

CITY OF BUCKEYE, AZ

Water and Wastewater Rate Study

Final Report / May 23, 2019



May 23, 2019

Mr. Michael D. Weber, P.E.
Water Resources Director
City of Buckeye
21749 W. Yuma Road
Buckeye, AZ 85326

Subject: Water and Wastewater Rate Study

Dear Mr. Weber,

Raftelis is pleased to provide this Water and Wastewater Rate Study Report (Report) for the City of Buckeye (City).

The major objectives of the study include the following:

- Develop financial plans for the water and wastewater funds for the 5-year study period, Fiscal Year (FY) 2019 – 2023.
- Develop water and wastewater cost-of-service analyses to ensure equitable recovery of costs from customer classes
- Develop cost-of-service water and wastewater rates, along with rate alternatives that meet City pricing objectives.
- Assessment of and update of outside-city rate differential and meter installation fees.

This Report summarizes the key findings and recommendations related to the study.

It has been a pleasure working with you, and we thank you and the City staff for the support provided throughout the course of this study.

Sincerely,

A handwritten signature in black ink that reads 'Todd Cristiano'.

Todd Cristiano
Manager

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Definitions

- Test year: The year in which proposed rates will be effective
- Study period: Financial planning period for the 5-year period from FY19 through FY23.
- FY19: The budget year period July 1, 2018 through June 30, 2019
- Kgals: 1,000 gallons
- Res/Comm/MF/Land/Irr: Residential/Commercial/Multifamily/Landscape/Flood Irrigation

Executive Summary

Introduction

The City of Buckeye (City) provides service to approximately 23,000 water and 21,000 wastewater customers. The City is financially self-sufficient with funding for capital and operating requirements derived primarily from rates. The City authorized this study to assure that an adequate level of revenue from water and wastewater rates is maintained to finance the City's daily operations as well as future capital improvements and expansions. The study includes the following:

- Development of water and wastewater financial plans for the 5-year study period, Fiscal Year 2019-2023.
- Analysis of customer class water cost of service.
- Design of water and wastewater rates.

Raftelis used industry standard methodologies supported by the American Water Works Association (AWWA) *Principles of Water Rates, Fees, and Charges* M1 manual for this rate study.

Study Goals and Objectives

The City's overarching goal for this study was to develop long-term financial plans for the water and wastewater utilities while ensuring:

- Rate revenues are sufficient to meet annual operating expenses, debt service, and capital expenditures
- Capital projects are funded with the optimal mix of rate revenue and debt to minimize impacts to customers
- Reserve levels are maintained in accordance with industry best practices, and that debt service coverage targets are met
- Rates are based on a cost-of-service analysis which equitably recovers the cost to provide service to customer classes

In addition, the City identified specific pricing objectives to develop the rate alternatives presented in this study, in addition to cost-of-service rate design. These objectives were guided by two primary goals: revenue sufficiency and defensibility.

- **Revenue stability.** Produce rates that maintain a steady stream of revenue during periods of water usage variability.
- **Conservation.** Through the rate structure, continue to promote wise use of water.
- **Demand management.** To the extent possible, encourage customers to shift water use during peak periods of the year.
- **Interclass equity.** Maintain equity between the customer classes (i.e. prevent one class subsidizing another)
- **Intraclass equity.** Maintain equity between low and high volume customers within a class.

These objectives often compete with one another. For example, revenue stability would suggest a higher fixed charge while a conservation-oriented structure would favor a lower fixed charge (giving the customer more control over their monthly bill). Raftelis worked with staff to balance these objectives when developing the alternative rate structures.

Study Findings

Principal findings of this study are as follows:

WATER

- Projected water sales revenue under existing rates is insufficient to meet annual revenue requirements through the study period. Equal annual adjustments of 3.5% from FY20 through FY23 are required to meet all future revenue requirements as detailed in the study period. Revenue adjustments are effective October 1 of each year.
- It is recommended that the water financial plan be updated annually to reflect current estimates of revenue, operating expenses, capital improvement needs, and maintenance of reserve targets.
- Raftelis developed three rate structure alternatives for consideration, which are described below. These rate alternatives are designed to meet the City's objectives of revenue stability and customer class equitability.
 1. **Financial Plan Increase (FPI).** An overall revenue adjustment is applied to the current rates. This alternative is not cost-of-service based but recovers the overall revenue requirement.
 2. **Cost of Service (COS).** Proposed rates are based on the cost of service analysis and recover each class's cost of service.
 3. **Fixed Charge Recovery (FCR).** This structure uses cost of service rates with a portion of capital costs recovered in the monthly fixed charge. FCR recovers the cost of service for each class with the exception of the flood irrigation class, whose rates are increased by the overall financial plan revenue adjustments.
- The proposed rate alternatives 2 and 3, COS and FCR, assess the same meter charge by meter size to all customer classes. The volumetric structures for each class are unchanged. The monthly base rate recovers the cost of billing, administration, meter replacement costs, and under FCR, a portion of capital costs. The volume rate recovers the cost to treat and deliver the water based on demands placed on the system by customers. Table 1 shows the monthly base rate at current rates and the proposed alternatives.

Table 1: Comparison of Current and Proposed FY20 Rate Alternatives

Description	Current	Alternative 1 FPI	Alternative 2 COS	Alternative 3 FCR
Monthly Base Rate, \$ per Bill				
Residential (¾", 1" and 1 1/2" meters)	\$32.94	\$34.10	\$10.66	\$30.00
Commercial/Multifamily, \$ per bill by meter size (inches)				
¾"	\$34.35	\$35.56	\$10.66	\$34.35
1"	\$107.90	\$111.68	\$10.66	\$107.90
1 ½"	\$107.90	\$111.68	\$12.65	\$107.90
2"	\$287.80	\$297.88	\$18.13	\$287.80
3"	\$287.80	\$297.88	\$26.40	\$287.80
4"	\$539.63	\$558.52	\$34.66	\$539.63
6"	\$899.38	\$930.86	\$58.20	\$899.38
8"	\$1,798.75	\$1,861.71	\$84.00	\$1,798.75
Landscape, \$ per bill by meter size (inches)				
¾"	\$26.60	\$27.54	\$10.66	\$26.60
1"	\$83.56	\$86.49	\$10.66	\$83.56
1 ½"	\$83.56	\$86.49	\$12.65	\$83.56
2"	\$222.87	\$230.68	\$18.13	\$222.87
3"	\$222.87	\$230.68	\$26.40	\$222.87
4"	\$417.89	\$432.52	\$34.66	\$417.89
6"	\$696.48	\$720.86	\$58.20	\$696.48
8"	\$1,392.95	\$1,441.71	\$84.00	\$1,392.95
Flood Irrigation, \$ per Bill [1]				
	\$45.00	\$46.58	\$121.86	\$46.58
Volume Rates, \$ per 1,000 gallons				
Residential				
0 – 6	\$3.93	\$4.07	\$7.07	\$4.28
7 – 10	\$4.91	\$5.09	\$8.83	\$5.34
11 – 15	\$6.14	\$6.36	\$11.04	\$6.68
16 – 30	\$7.68	\$7.95	\$13.80	\$8.35
31 and over	\$9.59	\$9.93	\$17.24	\$10.43
Commercial / Multifamily				
	\$8.08	\$8.37	\$7.79	\$8.08
Landscape				
0 – 10	\$6.61	\$6.85	\$10.39	\$8.15
11 and over	\$7.93	\$8.21	\$12.47	\$9.78

[1] Flood Irrigation customers are not assessed a volume charge. They are assessed a bill 11 out of 12 months per year.

WASTEWATER

- Projected wastewater service revenue is sufficient to meet annual revenue requirements through the study period. Raftelis recommends no changes to the existing sewer rates.
- It is recommended that the wastewater financial plan be updated annually to reflect current estimates of revenue, operating expenses, capital improvement needs and maintenance of reserve targets.
- Table 2 shows the current wastewater rates.

Table 2: Current Wastewater Rates

Description	Current Rates
Residential Single Family	
Base Rate, \$ per bill	\$28.86
Volume Rate, \$ per 1,000 gallons [1]	\$2.00
Residential Multifamily and Commercial	
Base Rate, \$ per bill by meter size	
¾"	\$19.12
1"	\$60.06
1.5"	\$60.06
2"	\$160.19
3"	\$160.19
4"	\$300.36
6"	\$500.59
8"	\$1,001.18
Volume Rate, \$ per 1,000 gallons [2]	\$2.51
[1] Based on the lower of average January / February / March water reads from the previous year of usage for the residence, or actual use.	
[2] Based on actual water consumption.	

METER INSTALLATION FEES

The City requested a review and update of their meter installation fees. The meter installation fees consist of three components; labor, materials, and meter cost. Raftelis developed the labor costs using the City’s average hourly rates for water operators as well as an allocation for overhead costs. The meter installation fee for a 1” meter, which is the most common meter size, will increase by \$55.49 from \$515.20 to \$570.69. Appendix D, Table D-3 compares the existing and proposed meter installation fees.

INSIDE-OUTSIDE CITY WATER RATE DIFFERENTIAL

The City provides service to a nominal amount of customers in unannexed parts of the City. The City requested the development of a conceptual rate differential to approximate the risk of serving customers not in the City. Raftelis used the utility basis methodology promulgated by the American Water Works Association to estimate the additional risk to serve these customers and to develop a rate differential to represent those risks. Comparing the revenue requirement unit cost basis under the utility basis as compared to the unit cost rate under the cash basis, the rate differential for outside-City customers is 1.15 times the inside-City rate.

Reliance on City-Provided Data

During this project, the City (and/or its representatives) provided Raftelis with a variety of technical information, including cost and revenue data. Raftelis did not independently assess or test for the accuracy of such data – historic or projected. Raftelis has relied on this data in the formulation of our findings and subsequent recommendations, as well as in the preparation of this report.

There are often differences between actual and projected data. Some of the assumptions used in this report will not be realized, and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between the data or results projected in this report and actual results achieved, and those differences may be material. As a result, Raftelis takes no responsibility for the accuracy of data or projections provided by or prepared on behalf of the City, nor do we have any responsibility for updating this report for events occurring after the date of this report.

Section 2: Assumptions

Table 3 presents the major assumptions used in this study. Changes in these assumptions could materially impact the results of the findings and conclusions.

Table 3: Study Assumptions

Escalation Factors	
Personnel Services	3.0%
Professional & Contractual Services	3.0%
Repairs/Maintenance	3.0%
Operating Supplies / Equipment < \$5000	3.0%
Professional Development	3.0%
Debt Service	3.0%
Bad Debt Expense	3.0%
Other Charges / Services	3.0%
One-time Expenditures	3.0%
Reserves / Contingencies	3.0%
Global Growth Premium	14.0%
Operating Cash Flow, Unrestricted Cash	
FY19 Beginning Balance	
Water	\$29.0 million
Wastewater	\$1.3 million
Capital Cash Flow, Restricted Cash	
FY19 Beginning Balance	
Water	\$6.5 million
Wastewater	\$5.3 million
Annual % Account Growth	
Non-Global Area	3.0%
Global Area	14.0%
Water Fund Reserve Targets	
Operating	90 days of O&M
Capital	1-year's depreciation expense
Wastewater Fund Reserve Targets	
Operating	90 days of O&M
Capital	1-year's depreciation expense
Future Debt Issuances	
Term [1]	26 - 20 years
Interest Rate	4.0%
Issuance Expense	1.5%
Debt Service Reserve Requirement	1-Year Average Annual Debt Service Payment
Debt Service Coverage (DSC) Targets	
Water	1.50x
Wastewater	1.50x

[1] The City indicated that they have approval to issue subordinate debt with a 2044 limit. The assumed term is therefore the greater of 20 years or the number of years to 2044.

Section 3: Water Rates

Introduction

The City's water utility is a self-supporting enterprise fund. The City has one combined fund for the water utility but tracks capital related activities separately from the daily operations and maintenance expenses of the utility. For the purposes of this study, Raftelis developed two separate cash flows for the rate analysis.

- Capital cash flow (includes restricted cash)
- Operating cash flow (unrestricted cash)

The operating cash flow is used for the basis of rate-setting. Appendix A contains the detailed calculations supporting the financial plan, cost of service and rate design analysis presented in this section.

Financial Plan

CAPITAL CASH FLOW

Because of the restrictions on the uses of certain bond proceeds and impact fee revenues, this cash flow is tracked separately. Appendix Table A-1 summarizes the capital cash flow.

Beginning Balance

The capital fund balance will be \$6.5 million at the beginning of FY19. The capital fund balance consists of unused bond proceeds and impact fee revenues, and transfers from the operating fund to cash fund capital projects and meet reserve targets.

Sources of Funds

Sources include impact fee revenue, revenue bond proceeds, investment income, and transfers from the operating cash flow. Impact fee revenue averages \$500,000 annually beginning in FY20. Annual impact fee revenues are based on data from City staff projections. Transfers from the operating cash balance average \$13.5 million per year during the study period. Investment income is calculated using a 1.0 percent annual interest rate applied to the average fund balance and averages \$0.1 million per year.

Uses of Funds

The City's capital projects for the study period total \$201.6 million, inflated. Table A-2 summarizes the water capital improvement program. This capital program reflects the projects identified in the water system master plan study and includes projects related to the Apache Road Water Campus, Farallon and other treatment plant projects, wells, water resources and other miscellaneous facilities. Based on City direction, an annual inflation allowance is not applied to the projected capital costs. The City will monitor and update projected costs as estimates are refined. Debt issuance costs are 1.5 percent of the total debt issue and debt reserve costs are equal to 1-year of the proposed annual debt service payment. Revenue bond debt issuance of \$92.0 million and \$52.0 million are projected in FY20 and FY22, respectively, to fund a portion of the capital program. These revenue bond issuances result in \$12.2 million in debt service reserve and issuance expenses.

This capital improvement program includes both growth-related projects as well as on going renewal and replacement projects. Growth-related project costs not funded by impact fees are assumed to be funded through rates. The collection of impact fees is largely dependent on the timing of new development. Major capital facilities

or infrastructure often require several years to design, develop and construct. As a result, capital costs tend to be concentrated around various points in time rather than distributed evenly over an entire planning period. Capital facilities or infrastructure that is delayed until sufficient system development charge revenues have accumulated to fund those facilities may result in decreased service levels to all customers.

There may be periods of time when other revenues or financing mechanisms will be necessary to meet cash flow requirements. To accommodate cash flow shortfalls, utilities may need to borrow funds or rely on rate revenue which would be paid back through future impact fee revenue.

Capital Reserves

Because of the capital nature of water utilities, designated capital reserves are commonplace in the industry. Capital reserves are established to provide a utility with sufficient funds to meet unanticipated capital needs, such as an infrastructure failure or unexpected repair and replacement project costs. Capital reserve targets can be defined in a number of ways given that capital expenditures generally fluctuate more than operating costs on a year-to-year basis. Utilities tend to choose targets they find reasonably easy to administer, and that differ depending on where the utilities are in their infrastructure lifecycle. For example, one utility may have not experienced major growth for years and has largely depreciated its assets while another may have more recently constructed facilities while, yet another utility may be rapidly growing and have just built a new treatment plant.

A common capital reserve target is one year of annual depreciation expense equal to \$6.5 million. Raftelis has calculated target capital reserves equal to annual depreciation expense. Because this is a new reserve target recommendation, the financial plan and resulting rate revenue increase recommendations result in the capital reserve being fully funded by FY20.

OPERATING CASH FLOW

Financial activities associated with funding annual operating revenues and revenue requirements are tracked separately from the activities associated with impact fee project funding. Table A-3 summarizes the unrestricted operating cash flow.

Beginning Balance

The operating cash balance includes unrestricted net revenues carried over from previous years. The fund balance is projected to be \$29.0 million at the beginning of FY19.

Revenues

Operating revenue is derived from water rates, investment income, and other miscellaneous sources. Water sales revenue under existing rates is based on the projected number of water accounts and water usage amounts for each customer class. Revenue from existing rates averaged \$27.4 million, annually, during the study period. Miscellaneous revenues include the Global service area meter and service line install fees, Global hook-up fees, hydrant charges, account processing charges, and other administrative fees. Approximately \$2.0 million of miscellaneous revenues are from the Global meter and line installation fees and hook-up fees. Table A-4 summarizes the miscellaneous revenue projections.

Revenue Requirements

Revenue requirements imposed on these operating revenues include operation and maintenance expense (O&M), annual debt service payments, and transfers to the water capital fund to cash finance a portion of the capital improvement program (PAYGO). O&M consists of personnel, professional and contractual services, repairs and maintenance, meter replacements, materials and supplies, Global growth premium payments, and transfers to the City's general fund for central services. O&M averaged \$17.3 million annually during the study period. Table A-5

summarizes the operations and maintenance expense projections. Transfers to the water capital fund occur when impact fee revenues, reserves, or debt issuances are insufficient to meet the capital requirements. Transfers of \$35.4 million, \$16.7 million, and \$15.6 million are anticipated in FY19, FY21, and FY23, respectively.

Annual debt service payments will increase from \$3.9 million in FY19 to \$14.8 million in FY23. Existing debt service payments increase from \$3.9 million in FY19 to \$4.8 million in FY23. Bond issues of \$92 million and \$52 million are proposed in FY20 and FY22, respectively. The FY20 bond issue will increase annual debt service by \$6.7 million beginning in FY21. The FY22 bond issue will increase annual debt service payments by \$3.7 million beginning in FY23.

Indicated Water Sales Revenue Adjustments

Water rate revenue should be sufficient to meet revenue requirements, finance the capital improvement program, maintain adequate reserves, and comply with bond covenants. A minimum operating reserve equal to 90 days of operating expenses is recommended, which is typical in the industry and for a utility of this size. Raftelis set a debt service coverage target of 1.5 times net revenue to ensure that the City had sufficient coverage capacity to issue debt in the future. Equal annual revenue adjustments of 3.5% in FY20-FY23 are necessary to meet the requirements and maintain the financial health of the utility. Rate adjustments are assumed to become effective on October 1st of each year or for 9 months of the fiscal year. It is recommended that the financial plan be updated annually to determine whether the projected increases are appropriate.

WATER CASH FLOW PROJECTIONS

Table 4 summarizes the key water operating and capital cash flow projections.

Table 4: Water Utility Financial Plan Projections

Description	FY19	FY20	FY21	FY22	FY23
Operating Fund Summary					
Revenue Adjustment	0.0%	3.5%	3.5%	3.5%	3.5%
Debt Service Coverage	3.61	3.95	1.69	1.81	1.57
PAYGO Capital Funded (\$ millions)	\$40.35	\$51.75	\$45.76	\$44.34	\$19.37
Ending Operating Balance (\$ millions)	\$3.83	\$14.79	\$4.52	\$12.84	\$5.01
Target Operating Reserves (\$ millions)	\$3.67	\$4.07	\$4.42	\$4.62	\$4.82
Over/(Under Target) (\$ millions)	\$0.16	\$10.72	\$0.10	\$8.22	\$0.19
Capital Fund Summary					
Revenue Bond Issuance (\$ millions)	\$0.0	\$92.0	\$0.0	\$52.0	\$0.0
Ending Capital Balance (\$ millions)	\$1.62	\$34.89	\$6.51	10.23	7.06
Target Capital Reserves (\$ millions)	\$6.47	\$6.47	\$6.47	\$6.47	\$6.47
Unrestricted (\$ millions)	(\$4.85)	\$28.42	\$0.04	\$3.76	\$0.59

Cost of Service

Equitable water rates fairly recover the cost to service each respective customer class. Determination of cost of service takes into account the volume of water used by the class, class peak rates of demand, number of customers within the class, and other relevant factors.

