Culinary and Irrigation Rate Study

January 2019

Prepared for:

IVINS CITY UTAH

Prepared by:

BOWEN COLLINS & ASSOCIATES

CULINARY AND IRRIGATION RATE STUDY

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EXECUTIVE SUMMARY

INTRODUCTION

Ivins City has retained Bowen, Collins & Associates (BC&A) to update its culinary water rates and develop rates for the proposed secondary irrigation system. The purpose of this study is to evaluate and update the City's water rates based on changes in system development patterns and revenue requirements that have occurred since the current rates were established, as well as determine rates for the future irrigation system. The rate study calculates detailed rates for the next six years and presents a longer term finance plan to achieve the City's primary objectives of:

- Maintaining high quality, reliable water service at affordable prices for customers;
- Maintaining stable revenue generation adequate to fund system needs; and
- Minimizing the City's long-term costs by avoiding debt where possible.

Implementing the recommendations contained in this report will help Ivins City keep its water utility system adequately funded to maintain its current infrastructure and keep pace with the plan outlined in the Culinary Water and Secondary Irrigation Master Plans.

WATER RATE ANALYSIS

The primary objective of this water rate analysis is to establish fair and equitable rates that will be sufficient to meet revenue requirements for the City. To accomplish this goal, this analysis focused on 3 major tasks:

1. **Projecting Water Use:** Future water sales were estimated by examining current use patterns and by projecting water system growth for the next several years.
2. **Calculating Revenue Requirements:** Total revenue requirements for the system were projected for the next several years based on the budget plan outlined previously. Non-rate revenue (including impact fee revenue) was deducted from the total to give the net revenue requirement to be recovered from rate payers.
3. **Cost Allocation:** This analysis generally follows the basic cost-of-service approach recommended by the American Water Works Association (AWWA).[1] The essential principle of this method is that "water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers."[2] To accomplish this goal, the system revenue requirements were allocated to four customer service characteristics: average day demand, peak day demand, billing & collection, and meters & services.
4. **Rate Design:** Rates were calculated to recover the allocated cost of service for each customer service characteristic based on a given rate structure. This report outlines an increasing block rate structure similar to the current rate structure used by the City.

[1] American Water Works Association. *Principles of Water Rates, Fees, and Charges: Manual M1*. 2000.
[2] *Ibid.*, p. xix.

The recommended rate structure for the City is shown in Table ES-1, ES-2, and ES-3. These tables display the monthly base rate and proposed block rates for the culinary water system and proposed secondary irrigation system. The proposed rates should be re-evaluated within the next 3 to 5 years to ensure that the City's revenue requirements and goals are being met.

Table ES-1
Monthly Base Rate ($/month, culinary and irrigation users)

Meter Size	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
3/4 and smaller	$16.91	$17.96	$18.78	$19.67	$20.60	$21.57
1	$25.24	$26.84	$28.06	$29.37	$30.74	$32.19
1.5	$45.88	$48.85	$51.04	$53.41	$55.88	$58.52
2	$70.75	$75.36	$78.73	$82.36	$86.16	$90.23
3	$149.58	$159.40	$166.50	$174.16	$182.14	$190.75
4	$253.14	$269.83	$281.82	$294.76	$308.26	$322.83
6	$522.57	$557.09	$581.81	$608.51	$636.35	$666.44
8	$750.47	$800.08	$835.57	$873.90	$913.86	$957.07
10	$1,206.40	$1,286.18	$1,343.22	$1,404.82	$1,469.05	$1,538.51

Table ES-2
Volume Block Rate ($/month, culinary water)

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
Block 1 Rate						
Residential	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Multi	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Commercial	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Institutional	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Stock	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Block 2 Rate						
Residential	$2.49	$2.65	$2.83	$3.06	$3.28	$3.50
Multi	$2.49	$2.65	$2.83	$3.06	$3.28	$3.50
Commercial	$2.35	$2.50	$2.67	$2.88	$3.09	$3.31
Institutional	$2.35	$2.50	$2.67	$2.88	$3.09	$3.31
Stock	$2.49	$2.65	$2.83	$3.06	$3.28	$3.50
Block 3 Rate						
Residential	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Multi	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Commercial	$2.86	$3.04	$3.26	$3.51	$3.77	$4.07
Institutional	$2.86	$3.04	$3.26	$3.51	$3.77	$4.07
Stock	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Block 4 Rate						
Residential	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68
Multi	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68
Commercial	$3.67	$3.90	$4.15	$4.41	$4.70	$5.00
Institutional	$3.67	$3.90	$4.15	$4.41	$4.70	$5.00
Stock	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68

Table ES-3
Volume Block Rate ($/month, irrigation water)

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
Block 1 Rate						
Residential	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Multi	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Commercial	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Institutional	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Stock	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Block 2 Rate*						
Residential	$2.49	$2.65	$1.68	$1.77	$1.87	$1.97
Multi	$2.49	$2.65	$1.68	$1.77	$1.87	$1.97
Commercial	$2.35	$2.50	$1.58	$1.66	$1.76	$1.85
Institutional	$2.35	$2.50	$1.58	$1.66	$1.76	$1.85
Stock	$2.49	$2.65	$1.68	$1.77	$1.87	$1.97
Block 3 Rate*						
Residential	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Multi	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Commercial	$2.86	$3.04	$3.26	$3.51	$3.77	$4.07
Institutional	$2.86	$3.04	$3.26	$3.51	$3.77	$4.07
Stock	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Block 4 Rate*						
Residential	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68
Multi	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68
Commercial	$3.67	$3.90	$4.15	$4.41	$4.70	$5.00
Institutional	$3.67	$3.90	$4.15	$4.41	$4.70	$5.00
Stock	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68

*Rate for secondary irrigation water

CULINARY AND IRRIGATION WATER RATE ANALYSIS

INTRODUCTION

Ivins City has retained Bowen, Collins & Associates (BC&A) to update its culinary water rates and develop rates for the proposed secondary irrigation system. The purpose of this study is to evaluate and update the City's water rates based on changes in system development patterns and revenue requirements that have occurred since the current rates were established, as well as determine rates for the future irrigation system. The rate study calculates detailed rates for the next six years and presents a longer term finance plan to achieve the City's primary objectives of:

- Maintaining high quality, reliable water service at affordable prices for customers;
- Maintaining stable revenue generation adequate to fund system needs; and
- Minimizing the City's long-term costs by avoiding debt where possible.

Implementing the recommendations contained in this report will help Ivins City keep its water utility system adequately funded to maintain its current infrastructure and keep pace with the plan outlined in the Culinary Water and Secondary Irrigation Master Plans.

PROJECTED REVENUE NEEDS

Before calculating detailed water rates, it is important to consider the overall plan for meeting the future revenue needs of the City. It is also important to establish the approach that Ivins will take for the implementation of the secondary irrigation system. As outlined in the Ivins Culinary Water and Secondary Irrigation Master Plans, culinary water sources in Washington County are becoming more scarce and expensive to develop. In order to continue providing the water needed for growth, the City has decided to initiate the plan to bring a secondary irrigation water system into service in order to utilize water sources that would otherwise not be usable in the culinary water system. Since 2002, Ivins City has required developers to install secondary irrigation lines with the intent to bring this system online. This system will be constructed in phases, and users will be added to the system over time. At its core, the irrigation system will act as a new source for the City, freeing up capacity in the culinary water system and reducing the need for culinary water system improvements.

Because these two systems are so closely related, the rates for the each utility have been analyzed jointly in this report. One of the primary reasons for this is approach is that it would be difficult to place the rate burden of an entire irrigation system on the small number of connections present during the first implementation phase (i.e. forcing a select few to cover all of the costs associated with running the system). As the secondary irrigation system grows and matures, rates will also need to be re-evaluated and adjusted.

The first step in the rate setting process is to project future system expenditures. Historic and projected expenditures for the City for years 2015 through 2027 are shown in Figure 1. Future expenditures can be grouped into four categories:

- **Operation and Maintenance Expenditures –** These are the annual costs of operating and maintaining the system. They include items such as salary and benefit costs for City staff,

wholesale water purchase costs, equipment and supplies, power costs, and all other costs associated with doing business throughout the year. Operation and maintenance (O&M) costs are relatively constant from year to year and tend to follow the rate of inflation.

