City Council
Special Meeting Agenda

AUGUST 27, 2013
6:00 p.m.
City of Turlock Yosemite Room
156 S. Broadway, Turlock, California

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Mayor
John S. Lazar

Council Members
Amy Bublak **Steven Nascimento**
Forrest White **William DeHart, Jr.**
Vice Mayor

City Manager
Roy W. Wasden
City Clerk
Kellie E. Weaver
City Attorney
Phaedra A. Norton

SPEAKER CARDS: To accommodate those wishing to address the Council and allow for staff follow-up, speaker cards are available for any agendized topic or any other topic delivered under Public Comment. Please fill out and provide the Comment Card to the City Clerk or Police Officer.

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NOTICE: Pursuant to California Government Code Section 54954.3, any member of the public may directly address the City Council on any item appearing on the agenda, including Consent Calendar and Public Hearing items, before or during the City Council's consideration of the item.

AGENDA PACKETS: Prior to the City Council meeting, a complete Agenda Packet is available for review on the City's website at www.cityofturlock.org and in the City Clerk's Office at 156 S. Broadway, Suite 230, Turlock, during normal business hours. Materials related to an item on this Agenda submitted to the Council after distribution of the Agenda Packet are also available for public inspection in the City Clerk's Office. Such documents may be available on the City's website subject to staff's ability to post the documents before the meeting.

1. CALL TO ORDER

2. PUBLIC PARTICIPATION – LIMITED TO ITEMS DESCRIBED IN THE NOTICE FOR THIS MEETING

This is the time set aside for citizens to address the City Council concerning any item that has been described in the notice for the meeting before or during consideration of that item. You will be allowed three (3) minutes for your comments. If you wish to speak regarding an item on the agenda, you may be asked to defer your remarks until the Council addresses the matter.

3. DECLARATION OF CONFLICTS OF INTEREST AND DISQUALIFICATIONS

4. WORKSHOP – DRAFT WATER RATES AND WATER CAPACITY CHARGES STUDY

A. Informational workshop regarding the Draft Water Rates and Water Capacity Charges Study. (*Madden*)

5. ADJOURNMENT

The foregoing meeting is hereby called by Mayor John S. Lazar at the above mentioned date and time pursuant to California Government Code §54956.

John Lazar

JOHN S. LAZAR, Mayor

MUNICIPAL
FINANCIAL
SERVICES

Prepared for
City of Turlock

Water Rates and Water Capacity Charges Study

August 2013

D R A F T

Water Rates and Water Capacity Charges Study

Prepared for

City of Turlock, California

August 2013

MUNICIPAL FINANCIAL SERVICES

871 Coronado Center Drive, Suite 200

Henderson, Nevada 89052

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Table of Contents

List of Figures v

List of Tables v

List of Abbreviations vii

Executive Summary ES-1

Summary of Methodology and New Rate Structure ES-1

Significant Assumptions ES-2

Debt Service Coverage ES-3

Recommended Water Rates ES-4

Impact of New Rate Structure and Rates ES-5

Recommended Water Capacity Charges ES-6

1. Introduction 1-1

1.1 Organization of the Report 1-1

1.2 Overview of Utility Rate Setting Process 1-1

1.3 Rate-Making Objectives 1-2

1.4 Turlock Water Utility 1-3

1.5 Water Utility Meter Reading and Billing 1-4

1.6 Current Rates and Customer Classes 1-4

1.7 Basis for Current Rates 1-5

1.8 Water System Comparison with Comparable Cities 1-5

1.8.1 Comparison of Comprehensive Annual Financial Reports 1-5

1.8.2 Comparison of Water System Efficiency Metrics 1-7

2. User Characteristics 2-1

2.1 Historic and Projected Meters by Customer Class and Size 2-1

2.2 Historic Production and Projected Water Demand 2-2

2.3 Evaluation of Use by Tier and Customer Class 2-4

2.4 CY12 Average Commodity Charge for Each Customer Class 2-5

2.5 Peak Water Use Patterns 2-6

2.6 Water Meter Equivalency Factors 2-7

3. Water Rates 3-1

3.1 Water Operating Revenues and Expenditures 3-1

3.2 Water Capital Revenues and Expenditures 3-2

3.2.1 City Water System Projected Capital Project Expenditures and Source of Funds 3-2

3.2.2 TID RSWSP Projected Capital Project Expenditures and Source of Funds 3-3

3.3 Debt Service Coverage 3-4

3.4 Target Reserve Fund Levels 3-4

3.5 Cash Flow for Two Water System Development Scenarios 3-5

3.6 Comparison of Two Water System Development Scenarios 3-6

DRAFT for review purposes only. Use of contents on this sheet is subject to the limitations specified at the end of this document.