The cost of service analysis is conducted for a test year which is considered representative of the period in which resultant rates are expected to be in effect. The year FY20 was selected as the test year for this study. Appendix Tables A-6 through Table A-14 provide supporting detail to the table information presented in this section.

COST OF SERVICE PROCESS

The cost-of-service process is a method to assign costs based on each customer class's proportionate share of water demands and number of customers. The cost-of-service analysis consists of the following nine steps:

1. Determine the FY20 rate revenue at current rates
2. Determine the test year revenue requirement
3. Functionalize the revenue requirement
4. Allocate functionalized costs to cost components
5. Determine the total system units of service
6. Determine the unit costs of service
7. Determine customer class units of service
8. Distribute costs to customer classes
9. Design rates to recover class cost-of-service and the total revenue requirement

FY20 REVENUE AT CURRENT RATES

Raftelis developed FY20 rate revenue at current rates using detailed billing records provided by the City. Revenue projections are based on the current number of customers by meter size and class, projected use per account and growth in the number of accounts by class. The FY20 revenue at current rates is shown in Table 5. This projection serves as the basis for determining the FY20 revenue requirement. This billing data analysis is also used in the units of service analysis.

Table 5: Water – FY20 Revenue at Current Rates

Customer Class	Annual Bills	Volume (millions of kgals)	Revenue (\$ millions)
Residential	288,559	1,656	\$16.96
Commercial/Multifamily	5,866	232	\$2.88
Landscape	6,127	572	\$5.26
Flood Irrigation	4,807	0	\$0.22
Total	305,359	2,460	\$25.32

*Values rounded to foot.

TEST YEAR REVENUE REQUIREMENT

The revenue requirement shown in Table 6 shows the level of rate revenue required from rates with the FY20 proposed revenue adjustment. The proposed 3.5% revenue adjustment in FY20 is in effect for 9 months and generates \$664,807 of additional revenue. This equates to an annualized increase of 2.625%. However, to ensure that rates recover the 9 months of revenue at a 3.5% revenue adjustment, the revenue requirement in Table 6 must be annualized.

Table 6: Water - FY20 Revenue Requirement

Item	FY20
Operation and Maintenance Expense	\$16.29
Debt Service	\$3.94
PAYGO Transfer to Capital Fund	\$0.00
Total Expenditures	\$20.23
Other Revenue Adjustments	
Miscellaneous Revenue	(\$5.10)
Investment Income	(\$0.09)
Change in Fund Balance	\$11.20
Total Other Revenue Adjustments	\$6.01
Net FY20 Revenue Requirement [1]	\$26.24
*Values rounded to foot.	
[1] Annualized FY20 revenue adjustment = \$25,325,979 x 3.5% + \$25,325,979	

REVENUE REQUIREMENT ALLOCATION

The underlying principle in cost allocation is to convert the test year revenue requirement into costs that best reflect the cost associated with customer water demands placed on the system. Those costs are proportionally allocated to customer classes based on their respective customer class units of service to determine class cost of service.

Customer class units of service include average day, peak day, and peak hour demands, the number of equivalent meters, and the number of bills.

Functional Cost Components

Water systems are comprised of several facilities (unit processes or functions) that are designed and operated to collect, treat, and distribute water to customers. The separation of costs into functional components provides a means for distributing costs to customer classes based on their respective responsibility in the system. Typical functional categories for water systems include source of supply, transmission and distribution, treatment, pumping, storage, and customer-related costs.

Allocation Factors

Water systems are designed and operated to meet the average and peak demands of their customers. Therefore, data on annual consumption and peak demand contributions are needed to allocate costs equitably among customer classes. Since customers do not exert their maximum demand for water at the same time, water facilities are designed to meet the coincidental demands on the system. Using system peak demand to average demand ratios provides a means for distributing costs equitably to customer classes.

For every facility on the system, there is an underlying average demand, or uniform rate of usage, exerted coincidentally by customers for which the average day cost component applies. Certain facilities are operated and designed to meet the demand above the average day demand or maximum day extra-capacity demand. Costs associated with those facilities are allocated to both the average day and maximum day cost components. Similarly, other facilities are designed to meet demands in excess of maximum day requirements or maximum hour extra-capacity. Costs associated with these facilities are allocated to the average day, maximum day, and maximum hour cost components.

The ratio of maximum day and average day demand is used to allocate costs between average day and maximum day cost components. A maximum day to average day ratio of 1.80 is used based on the Water Master Plan provided by the City. This indicates approximately 56% of the capacity of facilities designed and operated for maximum day demand is needed for average day demands use. Accordingly, the remaining 44% is for maximum day extra-capacity requirements.

A ratio of maximum hour to average day water use of 3.00 is detailed in the Master Plan. This ratio indicates 33% of the capacity of facilities designed and operated for maximum hour demand is needed for average day demands, 27% is required to meet maximum day extra-capacity demand, and the remaining 40% is for maximum hour extra-capacity demand. These ratios are used to allocate the line item functionalized costs to cost components. Other cost allocations are based on the allocation of all other categories.

Other revenue requirements can be directly assigned to specific cost components. Billing and administrative costs such as meter reading are allocated directly to the billing cost component. Indirect expenditures not specifically assigned are allocated in proportion to all other operations and maintenance cost components.

Allocation of Functionalized Costs

Once costs have been separated by function, they can be further allocated to cost components using the demand factors identified above. Allocating costs to cost components provides a means of assigning functionalized costs based on the design and functional parameters that facility serves in the system. Cost components include average day demand, peak rates of demand, meters and services and customer). Below is a definition of the customer service characteristics.

- » **Base/Average day** costs vary directly with the quantity of water sold under average day load conditions.
- » **Peak extra-capacity** costs represent those costs incurred to meet water demands that exceed average levels of water usage by customers. These costs are incurred to the water usage variations and peak demands imposed on a water system. Extra capacity costs are incurred to meet the capacity above the maximum day and maximum hour demands.
- » **Meter and services** costs vary based on the size of meter and include meter repair and maintenance and a portion of capital costs associated with meeting the demands of the customer. The count of meters is typically stated on a per ¾" equivalent basis.
- » **Billing** costs include the cost of billing, customer service, and customer accounting.
- » **Irrigation** costs include the costs specific to the flood irrigation customer class. These costs are allocated separately to determine flood irrigation specific cost of service requirements.

Functional O&M costs are generally allocated to the cost components that best reflect the design or functional parameter associated with that facility's expense. For example, water supply costs are allocated to the base or average day costs as source of supply facilities are designed to meet average day demands. Pump stations are designed to meet maximum day demands. These costs are allocated to the average day and maximum day cost components. Similarly, wells and treatment, and transmission mains are designed to meet maximum day demand. Treated storage and distribution main facilities are designed to meet maximum hour demands. These costs are allocated to the average day, maximum day, and maximum hour cost components. Meter repair is associated with repair and replacement of customer meters. These costs are allocated directly to the meters and services cost component.

Water system assets provide a reasonable basis for allocating annual capital costs. The wells and treatment, pumping, and transmission facilities are designed to meet the peak demands on the system. These costs are allocated to the average day and maximum day cost component. Treated storage and distribution mains are

designed to meet maximum hour demands. These costs are allocated to the average day, maximum day, and maximum hour demands. Other costs not specifically allocated are allocated in proportion to all other assets.

Allocated Revenue Requirement

Table 7 summarizes the allocated revenue requirement from the analysis discussed above. The allocated revenue requirement is distributed to customer classes based on their proportionate share of total customer service characteristics.

Table 7: Water – FY20 Allocated Revenue Requirement
\$ millions

Description	Base	Maximum Day Extra Capacity	Maximum Hour Extra Capacity	Equivalent Meters	Billing	Flood Irrigation [2]
Operation & Maintenance Expense [1]	\$4.01	\$3.06	\$0.47	\$0.98	\$2.13	\$0.45
Capital Costs	\$7.33	\$5.70	\$1.82	\$0.18	\$0.00	\$0.11
Total Allocated Revenue Requirement	\$11.34	\$8.76	\$2.29	\$1.16	\$2.13	\$0.56

*Values rounded to foot.
[1] Net of miscellaneous revenues.
[2] Raw water

Customer Class Units of Service

Customers of a water utility are often identified according to customer class. Each customer class has unique water demands and usage characteristics. Because cost-of-service is based on the concept of proportionality, customer service characteristics for each customer class must be analyzed to distribute the functionalized and allocated system revenue requirements based on their respective demand profiles. Table 8 details the units of service.

Table 8: Water - FY20 Customer Class Units of Service

Customer Class	Average Day Demand <i>1,000 gallons</i>	Maximum Day Extra Capacity <i>1,000 gpd</i>	Max Hour Extra Capacity <i>1,000 gpd</i>	3/4" Cost Equivalent Meters [1]	Billing bills
Residential	1,656,079	5,281	11,827	288,559	288,559
Commercial/Multifamily	232,027	655	1,516	12,324	5,866
Landscape	572,092	4,089	7,861	10,795	6,127
Flood Irrigation	0	0	0	4,807	4,807
Total	2,460,198	10,025	21,204	316,485	305,359

*Values rounded to foot.
[1] ¾" equivalency based on meter costs for the City of Buckeye.

Unit Cost of Service

The unit cost of service is the quotient of the allocated revenue requirement by cost component divided by the units of service for each. Table 9 shows the calculation of the unit cost of service.

Table 9: Water – FY20 Unit Cost of Service

Description	Average Day Demand	Maximum Day Extra Capacity	Max Hour Extra Capacity	3/4" Cost Equivalent Meters [1]	Billing	Irrigation
Revenue Requirement (\$ mil)	\$11.34	\$8.76	\$2.29	\$1.16	\$2.13	\$0.56
Units of Service	1,000 gallons	1,000 gpd	1,000 gpd	Eq. Meters	Bills	Bills
Units	2,460,198	10,025	21,204	311,678	305,359	4,807
Unit Cost of Service	\$4.61	\$873.20	\$107.63	\$3.70	\$6.96	\$114.90

*Values rounded to foot.
[1] Excludes flood irrigation units.

Distribution of Costs to Customer Classes

Table 10 shows the distributed cost-of-service to customer classes. The customer class units of service in Table 8 are multiplied by the unit cost of service in Table 9 to determine the customer class cost of service.

Table 10: Water - FY20 Customer Class Cost of Service

Customer Class	Avg Day	Max Day Extra Capacity	Max Hour Extra Capacity	3/4" Cost Equivalent Meters	Billing	Irrigation
Residential	\$7.64	\$4.62	\$1.28	\$1.07	\$2.01	\$0.00
Commercial/Multifamily	\$1.07	\$0.57	\$0.16	\$0.05	\$0.05	0
Landscape	\$2.64	\$3.57	\$0.85	\$0.04	\$0.04	0
Flood Irrigation	0	0	0	0	0.03	0.55
Total	\$11.35	\$8.76	\$2.29	\$1.16	\$2.13	\$0.55

*Values rounded to foot.

Comparison of FY20 Cost of Service to Revenue at Existing Rates

Table 11 shows the comparison of FY20 cost of service to revenue under current rates for each customer class. The change in each customer class' cost is a product of the two components 1) the functionalization and allocation of the revenue requirement and 2) the distribution of these costs to customer classes based on their units of service.

Table 11: Water - Comparison of FY20 Cost of Service to Revenue Under Current Rates

Customer Class	FY20 Cost of Service	FY20 Revenue Under Existing Rates	Change - \$	Change - %
Residential	\$16.62	\$16.96	(\$0.34)	-2.2%
Commercial/Multifamily	\$1.90	\$2.88	(\$0.98)	-34.4%
Landscape	\$7.14	\$5.26	\$1.88	35.7%
Flood Irrigation	\$0.58	\$0.22	\$0.36	170.8%
Total	\$26.24	\$25.32	\$0.89	3.5%

*Values rounded to foot.

RATE DESIGN

In the development of schedules of water rates, a basic consideration is to establish equitable charges to customers commensurate with the cost of providing service. The only method of assessing entirely equitable water rates would be the determination of each customer's bill based upon their unique service requirements. Since this is

impractical, schedules of rates are normally designed to meet average conditions for groups (classes) of customers having similar service requirements. Rates should be reasonably simple in application and subject to as few misinterpretations as possible. Appendix Tables A-15 through Table A-27 provide supporting detail to the table information presented in this section.

Existing Rate Structure

The City’s current rate structure consists of a monthly base rate that varies by meter size and volumetric rates for usage. The volume rates and structure vary by customer class. Table 12 shows the current rates and structures.

Table 12: Water - FY19 Current Water Rate Structure

Description	Current Rates
Monthly Base Rate, \$ per Bill	
Residential (3/4", 1" and 1 1/2" meters)	\$32.94
Commercial/Multifamily, \$ per bill by meter size (inches)	
3/4"	\$34.35
1"	\$107.90
1 1/2"	\$107.90
2"	\$287.80
3"	\$287.80
4"	\$539.63
6"	\$899.38
8"	\$1,798.75
Landscape, \$ per bill by meter size (inches)	
3/4"	\$26.60
1"	\$83.56
1 1/2"	\$83.56
2"	\$222.87
3"	\$222.87
4"	\$417.89
6"	\$696.48
8"	\$1,392.95
Flood Irrigation, \$ per Bill [1]	\$45.00
Volume Rates, \$ per 1,000 gallons	
Residential	
0 – 6	\$3.93
7 – 10	\$4.91
11 – 15	\$6.14
16 – 30	\$7.68
31 and over	\$9.59
Commercial / Multifamily	\$8.08
Landscape	
0 – 10	\$6.61
11 and over	\$7.93
[1] Flood Irrigation customers are not assessed a volume charge. They are assessed a bill 11 out of 12 months per year.	

Rate Alternatives

Raftelis developed three rate structure alternatives for consideration which are described below. These rate alternatives are designed to meet the City’s objectives of revenue stability and customer class equitability.

1. **Financial Plan Increase (FPI).** Overall revenue adjustment is applied to the current rates. The alternative is not cost-of-service based but recovers the overall revenue requirement.
2. **Cost of service (COS).** Proposed rates are based on the cost of service analysis and recover each class’s cost of service.
3. **Fixed charge recovery (FCR).** Cost of service rates with a portion of capital costs recovered in the monthly fixed charge. FCR recovers the cost of service for each customer class.

Rate alternative 2 assesses the same base rate by meter size to all customer classes. The volumetric structures for each class are unchanged. The monthly base rate recovers the cost of billing, administration, meter replacement costs, and under FCR, a portion of capital costs. The volume rate recovers the cost to treat and deliver the water based on demands placed on the system by customers. Table 13 shows the current rates and the proposed FY20 rate alternatives.

Table 13: Water - Comparison of Current and Proposed FY20 Rate Alternatives

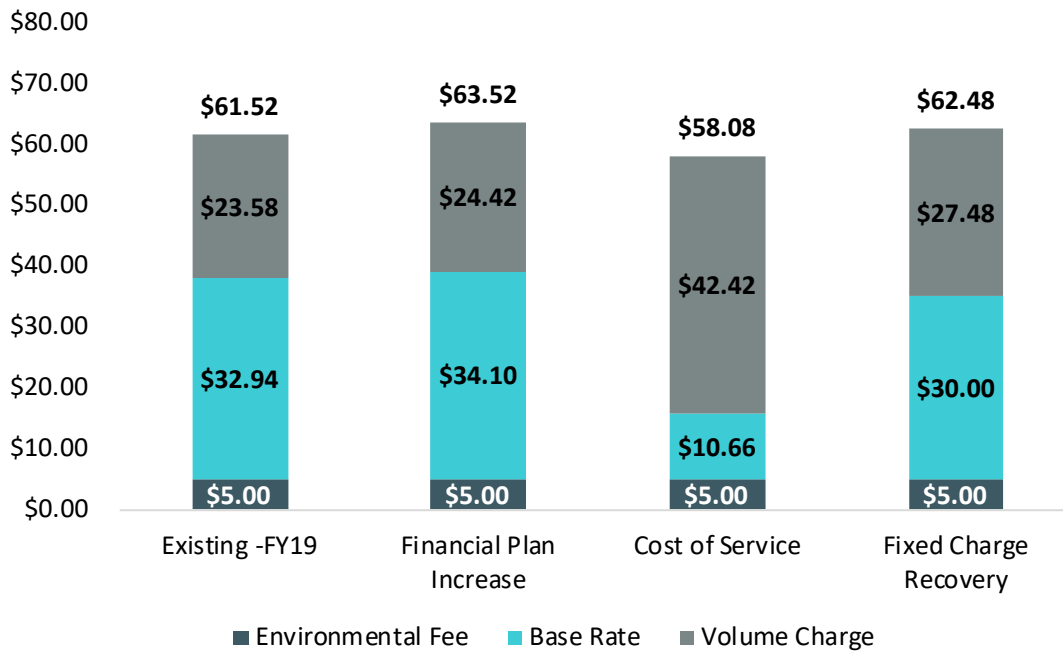
Description	Current	Alternative 1 FPI	Alternative 2 COS	Alternative 3 FCR
Monthly Base Rate, \$ per Bill				
Residential (¾”, 1” and 1½” meters)	\$32.94	\$34.10	\$10.66	\$30.00
Commercial/Multifamily, \$ per bill by meter size (inches)				
¾”	\$34.35	\$35.56	\$10.66	\$34.35
1”	\$107.90	\$111.68	\$10.66	\$107.90
1 ½”	\$107.90	\$111.68	\$12.65	\$107.90
2”	\$287.80	\$297.88	\$18.13	\$287.80
3”	\$287.80	\$297.88	\$26.40	\$287.80
4”	\$539.63	\$558.52	\$34.66	\$539.63
6”	\$899.38	\$930.86	\$58.20	\$899.38
8”	\$1,798.75	\$1,861.71	\$84.00	\$1,798.75
Landscape, \$ per bill by meter size (inches)				
¾”	\$26.60	\$27.54	\$10.66	\$26.60
1”	\$83.56	\$86.49	\$10.66	\$83.56
1 ½”	\$83.56	\$86.49	\$12.65	\$83.56
2”	\$222.87	\$230.68	\$18.13	\$222.87
3”	\$222.87	\$230.68	\$26.40	\$222.87
4”	\$417.89	\$432.52	\$34.66	\$417.89
6”	\$696.48	\$720.86	\$58.20	\$696.48
8”	\$1,392.95	\$1,441.71	\$84.00	\$1,392.95
Flood Irrigation, \$ per Bill [1]	\$45.00	\$46.58	\$121.86	\$46.58

Description	Current	Alternative 1 FPI	Alternative 2 COS	Alternative 3 FCR
Volume Rates, \$ per 1,000 gallons				
Residential				
0 – 6	\$3.93	\$4.07	\$7.07	\$4.28
7 – 10	\$4.91	\$5.09	\$8.83	\$5.34
11 – 15	\$6.14	\$6.36	\$11.04	\$6.68
16 – 30	\$7.68	\$7.95	\$13.80	\$8.35
31 and over	\$9.59	\$9.93	\$17.24	\$10.43
Commercial / Multifamily				
	\$8.08	\$8.37	\$7.79	\$8.08
Landscape				
0 – 10	\$6.61	\$6.85	\$10.39	\$8.15
11 and over	\$7.93	\$8.21	\$12.47	\$9.78

[1] Flood Irrigation customers are not assessed a volume charge. They are assessed a bill 11 out of 12 months per year.