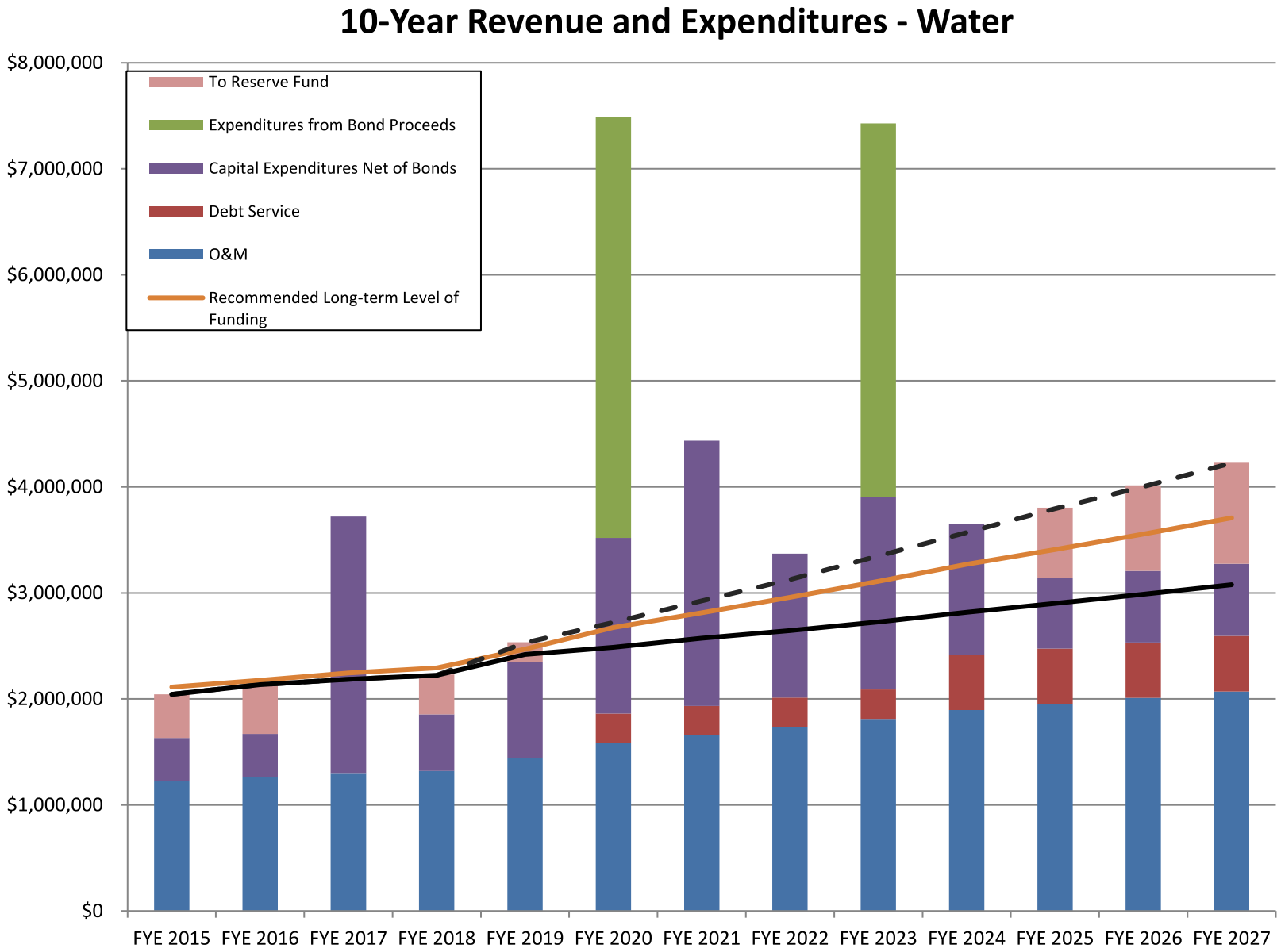
- **Debt Service Expenditures –** These are the costs paid toward bonds taken out by the City in previous years. These costs are easily predictable because they are tied to set payment schedules for each bond.
- **Capital Expenditures –** These are costs for constructing new facilities within the City. This can include completely new facilities or replacement of existing facilities. Capital improvement expenditures are usually the most volatile of expenditure categories. Because O&M and debt service costs are basically fixed, budgets are usually balanced by increasing or decreasing capital improvement expenditures as necessary. While some fluctuation in the funding of capital improvements is acceptable from year to year, the overall health of the system will depend on adequately funding this portion of the budget over the long term. A detailed list of Capital Facilities Projects can be found in the City's Culinary Water and Secondary Irrigation Master Plans.
- **Funds to Cash Reserves –** After all expenses have been paid, any remaining funds are placed in the City's reserve fund. The reserve fund can be used to covers future system costs. Different cities or water service districts treat reserve funds differently, but as a general rule of thumb, it is a good idea to maintain **at least 6 months' worth of O&M in cash reserves**.

10-YEAR BUDGET PLAN

With the expected expenditures outlined above, it is possible to prepare a future budget plan. A budget plan has been developed for the water utility and is shown on top of projected expenditures in Figure 1. The process of creating this budget plan was as follows:

1. **Identify projected revenue based on existing water rates –** Using the City's existing water rates, BC&A calculated the revenue the City could expect to receive over the next 10 years if no changes are made to existing rates. These projections include consideration of future system growth (i.e. increased rate revenue as more users are added to the system).
2. **Identify recommended level of funding based on long-term system needs** – As with most things, each component of a water system has a finite service life. As such, it is necessary to continually budget money for the rehabilitation or replacement of these system components. If adequate funds are not set aside for regular system renewal, the system will fall into a state of disrepair and be incapable of providing the level of service customers in the City have come to expect.

   To maintain the utility in good operating condition, it is recommended that the City's annual investment into the system be approximately equal to the replacement value of the system divided by its estimated service life. The estimated replacement value of the City's water system is $55 million. The following service life of each component was used to determine the recommended annual investment rate for the system:


10-Year Revenue and Expenditures - Water
$8,000,000
$7,000,000
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
To Reserve Fund
Expenditures from Bond Proceeds
Capital Expenditures Net of Bonds
Debt Service
O&M
Recommended Long-term Level of Funding
FYE 2015
FYE 2016
FYE 2017
FYE 2018
FYE 2019
FYE 2020
FYE 2021
FYE 2022
FYE 2023
FYE 2024
FYE 2025
FYE 2026
FYE 2027

- Pipelines: 60 years
- Sources: 40 years
- Storage Facilities: 50 Years
- Pump Stations: 40 Years

Based on these service life estimates, the recommended level of annual funding for the water system is currently $971,000. While a large portion of this total can be used toward constructing those projects identified in the capital facilities plan (if projects are needed for future growth, funds paid out of reserve accounts will be replenished as impact fees are collected), the remaining amount will be available for rehabilitation and replacement of existing facilities.

Based on this approach, the City's recommended long-term level of funding based on all O&M and system investment needs is shown in Figure 1. As can be seen in the figure, the City's current level of investment in the system is close to where it should be at this point in time, but as the system continues to grow, a gap begins to develop between recommended revenue and actual projected revenue. It is recommended that the City increase its rates gradually in order to keep up with inflation and continue to meet the City's long-term system investment needs. As shown in the figure, the projected rate revenue in the future exceeds the recommended long term level of funding. This is because the City is going to construct a number of significant projects over the next 10 years that will require revenue above the "long term" recommendation. What this means is that once the City has completed construction of the large capital improvements for the secondary irrigation system, rates increases beyond the 10 year planning window should be more moderate, allowing the recommended long term level of funding to catch up with rate revenue.

3. **Create a plan to transition from existing revenue to revenue adequate to support long-term system needs** – The City needs to modify and increase its rates in order to implement the projects laid out in the Culinary and Secondary Irrigation Master Plans and meet long-term funding goals. Following the rate schedule recommended in this report will result in sufficient income to accomplish the City's goals.

Based on this overall budget plan, detailed rates can now be calculated for the culinary water and irrigation system. The following analysis calculates detailed water rates for the next 6 years based on the overall budget plan.

This analysis focuses on four major tasks:

1. **Projecting Water Use:** Future water sales were estimated by examining current use patterns and by projecting water system growth for the next several years.
2. **Calculating Revenue Requirements:** Total revenue requirements for the system were projected for the next several years based on the budget plan outlined previously. Non-rate revenue (including impact fee revenue) was deducted from the total to give the net revenue requirement to be recovered from rate payers.

3. **Cost Allocation:** This analysis generally follows the basic cost-of-service approach recommended by the American Water Works Association (AWWA).[1] The essential principle of this method is that "water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers."[2] To accomplish this goal, the system revenue requirements were allocated to four customer service characteristics: average day demand, peak day demand, billing & collection, and meters & services.
4. **Rate Design:** Rates were calculated to recover the allocated cost of service for each customer service characteristic based on a given rate structure. This report outlines an increasing block rate structure similar to the current rate structure used by the City.

The remainder of this report details the results of each of these four major tasks.

KEY ASSUMPTIONS

The results presented in this report are based on the following assumptions:

1. The Ivins City Water Fund will continue to be a self-funding, enterprise-type fund.
2. Customers will continue to be billed as done currently, with one exception. It is recommended that customers on a shared master meter be billed by dividing the total usage from the development by the number of connections behind the master meter and billing each customer based on the average water usage per connection in the development. This differs from the current billing method which considers the meter as a single user, pushing the majority of water use into the highest tier billing rate.
3. This study follows the basic recommended methodologies of AWWA in developing cost-of-service water rate options for consideration by Ivins City. Only the "cash basis" approach has been used to allocate costs to users. The "cash basis" study methodology is summarized later in this report.
4. The City's current rate structure does not include a water allowance in the monthly base charge. It has been assumed this practice will continue.
5. This rate study is based on projections of future water demands and projected system operation, maintenance, and improvement costs. These projections are based on current economic conditions over the last several years. Because conditions may change over time, it is recommended that Ivins City review the rates annually and adjust them as needed to provide a revenue stream that will adequately fund operation and maintenance costs as well as needed capital improvements. It is also recommended that a comprehensive review and updating of water rates be undertaken in three to five years so that the basic analytical foundations of this study can be re-evaluated.

