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Water Cost-of-Service Study **FINAL**

SEPTEMBER 2017

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GLOSSARY

TERM	DESCRIPTION		
AF	Acre-foot / Acre-feet, 1 AF = 326,000 gallons		
AFY	Acre-feet per year		
AVG	Average		
AWS	Assured Water Supply		
AWT	Advanced Water Treatment		
AWWA	American Water Works Association		
BOR	Bureau of Reclamation		
CAGRD	Central Arizona Groundwater Replenishment District		
CAP	Central Arizona Project		
CAWCD	Central Arizona Water Conservation District		
CCI	Construction Cost Index		
CIP	Capital Improvement Plan		
CWIP	Construction Work-in-Progress		
DCP	Drought Contingency Plan		
DCP+	Drought Contingency Plan Plus		
DMP	Drought Management Plan		
EDU	Equivalent Demand Unit		
ENR	Engineering News Record		
FY	Fiscal Year		
MEU	Meter Equivalent Units – relate the capacity required to serve each connection to the system based on the expected maximum flow from meters of each size		
MG	Million gallons, 1 MG = 3.07 acre feet		
MGD	Million gallons per day		
MHI	Median Household Income		
MPC	Municipal Property Corporation		
0&M	Operations and Maintenance		
PAYGO	Pay-As-You-Go		
RWDS	Reclaimed Water Distribution System		
SRP	Salt River Project		
SFR	Single Family Residential		

EXECUTIVE SUMMARY

OVERVIEW

The City of Scottsdale's Division of Water Resources, the Scottsdale Water utility, provides water and wastewater services to over 230,000 residents with a system that currently spans 185 square miles. Scottsdale Water has more than 2,000 miles of water transmission and distribution pipelines and more than 1,400 miles of sewer collection pipelines and 43 lift stations. To meet customer water demands, Scottsdale Water accesses 43 storage reservoirs, existing groundwater, reclaimed water, water from the Salt and Verde River watersheds, and water from the Colorado River through the Central Arizona Project (CAP). In fiscal year 2015/16, Scottsdale Water delivered an average of 60.5 million gallons of water a day to its customers. Based on the current trends and land uses, Scottsdale Water's population in 2040 is estimated to approach 296,000.

In order to meet the continuing needs of existing customers as well as future customers, Scottsdale Water must continue to reinvest in its infrastructure and adapt to changing conditions. In doing so, Scottsdale Water must also maintain utility rates that fund ongoing operations and capital needs, as well as equitably recover costs from system users.

COST-OF-SERVICE STUDY

The City of Scottsdale engaged Carollo Engineers to conduct a Water Cost-of-Service Study (Study) for Fiscal Year (FY) 2017/18. This Study builds on a previous cost-of-service study that was used to establish the current rate structure, which was implemented on July 1, 2012, and updated since that time, as well as provides a near-term financial outlook for Scottsdale Water. A cost-of-service study is generally split into four components:

- 1. Revenue Requirement Analysis- Forecast of annual expenditures, bond obligations, and utility revenues.
- 2. Functional Cost Analysis Review of system cost drivers, including system requirements to meet peak summer water demands.
- 3. Water Demand Analysis- Evaluation of the water usage patterns, water production, and purchase requirements.
- 4. Rate Design- Update of the water rates to equitably and proportionally recover costs from system users.

Although each component serves a unique and separate purpose, they are all interconnected and establish the basis for the proposed rates.

RESULTS AND RECOMMENDATIONS

Based on the analysis as presented within this Water Cost-of-Service Study, Carollo recommends that the City implement the water rates as proposed by Scottsdale Water, which align with the existing rate structure and are substantiated by this cost of service study. Moreover, the current rate structure continues to reflect the cost of providing water service to Scottsdale Water's customers. Given historical volatility in water demands and the potential of future regulatory restrictions, it is recommended that the City also adopt the proposed demand reduction rate surcharges that may be implemented in future periods as necessary and directed by City Council. These demand reduction rates are designed to provide revenues sufficient to continue to meet Scottsdale Water's expenditures and debt obligations, despite reductions in demand/sales due to regulatory water curtailment requirements or other low demand periods.

METER		FY	FY	FY	FY	FY
SIZE	CURRENT	2017/18	2018/19	2019/20	2020/21	2021/22
5/8"	\$11.25	\$11.90	\$12.26	\$12.75	\$13.26	\$13.79
3/4"	14.50	15.40	15.86	16.50	17.16	17.84
1"	20.50	21.75	22.40	23.30	24.23	25.20
1-1/2"	33.75	35.75	36.82	38.30	39.83	41.42
2"	45.00	47.75	49.18	51.15	53.20	55.32
3"	60.00	95.00	97.85	101.76	105.83	110.07
4"	140.00	148.50	152.96	159.07	165.44	172.05
6"	280.00	297.00	305.91	318.15	330.87	344.11
8"	390.00	413.50	425.91	442.94	460.66	479.09

The current and FY 2017/18 proposed water rates for all customer classes are set forth in the following tables. Additionally, future year rates are projected based on the current financial forecast.

CURRENT AND PROPOSED MONTHLY BASE FEES

The usage allotment by tier and the resulting commodity rates are specific to each customer class in order to proportionally recover costs from each customer. The rates proposed by Scottsdale Water include an update to the Tier 3 breakpoint for single family residential customers, and to the Tier 2 breakpoint for multifamily and non-residential customers to bring the breakpoint for Tiers 1, 2, and 3

TABLE E-1

2

into alignment for all customers. The single family Tier 3 breakpoint is lowered from 40,000 to 30,000 gallons per month, the commercial Tier 2 breakpoint is raised from 10,000 to 12,000 gallons per month.

TABLE E-2 PROPOSED RATE STRUCTURE BREAKPOINTS

TIER	FROM	ТО
SINGLE FAMILY RESIDE	ENTIAL / SFR LANDSC	APE/IRRIGATION
Tier 1	0	5,000
Tier 2	5,001	12,000
Tier 3	12,001	30,000
Tier 4	30,001	65,000
Tier 5	Over	65,000

MULTIFAMILY RESIDENTIAL / COMMERCIAL / INDUSTRIAL / NONRESIDENTIAL / NON-SFR IRRIGATION

Tier 1	0	5,000
Tier 2	5,001	12,000
Tier 3	12,001	30,000
Tier 4	Over	30,000

TABLE E-3CURRENT AND PROPOSED WATER COMMODITY RATES

		FY	FY	FY	FY	FY
	CURRENT	2017/18	2018/19	2019/20	2020/21	2021/22
SINGLE FAM	ILY RESIDENTIAL /	SFR LANDSCAPE	/IRRIGATION			
Tier 1	\$1.65	\$1.65	\$1.70	\$1.77	\$1.84	\$1.91
Tier 2	2.85	2.95	3.04	3.16	3.29	3.42
Tier 3	3.55	3.70	3.81	3.96	4.12	4.29
Tier 4	4.50	4.75	4.89	5.09	5.29	5.50
Tier 5	5.25	5.55	5.72	5.95	6.18	6.43
MULTIFAMI	LY RESIDENTIAL / (COMMERCIAL / IN	NDUSTRIAL / NON	RESIDENTIAL / N	ON-SFR IRRIGATIO	N
Tier 1	\$1.65	\$1.65	\$1.70	\$1.77	\$1.84	\$1.91
Tier 2	2.85	2.95	3.04	3.16	3.29	3.42
Tier 3	3.55	3.70	3.81	3.96	4.12	4.29
Tier 4	3.85	4.05	4.17	4.34	4.51	4.69

1 INTRODUCTION

PURPOSE

The City of Scottsdale engaged Carollo Engineers to conduct a Cost-of-Service Study (Study) for its water utility, Scottsdale Water. This Study includes a cost-of-service analysis and proposes demand reduction rate surcharge adjustments to meet the ongoing revenue needs of Scottsdale Water. Scottsdale Water, like many southwestern water providers, has been challenged by ongoing drought conditions.

Scottsdale Water commissioned Carollo to analyze its current revenue requirements and develop updated rates that proportionally recover costs from system users and are designed to balance conservation goals with revenue needs. To develop these rates, Carollo completed a review of Scottsdale Water's revenue needs, customer usage patterns, capital improvement plans (CIP), and other future cost drivers. This Study documents the four-step approach Carollo used in developing the proposed rates, presents the rates and the overall impact to Scottsdale Water's financial projections, and provides further detail of the methodology and assumptions used to develop the financial plan.

BACKGROUND ON THE CITY OF SCOTTSDALE

Scottsdale Water's total water supply includes surface water and groundwater sources, as well as an increasing amount of recycled water. In 2016, Scottsdale Water delivered an average of 67.5 million gallons per day to its water users. Customers may receive water from a single source of water or from a combination of water sources, depending on the time of year, the weather, and customer demand. The utility's main surface water supply is from the Colorado River. This water is transported through the Central Arizona Project canal to the Scottsdale CAP Water Treatment Plant. Scottsdale Water also receives surface water from the Salt River Project (SRP), which comes from the Verde and Salt Rivers. Water is transported by SRP to the Chaparral Water Treatment Plant. Both facilities employ state of the art technology to deliver superior water quality for the customers. In addition to these two main surface water sources, Scottsdale uses groundwater from aquifers deep below ground. The water is pumped from the ground through one of Scottsdale Water's wells and then disinfected prior to entering the drinking water distribution system. The water from these wells may receive other forms of treatment prior to disinfection and distribution. Scottsdale also uses underground aquifers to store surface water (so some groundwater was previously surface water) and highly treated, ultrapure

recycled water. Elevations increase over 2,500 feet, rising generally from the south to the north and east, greatly affecting electricity, maintenance, and water distribution costs.



Image source: City of Scottsdale Infrastructure Improvement Plan, 2013

The water system is also flexible in that the water supplies from the north may be conveyed to the south and vice versa. Scottsdale Water also serves a small number of customers outside the City limits. Additionally Scottsdale Water has agreements with the Tonto Hills Domestic Water Improvement District and Carefree Water Company to treat and deliver CAP water.

Customer Profile

Based on FY 2015/16 customer data, the majority of Scottsdale Water's accounts are single family residential customers (90 percent), followed by multifamily residential and commercial customers (10 percent). Scottsdale Water's customer class consumption profile reflects the differences between each class' average water usage. In FY 2015/16, single family residential customers consumed 60 percent of Scottsdale Water's total delivered water, with multifamily residential and commercial customers consuming 19 and 21 percent, respectively.

Current Water Rates and Tiers

Scottsdale Water's current water rate structure consists of two main charges: a monthly base fee and a commodity charge. The base fee is determined by the size of the water meter serving a property. A five-tier increasing block rate structure is used to determine the water commodity charge for single family residential accounts. A four-tier increasing block rate structure is used for multifamily residential and other nonresidential. The tiers are intended to provide a pricing incentive to differentiate between responsible water use and excessive use primarily associated with high levels of outdoor watering of turf areas with treated drinking water. Table 1-2 shows the single family tiers and rates.

TABLE 1-1	CORRENT MONTHLY BASE FEE
METER SIZE	E MONTHLY BASE FEE
5/8"	\$11.25
3/4"	14.50
1"	20.50
1-1/2"	33.75
2"	45.00
3"	60.00
4"	140.00
6"	280.00
8"	390.00

TABLE 1-2	CURRENT SINGLE FA	ES AND TIER ALLOCATIO		
TIER	RATE	FROM	ТО	
1	\$1.65	0	5,000	
2	2.85	5001	12,000	
3	3.55	12,001	40,000	
4	4.50	40,001	65,000	
5	5.25	Over	65,000	

1. Rates are per 1,000 gallons.

For multifamily residential and commercial accounts, a four-tiered commodity rate structure is applied to each customer's monthly usage. Table 1-3 summarizes Scottsdale Water's current water rate structure for multifamily and nonresidential customers.

TABLE 1-3 CU ALLOCATIONS	IRRENT MULTIFAN	IILY RESIDENTIAL/I	NON-RESIDENTIAL I	RATES AND T
TIER	RATE	FROM	ТО	
1	\$1.65	0	5,000	
2	2.85	5001	10,000	
3	3.55	10,001	30,000	
4	3.85	Over	30,000	

1. Rates are per 1,000 gallons.

Outside City Surcharge

Carollo recommends increasing the outside city surcharge from 10 percent to 15 percent based on the calculated cost of infrastructure, operations, and other support services, which is in excess of 15 percent. Based on discussion with Scottsdale Water staff, Scottsdale Water must operate, maintain, and repair facilities outside the City boundaries to serve these customers. Water delivered to these customers passes through Scottsdale Water's system and then through these extended facilities. As a result, the fully loaded cost to provide service to outside city customers could be as much as 49 percent higher than for inside city customers, as shown in Table 1-4 below. As such, a surcharge higher than the proposed 15 percent could be substantiated.

Maximum Surcharge Percentage (to recover all eligible costs)	49%					
Total Revenues with Maximum Surcharge	\$1,853,000					
Revenues from Maximum Surcharge	606,000					
Revenues without Surcharge	\$1,247,000					
Total Surcharge Eligible Costs	\$606,000					
Maintenance of Transmission Mains (12" and Larger)14,000						
Amortization of Transmission Mains (12" and Larger)\$592,000						
Costs Eligible for Outside City Surcharge						
TABLE 1-4OUTSIDE CITY SURCHARGE CALCULATION						

The maximum surcharge amount of 49 percent has been calculated based on the costs to construct and maintain the water transmission mains with diameters of 12 inches or larger in the outside city service area. The percentage surcharge is calculated by dividing the revenues from the maximum surcharge, \$606,000, by the amount of revenues expected from outside city customers without a surcharge, \$1,247,000.

Amortized construction costs were estimated based on a 50 year amortization period and a 6 percent interest rate. Maintenance costs were estimated using an estimate of pipeline maintenance costs provided by City staff and the share of pipes by length located in the outside city service area. Smaller pipelines, those with diameters of 8 inched and below, are not included in the surcharge calculation since the normal rates cover the costs associated with localized distribution facilities.

Water Hauling Capital Recovery Fees

In order to meet the continuing needs of water hauling customers, Scottsdale Water has invested in a \$0.5 million Water Station (Station) to facilitate connection to the system. Water hauling customers typically transport the water for use by customers outside the city limits who have not paid a water development fee. Therefore, the water hauling fees now includes a capital recovery component to recover the investment Scottsdale Water has made to construct the Station and the other water system infrastructure needed to produce and transmit water to the Station. The proposed water hauling capital recovery fees are shown in **Table 1-5** below. Fees for FY 2018/19 through FY 2021/22 are projected based on 3 percent per year rate adjustments.

TABLE 1-5	PROPOSED WATER HAULING CAPITAL RECOVERY FEE							
	FY	FY	FY	FY	FY			
CUSTOMER	2017/18	2018/19	2019/20	2020/21	2021/22			
Residential	\$5.00	\$5.15	\$5.31	\$5.47	\$5.64			
Commercial	\$10.00	\$10.30	\$10.61	\$10.93	\$11.26			

In addition to the cost recovery fee, customers pay the base fee and commodity rates the same as any other water customer.

Bulk Water Rates

Bulk water customers typically receive water through unpressurized delivery systems. Utility staff maintains, operates and replaces each of these systems. The bulk water rates are shown in Table 1-6 below. The proposed rate for FY 2017/18 represents a 6 percent increase over the current rate. Rates for FY 2018/19 through FY 2021/22 are projected based on 3 percent per year rate adjustments.

TABLE 1-6	CURRENT AND PROPOSED BULK WATER RATES						
		FY	FY	FY	FY	FY	
	CURRENT	2017/18	2018/19	2019/20	2020/21	2021/22	
All Usage	\$1.65	\$1.75	\$1.80	\$1.86	\$1.91	\$1.97	

1. Rates are per 1,000 gallons.

Development Fees

One mechanism used by Scottsdale Water to fund the infrastructure needed to accommodate new growth is the assessment of development fees. Development fees are one-time payments that represent the proportionate share of infrastructure capital costs needed to accommodate new Equivalent Demand Units (EDU). Carollo did not review the development fees as part of this study. However, the City implemented the fees in 2013 in order to comply with Arizona development fee requirements.

TABLE 1-7 CURRENT WATER DEVELOPMENT FEES

METER SIZE	MEUS PER METER	DEVELOPMENT FEE
5/8", 3/4", 1"	1.0	\$3,365
1 1/2"	5.0	16,825
2"	8.0	26,920
3" Compound	16.0	53,840
3" Turbine	22.0	74,030
4" Compound	25.0	84,125
4" Turbine	42.0	141,330
6" Compound	50.0	168,250
6" Turbine	86.0	291,073
8" Compound	80.0	269,200

2 PROJECT OBJECTIVES

Scottsdale Water retained Carollo to perform an update to the 2011 Cost-of-Service Study. The update is designed to be an independent analysis and evaluation of the existing rate-setting process and methodology for cost recovery, allocations, and calculations, and to make recommendations and refinements. The goal of this Study is to evaluate the rate-setting process and include the following objectives:

- Review the appropriateness of the existing financial plan of Scottsdale Water which documents the utility's financial sufficiency and ability to meet operation and maintenance (O&M) costs and CIP needs.
- Evaluate and develop policy considerations of the existing water rate methodology to achieve the goals and objectives of Scottsdale Water, including ease of understanding and promoting water use efficiency/conservation.
- Calculate and document the functionalization, classification, and allocation of costs-including capital reserves-among appropriate customer classes consistent with industry standards.
- Provide a rate design framework that proportionately aligns demands, allocations, and costs associated with Scottsdale Water's operations, service classes, and pricing tiers.

Comprehensive Rate Design

Rates are typically designed to achieve multiple objectives. While industry standards provide a basis for testing reasonableness, Scottsdale Water must illustrate how its rates reasonably and proportionally recover costs from system users. Within the cost-of-service approach, the City's policy guidelines can influence rate structure design elements that are distinct to Scottsdale Water and the community. Within Scottsdale Water's rate structure, these policies encompass the entire structure, including the selection of the rate design (inclining block rates). With its rate structure, Scottsdale Water is able to satisfy its policy objectives and cost-of-service requirements.

FORWARD-LOOKING STATEMENT

The calculations and forecasts of this analysis are based on the reasonable projections of existing service costs, water demands, and system operations with information available and on existing cost-of-service proportionality requirements. Significant changes in Scottsdale Water's operations, changes in Arizona law, or further regulatory actions in regard to water use may require Scottsdale to revisit the cost-of-service analysis.

3 COST OF SERVICE REVIEW

STEP-BY-STEP APPROACH

Rate analyses are performed to recover system revenues in order to sufficiently fund utility O&M, reserves for future replacement and enhancement capital needs, and other operational costs incurred.