Figure 1 below compares an average residential monthly bill under existing rates and each alternative. Average monthly usage is 6,000 gallons.

**Figure 1: Average Monthly Residential Bill Comparison
6,000 Gallons Monthly Billable Volume**



Section 4: Wastewater Rates

Introduction

The City's wastewater utility is a self-supporting enterprise fund. The City has one combined fund for the wastewater utility but tracks capital related activities separately the daily operations and maintenance expenses of the utility. For the purposes of this study, Raftelis developed two separate wastewater cash flows for the rate analysis.

- Capital cash flow (includes restricted cash)
- Operating cash flow (unrestricted cash)

The operating cash flow is used for the basis of rate-setting. Appendix B contains the detailed calculations supporting the financial plan analysis presented in this section.

Financial Plan

CAPITAL CASH FLOW

Because of the restrictions on the uses of certain bond proceeds and impact fee revenues, this cash flow is tracked separately. Table B-1 summarizes the capital cash flow.

Beginning Balance

The capital fund balance will be \$5.3 million at the beginning of FY19. The capital fund balance consists of unused bond proceeds and impact fee revenues, and transfers from the operating fund to cash fund capital projects and meet reserve targets.

Sources of Funds

Sources include impact fee revenue, revenue bond proceeds, investment income, and transfers from the operating cash flow. Impact fee revenue averages \$200,000 annually beginning in FY20. Annual impact fee revenues are based on data from City staff projections. Transfers from the operating cash balance average \$2.9 million per year during the study period. Investment income is calculated using a 1.0 percent annual interest rate applied to the average fund balance.

Uses of Funds

The City's capital projects for the study period total \$17.8 million, inflated. Table B-2 summarizes the wastewater capital improvement program. This program includes lift stations, Central and Sundance Water Reclamation Facility improvements, SCADA improvements, and pipe upsizing. Based on City direction, an annual inflation allowance is not applied to the projected capital costs. The City will monitor and update projected costs as estimates are refined. The City plans to complete a wastewater system master plan study in the future. After the completion of the master plan study, the financial plan should be updated to reflect the updated capital projections identified. Debt issuance costs are 1.5 percent of the total debt issue and debt reserve costs are equal to 1-year of the proposed annual debt service payment. A revenue bond debt issuance is projected in FY20 to fund a portion of the capital program, resulting in \$0.2 million in debt service reserve and issuance expenses.

This capital improvement program includes both growth-related projects as well as on going renewal and replacement projects. Growth-related project costs not funded by impact fees are assumed to be funded through

rates. The collection of impact fees is largely dependent on the timing of new development. Major capital facilities or infrastructure often require several years to design, develop and construct. As a result, capital costs tend to be concentrated around various points in time rather than distributed evenly over an entire planning period. Capital facilities or infrastructure that is delayed until sufficient system development charge revenues have accumulated to fund those facilities may result in decreased service levels to all customers.

There may be periods of time periods when other revenues or financing mechanisms will be necessary to meet cash flow requirements. To accommodate cash flow shortfalls, utilities may need to borrow funds or rely on rate revenue which would be paid back through future impact fee revenue.

Capital Reserves

Because of the capital nature of wastewater utilities, designated capital reserves are commonplace in the industry. Capital reserves are established to provide a utility with sufficient funds to meet unanticipated capital needs, such as an infrastructure failure or unexpected repair and replacement project costs. Capital reserve targets can be defined in a number of ways given that capital expenditures generally fluctuate more than operating costs on a year-to-year basis. Utilities tend to choose targets they find reasonably easy to administer, and that differ depending on where the utilities are in their infrastructure lifecycle. For example, one utility may have not experienced major growth for years and has largely depreciated its assets while another may have more recently constructed facilities while, yet another utility may be rapidly growing and have just built a new treatment plant.

A common capital reserve target is one year of annual depreciation expense of \$5.6 million. Raftelis has calculated target reserves equal to annual depreciation expense. Because this is a new reserve target recommendation, the financial plan and resulting rate revenue increase recommendations result in the capital reserve being fully funded by FY22.

OPERATING CASH FLOW

Financial activities associated with funding annual operating revenues and revenue requirements are tracked separately from the activities associated with impact fee project funding. Table B-3 summarizes the unrestricted operating cash flow.

Beginning Balance

The cash fund balance includes unrestricted net revenues carried over from previous years. The fund balance is projected to be \$1.3 million at the beginning of FY19.

Revenues

Operating revenue is derived from wastewater rate revenue, investment income, and other miscellaneous revenue. Wastewater sales revenue under existing rates is based on the projected number of wastewater accounts and usage amount for each customer class. Revenue from existing rates averages \$11.4 million annually during the study period.

Revenue Requirements

Revenue requirements include operation and maintenance expense (O&M), annual debt service payments, and transfers to the wastewater capital fund to cash finance a portion of the capital improvement program (PAYGO). O&M consists of personnel, materials and supplies associated with sewage treatment and collection, transfers to the City's general fund for shared services, and other general operating activities. O&M averages \$6.4 million annually during the study period. Table B-5 details the operation and maintenance expenses. Transfers to the wastewater capital fund occur when impact fee revenues, reserves, or debt issuances are insufficient to meet the

capital requirements. These transfers average \$2.9 million per year over the study period. Projected debt service on existing and proposed debt averaged \$1.1 million per year over the study period.

Indicated Wastewater Service Revenue Adjustments

Wastewater rate revenue should be sufficient to meet revenue requirements, finance the capital improvement program, and maintain adequate reserves and debt service coverage ratios. A minimum operating reserve equal to 90 days of operating expenses is recommended. This amount provides a reasonable operating allowance for sound wastewater utility operations. Raftelis set a debt service coverage target of 1.5 times net revenue to ensure that the City had sufficient coverage capacity to issue debt in the future. No rate revenue adjustments are required during the study period. It is recommended that the financial plan be updated annually to determine if the projected increases are appropriate.

WASTEWATER CASH FLOW PROJECTIONS

Table 14 summarizes the key wastewater operating and capital cash flow projections.

Table 14: Wastewater Utility Financial Plan Projections

Description	FY19	FY20	FY21	FY22	FY23
Operating Fund Summary					
Revenue Adjustment	0.0%	0.0%	0.0%	0.0%	0.0%
Debt Service Coverage	4.40	5.32	4.90	5.54	6.27
PAYGO Capital Funded (\$ millions)	\$5.29	\$9.17	\$1.65	\$1.39	\$0.25
Ending Operating Balance (\$ millions)	\$1.54	\$1.56	\$1.60	\$2.98	\$8.73
Target Operating Reserves (\$ millions)	\$1.53	\$1.54	\$1.58	\$1.63	\$1.68
Unrestricted (\$ millions)	\$0.01	\$0.02	\$0.02	\$1.35	\$7.05
Capital Fund Summary					
Revenue Bond Issuance (\$ millions)	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00
Ending Capital Balance (\$ millions)	\$3.01	\$0.62	\$3.39	\$5.80	\$5.81
Target Capital Reserves (\$ millions)	\$5.55	\$5.55	\$5.55	\$5.55	\$5.55
Unrestricted (\$ millions)	(\$2.54)	(\$4.93)	(2.16)	\$0.25	\$0.26

Cost of Service

Based on discussion with City staff, because the indicated wastewater rate revenue adjustments are 0.0% for each year of the study period, no changes to the existing rate structure were deemed necessary. Thus, an extensive wastewater cost of service analysis was not completed.

Rate Design

In the development of schedules of wastewater rates, a basic consideration is to establish equitable charges to customers commensurate with the cost of providing service. The only method of assessing entirely equitable wastewater rates would be the determination of each customer’s bill based upon their unique service requirements. Since this is impractical, schedules of rates are normally designed to meet average conditions for groups (classes) of customers having similar service requirements. Rates should be reasonably simple in application and subject to as few misinterpretations as possible.

Existing Rate Structure

The City’s current rate structure consists of a monthly base rate that varies by class and meter size and volumetric rates for all usage that varies by class. Table 15 lists the current rates and structures.

Table 15: Wastewater – FY19 Current Wastewater Rate Structure

Description	Current Rates
Residential Single Family	
Base Rate, \$ per bill	\$28.86
Volume Rate, \$ per 1,000 gallons [1]	\$2.00
Residential Multifamily and Commercial	
Base Rate, \$ per bill by meter size	
¾”	\$19.12
1”	\$60.06
1.5”	\$60.06
2”	\$160.19
3”	\$160.19
4”	\$300.36
6”	\$500.59
8”	\$1,001.18
Volume Rate, \$ per 1,000 gallons [2]	\$2.51
[a] Based on the lower of average January / February / March water reads from the previous year of usage for the residence, or actual use.	
[b] Based on actual water consumption.	

Proposed Rates Alternatives

Raftelis recommends no changes to the existing sewer rates. The typical monthly residential bill with a billable volume of 4,000 gallons is \$36.86.

Section 5: Outside City Rates

Background

The City requested an analysis of an appropriate rate differential to customers served outside the City limits. Currently, the City serves customers located both within and outside the City limits. The risks of owning a water system reside with the City and the water customers/taxpayers living in the City. Common risks incurred by inside City customers is that they pay property tax while outside city customers do not. The funds received by the City are used to develop and acquire water resources and provide treated water for both the City and County customers served by the Utility. City customers approve the issuance of bonds to fund water utility capital improvements which benefit all customers, including outside city customers. To recognize these risks and to quantify the associated costs, the City uses an industry-accepted approach to establish a differential on the outside city rates.

A common method of developing a differential for outside City customers is through the rate of return approach. The rate of return approach recognizes the risk inside City customers (Owners) undertake to service outside City customers (Non-owners). The rate of return method provides a reasonable means of measuring the additional financial risk for serving outside City.

Rate Differential Methodology and Calculation

Raftelis developed a conceptual differential by developing a unit cost for outside city customers using a comparison of the utility basis revenue requirement to the cash basis revenue requirement. The cash basis revenue requirement is currently used for the City's rate setting process and the results presented in this study.

The utility-basis is generally applicable to investor-owned utilities and public systems under the jurisdiction of state utility commissions or other regulatory bodies. It is also an appropriate method for municipal utilities that serve customers outside of their corporate limits. The utility basis revenue requirement includes operating expenses, depreciation and a return on rate base or investment for facilities used to serve outside city customers. The return on rate base is calculated using a utility's weighted average cost of capital multiplied by the utility's rate base or net assets. The quotient of the utility basis unit cost to the cash basis unit cost is the differential.

The primary difference between the cash and utility basis is the concept of ownership and the method of consumer protection. Under the cash-basis, consumer protection is provided by the budgeting oversight of the elected officials. These officials act as a representative of the customers and the utility. These officials are typically elected by the citizens that act as the owners of the utility. Under this approach, ownership and consumer protection are combined into one elected body. Under the utility-basis, consumer protection is often provided by state public utility or service commissions. These regulatory bodies establish financial and rate development rules and regulations and authorize rates of return that provide consumer protection. In addition, consumer protection is often provided by contractual agreements that define the basis of utility rates where municipally-owned utilities provide services to customers located outside their corporate jurisdictions. Outside city customers also do not pay property tax to the City. Although the City does not use property tax to fund enterprise operations, the utilities do receive indirect benefit from general fund resources such as police and fire during times of emergencies.

Based on a rate of return of 4.84%, the ratio of unit costs from the utility basis to the cash basis produces a rate outside City rate differential of 1.15 times inside City rates. Tables in Appendix C detail the rate differential calculations.

Section 6: Meter Installation Fees

The City assesses a water meter fee to new development. The fee is intended to recover the cost the City incurs to purchase and install the meter. Meter related costs include the meter itself, the ert, and antenna. Operator install costs incurred by the City to install the new development’s meter include labor, transportation, and indirect overhead costs. The fee does not recover the cost associate with installing the service line connecting the meter to the new development’s plumbing.

Based on discussion with City staff, installation of new meters sized 2 inches and smaller require on average a two-person operator crew for 2 hours, a total of 4 labor hours. Meter installations over 2 inches require a four-person operator crew for 2 hours, a total of 8 labor hours. Table 16 below compares the existing meter fees to the updated meter fees. Tables in Appendix D detail the operator installation costs.

Table 16: Meter Installation Fee Table

Meter Type and Size	Meter/Ert/ Antenna Cost	Operator Install Cost	Proposed Fee	Current Fee	Change (\$)	Change (%)
1" Water Meter (Displacement)	\$307.57	\$263.12	\$570.69	\$515.20	\$55.49	11%
1 1/2" Water Meter (Displacement)	\$556.23	\$263.12	\$819.35	\$964.01	(\$144.66)	-15%
1 1/2" Water Meter (Turbo)	\$970.07	\$263.12	\$1,233.19	\$1,877.21	(\$644.02)	-34%
2" Water Meter (Displacement)	\$805.95	\$263.12	\$1,069.07	\$1,324.10	(\$255.03)	-19%
2" Compound Meter	\$1,750.00	\$263.12	\$2,013.12	Not Applicable		
2" Turbo Meter	\$894.77	\$263.12	\$1,157.89	\$2,094.46	(\$936.57)	-45%
3" Compound Meter	\$1,907.43	\$526.24	\$2,433.67	\$4,211.55	(\$1,777.89)	-42%
3" Turbo Meter	\$1,317.80	\$526.24	\$1,844.04	\$2,497.61	(\$653.58)	-26%
4" Compound Meter	\$3,666.41	\$526.24	\$4,192.65	\$6,666.93	(\$2,474.29)	-37%
4" Turbo Meter	\$1,667.15	\$526.24	\$2,193.39	\$3,727.11	(\$1,533.73)	-41%
6" Compound Meter	\$5,227.21	\$526.24	\$5,753.45	\$8,725.71	(\$2,972.27)	-34%
6" Turbo Meter/Mag	\$3,735.63	\$526.24	\$4,261.87	\$11,534.73	(\$7,272.87)	-63%
8" Compound Meter	\$7,664.69	\$526.24	\$8,190.93	\$17,035.80	(\$8,844.88)	-52%
8" Turbo Meter/Mag	\$4,011.45	\$526.24	\$4,537.69	\$10,590.92	(\$6,053.24)	-57%

APPENDIX A:
**WATER UTILITY
FINANCIAL PLAN
COST OF SERVICE AND
RATE DESIGN**

Table A-1
City of Buckeye, AZ
Water Utility
Capital Fund Cash Flow Analysis

Line No.	Description	Fiscal Year Ending June 30				
		Budget	Projected			
		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		\$	\$	\$	\$	\$
	Sources of Funds					
1	Transfer From Operating Fund	35,420,104	0	16,666,711	0	15,613,225
2	Impact Fees	0	500,000	500,000	500,000	500,000
3	Revenue Bond Proceeds	0	92,000,000	0	52,000,000	0
4	State and Other Loan Proceeds	0	0	0	0	0
5	Investment Income	40,600	182,500	207,000	83,700	86,400
6	Total Sources	35,460,704	92,682,500	17,373,711	52,583,700	16,199,625
	Uses of Funds					
7	Capital Projects	40,347,100	51,752,920	45,755,000	44,341,949	19,371,771
8	Debt Service Reserve and Issuance Expense	0	7,655,300	0	4,522,300	0
9	Transfer To Operating Fund	0	0	0	0	0
10	Total Uses	40,347,100	59,408,220	45,755,000	48,864,249	19,371,771
11	Annual Surplus (Deficiency)	(4,886,396)	33,274,280	(28,381,289)	3,719,451	(3,172,146)
12	Beginning Balance	6,502,500	1,616,104	34,890,384	6,509,095	10,228,546
13	Ending Balance	1,616,104	34,890,384	6,509,095	10,228,546	7,056,400
14	Target Reserve - 1-year Depreciation Expense	6,470,000	6,470,000	6,470,000	6,470,000	6,470,000
15	Unrestricted	(4,853,896)	28,420,384	39,095	3,758,546	586,400

Table A-2
City of Buckeye, AZ
Water Utility
Water Capital Improvement Plan (Inflated)

Line No.	Title	Fiscal Year Ending June 30					5-Year Total
		Budget	Projected				
		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	
		\$	\$	\$	\$	\$	\$
1	FY 17-18 Total Capital	0	0	0	0	0	0
2	Apache Road Water Campus	37,170,000	35,366,000	20,747,000	1,051,000	0	94,334,000
3	Apache Road Well #1	0	386,000	2,932,000	0	0	3,318,000
4	Apache Road Well #2	0	830,000	2,488,000	0	0	3,318,000
5	CDBG 1st to 4th Street Waterline	174,000	0	0	0	0	174,000
6	Drill Well #13	0	1,188,320	2,970,800	0	0	4,159,120
7	Replace Water Mains in Sun Valley	0	0	0	2,857,143	7,142,857	10,000,000
8	Sweetwater Well #2 (Sun Valley Well #2)	2,330,000	0	0	0	0	2,330,000
9	Water Administration Building	0	0	0	0	0	0
10	Waterline for Commercial Parcels at Airport	500,000	4,600,000	0	0	0	5,100,000
11	WTF #16 Farallon	90,300	1,790,000	15,000,000	22,587,520	0	39,467,820
12	WTF #9	82,800	2,462,200	0	0	0	2,545,000
13	WTP #5	0	0	0	1,200,000	7,210,000	8,410,000
14	WTP #5 Booster Station	0	0	0	13,418,286	5,018,914	18,437,200
15	WTP #5 Storage Reservoir	0	0	1,291,200	3,228,000	0	4,519,200
16	WTP #5 Storage Reservoir Tie in to Main	0	130,400	326,000	0	0	456,400
17	Water Resource Purchase	0	5,000,000	0	0	0	5,000,000
18	CIP Adjustment	0	0	0	0	0	0
19	Total CIP Program	40,347,100	51,752,920	45,755,000	44,341,949	19,371,771	201,568,740