[1] American Water Works Association. *Principles of Water Rates, Fees, and Charges: Manual M1*. 2000.
[2] *Ibid.*, p. xix.

PROJECTING WATER USE

Historical Water Use

Ivins City provides water service to over 3,000 accounts, as summarized in Table 1. The residential customer class is the largest customer class, accounting for 97 percent of the accounts.

Table 1
FYE 2018 Account and Water Use Summary

Customer Class	Annual Use (kgal)	Accounts	Average Use per Account (kgal/year)
Residential	409,472	2,968	138
Multi	44,608	211	228.8
Commercial	38,950	42	922.3
Institutional	39,505	66	599.3
Stock	1,291	8	161.4
Total	**533,826**	**3,295**	

Projected Accounts

Growth projections used for the City's updated Culinary Water and Secondary Irrigation Master Plans are based on the growth projections established in the City's 2013 Culinary Water Master Plan. These projections include a relatively high amount of growth to occur in Ivins over the next 5-10 years, but for the purpose of this rate study, a more moderate annual growth rate of 3.0% was used. This was done to avoid potentially excessive rate increases from occurring too far in advance. Projected growth rates and number of accounts by customer type are summarized in Table 2.

Table 2
Projected Growth in System Accounts

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Residential	3,149	3,243	3,341	3,441	3,544	3,650
Multi[1]	211	211	211	211	211	211
Commercial	45	46	48	49	50	51
Institutional	70	72	74	76	78	80
Stock	8	8	8	8	8	8
Total	**3,483**	**3,580**	**3,682**	**3,785**	**3,891**	**4,000**

[1]Number of connections behind master meter

Projected Water Use

The projected growth in total water use is shown in Table 3.

Table 3
Projected Growth in Water Use

Customer Class	Average Use/Acct.	Amount (kgal)					
		FYE 2019	FYE 2020	2014	2015	2016	2017
Residential	138.0	434,444	447,412	460,932	474,729	488,939	503,607
Multi	228.8	44,608	44,608	44,608	44,608	44,608	44,608
Commercial	922.3	41,505	42,428	44,272	45,195	46,117	47,501
Institutional	599.3	41,950	43,148	44,347	45,545	46,744	48,146
Stock	161.4	1,291	1,291	1,291	1,291	1,291	1,291
Total		**563,798**	**578,887**	**595,451**	**611,368**	**627,699**	**646,491**

Peaking Characteristics

The peak day peaking factor is the ratio of the peak day rate of flow divided by the average day rate of flow. The system-wide peak day peaking factor is **2.08**. This is based on the peaking factor as reported in the Ivins City Culinary Water Master Plan. The estimated peak day factor for each customer class has been estimated to be equal to the system wide peaking factor.

Seasonal Demands

Water use in Ivins is not uniform during the year. Records indicate that approximately 55%-58% percent of the total annual water use in Ivins goes toward irrigation. Because additional source and pipe capacity is required to meet summertime peaks, the cost of providing water during the summer is generally higher than the cost of providing water during the winter. These peak demands are accounted for in the rate model and are incorporated in the increasing block rate structure (customers that use more water in the summer will pay increasingly higher water rates).

Demands by Water Use Block

Ivins City currently uses an increasing block rate for all customers. Table 4 and Table 5 summarize the City's current block structure for residential and non-residential customers.

Table 4
Block Water Use by Residential Customers

Upper Block Limits (kgal)				% Use by Block (2017)			
Block 1	Block 2	Block 3	Block 4	Block 1	Block 2	Block 3	Block 4
7	15	30	+	55%	36%	9%	0%

Table 5
Block Water Use by Non-Residential Customers

Upper Block Limits (kgal)			% Total Use by Block (2017)		
Block 1	**Block 2**	**Block 3**	**Block 1**	**Block 2**	**Block 3**
20	100	+	32%	67%	1%

These percentages will be used to calculate how to distribute costs between the various blocks for future rate structures. As can be seen in the table, the existing block rate structure has been quite effective in encouraging water use to be contained in the lower blocks.

Meters

Table 6 summarizes the number of existing meters in the Ivins City water system by size. Meters range in size from ¾-inch to 4-inch. For accounting purposes, all meters 3/4–inch and smaller are grouped into one category. Over 98 percent of the meters are ¾-inch meters. Table 6 also presents equivalent meter data based on AWWA meter cost-of-service criteria. The information in Table 6 is used to develop monthly base rates by meter size.

Table 6
Meters and Equivalent Meters by Size

	Size (Inches)									Total
	3/4 and smaller	**1**	**1 1/2**	**2**	**3**	**4**	**6**	**8**	**10**	
Number of Meters	**3,325**	**13**	**0**	**28**	**0**	**5**	**0**	**0**	**0**	**3,371**
% of Total	**98.6%**	**0.4%**	**0.0%**	**0.83%**	**0.0%**	**0.15%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**
AWWA Equiv. Meter Ratios	1.0	1.7	3.3	5.3	11.67	20	41.67	60	96.67	
Equivalent Meters	**3,325**	**22**	**0**	**149**	**0**	**100**	**0**	**0**	**0**	**3,596**
% of Total	**92.5%**	**0.6%**	**0.0%**	**4.2%**	**0.0%**	**2.8%**	**0.0%**	**0.0%**	**0.0%**	**100.0%**

CALCULATING REVENUE REQUIREMENTS

There are two methods for determining a water utility's revenue requirements. One is called the Cash Basis of revenue requirements. The other method is called the Utility Basis of revenue requirements. The revenue requirements for each approach are summarized below.

	Cash Basis		**Utility Basis**
	Operation and Maintenance Costs		Operation and Maintenance Cost
Plus:	Debt Service	Plus:	Depreciation
	Cash-Financed Capital Outlays		Return on Investment
	Taxes (if applicable)		Taxes (if applicable)
	Net Additions to Reserves		
	Total Requirements		Total Requirements
Less:	Non-Rate Revenues	Less:	Non-Rate Revenues
Equals:	Net Requirements from Rates	Equals:	Net Requirements from Rates

The cash basis of revenue requirements is based on the actual cash expenditures of the system. Its goal is to make sure revenues match the cash needs of the system. In public utilities, this method generally matches the budgetary expenditures for the period. It has the additional advantage of being more understandable to most ratepayers and more directly meets any debt service coverage requirements that the system might need to comply with.

The utility basis approach simulates the financial requirements of private sector companies. It ensures that revenue requirements reflect the depreciation incurred by the system, as well as a return on the investment in rate base by system owners. In the municipal utility setting, the utility basis is most often used when there is significant utility service to customers outside the jurisdictional boundaries of the system owners, such as outside-City customers. It allows the system owners (i.e., inside-City customers) to earn a return from the investments to serve the outside-City customers. Because Ivins City does not have any outside-City users, rates for this study were developed under the **cash basis only.**

Non-Rate Revenue

The projected non-rate revenue for the planning period is summarized in Table 7. Non-Rate Revenue may include items such as impact fees, service connection fees, net interest income, lease income, and gain/loss on disposal of assets. It should be noted that revenue shown in the table takes into account the proposed water impact fee as outlined in the Ivins City Water (Culinary and Irrigation) Impact Fee Analysis.

Table 7
Projected Non-Rate Revenue

Item	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
Operation Non-Rate Revenue	$158,180	$167,647	$177,682	$188,319	$199,594	$211,545
Non-Operations Non-Rate Revenue	$403,874	$411,093	$432,828	$440,499	$455,563	$471,531
Total	**$562,054**	**$578,740**	**$610,510**	**$628,818**	**$655,157**	**$683,076**

City Expenditures

The projected City expenditures for the planning period are summarized in Table 8. Included in the table are the projected total costs for the three major categories of expenditures: operations and maintenance, debt service, and capital expenditures. Each of these categories are discussed in more detail in following sections.

Table 8
Projected Revenue Requirements

Item	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
O&M	$1,443,059	$1,585,025	$1,656,361	$1,734,107	$1,812,152	$1,893,710
Debt Services[1]	$0	$277,416	$277,416	$277,416	$277,416	$523,703
Capital Improvements (Net of Bonds)	$1,091,403	$875,709	$1,004,474	$1,128,190	$1,273,964	$1,158,729
Total Expenditures	**$2,534,462**	**$2,738,150**	**$2,938,251**	**$3,139,713**	**$3,363,532**	**$3,576,142**

Operation and Maintenance Costs

The projected operation and maintenance (O&M) costs for the City have been taken from the City's budget year for the year 2017. Beyond 2017, it has been assumed that most of these O&M cost categories will increase at a rate equal to half the system growth rate in each year and an assumed inflation rate of 3.0 percent (e.g. budget growth = 3.0 %/2 + 3% = 4.5%). Per the direction of City staff, the O&M budget has also been increased in FYE 2019 and FYE 2020 to account for 2 new public works system operators that the City is planning to hire in these respective years.

Debt Service Costs

The Ivins City water fund currently has no debt service. However, the City has planned to use a municipal bond to fund the design and construction of a new irrigation storage tank and large irrigation transmission line in 2020 as well as a new public works yard in 2023. Per the direction of the City, 40% of the cost of the new public works yard has been allocated to the water fund.