When conducting the cost-of-service analysis, Carollo used a four-step approach, taking into consideration relevant legal standards and industry guidelines. Each step in this process shapes the subsequent step, ultimately resulting in a fair, equitable, and well-documented rate calculation. While the process is shown in a linear step-by-step approach, this is really an iterative process where the ultimate objective is to balance revenues with costs. The process presented below is advocated by the American Water Works Association (AWWA), a national industry trade group that makes recommendations on generally accepted practices in the water industry, and consistent with industry standards established by the AWWA Principles of Water Rates, Fees and Charges: Manual of Water

Supply Practices M1 (M1 Manual).



Revenue Requirement Analysis

Compares existing revenues of the utility to its operating, capital, and debt obligations to establish the adequacy of the existing cost recovery levels

Functional Cost Analysis

Identifies and apportions annual revenue requirements to functional rate components based on its application of the utility system



Water Demand Analysis

Forecasts water sales based on historical billings, modifications to the rate structure, and any regulatory restrictions

Rate Design

Considers both the level and structure of the rate design to collect the distributed revenue requirements from each class of service

Step 1: Revenue Requirement Analysis

The revenue requirement analysis is the first step, serving as the initial diagnostic of the utility's financial health. The revenue requirement analysis evaluates the utility's expenses and other operating requirements, such as debt service and applicable coverage ratios, and establishes a baseline revenue need that must be recovered through rates in order to fund Scottsdale Water's expenditures.

As these expenses increase over time due to cost escalation and changes in operating conditions, the revenue requirement analysis determines if projected revenues from user rates are adequate to recover the utility's costs. If revenues fall short of the revenue requirement at any point in the projection, it signals that the agency is in need of a revenue increase.

Step 2: Functional Cost Analysis

After determining a utility's revenue requirement, the next step is the allocation of costs to functional categories (i.e., cost components), effectively known as the cost-of-service analysis because of its role in developing a cost to serve each customer class and tier. The optimal goal of the cost-of-service analysis is to delineate how much of the utility's costs benefit each customer class and how much each customer class burdens a utility's system and water resources. In order to achieve this, costs are categorized by placing all of the expenses in an earmarked "bucket," such as customer service, which accounts for general support and administrative costs like customer billing. This process allows costs to be proportionally distributed to each customer class. The rate calculation that follows is as simple as dividing the bucket by the appropriate units (units of water, accounts, etc.) for each customer class and tier.

Step 3: Water Demand Analysis

Forecasting water sales is a critical component in the rate setting process. As part of the budget process, Scottsdale Water forecasts the expected water usage based on historical demand, proposed changes to rates, regulatory impacts, and weather. These forecasted water demands are then compared against forecasted revenue requirements, and rates are developed to recover Scottsdale Water's costs. In other words, future demands are based on historic sales and factored for considerations like conservation and weather. Rates are then generated so that estimated sales revenues match associated costs.

Step 4: Rate Design

The final part of the analysis is the rate design. The rate design process establishes a rate structure that proportionately recovers costs from customer classes and customers within each customer class. The final rate structure and rate recommendations are designed to (1) fund the utility's long- and short-term projected costs of providing service, (2) proportionally allocate costs to system customers, and (3) provide a reasonable and prudent balance of revenue stability while encouraging conservation.

4 REVENUE REQUIREMENT ANALYSIS

The revenue requirement analysis is the first test of a utility's fiscal health. This analysis evaluates the adequacy of current rate levels and sets the basis for near- and long-term rate planning.

A revenue requirement analysis was completed by building on Scottsdale Water's existing rate model. The analysis includes Scottsdale Water's five-year operating and maintenance cost projections, budgeted CAP expenditures and other future expenses, information related to current reserve fund balances, other future revenues, and other miscellaneous financial information.

Once the revenue requirement is established by compiling all of the utility's cost drivers, two tests are typically utilized to define the annual revenues necessary to recover Scottsdale Water's costs.

The cash flow sufficiency test defines the amount of annual revenues that must be collected in order to meet annual expenditure obligations of the utility. The cash flow obligations of Scottsdale Water include:

- Operating, maintenance, and various non-operating expenses
- Debt service payments
- Rate-funded capital expenditures
- Reserve funding

Offsetting these cash flow obligations are various sources of revenue, most notably:

- Customer rate revenues
- Miscellaneous operating and non-operating revenues
- Development fee revenues used for growth-related debt service
- Use of surplus reserve balances

Use of surplus reserve balances is not an explicit revenue source such as rate revenue but is accounted for in the year-end net cash flow. For example, if the forecast results in negative year-end cash flow then the operating reserve will be drawn down by an equal amount. However, continually relying on such reserves is not fiscally prudent and financially sustainable; therefore, such reserves are generally not relied upon as part of this Study. The result of the cash flow sufficiency test is defining the amount of rate revenues needed to meet Scottsdale Water's cash flow needs. Rates are set to generate the revenue to cover cash flow for two reasons: (1) they are controlled by the City Council and are the largest source of revenue whereas, (2) other revenue sources are typically limited by either external constraints, scale, or subject to potential fluctuations due to factors such as customer growth for development fees.

The second test is the debt service coverage test. Many utilities use bonded indebtedness to fund a portion of their capital expenses. Debt service coverage is dictated by the utility's bond covenants and establishes a threshold above basic debt service that the utility must collect in revenues.

The debt service coverage test is necessary because when a utility issues debt it agrees to certain terms and conditions in relation to the repayment of the debt. Debt coverage is often one of those stipulations and might add an additional expense to the utility if revenues are not sufficiently in excess of expenditures. Debt coverage refers to the collection of revenues to meet all operating expenses and debt service obligations plus an additional multiple of that debt service.

Scottsdale Water's existing debt instruments include Municipal Property Corporation (MPC) bonds and Revenue bonds, which are secured by excise taxes and require a minimum debt coverage ratio of 1.2x. Due to Scottsdale Water's practice of cash funding capital expenditures in combination with debt, actual coverage levels within Scottsdale Water have been achieved at closer to 2.0x. The current analysis sets the target debt service coverage ratio at 1.2x.

The revenue requirement analysis summarizes the various costs by budget category, and compares the current revenue structure against these costs. Any shortfall between revenues and expenses forms the basis for any needed rate revenue increases.

SCOTTSDALE WATER BUDGET CATEGORY ANALYSIS

Water Supply and Costs¹

The utility's largest renewable water supply originates from the Colorado River and is managed and delivered by the Central Arizona Water Conservation District (CAWCD) through the CAP canal. The City of Scottsdale has access to more than 81,271 acre feet (AF) of CAP supply annually, which comprises approximately 70 percent of the total water supply utilized by Scottsdale Water. This supply is treated by Scottsdale Water's existing CAP Water Treatment Plant. The United States Bureau of Reclamation (BOR) studies the Colorado River supply conditions year-round and publishes its findings in regular reports. The potential for a shortage on the Colorado River system has been discussed and reviewed for years, and recent studies have indicated the potential for CAP water deliveries to be reduced may occur prior to 2019. This could change if above-normal runoff conditions occur in the interim. If the Colorado River should experience a shortage, water deliveries to the CAP would be reduced to the State of Arizona by 320,000 AF as an initial stage of reduction. Under this condition, some sub-contract holders, including Scottsdale Water would be affected, and supply to agricultural users would be reduced.

The SRP water supplies originate from the Salt and Verde River systems. These systems are fed from precipitation and snow pack in northeastern and central Arizona. The water is stored in a series of reservoirs and delivered to Scottsdale Water through SRP's canal to Scottsdale Water's Chaparral Water

¹ City Of Scottsdale Drought Management Plan

Treatment Plant. SRP's water supply also consists of an allocation of groundwater pumped from wells located on lands within the SRP service area. The SRP supply is available for use only on lands within its service area, known as "On-Project" lands. SRP's available groundwater and surface water supplies vary from year to year, sometimes significantly. SRP lands are located in the southern portion of Scottsdale Water's service area. Scottsdale Water's remaining service area is referred to as "Off-Project." Under normal supply conditions, Scottsdale Water's SRP lands, 6,071 acres, are entitled to a total of 3 AF per acre of surface water and groundwater, which during normal flow years is 18,213 AF per year. The average water demand on Scottsdale Water's SRP lands averages approximately 2.5 AF per acre in recent years. When shortages develop on the SRP system, normal delivered volumes are typically reduced corresponding to the shortage. Shortages have occurred within SRP over the last several decades, most recently during the FY 2003/04 time frame, which saw an allocation reduction to approximately 2 AF per acre. Carollo met with Scottsdale Water staff to gain an understanding and basis for allocating each of Scottsdale Water's local and imported supplies and operating and maintenance costs.

Groundwater

Scottsdale meets the majority of its customer's water demands with surface water and has met the Arizona Department of Water Resources safe yield requirements since 2006. Beginning in 2020, safe yield will require that for every gallon of groundwater withdrawn from the aquifer, another gallon must be recharged back into the aquifer. Scottsdale Water still utilizes groundwater for operational performance, to meet peak demand, conduct groundwater remediation, and as backup for surface water supply during shortage conditions or other surface water supply interruptions.

Due to emphasized and prolonged use of renewable surface water supplies and Scottsdale Water's water recharge efforts, Scottsdale Water's groundwater supplies are significantly less impacted by drought; however, during chronic drought episodes Scottsdale Water may be required to increase planned groundwater pumping to meet customer demands if surface water supplies are reduced.

Recycled Water and Conservation

It should be noted that reclaimed water is also an important component in the overall portfolio of Scottsdale's water resources. Planning for the use of reclaimed water within the City is accomplished within the framework of integrated water resource management with its focus on meeting irrigation demands, maintaining the goal of safe yield, and maximizing recharge opportunities. Through its recent 2012 Water Reuse Master Plan Update, Scottsdale Water has implemented strategic efforts in order to maximize their capability to locally reuse and recharge reclaimed water. Scottsdale Water's obligation to deliver reclaimed water to non-potable customers via the Reclaimed Water Distribution System (RWDS) includes the use of untreated CAP canal water; therefore, during a drought episode, there may be a need to monitor the potential service impacts to this portion of the customer base.

Scottsdale Water strives to achieve a resilient water portfolio that not only supplies water for basic health and human safety, but meets outdoor irrigation demands during the peak of the summer usage period.

Accordingly, Scottsdale Water provides reclaimed water for non-domestic usage and maintains a general conservation program.

Existing Operating Expenditures

For sound financial operations of Scottsdale Water's system, the revenues generated must be sufficient to meet the expenditures or cash obligations of the utility. The revenue needs are defined as the amount of revenues that must be recovered through water rates in order to cover annual expenditures, less any offsetting revenues. Offsetting revenues may include interest earnings and other non-operating revenues, such as lease revenues, late payment charges, account initiation fees, or other miscellaneous revenues and receipts. Based on Scottsdale Water's estimated FY 2016/17 expenditures, the table below identifies the projected expenditures and offsetting revenues for FY 2017/18.

TABLE 4-1OFFSETTING REVENUES AND OPERATING EXPENDITURES

DESCRIPTION	FY 2017/18	NOTES
OFFSETTING REVENUES		
Department Indirect & Other		
Revenue	\$1,750	Includes interest revenue, department indirects, contractual
Development Fees	1,800	
Total Offsetting Revenues	\$3,550	
OPERATING EXPENDITURES		
		Includes employee salaries & wages (including benefits),
		purchased water, electricity, treatment filter media,
Operating Expenses	\$50,864	maintenance.
		Includes franchise fee, city-wide indirect allocations, AWT
Operating Transfers	11,000	operating transfer.
Debt Service	21,650	MPC bonds and Revenue bonds.
Total Operating Expenditures	\$83,514	

1. All values in thousand dollars.

Operating Needs

Operating needs are expenditures that Scottsdale Water incurs in the day-to-day operations of its system, such as employee salaries and benefits, raw water purchases, electricity, and treatment filter media. Other costs in the operating budget include citywide indirect costs for services such as accounting, human resources, legal counsel, etc.

Scottsdale Water's FY 2017/18 projected operating budget served as the basis for forecasting future operating expenses. The budget was compared to prior year actual financial information to identify any anomalies or one-time expenditures not appropriate for forecasting in future years. Scottsdale Water staff also reviewed the budget for costs that might need to be adjusted due to future operational changes.

Unless manually calculated, future years were forecasted using general cost inflation factors appropriate for the type of expense. These escalation factors, provided in Table 4-2, were assigned on a line-item basis.

TABLE 4-2COST ESCALATION FACTORS

COST ESCALATOR	DESCRIPTION
Labor Cost Inflation	Labor rates are assumed to increase at the long-term average of about 3 percent per year.
Construction Cost Inflation	Although capital cost inflation is commonly linked to the Engineering News Record (ENR) Construction Cost Index (CCI), the inflation rate assumes the ENR's long-term average of 3 percent.
Power Inflation	This escalator applies to costs such as electricity and fuel, which typically exhibit annual increases higher than general inflation; it is set at 1 percent for FY 2017/18, and between 3 and 5 percent thereafter.
General Cost Inflation	This escalator applies to most expenses in the operating expense forecast; it averages about 2 percent per year.
Purchased Water Costs	This escalator is applied to replenishment and raw water purchased from CAWCD and SRP. The year-over year change in purchased raw water costs varies based on the rates and fees implemented by the CAP, CAGRD, and other water purveyors. Over the next five years, water purchase costs are expected to increase by an average of about 10 percent per year.
Chemical Cost Inflation	Chemical costs are expected to decrease by about 3.7 percent in FY 2017/18 due to inventory levels, after that time, they are projected to increase by about 5.5 percent per year.

Operating expenses are projected to increase to \$60.2 million in FY 2020/21, representing an 18.5 percent overall increase from the FY 2017/18 budgeted level of \$50.8 million, and an average annual increase of approximately 3.5 percent. The largest driver for these increases is the purchase cost of raw water.

Debt Service

Existing debt service payments are established in Scottsdale Water's debt repayment schedules. Currently, Scottsdale Water's annual payment for existing debt service is approximately \$21.7 million in FY 2017/18. A full listing of Scottsdale Water's existing debt schedule is provided in Appendix D.

Debt Service Coverage

As discussed previously, Scottsdale Water's bonds are structured as MPC and Revenue bonds that rely on pledged excise tax revenues for coverage. In order to promote continued fiscal sustainability and maintain favorable credit ratings, Scottsdale Water targets an internal debt coverage ratio of 1.2x. The target coverage ratio means that Scottsdale Water's adjusted net revenues shall amount to at least 120 percent of the annual debt service. Annual debt service includes the annual principal and interest payments on outstanding debt in any given year.

Capital Projects

The CIP includes a variety of capital projects that involve repairing, or replacing and expanding, existing water system assets, as well as purchasing or replacing other small equipment. Over the next five years, Scottsdale Water expects to fund roughly \$200 million in capital investments. Higher levels of spending are expected in the next two years, with costs tapering off thereafter. After the five-year planning period, costs are expected to increase, ultimately leveling at about \$40 million per year.

Figure 4-1 below shows the estimated project costs, as well as the expected cost escalation for the next ten years.



Capital Funding

Scottsdale Water plans to fund capital expenditures using a mix of debt proceeds, revenues from rates, development fees, and existing fund balance. A debt issuance that will provide \$42.1 million for capital projects is planned for FY 2017/18. After that time (FY 2018/19 through FY 2021/22), capital projects will be funded using cash held in the existing fund balance, cash from user rates, and development fee revenues.

REVENUE REQUIREMENT ANALYSIS



Figure 4-2 below shows the analyzed capital funding strategy for the five-year study period.

Reserves

FIGURE 4-2

CAPITAL FUNDING

In addition to the operating expenses outlined in this Study, Scottsdale Water has revenue requirements related to maintaining adequate water reserve funds. Each of the reserve funds is described below.

Scottsdale Water should continue to monitor revenues and reserve levels on an annual basis. The reserve target may also be adjusted further as Scottsdale Water policy dictates to minimize rates or to smooth future rate increases. Should Scottsdale Water reach and maintain desired reserve levels, it is recommended that Scottsdale Water implement a reserve policy to formally define desired funding levels, needs, and uses.

Operating Reserve

The City of Scottsdale's comprehensive financial policies dictate that the water fund should maintain an operating reserve between 60 and 90 days of budgeted operating expenses excluding debt service. The revenue requirement analysis targets a minimum operating fund balance equal to 70 days of operating expenses. This minimum fund balance is adjusted annually to take into account changes to Scottsdale Water's operating expenditures.

Replacement and Extension Reserve

The Replacement and Extension Reserve is a capital reserve held by Scottsdale Water that is used to provide a source of funds for capital projects in the event of an emergency. The revenue requirement analysis targeted a minimum capital fund balance of approximately 2 percent of the original cost of Scottsdale Water's capital assets, as dictated by the City's policy.

Capital/Rate Stabilization

The balance of Scottsdale Water's cash assets is held as unrestricted cash in the water fund and is available for rate stabilization or to pay for capital projects. The current balance of these funds is \$83.2 million (projected for FY 2016/17 year-end) with and ending FY 2017/18 balance of \$91.0 million.

Table 4-3 shows the projected ending balances for each of Scottsdale Water's reserves.

TABLE 4-3 RESERVE BALANCE SUMMARY (PRIOR TO ANY RATE INCREASES)

	FY	FY	FY	FY	FY
DESCRIPTION	2017/18	2018/19	2019/20	2020/21	2021/22
Operating Reserve	\$11,297,000	\$11,691,000	\$11,987,000	\$12,628,000	\$13,251,000
Replacement and Extension					
Reserve	28,561,000	29,700,000	30,519,000	31,061,000	31,450,000
Cash In Reserve	\$39,858,000	\$41,391,000	\$42,506,000	\$43,689,000	\$44,701,000
Balance for Capital/Rate Stabilization (PAYGO)	91,081,000	52,107,000	30,604,000	22,855,000	23,175,000
Total Cash Balance	\$130,939,000	\$93,498,000	\$73,110,000	\$66,544,000	\$67,876,000

PROJECTED REVENUES UNDER CURRENT RATES

Scottsdale Water collects most of its revenues through user service charges, including monthly base fees and commodity charges. These revenues make up roughly 90 percent of Scottsdale Water's operating revenues.

The forecasted annual retail demand for the study period is 67,800 AF per year.

Table 4-4 outlines Scottsdale Water's projected revenue and expense forecast for the next five years prior to any rate increases. Absent rate increases, Scottsdale Water will run budget deficits after FY 2018/19, and would not be able to meet its rate-funded capital targets without significant use of cash on hand and decreasing reserve levels in FY 2020/21 and FY 2021/22.