Table A-3
City of Buckeye, AZ
Water Utility
Operating Fund Cash Flow Analysis

Line No.	Description	Fiscal Year Ending June 30				
		Budget	Projected			
		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		\$	\$	\$	\$	\$
	Sources of Funds					
	Service Charge Revenue					
1	Total Revenue from Existing Water Rates	23,648,936	25,325,979	27,188,794	29,261,919	31,573,282
2	Additional Water Sales Revenue from Rate Increases	0	664,807	1,690,293	2,907,015	4,351,484
3	Total Water Rate Revenue	23,648,936	25,990,786	28,879,088	32,168,934	35,924,766
4	Other Miscellaneous Revenue	5,061,900	5,103,694	5,328,994	5,572,136	5,834,089
5	Transfer From Capital Fund	0	0	0	0	0
6	Investment Income	164,200	93,100	96,600	86,800	89,200
7	Total Sources	28,875,036	31,187,580	34,304,682	37,827,870	41,848,054
	Uses of Funds					
8	Total Operations and Maintenance	14,668,600	16,287,700	17,699,600	18,461,800	19,279,500
	Debt Service					
9	Existing	3,948,147	3,940,022	3,940,482	4,769,783	4,768,788
10	Proposed - Revenue Bonds	0	0	6,275,348	6,275,348	10,017,620
11	Proposed - State and Other Loans	0	0	0	0	0
12	Total Debt Service	3,948,147	3,940,022	10,215,830	11,045,131	14,786,408
13	Transfer To Capital Fund	35,420,104	0	16,666,711	0	15,613,225
14	Total Uses	54,036,851	20,227,722	44,582,140	29,506,931	49,679,133
15	Annual Surplus (Deficiency)	(25,161,815)	10,959,859	(10,277,459)	8,320,939	(7,831,078)
16	Beginning Balance	28,996,015	3,834,200	14,794,059	4,516,600	12,837,539
17	Ending Balance	3,834,200	14,794,059	4,516,600	12,837,539	5,006,461
18	Target Operating Reserves	3,670,000	4,070,000	4,420,000	4,620,000	4,820,000
19	Unrestricted Funds	164,200	10,724,059	96,600	8,217,539	186,461
20	Months in Effect	9	9	9	9	9
21	Annual Wastewater Service Revenue Increase	0.0%	3.5%	3.5%	3.5%	3.5%
22	Cumulative Revenue Increase	0.0%	3.5%	7.1%	10.9%	14.8%
23	Cash Reserve Ratio	26.1%	90.8%	25.5%	69.5%	26.0%
24	Debt Service Coverage	3.61	3.95	1.69	1.81	1.57

Table A-4
City of Buckeye, AZ
Water Utility
Water Miscellaneous Revenue Forecast

Line No.	Description	Budget		Projected		
		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		\$	\$	\$	\$	\$
	Other Miscellaneous Revenue					
1	Global Water Sales	0	0	0	0	0
2	Other Fees	875,000	901,300	928,300	956,100	984,800
3	Irrigation Fees	0	0	0	0	0
4	Wet Water Production	0	0	0	0	0
5	Global Hook-Up Fee	700,000	721,000	742,600	764,900	787,800
6	Global Line Extension	0	0	0	0	0
7	Service Fee	1,275,000	1,313,300	1,352,700	1,393,300	1,435,100
8	Cash over(under)	0	0	0	0	0
9	Sale of Asset	0	0	0	0	0
10	Bad Debt Recovery	0	0	0	0	0
11	Salaries/Benefits Reimbursement	0	0	0	0	0
12	Miscellaneous	12,000	12,400	12,800	13,200	13,600
13	Grants	0	0	0	0	0
14	Hydrant	609,900	628,200	647,000	666,400	686,400
15	Subtotal Other Miscellaneous Revenue	3,471,900	3,576,200	3,683,400	3,793,900	3,907,700
16	Env Fee & ADWR					
17	Env Fee & ADWR	1,590,000	1,527,494	1,645,594	1,778,236	1,926,389
20	Subtotal Env Fee & ADWR	1,590,000	1,527,494	1,645,594	1,778,236	1,926,389
21	Total Water Miscellaneous Revenue	5,061,900	5,103,694	5,328,994	5,572,136	5,834,089

Table A-5
City of Buckeye, AZ
Water Utility
Historical & Projected Operation and Maintenance Expense

Line No.	Fund	Dept	Org	Org Description	Obj	Account Description	Fiscal Year Ending June 30				
							Budget	Projected			
							FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
						\$	\$	\$	\$	\$	
1	4000	210	40003210	Water Utility Administration	510001	Salaries and Wages	1,575,100	1,622,400	1,671,100	1,721,200	1,772,800
2	4000	210	40003210	Water Utility Administration	510310	Wages Overtime	14,500	14,900	15,300	15,800	16,300
3	4000	210	40003210	Water Utility Administration	510400	Arizona State Retirement	189,800	195,500	201,400	207,400	213,600
4	4000	210	40003210	Water Utility Administration	510420	FICA	121,600	125,200	129,000	132,900	136,900
5	4000	210	40003210	Water Utility Administration	510425	Workers Comp insurance	34,500	35,500	36,600	37,700	38,800
6	4000	210	40003210	Water Utility Administration	510426	Health Insurance	327,700	337,500	347,600	358,000	368,700
7	4000	210	40003210	Water Utility Administration	520001	Legal Services	100,000	103,000	106,100	109,300	112,600
8	4000	210	40003210	Water Utility Administration	520006	Engineering Services	100,000	103,000	106,100	109,300	112,600
9	4000	210	40003210	Water Utility Administration	520019	Custodial Contract (PW)	15,000	15,500	16,000	16,500	17,000
10	4000	210	40003210	Water Utility Administration	520034	Water Right Lease	60,000	61,800	63,700	65,600	67,600
11	4000	210	40003210	Water Utility Administration	520035	Landscaping	1,000	1,000	1,000	1,000	1,000
12	4000	210	40003210	Water Utility Administration	520036	Permit Fees	46,800	48,200	49,600	51,100	52,600
13	4000	210	40003210	Water Utility Administration	520037	Professional Services General	170,000	175,100	180,400	185,800	191,400
14	4000	210	40003210	Water Utility Administration	520506	Repair and Replace	2,500	2,600	2,700	2,800	2,900
15	4000	210	40003210	Water Utility Administration	520515	Generator R & M	0	0	0	0	0
16	4000	210	40003210	Water Utility Administration	520574	Fire Hydrant Maint/Replacement	0	0	0	0	0
17	4000	210	40003210	Water Utility Administration	520575	Water Meters R & M	0	0	0	0	0
18	4000	210	40003210	Water Utility Administration	520576	Water System R & M	0	0	0	0	0
19	4000	210	40003210	Water Utility Administration	520577	Reservoir/Booster Maint/Repair	0	0	0	0	0
20	4000	210	40003210	Water Utility Administration	520582	Sampling Stations	1,000	1,000	1,000	1,000	1,000
21	4000	210	40003210	Water Utility Administration	520585	Treatment Plant O&M	0	0	0	0	0
22	4000	210	40003210	Water Utility Administration	520586	Irrigation Systems Parts/Mater	0	0	0	0	0
23	4000	210	40003210	Water Utility Administration	521501	Office Supply/Equipment	7,000	7,200	7,400	7,600	7,800
24	4000	210	40003210	Water Utility Administration	521502	Program Supplies/Equipment	7,000	7,200	7,400	7,600	7,800
25	4000	210	40003210	Water Utility Administration	521505	Equipment Rental	0	0	0	0	0
26	4000	210	40003210	Water Utility Administration	521508	Automotive Expenses	42,000	43,300	44,600	45,900	47,300
27	4000	210	40003210	Water Utility Administration	521510	Postage and Freight	10,000	10,300	10,600	10,900	11,200
28	4000	210	40003210	Water Utility Administration	521520	Small Tools<\$5	0	0	0	0	0
29	4000	210	40003210	Water Utility Administration	521521	IT Equipment <\$5000	25,000	25,800	26,600	27,400	28,200
30	4000	210	40003210	Water Utility Administration	521540	Chemicals	0	0	0	0	0
31	4000	210	40003210	Water Utility Administration	521922	Uniforms	23,000	23,700	24,400	25,100	25,900
32	4000	210	40003210	Water Utility Administration	522310	Laboratory Fees	0	0	0	0	0
33	4000	210	40003210	Water Utility Administration	522507	Vehicle Fuel	50,000	51,500	53,000	54,600	56,200
34	4000	210	40003210	Water Utility Administration	523015	Miscellaneous	0	0	0	0	0
35	4000	210	40003210	Water Utility Administration	523025	Public Relation	10,000	10,300	10,600	10,900	11,200
36	4000	210	40003210	Water Utility Administration	523027	Recruitment	0	0	0	0	0
37	4000	210	40003210	Water Utility Administration	523030	Bank Charges	12,000	12,400	12,800	13,200	13,600
38	4000	210	40003210	Water Utility Administration	523035	Water Conservation	11,000	11,300	11,600	11,900	12,300
39	4000	210	40003210	Water Utility Administration	523053	Indirect Cost Allocation	640,500	659,700	679,500	699,900	720,900
40	4000	210	40003210	Water Utility Administration	523054	Insurance and Bonds	10,000	10,300	10,600	10,900	11,200

Table A-5
City of Buckeye, AZ
Water Utility
Historical & Projected Operation and Maintenance Expense

Line No.	Fund	Dept	Org	Org Description	Obj	Account Description	Fiscal Year Ending June 30				
							Budget	Projected			
							FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
						\$	\$	\$	\$	\$	
41	4000	210	40003210	Water Utility Administration	523055	Legal Printing and Advertising	0	0	0	0	0
42	4000	210	40003210	Water Utility Administration	523060	Global Growth Premium	1,617,000	1,843,400	2,101,500	2,395,700	2,731,100
43	4000	210	40003210	Water Utility Administration	523999	Bad Debt Expense	25,000	25,800	26,600	27,400	28,200
44	4000	210	40003210	Water Utility Administration	526010	Electric - Utility	60,500	62,300	64,200	66,100	68,100
45	4000	210	40003210	Water Utility Administration	526015	Natural Gas - Utility	0	0	0	0	0
46	4000	210	40003210	Water Utility Administration	526018	Water/Wastewater - Utility	40,000	41,200	42,400	43,700	45,000
47	4000	210	40003210	Water Utility Administration	526024	Purchased Water (Goodyear)	75,000	77,300	79,600	82,000	84,500
48	4000	210	40003210	Water Utility Administration	526025	Telephone	21,200	21,800	22,500	23,200	23,900
49	4000	210	40003210	Water Utility Administration	526110	Conference and Seminars	21,000	21,600	22,200	22,900	23,600
50	4000	210	40003210	Water Utility Administration	526115	Travel and Meals	8,100	8,300	8,500	8,800	9,100
51	4000	210	40003210	Water Utility Administration	526120	Dues and Subscription	8,500	8,800	9,100	9,400	9,700
52	4000	211	40003211	Irrigation	510001	Salaries and Wages	122,200	125,900	129,700	133,600	137,600
53	4000	211	40003211	Irrigation	510310	Wages Overtime	11,500	11,800	12,200	12,600	13,000
54	4000	211	40003211	Irrigation	510400	Arizona State Retirement	14,600	15,000	15,500	16,000	16,500
55	4000	211	40003211	Irrigation	510420	FICA	9,300	9,600	9,900	10,200	10,500
56	4000	211	40003211	Irrigation	510425	Workers Comp insurance	5,000	5,200	5,400	5,600	5,800
57	4000	211	40003211	Irrigation	510426	Health Insurance	49,100	50,600	52,100	53,700	55,300
58	4000	211	40003211	Irrigation	520586	Irrigation Systems Parts/Mater	200,000	206,000	62,200	64,100	66,000
59	4000	211	40003211	Irrigation	521508	Automotive Expenses	600	600	600	600	600
60	4000	211	40003211	Irrigation	526023	RID Water Purchased	40,000	41,200	42,400	43,700	45,000
61	4000	211	40003211	Irrigation	526026	BID Water Purchased	60,000	61,800	63,700	65,600	67,600
62	4000	212	40003212	Central Buckeye	510001	Salaries and Wages	127,300	131,100	135,000	139,100	143,300
63	4000	212	40003212	Central Buckeye	510310	Wages Overtime	10,100	10,400	10,700	11,000	11,300
64	4000	212	40003212	Central Buckeye	510400	Arizona State Retirement	15,600	16,100	16,600	17,100	17,600
65	4000	212	40003212	Central Buckeye	510420	FICA	10,000	10,300	10,600	10,900	11,200
66	4000	212	40003212	Central Buckeye	510425	Workers Comp insurance	4,400	4,500	4,600	4,700	4,800
67	4000	212	40003212	Central Buckeye	510426	Health Insurance	16,500	17,000	17,500	18,000	18,500
68	4000	212	40003212	Central Buckeye	520035	Landscaping	8,800	9,100	9,400	9,700	10,000
69	4000	212	40003212	Central Buckeye	520049	Laboratory Fees	14,000	14,400	14,800	15,200	15,700
70	4000	212	40003212	Central Buckeye	520506	Repair and Replace	5,000	5,200	5,400	5,600	5,800
71	4000	212	40003212	Central Buckeye	520515	Generator R & M	12,000	12,400	12,800	13,200	13,600
72	4000	212	40003212	Central Buckeye	520577	Reservoir/Booster Maint/Repair	60,000	61,800	63,700	65,600	67,600
73	4000	212	40003212	Central Buckeye	520581	Well Maintenance Repair	90,000	92,700	95,500	98,400	101,400
74	4000	212	40003212	Central Buckeye	520585	Treatment Plant O&M	2,500	2,600	2,700	2,800	2,900
75	4000	212	40003212	Central Buckeye	521508	Automotive Expenses	0	0	0	0	0
76	4000	212	40003212	Central Buckeye	521526	SCADA	10,000	10,300	10,600	10,900	11,200
77	4000	212	40003212	Central Buckeye	521540	Chemicals	5,000	5,200	5,400	5,600	5,800
78	4000	212	40003212	Central Buckeye	522152	Safety Equipment	7,500	7,700	7,900	8,100	8,300
79	4000	212	40003212	Central Buckeye	526010	Electric - Utility	40,000	41,200	42,400	43,700	45,000
80	4000	213	40003213	Sundance Buckeye	510001	Salaries and Wages	195,300	201,200	207,200	213,400	219,800

Table A-5
City of Buckeye, AZ
Water Utility
Historical & Projected Operation and Maintenance Expense

Line No.	Fund	Dept	Org	Org Description	Obj	Account Description	Fiscal Year Ending June 30				
							Budget	Projected			
							FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
							\$	\$	\$	\$	\$
81	4000	213	40003213	Sundance Buckeye	510310	Wages Overtime	10,400	10,700	11,000	11,300	11,600
82	4000	213	40003213	Sundance Buckeye	510400	Arizona State Retirement	23,800	24,500	25,200	26,000	26,800
83	4000	213	40003213	Sundance Buckeye	510420	FICA	15,300	15,800	16,300	16,800	17,300
84	4000	213	40003213	Sundance Buckeye	510425	Workers Comp insurance	6,700	6,900	7,100	7,300	7,500
85	4000	213	40003213	Sundance Buckeye	510426	Health Insurance	44,000	45,300	46,700	48,100	49,500
86	4000	213	40003213	Sundance Buckeye	520035	Landscaping	19,300	19,900	20,500	21,100	21,700
87	4000	213	40003213	Sundance Buckeye	520049	Laboratory Fees	24,000	24,700	25,400	26,200	27,000
88	4000	213	40003213	Sundance Buckeye	520506	Repair and Replace	25,000	25,800	26,600	27,400	28,200
89	4000	213	40003213	Sundance Buckeye	520515	Generator R & M	28,000	28,800	29,700	30,600	31,500
90	4000	213	40003213	Sundance Buckeye	520577	Reservoir/Booster Maint/Repair	230,000	236,900	244,000	251,300	258,800
91	4000	213	40003213	Sundance Buckeye	520581	Well Maintenance Repair	130,000	133,900	137,900	142,000	146,300
92	4000	213	40003213	Sundance Buckeye	520585	Treatment Plant O&M	460,000	473,800	488,000	502,600	517,700
93	4000	213	40003213	Sundance Buckeye	521501	Office Supply/Equipment	0	0	0	0	0
94	4000	213	40003213	Sundance Buckeye	521508	Automotive Expenses	0	0	0	0	0
95	4000	213	40003213	Sundance Buckeye	521520	Small Tools-<\$5	2,500	2,600	2,700	2,800	2,900
96	4000	213	40003213	Sundance Buckeye	521521	IT Equipment <\$5000	0	0	0	0	0
97	4000	213	40003213	Sundance Buckeye	521526	SCADA	14,000	14,400	14,800	15,200	15,700
98	4000	213	40003213	Sundance Buckeye	521540	Chemicals	40,000	41,200	42,400	43,700	45,000
99	4000	213	40003213	Sundance Buckeye	522152	Safety Equipment	2,000	2,100	2,200	2,300	2,400
100	4000	213	40003213	Sundance Buckeye	526010	Electric - Utility	600,000	618,000	636,500	655,600	675,300
101	4000	213	40003213	Sundance Buckeye	526025	Telephone	14,000	14,400	14,800	15,200	15,700
102	4000	214	40003214	Tartesso Buckeye	510001	Salaries and Wages	98,900	101,900	105,000	108,200	111,400
103	4000	214	40003214	Tartesso Buckeye	510310	Wages Overtime	5,700	5,900	6,100	6,300	6,500
104	4000	214	40003214	Tartesso Buckeye	510400	Arizona State Retirement	12,500	12,900	13,300	13,700	14,100
105	4000	214	40003214	Tartesso Buckeye	510420	FICA	8,000	8,200	8,400	8,700	9,000
106	4000	214	40003214	Tartesso Buckeye	510425	Workers Comp insurance	3,500	3,600	3,700	3,800	3,900
107	4000	214	40003214	Tartesso Buckeye	510426	Health Insurance	21,600	22,200	22,900	23,600	24,300
108	4000	214	40003214	Tartesso Buckeye	520035	Landscaping	7,000	7,200	7,400	7,600	7,800
109	4000	214	40003214	Tartesso Buckeye	520036	Permit Fees	0	0	0	0	0
110	4000	214	40003214	Tartesso Buckeye	520049	Laboratory Fees	20,000	20,600	21,200	21,800	22,500
111	4000	214	40003214	Tartesso Buckeye	520515	Generator R & M	11,000	11,300	11,600	11,900	12,300
112	4000	214	40003214	Tartesso Buckeye	520577	Reservoir/Booster Maint/Repair	75,000	77,300	79,600	82,000	84,500
113	4000	214	40003214	Tartesso Buckeye	520581	Well Maintenance Repair	70,000	72,100	74,300	76,500	78,800
114	4000	214	40003214	Tartesso Buckeye	520585	Treatment Plant O&M	6,000	6,200	6,400	6,600	6,800
115	4000	214	40003214	Tartesso Buckeye	521508	Automotive Expenses	0	0	0	0	0
116	4000	214	40003214	Tartesso Buckeye	521526	SCADA	5,000	5,200	5,400	5,600	5,800
117	4000	214	40003214	Tartesso Buckeye	521540	Chemicals	5,000	5,200	5,400	5,600	5,800
118	4000	214	40003214	Tartesso Buckeye	522152	Safety Equipment	0	0	0	0	0
119	4000	214	40003214	Tartesso Buckeye	526010	Electric - Utility	145,000	149,400	153,900	158,500	163,300
120	4000	214	40003214	Tartesso Buckeye	526025	Telephone	51,000	52,500	54,100	55,700	57,400