Capital Improvement Costs

The projected capital improvement costs for the City have been taken from the City's Culinary Water and Secondary Irrigation Master Plans. A detailed list of all capital improvements can be found in each respective report.

Included under the capital improvements budget is a section for the transfer of funds to or from the City's reserve fund. As noted previously, it is recommended that the City invest approximately $971,000 annually (increased with an assumed inflation rate of 3.0% plus a 3.0% increase to account for a higher system replacement value each year as infrastructure is added to the system) into the system. Any money not spent on projects in the capital facility plan should be spent on other system rehabilitation and replacement projects. However, if specific rehabilitation and replacement projects are not immediately needed, these funds should be deposited in the utility's reserve balance for later use. To facilitate the option of paying for improvements without bonding, it is expected that there will be years in which excess funds are generated and added to the reserve, only to be drawn out in subsequent years for large projects. From a long-term perspective, the City should continue to invest the recommended amount into projects in the system such that the reserve fund's overall size does not appreciably increase due to these transfers.

REVENUE GENERATED WITH CURRENT RATES

Total annual projected rate revenues based on the City's existing rates are shown in Table 9. It can be seen that the City's current rate schedule does not provide adequate funding to meet the City's recommended level of revenue. This considered, it is recommended that the City adjust its rates to meet projected revenue requirements.

Table 9
Projected Revenue Based on Existing Water Rates

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYW 2023	FYE 2024
Projected Rate Revenue - Existing Rates	$1,856,410	$1,907,296	$1,961,617	$2,015,417	$2,070,672	$2,132,793
Projected Rate Revenue Requirements	$1,967,794	$2,143,038	$2,314,277	$2,496,636	$2,693,339	$2,885,105
Projected Difference	($111,384)	($235,742)	($352,660)	($481,219)	($622,667)	($752,312)

COST ALLOCATIONS

A key step in a cost-of-service rate analysis is the allocation of costs to customer service characteristics. The allocation approach used in this rate update reflects the basic approaches recommended by the AWWA.

Customer Service Characteristics

Customer service characteristics are demands or other "services" that each customer receives. Specifically, the customer service characteristics considered in this rate study include:

- average demand,
- peak day demand,
- billing & collection, and
- meters & services.

The first step in allocating costs is to divide each of the City's revenue requirements into these four categories. This has been done in the water rate model. In each case, these allocations are based on professional engineering judgment and knowledge of system operations.

To understand how this has been done, it may be useful to consider a few examples. As one example, a large portion of costs for distribution pipelines are attributed to average day demand. This basically represents the cost of maintaining pipes and valves in the ground to provide water to system users. However, the size of the pipelines in the system must be larger than would be required to convey average flow, because of daily and seasonal fluctuations in system flow. Thus, a portion of the distribution budget has been allocated to peak demand to account for the increased costs of maintaining a larger system. The remaining amount is allocated to cover the costs of meters and service lines.

In contrast to the distribution pipelines is the Accounting Services O&M budget item. Because this budget item is associated with working with individual customers, the majority is assigned to billing and collection, while the remaining portion goes to meters and services. Each of the other revenue requirements has been divided among the customer service characteristic categories based on similar logic.

Using the percentages assigned to each budget category, the system revenue costs are distributed among the customer service characteristics. This is shown in detail in the rate model (see Appendix A for rate model tables).

RECOMMENDED RATES

The rate model has been used to calculate the water rates required to meet revenue needs for the next six years. These results are summarized in Table 10, 11 and 12. Note that rate schedules for customers on the culinary water system and secondary water system are shown. The recommended rates follow the same block schedule that the City currently utilizes. The base rate for users on each system is the same, with block rates that differ. Note that the block schedules are the same for both systems for FYE 2019 and FYE 2020, with the changes beginning in FYE 2021 (the secondary irrigation system is not currently in operation and is anticipated to come into service in 2021). The rate schedule is intended to give secondary water users a slight rate discount (a savings of about $50 per year for the average user).

Table 10
Monthly Base Rate ($/month, culinary and irrigation users)

Meter Size	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
3/4 and smaller	$16.91	$17.96	$18.78	$19.67	$20.60	$21.57
1	$25.24	$26.84	$28.06	$29.37	$30.74	$32.19
1.5	$45.88	$48.85	$51.04	$53.41	$55.88	$58.52
2	$70.75	$75.36	$78.73	$82.36	$86.16	$90.23
3	$149.58	$159.40	$166.50	$174.16	$182.14	$190.75
4	$253.14	$269.83	$281.82	$294.76	$308.26	$322.83
6	$522.57	$557.09	$581.81	$608.51	$636.35	$666.44
8	$750.47	$800.08	$835.57	$873.90	$913.86	$957.07
10	$1,206.40	$1,286.18	$1,343.22	$1,404.82	$1,469.05	$1,538.51

Table 11
Volume Block Rate ($/month, culinary water)

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
Block 1 Rate						
Residential	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Multi	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Commercial	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Institutional	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Stock	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Block 2 Rate						
Residential	$2.49	$2.65	$2.83	$3.06	$3.28	$3.50
Multi	$2.49	$2.65	$2.83	$3.06	$3.28	$3.50
Commercial	$2.35	$2.50	$2.67	$2.88	$3.09	$3.31
Institutional	$2.35	$2.50	$2.67	$2.88	$3.09	$3.31
Stock	$2.49	$2.65	$2.83	$3.06	$3.28	$3.50
Block 3 Rate						
Residential	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Multi	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Commercial	$2.86	$3.04	$3.26	$3.51	$3.77	$4.07
Institutional	$2.86	$3.04	$3.26	$3.51	$3.77	$4.07
Stock	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Block 4 Rate						
Residential	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68
Multi	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68
Commercial	-	-	-	-	-	-
Institutional	-	-	-	-	-	-
Stock	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68

Table 12
Volume Block Rate ($/month, irrigation water)

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
Block 1 Rate						
Residential	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Multi	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Commercial	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Institutional	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Stock	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Block 2 Rate*						
Residential	$2.49	$2.65	$1.68	$1.77	$1.87	$1.97
Multi	$2.49	$2.65	$1.68	$1.77	$1.87	$1.97
Commercial	$2.35	$2.50	$1.58	$1.66	$1.76	$1.85
Institutional	$2.35	$2.50	$1.58	$1.66	$1.76	$1.85
Stock	$2.49	$2.65	$1.68	$1.77	$1.87	$1.97
Block 3 Rate*						
Residential	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Multi	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Commercial	$2.86	$3.04	$3.26	$3.51	$3.77	$4.07
Institutional	$2.86	$3.04	$3.26	$3.51	$3.77	$4.07
Stock	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Block 4 Rate*						
Residential	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68
Multi	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68
Commercial	-	-	-	-	-	-
Institutional	-	-	-	-	-	-
Stock	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68

*Rate for secondary irrigation water

Monthly Base Charges

The first component of the proposed rate is the monthly base charge. The monthly base charge will be the same for all customer classes. The recommended base charge for a 3/4-inch meter is recommended to be $16.91 per month in 2019. This represents a decrease of 29% percent in the monthly base charge compared to the current base rate of $23.90 per month. This decrease is recommended based on the cost-of-service approach utilized in this evaluation, which shows that the base rate should be less than it currently is and that the volume rates should be higher than they currently are. Corresponding rates for larger meters are shown in Table 10.

Volumetric Rates

Volumetric rates will vary by customer class to reflect the cost of service. The following is a summary of the block schedule which corresponds to Table 11 and 12 (which matches the City's current block schedule):

- Residential Blocks
  - Block 1 = 0 to 7,000 gallons per month
  - Block 2 = 7,001 to 15,000 gallons per month (0 to 8,000 gallons on irrigation system)
  - Block 3 = 15,001 to 30,000 gallons per month (8,000 to 23,000 gallons on irrigation system)
  - Block 4 = Greater than 30,000 gallons per month (greater than 23,000 gallons on irrigation system)
- Multi (Master Metered) Blocks
  - To be billed at the residential block rate by taking the total water use for the master meter community and dividing water use evenly over all connections.
- Commercial/Industrial/Stock
  - Block 1 = 0 to 20,000 gallons per month
  - Block 2 = 20,001 to 100,000 gallons per month (0 to 80,000 gallons on irrigation system)
  - Block 3 = Greater than 100,000 gallons per month (greater than 80,000 gallons on irrigation system)

A few items should be noted about the recommended rates:

1. For users on the secondary water system, culinary water use over 7,000 gallons per month should be billed at an increased "penalty rate" that is 10% higher than the normal culinary block rate. This penalty should be assessed to prevent users that have access to secondary water from continuing to irrigate with culinary water.
2. As previously discussed, it is recommended that the City change the way that master metered communities are billed. Rather than billing the meter as a single user (which results in water use very quickly reaching the block 4 billing rate), water use for master metered communities should be distributed evenly among all connections in the community with each connection being billed as a normal residential (3/4") meter.