TABLE 4-4 REVENUE REQUIREN	/IENT SUMMAF	RY (PRIOR TO A	NY RATE INCR	EASES)	
Description	FY 2017/18 ⁽¹⁾	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22
Revenue Items					
Base and Commodity Revenues ⁽²⁾	\$92,634	\$92,634	\$92,634	\$92,634	\$92,634
Development Fee Revenues	1,800	1,800	1,800	1,800	1,800
Other Revenues	6,629	7,063	7,553	7,822	8,041
Total Operating Revenues	\$101,063	\$101,497	\$101,987	\$102,256	\$102,475
Expenditures					
Operating Expenses	\$50,864	\$52,728	\$54,076	\$57,217	\$60,257
Operating Transfers	8,039	8,089	8,140	8,192	8,246
AWT Operating Transfers	2,960	2,990	3,020	3,050	3,080
Debt Service ⁽³⁾	21,650	20,950	20,951	20,872	20,801
Total Operating Expenditures ⁽⁴⁾	\$83,514	\$84,757	\$86,186	\$89,331	\$92,384
Available for Capital/Reserves	\$17,549	\$16,740	\$15,802	\$12,924	\$10,091
Rate and Reserve Funded Capital	(10,417)	(58,634)	(43,413)	(29,568)	(21,777)
Increase in Franchise Fee (5)	0	0	0	0	0
Change in Fund Balance	\$7,132	(\$41,893)	(\$27,611)	(\$16,643)	(\$11,686)
Consolidated Fund Balance	\$129,181	\$87,287	\$59,676	\$43,033	\$31,347
Reserve Target ⁽⁶⁾	\$39,858	\$41,363	\$42,451	\$43,606	\$44,588
Balance for Capital/Rate Stabilization (PAYGO)	\$89,323	\$45,924	\$17,226	(\$573)	(\$13,241)
Resulting Coverage Factor ⁽⁷⁾	1.9 x	1.9 x	1.9 x	1.7 x	1.6 x

1. All figures are in thousands of dollars and might differ from Appendix C due to rounding.

2. Revenues calculated based on projected sales and accounts for FY 2017/18.

3. Includes modeled additional future debt issuances.

4. Does not include costs to fund PAYGO projects or additions to meet minimum fund balances.

5. Scottsdale Water pays a franchise fee to the City based on 5 percent of base and commodity revenues, increases in the rates will increase the total franchise fee payments.

6. Combined reserve target for Operating and Replacement and Extension Reserves.

7. Calculated coverage factor assuming that 50% of development fee revenues are included in the coverage calculation.

The results presented in the table above illustrate the need for moderate rate revenue increases. The primary drivers of the incremental increases are raw water costs and the funding of capital improvements. Over the next five years, operating expenses are expected to increase from about \$50.8 million to \$60.2 million due to inflationary costs increases and increases in raw water purchase costs averaging about 10 percent per year. Over that same time period, Scottsdale Water plans to invest over \$200 million in capital improvements to the water system, with over \$160 million to be cash-funded.

RECOMMENDED REVENUE REQUIREMENTS

Based on the results of this analysis, it is recommended that Scottsdale Water increase revenues annually in order to meet projected revenue needs. Based on current projections, revenues will not adequately fund expenses or reserves in the coming years. As FY 2016/17 is the current fiscal year, and given the necessary noticing and implementation requirements, the proposed revenue increases will be effective beginning November 2017. The rate increase will not be in effect for the entire FY 2017/18 period.

Scottsdale Water's past planning and management has placed the utility in a good financial position. Use of existing fund balance to fund CIP projects over the next three years, coupled with relatively low outstanding debt will allow Scottsdale Water to continue to cover costs with only modest rate increases. As shown in Table 4-5 below, rate increases at the inflationary level of 3 percent per year, will be sufficient to cover ongoing costs and fund the capital improvement plan, barring any unexpected and substantial revenue losses or cost increases.

While Scottsdale Water is forecasted to generate positive cash flow of over \$15 million per year, these funds are not to be considered excess. Any resulting positive cash flow will be utilized to either fund identified PAYGO capital projects or to rebuild reserves. Secondarily, this positive cash flow helps to maintain Scottsdale Water's debt service coverage ratio.

Description	FY 2017/18 ⁽¹⁾	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22
Operating Revenues ⁽²⁾	\$101,063	\$104,276	\$107,629	\$110,845	\$114,101
Operating Expenditures and Transfers	(58,904)	(60,958)	(62,502)	(65,846)	(69,094)
AWT Operating Transfers	(2,960)	(2,990)	(3,020)	(3,050)	(3,080)
Debt Service	(21,650)	(20,950)	(20,951)	(20,872)	(20,801)
Cash Flow Surplus (Deficit)	\$17,549	\$19,378	\$21,157	\$21,078	\$21,126
Recommended Rate Increase	3.00%	3.00%	3.00%	3.00%	3.00%
Month of Increase	November	November	November	November	November
Revenues from Rate Increase	1,853	1,908	1,966	2,024	2,085
Available for Capital/Reserves ⁽³⁾	\$19,402	\$21,286	\$23,122	\$23,102	\$23,212
Rate and Reserve Funded Capital	(10,417)	(58,634)	(43,413)	(29,568)	(21,777)
Increase in Franchise Fee ⁽⁴⁾	(93)	(95)	(98)	(101)	(104)
Change in Fund Balance	\$8,892	(\$37,443)	(\$20,389)	(\$6,567)	\$1,330
Consolidated Fund Balance	\$130,941	\$93,498	\$73,109	\$66,542	\$67,873
Reserve Target ⁽⁵⁾	\$39,858	\$41,390	\$42,506	\$43,689	\$44,701
Balance for Capital/Rate Stabilization (PAYGO)	\$91,083	\$52,108	\$30,603	\$22,853	\$23,171
Resulting Coverage Factor ⁽⁶⁾	2.0 x	2.1 x	2.2 x	2.2 x	2.2 x

TABLE 4-5RECOMMENDED REVENUE INCREASES AND RESULTING CASH FLOWS

1. All figures are in thousands of dollars and might differ from Appendix C due to rounding.

2. Line item includes revenues for a full year of each previous years rate increase.

3. Cash flow maintains Scottsdale Water's coverage factor. These funds are used later to cash fund non-operating expenditures, such as capital projects and reserve obligations.

4. Scottsdale Water pays a franchise fee to the City based on 5 percent of base and commodity revenues, increases in the rates will increase the total franchise fee payments.

5. Combined reserve target for Operating and Replacement and Extension Reserves.

6. Calculated coverage factor assuming that 50% of development fee revenues are included in the coverage calculation.

5 FUNCTIONAL COST ALLOCATION

With Scottsdale Water's revenue requirements outlined—including needed rate increases—the next step is to link each cost item with a specific service to the system that it supports. This is commonly referred to as the cost-of-service analysis, or the functional cost allocation, because it connects each cost of Scottsdale Water with a functional category or purpose that it funds. For instance, expenses related to the billing system are allocated under the umbrella of the customer service function, while baseline raw water purchases go to support the base demand function.

The costs incurred are generally responsive to the specific service requirements or cost drivers imposed on the system and its water resources by its customers. The principal service requirements that drive costs include the annual volume of water consumed, the peak water demands incurred, and the number or customers or meter equivalents in the system. Accordingly, these service requirements are the basis for the selection of the categories utilized in the functional allocation process.

The AWWA M1 Manual outlines the two most widely used methods for allocation of costs— the baseextra capacity method and the commodity-demand methodology. Both methods recognize that the cost of serving a customer depends not only on the total volume of water used, but also on the rate of use or peak-demand requirements.

Similar to the previous cost-of-service study, the proposed rates presented within this Study are developed using a base-extra capacity method. In using the base-extra capacity method, costs are typically separated into four cost components: (1) Base (average), (2) Extra Capacity, (3) Customer, and (4) Fire. As noted in the AWWA M1 Manual, in detailed rate studies, some of these elements might be broken down further into two or more subcomponents.

Based on Scottsdale Water's expenditures and system characteristics, the Customer (fixed monthly) component is separated into two subcomponents: (1) Customer (accounts) and (2) Capacity (meter equivalent units (MEU)). Capacity-related costs are also included in the Base cost component described below.

This bifurcation of the Customer component is done to better identify and allocate costs that vary based on capacity needs (as defined by the size of the meter) from those that should be equally shared by each customer account. Similarly, Extra Capacity was split into three subcomponents: (1) Peak Month, (2) Peak Day, and (3) Peak Hour. These are designed to better distinguish that not all demand (and peaking) is equal. These calculated peaking factors, based on Scottsdale Water's system, are used to allocate the cost of providing extra capacity in the system needed to serve those who use more. Different facilities, such as distribution and storage facilities, and the operation and maintenance costs associated with those facilities, are designed to meet the peaking demands of customers. Therefore, extra-capacity costs include the operations and maintenance costs and capital costs associated with meeting peak customer demand.

WATER SYSTEM COST CATEGORIES

Carollo developed a detailed cost allocation that serves as the foundation for the proposed rate adjustments. Carollo met with Scottsdale Water staff (finance and engineering) to prepare a detailed evaluation and calculation of system capacity and utilization. This process served as the basis for allocating each line item and to forecast how potential operational shifts would impact the cost of service.

As the first step in the evaluation process, a functional allocation was developed by analyzing Scottsdale Water's budget on a line-by-line basis and allocating each expense to the appropriate functional cost category. The revenue requirements, discussed previously, were then allocated to functional cost categories. The following are the functional cost categories based on the AWWA base-extra capacity methodology:

Functional Cost Components:

- *Customer:* Customer costs are fixed expenses that relate to operational support activities, including accounting, billing, customer service, and administrative and technical support. These expenditures are essentially common to all customers, regardless of the meter size serving a property.
- **Base:** Costs allocated to the Base function are those associated with providing the basic level of water service. It is assumed that allocated costs benefit usage uniformly and do not vary based on the peak or overall volume of water. This category also includes meter and capacity-related costs, such as meter maintenance and peaking charges, that are included based on the meter's hydraulic capacity (measured in gallons per minute).
 - *Peak Month Usage:* Costs associated with providing the extra system capacity to meet the extra demand associated with months with higher usage.
 - *Peak Day Usage:* Similar to Peak Month Usage, these are the costs of providing the extra capacity to meet peak day demands.
 - *Peak Hour:* Costs associated with providing the necessary capacity to meet spikes in usage during the day.
- *Fire Protection:* As the system is partially designed around fire flows, a portion of the incremental fire flow capacity is allocated to fire protection. This category includes both public and private fire protection. Public fire protection is the shared cost of providing fire protection through Scottsdale Water's 11,052 fire hydrants. Private fire protection is the cost associated with upsizing a fire meter in order to provide additional capacity for increased flow in the need of fire protection this increased flow is called fire flow.

This functional allocation process provides a reasonable, appropriate, and industry-standard basis for proportionately distributing costs to system customers based on cost causation principles — e.g., their usage patterns — and is grounded in cost-of-service principles and standards.

This methodology and process also provides the basis for the tiered rate structure. Peak costs are allocated into the outer tiers so that they are collected from the customers with higher usage, who are the drivers of the consumption peaking.

The allocation of fixed asset categories across functional categories provides the allocation of the system which is generally called the plant-in-service or fixed asset allocation. Instinctively the fixed asset allocation provides the percentages of the system that is "responsible" for providing each of the above utility functions. The following table provides the fixed asset allocation for Scottsdale Water.

TABLE 5-1FIXED ASSET ALLOCATION

ASSET DESCRIPTION	CUSTOMER	BASE USAGE	PEAK MONTH	PEAK DAY	PEAK HOUR	FIRE	AS ALL OTHER ¹
Land							100.0%
Meters & Services	100.0%						
Structures & Buildings	25.0%	39.0%	10.0%	5.0%	21.0%		
Treatment		52.0%	13.0%	6.0%	29.0%		
Reservoirs		32.0%	8.0%	4.0%	18.0%	38.0%	
Wells		52.0%	13.0%	6.0%	29.0%		
Water Rights		52.0%	13.0%	6.0%	29.0%		
Pump Stations		33.0%	8.0%	4.0%	18.0%	36.0%	
Transmission & Distribution		36.0%	9.0%	5.0%	20.0%	30.0%	
Hydrants						100.0%	
Miscellaneous	100.0%						
CWIP							100.0%
Fixed Asset Allocation	6.0%	47.0%	12.0%	6.0%	26.0%	4.0%	-

1. As All Other allocation is reallocated across the other functional components.

The above allocation represents the functional allocation of the existing system assets and the "fixed asset" allocation that can be applied to the budget and revenue requirement line items. To continue, the next step in the functional allocation process is the allocation of the revenue requirement. The budgeted revenue requirements for FY 2017/18 were reviewed on a line-item by line-item basis and allocated to each of the functional components discussed above. Allocating the revenue requirement to the various functional components the amount of revenue needed to be collected to cover the costs

associated with each component. A detailed table showing the allocation of each line item is included in Appendix E.

In addition to allocating costs across the functional components, costs were also allocated between the fixed and variable charge of the rate structure. This allocation was done to account for the fact that some customers have an "upsized" meter due to an increased need for fire protection. By allocating costs between the two rate components (i.e., base and volumetric), costs can be more equitably recovered to account for this upsizing in meters.² The table below summarizes the revenue requirement functional allocation.

Table 5-2 provides the functional allocation of FY 2017/18 costs by category to the specific component of the rates through which those functionalized costs are recovered. Detail of this allocation is shown in the rate calculations of Appendix E.

TABLE 3-2 TOLE REVENUE REQUIREMENT FORCHORAL ALLOCATION							
FY 2017/18 ALLOCATION	CUSTOMER	BASE USAGE	PEAK MONTH	PEAK DAY	PEAK HOUR	FIRE	TOTAL
Base Fee	\$6,871	\$4,521	\$0	\$0	\$0	\$9,427	\$20,819
Allocation	33.00%	21.72%	0.00%	0.00%	0.00%	45.28%	100%
Commodity	\$0	\$36,578	\$10,275	\$5,137	\$22,604	\$0	\$74,594
Rate Allocation	0.00%	49.04%	13.77%	6.89%	30.30%	0.00%	100%
Total	\$6,871	\$41,099	\$10,275	\$5,137	\$22,604	\$9,427	\$95,413
Allocation ⁽¹⁾	7.20%	43.07%	10.77%	5.38%	23.69%	9.88%	100%
Rate Allocation Total Allocation ⁽¹⁾	0.00% \$6,871 7.20%	49.04% \$41,099 43.07%	13.77% \$10,275 10.77%	6.89% \$5,137 5.38%	30.30% \$22,604 23.69%	0.00% \$9,427 9.88%	100% \$95,413 100%

1. Dollar values in thousands, totals may be off due to rounding.

The above allocation process is then allocated across customer classes to determine the appropriate amount of revenue to collect from each class. This process is called the customer allocation and is the next step in the cost-of-service analysis.

CUSTOMER CLASS DISTRIBUTION OF COSTS

TADLE E 2 ELLE DEVENUE DECUMPENTELINICTIONAL ALLOCATION

The costs allocated to each functional category were then distributed across each functional component based upon each customer class's proportionate usage of the system. The costs are allocated to the functional components in the following way:

 $^{^2}$ Through discussion with City staff, the majority of meters that were upsized to provide improved fire protection were mostly single family residential customers.

- **Customer:** Costs are allocated based on each customer class's share of the total number of accounts. Costs are distributed using this metric because customer costs are the same no matter the size or usage patterns of an individual customer. An example to illustrate this logic is the cost of mailing out bills and postage. It costs the same to mail a bill to a single family residential customer as it does to mail a bill to the largest commercial customer. Therefore, costs are allocated on an account by account basis.
- Base Usage: Costs are allocated based on the annualized winter usage for each of the defined customer classes. Annualized winter usage is used because it best represents the "base" usage that a customer would use for essential water use essential water use meaning the amount of water used for health and safety reasons. It is important to note that annualized winter usage is a calculated customer statistic and represents the usage over the winter months.
- **Peak Month/Day/Hour Usage:** Costs are allocated based on the incremental summer usage. Incremental summer usage is defined as the difference between total annual usage (actual usage from the customer statistics) and annualized winter usage.
- Fire Protection: For the customer allocation process, fire protection costs are allocated based on the number of MEUs. This method of allocation accounts for the fire flow driven components of the water system by passing costs onto customers based on their potential demands on the system. Additionally, the costs of public fire protection (hydrants) are considered a public benefit to be shared among all users.

Using the above-stated allocation methods, costs are assigned to different customer classes. Three different customer classes were assigned to the customer base for Scottsdale Water. Costs were allocated to single family residential and commercial customers. Commercial customers are all customers except single family.

6 WATER DEMAND ANALYSIS

As an update to the 2011 Cost-of-Service Study, Carollo analyzed Scottsdale Water's billing records from FY 2009/10 through FY 2015/16. To forecast future water demands, a combination of the FY 2015/16 billings and more recent consumption records were used to forecast the FY 2017/18 water demands and customer class usage profiles. Based on conservation trends and current water demands, the total forecasted water demand for FY 2017/18 is 60.5 million gallons per day (MGD).

Based on billing records from FY 2009/10 through FY 2015/16, Table 6-1 provides summary customer statistics by customer class, including the number of accounts, MEUs, and water demands. An MEU is based on the size and capacity of the meter and is an estimation of the potential demand, or capacity requirement, that the meter will place on Scottsdale Water. For example, Scottsdale Water's smallest meter (5/8-inch) is counted as one MEU and has a maximum capacity of 20 gallons per minute (gpm). A 1-inch meter, however, has a maximum capacity of 50 gpm, based on the same water pressure, or 2.5 times that of the 5/8-inch meter. Consequently, a customer with a 1-inch meter would have one account and 2.5 MEUs.

Scottsdale Water has experienced some growth but has not realized the growth levels expected by the planning department in recent years. The Study's projections are based on the conservative assumption that the number of accounts and MEUs in each customer class remains constant throughout the Study period. Additionally, annual usage is projected to remain equal to the actual sales from FY 2016/17.

TABLE 6-1 HISTORICAL FY 2015/16 WATER DEMANDS AND CUSTOMER CLASS PROFILE

CUSTOMER CLASS	NUMBER OF ACCOUNTS	METER EQUIVALENT UNITS	TOTAL USAGE (MGD)	ANNUALIZED SUMMER USAGE (MGD)	SUMMER PEAKING FACTOR (SUMMER/AVG)
Single Family Residential	78,948	153,368	36.3	42.9	1.18
Multifamily Residential & Commercial	10,767	58,570	24.2	28.7	1.19
Total	89,715	211,937	60.5	71.6	1.18

Forecasting demands is a critical component to the analysis. In light of current demand fluctuations, the forecast evaluates both historic trends and assumptions of future behavior. No additional conservation or demand growth is assumed after FY 2017/18. For this rate analysis, forecasted demand is estimated to be equal to the FY 2015/16 level of 60.5 MGD. As Scottsdale Water evaluates rate needs beyond the proposed FY 2017/18 rate adoption period, it will be important to re-evaluate the long-range water demand trends.