Table A-5
City of Buckeye, AZ
Water Utility
Historical & Projected Operation and Maintenance Expense

Line No.	Fund	Dept	Org	Org Description	Obj	Account Description	Fiscal Year Ending June 30				
							Budget	Projected			
							FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
							\$	\$	\$	\$	\$
121	4000	215	40003215	Festival Buckeye	510001	Salaries and Wages	93,900	96,700	99,600	102,600	105,700
122	4000	215	40003215	Festival Buckeye	510310	Wages Overtime	8,600	8,900	9,200	9,500	9,800
123	4000	215	40003215	Festival Buckeye	510400	Arizona State Retirement	12,000	12,400	12,800	13,200	13,600
124	4000	215	40003215	Festival Buckeye	510420	FICA	7,700	7,900	8,100	8,300	8,500
125	4000	215	40003215	Festival Buckeye	510425	Workers Comp insurance	3,400	3,500	3,600	3,700	3,800
126	4000	215	40003215	Festival Buckeye	510426	Health Insurance	21,600	22,200	22,900	23,600	24,300
127	4000	215	40003215	Festival Buckeye	520035	Landscaping	7,000	7,200	7,400	7,600	7,800
128	4000	215	40003215	Festival Buckeye	520036	Permit Fees	0	0	0	0	0
129	4000	215	40003215	Festival Buckeye	520049	Laboratory Fees	16,500	17,000	17,500	18,000	18,500
130	4000	215	40003215	Festival Buckeye	520515	Generator R & M	16,000	16,500	17,000	17,500	18,000
131	4000	215	40003215	Festival Buckeye	520577	Reservoir/Booster Maint/Repair	12,000	12,400	12,800	13,200	13,600
132	4000	215	40003215	Festival Buckeye	520581	Well Maintenance Repair	98,000	100,900	103,900	107,000	110,200
133	4000	215	40003215	Festival Buckeye	520585	Treatment Plant O&M	7,000	7,200	7,400	7,600	7,800
134	4000	215	40003215	Festival Buckeye	521508	Automotive Expenses	0	0	0	0	0
135	4000	215	40003215	Festival Buckeye	521526	SCADA	15,000	15,500	16,000	16,500	17,000
136	4000	215	40003215	Festival Buckeye	521540	Chemicals	4,500	4,600	4,700	4,800	4,900
137	4000	215	40003215	Festival Buckeye	522152	Safety Equipment	200	200	200	200	200
138	4000	215	40003215	Festival Buckeye	526010	Electric - Utility	200,000	206,000	212,200	218,600	225,200
139	4000	215	40003215	Festival Buckeye	526025	Telephone	3,300	3,400	3,500	3,600	3,700
140	4000	216	40003216	North Airport Road	510001	Salaries and Wages	90,200	92,900	95,700	98,600	101,600
141	4000	216	40003216	North Airport Road	510310	Wages Overtime	7,900	8,100	8,300	8,500	8,800
142	4000	216	40003216	North Airport Road	510400	Arizona State Retirement	11,500	11,800	12,200	12,600	13,000
143	4000	216	40003216	North Airport Road	510420	FICA	7,400	7,600	7,800	8,000	8,200
144	4000	216	40003216	North Airport Road	510425	Workers Comp insurance	3,300	3,400	3,500	3,600	3,700
145	4000	216	40003216	North Airport Road	510426	Health Insurance	14,200	14,600	15,000	15,500	16,000
146	4000	216	40003216	North Airport Road	520035	Landscaping	9,500	9,800	10,100	10,400	10,700
147	4000	216	40003216	North Airport Road	520049	Laboratory Fees	6,000	6,200	6,400	6,600	6,800
148	4000	216	40003216	North Airport Road	520515	Generator R & M	15,000	15,500	16,000	16,500	17,000
149	4000	216	40003216	North Airport Road	520577	Reservoir/Booster Maint/Repair	95,000	97,900	100,800	103,800	106,900
150	4000	216	40003216	North Airport Road	520581	Well Maintenance Repair	135,000	139,100	143,300	147,600	152,000
151	4000	216	40003216	North Airport Road	520585	Treatment Plant O&M	80,000	82,400	84,900	87,400	90,000
152	4000	216	40003216	North Airport Road	521508	Automotive Expenses	0	0	0	0	0
153	4000	216	40003216	North Airport Road	521526	SCADA	12,000	12,400	12,800	13,200	13,600
154	4000	216	40003216	North Airport Road	521540	Chemicals	40,000	41,200	42,400	43,700	45,000
155	4000	216	40003216	North Airport Road	522152	Safety Equipment	100	100	100	100	100
156	4000	216	40003216	North Airport Road	526010	Electric - Utility	10,000	10,300	10,600	10,900	11,200
157	4000	216	40003216	North Airport Road	526025	Telephone	0	0	0	0	0
158	4000	217	40003217	Hopeville	520035	Landscaping	4,000	4,100	4,200	4,300	4,400
159	4000	217	40003217	Hopeville	520049	Laboratory Fees	5,000	5,200	5,400	5,600	5,800
160	4000	217	40003217	Hopeville	520515	Generator R & M	5,000	5,200	5,400	5,600	5,800

Table A-5
City of Buckeye, AZ
Water Utility
Historical & Projected Operation and Maintenance Expense

Line No.	Fund	Dept	Org	Org Description	Obj	Account Description	Fiscal Year Ending June 30				
							Budget	Projected			
							FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
							\$	\$	\$	\$	\$
161	4000	217	40003217	Hopeville	520577	Reservoir/Booster Maint/Repair	51,000	52,500	54,100	55,700	57,400
162	4000	217	40003217	Hopeville	520581	Well Maintenance Repair	15,000	15,500	16,000	16,500	17,000
163	4000	217	40003217	Hopeville	520585	Treatment Plant O&M	64,000	65,900	67,900	69,900	72,000
164	4000	217	40003217	Hopeville	521526	SCADA	5,000	5,200	5,400	5,600	5,800
165	4000	217	40003217	Hopeville	521540	Chemicals	7,100	7,300	7,500	7,700	7,900
166	4000	217	40003217	Hopeville	522152	Safety Equipment	0	0	0	0	0
167	4000	217	40003217	Hopeville	526010	Electric - Utility	28,500	29,400	30,300	31,200	32,100
168	4000	218	40003218	Global	510001	Salaries and Wages	154,200	158,800	163,600	168,500	173,600
169	4000	218	40003218	Global	510310	Wages Overtime	18,500	19,100	19,700	20,300	20,900
170	4000	218	40003218	Global	510400	Arizona State Retirement	19,600	20,200	20,800	21,400	22,000
171	4000	218	40003218	Global	510420	FICA	12,500	12,900	13,300	13,700	14,100
172	4000	218	40003218	Global	510425	Workers Comp insurance	5,600	5,800	6,000	6,200	6,400
173	4000	218	40003218	Global	510426	Health Insurance	35,000	36,100	37,200	38,300	39,400
174	4000	218	40003218	Global	520035	Landscaping	18,700	19,300	19,900	20,500	21,100
175	4000	218	40003218	Global	520036	Permit Fees	0	0	0	0	0
176	4000	218	40003218	Global	520049	Laboratory Fees	16,000	16,500	17,000	17,500	18,000
177	4000	218	40003218	Global	520506	Repair and Replace	20,000	20,600	21,200	21,800	22,500
178	4000	218	40003218	Global	520515	Generator R & M	50,000	51,500	53,000	54,600	56,200
179	4000	218	40003218	Global	520577	Reservoir/Booster Maint/Repair	100,000	103,000	106,100	109,300	112,600
180	4000	218	40003218	Global	520581	Well Maintenance Repair	120,000	123,600	127,300	131,100	135,000
181	4000	218	40003218	Global	520585	Treatment Plant O&M	100,000	103,000	106,100	109,300	112,600
182	4000	218	40003218	Global	521508	Automotive Expenses	0	0	0	0	0
183	4000	218	40003218	Global	521520	Small Tools-<\$5	1,500	1,500	1,500	1,500	1,500
184	4000	218	40003218	Global	521521	IT Equipment <\$5000	0	0	0	0	0
185	4000	218	40003218	Global	521526	SCADA	18,000	18,500	19,100	19,700	20,300
186	4000	218	40003218	Global	521540	Chemicals	40,000	41,200	42,400	43,700	45,000
187	4000	218	40003218	Global	522152	Safety Equipment	0	0	0	0	0
188	4000	218	40003218	Global	526010	Electric - Utility	370,000	381,100	392,500	404,300	416,400
189	4000	218	40003218	Global	526025	Telephone	11,000	11,300	11,600	11,900	12,300
190	4000	219	40003219	Sun Valley	520049	Laboratory Fees	4,500	4,600	4,700	4,800	4,900
191	4000	219	40003219	Sun Valley	520506	Repair and Replace	1,000	1,000	1,000	1,000	1,000
192	4000	219	40003219	Sun Valley	520515	Generator R & M	2,500	2,600	2,700	2,800	2,900
193	4000	219	40003219	Sun Valley	520577	Reservoir/Booster Maint/Repair	30,000	30,900	31,800	32,800	33,800
194	4000	219	40003219	Sun Valley	520581	Well Maintenance Repair	19,000	19,600	20,200	20,800	21,400
195	4000	219	40003219	Sun Valley	521526	SCADA	0	0	0	0	0
196	4000	219	40003219	Sun Valley	521540	Chemicals	2,100	2,200	2,300	2,400	2,500
197	4000	219	40003219	Sun Valley	526010	Electric - Utility	20,000	20,600	21,200	21,800	22,500
198	4000	350	40003350	Water Distribution	510001	Salaries and Wages	533,500	549,500	566,000	583,000	600,500
199	4000	350	40003350	Water Distribution	510310	Wages Overtime	100,000	103,000	106,100	109,300	112,600
200	4000	350	40003350	Water Distribution	510400	Arizona State Retirement	72,700	74,900	77,100	79,400	81,800

Table A-5
City of Buckeye, AZ
Water Utility
Historical & Projected Operation and Maintenance Expense

Line No.	Fund	Dept	Org	Org Description	Obj	Account Description	Fiscal Year Ending June 30				
							Budget	Projected			
							FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
							\$	\$	\$	\$	\$
201	4000	350	40003350	Water Distribution	510420	FICA	46,600	48,000	49,400	50,900	52,400
202	4000	350	40003350	Water Distribution	510425	Workers Comp Insurance	19,900	20,500	21,100	21,700	22,400
203	4000	350	40003350	Water Distribution	510426	Health Insurance	155,100	159,800	164,600	169,500	174,600
204	4000	350	40003350	Water Distribution	520036	Permit Fees	0	0	0	0	0
205	4000	350	40003350	Water Distribution	520506	Repair and Replace	2,500	2,600	2,700	2,800	2,900
206	4000	350	40003350	Water Distribution	520574	Fire Hydrant Maint/Replacement	150,000	154,500	159,100	163,900	168,800
207	4000	350	40003350	Water Distribution	521501	Office Supply/Equipment	2,000	2,100	2,200	2,300	2,400
208	4000	350	40003350	Water Distribution	521505	Equipment Rental	20,000	20,600	21,200	21,800	22,500
209	4000	350	40003350	Water Distribution	521508	Automotive Expenses	0	0	0	0	0
210	4000	350	40003350	Water Distribution	521514	Water Distrib System R&M	250,000	257,500	265,200	273,200	281,400
211	4000	350	40003350	Water Distribution	521520	Small Tools<\$5	20,000	20,600	21,200	21,800	22,500
212	4000	350	40003350	Water Distribution	521521	IT Equipment <\$5000	10,000	10,300	10,600	10,900	11,200
213	4000	350	40003350	Water Distribution	522152	Safety Equipment	13,000	13,400	13,800	14,200	14,600
214	4000	350	40003350	Water Distribution	526025	Telephone	7,500	7,700	7,900	8,100	8,300
215	4000	351	40003351	Customer Svc Meters	510001	Salaries and Wages	342,200	352,500	363,100	374,000	385,200
216	4000	351	40003351	Customer Svc Meters	510310	Wages Overtime	25,000	25,800	26,600	27,400	28,200
217	4000	351	40003351	Customer Svc Meters	510400	Arizona State Retirement	41,400	42,600	43,900	45,200	46,600
218	4000	351	40003351	Customer Svc Meters	510420	FICA	26,500	27,300	28,100	28,900	29,800
219	4000	351	40003351	Customer Svc Meters	510425	Workers Comp Insurance	11,700	12,100	12,500	12,900	13,300
220	4000	351	40003351	Customer Svc Meters	510426	Health Insurance	116,200	119,700	123,300	127,000	130,800
221	4000	351	40003351	Customer Svc Meters	520575	Water Meters R & M	1,000,000	2,030,000	2,090,900	2,153,600	2,218,200
222	4000	351	40003351	Customer Svc Meters	521508	Automotive Expenses	0	0	0	0	0
223	4000	351	40003351	Customer Svc Meters	521515	Water Meter Telemetry	75,000	77,300	79,600	82,000	84,500
224	4000	351	40003351	Customer Svc Meters	521520	Small Tools<\$5	9,500	9,800	10,100	10,400	10,700
225	4000	351	40003351	Customer Svc Meters	521521	IT Equipment <\$5000	7,500	7,700	7,900	8,100	8,300
226	4000	351	40003351	Customer Svc Meters	522152	Safety Equipment	5,000	5,200	5,400	5,600	5,800
227	4000	300	40003300	Christmas Well	520515	Generator R & M	300	300	300	300	300
228	4000	301	40003301	Tract A Well	520035	Landscaping	1,900	2,000	2,100	2,200	2,300
229	4000	301	40003301	Tract A Well	526010	Electric - Utility	12,000	12,400	12,800	13,200	13,600
230	4000	302	40003302	Drainage Wells	520581	Well Maintenance Repair	90,000	92,700	95,500	98,400	101,400
231	4000	302	40003302	Drainage Wells	526010	Electric - Utility	100,000	103,000	106,100	109,300	112,600
232	4000	199	40009199	Budgeted Uses of Funds	570020	Contingencies	99,700	102,700	105,800	109,000	112,300
233	0	0	0	0	0	Non-Indian Ag Water Purchase	0	0	870,000	896,100	923,000
234	Total						14,668,600	16,287,700	17,699,600	18,461,800	19,279,500

Table A- 6
City of Buckeye, AZ
Water Utility
Total Cost of Service

Line No.	Description	Operating Expense	Capital Costs	Total
	Revenue Requirements			
1	Operating & Maintenance Expense	16,287,700		16,287,700
2	Debt Service		3,940,022	3,940,022
3	Transfer To Capital Improvement Fund		0	0
4	Total Revenue Requirements	16,287,700	3,940,022	20,227,722
	Revenue Requirement Adjustments			
5	Miscellaneous Revenue	(5,103,694)		(5,103,694)
6	Transfer From Capital Fund		0	0
7	Interest Income	(93,100)		(93,100)
8	Operating Reserve Increase (Decrease)		11,181,461	11,181,461
9	Total Adjustments	(5,196,794)	11,181,461	5,984,667
10	Subtotal	11,090,906	15,121,483	26,212,388
11	Net Revenue Requirement			26,212,388

Table A- 7
City of Buckeye, AZ
Water Utility
Allocation of Water System Assets
And Annual Capital Costs

Line No.	Description	Original Cost	Volume			Customer Related			Total
			Base	Maximum Day Demand	Maximum Hour Demand	Meters & Services	Billing	Irrigation	
Water System Assets									
1	Land	2,172,114	100.0%						100.0%
2	Source of Supply	0	100.0%						100.0%
3	Wells / Treatment	47,028,666	55.6%	44.4%					100.0%
4	Pump Station	13,186,398	55.6%	44.4%					100.0%
5	Treated Storage	2,053,660	33.3%	26.7%	40.0%				100.0%
6	Transmission Mains	44,046,553	55.6%	44.4%					100.0%
7	Distribution Mains	44,660,904	33.3%	26.7%	40.0%				100.0%
8	Customer Billing	0					100.0%		100.0%
9	Meters & Services	1,800,152				100.0%			100.0%
10	Public Fire	0							100.0%
11	Common to Irrigation	1,101,720						100.0%	100.0%
12	All Other Infrastructure	0	48.8%	37.9%	12.1%	1.2%	0.0%	0.0%	100.0%
13	All Other General	1,768,245	48.8%	37.9%	12.1%	1.2%	0.0%	0.0%	100.0%
14	Total	157,818,410							

Table A- 8
City of Buckeye, AZ
Water Utility
Allocation of Water System Assets
And Annual Capital Costs

Line No.	Description	Net Book Value	Volume		Customer Related			Irrigation	Total
			Base	Maximum Day Demand	Maximum Hour Demand	Meters & Services	Billing		
Water System Assets									
1	Land	2,172,114	2,172,114	0	0	0	0	0	2,172,114
2	Source of Supply	0	0	0	0	0	0	0	0
3	Wells / Treatment	47,028,666	26,127,036	20,901,629	0	0	0	0	47,028,666
4	Pump Station	13,186,398	7,325,777	5,860,621	0	0	0	0	13,186,398
5	Treated Storage	2,053,660	684,553	547,643	821,464	0	0	0	2,053,660
6	Transmission Mains	44,046,553	24,470,307	19,576,246	0	0	0	0	44,046,553
7	Distribution Mains	44,660,904	14,886,968	11,909,574	17,864,361	0	0	0	44,660,904
8	Customer Billing	0	0	0	0	0	0	0	0
9	Meters & Services	1,800,152	0	0	0	1,800,152	0	0	1,800,152
10	Public Fire	0	0	0	0	0	0	0	0
11	Common to Irrigation	1,101,720	0	0	0	0	0	1,101,720	1,101,720
12	All Other Infrastructure	0	0	0	0	0	0	0	0
13	All Other General	1,768,245	863,496	670,966	213,239	20,543	0	0	1,768,245
14	Total Water System Assets	157,818,410	76,530,251	59,466,680	18,899,065	1,820,695	0	1,101,720	157,818,410
15	Percent of Total		48.5%	37.7%	12.0%	1.2%	0.0%	0.7%	
16	Annual Capital Costs	15,121,483	7,332,800	5,697,842	1,810,827	174,451	0	105,562	