APPENDIX A
RATE MODEL TABLES

Table A
10-Year Budget Plan - Water

	Historic			Projected									
	Year			Year									
	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027
Total Accounts	3,099	3,205	3,295	3,387	3,483	3,580	3,682	3,785	3,891	4,008	4,128	4,252	4,379
% Growth from Previous Year	-	3.42%	2.81%	3.00%	3%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Expenditures													
O&M	$1,223,049	$1,259,740	$1,300,892	$1,320,322	$1,443,059	$1,585,025	$1,656,361	$1,734,107	$1,812,152	$1,893,710	$1,950,567	$2,009,133	$2,069,458
Debt Service	$0	$0	$0	$0	$0	$277,416	$277,416	$277,416	$277,416	$523,703	$523,703	$523,703	$523,703
Total Capital Expenditures	$409,562	$409,562	$2,419,557	$534,423	$902,906	$5,625,729	$2,502,899	$1,359,149	$5,339,014	$1,229,531	$668,635	$674,922	$681,398
Total Expenditures	*$1,632,611*	*$1,669,302*	*$3,720,449*	*$1,854,745*	*$2,345,965*	*$7,488,170*	*$4,436,675*	*$3,370,672*	*$7,428,582*	*$3,646,944*	*$3,142,906*	*$3,207,758*	*$3,274,559*
Expenditures from Bond Proceeds	$0	$0	$0	$0	$0	$3,969,000	$0	$0	$3,524,000	$0	$0	$0	$0
Capital Expenditures Net of Bonds	$409,562	$409,562	$2,419,557	$534,423	$902,906	$1,656,729	$2,502,899	$1,359,149	$1,815,014	$1,229,531	$668,635	$674,922	$681,398
Income													
Operations Non-Rate Revenue	$98,331	$132,285	$150,644	$149,249	$158,180	$167,647	$177,682	$188,319	$199,594	$211,545	$217,880	$224,404	$231,124
Impact Fees	$197,750	$203,548	$211,019	$217,530	$349,853	$353,832	$372,131	$376,160	$387,364	$399,240	$411,217	$423,553	$436,260
Other Non Rate, Non Operation	$46,466	$47,260	$48,078	$50,963	$54,020	$57,262	$60,697	$64,339	$68,200	$72,292	$74,460	$76,694	$78,995
Sales - Existing Rates	$1,700,330	$1,751,340	$1,775,000	$1,805,002	$1,856,410	$1,907,296	$1,961,617	$2,015,417	$2,070,672	$2,132,793	$2,196,776	$2,262,680	$2,330,560
Projected Income - Existing Rates	*$2,042,877*	*$2,134,433*	*$2,184,741*	*$2,222,743*	*$2,418,464*	*$2,486,037*	*$2,572,127*	*$2,644,234*	*$2,725,829*	*$2,815,869*	*$2,900,334*	*$2,987,332*	*$3,076,939*
System Investment Goal	$888,603	$915,261	$942,718	$971,000	$1,027,652	$1,089,311	$1,154,669	$1,223,950	$1,297,387	$1,375,230	$1,457,744	$1,545,208	$1,637,921
Recommended Long-term Level of Funding	$2,111,651	$2,175,001	$2,243,611	$2,291,322	$2,470,710	$2,674,336	$2,811,030	$2,958,056	$3,109,539	$3,268,940	$3,408,311	$3,554,341	$3,707,379
Recommended Rate Increases				0.0%	6.0%	6.0%	5.0%	5.0%	5.0%	4.0%	4.0%	3.0%	3.0%
Sales Revenue With Increase	$1,700,330	$1,751,340	$1,775,000	$1,805,002	$1,967,794	$2,143,038	$2,314,277	$2,496,636	$2,693,339	$2,885,105	$3,090,524	$3,278,737	$3,478,412
Projected Income - Recommended Rates	$2,042,877	$2,134,433	$2,184,741	$2,222,743	$2,529,848	$2,721,778	$2,924,787	$3,125,453	$3,348,496	$3,568,182	$3,794,081	$4,003,389	$4,224,792

Table A1
Ivins City – Water Rate Study
Historical Water Use (kgal)

	FYE 2015			*FYE 2016*			*FYE 2017*				
Customer Class	**Use (kgal)**	**Accounts**	**Use per Account**	**Use (kgal)**	**Accounts**	**Use per Account**	**Use (kgal)**	**Accounts**	**Use per Account**	**Planning Use/Acct.**	**Use/Acct. (kgal/month)**
Residential	372,487	2,775	134.2	397,546	2,881	138.0	409,472	2,968	138.0	138.0	11.5
Multi	45,895	211	217.5	43,309	211	205.3	44,608	211	211.4	211.4	17.6
Commercial	38,978	41	950.7	37,816	41	922.3	38,950	42	922.3	922.3	76.9
Institutional	39,312	64	614.3	38,354	64	599.3	39,505	66	599.3	599.3	49.9
Stock	1,221	8	152.6	1,291	8	161.4	1,291	8	161.4	161.4	13.4
Total	497,893	3,099	160.7	518,316	3,205	161.7	533,827	3,295	162.0	162.0	13.5

Table A2
Ivins City – Water Rate Study
Projected Accounts

		Number						
Customer Class	**Year**	**FYE 2018**	**FYE 2019**	**FYE 2020**	**FYE 2021**	**FYE 2022**	**FYE 2023**	**FYE 2024**
	% Growth	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**	**3.00%**
Residential		3,057	3,149	3,243	3,341	3,441	3,544	3,650
Multi		211	211	211	211	211	211	211
Commercial		43	45	46	48	49	50	52
Institutional		68	70	72	74	76	78	80
Stock		8	8	8	8	8	8	8
Total		3,387	3,483	3,580	3,682	3,785	3,891	4,001

Table A3
Ivins City – Water Rate Study
Projected Annual Water Use (kgal)

Customer Class	3-Year Avg. Use/Acct.	Amount (kgal) FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
Residential	138.0	421,751	434,444	447,412	460,932	474,729	488,939	503,607
Multi	211.4	44,608	44,608	44,608	44,608	44,608	44,608	44,608
Commercial	922.3	39,661	41,505	42,428	44,272	45,195	46,117	47,501
Institutional	599.3	40,751	41,950	43,148	44,347	45,545	46,744	48,146
Stock	161.4	1,291	1,291	1,291	1,291	1,291	1,291	1,330
Total		548,062	563,798	578,887	595,451	611,368	627,699	645,192

Table A4
Ivins City – Water Rate Study
Peaking Factors

Customer Class	Max. Mo./ Avg. Mo.	Est. Peak Day Factor
Residential	1.68	2.08
Multi	1.68	2.08
Commercial	1.68	2.08
Institutional	1.68	2.08
Stock	1.68	2.08
System	1.68	2.08
System Peak Day to Average Day Factor	2.08	

Table A5
Ivins City – Water Rate Study
Projected Water Peaking Characteristics

	Estimated Peak Day (kgal)						Excess Over Average (kgal)					
Customer Class	**FYE 2018**	**FYE 2019**	**FYE 2020**	**FYE 2021**	**FYE 2022**	**FYE 2023**	**FYE 2018**	**FYE 2019**	**FYE 2020**	**FYE 2021**	**FYE 2022**	**FYE 2023**
Residential	2,408.03	2,480.49	2,554.54	2,631.73	2,710.51	2,791.64	1,252.54	1,290.24	1,328.75	1,368.91	1,409.88	1,452.08
Multi	254.69	254.69	254.69	254.69	254.69	254.69	132.48	132.48	132.48	132.48	132.48	132.48
Commercial	226.45	236.98	242.24	252.78	258.04	263.31	117.79	123.27	126.00	131.48	134.22	136.96
Institutional	232.67	239.52	246.36	253.20	260.05	266.89	121.03	124.58	128.14	131.70	135.26	138.82
Stock	7.37	7.37	7.37	7.37	7.37	7.37	3.83	3.83	3.83	3.83	3.83	3.83
Unused	-	-	-	-	-	-	-	-	-	-	-	-
Total	3,129.21	3,219.05	3,305.21	3,399.78	3,490.66	3,583.90	1,627.67	1,674.40	1,719.22	1,768.41	1,815.68	1,864.18

Table A6
Ivins City – Water Rate Study
Projected Summer Water Use

	Summer	Summer Use (kgal)						
Customer Class	**Percent**	**FYE 2018**	**FYE 2019**	**FYE 2020**	**FYE 2021**	**FYE 2022**	**FYE 2023**	**FYE 2024**
Residential	58.0%	244,616	251,977	259,499	267,341	275,343	283,584	292,092
Multi	58.0%	25,873	25,873	25,873	25,873	25,873	25,873	25,873
Commercial	58.0%	23,003	24,073	24,608	25,678	26,213	26,748	27,550
Institutional	58.0%	23,636	24,331	25,026	25,721	26,416	27,111	27,925
Stock	58.0%	749	749	749	749	749	749	749
Total		317,876	327,003	335,755	345,361	354,593	364,065	374,189

Table A7
Ivins City – Water Rate Study
Block Water Use by Residential Customers

Upper Block Limits (kgal)				% Use by Block (2017)			
Block 1	**Block 2**	**Block 3**	**Block 4**	**Block 1**	**Block 2**	**Block 3**	**Block 4**
7	15	30	+	55%	36%	9%	0%

Table A8
Ivins City – Water Rate Study
Block Water Use by Non-Residential Customers