TABLE 6-2	PROJECTED F	Y 2017/	18 DEMAND BY	CUSTOMER CLASS
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CUSTOMER CLASS	FY 2015/16 DEMAND (MGD)	PROPOSED PERCENT CHANGE	PROJECTED INCREASE (MGD)	PROJECTED FY 2017/18 USAGE (MGD)
Single Family Residential	36.3	0%	0.0	36.3
Multifamily Residential & Commercial	24.2	0%	0.0	24.2
Total	60.5	0%	0.0	60.5

1. Forecasted demands detailed in Appendix B.
7 RATE DESIGN

The rate design analysis brings together all of the pieces described thus far in the revenue requirement analysis, the functional cost allocation, and the water demand analysis. The expenses allocated to each functional category and then to each customer class need to be fairly, equitably, and proportionally recovered through nuanced and balanced rates. The goal of the rate design analysis is simple: to develop a rate structure that collects revenue from each customer class and each customer in accordance with the proportionate benefits received from and the burdens placed on the water system and water resources — i.e., there must be a cost and revenue nexus.

Scottsdale Water's existing structure provides a foundation for equitably and proportionately recovering costs from Scottsdale Water's customers and reflects Scottsdale Water's cost structure.

As previously explained, Scottsdale Water's service rates and charges are separated into monthly fixed charges and variable commodity charges. Fixed charges are designed to recover the cost from system users based on their reserved capacity within the system regardless of day-to-day use of the system. Fixed charge revenue is intended to defray a portion of the fixed costs that do not change with demand on a year-to-year basis, at least not in the short-term. These costs typically include debt service, repairing and refurbishing the water system, and administrative costs such as utility billing. Commodity charges recover system costs from users based on the actual water used. Scottsdale Water's commodity charges are designed to recover the system costs to produce, purchase, treat, and distribute water to Scottsdale Water's customers, including indirect costs to support these activities.

FIXED MONTHLY BASE FEE

Scottsdale Water's current monthly base fee is based on meter size, which is the most common method for developing fixed charges. Meter size serves as an estimate of the potential demand that a customer can place on the system; Scottsdale Water incurs fixed costs to create, operate, and maintain that capacity. This approach recognizes that regardless of a customer's actual demands, that customer has reserved capacity within the system that Scottsdale Water must operate and maintain. The customer is therefore responsible for a share of Scottsdale Water's fixed costs in proportion to reserved capacity.

Development of the monthly base fee is a function of the total budget needed for these costs and the number of MEUs in the system. The monthly base fee is calculated by dividing the revenue requirement by the total number of MEUs, and then dividing again by twelve months.

As discussed previously, the monthly base fee is based on a customer's meter size. Scottsdale Water defines the base, or smallest, meter as a 5/8-inch meter. As noted in Section 4 of this report, larger meters have the potential to demand more capacity, or said differently, exert a greater demand on the system. The potential capacity demand (peaking) is proportional to the potential flow through each meter size as established by AWWA hydraulic capacity ratios. Capacity ratios, a function of a meter's maximum flow rate, are used to increase the monthly base fee for larger capacity meters.

METER	MEU				FIRE	
SIZE	FACTOR	CURRENT	CUSTOMER	CAPACITY	PROTECTION	TOTAL
5/8"	1	\$11.25	\$6.38	\$1.78	\$3.71	\$11.87
3/4"	1.5	14.50	6.38	2.67	5.56	14.61
1"	2.5	20.50	6.38	4.44	9.27	20.09
1-1/2"	5	33.75	6.38	8.89	18.53	33.80
2"	8	45.00	6.38	14.22	29.65	50.26
3"	16	60.00	6.38	28.44	59.31	94.13
4"	25	140.00	6.38	44.44	92.67	143.49
6"	50	280.00	6.38	88.88	185.33	280.59
8"	80	390.00	6 38	142 21	296 53	445 12

Table 7-1 below presents the calculation of the FY 2017/18 monthly base fee by meter size.

COMPONENTS TO CALCULATED MONTHLY BASE FEE (FY 2017/18)

8" 80 390.00 6.38 142.21 296.53 445.12 Table 7-2 below presents the proposed base fees for FY 2017/18 as well as projected fees through FY 2021/22. The proposed rates for FY 2017/18 are those proposed by Scottsdale Water, projected rates for subsequent years are calculated based on the calculated 3 percent per year rate revenue requirement increases. The rates proposed by Scottsdale Water are in reasonable alignment with those calculated in this cost of service analysis. The slight differences in the monthly base fees are primarily driven by the proposed rates collecting a slightly greater share of revenues through the monthly base fees as compared to the calculated rates as well as slight differences in the allocation of costs to the customer, capacity, and fire components.

TABLE 7-1

METER SIZE	CURRENT	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22
5/8"	\$11.25	\$11.90	\$12.26	\$12.75	\$13.26	\$13.79
3/4"	14.50	15.40	15.86	16.50	17.16	17.84
1"	20.50	21.75	22.40	23.30	24.23	25.20
1-1/2"	33.75	35.75	36.82	38.30	39.83	41.42
2"	45.00	47.75	49.18	51.15	53.20	55.32
3"	60.00	95.00	97.85	101.76	105.83	110.07
4"	140.00	148.50	152.96	159.07	165.44	172.05
6"	280.00	297.00	305.91	318.15	330.87	344.11
8"	390.00	413.50	425.91	442.94	460.66	479.09

TABLE 7-2 CURRENT AND PROPOSED MONTHLY BASE FEES

FIRE PROTECTION CHARGES

In addition to providing clean and reliable drinking water, Scottsdale Water's system also provides system capacity for fire suppression. In addition to providing distribution system capacity, Scottsdale Water must also provide storage and conveyance capacity necessary for emergency water flows. For most users, the costs to provide and maintain this capacity are recovered from through their monthly base fees, as their domestic meter also provides water for fire protection. In addition to those standard connections, Scottsdale Water serves 3,370 private fire protection connections.

The private fire protection connections include both metered and unmetered connections to the water system. Because the size of all of the connections is not known at this time, the City has proposed a flat monthly fee of \$2.00 per account to recoup the costs associated with this service. The charge is expected to generate about \$81,000 in per year. Table 7-3 below shows the proposed fire protection charge as well as projected charges through FY 2021/22 based on the 3 percent per year rate revenue increases.

TABLE 7-3	PRIVATE FIRE CHARGE PER METER EQUIVALENT								
	CURRENT	PROPOSED FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22			
Monthly Fee	N/A	\$2.00	\$2.06	\$2.12	\$2.19	\$2.25			

COMMODITY RATES

As with the other components of Scottsdale Water's rate structure, the commodity rates were updated as part of this Study based on the current and projected costs to provide water service to each customer and customer class.

Tiered Rate Structure

Scottsdale Water's tiered rate structure is built upon the idea that peak usage results in increasing costs for Scottsdale Water, unique from the costs incurred for basic (i.e., average) service. Additionally, it indirectly incentivizes conservation by sending a price signal to customers that if they use more water they have to pay a higher price. As users increase their demand, the Scottsdale Water must continue to produce and import more water at an increased cost compared with base demand, as well as size, operate, and maintain larger facilities to meet the higher demand. Built on the foundation of the baseextra capacity methodology, these additional costs are covered through Scottsdale Water's tiered rate system. Every unit of water begins with a base unit cost intended to recover Scottsdale Water's basic production, conveyance, and distribution costs. The concept of proportionality requires that cost allocations consider both the average quantity of water consumed (base) and the peak rate at which it is consumed (peaking). Use of peaking is consistent with the cost of providing service because a water system is designed to handle peak demands, and the additional costs associated with designing, constructing and maintaining facilities required to meet these peak demands. These incremental costs are allocated to those customers whose usage requires the need to size, operate, and maintain facilities to meet peak demand. Thus, under a tiered rate structure the incremental production costs for peak and excessive usage are recovered in the upper tiers.

Scottsdale Water uses three main sources of water supply: groundwater; imported water from the CAP and SRP; and recycled water. Additionally, conservation is a major element of Scottsdale Water's supply planning, as it frees capacity for new or excess usage and can help to reduce Scottsdale Water's imported water supplies. The three sources of supply and the direct and indirect costs to treat and deliver the water to the retail customers are increasingly expensive. Absent higher customer demands, Scottsdale Water would be less reliant on these more expensive water supply costs. As a result, the existing and proposed commodity rate structure allocates higher cost supplies and some conservation

costs to high volume users. Scottsdale Water allocates supply costs first to customer classes and then to each tier within the respective customer class according to peaking factors. Every user "peaks" on the system in some way, either through seasonal peaking when their demand spikes in the hot summer months, or through diurnal peaking when their demand spikes in the morning and early evening. Peaking factors account for this behavior based on how significant the peaking behavior is. Scottsdale Water's low-volume users have modest peaking, meaning their demands throughout the course of the year are relatively stable and consistent. Customers in Tiers 3, 4, and 5 have higher peaking factors as their usage is calculated relative to other customers. These peaking factors allow fair, equitable, and proportionate distribution of water supply and production costs to each customer class and tier. While efforts were taken to define various customer classes that group customers based upon consistent usage patterns, some individual customers may vary moderately from the peaking behavior displayed by the class as a whole; however, the system is operated in aggregate and the proposed rates are reflective of this collective demand.

Consumption Patterns

Figure 7-1 shows Scottsdale Water's monthly usage in MGD for FY 2015/16. As shown, the Scottsdale Water experiences a significant peak in demand in the summer months due to increased outdoor water usage. In August, the peak month, average usage is 79 MGD, compared to just 43 MGD in February, the minimum month. Because the system is sized to meet demand in the peak months, those costs can be recovered through the increased rates for usage in the upper tiers.



Similar to the system as a whole, usage within each tier exhibits a seasonal peak. Tier 1 exhibits the lowest peak factor because much of the Tier 1 usage is not discretionary. Tier 2 through Tier 5 each exhibit incrementally higher peak factors as the amount of discretionary or outdoor usage increases with each tier. These differences in peaking for each tier form the basis for the incrementally higher rates charged for usage within each tier. Table 7-4 below presents the peak factors for each tier based on FY 2015/16 consumption data.

TABLE 7-4 SINGLE FAMILY RESIDENTIAL PEAK FACTORS BY THE

TIER	MINIMUM MONTH (MG)	AVERAGE MONTH (MG)	MAX MONTH (MG)	AVG/MIN PEAK FACTOR	MAX/MIN PEAK FACTOR
Tier 1	370.0	386.0	394.0	1.04	1.06
Tier 2	242.0	327.0	378.0	1.35	1.56
Tier 3	243.0	454.0	635.0	1.87	2.61
Tier 4	351.0	625.0	939.0	1.78	2.68
Tier 5	11.0	49.0	101.0	4.45	9.18

Tier Analysis

As part of the Study, Carollo evaluated the tier breaks for reasonableness. It is important that there is a nexus between the water used in each tier and the cost of providing that water. This nexus is demonstrated in the beginning of this section. Carollo evaluated the demand patterns of each class to assess the application of the existing tier breaks in relation to how customers will consume water and how water will be provided. Another critical part of the tier analysis was forecasting how much demand will occur in each tier. This forecast can have a significant impact on revenues, as over-forecasting use in the upper tiers would cause the utility's revenue to be susceptible to volatile demand.

The rates proposed by Scottsdale Water include an update to the Tier 3 breakpoint for single family residential customers, and to the Tier 2 breakpoint for multifamily and non-residential customers to bring the breakpoint for Tiers 1, 2, and 3 into alignment for all customers. The single family Tier 3 breakpoint is lowered from 40,000 to 30,000 gallons per month, the commercial Tier 2 breakpoint is raised from 10,000 to 12,000 gallons per month. Table 7-5 below presents the proposed tier breakpoints.

TABLE 7-5 PROPOSED RATE STRUCTURE BREAKPOINTS

TIER	FROM	ТО							
SINGLE FAMILY RESID	SINGLE FAMILY RESIDENTIAL (IN GALLONS)								
Tier 1	0	5,000							
Tier 2	5,001	12,000							
Tier 3	12,001	30,000							
Tier 4	30,001	65,000							
Tier 5	Over	65,000							
MULTIFAMILY & COM	MERCIAL (IN GALLONS	5)							
Tier 1	0	5,000							
Tier 2	5,001	12,000							
Tier 3	12,001	30,000							
Tier 4	Over	30,000							

Single Family Residential Tiers

Scottsdale Water's proposed tier breaks provide a reasonable basis for allocating peaking costs within this specific customer class. In both the winter and summer months, a majority of the single family residential demands occur in Tiers 1, 2, and 3. A discernable peaking pattern is shown, in which the volume of water consumed increases significantly in the summer. Tiers 4 and 5 capture the increased peak demands and provide a structure for recovering infrastructure and supply costs required to meet these peak demands.

Multifamily Residential, Non-Residential, and Fire Service Tiers

Nonresidential customers are provided a four-tiered water structure, similar to residential customers (detailed above). It is, however, important that Scottsdale Water continually revisit these allocations and adjust them as necessary in order to continue to equitably recover costs from its nonresidential customers.

Table 7-6 below shows the total water consumed and percentage of water consumed within each tier for single family and multifamily and non-residential customers based on FY 2015/16 deliveries and the updated tier breakpoints.

TABLE 7-6CONSUMPTION BY TIER

TIED	TOTAL TIER	PERCENTAGE OF
TIER	CONSUMPTION	CONSUMPTION
SINGLE FA	AMILY RESIDENTIAL	
Tier 1	4,111,000	31%
Tier 2	3,520,000	27%
Tier 3	4,255,000	32%
Tier 4	788,000	6%
Tier 5	588,000	4%
MULTIFA	MILY & COMMERCIAL	
Tier 1	510,000	6%
Tier 2	409,000	5%
Tier 3	1,192,000	14%
Tier 4	6,708,000	76%

Demand within each tier is forecasted based on an analysis of the historical customer consumption data provided by Scottsdale Water.

Rate Adjustments

The proposed FY 2017/18 Scottsdale Water rates remain consistent with cost-of-service-based ratemaking principles and proportionality requirements. Under this methodology each functional cost is divided by the number of billing units (in MG) of projected water sales in the tier or tiers to which that functional cost is attributed.

To calculate the costs attributable to each tier, Table 7-7 shows the commodity rate functional cost components (base and peak) and divides them across the projected sales of units of water. Each functional category includes usage in a specific tier or tiers, and thus, the usage in that tier or tiers forms the denominator for allocating the cost in that category. The combined unit costs allocated to each tier can then be calculated, arriving at a unit cost for each customer and applicable tier.

TABLE 7-7FY 2017/18 UNIT COST CALCULATIONS

		SINGLE FAMILY	MULTIFAMILY RESIDENTIAL
DESCRIPTION	TOTAL	RESIDENTIAL	& NON-RESIDENTIAL
REVENUE REQUIREMENT (IN	l \$1,000)		
Base	\$36,578,000	\$21,968,000	\$14,610,000
Peak Month	\$10,275,000	\$5,017,000	\$5,257,000
Peak Day	\$5,137,000	\$2,509,000	\$2,629,000
Peak Hour	\$22,604,000	\$11,038,000	\$11,566,000
DEMAND (1,000 GALLONS)			
Tier 1		4,111,000	510,000
Tier 2		3,520,000	409,000
Tier 3		4,255,000	1,192,000
Tier 4		788,000	6,708,000
Tier 5		588,000	N/A
Total Demand		13,262,000	8,819,000
RATE (\$/1,000 GALLONS)			
Tier 1		\$1.66	\$1.66
Tier 2		\$3.00	\$3.00
Tier 3		\$3.77	\$3.77
Tier 4		\$4.83	\$4.10
Tier 5		\$5.66	N/A

The proposed rates for FY 2017/18 are those proposed by Scottsdale Water, projected rates for subsequent years are calculated based on the calculated 3 percent per year rate revenue requirement increases. The rates proposed by Scottsdale Water are in close alignment with those calculated in this cost of service analysis. The slight differences in the volumetric rates are primarily driven by the proposed rates collecting a slightly greater share of revenues through the monthly base fees as compared to the calculated rates.

Table 7-8 provides the proposed single family residential commodity rates for FY 2017/18 as well as projected rates through FY 2021/22.

TABLE 7-8 PROPOSED SINGLE FAMILY RESIDENTIAL WATER COMMODITY RATE PROJECTIONS								
TIER	CURRENT	PROPOSED FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22		
Tier 1	\$1.65	\$1.65	\$1.70	\$1.77	\$1.84	\$1.91		
Tier 2	2.85	2.95	3.04	3.16	3.29	3.42		
Tier 3	3.55	3.70	3.81	3.96	4.12	4.29		
Tier 4	4.50	4.75	4.89	5.09	5.29	5.50		
Tier 5	5.25	5.55	5.72	5.95	6.18	6.43		

It is important to understand the relationship of tier break points and rates. Specifically, once a single family residential user enters Tier 5, they are using over 65,000 gallons in a month. The proposed rates represent the significant additional capacity built into the system to provide this peak demand. Overall, the proposed rates reflect the additional cost of providing and servicing this additional capacity relative to the level of service (source of supply and capacity reservation).

The following proposed nonresidential rates reflect the updated cost of service and water demands for multifamily and non-residential customers.

PROJECTIONS									
TIER	CURRENT	PROPOSED FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22			
Tier 1	\$1.65	\$1.65	\$1.70	\$1.77	\$1.84	\$1.91			
Tier 2	2.85	2.95	3.04	3.16	3.29	3.42			
Tier 3	3.55	3.70	3.81	3.96	4.12	4.29			
Tier 4	3.85	4.05	4.17	4.34	4.51	4.69			

City of Scottsdale

Comparison of Calculated and Proposed Rates

When comparing the calculated cost of service allocation with the existing cost allocation based on the existing rates, there are minor changes in the percentage of costs allocated to each customer class. Table 7-10 shows these results. The calculated percentages for the proposed rates are based on applying the proposed rates to the customers and usage for FY 2017/18. Revenues allocations for the calculated rates are based on applying those same customers and usage to the calculated rates. The discrepancy between the proposed and calculated allocations primarily due to the proposed rates collecting a slightly greater share of revenues through the monthly base fees as compared to the calculated rates. Table 7-10 shows the revenues for a full year at the proposed or calculated rates. Actual revenues for FY 2017/18 may be lower due to the scheduled November rate implementation.