Table A- 9
City of Buckeye, AZ
Water Utility
Allocation of O&M Expenses

Line No.	Description	Total	Volume			Customer Related			Total
			Base	Maximum Day Demand	Maximum Hour Demand	Meters & Services	Billing	Irrigation	
	Water System Assets								
1	Source of Supply	253,460	100.0%					100.0%	
2	Wells / Treatment	5,923,786	55.6%	44.4%				100.0%	
3	Pump Station	919,317	55.6%	44.4%				100.0%	
4	Treated Storage	306,439	33.3%	26.7%	40.0%			100.0%	
5	Transmission Mains	1,257,821	55.6%	44.4%				100.0%	
6	Distribution Mains	1,240,519	33.3%	26.7%	40.0%			100.0%	
7	Customer Billing	2,788,274					100.0%	100.0%	
8	Meters & Services	3,011,647				100.0%		100.0%	
9	Public Fire	0						100.0%	
10	Common to Irrigation	586,438					100.0%	100.0%	
11	All Other Infrastructure	0	48.8%	37.9%	12.1%	1.2%	0.0%	0.0%	100.0%
12	All Other General	0	48.8%	37.9%	12.1%	1.2%	0.0%	0.0%	100.0%
13	Unused	0						0.0%	
14	Total Water System Assets	<u>16,287,700</u>							

Table A- 10
City of Buckeye, AZ
Water Utility
Allocation of O&M Expenses

Line No.	Description	Total	Volume		Customer Related			Irrigation	Total
			Base	Maximum Day Demand	Maximum Hour Demand	Meters & Services	Billing		
	Water System Assets								
1	Source of Supply	253,460	253,460	0	0	0	0	253,460	
2	Wells / Treatment	5,923,786	3,290,992	2,632,794	0	0	0	5,923,786	
3	Pump Station	919,317	510,731	408,585	0	0	0	919,317	
4	Treated Storage	306,439	102,146	81,717	122,576	0	0	306,439	
5	Transmission Mains	1,257,821	698,790	559,032	0	0	0	1,257,821	
6	Distribution Mains	1,240,519	413,506	330,805	496,207	0	0	1,240,519	
7	Customer Billing	2,788,274	0	0	0	2,788,274	0	2,788,274	
8	Meters & Services	3,011,647	0	0	0	3,011,647	0	3,011,647	
9	Public Fire	0	0	0	0	0	0	0	
10	Common to Irrigation	586,438	0	0	0	0	586,438	586,438	
11	All Other Infrastructure	0	0	0	0	0	0	0	
12	All Other General	0	0	0	0	0	0	0	
13	Unused	0	0	0	0	0	0	0	
14	Total O&M Expense	16,287,700	5,269,626	4,012,933	618,783	3,011,647	2,788,274	586,438	16,287,700
15	Percent of Total		32.4%	24.6%	3.8%	18.5%	17.1%	3.6%	
16	Miscellaneous Revenue	(5,196,794)	(1,255,280)	(955,922)	(147,401)	(2,034,300)	(664,196)	(139,696)	(5,196,794)
16	Net Annual O&M Expenses	11,090,906	4,014,346	3,057,010	471,382	977,347	2,124,078	446,742	11,090,906

Table A- 11
City of Buckeye, AZ
Water Utility
Units of Service

Line No.	Customer Class	Water Use		Maximum Day Demand		Maximum Hour Demand			Bills	Equivalent Meters		
		Annual 1,000 gal	Average Day 1,000 gal	Demand Factor	Total Demand	Extra Demand	Demand Factor	Total Demand		Extra Demand	Capacity	Cost
1	Residential	1,656,079	4,537	216%	9,819	5,281	361%	16,364	11,827	288,559	288,559	288,559
2	Commercial/Multifamily	232,027	636	203%	1,291	655	338%	2,152	1,516	5,866	15,706	12,324
3	Landscape	572,092	1,567	361%	5,657	4,089	602%	9,428	7,861	6,127	12,423	10,795
4	Flood Irrigation	0	0	0%	0	0	0%	0	0	4,807	4,807	4,807
5		0	0	0%	0	0	0%	0	0	0	0	0
6	Total	2,460,199	6,740		16,766	10,026		27,944	21,204	305,359	321,495	316,485

Table A- 12
City of Buckeye, AZ
Water Utility
Unit Costs of Service

Line No.	Description	Total	Volume		Customer Related			
			Base	Maximum Day Demand	Maximum Hour Demand	Meters & Services	Billing	Irrigation
Cost of Service								
1	O&M Expense	11,090,906	4,014,346	3,057,010	471,382	977,347	2,124,078	446,742
2	Capital Cost	15,121,483	7,332,800	5,697,842	1,810,827	174,451	0	105,562
3	Irrigation Adjustment	0	0					0
4	Total Cost of Service	26,212,388	11,347,146	8,754,852	2,282,210	1,151,798	2,124,078	552,304
		100%	43%	33%	9%	4%	8%	2%
Units of Service								
	Units		<u>1,000 gal</u>	<u>gpd</u>	<u>gpd</u>	<u>Equivalent Meter Cost [1]</u>	<u># Bills</u>	<u># Bills</u>
5	Total Units of Service		2,460,199	10,026	21,204	311,678	305,359	4,807
6	Unit Costs		\$4.61	\$873.20	\$107.63	\$3.70	\$6.96	\$114.90

Table A- 13
City of Buckeye, AZ
Water Utility
Customer Class Cost of Service

Line No.	Description	Total	Volume		Customer Related			
			Base	Maximum Day Demand	Maximum Hour Demand	Meters & Services	Billing	Irrigation
1	Unit Costs of Service - \$/unit		\$4.61	\$873.20	\$107.63	\$3.70	\$6.96	\$114.90
	Customer Class							
	Residential							
2	Units		1,656,079	5,281	11,827	288,559	288,559	
3	Cost of Service - \$	\$16,596,525	\$7,638,316	\$4,611,660	\$1,272,968	\$1,066,361	\$2,007,219	\$0
	Commercial/Multifamily							
4	Units		232,027	655	1,516	12,324	5,866	
5	Cost of Service - \$	\$1,891,942	\$1,070,177	\$572,243	\$163,173	\$45,543	\$40,806	\$0
	Landscape							
6	Units		572,092	4,089	7,861	10,795	6,127	
7	Cost of Service - \$	\$7,138,182	\$2,638,653	\$3,570,949	\$846,068	\$39,894	\$42,618	\$0
	Flood Irrigation							
8	Units						4,807	4,807
9	Cost of Service - \$	\$585,739					\$33,435	\$552,304
10	Total Cost of Service	\$26,212,388	\$11,347,146	\$8,754,852	\$2,282,210	\$1,151,798	\$2,124,078	\$552,304

Table A- 14
City of Buckeye, AZ
Water Utility
Comparison of Cost of Service With Revenues Under Existing Rates

Line No.	Customer Class	Adjusted Cost of Service	Revenue Under Existing Rates	Indicated Revenue Adjustment
1	Residential	\$16,596,525	\$16,964,894	-2.2%
2	Commercial/Multifamily	\$1,891,942	\$2,883,031	-34.4%
3	Landscape	\$7,138,182	\$5,261,754	35.7%
4	Flood Irrigation	\$585,739	\$216,300	170.8%
5	Total System	\$26,212,388	\$25,325,979	3.5%

Table A- 15
 City of Buckeye, AZ
 Water Utility
 Development of COS Service Charge

Line No.	COS Component	Cost of Service	Units of Service	Units	Unit Cost of Service
1	Meters & Services	\$1,151,798	311,678	Equiv Meter Cost	\$3.70
2	Billing	\$2,124,078	305,359	Bills	\$6.96
3	Total	<u>\$3,275,876</u>			

Table A- 16
City of Buckeye, AZ
Water Utility
Development of COS Service Charge

Line No.	Meter Size	Cost Equivalency	Capacity Equivalency	Monthly Meter Charge	Monthly Billing Charge	Total Monthly Charge	Rounded
1	3/4 inch	1.00	1.00	\$3.70	\$6.96	\$10.65	\$10.66
2	1 inch	1.00	1.00	\$3.70	\$6.96	\$10.65	10.66
3	1.5 inch	1.54	1.25	\$5.69	\$6.96	\$12.64	12.65
4	2 inch	3.02	4.00	\$11.17	\$6.96	\$18.13	18.13
5	3 inch	5.26	8.00	\$19.44	\$6.96	\$26.39	26.40
6	4 inch	7.50	12.50	\$27.70	\$6.96	\$34.66	34.66
7	6 inch	13.86	25.00	\$51.23	\$6.96	\$58.19	58.20
8	8 inch	20.85	40.00	\$77.04	\$6.96	\$84.00	84.00

Table A- 17
City of Buckeye, AZ
Water Utility
Development of COS Volume Charge

Line No.	Customer Class	Uniform Rate Calculation				Tiered Rate Calculation				Use (Kgal)	Uniform Charge Projected Revenue	Tiered Projected Revenue
		Average Day	Peak Day	Peak Hour	Total	Upper Limit of Tier (Kgal)	Tier Differential	% Use in Tier	Tiered Rates			
1	Residential	\$4.61	\$2.78	\$0.77	\$8.17					1,656,079	\$13,522,945	
2	Tier 1					6,000	1.00	69.5%	\$7.07			\$8,137,034
3	Tier 2					10,000	1.25	16.4%	8.83			\$2,400,742
4	Tier 3					15,000	1.56	7.4%	11.04			\$1,356,335
5	Tier 4					30,000	1.95	4.6%	13.80			\$1,049,766
6	Tier 5					Over	2.44	2.1%	17.24			\$592,093
7	Commercial/Multifamily	\$4.61	\$2.47	\$0.70	\$7.78	All	1.00	100.0%	\$7.79	232,027	\$1,805,593	\$1,807,493
8	Landscape	\$4.61	\$6.24	\$1.48	\$12.33					572,092	\$7,055,670	
9	Tier 1					10,000	1.00	6.3%	\$10.39			\$372,769
10	Tier 2					Over	1.20	93.7%	\$12.47			\$6,686,427
											\$22,384,208	\$22,402,658

Table A- 18
City of Buckeye, AZ
Water Utility
Development of Flood Irrigation COS Flat Rate

Line No.	Customer Class	Total COS	Projected Bills	COS Rate
1	Flood Irrigation	\$585,739	4,807 \$	121.86

Table A- 19
City of Buckeye, AZ
Water Utility
Total Revenue Check - COS Rates

Line No.	Customer Class	Total COS	Projected		Difference	
			Base Revenue	Volumetric Revenue		
1	Residential	\$16,596,525	\$3,076,040	\$13,535,969	\$16,612,009	\$15,484
2	Commercial/Multifamily	\$1,891,942	\$86,380	\$1,807,493	\$1,893,872	\$1,930
3	Landscape	\$7,138,182	\$82,548	\$7,059,196	\$7,141,744	\$3,562
4	Flood Irrigation	\$585,739	\$585,739	\$0	\$585,739	\$0
5	Total	\$26,212,388	\$3,830,707	\$22,402,658	\$26,233,365	\$20,977

Table A- 20
City of Buckeye, AZ
Water Utility
Development of Alternative 3 Base Charge Revenue Requirement

Line No.	Description	Amount
1	Cost of Service	\$26,212,388
2	Percent of Costs Recovered in Fixed Charge	36.228%
3	Total Fixed Charges to be Recovered	\$9,496,332
4	Total Meter Cost of Service	\$1,151,798
5	Equivalent Bills (Meter Cost)	311,678
6	\$ Per Equivalent Bill	3.70
	Billing and Admin Costs	
7	Total Billing Cost of Service	\$2,124,078
8	Bills	305,359
9	Unit Cost, \$ per Bill	6.96
10	Other Fixed Costs	\$6,220,455
11	Equivalent Bills (Meter Capacity)	321,495
11	Unit Cost, \$ Equivalent Bill	19.35
12	Total Costs to be Recovered in Fixed Charge	\$9,496,332

Table A- 21
City of Buckeye, AZ
Water Utility
Development of Alternative 3 - Fixed Charge Recovery Base Charge

Line No.	Meter Size	Meter Capacity Ratio	Meter Cost Ratio	Meter Costs	Billing Costs	Capital Costs	Rounded Total	Bills	Residential Charge
1	3/4 inch	1.00	1.00	\$3.70	\$6.96	\$19.35	\$30.00	296,103	\$8,883,091
2	1 inch	1.00	1.00	\$3.70	\$6.96	\$19.35	\$30.00	3,131	\$93,916
3	1.5 inch	1.25	1.54	\$5.69	\$6.96	\$24.19	\$36.85	1,669	\$61,492
4	2 inch	4.00	3.02	\$11.17	\$6.96	\$77.39	\$95.55	4,278	\$408,782
5	3 inch	8.00	5.26	\$19.44	\$6.96	\$154.79	\$181.20	96	\$17,458
6	4 inch	12.50	7.50	\$27.70	\$6.96	\$241.86	\$276.55	14	\$3,827
7	6 inch	25.00	13.86	\$51.23	\$6.96	\$483.71	\$541.95	40	\$21,942
8	8 inch	40.00	20.85	\$77.04	\$6.96	\$773.94	\$857.95	28	\$23,742
9	Total								\$9,514,250
								Over / (Under)	\$17,918

Table A- 22
 City of Buckeye, AZ
 Water Utility

Alternative 3 Fixed Charge Recovery Base Charge Revenue by Class

Line No.	Meter Size	Residential			Commercial/Multifamily (FY19 Fixed Charge)			Landscape (FY19 Fixed Charge)			Flood Irrigation			Total	
		Bill Distribution	Bills	Revenue	Bill Distribution	Bills	Revenue	Bill Distribution	Bills	Revenue	Bill Distribution	Bills	Revenue	Bills	Revenue
1	3/4 inch	100.0%	288,559	\$8,656,773	36.7%	2,155	\$74,026	9.5%	582	\$15,486	100.0%	4,807	\$126,437	296,103	\$8,872,723
2	1 inch	0.0%	0	\$0	12.4%	730	\$78,741	39.2%	2,401	\$200,610	0.0%	0	\$0	3,131	\$279,351
3	1.5 inch	0.0%	0	\$0	9.0%	529	\$57,038	18.6%	1,140	\$95,267	0.0%	0	\$0	1,669	\$152,305
4	2 inch	0.0%	0	\$0	38.8%	2,275	\$654,602	32.7%	2,004	\$446,564	0.0%	0	\$0	4,278	\$1,101,165
5	3 inch	0.0%	0	\$0	1.6%	96	\$27,728	0.0%	0	\$0	0.0%	0	\$0	96	\$27,728
6	4 inch	0.0%	0	\$0	0.2%	14	\$7,467	0.0%	0	\$0	0.0%	0	\$0	14	\$7,467
7	6 inch	0.0%	0	\$0	0.7%	40	\$36,413	0.0%	0	\$0	0.0%	0	\$0	40	\$36,413
8	8 inch	0.0%	0	\$0	0.5%	28	\$49,777	0.0%	0	\$0	0.0%	0	\$0	28	\$49,777
9	Total		288,559	\$8,656,773		5,866	\$985,791		6,127	\$757,927		4,807	\$126,437	305,359	\$10,526,929

Table A- 23
City of Buckeye, AZ
Water Utility
Flood Irrigation Reallocation for Rates - Fixed Charge Recovery Alternative

Line No.	Customer Class	COS	Flood Irrigation Adjustment [1]	Adjustment	Adjusted COS for Rate Design
1	Residential	\$16,596,525	67.3%	\$243,575	\$16,840,100
2	Commercial/Multifamily	\$1,891,942	9.4%	\$34,126	\$1,926,068
3	Landscape	\$7,138,182	23.3%	\$84,143	\$7,222,325
4	Flood Irrigation	\$585,739	-100.0%	(\$361,845)	\$223,895
5	Total	<u>\$26,212,388</u>		<u>\$0</u>	<u>\$26,212,388</u>

Table A- 24
City of Buckeye, AZ
Water Utility
Development of Alternative 3 Volume Charge

Line No.	Customer Class	Uniform Rate Calculation					Tiered Rate Calculation				Use (Kgal)	Uniform Charge Projected Revenue	Tiered Projected Revenue
		Total Adjusted COS	Base Revenue	Difference	Use (Kgal)	Uniform Rate	Upper Limit of Tier (Kgal)	Tier Differential	% Use in Tier	Tiered Rates			
1	Residential	\$16,840,100	\$8,656,773	\$8,183,327	1,656,079	\$4.94					1,656,079	\$8,183,327	
2	Tier 1						6,000	1.00	69.5%	\$4.2800			\$4,925,955
3	Tier 2						10,000	1.25	16.4%	\$5.3400			\$1,451,864
4	Tier 3						15,000	1.56	7.4%	\$6.6800			\$820,681
5	Tier 4						30,000	1.95	4.6%	\$8.3500			\$635,184
6	Tier 5						Over	2.44	2.1%	\$10.4300			\$358,209
7	Commercial/Multifamily	\$1,926,068	\$985,791	Adjusted \$1,874,780	232,027 4.05		All	1.00	100.0%	\$8.08	232,027	\$1,874,780	\$1,874,780
												MF/Comm Fixed Charge	\$985,791
												Adjusted Revenue	\$2,860,571
												Less: COS	\$1,926,068
												Landscape Allocation	(\$934,503)
8	Landscape	\$6,287,822	\$757,927	\$5,529,895	572,092	\$9.67					572,092	\$5,529,895	
9	Tier 1						10,000	1.00	6.3%	\$8.15			\$292,510
10	Tier 2						Over	1.20	93.7%	\$9.78			\$5,244,046
											\$15,588,002	\$15,603,231	

Table A- 25
City of Buckeye, AZ
Water Utility
Flood Irrigation Flat Rate

Line No.	Customer Class	Adjusted COS	Projected Bills	COS Rate
1	Flood Irrigation	\$ 223,895	4,807	\$ 46.58

Table A- 26
City of Buckeye, AZ
Water Utility
Revenue Proof

Line No.	Customer Class	Adjusted COS	Projected Base Revenue	Projected Volume Revenue	Projected Total Revenue	Difference
1	Residential	\$16,840,100	\$8,656,773	\$8,191,894	\$16,848,667	\$8,567
2	Commercial/Multifamily	\$1,926,068	\$985,791	\$1,874,780	\$2,860,571	\$934,503
3	Landscape	\$7,222,325	\$757,927	\$5,536,557	\$6,294,484	(\$927,841)
4	Flood Irrigation	\$223,895	\$223,895	\$0	\$223,895	\$0
5	Total	\$26,212,388	\$10,624,386 41%	\$15,603,231 60%	\$26,227,618 100%	\$15,229