Upper Block Limits (kgal)			% Total Use by Block (2017)		
Block 1	**Block 2**	**Block 3**	**Block 1**	**Block 2**	**Block 3**
20	100	+	32%	67%	1%

Table A9
Ivins City – Water Rate Study
Meters and Equivalent Meters

Meters	2017										
	Size (Inches)										
Customer Class	**3/4 and smaller**	**1**	**1 1/2**	**2**	**3**	**4**	**6**	**8**	**10**	**Total**	**% of Total**
Residential	2,968	0	0	0	0	0	0	0	0	2,968	90.1%
Multi	211	0	0	0	0	0	0	0	0	211	6.4%
Commercial	41	1	0	0	0	0	0	0	0	42	1.3%
Institutional	21	12	0	28	0	5	0	0	0	66	2.0%
Stock	8	0	0	0	0	0	0	0	0	8	0.2%
Unused	0	0	0	0	0	0	0	0	0	0	0.0%
Total	3,249	13	0	28	0	5	0	0	0	3,295	100.0%
% of Total	98.6%	0.39%	0.00%	0.85%	0.00%	0.15%	0.00%	0.00%	0.00%	100.00%	
AWWA Equiv. Meter Ratios	1.00	1.67	3.33	5.33	11.67	20.00	41.67	60.00	96.67		
Equivalent Meters											
	Size (Inches)										
Customer Class	**3/4 and smaller**	**1**	**1 1/2**	**2**	**3**	**4**	**6**	**8**	**10**	**Total**	**% of Total**
Residential	2,968	0	0	0	0	0	0	0	0	2,968	84.3%
Multi	211	0	0	0	0	0	0	0	0	211	6.0%
Commercial	41	2	0	0	0	0	0	0	0	43	1.2%
Institutional	21	20	0	149	0	100	0	0	0	290	8.2%
Stock	8	0	0	0	0	0	0	0	0	8	0.2%
Unused	0	0	0	0	0	0	0	0	0	0	0.0%
Total	3,249	22	0	149	0	100	0	0	0	3,520	100.0%
% of Total	92.3%	0.6%	0.0%	4.2%	0.0%	2.8%	0.0%	0.0%	0.0%	100.0%	

Table A10
Ivins City – Water Rate Study
Projected Number of Equivalent Meters by Size

Customer Class	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Residential	3,057	3,149	3,243	3,341	3,441	3,544
Multi	211	211	211	211	211	211
Commercial	43	45	46	49	50	51
Institutional	299	308	317	326	335	343
Stock	8	8	8	8	8	8
Unused	0	0	0	0	0	0
Total	3,619	3,722	3,826	3,934	4,044	4,157

Table A11
Ivins City – Water Rate Study
Impact Fee Revenue

Size of Meter	Impact Fee	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
3/4 and smaller	$3,346					$316,700	$319,999	$336,494	$339,793	$349,690	$360,181
1	$5,587					$2,116	$2,138	$2,248	$2,271	$2,337	$2,407
1 1/2	$11,141					$0	$0	$0	$0	$0	$0
2	$17,832					$14,547	$14,699	$15,457	$15,608	$16,063	$16,545
3	$39,044					$0	$0	$0	$0	$0	$0
4	$66,913					$9,748	$9,849	$10,357	$10,458	$10,763	$11,086
6	$139,414					$0	$0	$0	$0	$0	$0
8	$200,740					$0	$0	$0	$0	$0	$0
10	$323,426					$0	$0	$0	$0	$0	$0
Total Impact Fee Revenue		$193,250	$199,048	$205,019	$211,170	$343,112	$346,686	$364,556	$368,130	$378,852	$390,218

Table A12
Ivins City – Water Rate Study
Non-Rate Revenue (Including Connection Fees)

Item	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
Operations										
Connection Fees	$58,019	$59,760	$56,615	$60,012	$63,613	$67,429	$71,475	$75,764	$80,309	$85,128
Penalties and Forfeitures	$32,112	$33,075	$36,639	$38,837	$41,168	$43,638	$46,256	$49,031	$51,973	$55,092
Return Check Charges	$400	$450	$390	$400	$400	$400	$400	$400	$400	$400
Construction Water	$7,800	$39,000	$57,000	$50,000	$53,000	$56,180	$59,551	$63,124	$66,911	$70,926
Total Operations Non-Rate Revenue	$98,331	$132,285	$150,644	$149,249	$158,180	$167,647	$177,682	$188,319	$199,594	$211,545
Expansion and Replacement										
Impact Fees	$193,250	$199,048	$205,019	$211,170	$343,112	$346,686	$364,556	$368,130	$378,852	$390,218
Taviawk Zonal Water Impact Fee	$4,500	$4,500	$6,000	$6,360	$6,742	$7,146	$7,575	$8,029	$8,511	$9,022
Interest Earnings	$26,466	$27,260	$28,078	$29,763	$31,548	$33,441	$35,448	$37,575	$39,829	$42,219
Miscellaneous	$20,000	$20,000	$20,000	$21,200	$22,472	$23,820	$25,250	$26,765	$28,370	$30,073
Total Expansion Non-Rate Revenue	$244,216	$250,808	$259,097	$268,492	$403,874	$411,093	$432,828	$440,499	$455,563	$471,531
Total Non-Rate Revenue	$342,547	$383,093	$409,741	$417,741	$562,054	$578,740	$610,510	$628,817	$655,157	$683,077

Table A13
Ivins City – Water Rate Study
Non-Rate Revenue (Including Connection Fees)