TABLE 7-10 COST ALLOCATION CHANGE BY CUSTOMER CLASS

	PROPOSED RATES	CALCULATED RATES	
CUSTOMER CLASS	ALLOCATION	ALLOCATION	DIFFERENCE
Single Family Residential	\$57,068,000	\$56,672,000	0.7%
Multifamily Residential			
& Commercial	\$38,345,000	\$38,741,000	-1.0%
Total	\$95,413,000	\$95,413,000	0.0%

Based on the results of the comparison, the proposed rate adjustments reasonably reflect the calculated cost of service.

CUSTOMER IMPACTS

Sample monthly bill impacts are presented in Table 7-11 below for FY 2017/18 and FY 2018/19. The 17,000 gallons sample represents a low-volume user who stays within Tiers 1 through 3. The 50,000 gallons sample reflects a mid- to high-volume user with consumption in Tiers 1 through 4.

TABLE 7-11 MONTHLY BILL COMPARISON FOR PROPOSED RATES

BILL COMPONENT	17,000 GAL			50,000 GAL		
	CURRENT	PROPOSED 2017/18	PROJECTED 2018/19	CURRENT	PROPOSED 2017/18	PROJECTED 2018/19
Base Fee (5/8")	\$11.25	\$11.90	\$12.26	\$11.25	\$11.90	\$12.26
Commodity Charge ¹	45.95	47.40	48.83	172.60	190.50	196.16
Tier 1	8.25	8.25	8.50	8.25	8.25	8.50
Tier 2	19.95	20.65	21.28	19.95	20.65	21.28
Tier 3	17.75	18.50	19.05	99.40	66.60	68.58
Tier 4	0.00	0.00	0.00	45.00	95.00	97.80
Tier 5	0.00	0.00	0.00	0.00	0.00	0.00
Total Monthly Bill	\$57.20	\$59.30	\$61.09	\$183.85	\$202.40	\$208.42
% Difference		4%	3%		10%	3%
Monthly change		\$2.10	\$1.79		\$18.55	\$6.02
Bill as % of median household income ²	1.0%	1.1%	1.1%	3.3%	3.7%	3.8%
\$ per person/day ³	\$0.04	\$0.04	\$0.04	\$0.13	\$0.14	\$0.14

1. Sum of Tiers 1-5.

2. Assumes 66,399 as the medium household income (MHI)³

3. Assumes 4-person household size.

³ 2015-based Scottsdale Demographic and Income Comparison Profile, ESRI 2016

DEMAND REDUCTION SURCHARGE RATES

In light of the current water availability uncertainty and need for financial resiliency, Carollo developed Demand Reduction Surcharges Rates for Scottsdale Water. Demand Reduction Surcharges Rates are rates that may be imposed by Scottsdale Water following levels of extreme water demand reductions due to supply restrictions caused by drought or system outages on the CAP or SRP systems. The Demand Reduction Surcharge Rates presented below would take the place of the utility's commodity rates, if implemented, during drought or other conditions leading to decreased demands.

The objective of these rates is to recover system costs if customers' potable water usage declines as a result of expanded or future water shortage conditions. As discussed previously, many of Scottsdale Water's costs are fixed, in that they do not fluctuate with changes in water demands. Included in these fixed charges is a portion of the purchased water costs, specifically, the CAP energy rate and CAP Drought Contingency Plan (DCP) rates per AF delivered. While Scottsdale Water would attempt to identify other cost savings, additional expenditures are likely to offset any savings or potentially increase total expenditures as Scottsdale Water's conservation programs are implemented.

The CAP's DCP outlines expected reductions in Scottsdale Water's entitlements based on the elevation of Lake Mead. Those reductions range from 854 acre-feet per year (AFY) at an elevation of 1,075 feet to 3,524 AFY at 1,025 feet. Scottsdale Water's current full entitlement is 81,271 AFY. Given the relatively small reductions in entitlements, it is not expected that Scottsdale Water would need to seek other sources of supply in the event that reductions are put in place. Rather, the expected conservation by Scottsdale Water customers will lower demands in an amount sufficient to allow them to be covered by existing supplies.

Drought Management Plan (DMP)

The City of Scottsdale has been proactive in the planning of long-term, sustainable water supplies for its community and has secured a diverse and resilient water supply portfolio. These supplies reduce the vulnerability of the community to the risks associated with potential external factors that may present future supply reductions or limitations. A water shortage can occur when a source of supply is reduced to a level at which it is unable to support an existing demand condition. This can be the result of a natural circumstance or an interruption of supply that is outside the control of Scottsdale Water. The duration can vary from a matter of weeks to several months or years. Scottsdale Water has, as part of its normal water planning, analyzed water demand characteristics during periods of both normal and reduced water supply. Understanding the dynamics of demand management is important, as supply reductions or interruptions can present serious challenges to maintaining the health, safety, and economic well-being of the community. Through its strategic planning efforts and the development of a

diverse water supply portfolio, Scottsdale has taken steps to protect its customers from the adverse effects of drought for years to come. The DMP provides guidelines that can be used to manage water supply and water use during an episode of reduced supply availability. These are based on the establishment of priorities that are designed to consider customer needs, protect the health and safety of the community, preserve environmental resources, and avoid adverse impacts to public activity. The plan should be updated approximately every 5 years consistent with the Water Master Plan update. ⁴

The utility's portfolio of water resources provides for a continuous, sustainable water supply which can be delivered to customers at a reasonable cost. The utility's water supplies are consistent with the state regulatory requirements for a long-term 100-year Assured Water Supply (AWS). The development of the current water resources portfolio is based on a strategic long-term direction emphasizing the increased use of renewable supplies rather than mining groundwater in order to meet the utility's water demands. In addition to surface water supplies, reclaimed water supplies are also included in the renewable water resource portfolio, however the DMP will focus on potable water supplies. Scottsdale Water's potable water resources portfolio consists of three water supplies. Each of these supply sources has its own set of delivery and use restrictions based on regulatory, contractual, and operational limitations that impact where and how they can be used to meet the community's needs.

As presented previously in Section 6 of this report, Scottsdale Water is forecasted to have retail water sales of roughly 22,090 MG (67,800 AF) in FY 2017/18. Based on an extreme water curtailment period, Scottsdale Water estimated two potential demand reduction scenarios. Forecast demands for each scenario have been developed based on Scottsdale Water calling on customers to conserve 10 or 20 percent; demands are then further reduced based on price elasticity.

Elasticity of Demand

Elasticity is a measure of the responsiveness of customers to a change in price. As price increases, goods would see a decrease in demand in proportion to the relative elasticity of that good. While water is a relatively inelastic good—it is an essential service for domestic and commercial needs, and crucial for health and sanitation—it does have some elastic uses, such as landscaping. Therefore, a modest decrease in demand is expected in response to an increase in unit price.

For this analysis, price elasticities of -0.3 and-0.1 were used for single family residential customers and all other customers, respectively. For example, a price elasticity factor of-0.3 means that with a 100

⁴ City of Scottsdale Drought Management Plan

percent increase in price, Scottsdale Water could expect a 30 percent reduction in demands. The difference in elasticity is due to the ability of single family residential customers to change their demand with greater ease. Many multifamily residential customers are already efficient with water usage, and are less able to cut back demand. Similarly, commercial enterprises will have less ability to cut back demand in the short-term, while they may be able to adopt water-saving technology in the long-term if the price increase is significant enough.

These factors can be interpreted as an adjustment on the change in unit price. With an elasticity of -0.3, this analysis predicts that for every 1 percent increase in price, there is a corresponding drop in demand of 0.3 percent. For a 9 percent increase in price, demands are expected to drop by 2.7 percent.

When calculating rates, it is critical to take price elasticity into account, particularly for rate increases that exceed the standard inflation rate. Rates may be able to achieve funding goals when modeling revenue needs, but if elasticity is sufficient enough to drive demand down, it could lead to a shortfall. As a result, this analysis has taken into account the impact of price elasticity of demand to bolster the rate design.

Demand Reduction Scenarios

Demand Reduction Stage 1 equates to a slight reduction in demands (0 to 5 MGD). Scottsdale Water is currently in this stage, and the proposed rates have been designed to make up for the associated revenue shortfall.

Demand Reduction Stage 2 is based on a 5 to 15 MGD reduction below FY 2017/18 levels. Under this scenario, Scottsdale Water would call on its customers to reduce demands to a level 10 percent below the projected FY 2017/18 usage levels. When price elasticity is considered, the realized level of conservation could reach approximately 15 percent or about 12,100 AF. Based on the proposed rates for FY 2017/18, this level of conservation would result in a revenue shortfall of \$8.5 million. Under this scenario, Scottsdale Water could expect CAP cost savings of about \$1.1 million, however it is assumed that in order to implement this level of conservation, Scottsdale Water would need to incur \$250,000 for public outreach and education. Thus, the net change to rate revenue requirements under this scenario would be a reduction of about \$880,000.

Demand Reduction Stage 3 is based on a 15 to 30 MGD reduction below FY 2017/18 levels. Under this scenario, Scottsdale Water would call on its customers to reduce demands to a level 20 percent below the projected FY 2017/18 usage levels. When price elasticity is considered, the realized level of conservation could reach approximately 25 percent or about 20,200 AF. Based on the proposed rates for FY 2017/18, this level of conservation would result in a revenue shortfall of \$16.6 million. Under this scenario, Scottsdale Water could expect CAP cost savings of about \$1.9 million, however it is assumed

that in order to implement this level of conservation, Scottsdale Water would need to incur \$250,000 for public outreach and education. Thus, the net change to rate revenue requirements under this scenario would be a reduction of about \$1,600,000.

The conditions that may lead to Stage 4 (>30 MGD) are unlikely; during this stage Scottsdale Water will evaluate the potential for substantially reducing water use through more structured mandatory water use restrictions. Discretionary uses of water by customers may be eliminated and the public awareness of the critical level of the shortage will be heightened.

The tables below present the proposed Demand Reduction Surcharge Rates for each demand reduction stage. The rates presented would take the place of the proposed rates, if implemented, during times of reduced demands. Each set of rates is only applicable one at a time (not cumulative).

TABLE 7-12 DEMAND REDUCTION RATES WITH CALL FOR 10 PERCENT CUTBACK

	FY	FY	FY	FY	FY
TIER	2017/18	2018/19	2019/20	2020/21	2021/22
SINGLE FAMI	LY RESIDENTIAL	-			
Tier 1	\$1.92	\$1.97	\$2.03	\$2.09	\$2.16
Tier 2	3.58	3.68	3.79	3.91	4.02
Tier 3	4.53	4.67	4.81	4.95	5.10
Tier 4	5.85	6.02	6.20	6.39	6.58
Tier 5	6.87	7.08	7.29	7.51	7.73
MULTIFAMIL	Y AND NON-RES	SIDENTIAL			
Tier 1	\$1.92	\$1.97	\$2.03	\$2.09	\$2.16
Tier 2	3.58	3.68	3.79	3.91	4.02
Tier 3	4.53	4.67	4.81	4.95	5.10
Tier 4	4.94	5.09	5.24	5.40	5.56

TABLE 7-13	DEMAND	REDUCTION R.	ATES WITH CA	ALL FOR 20 PE	RCENT CUTBA	ICK
TIER	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	
SINGLE FAMI	LY RESIDENTIA	L				
Tier 1	\$2.15	\$2.21	\$2.28	\$2.35	\$2.42	
Tier 2	4.06	4.19	4.31	4.44	4.57	
Tier 3	5.17	5.32	5.48	5.65	5.82	
Tier 4	6.69	6.89	7.10	7.31	7.53	
Tier 5	7.87	8.11	8.35	8.60	8.86	
MULTIFAMIL	Y AND NON-RE	SIDENTIAL				
Tier 1	\$2.15	\$2.21	\$2.28	\$2.35	\$2.42	
Tier 2	4.06	4.19	4.31	4.44	4.57	
Tier 3	5.17	5.32	5.48	5.65	5.82	
Tier 4	5.64	5.81	5.98	6.16	6.35	

Appendix A – Historical Demand Summary

The following table details the historic demand by customer class over the past four fiscal years.



Historical Demands By Class and Tier Based on Customer Billing Data

	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16
Non-Residential	kgal	kgal	kgal	kgal
tier1	268,892	268,147	266,294	267,444
tier2	213,622	214,275	210,291	211,954
tier3	616,705	616,429	601,568	609,679
tier4	3,487,821	3,413,901	3,274,782	3,419,151
tier5	0	0	0	0
Subtotal Non-Residential	4,587,040	4,512,752	4,352,936	4,508,227
Multi Family Residential	kaal	kaal	kaal	kaal
tier1	236.745	233.831	238.653	239.841
tier2	194,473	192.068	193,376	194,432
tier3	569.979	564.519	559.257	566.580
tier4	3.296.173	3.276.220	3.068.674	3.253.415
tier5	0	0	0	0
Subtotal Multi Family Residential	4,297,370	4,266,638	4,059,960	4,254,268
Multi Family and Non-Residential	kgal	kgal	kgal	kgal
tier1	505,637	501,978	504,947	510,086
tier2	408,095	406,342	403,667	408,629
tier3	1,186,684	1,180,948	1,160,825	1,182,753
tier4	6,783,994	6,690,121	6,343,456	6,709,407
tier5	0	0	0	0
Subtotal Multi Family and Non-Residential	8,884,410	8,779,390	8,412,895	8,810,875
Single Family Residential	kgal	kgal	kgal	kgal
tier1	4,106,700	4,115,301	4,075,158	4,110,704
tier2	3,570,390	3,602,106	3,394,879	3,520,347
tier3	4,284,588	4,325,215	3,882,761	4,229,896
tier4	785,668	787,684	682,408	787,618
tier5	565,675	587,756	495,672	586,985
Subtotal Single Family Residential	13,313,021	13,418,063	12,530,877	13,235,549
	kaal	kaal	kaal	kaal
tier1	4 612 337	4 617 279	4 580 105	4 620 789
tier?	3 978 485	4 008 449	3 798 546	3 928 976
tier3	5 471 272	5 506 164	5 043 586	5 412 649
tier4	7 569 662	7 477 205	7 025 864	7 497 025
tior5	565 675	587 756	495 672	586 985
		307.730	7,0,2	500,505

Appendix B – Projected Water Accounts and Demands

The following tables show the projected number of accounts and projected water demands by tier for each customer class. The first table shows a summary for all customer classes.

Usage is sh	nown in 1,000,000 ga	unless otherwise noted.
Note: Five year forcas	t assumed no growth in	account or usage as growth has
be	en minimal in recent ye	ars, based on historic demands.
		Each year constant
All Meter Sizes	Customer Class	2016 - 2022
Number of Accounts		
5/8"		18,774
3/4"		20,819
1"		42,847
1.5"		3,393
2"		3,469
3"		242
4"		99
6"		65
8"		6
Total Number of Account	ts	89,715
Total Number of MEs		211,937
Proposed Tier Breakdown		
Tier 1 Usage		4,621
Tier 2 Usage		3,929
Tier 3 Usage		5,447
Tier 4 Usage		7,496
Tier 5 Usage		588
Total Usage		22,081
Seasonal Usage		
Summer		13,060
Winter		9,021
Total Usage		22,081

Usage is shown in	1,000,000 gal	unless otherwise noted.
Note: Five year forcast assum	ned no growth in ac	count or usage as growth has
been mir	imal in recent years	s, based on historic demands.
Single Family	Customer Class	Each year constant 2016 - 2022
Number of Accounts		
5/8"	Single-Family	17,881
3/4"	Single-Family	19,957
1"	Single-Family	40,133
1.5"	Single-Family	873
2"	Single-Family	103
3"	Single-Family	2
4"	Single-Family	-
6"	Single-Family	-
8"	Single-Family	-
Total Number of Accounts		78,948
Total Number of MEs	Single-Family	153,368
Proposed Tier Breakdown		
Tier 1 Usage	Single-Family	4,111
Tier 2 Usage	Single-Family	3,520
Tier 3 Usage	Single-Family	4,255
Tier 4 Usage	Single-Family	788
Tier 5 Usage	Single-Family	588
Total Usage		13,262
Seasonal Usage		
Summer	Single-Family	7,825
Winter	Single-Family	5,437
Total Usage		13,262

Usage is shown in	1,000,000 gal	unless otherwise noted.							
Note: Five year forcast assum	ed no growth in ac	count or usage as growth has							
been min	been minimal in recent years, based on historic demands.								
Non-Residential	Customer Class	Each year constant 2016 - 2022							
Number of Accounts									
5/8"	Commercial	893							
3/4"	Commercial	862							
1"	Commercial	2,714							
1.5"	Commercial	2,520							
2"	Commercial	3,367							
3"	Commercial	240							
4"	Commercial	99							
6"	Commercial	65							
8"	Commercial	6							
Total Number of Accounts		10,767							
Total Number of MEs	Commercial	58,570							
Pronosed Tier Breakdown									
Tier 1 Usage	Commercial	510							
Tier 2 Usage	Commercial	409							
Tier 3 Usage	Commercial	1,192							
Tier 4 Usage	Commercial	6.708							
Total Usage		8,819							
5		,							
Seasonal Usage									
Summer	Commercial	5,235							
Winter	Commercial	3,584							
Total Usage		8,819							

	Usage is shown in	1,000,000 gal	unless otherwise noted.
Note: Five	e year forcast assume	d no growth in ac	count or usage as growth has
	been minin	nal in recent years	s, based on historic demands.
Single Family R	tesidential		Each year constant
Use By Meter S	Size		2016 - 2022
Meter Size		To	tal Annual Use (Million Gals)
5/8"			2,035
3/4"			2,616
1"			8,075
1.5"			426
2"			106
3" 4"			4
4 6"			-
8"			-
			40.000
lotal			13,262
Meter Size		Monthly	Average per Account (Gals)
5/8"			9,000
3/4"			11,000
1"			17,000
1.5"			41,000
2"			86,000
3"			159,000
4"			
6" 0"			
8			
Total			14,000

Usage is sho	wn in 1,000,000 gal	unless otherwise noted.
Note: Five year forcast	assumed no growth in ac	count or usage as growth has
bee	n minimal in recent year	s, based on historic demands.
Non-Residential		Each year constant
Use By Meter Size		2016 - 2022
Meter Size	Тс	otal Annual Use (Million Gals)
5/8"		115
3/4"		102
1"		675
1.5"		1,556
2"		4,577
3"		571
4"		647
6"		522
8"		55
Total		8,819
Meter Size	Monthl	y Average per Account (Gals)
5/8"		11,000
3/4"		10,000
1"		21,000
1.5"		51,000
2"		113,000
3" 4"		198,000
4 6"		547,000
0 8"		766 000
Total		68,000

Appendix C – Revenue Requirement Analysis

Based on the O&M tables, the Revenue Requirement tables detail the total sources and uses of funds prior to the rate increases, as well as the calculations and results of the cash flow and coverage tests. The results of the revenue requirements are used to define the total revenue necessary to collect from rates. The final table provides a cash flow for the water fund with the rate increases.