Table A-27
City of Buckeye, AZ
Water Utility
Water Rates - 5-Year COS Transition

Line No.	Description	Current	Proposed			
			FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		\$	\$	\$	\$	\$
<u>Base Charges - Residential, Multifamily/Commercial, Landscape</u>						
<u>Residential</u>						
1	3/4 inch	32.94	30.00	31.10	32.25	33.30
2	1 inch	32.94	30.00	31.10	32.25	33.30
3	1.5 inch	32.94	30.00	31.10	32.25	33.30
<u>Commercial/Multifamily</u>						
4	3/4 inch	34.35	34.35	34.35	34.35	34.35
5	1 inch	107.90	107.90	107.90	107.90	107.90
6	1.5 inch	107.90	107.90	107.90	107.90	107.90
7	2 inch	287.80	287.80	287.80	287.80	287.80
8	3 inch	287.80	287.80	287.80	287.80	287.80
9	4 inch	539.63	539.63	539.63	539.63	539.63
10	6 inch	899.38	899.38	899.38	899.38	899.38
11	8 inch	1,798.75	1,798.75	1,798.75	1,798.75	1,798.75
<u>Landscape</u>						
12	3/4 inch	26.60	26.60	28.70	30.95	33.30
13	1 inch	83.56	83.56	83.56	83.56	83.56
14	1.5 inch	83.56	83.56	83.56	83.56	83.56
15	2 inch	222.87	222.87	222.87	222.87	222.87
16	3 inch	222.87	222.87	222.87	222.87	222.87
17	4 inch	417.89	417.89	417.89	417.89	417.89
18	6 inch	696.48	696.48	696.48	696.48	696.48
19	8 inch	1,392.95	1,392.95	1,392.95	1,392.95	1,392.95

Table A-27
City of Buckeye, AZ
Water Utility
Water Rates - 5-Year COS Transition

Line No.	Description	Current	Proposed			
			FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		\$	\$	\$	\$	\$
<u>Volume Rate (\$ per 1,000 gal)</u>						
	<u>Volume Rate (\$ per 1,000 gal)</u>					
20	0 - 6	3.93	4.28	4.41	4.51	4.63
21	7 - 10	4.91	5.34	5.51	5.63	5.79
22	11 - 15	6.14	6.68	6.88	7.04	7.23
23	16 - 30	7.68	8.35	8.60	8.80	9.04
24	31 and Over	9.59	10.43	10.75	11.00	11.30
<u>Multifamily / Commercial</u>						
25	All Usage	8.08	8.08	8.08	8.08	8.08
<u>Landscape</u>						
26	0 - 10	6.61	8.15	8.69	9.36	10.06
27	11 and Over	7.93	9.78	10.43	11.24	12.08

APPENDIX B:

**WASTEWATER UTILITY
FINANCIAL PLAN**

Table B- 1
City of Buckeye, AZ
Wastewater Utility
Capital Fund Cash Flow Analysis

		For the Fiscal Year Ending June 30				
Line No.	Description	Budget	Projected			
		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		\$	\$	\$	\$	\$
Sources of Funds						
1	Transfer From Operating Fund	2,909,223	3,816,709	4,194,543	3,556,304	4,100
2	Impact Fees	0	200,000	200,000	200,000	200,000
3	Revenue Bond Proceeds	0	3,000,000	0	0	0
4	State and Other Loan Proceeds	0	0	0	0	0
5	Investment Income	41,800	18,100	20,000	45,900	58,000
6	Total Sources	2,951,023	7,034,809	4,414,543	3,802,204	262,100
Uses of Funds						
7	Capital Projects	5,292,710	9,170,000	1,650,000	1,391,400	250,000
8	Debt Service Reserve and Issuance Expense	0	249,600	0	0	0
9	Transfer To Operating Fund	0	0	0	0	0
10	Total Uses	5,292,710	9,419,600	1,650,000	1,391,400	250,000
11	Annual Surplus (Deficiency)	(2,341,687)	(2,384,791)	2,764,543	2,410,804	12,100
12	Beginning Balance	5,347,031	3,005,344	620,553	3,385,096	5,795,900
13	Ending Balance	3,005,344	620,553	3,385,096	5,795,900	5,808,000
14	Target Reserve 1-year Depreciation Expense	5,550,000	5,550,000	5,550,000	5,550,000	5,550,000
15	Unrestricted Funds	(2,544,656)	(4,929,447)	(2,164,904)	245,900	258,000

Table B- 2
City of Buckeye, AZ
Wastewater Utility
Wastewater 10-Yr Capital Improvement Plan (Inflated)

Line No.	Title	Projected					5-Year Total
		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	
		\$	\$	\$	\$	\$	\$
1	Replace Generator at Admin Bldg - Beloat WWTP	0	0	0	0	0	0
2	Roosevelt Sewer Line Replacement	0	0	0	0	0	0
3	Sundance WRF Improvements - UV System Improvements	0	0	0	0	0	0
4	Sundance WRF Improvements - Back up disifection system (Chlorine)	0	0	0	0	0	0
5	Other Capital from Actual Financial Summary	0	0	0	0	0	0
6	Central Plant SCADA Improvements	0	1,000,000	500,000	250,000	250,000	2,000,000
7	Central WRF- Air Leaks	0	0	0	128,000	0	128,000
8	Central WRF- Headworks Lift Station Improvements	0	0	0	239,400	0	239,400
9	Central WRF- Repair Aerator A/Blowers Evaluations	0	0	0	224,000	0	224,000
10	Central WWTP Generator Replacement	0	0	0	0	0	0
11	Festival Ranch Plant SCADA Improvements	0	1,900,000	600,000	0	0	2,500,000
12	Lift Station West of MC 85	2,400,000	0	0	0	0	2,400,000
13	North Miller Road Trunk Sewer Design	499,550	5,170,000	0	0	0	5,669,550
14	Sundance SCADA (WTF Improvements)	1,000,000	500,000	250,000	250,000	0	2,000,000
15	Sundance WRF - Odor Scrubber Upgrades	1,000,000	0	0	0	0	1,000,000
16	Sundance WRF Conversion- DCR (Plant 1 & 2)	234,000	0	0	0	0	234,000
17	Sundance WWTP DCR (Effluent System Modification)	159,160	0	0	0	0	159,160
18	Tartesso Plant SCADA Improvements	0	600,000	300,000	300,000	0	1,200,000
19	Total Capital Improvement Program	5,292,710	9,170,000	1,650,000	1,391,400	250,000	17,754,110

Table B- 3
City of Buckeye, AZ
Wastewater Utility
Operating Fund Cash Flow Analysis

Line No.	Description	For the Fiscal Year Ending June 30				
		Budget	Projected			
		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		\$	\$	\$	\$	\$
	Sources of Funds					
	Service Charge Revenue					
1	Total Revenue from Existing Wastewater Fees	9,858,000	10,565,509	11,350,635	12,224,858	13,200,025
2	Additional Wastewater Fee Revenue from Rate Increases	0	0	0	0	0
3	Total Wastewater Fee Revenue	9,858,000	10,565,509	11,350,635	12,224,858	13,200,025
4	Other Miscellaneous Revenue	325,400	335,200	345,200	355,500	366,200
5	Transfer From Capital Fund	0	0	0	0	0
6	Investment Income	14,200	15,500	15,800	22,900	58,500
7	Total Sources	10,197,600	10,916,209	11,711,635	12,603,258	13,624,725
	Uses of Funds					
8	Total Operations and Maintenance	6,107,300	6,150,900	6,335,100	6,525,200	6,720,700
	Debt Service					
9	Existing	938,377	937,300	937,061	937,180	937,017
10	Proposed - Revenue Bonds	0	0	204,631	204,631	204,631
11	Proposed - State and Other Loans	0	0	0	0	0
12	Total Debt Service	938,377	937,300	1,141,692	1,141,811	1,141,648
13	Transfer To Capital Fund	2,909,223	3,816,709	4,194,543	3,556,304	4,100
14	Total Uses	9,954,900	10,904,909	11,671,335	11,223,315	7,866,448
15	Annual Surplus (Deficiency)	242,700	11,300	40,300	1,379,942	5,758,277
16	Beginning Balance	1,301,500	1,544,200	1,555,500	1,595,800	2,975,742
17	Ending Balance	1,544,200	1,555,500	1,595,800	2,975,742	8,734,019
18	Target Operating Reserves	1,530,000	1,540,000	1,580,000	1,630,000	1,680,000
19	Unrestricted Funds	14,200	15,500	15,800	1,345,742	7,054,019
20	Annual Wastewater Service Revenue Increase	0.0%	0.0%	0.0%	0.0%	0.0%
21	Cumulative Revenue Increase	0.0%	0.0%	0.0%	0.0%	0.0%
22	Debt Service Coverage	4.40	5.32	4.90	5.54	6.27

Table B- 4
 City of Buckeye, AZ
 Wastewater Utility
 Wastewater Miscellaneous Revenue Forecast

Line No.	Acc Title	Budget		Projected		
		FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
		\$	\$	\$	\$	\$
	Other Miscellaneous Revenue					
1	Other Fees	100	100	100	100	100
2	Effluent	325,000	334,800	344,800	355,100	365,800
3	Service Fee	300	300	300	300	300
4	Subtotal Other Miscellaneous Revenue	325,400	335,200	345,200	355,500	366,200
5	Total Wastewater Miscellaneous Revenue	325,400	335,200	345,200	355,500	366,200

Table B- 5
City of Buckeye, AZ
Wastewater Utility
Historical & Projected Operation and Maintenance Expense

Line No.	Fund	Dept	Org	Org Description	Obj	Account Description	For the Fiscal Year Ending June 30				
							Budget	Projected			
							FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
						\$	\$	\$	\$	\$	
1	4001	220	40013220	Wastewater Administration	510001	Salaries and Wages	518,400	534,000	550,000	566,500	583,500
2	4001	220	40013220	Wastewater Administration	510310	Wages Overtime	36,000	37,100	38,200	39,300	40,500
3	4001	220	40013220	Wastewater Administration	510400	Arizona State Retirement	66,200	68,200	70,200	72,300	74,500
4	4001	220	40013220	Wastewater Administration	510402	Share of Pension Expense	0	0	0	0	0
5	4001	220	40013220	Wastewater Administration	510420	FICA	42,400	43,700	45,000	46,400	47,800
6	4001	220	40013220	Wastewater Administration	510425	Workers Comp insurance	10,200	10,500	10,800	11,100	11,400
7	4001	220	40013220	Wastewater Administration	510426	Health Insurance	128,300	132,100	136,100	140,200	144,400
8	4001	220	40013220	Wastewater Administration	520001	Legal Services	0	0	0	0	0
9	4001	220	40013220	Wastewater Administration	520019	Custodial Contract (PW)	0	0	0	0	0
10	4001	220	40013220	Wastewater Administration	520035	Landscaping	0	0	0	0	0
11	4001	220	40013220	Wastewater Administration	520037	Professional Services General	300,000	169,000	174,100	179,300	184,700
12	4001	220	40013220	Wastewater Administration	520045	Permit Fees	50,000	51,500	53,000	54,600	56,200
13	4001	220	40013220	Wastewater Administration	520506	Repair and Replace	1,000	1,000	1,000	1,000	1,000
14	4001	220	40013220	Wastewater Administration	520540	Wastewater Plant R & M	0	0	0	0	0
15	4001	220	40013220	Wastewater Administration	520541	Wastewater System R & M	0	0	0	0	0
16	4001	220	40013220	Wastewater Administration	520542	Sludge Removal	0	0	0	0	0
17	4001	220	40013220	Wastewater Administration	520543	WW R&M	0	0	0	0	0
18	4001	220	40013220	Wastewater Administration	520578	Festival Ranch WRF O&M	0	0	0	0	0
19	4001	220	40013220	Wastewater Administration	520579	Northeast Buckeye WW O&M	0	0	0	0	0
20	4001	220	40013220	Wastewater Administration	520580	Tartesso WRF O&M	0	0	0	0	0
21	4001	220	40013220	Wastewater Administration	521501	Office Supply/Equipment	1,000	1,000	1,000	1,000	1,000
22	4001	220	40013220	Wastewater Administration	521502	Program Supplies/Equipment	18,000	18,500	19,100	19,700	20,300
23	4001	220	40013220	Wastewater Administration	521505	Equipment Rental	0	0	0	0	0
24	4001	220	40013220	Wastewater Administration	521508	Automotive Expenses	35,000	36,100	37,200	38,300	39,400
25	4001	220	40013220	Wastewater Administration	521510	Postage and Freight	100	100	100	100	100
26	4001	220	40013220	Wastewater Administration	521520	Small Tools<\$5000	0	0	0	0	0
27	4001	220	40013220	Wastewater Administration	521540	Chemicals	0	0	0	0	0
28	4001	220	40013220	Wastewater Administration	521922	Uniforms	22,000	22,700	23,400	24,100	24,800
29	4001	220	40013220	Wastewater Administration	522310	Laboratory Fees	0	0	0	0	0
30	4001	220	40013220	Wastewater Administration	522507	Vehicle Fuel	18,000	18,500	19,100	19,700	20,300
31	4001	220	40013220	Wastewater Administration	523015	Miscellaneous	0	0	0	0	0
32	4001	220	40013220	Wastewater Administration	523019	Administrative Fees	85,000	87,600	90,200	92,900	95,700
33	4001	220	40013220	Wastewater Administration	523025	Public Relation	6,000	6,200	6,400	6,600	6,800
34	4001	220	40013220	Wastewater Administration	523030	Bank Charges	7,000	7,200	7,400	7,600	7,800
35	4001	220	40013220	Wastewater Administration	523053	Indirect Cost Allocation	664,700	684,600	705,100	726,300	748,100
36	4001	220	40013220	Wastewater Administration	523999	Bad Debt Expense	10,000	10,300	10,600	10,900	11,200
37	4001	220	40013220	Wastewater Administration	526010	Electric - Utility	0	0	0	0	0
38	4001	220	40013220	Wastewater Administration	526018	Water/Wastewater - Utility	0	0	0	0	0
39	4001	220	40013220	Wastewater Administration	526025	Telephone	800	800	800	800	800
40	4001	220	40013220	Wastewater Administration	526110	Conference and Seminars	8,000	8,200	8,400	8,700	9,000

Table B- 5
City of Buckeye, AZ
Wastewater Utility
Historical & Projected Operation and Maintenance Expense

Line No.	Fund	Dept	Org	Org Description	Obj	Account Description	For the Fiscal Year Ending June 30				
							Budget	Projected			
							FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
						\$	\$	\$	\$	\$	
41	4001	220	40013220	Wastewater Administration	526115	Travel and Meals	7,500	7,700	7,900	8,100	8,300
42	4001	220	40013220	Wastewater Administration	526120	Dues and Subscription	1,000	1,000	1,000	1,000	1,000
43	4001	221	40013221	Central Buckeye	510001	Salaries and Wages	293,100	301,900	311,000	320,300	329,900
44	4001	221	40013221	Central Buckeye	510310	Wages Overtime	11,600	11,900	12,300	12,700	13,100
45	4001	221	40013221	Central Buckeye	510400	Arizona State Retirement	36,400	37,500	38,600	39,800	41,000
46	4001	221	40013221	Central Buckeye	510420	FICA	23,300	24,000	24,700	25,400	26,200
47	4001	221	40013221	Central Buckeye	510425	Workers Comp insurance	10,200	10,500	10,800	11,100	11,400
48	4001	221	40013221	Central Buckeye	510426	Health Insurance	100,500	103,500	106,600	109,800	113,100
49	4001	221	40013221	Central Buckeye	520019	Custodial Contract	0	0	0	0	0
50	4001	221	40013221	Central Buckeye	520035	Landscaping	0	0	0	0	0
51	4001	221	40013221	Central Buckeye	520045	Permit Fees	6,000	6,200	6,400	6,600	6,800
52	4001	221	40013221	Central Buckeye	520049	Laboratory Fees	30,000	30,900	31,800	32,800	33,800
53	4001	221	40013221	Central Buckeye	520506	Repair and Replace	3,000	3,100	3,200	3,300	3,400
54	4001	221	40013221	Central Buckeye	520540	Wastewater Plant R & M	500,000	515,000	530,500	546,400	562,800
55	4001	221	40013221	Central Buckeye	520542	Sludge Removal	6,000	6,200	6,400	6,600	6,800
56	4001	221	40013221	Central Buckeye	521501	Office Supply/Equipment	100	100	100	100	100
57	4001	221	40013221	Central Buckeye	521502	Program Supplies/Equipment	0	0	0	0	0
58	4001	221	40013221	Central Buckeye	521503	Lab Supplies	10,000	10,300	10,600	10,900	11,200
59	4001	221	40013221	Central Buckeye	521505	Equipment Rental	0	0	0	0	0
60	4001	221	40013221	Central Buckeye	521508	Automotive Expenses	0	0	0	0	0
61	4001	221	40013221	Central Buckeye	521520	Small Tools<\$5000	600	600	600	600	600
62	4001	221	40013221	Central Buckeye	521521	IT Equipment <\$5000	2,000	2,100	2,200	2,300	2,400
63	4001	221	40013221	Central Buckeye	521526	SCADA	10,000	10,300	10,600	10,900	11,200
64	4001	221	40013221	Central Buckeye	521540	Chemicals	72,000	74,200	76,400	78,700	81,100
65	4001	221	40013221	Central Buckeye	522152	Safety Equipment	6,000	6,200	6,400	6,600	6,800
66	4001	221	40013221	Central Buckeye	526010	Electric - Utility	256,700	264,400	272,300	280,500	288,900
67	4001	221	40013221	Central Buckeye	526018	Water/Wastewater - Utility	18,400	19,000	19,600	20,200	20,800
68	4001	221	40013221	Central Buckeye	526025	Telephone	4,200	4,300	4,400	4,500	4,600
69	4001	222	40013222	Sundance Buckeye	510001	Salaries and Wages	207,200	213,400	219,800	226,400	233,200
70	4001	222	40013222	Sundance Buckeye	510310	Wages Overtime	6,300	6,500	6,700	6,900	7,100
71	4001	222	40013222	Sundance Buckeye	510400	Arizona State Retirement	25,500	26,300	27,100	27,900	28,700
72	4001	222	40013222	Sundance Buckeye	510420	FICA	16,300	16,800	17,300	17,800	18,300
73	4001	222	40013222	Sundance Buckeye	510425	Workers Comp insurance	7,100	7,300	7,500	7,700	7,900
74	4001	222	40013222	Sundance Buckeye	510426	Health Insurance	57,400	59,100	60,900	62,700	64,600
75	4001	222	40013222	Sundance Buckeye	520035	Landscaping	0	0	0	0	0
76	4001	222	40013222	Sundance Buckeye	520045	Permit Fees	0	0	0	0	0
77	4001	222	40013222	Sundance Buckeye	520049	Laboratory Fees	30,000	30,900	31,800	32,800	33,800
78	4001	222	40013222	Sundance Buckeye	520506	Repair and Replace	14,000	14,400	14,800	15,200	15,700
79	4001	222	40013222	Sundance Buckeye	520542	Sludge Removal	0	0	0	0	0
80	4001	222	40013222	Sundance Buckeye	520543	WW R&M	400,000	412,000	424,400	437,100	450,200

Table B- 5
City of Buckeye, AZ
Wastewater Utility
Historical & Projected Operation and Maintenance Expense