Item	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
O&M										
Salaries & Wages	$374,694	$385,935	$401,818	$419,900	$519,159	$622,885	$650,914	$680,206	$710,815	$742,802
Overtime	$4,531	$4,667	$7,838	$8,191	$8,559	$8,944	$9,347	$9,768	$10,207	$10,666
Employee Benefits	$160,574	$165,391	$179,182	$187,245	$195,671	$204,476	$213,678	$223,293	$233,342	$243,842
Employers Taxes	$36,303	$37,392	$38,535	$40,269	$42,081	$43,975	$45,954	$48,022	$50,183	$52,441
Uniform & Safety Equipment	$1,573	$1,620	$1,650	$1,724	$1,810	$1,901	$1,996	$2,096	$2,201	$2,311
Outside Counsel - Legal	$3,821	$3,936	$2,693	$2,814	$2,941	$3,073	$3,211	$3,356	$3,507	$3,665
Books, Subscripts, Memberships	$4,391	$4,523	$7,886	$8,241	$8,612	$8,999	$9,404	$9,827	$10,270	$10,732
Software	$12,370	$12,741	$21,844	$22,827	$23,854	$24,928	$26,049	$27,222	$28,447	$29,727
Public Notices	$5,284	$5,443	$3,212	$3,357	$3,508	$3,665	$3,830	$4,003	$4,183	$4,371
Travel & Lodging	$4,276	$4,404	$3,633	$3,796	$3,967	$4,146	$4,332	$4,527	$4,731	$4,944
Office Supplies	$16,569	$17,066	$9,016	$9,422	$9,846	$10,289	$10,752	$11,236	$11,741	$12,270
Equipment - Supplies & Maint.	$2,196	$2,262	$2,221	$2,321	$2,425	$2,535	$2,649	$2,768	$2,892	$3,022
Equipment Rental/Lease	$16,167	$16,652	$9,300	$9,719	$10,156	$10,613	$11,090	$11,589	$12,111	$12,656
Vehicle Maintenance	$3,766	$3,879	$3,270	$3,417	$3,571	$3,732	$3,900	$4,075	$4,258	$4,450
Gas/Oil/Diesel	$8,420	$8,673	$9,157	$9,569	$10,000	$10,450	$10,920	$11,411	$11,925	$12,461
Bldgs & Grounds - Supplies/Mnt	$7,649	$7,878	$6,886	$7,196	$7,520	$7,858	$8,212	$8,581	$8,967	$9,371
Utilities	$16,658	$17,158	$12,787	$13,362	$13,964	$14,592	$15,249	$15,935	$16,652	$17,401
Telephone	$8,029	$8,270	$11,063	$11,561	$12,081	$12,625	$13,193	$13,787	$14,407	$15,055
Professional & Technical	$21,170	$21,805	$24,233	$25,323	$26,463	$27,654	$28,898	$30,199	$31,558	$32,978
Accounting Services	$8,180	$8,425	$7,950	$8,308	$8,682	$9,072	$9,481	$9,907	$10,353	$10,819
Contractor Services	$15,996	$16,476	$15,526	$16,225	$16,955	$17,718	$18,515	$19,348	$20,219	$21,129
Water Purchase	$441,181	$454,416	$468,048	$450,000	$450,000	$470,250	$491,411	$513,525	$536,633	$560,782
Irrigation Water Share Assess	$5,786	$5,960	$7,908	$8,264	$8,636	$9,024	$9,430	$9,855	$10,298	$10,762
Education & Training	$1,953	$2,012	$2,388	$2,495	$2,608	$2,725	$2,848	$2,976	$3,110	$3,250
Material & Supplies	$6,243	$6,430	$2,279	$2,382	$2,489	$2,601	$2,718	$2,840	$2,968	$3,101
Landfill Charges	$1,880	$1,936	$3,490	$3,647	$3,811	$3,983	$4,162	$4,349	$4,545	$4,749
Insurance & Surety Bonds	$17,404	$17,926	$17,528	$18,317	$19,141	$20,002	$20,902	$21,843	$22,826	$23,853
Miscellaneous	$2,589	$2,667	$8,687	$9,078	$9,486	$9,913	$10,359	$10,826	$11,313	$11,822
Bankcard Fees	$10,259	$10,567	$10,864	$11,353	$11,864	$12,398	$12,956	$13,539	$14,148	$14,784
Newsletter	$3,136	$3,230	$0	$0	$3,200	$0	$0	$3,200	$3,344	$3,494
Unused	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Unused	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M	$1,223,049	$1,259,740	$1,300,892	$1,320,322	$1,443,059	$1,585,025	$1,656,361	$1,734,107	$1,812,152	$1,893,710
	FYE 2015	**FYE 2016**	**FYE 2017**	**FYE 2018**	**FYE 2019**	**FYE 2020**	**FYE 2021**	**FYE 2022**	**FYE 2023**	**FYE 2024**
Debt Service										
Irrigation System Improvements Debt Service	$0	$0	$0	$0	$0	$277,416	$277,416	$277,416	$277,416	$277,416
Public Works Building Debt Service										$246,287
Unused										
Unused										
Unused									$0	$0
Total Debt Service	$0	$0	$0	$0	$0	$277,416	$277,416	$277,416	$277,416	$523,703
Capital Outlays	**FYE 2015**	**FYE 2016**	**FYE 2017**	**FYE 2018**	**FYE 2019**	**FYE 2020**	**FYE 2021**	**FYE 2022**	**FYE 2023**	**FYE 2024**
Meter Replacement	$0	$0	$0	$67,961	$70,000	$74,200	$78,652	$83,371	$88,373	$93,676
Capital Outlay - Equipment	$60,000	$60,000	$60,295	$61,000	$64,660	$68,540	$72,652	$77,011	$81,632	$86,530
Capital Outlay Tools	$9,000	$9,000	$9,200	$9,200	$9,752	$10,337	$10,957	$11,615	$12,312	$13,050
Capital Outlay - Other	$7,000	$7,000	$7,000	$7,200	$7,632	$8,090	$8,575	$9,090	$9,635	$10,213
Regional Pipeline	$254,562	$254,562	$254,562	$254,562	$254,562	$254,562	$254,562	$254,562	$254,562	$254,562
Water System Upgrades	$75,000	$75,000	$79,000	$80,000	$100,000	$220,000	$270,000	$70,000	$270,000	$200,000
Water Road Repair	$4,000	$4,000	$4,500	$4,500	$4,500	$4,500	$4,500	$4,500	$4,500	$4,500
Culinary Water Master Plan	$0	$0	$0	$50,000	$0	$0	$0	$0	$60,000	$0
Secondary Irrigation Master Plan	$0	$0	$45,000	$0	$0	$0	$0	$0	$60,000	$0
Other Capital Outlays	$0	$0	$1,960,000	$0	$0	$0	$0	$0	$0	$0
Capital Improvements										
P1-01 - Irrigation Pipeline	$0	$0	$0	$0	$250,000	$1,596,500	$0	$0	$0	$0
P1-02 - Irrigation Storage Tank	$0	$0	$0	$0	$0	$2,122,000	$0	$0	$0	$0
P1-03 - Irrigation Pipeline	$0	$0	$0	$0	$0	$204,000	$0	$0	$0	$0
P1-04 - PRV Vault	$0	$0	$0	$0	$61,800	$0	$0	$0	$0	$0
P1-05 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$490,000	$0	$0	$0
P1-06 - Irrogation Pipeline	$0	$0	$0	$0	$0	$0	$25,000	$0	$0	$0
P1-07 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$66,000	$0	$0	$0
P1-08 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$162,000	$0	$0	$0
P1-09 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$92,000	$0	$0	$0
P1-10 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$523,000	$0	$0	$0
P1-11 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$0	$141,000	$0	$0
P1-12 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$0	$163,000	$0	$0
P1-13 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$0	$260,000	$0	$0
P1-14 - PRV Vault	$0	$0	$0	$0	$0	$0	$66,000	$0	$0	$0
M-1 - Irrigation Meter Installation	$0	$0	$0	$0	$0	$320,000	$379,000	$0	$0	$0
P2-01 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$0	$0	$407,000	$0
P2-02 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$0	$0	$96,000	$0
P2-03 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$0	$0	$116,000	$0
P2-04 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$0	$0	$0	$260,000
P2-05 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,000
P2-06 - Irrigation Pipeline	$0	$0	$0	$0	$0	$0	$0	$0	$0	$18,000
P2-07 - PRV Vault	$0	$0	$0	$0	$0	$0	$0	$0	$70,000	$0
M-2 - Irrigation Meter Installation	$0	$0	$0	$0	$0	$0	$0	$285,000	$285,000	$285,000
F1 - New Public Works Yards	$0	$0	$0	$0	$0	$0	$0	$0	$3,524,000	$0
F2 - New City Office	$0	$0	$0	$0	$0	$743,000	$0	$0	$0	$0
Install Booster Pump in Taviawk Subdivision	$0	$0	$0	$0	$80,000	$0	$0	$0	$0	$0
Misc. Rehabilitation and Replacement Budget	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Bond Revenue										
Bond Revenue - Irrigation Improvements	$0	$0	$0	$0	$0	($3,969,000)	$0	$0	$0	$0
Bond Revenue - Public Works Facility	$0	$0	$0	$0	$0	$0	$0	$0	($3,524,000)	$0
Transfer to/(from) Reserve Fund	$410,267	$465,131	($1,535,708)	$367,998	$183,884	($797,391)	($1,511,888)	($245,219)	($556,086)	($78,762)
Total Capital Outlays	$ 819,829	$ 874,693	$ 883,849	$ 902,421	$ 1,086,790	$ 859,337	$ 991,010	$ 1,113,930	$ 1,258,928	$ 1,150,769
Total All Revenue Requirements	$ 2,042,877	$ 2,134,433	$ 2,184,741	$ 2,222,743	$ 2,529,848	$ 2,721,778	$ 2,924,787	$ 3,125,453	$ 3,348,496	$ 3,568,182
LESS:										
Operations Non-Rate Revenue	$98,331	$132,285	$150,644	$149,249	$158,180	$167,647	$177,682	$188,319	$199,594	$211,545
Expansion Non-Rate Revenue	$244,216	$250,808	$259,097	$268,492	$403,874	$411,093	$432,828	$440,499	$455,563	$471,531
Net Revenue Requirements	$ 1,700,330	$ 1,751,340	$ 1,775,000	$ 1,805,002	$ 1,967,794	$ 2,143,038	$ 2,314,277	$ 2,496,636	$ 2,693,339	$ 2,885,105

Table A14
Ivins City – Water Rate Study
Cost Allocation % to Service Characteristics

Item	Average Demand	Peak Day	Billing & Collection	Meters & Services	Total
O&M					
Salaries & Wages	60%	5%	5%	30%	100%
Overtime	60%	5%	5%	30%	100%
Employee Benefits	60%	5%	5%	30%	100%
Uniform & Safety Equipment	60%	5%	5%	30%	100%
Outside Counsel - Legal	80%	5%	0%	15%	100%
Books, Subscripts, Memberships	80%	5%	0%	15%	100%
Software	80%	5%	0%	15%	100%
Public Notices	0%	0%	100%	0%	100%
Travel & Lodging	60%	10%	10%	20%	100%
Office Supplies	0%	0%	20%	80%	100%
Equipment - Supplies & Maint.	0%	0%	50%	50%	100%
Equipment Rental/Lease	60%	5%	5%	30%	100%
Vehicle Maintenance	60%	5%	5%	30%	100%
Gas/Oil/Diesel	60%	5%	5%	30%	100%
Bldgs & Grounds - Supplies/Mnt	60%	5%	5%	30%	100%
Utilities	0%	0%	50%	50%	100%
Telephone	0%	0%	70%	30%	100%
Professional & Technical	60%	5%	5%	30%	100%
Accounting Services	0%	0%	70%	30%	100%
Contractor Services	60%	5%	5%	30%	100%
Water Purchase	60%	5%	5%	30%	100%
Irrigation Water Share Assess	60%	5%	5%	30%	100%
Education & Training	0%	0%	50%	50%	100%
Material & Supplies	60%	5%	5%	30%	100%
Landfill Charges	60%	5%	5%	30%	100%
Insurance & Surety Bonds	60%	5%	5%	30%	100%
Miscellaneous	60%	5%	5%	30%	100%
Bankcard Fees	60%	5%	5%	30%	100%
Newsletter	60%	5%	5%	30%	100%
Unused	60%	5%	5%	30%	100%
Unused	60%	5%	5%	30%	100%
Unused	60%	5%	5%	30%	100%

Table A15
Ivins City – Water Rate Study
Fixed Asset Allocations to Service Characteristics (Pipes, Well, Tanks, Equipment, etc.)