	*	Values shown in 1	1,000,000					
				٧	Nater Forecast			
<u>Note</u>	Includes Funds 600, 602, 626, 627	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
		2016	2017	2018	2019	2020	2021	2022
	Water Funds Summary - Pre Rate Increase							
	Sources of Funds							
	Beginning Budgetary Cash Balance	\$125.8	\$135.9	\$122.0	\$130.9	\$93.5	\$73.1	\$66.5
1	Base and Usage Revenues - Pre Increase	90.3	90.1	92.6	95.4	98.3	101.2	104.3
2	Other Rate Revenues	1.4	1.3	1.2	1.3	1.3	1.3	1.3
3	Non-potable Revenues	2.3	1.9	3.6	3.7	3.8	3.9	3.9
3	Interest Earnings	0.8	0.6	0.7	1.0	1.4	1.6	1.7
3	Miscellaneous Revenue	2.6	0.4	0.8	0.8	0.8	0.9	0.9
3	Development Fee Revenues	3.3	3.0	1.8	1.8	1.8	1.8	1.8
4	New Bond Issues	-	-	42.1	-	-	-	-
3	Department Indirects	0.4	0.5	0.2	0.3	0.3	0.3	0.3
	Total Sources	\$226.9	\$233.7	\$265.2	\$235.2	\$201.1	\$184.0	\$180.6
	Licos of Funds							
5	Operating Expanses	¢16.0	¢40.2	¢E0.0	¢E2 7	¢E11	¢ = 7 . 7	\$60 Q
5	Operating Expenses	340.0 7.6	Ş49.2 0 1	Ş50.9 8 0	ې52.7 م م	Ş54.1 9.4	\$57.2 9.6	ې00.5 م م
5	ANAT Operating Transfers	7.0	8.1 2.7	8.0	8.2	8.4 3.0	8.0 3.0	0.0
5	Dobt Sorvico	2.0	2.7	3.U 21.7	3.0	3.0	3.0	3.1 20.9
7	Capital Improvements	16.5 16 E	10.0	21.7	21.0 EQ C	21.0	20.9	20.0
			55.0	52.5		45.4	29.0	21.0
	Total Uses	\$91.0	\$111.7	\$136.0	\$143.5	\$129.9	\$119.3	\$114.8
	Ending Cash Balance	\$135.9	\$122.0	Ş129.2	Ş91.7	Ş71.2	Ş64.6	\$65.9
	Change in Fund Balance	\$10.0	(\$13.8)	\$7.1	(\$39.3)	(\$22.3)	(\$8.5)	(\$0.7)
	Less Reserves:							
8	Operating Reserve	\$11.3	\$11.3	\$11.3	\$11.7	\$12.0	\$12.6	\$13.3
9	Replacement & Extension Reserve	26.3	27.5	28.6	29.7	30.5	31.1	31.5
	Water Revenue Bond Reserve	-	-	-	-	-	-	-
10	Capital/Rate Stabilization Balance	\$98.3	\$83.2	\$89.3	\$50.3	\$28.7	\$20.9	\$21.2
	Numbers may vary from final numbers used in City	financials.						

		*Values shown in 1	1,000,000					
				V	Vater Forecast			
<u>Note</u>	Includes Funds 600, 602, 626, 627	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
		2016	2017	2018	2019	2020	2021	2022
	Capital Expenditures							
7	Planned Capital Improvements	\$0.0	\$0.0	\$52.5	\$58.7	\$43.4	\$29.6	\$21.8
4	Debt Issuance Override	\$0.0	\$0.0	\$42.1	\$0.0	\$0.0	\$0.0	\$0.0
7	Adjusted Capital Improvements	\$0.0	\$0.0	\$52.5	\$58.7	\$43.4	\$29.6	\$21.8
	Cash Flow Test - Pre Rate Increase							
	Sources of Funds							
1	Water Charges - Pre Increase	\$90.3	\$90.1	\$92.6	\$95.4	\$98.3	\$101.2	\$104.3
2	Other Rate Revenues	1.4	1.3	1.2	1.3	1.3	1.3	1.3
3	Non-potable Revenues	2.3	1.9	3.6	3.7	3.8	3.9	3.9
3	Interest Earnings	0.8	0.6	0.7	1.0	1.4	1.6	1.7
3	Miscellaneous Revenue	2.6	0.4	0.8	0.8	0.8	0.9	0.9
3	Development Fee Revenues	3.3	3.0	1.8	1.8	1.8	1.8	1.8
3	New Bond Issues	-	-	-	-	-	-	-
3	Department Indirects	0.4	0.5	0.2	0.3	0.3	0.3	0.3
	Total Sources	\$101.0	\$97.8	\$101.1	\$104.3	\$107.6	\$110.8	\$114.1
	Uses of Funds							
5	Operating Expenses	\$46.0	\$49.2	\$50.9	\$52.7	\$54.1	\$57.2	\$60.3
5	Operating Transfers	7.6	8.1	8.0	8.2	8.4	8.6	8.8
5	AWT Operating Transfers	2.6	2.7	3.0	3.0	3.0	3.0	3.1
6	Debt Service	18.3	18.0	21.7	21.0	21.0	20.9	20.8
8	Cash Funded Capital	16.5	33.6	10.4	58.6	43.4	29.6	21.8
	Total Uses	\$91.0	\$111.7	\$93.9	\$143.5	\$129.9	\$119.3	\$114.8
	Cash Flows (Cash Drawdown)	\$10.0	(\$13.8)	\$7.1	(\$39.3)	(\$22.3)	(\$8.5)	(\$0.7)
	Numbers may vary from final numbers used in	City financials.						

		*Values shown in 1	,000,000					
				v	Vater Forecast			
Note	Includes Funds 600, 602, 626, 627	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
		2016	2017	2018	2019	2020	2021	2022
	Debt Coverage Test Pre Rate Increase							
11	Coverage Target	1.2	1.2	1.2	1.2	1.2	1.2	1.2
12	Development Fees Included in Coverage Test	50%						
13	Operating Revenues	\$97.8	\$94.8	\$99.3	\$102.5	\$105.8	\$109.0	\$112.3
12	Development Fees Included in Coverage	1.6	1.5	0.9	0.9	0.9	0.9	0.9
5	Less: Operating Expenses & Transfers	(53.6)	(57.3)	(58.9)	(61.0)	(62.5)	(65.8)	(69.1)
14	Net Revenues	45.8	39.0	41.3	42.4	44.2	44.1	44.1
6	Debt Service	(18.3)	(18.0)	(21.7)	(21.0)	(21.0)	(20.9)	(20.8)
15	Target Coverage	(3.7)	(3.6)	(4.3)	(4.2)	(4.2)	(4.2)	(4.2)
	Debt Coverage Surplus (Deficit)	\$23.9	\$17.4	\$15.3	\$17.3	\$19.1	\$19.1	\$19.1
	Net Revenues/Debt Service							
16	Debt Coverage Ratio	2.5 x	2.2 x	1.9 x	2.0 x	2.1 x	2.1 x	2.1 x
	Numbers may vary from final numbers used in C	ity financials.						

		*Values shown in	1,000,000					
				,	Water Forecast			
Note	Includes Funds 600, 602, 626, 627	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
		2016	2017	2018	2019	2020	2021	2022
	Rate Increase Calculation							
17	Required Rate Increase Revenues	\$0.0	\$13.8	\$0.0	\$39.3	\$22.3	\$8.5	\$0.7
18	Month of Adoption	November	November	November	November	November	November	November
19	Rate Increase Override		0%	3%	3%	3%	3%	3%
19	Implemented Rate Increase	0%	0%	3%	3%	3%	3%	3%
	Pre-Increase Revenues	\$101.0	\$97.8	\$101.1	\$104.3	\$107.6	\$110.8	\$114.1
20	Revenues from Full Year Increase	\$0.0	\$0.0	\$2.8	\$2.9	\$2.9	\$3.0	\$3.1
20	Less: Rate Increase Delay			(0.9)	(1.0)	(1.0)	(1.0)	(1.0)
20	Resulting Revenues From Increase	\$0.0	\$0.0	\$1.9	\$1.9	\$2.0	\$2.0	\$2.1
	Total Revenues With Increase	\$101.0	\$97.8	\$102.9	\$106.2	\$109.6	\$112.9	\$116.2
	Less: Expenditures	(91.0)	(111.7)	(93.9)	(143.5)	(129.9)	(119.3)	(114.8)
21	Less: Increase in Franchise Fee			(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
22	Available for Capital (Use of Reserves)	\$10.0	(\$13.8)	\$8.9	(\$37.4)	(\$20.4)	(\$6.6)	\$1.3
23	Coverage	2.5 x	2.2 x	2.0 x	2.1 x	2.2 x	2.2 x	2.2 x
	Numbers may vary from final numbers used in C	ity financials.						

	*V	alues shown in 🖸	1,000,000					
	_			1	Water Forecast			
Note	Includes Funds 600, 602, 626, 627	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
		2016	2017	2018	2019	2020	2021	2022
	Water Funds Summary - With Rate Increase	I	Note: Projections	based on Operat	ions and Budgets	as of 2016		
	Sources of Funds							
	Beginning Budgetary Cash Balance	\$125.8	\$135.9	\$122.0	\$130.9	\$93.5	\$73.1	\$66.5
1	Water Charges - Pre Increase	90.3	90.1	92.6	95.4	98.3	101.2	104.3
20	Revenues From Rate Increase	-	-	1.9	1.9	2.0	2.0	2.1
2	Other Rate Revenues	1.4	1.3	1.2	1.3	1.3	1.3	1.3
3	Non-potable Revenues	2.3	1.9	3.6	3.7	3.8	3.9	3.9
3	Interest Earnings	0.8	0.6	0.7	1.0	1.4	1.6	1.7
3	Miscellaneous Revenue	2.6	0.4	0.8	0.8	0.8	0.9	0.9
3	Development Fee Revenues	3.3	3.0	1.8	1.8	1.8	1.8	1.8
4	New Bond Issues	-	-	42.1	-	-	-	-
3	Department Indirects	0.4	0.5	0.2	0.3	0.3	0.3	0.3
	Total Sources	\$226.9	\$233.7	\$267.1	\$237.1	\$203.1	\$186.0	\$182.7
	Uses of Funds							
5	Operating Expenses	\$46.0	\$49.2	\$50.9	\$52.7	\$54.1	\$57.2	\$60.3
21	Increase in Franchise Fee	-	-	0.1	0.1	0.1	0.1	0.1
5	Operating Transfers	7.6	8.1	8.0	8.2	8.4	8.6	8.8
5	AWT Operating Transfers	2.6	2.7	3.0	3.0	3.0	3.0	3.1
6	Debt Service	18.3	18.0	21.7	21.0	21.0	20.9	20.8
7	Capital Improvements	16.5	33.6	52.5	58.6	43.4	29.6	21.8
	Total Uses	\$91.0	\$111.7	\$136.1	\$143.6	\$130.0	\$119.4	\$114.9
	Ending Cash Balance	\$135.9	\$122.0	\$130.9	\$93.5	\$73.1	\$66.5	\$67.9
	Change in Fund Balance	\$10.0	(\$13.8)	\$8.9	(\$37.4)	(\$20.4)	(\$6.6)	\$1.3
	Less Reserves:							
8	Operating Reserve	\$11.3	\$11.3	\$11.3	\$11.7	\$12.0	\$12.6	\$13.3
9	Replacement & Extension Reserve	26.3	27.5	28.6	29.7	30.5	31.1	31.5
	Water Revenue Bond Reserve			-		-		-
24	Capital/Rate Stabilization Balance	\$98.3	\$83.2	\$91.1	\$52.1	\$30.6	\$22.9	\$23.2
	Numbers may vary from final numbers used in City f	financials.						

	Notes to Appendix C
1	This line item shows the expected revenue before each year's rate increase. The FY 2017/18 starting revenue was calculated based on the current number
1	of accounts and FY 2015/16 levels of water use.
-	This line item shows revenues from charges to customers other than the base and commodity rates. Specific revenues in this line item include: Connection
2	Fees, Water Late Charges, Unmetered Sales, Water Account Initiation Fees, and the Out of City Surcharge.
3	These projected revenues are based on the Water Resources Division's model as of January 2017.
4	The Water Resources Division expects to issue bonds in FY 2017/18 to provide \$42,105,000 of funding for capital projects.
5	These projected expenses are based the Water Resources Division's model as of January 2017 as forecasted by the City, with the modification to include
5	increased Franchise Fees based on the modeled rate increases.
C	Projected debt service is based on the Water Resources Division's model as of January 2017 as forecasted by the City. It includes debt service on
0	outstanding bonds as well as on the planned FY 2017/18 issuance.
7	CIP costs are escalated at 3.0% per year (ENR CCI 20-City Average 1990 to 2015) starting in FY 2018/19 as forecasted by the City.
0	The City's policy dictates that the Water Resources Division should target an operating reserve at between 60 and 90 days of O&M expenditures. This
0	forecast targets a 70 day operating reserve minimum.
0	The City's policy dictates that the Water Resources Division should target an extension and replacement reserve at approximately 2.0% of the original cost
9	of the water utility's assets.
10	This line item shows the expected year-end unreserved fund balance available for capital (PAYGO) or rate stabilization before each year's rate increase.
11	The debt coverage target for the water utility is set at 1.2x based on the Water Resources Division's debt covenants.
12	The Water Resources Division typically includes 50% of development fee revenues in the calculation of the debt coverage ratio.
13	This line item includes all ongoing operating revenues of the water utility.
1.4	This line item shows the net revenues available for coverage, calculated by subtracting projected operations expenses and transfers from the sum of
14	operating revenues and 50% of projected development fees.
15	This is 20% pf Debt Service to reach the 120% coverage target.
16	This line item shows the calculated coverage ratio prior to each year's rate increase.
17	This line item is the amount of rate increase revenue needed to balance finances in each year. It is the maximum of the cash flow or coverage deficits.
10	The proposed rate increases are scheduled for implementation on November 1, 2017. Projected increases for FY 2018/19 and thereafter are assumed to be
10	implemented on November 1 in each year.
19	This line item shows the overridden rate increases that are included in the projection. Increases have been overridden to 3% per year, thus driving a draw
15	down of the cash balance in order to fund capital projects.
20	The rate increase revenues for each year are calculated by first calculating the revenues from a full year rate increase, then subtracting the amount of
	revenue that would have been generated before the month of implementation.
21	The franchise fee has been adjusted based on the proposed and projected rate increases.
22	This line item shows the cash available for capital or reserves, or the amount of reserves that will be used, in each year with rate increases included.
23	This line item shows the calculated coverage ratio including each year's rate increase.
24	This line item shows the expected year-end unreserved fund balance available for capital (PAYGO) or rate stabilization with each rate increases included.

Appendix D – Debt Service Payment Schedules

The following table shows the debt service payment schedules for each of the outstanding bond issues, as well as for projected future bond issues through FY 2021/22. The debt service payments are split to show both principal and interest.

Туре	Cat2	Issue Cat1	Debt Service	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
MPC Bonds	Actual	2004 Water	Total DS	-	-	-	-	-	-	-
Revenue Bonds	Actual	2004 Water	Total DS	87,150	-	-	-	-	-	-
MPC Bonds	Actual	2005 Water	Total DS	3,417,750	-	-	-	-	-	-
MPC Bonds	Actual	2006 Water	Total DS	8,122,598	11,341,748	11,282,106	11,235,400	11,186,900	11,136,000	11,086,400
MPC Bonds	Actual	2008 Water	Total DS	3,915,784	3,902,469	3,920,609	933,800	933,800	933,800	933,800
Revenue Bonds	Actual	2008 Water	Total DS	-	-	-	-	-	-	-
MPC Bonds	Actual	2010 Water	Total DS	919,563	951,392	986,213	1,019,300	1,055,300	1,093,800	1,132,500
MPC Bonds	Actual	2015 Water	Total DS	-	-	-	-	-	-	-
MPC Bonds	Actual	2015 Water	Total DS	1,787,358	1,787,358	1,787,358	4,680,400	4,699,200	4,642,400	4,600,700
MPC Bonds	Proposed	2017 Water	Total DS	-	-	-	-	-	-	-
MPC Bonds	Proposed	2018 Water	Total DS	-	-	3,666,644	3,074,000	3,068,000	3,059,000	3,040,000
Summary By Fund/	<u>Bond Type</u>									
Water Revenue Bo	vice		87,205	55	-	-	-	-	-	
Water MPC Bonds			18,169,639	17,988,160	21,650,202	20,950,200	20,950,500	20,872,300	20,800,700	
Total Water				18,256,844	17,988,215	21,650,202	20,950,200	20,950,500	20,872,300	20,800,700
Proposed Bond Issu	ies									
Water			Total DS	-	-	3,666,644	3,074,000	3,068,000	3,059,000	3,040,000
Total			-	-	4,322,894	4,217,000	4,161,000	4,149,000	4,123,000	
Fiscal Agent Fees										
FISCAL AGENT FEE	S & Budget Ro	ounding - Water	Revenue Bonds	55	55	-	-	-	-	-
FISCAL AGENT FEE	ounding - Water	MPC Bonds	6,586	5,193	7,272	5,300	5,300	5,300	5,300	
FISCAL AGENT FEE	Water					2,000	2,000	2,000	2,000	
Summary By Fundir	ng Source									
Water Rates				11,505,168	11,708,525	15,330,783	14,704,034	14,663,214	14,617,944	14,564,050
Water Developme	ent Fees			5,535,157	5,119,028	5,144,566	5,074,348	5,100,790	5,063,608	5,039,336
Water Resource Development Fees				1,216,519	1,160,663	1,174,853	1,171,818	1,186,496	1,190,748	1,197,314
Total Water				18,256,844	17,988,215	21,650,202	20,950,200	20,950,500	20,872,300	20,800,700
Summary by Fund										
Water Principal				9,428,277	9,630,833	11,945,720	11,961,900	12,543,300	13,074,000	13,635,800
Water Interest				8,821,926	8,352,134	9,697,210	8,981,000	8,399,900	7,791,000	7,157,600
Water Fiscal Agen			6,641.00	5,248	7,272	7,300	7,300	7,300	7,300	
Total Water			18,256,844	17,988,215	21,650,202	20,950,200	20,950,500	20,872,300	20,800,700	

Appendix E – Functional Cost Allocation

The functional allocation tables are provide the allocation percentages used to allocate fixed assets and O&M expenses to the rate components. The total allocated costs are summed for each rate component to determine the overall allocation percentages to apply to the revenue requirements.