Line No.	Fund	Dept	Org	Org Description	Obj	Account Description	For the Fiscal Year Ending June 30				
							Budget	Projected			
							FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
							\$	\$	\$	\$	\$
81	4001	222	40013222	Sundance Buckeye	521501	Office Supply/Equipment	500	500	500	500	500
82	4001	222	40013222	Sundance Buckeye	521502	Program Supplies/Equipment	2,000	2,100	2,200	2,300	2,400
83	4001	222	40013222	Sundance Buckeye	521503	Lab Supplies	11,000	11,300	11,600	11,900	12,300
84	4001	222	40013222	Sundance Buckeye	521505	Equipment Rental	0	0	0	0	0
85	4001	222	40013222	Sundance Buckeye	521508	Automotive Expenses	0	0	0	0	0
86	4001	222	40013222	Sundance Buckeye	521520	Small Tools<\$5000	300	300	300	300	300
87	4001	222	40013222	Sundance Buckeye	521521	IT Equipment <\$5000	0	0	0	0	0
88	4001	222	40013222	Sundance Buckeye	521526	SCADA	10,000	10,300	10,600	10,900	11,200
89	4001	222	40013222	Sundance Buckeye	521540	Chemicals	60,000	61,800	63,700	65,600	67,600
90	4001	222	40013222	Sundance Buckeye	522152	Safety Equipment	4,500	4,600	4,700	4,800	4,900
91	4001	222	40013222	Sundance Buckeye	523015	Miscellaneous	0	0	0	0	0
92	4001	222	40013222	Sundance Buckeye	526010	Electric - Utility	322,400	332,100	342,100	352,400	363,000
93	4001	222	40013222	Sundance Buckeye	526018	Water/Wastewater - Utility	9,100	9,400	9,700	10,000	10,300
94	4001	222	40013222	Sundance Buckeye	526025	Telephone	4,200	4,300	4,400	4,500	4,600
95	4001	223	40013223	Tartesso Buckeye	510001	Salaries and Wages	91,100	93,800	96,600	99,500	102,500
96	4001	223	40013223	Tartesso Buckeye	510310	Wages Overtime	2,400	2,500	2,600	2,700	2,800
97	4001	223	40013223	Tartesso Buckeye	510400	Arizona State Retirement	11,200	11,500	11,800	12,200	12,600
98	4001	223	40013223	Tartesso Buckeye	510420	FICA	7,200	7,400	7,600	7,800	8,000
99	4001	223	40013223	Tartesso Buckeye	510425	Workers Comp insurance	3,100	3,200	3,300	3,400	3,500
100	4001	223	40013223	Tartesso Buckeye	510426	Health Insurance	43,200	44,500	45,800	47,200	48,600
101	4001	223	40013223	Tartesso Buckeye	520035	Landscaping	0	0	0	0	0
102	4001	223	40013223	Tartesso Buckeye	520045	Permit Fees	5,000	5,200	5,400	5,600	5,800
103	4001	223	40013223	Tartesso Buckeye	520049	Laboratory Fees	30,000	30,900	31,800	32,800	33,800
104	4001	223	40013223	Tartesso Buckeye	520506	Repair and Replace	2,600	2,700	2,800	2,900	3,000
105	4001	223	40013223	Tartesso Buckeye	520542	Sludge Removal	3,000	3,100	3,200	3,300	3,400
106	4001	223	40013223	Tartesso Buckeye	520543	WW R&M	160,000	164,800	169,700	174,800	180,000
107	4001	223	40013223	Tartesso Buckeye	521501	Office Supply/Equipment	100	100	100	100	100
108	4001	223	40013223	Tartesso Buckeye	521502	Program Supplies/Equipment	0	0	0	0	0
109	4001	223	40013223	Tartesso Buckeye	521503	Lab Supplies	6,000	6,200	6,400	6,600	6,800
110	4001	223	40013223	Tartesso Buckeye	521505	Equipment Rental	0	0	0	0	0
111	4001	223	40013223	Tartesso Buckeye	521508	Automotive Expenses	0	0	0	0	0
112	4001	223	40013223	Tartesso Buckeye	521520	Small Tools<\$5000	300	300	300	300	300
113	4001	223	40013223	Tartesso Buckeye	521521	IT Equipment <\$5000	0	0	0	0	0
114	4001	223	40013223	Tartesso Buckeye	521526	SCADA	10,000	10,300	10,600	10,900	11,200
115	4001	223	40013223	Tartesso Buckeye	521540	Chemicals	35,000	36,100	37,200	38,300	39,400
116	4001	223	40013223	Tartesso Buckeye	522152	Safety Equipment	5,000	5,200	5,400	5,600	5,800
117	4001	223	40013223	Tartesso Buckeye	523015	Miscellaneous	0	0	0	0	0
118	4001	223	40013223	Tartesso Buckeye	526010	Electric - Utility	95,000	97,900	100,800	103,800	106,900
119	4001	223	40013223	Tartesso Buckeye	526018	Water/Wastewater - Utility	0	0	0	0	0
120	4001	223	40013223	Tartesso Buckeye	526025	Telephone	5,000	5,200	5,400	5,600	5,800

Table B- 5
City of Buckeye, AZ
Wastewater Utility
Historical & Projected Operation and Maintenance Expense

Line No.	Fund	Dept	Org	Org Description	Obj	Account Description	For the Fiscal Year Ending June 30				
							Budget	Projected			
							FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
						\$	\$	\$	\$	\$	
121	4001	224	40013224	Festival Buckeye	510001	Salaries and Wages	101,800	104,900	108,000	111,200	114,500
122	4001	224	40013224	Festival Buckeye	510310	Wages Overtime	4,500	4,600	4,700	4,800	4,900
123	4001	224	40013224	Festival Buckeye	510400	Arizona State Retirement	12,700	13,100	13,500	13,900	14,300
124	4001	224	40013224	Festival Buckeye	510420	FICA	8,100	8,300	8,500	8,800	9,100
125	4001	224	40013224	Festival Buckeye	510425	Workers Comp insurance	3,600	3,700	3,800	3,900	4,000
126	4001	224	40013224	Festival Buckeye	510426	Health Insurance	43,200	44,500	45,800	47,200	48,600
127	4001	224	40013224	Festival Buckeye	520035	Landscaping	0	0	0	0	0
128	4001	224	40013224	Festival Buckeye	520045	Permit Fees	0	0	0	0	0
129	4001	224	40013224	Festival Buckeye	520049	Laboratory Fees	30,000	30,900	31,800	32,800	33,800
130	4001	224	40013224	Festival Buckeye	520506	Repair and Replace	3,000	3,100	3,200	3,300	3,400
131	4001	224	40013224	Festival Buckeye	520542	Sludge Removal	5,000	5,200	5,400	5,600	5,800
132	4001	224	40013224	Festival Buckeye	520543	WW R&M	200,000	206,000	212,200	218,600	225,200
133	4001	224	40013224	Festival Buckeye	521501	Office Supply/Equipment	100	100	100	100	100
134	4001	224	40013224	Festival Buckeye	521502	Program Supplies/Equipment	0	0	0	0	0
135	4001	224	40013224	Festival Buckeye	521503	Lab Supplies	6,000	6,200	6,400	6,600	6,800
136	4001	224	40013224	Festival Buckeye	521505	Equipment Rental	0	0	0	0	0
137	4001	224	40013224	Festival Buckeye	521508	Automotive Expenses	0	0	0	0	0
138	4001	224	40013224	Festival Buckeye	521520	Small Tools<\$5000	0	0	0	0	0
139	4001	224	40013224	Festival Buckeye	521521	IT Equipment <\$5000	0	0	0	0	0
140	4001	224	40013224	Festival Buckeye	521526	SCADA	10,000	10,300	10,600	10,900	11,200
141	4001	224	40013224	Festival Buckeye	521540	Chemicals	16,000	16,500	17,000	17,500	18,000
142	4001	224	40013224	Festival Buckeye	522152	Safety Equipment	5,000	5,200	5,400	5,600	5,800
143	4001	224	40013224	Festival Buckeye	526010	Electric - Utility	125,000	128,800	132,700	136,700	140,800
144	4001	224	40013224	Festival Buckeye	526018	Water/Wastewater - Utility	0	0	0	0	0
145	4001	224	40013224	Festival Buckeye	526025	Telephone	500	500	500	500	500
146	4001	224	40013224	Festival Buckeye	541210	Automobiles	0	0	0	0	0
147	4001	225	40013225	Northeast Lift Station	520035	Landscaping	2,000	2,100	2,200	2,300	2,400
148	4001	225	40013225	Northeast Lift Station	520045	Permit Fees	0	0	0	0	0
149	4001	225	40013225	Northeast Lift Station	520049	Laboratory Fees	0	0	0	0	0
150	4001	225	40013225	Northeast Lift Station	520506	Repair and Replace	3,000	3,100	3,200	3,300	3,400
151	4001	225	40013225	Northeast Lift Station	520580	Tartesso WRF O&M	20,000	20,600	21,200	21,800	22,500
152	4001	225	40013225	Northeast Lift Station	521520	Small Tools<\$5000	0	0	0	0	0
153	4001	225	40013225	Northeast Lift Station	521540	Chemicals	7,500	7,700	7,900	8,100	8,300
154	4001	225	40013225	Northeast Lift Station	526010	Electric - Utility	39,700	40,900	42,100	43,400	44,700
155	4001	225	40013225	Northeast Lift Station	526018	Water/Wastewater - Utility	14,300	14,700	15,100	15,600	16,100
156	4001	225	40013225	Northeast Lift Station	526025	Telephone	1,500	1,500	1,500	1,500	1,500
157	4001	226	40013226	Collections Sewer System	510001	Salaries and Wages	150,100	154,600	159,200	164,000	168,900
158	4001	226	40013226	Collections Sewer System	510310	Wages Overtime	5,400	5,600	5,800	6,000	6,200
159	4001	226	40013226	Collections Sewer System	510400	Arizona State Retirement	18,600	19,200	19,800	20,400	21,000
160	4001	226	40013226	Collections Sewer System	510420	FICA	11,900	12,300	12,700	13,100	13,500

Table B- 5
City of Buckeye, AZ
Wastewater Utility
Historical & Projected Operation and Maintenance Expense

Line No.	Fund	Dept	Org	Org Description	Obj	Account Description	For the Fiscal Year Ending June 30				
							Budget	Projected			
							FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23
						\$	\$	\$	\$	\$	
161	4001	226	40013226	Collections Sewer System	510425	Workers Comp Insurance	5,200	5,400	5,600	5,800	6,000
162	4001	226	40013226	Collections Sewer System	510426	Health Insurance	51,400	52,900	54,500	56,100	57,800
163	4001	226	40013226	Collections Sewer System	520541	Wastewater System R & M	60,000	61,800	63,700	65,600	67,600
164	4001	226	40013226	Collections Sewer System	521502	Program Supplies/Equipment	0	0	0	0	0
165	4001	226	40013226	Collections Sewer System	521508	Automotive Expenses	0	0	0	0	0
166	4001	226	40013226	Collections Sewer System	521520	Small Tools<\$5000	1,500	1,500	1,500	1,500	1,500
167	4001	226	40013226	Collections Sewer System	526025	Telephone	1,000	1,000	1,000	1,000	1,000
168	4001	199	40019199	Budgeted Uses of Funds	570020	Contingencies	0	0	0	0	0
169	Total						6,107,300	6,150,900	6,335,100	6,525,200	6,720,700

APPENDIX C:
**OUTSIDE CITY WATER RATE
DIFFERENTIAL**

Development of Outside City Differential

Table C-1
City of Buckeye, AZ
Calculation of Average Cost of Debt

Loans	Original Issue	Remaining Principal	% to Water	Low	High	Average
GADA Loan	\$2,200,000	\$1,675,000	74%	4.00%	5.00%	4.50%
Excise Tax Revenue Refunding Bonds	1,795,000	860,000	100%	2.50%	4.00%	3.25%
Water & Sewer System Senior Revenue Bonds 2015	250,000	250,000	100%	4.75%	4.75%	4.75%
Excise Tax Revenue Obligations, Series 2015	51,260,000	51,260,000	100%	3.50%	5.00%	4.25%
WIFA Bond - 920239 - 13	5,065,000	2,953,669	100%	2.98%	2.98%	2.98%
WIFA Bond - 920241 - 13	3,617,450	2,976,993	100%	2.98%	2.98%	2.98%
WIFA Bond - 920240 - 15	761,000	556,431	100%	2.98%	2.98%	2.98%
Total	64,948,450	60,532,093		Weighted Average Interest Rate		4.05%

Table C-2
City of Buckeye, AZ
Cost of Equity Capital

Risk Free Rate - Long-Term U.S. Treasury Bond Yield (2)		3.15%
Equity Risk Premium (3)	6.94%	
Beta for Water Companies (4)	0.41	
Adjusted Equity Risk Premium	2.85%	2.85%
Total Buildup of Cost of Equity Capital		6.00%

Notes:

- (1) Based on data provided by City for a FY 2022-23 test-year.
- (2) 30-year Long Term Treasury Bond Yield - Bloomberg (12/12/2018)
- (3) 2017 Valuation Handbook, U.S. Guide to Cost of Capital, Market Results through 2016, Duff & Phelps, 2017.
- (4) From stern.nyu.edu - Beta for Water Utility Industry: January 2018 Data
(http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/Betas.html)

Table C-3
City of Buckeye, AZ
Weighted Average Cost of Capital

Item	Cost	Weighted Average	Cost %	Weighted Average
Debt	\$60,532,093	59.4%	4.0%	2.40%
Equity	41,411,268	40.6%	6.0%	2.44%
Total Rate Base	\$101,943,361			4.84%

Table C-4
City of Buckeye, AZ
Development of Inside - Outside Differential

FY17 Cash Basis Revenue Requirement (From FY18 Budget)	
Buckeye	\$15,710,254
Global	5,753,999
Total	\$21,464,253
FY2017 Consumption, 1,000 gallons	2,110,321
Unit Cost, \$ per 1,000 gallons	\$10.17
Utility Basis Revenue Requirement (FY17)	
O&M/Depreciation	\$19,733,439
Rate Base	\$101,943,361
Rate of Return	4.84%
Return on Rate Base	4,932,730
Total Utility Basis Revenue Requirement	\$24,666,169
FY2017 Consumption, 1,000 gallons	2,110,321
Unit Cost, \$ per 1,000 gallons	\$11.69
Inside/Outside Differential	
Utility Basis Revenue Requirement, \$ per 1,000 gal	\$11.69
Cash Basis Revenue Requirement, \$ per 1,000 gal	\$10.17
Differential	1.15

APPENDIX D:
METER INSTALLATION FEES

Table D-1
City of Buckeye
Meter Installation Fees (Less than 3" meters)

Parameters	
Truck Charge	\$75
Number of Trucks	1
Materials and Supplies	\$0
Calculated Meter Install Fee	\$263

Line No	Staffing Requirements	Meter Install	Total
Level of Effort, Hours per Task			
1	Operator I, Mid Range	3.0	3.0
2	Operator II, Mid Range	1.0	1.0
3	Total Level of Effort	4.0	4.0
Direct Labor Costs, \$ per hour			
		<u>\$ per Hour</u>	
4	Operator I, Mid Range	\$39.05	\$117.15
5	Operator II, Mid Range	\$42.95	42.95
6	Total Direct Costs		\$160.10
Indirect Costs, \$ per hour			
		<u>Units</u>	
7	Indirect Charge (% of Salaries) [1]	17.5%	\$28.02
8	Total Indirect Costs		\$28.02
9	Subtotal	\$188.12	\$188.12
10		Truck Charge	\$75
11	Total Meter Installation Fees, 2-inch and Smaller		\$263

[1] Based on indirect costs allocation divided total salaries and wages for the water utility.

Table D-2
City of Buckeye
Meter Installation Fees (Greater than 2" meters)

Parameters	
Truck Charge	\$75
Number of Trucks	2
Materials and Supplies	\$0
Calculated Meter Install Fee	\$526

Line No	Staffing Requirements	Meter Install	Total
Level of Effort, Hours per Task			
1	Operator I, Mid Range	3.0	3.0
2	Operator II, Mid Range	1.0	1.0
3	Operator I, Mid Range	3.0	3.0
4	Operator II, Mid Range	1.0	1.0
5	Total Level of Effort	8.0	8.0
Direct Labor Costs, \$ per hour			
		<u>\$ per Hour</u>	
6	Operator I, Mid Range	\$39.05	\$117.15
7	Operator II, Mid Range	\$42.95	42.95
8	Operator I, Mid Range	\$39.05	117.15
9	Operator II, Mid Range	\$42.95	42.95
10	Total Direct Costs		\$320.20
Indirect Costs, \$ per hour			
		<u>Units</u>	
11	Indirect Charge (% of Salaries)	17.5%	\$56.04
12	Total Indirect Costs		\$56.04
13	Subtotal	\$376.24	\$376.24
14		Truck Charge	\$150
15	Total Meter Installation Fee (Greater Than 2-inch)		\$526

[1] Based on indirect costs allocation divided total salaries and wages for the water utility.

Table D-3
 City of Buckeye, AZ
 Comparison of Existing and Proposed Meter Installation Fees

Meter Type	Meter/Ert/Ant Cost	Operator Installation Cost	Proposed Fee	Current Fee	Change - \$	Change - %
1" Water Meter (Displacement)	\$307.57	\$263.12	\$570.69	\$515.20	\$55.49	11%
1 1/2" Water Meter (Displacement)	\$556.23	\$263.12	\$819.35	\$964.01	(\$144.66)	-15%
1 1/2" Water Meter (Turbo)	\$970.07	\$263.12	\$1,233.19	\$1,877.21	(\$644.02)	-34%
2" Water Meter (Displacement)	\$805.95	\$263.12	\$1,069.07	\$1,324.10	(\$255.03)	-19%
2" Compound Meter	\$1,750.00	\$263.12	\$2,013.12		Not Applicable	
2" Turbo Meter	\$894.77	\$263.12	\$1,157.89	\$2,094.46	(\$936.57)	-45%
3" Compound Meter	\$1,907.43	\$526.24	\$2,433.67	\$4,211.55	(\$1,777.89)	-42%
3" Turbo Meter	\$1,317.80	\$526.24	\$1,844.04	\$2,497.61	(\$653.58)	-26%
4" Compound Meter	\$3,666.41	\$526.24	\$4,192.65	\$6,666.93	(\$2,474.29)	-37%
4" Turbo Meter	\$1,667.15	\$526.24	\$2,193.39	\$3,727.11	(\$1,533.73)	-41%
6" Compound Meter	\$5,227.21	\$526.24	\$5,753.45	\$8,725.71	(\$2,972.27)	-34%
6" Turbo Meter/Mag	\$3,735.63	\$526.24	\$4,261.87	\$11,534.73	(\$7,272.87)	-63%
8" Compound Meter	\$7,664.69	\$526.24	\$8,190.93	\$17,035.80	(\$8,844.88)	-52%
8" Turbo Meter/Mag	\$4,011.45	\$526.24	\$4,537.69	\$10,590.92	(\$6,053.24)	-57%