Allocated Amount				
Average Demand	**Peak Day**	**Billing & Collection**	**Meters & Services**	**Total**
45.0%	20.0%	10.0%	25.0%	100.0%

Table A16
Ivins City – Water Rate Study
Allocation of O&M costs to Service Characteristics

FYE 2019				FYE 2020					FYE 2021			
Peak Day	Billing & Collection	Meters & Services	Total	Average Demand	Peak Day	Billing & Collection	Meters & Services	Total	Average Demand	Peak Day	Billing & Collection	Meters
$25,958	$25,958	$155,748	$519,159	$373,731	$31,144	$31,144	$186,865	$622,885	$390,549	$32,546	$32,546	$195
$428	$428	$2,568	$8,559	$5,367	$447	$447	$2,683	$8,944	$5,608	$467	$467	$2
$9,784	$9,784	$58,701	$195,671	$122,686	$10,224	$10,224	$61,343	$204,476	$128,207	$10,684	$10,684	$64
$2,104	$2,104	$12,624	$42,081	$26,385	$2,199	$2,199	$13,192	$43,975	$27,572	$2,298	$2,298	$13
$91	$0	$272	$1,810	$1,521	$95	$0	$285	$1,901	$1,597	$100	$0	$
$147	$0	$441	$2,941	$2,459	$154	$0	$461	$3,073	$2,569	$161	$0	$
$431	$0	$1,292	$8,612	$7,199	$450	$0	$1,350	$8,999	$7,523	$470	$0	$1
$0	$23,854	$0	$23,854	$0	$0	$24,928	$0	$24,928	$0	$0	$26,049	
$351	$351	$702	$3,508	$2,199	$367	$367	$733	$3,665	$2,298	$383	$383	$
$0	$793	$3,174	$3,967	$0	$0	$829	$3,317	$4,146	$0	$0	$866	$3
$0	$4,923	$4,923	$9,846	$0	$0	$5,144	$5,144	$10,289	$0	$0	$5,376	$5
$121	$121	$728	$2,425	$1,521	$127	$127	$760	$2,535	$1,589	$132	$132	$
$508	$508	$3,047	$10,156	$6,368	$531	$531	$3,184	$10,613	$6,654	$555	$555	$3
$179	$179	$1,071	$3,571	$2,239	$187	$187	$1,119	$3,732	$2,340	$195	$195	$1
$500	$500	$3,000	$10,000	$6,270	$522	$522	$3,135	$10,450	$6,552	$546	$546	$3
$0	$3,760	$3,760	$7,520	$0	$0	$3,929	$3,929	$7,858	$0	$0	$4,106	$4
$0	$9,775	$4,189	$13,964	$0	$0	$10,214	$4,378	$14,592	$0	$0	$10,674	$4
$604	$604	$3,624	$12,081	$7,575	$631	$631	$3,787	$12,625	$7,916	$660	$660	$3
$0	$18,524	$7,939	$26,463	$0	$0	$19,358	$8,296	$27,654	$0	$0	$20,229	$8
$434	$434	$2,604	$8,682	$5,443	$454	$454	$2,722	$9,072	$5,688	$474	$474	$2
$848	$848	$5,086	$16,955	$10,631	$886	$886	$5,315	$17,718	$11,109	$926	$926	$5
$22,500	$22,500	$135,000	$450,000	$282,150	$23,513	$23,513	$141,075	$470,250	$294,847	$24,571	$24,571	$147
$0	$4,318	$4,318	$8,636	$0	$0	$4,512	$4,512	$9,024	$0	$0	$4,715	$4
$130	$130	$782	$2,608	$1,635	$136	$136	$818	$2,725	$1,709	$142	$142	$
$124	$124	$747	$2,489	$1,560	$130	$130	$780	$2,601	$1,631	$136	$136	$
$191	$191	$1,143	$3,811	$2,390	$199	$199	$1,195	$3,983	$2,497	$208	$208	$1
$957	$957	$5,742	$19,141	$12,001	$1,000	$1,000	$6,001	$20,002	$12,541	$1,045	$1,045	$6
$474	$474	$2,846	$9,486	$5,948	$496	$496	$2,974	$9,913	$6,216	$518	$518	$3
$593	$593	$3,559	$11,864	$7,439	$620	$620	$3,719	$12,398	$7,773	$648	$648	$3
$160	$160	$960	$3,200	$0	$0	$0	$0	$0	$0	$0	$0	
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
$67,616	$132,895	$430,590	$1,443,059	$894,715	$74,510	$142,726	$473,074	$1,585,025	$934,985	$77,863	$149,149	$494
4.7%	9.2%	29.8%	100.0%	56.4%	4.7%	9.0%	29.8%	100.0%	56.4%	4.7%	9.0%	2

Table A17
Ivins City – Water Rate Study
Revenue Requirements by Service Characteristics

FYE 2019				FYE 2020					FYE 2021			
Peak	Billing & Collection	Meters & Services	Total	Average Demand	Peak Day	Billing & Collection	Meters & Services	Total	Average Demand	Peak Day	Billing & Collection	Meters & Services
$67,616	$132,895	$430,590	$1,443,059	$894,715	$74,510	$142,726	$473,074	$1,585,025	$934,985	$77,863	$149,149	$494,364
$0	$0	$0	$0	$124,837	$55,483	$27,742	$69,354	$277,416	$124,837	$55,483	$27,742	$69,354
$217,358	$108,679	$271,697	$1,086,790	$386,702	$171,867	$85,934	$214,834	$859,337	$445,955	$198,202	$99,101	$247,753
$7,412	$14,567	$47,199	$158,180	$94,633	$7,881	$15,096	$50,037	$167,647	$100,298	$8,353	$16,000	$53,032
$80,775	$40,387	$100,968	$403,874	$184,992	$82,219	$41,109.35	$102,773	$411,093	$194,773	$86,566	$43,283	$108,207
$196,787	$186,619	$554,120	$1,967,794	$1,126,629	$211,761	$200,196	$604,452	$2,143,038	$1,210,706	$236,630	$216,709	$650,232

Table A18
Ivins City – Water Rate Study
Cost Allocations to Customer Service Classes

FYE 2019				FYE 2020					FYE 2021			
Peak	Billing & Collection	Meters & Services	Total	Average Demand	Peak Day	Billing & Collection	Meters & Services	Total	Average Demand	Peak Day	Billing & Collection	Meters & Services

Table A19
Monthly Base Rate ($/month, culinary and irrigation users)

Meter Size	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
3/4 and smaller	$16.91	$17.96	$18.78	$19.67	$20.60	$21.57
1	$25.24	$26.84	$28.06	$29.37	$30.74	$32.19
1.5	$45.88	$48.85	$51.04	$53.41	$55.88	$58.52
2	$70.75	$75.36	$78.73	$82.36	$86.16	$90.23
3	$149.58	$159.40	$166.50	$174.16	$182.14	$190.75
4	$253.14	$269.83	$281.82	$294.76	$308.26	$322.83
6	$522.57	$557.09	$581.81	$608.51	$636.35	$666.44
8	$750.47	$800.08	$835.57	$873.90	$913.86	$957.07
10	$1,206.40	$1,286.18	$1,343.22	$1,404.82	$1,469.05	$1,538.51

Table A20
Volume Block Rate ($/month, culinary water)

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
Block 1 Rate						
Residential	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Multi	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Commercial	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Institutional	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Stock	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Block 2 Rate						
Residential	$2.49	$2.65	$2.83	$3.06	$3.28	$3.50
Multi	$2.49	$2.65	$2.83	$3.06	$3.28	$3.50
Commercial	$2.35	$2.50	$2.67	$2.88	$3.09	$3.31
Institutional	$2.35	$2.50	$2.67	$2.88	$3.09	$3.31
Stock	$2.49	$2.65	$2.83	$3.06	$3.28	$3.50
Block 3 Rate						
Residential	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Multi	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Commercial	$2.86	$3.04	$3.26	$3.51	$3.77	$4.07
Institutional	$2.86	$3.04	$3.26	$3.51	$3.77	$4.07
Stock	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Block 4 Rate						
Residential	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68
Multi	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68
Commercial	-	-	-	-	-	-
Institutional	-	-	-	-	-	-
Stock	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68

Table A21
Volume Block Rate ($/month, irrigation water)

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024
Block 1 Rate						
Residential	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Multi	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Commercial	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Institutional	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Stock	$1.84	$1.96	$2.05	$2.14	$2.24	$2.34
Block 2 Rate*						
Residential	$2.49	$2.65	$1.68	$1.77	$1.87	$1.97
Multi	$2.49	$2.65	$1.68	$1.77	$1.87	$1.97
Commercial	$2.35	$2.50	$1.58	$1.66	$1.76	$1.85
Institutional	$2.35	$2.50	$1.58	$1.66	$1.76	$1.85
Stock	$2.49	$2.65	$1.68	$1.77	$1.87	$1.97
Block 3 Rate*						
Residential	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Multi	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Commercial	$2.86	$3.04	$3.26	$3.51	$3.77	$4.07
Institutional	$2.86	$3.04	$3.26	$3.51	$3.77	$4.07
Stock	$3.14	$3.34	$3.58	$3.86	$4.15	$4.45
Block 4 Rate*						
Residential	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68
Multi	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68
Commercial	-	-	-	-	-	-
Institutional	-	-	-	-	-	-
Stock	$4.18	$4.44	$4.73	$5.04	$5.38	$5.68

*Rate for secondary irrigation water

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