Fixed Asset Allocation		Asset Value		Customer	Base	Peak Month	Peak Day	Peak Hour	Fire	Pumping	As All Other	Total
Land	\$	39,650,797									100%	100%
Meters & Services	\$	18,497,512		100%							0%	100%
Structures & Buildings	\$	111,645,769		25%	39%	10%	5%	21%			0%	100%
Treatment	\$	404,705,018			52%	13%	6%	29%			0%	100%
Reservoirs	\$	52,578,007			32%	8%	4%	18%	38%		0%	100%
Wells	\$	74,706,909			52%	13%	6%	29%			0%	100%
Water Rights	\$	87,171,705			52%	13%	6%	29%			0%	100%
Pump Stations	\$	178,397,502			33%	8%	4%	18%	36%		0%	100%
Transmission & Distribution	\$	478,608,030			36%	9%	5%	20%	30%		0%	100%
Hydrants	\$	16,455,347							100%		0%	100%
Miscellaneous	\$	11,979,432		100%							0%	100%
CWIP	\$	-									100%	100%
Total Fixed Assets to be Allocated	\$	1,474,396,029		\$ 58,388,38	6 \$ 588,482,135	\$ 147,120,534	\$ 73,560,267	\$ 323,665,174	\$ 243,528,736	\$-	\$ 39,650,797	,
Redistribution of As All Other				1,613,62	9 16,263,365	4,065,841	2,032,921	8,944,851	6,730,190		(39,650,797	<u>′)</u>
Total Allocated Fixed Assets		Correct		\$ 60,002,01	5 \$ 604,745,500	\$ 151,186,375	\$ 75,593,188	\$ 332,610,025	\$ 250,258,926	\$-	\$-	
Fixed Asset Allocation				4%	41%	10%	5%	23%	17%			
Allocations				Customer	Base	Peak Month	Peak Day	Peak Hour	Fire	Pumping	As All Other	Total
Fixed Assets				4%	41%	10%	5%	23%	17%	0%	0%	100%
Customer Only			100%							0%	100%	
Base Only				100%						0%	100%	

Allocations	Customer	Base	Peak Month	Peak Day	Peak Hour	Fire
Fixed Assets	4%	41%	10%	5%	23%	17%
Customer Only	100%					
Base Only		100%				
Peak Month Only			100%			
Peak Day Only				100%		
Peak Hour Only					100%	
Fire Only						100%
Pumping Only						
Base/Peak		52%	13%	6%	29%	
As All Other						
User Input						

0%

0%

0%

0%

0%

0%

100%

100%

100%

100%

100%

100%

100%

100%

100%

100%

100%
Rev Req Allocation					Customer	Base	Peak Month	Peak Day	Peak Hour	Fire	Pumping		As All Other	Total
Operations	\$	58,903,643	[Operating]		9%	45%	11%	6%	25%	4%	0%		0%	100%
Increase in Franchise Fee	\$	92,634	Fixed Assets		4%	41%	10%	5%	23%	17%	0%		0%	100%
AWT Operating Transfers	\$	2,960,000	Fixed Assets		4%	41%	10%	5%	23%	17%	0%		0%	100%
Debt Service	\$	21,650,202	Fixed Assets		4%	41%	10%	5%	23%	17%	0%		0%	100%
Cash Funded Capital	\$	10,417,135	Fixed Assets		4%	41%	10%	5%	23%	17%	0%		0%	100%
Cash Available for Capital	\$	8,892,178	Fixed Assets		4%	41%	10%	5%	23%	17%	0%		0%	100%
Less: Offsetting Revenues														
Non Potable Revenues	\$	(1,243,400)	Base/Peak		0%	52%	13%	6%	29%	0%	0%		0%	100%
Non Potable Revenues	\$	(3,636,100)	Base/Peak		0%	52%	13%	6%	29%	0%	0%		0%	100%
Interest Earnings	\$	(698,594)	As All Other		0%	0%	0%	0%	0%	0%	0%		100%	100%
Miscellaneous Revenue	\$	(802,000)	As All Other		0%	0%	0%	0%	0%	0%	0%		100%	100%
Development Fee Revenues	\$	(1,800,000)	Fixed Assets		4%	41%	10%	5%	23%	17%	0%		0%	100%
AWT	\$	-	As All Other		0%	0%	0%	0%	0%	0%	0%		100%	100%
AWT Operating Transfers	\$	-	Fixed Assets		4%	41%	10%	5%	23%	17%	0%		0%	100%
	\$	-	Fixed Assets		4%	41%	10%	5%	23%	17%	0%		0%	100%
Department Indirects	\$	(249,000)	As All Other		0%	0%	0%	0%	0%	0%	0%		100%	100%
Adjustment for Rate Increase Delay	\$	926,340	As All Other		0%	0%	0%	0%	0%	0%	0%	┚║└─	100%	100%
Subtotal: Rate Revenues to be Collected Reallocation of "As All Other"	\$	95,413,038		\$	6,930,418 \$ (59,286)	41,453,338 (354,613)	5 10,363,335 (88,653)	\$	\$ 22,799,336 (195,037	\$	\$ - -	\$	(823,254 823,254)
Total Allocation	\$	95,413,038		\$	6,871,132 \$	41,098,725	\$ 10,274,681	\$ 5,137,341	\$ 22,604,299	\$ 9,426,860	\$-	\$	-	
Total System Allocation					7.2%	43.1%	10.8%	5.4%	23.7%	9.9%	0.0%		0.0%	
Fixed/Variable Charge Allocation				1	Customer	Base	Peak Month	Peak Day	Peak Hour	Fire	Pumping		As All Other	Total
Fixed Charge				\$	- \$	- 1	\$ - :	\$-	\$-	\$ -	\$-	\$	-	
Reallocation of "As All Other"						-	-	-	-		-	_		-
Total Allocated to Fixed Charge	Ś	-	0%	s	- \$	_ 9	÷ - :	s -	s -	\$ -	s -	Ś	-	
Fixed Charge Percentage	Ŷ		0,0	Ť	0%	0%	0%	0%	0%	0%	0%	Ť	(0
Variable Charge				Ş	6,930,418 Ş	41,453,338	5 10,363,335	\$ 5,181,667	Ş 22,799,336	Ş 9,508,198	Ş -	Ş	(823,254	.)
Reallocation of "As All Other"				II —	(59,286)	(354,613)	(88,653)	(44,327)	(195,037) (81,338)	-	_	823,254	-
Total Allocated to Variable Charge	\$	95,413,038	100%	\$	6,871,132 \$	41,098,725	5 10,274,681	\$ 5,137,341	\$ 22,604,299	\$ 9,426,860	\$-	\$	-	
Variable Charge Percentage					100%	100%	100%	100%	100%	100%	0%			
Total To be Collected	\$	95,413,038		\$	6,871,132 \$	41,098,725	\$ 10,274,681	\$ 5,137,341	\$ 22,604,299	\$ 9,426,860	\$-	\$	-	
					7.2%	43.1%	10.8%	5.4%	23.7%	9.9%	0.0%		0.0%	

					O&M Allocation	(Cost Allocation	Customer	Base	Peak Month	Peak Day	Peak Hour	Fire	Pumping	As All Other	Total
Cat	Fund	FundName	Div DivName	Account	AccountName											_
Expense	600	WATER	23 CITY TREASUREF	51100	FULL-TIME WAGES	\$	691,776 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	51109	MILEAGE REIMBURSEMENT/CAR ALLOWANCE	\$	730 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	51115	EXCESS REGULAR WAGES	\$	156 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	51197	W/O CREDIT - PERSONNEL SERVICES	\$	(59,784) Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	51111	OVERTIME - OTHER	\$	16,431 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	51140	ARIZONA STATE RETIREMENT SYSTEM	\$	83,094 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	51150	HEALTH INSURANCE	\$	129,396 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	51151	DENTAL INSURANCE	\$	4,008 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	51152	LIFE INSURANCE	Ş	766 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	51154		Ş	421 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	51155	MEDICARE EMPLOYER TAX (FHI)	Ş	9,524 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	51156	SOCIAL SECURITY EMPLOYER TAX (FICA)	Ş	40,666 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	51200	CONTRACT WORKER SERVICES	Ş	9,761 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Cat	Fund	FundName	Div DivName	Account	AccountName											
Expense	600	WATER	23 CITY TREASURE	52165	BANKING SERVICES	Ś	199 557 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	52210	POSTAGE AND SHIPPING	Ś	355.500 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	52220	TELEPHONE/BASE	Ś	4.004 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	52227	PC REPLACEMENT	Ś	1.976 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	52230	OVERNIGHT TRAIN/BUSINESS CONF TRAVL	Ś	1.700 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	52245	TRAINING/BUSINESS CONFERENCE	Ś	7.000 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	52270	PRINTING & GRAPHICS SERVICES	Ś	120.000 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	52350	SOFTWARE MAINT & LICENSING	\$	306,900 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	52355	SOFTWARE MAINT & LIC (I.S. ONLY)	\$	3,126 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	52435	PROPERTY, LIABILITY & WORKERS' COMP	\$	23,046 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	52800	SUBSCRIPTIONS & MEMBERSHIPS	\$	318 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	52875	LICENSES & PERMITS	\$	600 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	52990	W/O CREDIT CONTRACTUAL	\$	(487,713) Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
													•			-
Cat	Fund	<u>FundName</u>	Div DivName	<u>Account</u>	AccountName											
Expense	600	WATER	23 CITY TREASUREF	53020	OFFICE SUPPLIES	\$	7,497 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	53025	FURNITURE & MINOR EQUIPMENT	\$	1,000 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	53045	BUSINESS MTGS - REFRESHMENTS & SUPPLIES	\$	250 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	53055	SAFETY & INCENTIVE AWARD	\$	300 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	53090	OTHER OPERATING SUPPLIES	\$	250 Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	23 CITY TREASUREF	53990	COMMODITY W/O CREDITS	\$	(3,138) Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Cat	Fund	FundName	<u>Div</u> <u>DivName</u>	Account	AccountName	<u>~</u>		404	44.0/	100/	50/	220/	470/	00/	0.00	7 40004
Expense	600	WATER	29 WATER RESOUR	51100	FULL-TIME WAGES	Ş	8,204,072 Fixed Assets	4%	41%	10%	5%	23%	1/%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51101		Ş	111,396 Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51103		Ş	311,496 Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51105	UNIFORMI, CLUTHING & TOUL ALLOWANCES	Ş	2,970 Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER WATER	29 WATER RESOUR	51109		Ş	E4.602 Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51115		ې د	S4,602 Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51132		Ş Ç	1/18 000 Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51102		Ş	(1 152 600) Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51110		Ş Ç	34 606 Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	W/ATER	29 WATER RESOUR	51110	OVERTIME - OTHER	ې خ	545 010 Fixed Assets	470	<u>41%</u>	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	511/10	ARIZONA STATE RETIREMENT SYSTEM	ې خ	1.085.652 Fixed Assets	470	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51150	HEALTH INSURANCE	÷ ¢	1.578.830 Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	W/ATER	29 WATER RESOUR	51150		ې خ	52 981 Fixed Accets	470	<u>41%</u>	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51157		ې خ	9.217 Fixed Assets	470	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51154		÷ ¢	5.489 Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51155	MEDICARE EMPLOYER TAX (FHI)	Ś	126.674 Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51155	SOCIAL SECURITY EMPLOYER TAX (FICA)	Ś	539.395 Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	51200	CONTRACT WORKER SERVICES	Ś	11.318 Fixed Assets	4%	41%	10%	5%	23%	17%	0%	0%	100%
Lybelise	000	WAILN	25 WATEN NESOUR	51200		<i>ب</i>	TI, SIG TINEU ASSELS	470	41/0	1070	570	23/0	11/0	070	070	100%

bit bit <th></th> <th></th> <th></th> <th></th> <th>O&M Allocation</th> <th>Cost</th> <th>Allocation</th> <th>Customer</th> <th>Base</th> <th>Peak Month</th> <th>Peak Day</th> <th>Peak Hour</th> <th>Fire</th> <th>Pumping</th> <th>As All Other</th> <th>Total</th>					O&M Allocation	Cost	Allocation	Customer	Base	Peak Month	Peak Day	Peak Hour	Fire	Pumping	As All Other	Total
Lot Inst																
Propert 601 Wolfs 9 0 0 0 0 <th><u>Cat</u></th> <th>Fund</th> <th><u>FundName</u></th> <th>Div DivName</th> <th>Account AccountName</th> <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>-</th>	<u>Cat</u>	Fund	<u>FundName</u>	Div DivName	Account AccountName					-						-
Exerce BO WATER 420 WATER 420, 40 2013 Exerce 5 Exerce 1000 0.00 </td <td>Expense</td> <td>600</td> <td>WATER</td> <td>29 WATER RESOUR</td> <td>52130 CONSULTANTS</td> <td>\$ 117,000</td> <td>Customer Only</td> <td>100%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td>	Expense	600	WATER	29 WATER RESOUR	52130 CONSULTANTS	\$ 117,000	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Factors 60 Warfs 90 Warfs 800 Mail Mail <th< td=""><td>Expense</td><td>600</td><td>WATER</td><td>29 WATER RESOUR</td><td>52137 SECURITY</td><td>\$ 580,000</td><td>Customer Only</td><td>100%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>100%</td></th<>	Expense	600	WATER	29 WATER RESOUR	52137 SECURITY	\$ 580,000	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
upper upper <th< td=""><td>Expense</td><td>600</td><td>WATER</td><td>29 WATER RESOUR</td><td>52140 LEGAL SERVICES - ATTORNEYS</td><td>\$ 9,000</td><td>As All Other</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>100%</td><td>100%</td></th<>	Expense	600	WATER	29 WATER RESOUR	52140 LEGAL SERVICES - ATTORNEYS	\$ 9,000	As All Other	0%	0%	0%	0%	0%	0%	0%	100%	100%
Papers ON VATE VATE <th< td=""><td>Expense</td><td>600</td><td>WATER</td><td>29 WATER RESOUR</td><td>52151 LABORATORY TESTING</td><td>\$ 25,000</td><td>Base/Peak</td><td>0%</td><td>52%</td><td>13%</td><td>6%</td><td>29%</td><td>0%</td><td>0%</td><td>0%</td><td>100%</td></th<>	Expense	600	WATER	29 WATER RESOUR	52151 LABORATORY TESTING	\$ 25,000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
besters 00 Walt 29 Walt 200 0.70 0	Expense	600	WATER	29 WATER RESOUR	52185 ADVERTISING	\$ 31,000	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Iborner Iborner <t< td=""><td>Expense</td><td>600</td><td>WATER</td><td>29 WATER RESOUR</td><td>52190 OTHER PROFESSIONAL SERVICES</td><td>\$ 814,883</td><td>Customer Only</td><td>100%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>100%</td></t<>	Expense	600	WATER	29 WATER RESOUR	52190 OTHER PROFESSIONAL SERVICES	\$ 814,883	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Commer 60 WATE 29 WATE 20 Line 51 20% 25% 20% </td <td>Expense</td> <td>600</td> <td>WATER</td> <td>29 WATER RESOUR</td> <td>52210 POSTAGE AND SHIPPING</td> <td>\$ 14,000</td> <td>Customer Only</td> <td>100%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td>	Expense	600	WATER	29 WATER RESOUR	52210 POSTAGE AND SHIPPING	\$ 14,000	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Classes OV MATE S MATE S Link Link <thlink< th=""> <thlink< <="" td=""><td>Expense</td><td>600</td><td>WATER</td><td>29 WATER RESOUR</td><td>52220 TELEPHONE/BASE</td><td>\$ 64,792</td><td>Customer Only</td><td>100%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>100%</td></thlink<></thlink<>	Expense	600	WATER	29 WATER RESOUR	52220 TELEPHONE/BASE	\$ 64,792	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Physics ON WATER 300 WATER 300 S223 SPECIAL PLANS S S15,44 Culture Cult With Physics OR OR OR OR OR	Expense	600	WATER	29 WATER RESOUR	52225 CELLULAR PHONES	\$ 21,131	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Departme 000 WATE 29 WATE 29 WATE 29 WATE 29 WATE 29 WATE 20 05 </td <td>Expense</td> <td>600</td> <td>WATER</td> <td>29 WATER RESOUR</td> <td>52226 SPECIALTY LINES - COMMUNICATIONS</td> <td>\$ 155,444</td> <td>Customer Only</td> <td>100%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td>	Expense	600	WATER	29 WATER RESOUR	52226 SPECIALTY LINES - COMMUNICATIONS	\$ 155,444	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Lippende	Expense	600	WATER	29 WATER RESOUR	52227 PC REPLACEMENT	\$ 117,785	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Lipperter Lipperter <t< td=""><td>Expense</td><td>600</td><td>WATER</td><td>29 WATER RESOUR</td><td>52230 OVERNIGHT TRAIN/BUSINESS CONF TRAVL</td><td>\$ 40,125</td><td>Customer Only</td><td>100%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>100%</td></t<>	Expense	600	WATER	29 WATER RESOUR	52230 OVERNIGHT TRAIN/BUSINESS CONF TRAVL	\$ 40,125	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Lippene 80 White 30 White 32 White 30 <th< td=""><td>Expense</td><td>600</td><td>WATER</td><td>29 WATER RESOUR</td><td>52245 TRAINING/BUSINESS CONFERENCE</td><td>\$ 23,915</td><td>Customer Only</td><td>100%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>0%</td><td>100%</td></th<>	Expense	600	WATER	29 WATER RESOUR	52245 TRAINING/BUSINESS CONFERENCE	\$ 23,915	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Lepende Biol Whitel 24 Whitel 23 24/17 Physical 5 3-3-9 Dist	Expense	600	WATER	29 WATER RESOUR	52250 SPONSORED TRAINING	\$ 115,275	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Lippens BIO Write 20 Write 20 Mit Subs 5 Lippens 50 D/S	Expense	600	WATER	29 WATER RESOUR	52270 PRINTING & GRAPHICS SERVICES	\$ 39,800	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Lippende BUD WAITR 24 WAITR Sold LAUREAL/OPEC 5 1.2.00 Lobit One Dis	Expense	600	WATER	29 WATER RESOUR	52275 PHOTOCOPY CHARGES	\$ 16,676	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
by bester BO WAIE 20 WAIE #20 WAIE #20 </td <td>Expense</td> <td>600</td> <td>WATER</td> <td>29 WATER RESOUR</td> <td>52323 LANDSCAPING</td> <td>\$ 142,900</td> <td>Customer Only</td> <td>100%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td>	Expense	600	WATER	29 WATER RESOUR	52323 LANDSCAPING	\$ 142,900	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Lippering Edd WAITER 200 Value Value <t< td=""><td>Expense</td><td>600</td><td>WATER</td><td>29 WATER RESOUR</td><td>52340 MAINTENANCE, OFF EQUIP & FURNITURE</td><td>\$ 4,500</td><td>Base/Peak</td><td>0%</td><td>52%</td><td>13%</td><td>6%</td><td>29%</td><td>0%</td><td>0%</td><td>0%</td><td>100%</td></t<>	Expense	600	WATER	29 WATER RESOUR	52340 MAINTENANCE, OFF EQUIP & FURNITURE	\$ 4,500	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Inperse DD WATER 29 WATER RESULT S23 D35 D55 D25 D55 D55 D255 D55	Expense	600	WATER	29 WATER RESOUR	52350 SOFTWARE MAINT & LICENSING	\$ 137,986	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
spense col with dot state res res< res res <td>Expense</td> <td>600</td> <td>WATER</td> <td>29 WATER RESOUR</td> <td>52355 SOFTWARE MAINT & LIC (I.S. UNLY)</td> <td>\$ 34,520</td> <td>Base/Peak</td> <td>0%</td> <td>52%</td> <td>13%</td> <td>6%</td> <td>29%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td>	Expense	600	WATER	29 WATER RESOUR	52355 SOFTWARE MAINT & LIC (I.S. UNLY)	\$ 34,520	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Lipperise Built WATER 20	Expense	600	WATER	29 WATER RESOUR	52360 MAINT - MACHINERY, EQUIP & AUTOS	\$ 995,952	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Spense 600 WATE 29 WATE RADUR 3.3000 BBU/Feak 0% 5.2% 1.3% 0% 29% 0%	Expense	600	WATER	29 WATER RESOUR	52361 MAINTENANCE PRVS	\$ 5,000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Spense BOD WATER 29 WATER RSOUR 5283 Service 0% 52/2% 13% 6% 22% 0% 0% 10% spense 600 WATER 29 WATER RSOUR 5283 PHOPENTY, LIABULTY & WORKRS' COMP \$ 48%/reak 0% 52% 13% 6% 22% 0% 0% 0% 10% spense 600 WATER 29 WATER RSOUR 5210 Lake/reak 0% 52% 13% 6% 22% 0% 0% 0% 10% 10% spense 600 WATER 29 WATER RSOUR 5210 Lake/reak 0% 52% 13% 6% 29% 0% 0% 10% spense 600 WATER 29 WATER RSOUR 5217 LET<-RAUNTENANCEA & EERAR (MAR)	Expense	600	WATER	29 WATER RESOUR		\$ 50,000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 23 WATER RESOUR 532.00 Distantional Learning 52.22 13.58 Ork 2.0% Ork Ork Ork ION Expense 600 WATER 29 WATER RESOUR 52.21 IAABUT & WORKERSCOMP 5 33.60 Mater RESOUR 52.25 IABUT & WORKER Ork 0.7k 0	Expense	600	WATER	29 WATER RESOUR		\$ 50,400 \$ FF 000	Base/Peak	0%	52%	13%	6% C%	29%	0%	0%	0%	100%
Chapterie 600 WATER 29 WATER RESOUR 22:01 AND PRATING Common State	Expense	600	WATER	29 WATER RESOUR		\$ 55,000 \$ 408,218	Base/Peak	0%	52%	13%	0%	29%	0%	0%	0%	100%
Expense GO WATER 29 WATER RESOUR 5230 Distant Restance ON 52/N Distant Restance ON Distant Restance Expense GO WATER 29 WATER RESOUR 5230 Distant Restance ON 52/N Distant Restance ON	Expense	600	WATER	29 WATER RESOUR	52435 PROPERTY, LIABILITY & WORKERS COMP	\$ 498,218 \$ 12,690	Base/Peak	0%	52%	13%	0% 6%	29%	0%	0%	0%	100%
Expense 600 WATER 239 OTHER MEMORY 54300 Disk/Peak Expense 600 WATER 29 WATER RESOUR 52672 FLET-FUEL 547976 Base/Peak 0% 52% 0%	Experise	600	WATER	29 WATER RESOUR	52510 LAND RENTS	\$ 15,060 \$ 25,060	Dase/Peak	0%	52%	13%	0%	29%	0%	0%	0%	100%
Expense God WATER A 29 WATER RESOUR 3207 Let "MAININg Heard Let are rank (mark)" 3 49,978 Base/Peak Expense 600 WATER 29 WATER RESOUR 5267 FLET - FLEL 5 370,572 Base/Peak 0% 52% 13% 6% 29% 0% 0% 0% 10% <td>Expense</td> <td>600</td> <td>WATER</td> <td>29 WATER RESOUR</td> <td>52590 UTHER RENTALS</td> <td>\$ 25,050 \$ 407.076</td> <td>Base/Peak</td> <td>0%</td> <td>52%</td> <td>13%</td> <td>6%</td> <td>29%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td>	Expense	600	WATER	29 WATER RESOUR	52590 UTHER RENTALS	\$ 25,050 \$ 407.076	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 52/27 FLET - REPLACEMENT 5 21,00/m D/m D/m <td>Expense</td> <td>600</td> <td>WATER</td> <td>29 WATER RESOUR</td> <td>52671 FLEET - MAINTENANCE & REPAIR (M&R)</td> <td>\$ 497,970 \$ 210.048</td> <td>Base/Peak</td> <td>0%</td> <td>52%</td> <td>13%</td> <td>6%</td> <td>29%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td>	Expense	600	WATER	29 WATER RESOUR	52671 FLEET - MAINTENANCE & REPAIR (M&R)	\$ 497,970 \$ 210.048	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER ASJON 2013 DEC Pack 0.% 1.0% 1.0% 0.%	Expense	600	WATER	29 WATER RESOUR		\$ 210,046 \$ 270,572	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 52711 Little Little Little 3 5/27/302 Dase/Peak 0% 52% 13% 0% 23% 0% 0% 10% Expense 600 WATER 29 WATER RESOUR 52713 WATER \$ 23/00 Base/Peak 0% 52% 13% 6% 29% 0% 0% 0% 10% Expense 600 WATER 29 WATER RESOUR 52713 WATER \$ 2,000 Base/Peak 0% 52% 13% 6% 29% 0% 0% 0% 1	Expense	600	WATER			\$ 570,372 \$ 0,272,012	Base/Feak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 52.71 ON ON D.N ON D.N ON D.N ON D.N ON D.N ON D.N	Expense	600	WATER	29 WATER RESOUR	52712 GAS	\$ 9,273,012	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 52.71 SOUD 52.74 SOUD 63.74 C/M C/M <t< td=""><td>Expense</td><td>600</td><td>WATER</td><td>29 WATER RESOUR</td><td>52712 GAS</td><td>\$ 27,000</td><td>Base/Peak</td><td>0%</td><td>52%</td><td>13%</td><td>6%</td><td>20%</td><td>0%</td><td>0%</td><td>0%</td><td>100%</td></t<>	Expense	600	WATER	29 WATER RESOUR	52712 GAS	\$ 27,000	Base/Peak	0%	52%	13%	6%	20%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 52/15 SOLD WASTE \$ 3,900 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 5280 SUBSCRIPTIONS & MEMBERSHIPS \$ 3,900 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 5280 SUBSCRIPTIONS & MEMBERSHIPS \$ 32,988 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 5280 DAMAGE CLAIMS \$ 6,500 Base/Peak 0% 52% 13% 6% 29% 0% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 5280 DAMAGE CLAIMS \$ 5,250 Base/Peak 0% 52% 13% 6% 29% 0% 0% 0% 0% 0% 0%	Expense	600	WATER	29 WATER RESOUR	52717 SEWER	\$ 23,100	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 5280 SUBSCRIPTIONS & MEMBERSHIPS \$ 32,988 Base/Peak 0% 52% 13% 0% 29% 0% 0% 0% 10%	Expense	600	WATER	29 WATER RESOUR	52715 SOLID WASTE	\$ 4,200	Base/Peak	0%	52%	13%	6%	20%	0%	0%	0%	100%
Expense 600 WATER 2.9 WATER RESOUR 52805 CITY MEMBERSHIPS 5 133,450 Base/Peak 0% 52% 13% 6% 2.9% 0% 0% 100% Expense 600 WATER 2.9 WATER RESOUR 52805 CITY MEMBERSHIPS \$ 133,450 Base/Peak 0% 52% 13% 6% 2.9% 0% 0% 100% Expense 600 WATER 2.9 WATER RESOUR 52805 CITY MEMBERSHIPS \$ 6,500 Base/Peak 0% 52% 13% 6% 2.9% 0% 0% 100% Expense 600 WATER 2.9 WATER RESOUR 52828 PROPERTY OWNER REIMBURSEMENTS \$ 400 Base/Peak 0% 52% 13% 6% 2.9% 0% 0% 0% 100% Expense 600 WATER RESOUR 5280 RECORDINO TRACT \$ 1,000 Base/Peak 0% 5.2% 13% 6% 2.9% 0% 0% 0% 100% 100% 100% 100%	Expense	600	WATER	29 WATER RESOUR	52800 SUBSCRIPTIONS & MEMBERSHIPS	\$ 37.988	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 52.00 DAMAGE (LAIMS) 5 DBas(Peak 0% 52% 13% 0% 29% 0%	Expense	600	WATER	29 WATER RESOUR	52805 CITY MEMBERSHIPS	\$ 193,450	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 52828 PROPERTY OWNER REIMBURSEMENTS \$ 400 Base/Peak 0% 52% 13% 6% 29% 0% 0% 0% 10% Expense 600 WATER 29 WATER RESOUR 52828 PROPERTY OWNER REIMBURSEMENTS \$ 400 Base/Peak 0% 52% 13% 6% 29% 0% 0% 0% 10% 0% </td <td>Expense</td> <td>600</td> <td>WATER</td> <td>29 WATER RESOUR</td> <td>52820 DAMAGE CLAIMS</td> <td>\$ 6500</td> <td>Base/Peak</td> <td>0%</td> <td>52%</td> <td>13%</td> <td>6%</td> <td>29%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td>	Expense	600	WATER	29 WATER RESOUR	52820 DAMAGE CLAIMS	\$ 6500	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 5282 PUBLIC ENCIRING MERIALITION OLTRACH 5 600 Base/Peak 0% 52% 13% 0% 29% 0%	Expense	600	WATER	29 WATER RESOUR	52828 PROPERTY OWNER REIMBURSEMENTS	\$ 400	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 52830 RECORDING FEES \$ 1,000 Base/Peak 0% 52% 13% 6% 29% 0% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 52831 PAPERLESS BILL INCENTIVE (07/17) \$ 100,000 Base/Peak 0% 52% 13% 6% 29% 0% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 52870 LANDFILL CONTRACT \$ 17,150 Base/Peak 0% 52% 13% 6% 29% 0% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 52875 LICENSES & PERMITS \$ 88,100 Base/Peak 0% 52% 13% 6% 29% 0%	Expense	600	WATER	29 WATER RESOUR	52829 PUBLIC EDUCATION OLITREACH	\$ 5.250	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 52831 PAPERLESS BILI INCENTIVE (07/17) \$ 100,000 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 52870 LANDFILL CONTRACT \$ 17,150 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 52870 LANDFILL CONTRACT \$ 17,150 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 52875 LICENSES & PERMITS \$ 88,100 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 5285 SPECIAL CONT WATER CONSERVATION \$ 240,000 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100% Merit <td>Expense</td> <td>600</td> <td>WATER</td> <td>29 WATER RESOUR</td> <td>52830 RECORDING FEES</td> <td>\$ 1.000</td> <td>Base/Peak</td> <td>0%</td> <td>52%</td> <td>13%</td> <td>6%</td> <td>29%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>100%</td>	Expense	600	WATER	29 WATER RESOUR	52830 RECORDING FEES	\$ 1.000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 52870 LANDFILL CONTRACT \$ 17,150 Base/Peak 0% 52% 13% 6% 29% 0% 0% 0% 10% Expense 600 WATER 29 WATER RESOUR 52870 LANDFILL CONTRACT \$ 17,150 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 52875 LICENSES & PERMITS \$ 88,100 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100% Expense 600 WATER 29 WATER RESOUR 5285 SPECIAL CONT WATER CONSERVATION \$ 240,000 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100% Merit 600 WATER 29 WATER RESOUR 52890 OTHER CONTRACTUAL SERVICES \$ 53,232 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100% M	Expense	600	WATER	29 WATER RESOUR	52831 PAPERLESS BILL INCENTIVE (07/17)	\$ 100.000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 52875 LICENSES & PERMITS \$ 88,100 Base/Peak 0% 52% 13% 6% 29% 0% 0% 0% 10% Expense 600 WATER 29 WATER RESOUR 5285 SPECIAL CONT WATER CONSERVATION \$ 240,000 Base/Peak 0% 52% 13% 6% 29% 0% 0% 10% Merit 600 WATER 29 WATER RESOUR 52890 OTHER CONTRACTUAL SERVICES \$ 53,232 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100%	Expense	600	WATER	29 WATER RESOUR	52870 LANDFILL CONTRACT	\$ 17,150	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense 600 WATER 29 WATER RESOUR 52885 SPECIAL CONT WATER CONSERVATION \$ 240,000 Base/Peak 0% 52% 13% 6% 29% 0% 0% 10% Merit 600 WATER 29 WATER RESOUR 52890 OTHER CONTRACTUAL SERVICES \$ 53,232 Base/Peak 0% 52% 13% 6% 29% 0% 0% 100%	Expense	600	WATER	29 WATER RESOUR	52875 LICENSES & PERMITS	\$ 88.100	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Merit 600 WATER 29 WATER RESOUR 52890 OTHER CONTRACTUAL SERVICES \$ 53,232 Base/Peak 0% 52% 13% 6% 29% 0% 0% 10%	Expense	600	WATER	29 WATER RESOUR	52885 SPECIAL CONT WATER CONSERVATION	\$ 240.000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
	Merit	600	WATER	29 WATER RESOUR	52890 OTHER CONTRACTUAL SERVICES	\$ 53.232	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%

					O&M Allocation		Cost	Allocation	Customer	Base	Peak Month	Peak Day	Peak Hour	Fire	Pumping	As All Other	Total
<u>Cat</u>	<u>Fund</u>	<u>FundName</u>	<u>Div</u> <u>DivName</u>	<u>Account</u>	AccountName		-										
Expense	600	WATER	29 WATER RESOUR	53020	OFFICE SUPPLIES	Ş	39,000	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53024	RADIOS AND ASSOCIATED EQUIPMENT	Ş	49,700	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53025	FURNITURE & MINOR EQUIPMENT	Ş	38,450	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53030	EDUCATION & RECREATION SUPPLIES	Ş	3,750	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53040	CHEMICALS & LABORATORY SUPPLIES	Ş	209,000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53042		Ş	28,500	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53043	TREATMENT FILTER MEDIA	Ş	3,822,420	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53044	WATER SAFETY EQUIPMENT	Ş	30,000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53045	BUSINESS MTGS - REFRESHMENTS & SUPPLIES	Ş	5,450	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53050	CLOTHING & PERSONAL PROTECT EQUIP	Ş	48,410	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53051	TREATMENT CHEMICAL(NON-TAXABLE)	\$	736,000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53052	CLEANING CHEMICAL(TAXABLE)	\$	240,500	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53055	SAFETY & INCENTIVE AWARD	\$	8,900	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53060	PHOTOGRAPHIC & DUPLICATING SUPPLIES	\$	10,000	Customer Only	100%	0%	0%	0%	0%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53070	PURCHASED WATER	\$	14,180,000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53090	OTHER OPERATING SUPPLIES	\$	96,130	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53700	GAS OIL & LUBRICANTS	\$	8,500	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53720	SMALL TOOLS & EQUIPMENT	\$	102,300	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53750	SERVICE INTERRUPTION MATERIALS	\$	33,600	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53770	MTRS TO MAINT & REPAIR BLDS & IMPR	\$	118,100	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53772	REPLACEMENT OR REPAIR	\$	450,000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53774	FIRE HYDRANT MAINTENANCE	\$	63,250	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53780	OTHER MAINTENANCE & REPAIR SUPPLY	\$	110,000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53793	MAT TO MAINT AND REPAIR ELEC	\$	487,250	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53794	MAT TO MAINT AND REPAIR MECH SYS	\$	545,750	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53796	IRRIGATION SITE ELECT MATERIALS	\$	7,500	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53797	IRRIGATION SITE MECH MATERIAL	\$	20,000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53798	PRV MECHANICAL MATERIALS	\$	168,000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
Expense	600	WATER	29 WATER RESOUR	53799	PRV ELECTRICAL MATERIALS	\$	5,000	Base/Peak	0%	52%	13%	6%	29%	0%	0%	0%	100%
							-										
Cat	Fund	FundName	Div DivName	Account	AccountName												
Expense	600	WATER	29 WATER RESOUR	54522	COMPUTER EQUIPMENT	\$	3,000	As All Other	0%	0%	0%	0%	0%	0%	0%	100%	100%
Expense	600	WATER	29 WATER RESOUR	54530	OTHER MACHINERY & EQUIPMENT	\$	270,500	As All Other	0%	0%	0%	0%	0%	0%	0%	100%	100%
Expense	600	WATER	29 WATER RESOUR	54710	MOTOR VEHICLES	\$	40,000	As All Other	0%	0%	0%	0%	0%	0%	0%	100%	100%
Franchise	600	WATER	29 WATER RESOUR	57791	TRANSFERS OUT - FRANCHISE FEES	\$	4,707,200	As All Other	0%	0%	0%	0%	0%	0%	0%	100%	100%
							L. L		<u>.</u>	•	•	•					<u> </u>
Cat	Fund	FundName	Div DivName	Account	<u>AccountName</u>												
Merit	600	WATER	XX NON DIVISIONA	51100	FULL-TIME WAGES	\$	291,445	As All Other	0%	0%	0%	0%	0%	0%	0%	100%	100%
Citywide	600	WATER	XX NON DIVISIONA	57750	CITYWIDE INDIRECT COST ALLOCATION	\$	3,332,280	As All Other	0%	0%	0%	0%	0%	0%	0%	100%	100%
							· · L		L	I		I	I	I			
					Subtotal: O&M Expenses	¢	58 903 643		\$ 4,446.786 \$	22 755 544	\$ <u>5 688 886</u>	\$ 2 <i>811 11</i> 2 \$	12 515 5 <i>1</i> 9 ¢	1 999 010 ¢	-	\$ 86521	25
1					Populacation of "Ac All Other"	ç	56,505,045		765 766	2 018 650	, J,000,000	ې <u>۲,044,44</u> 3 ې ۸۵۵ ۵۵۵	12,313,343 Ş	2// 2/2	-	, 0,000,4	25)
					Realitication of AS All Other					3,310,030	575,004	407,032	2,133,202	344,243		(0,055,4	
1					Total Reallocation O&M Expenses	\$	58,903,643		\$ 5,212,552 \$	26,674,202	\$ 6,668,550	\$ 3,334,275 \$	14,670,811 \$	2,343,253 \$	-	\$	-