3.7 Allocation of Costs 3-7
3.8 Comparison of Water Rates for Each Scenario 3-10
4. Evaluation of Water Bills 4-1
4.1 Design of New Rate Structure 4-1
4.2 Impact of New Rate Structure 4-2
4.3 Impact of New Rate Structure Upon Customer Classes 4-3
4.4 Affordability Test 4-4
4.5 Projected Water Bills for Each Scenario 4-5
4.6 Single Family Customer Bills for FY14 4-6
4.7 Commercial Customer Bills for FY14 4-7
4.8 Industrial Customer Bills for FY14 4-8
4.9 Turlock Unified School District Bills for FY14 4-9
4.10 Single Family Customer Bills for FY4 – FY23 4-10
4.11 Survey of Single Family Customer Bills 4-11
5. Water Capacity Charges 5-1
5.1 Regulatory Requirements 5-1
5.2 Conceptual Approach 5-1
5.3 Current Water Connection Charges 5-2
5.4 Construction of Water Assets and Reimbursements 5-3
5.5 Conceptual Approach 5-4
5.6 Water System Valuation 5-5
5.7 Water System Capacity 5-7
5.8 Unit Cost Peak Month Capacity 5-7
5.9 Single Family Peak Month Use 5-8
5.10 Capacity Charge for 1-inch Meter 5-8
5.11 Schedule of Capacity Charges 5-9
5.12 Comparison of Current vs. Recommended Capacity Charges 5-9
5.13 Survey of Single Family Capacity Charges 5-10
6. Public Review and Council Action 6-1
7. Limitations 7-1
Appendix A: Monthly Water Use Data for CY12 ..... A
Appendix B: Water Rate Development Tables – Groundwater Only Scenario ..... B
Appendix C: Water Rate Development Tables – Groundwater + Surface Water Scenario C
Appendix D: Water Capacity Charge Development Tables ..... D

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List of Figures

Figure 1-1. Overview of Rate Setting Analytical Steps 1-1
Figure 1-2. Number of Metered Accounts (2013) and Water Demand (CY12) 1-3
Figure 2-1. Metered Water Use by Tier and Customer Class as a Percent of Total Use 2-2
Figure 2-2. Projected Metered Water Use by Customer Class 2-3
Figure 2-3. Comparison of Historic Water Production and Projected Metered Water Use 2-3
Figure 2-4. Water Use by Tier and Customer Class as a Percent of Total Use 2-4
Figure 3-1. Increase in Monthly Bills, Debt Service and Cash Flow – Groundwater Only 3-6
Figure 3-2. Increase in Monthly Bills, Debt Service and Cash Flow – Groundwater + Surface Water 3-6
Figure 4-1. Design of the New Rate Structure 4-1
Figure 4-2. Impact of the New Rate Structure and Rates on Customer Classes 4-2
Figure 4-3. Single Family Customer Bills, FY4 – FY23 4-10
Figure 4-4. Annual Dollar Change in Single Family Customer Bills, FY4 – FY23 4-10
Figure 4-5. Survey of Single Family Customer Bills 4-11
Figure 5-1. Capacity Charge Development Methodology 5-5

List of Tables

Table ES-1. Recommended Water Rates ES-4
Table ES-2. Current, FY14 and FY15 Average Annual Customer Bills ES-5
Table ES-3. Recommended Water Capacity Charges ES-6
Table 1-1. Water System Financial Metrics of Five Cities 1-6
Table 1-2. Water System Efficiency Metrics of Five Cities 1-7
Table 2-1. Number of Water Meters by Customer Class and Size (April 2013) and Projections 2-1
Table 2-2. FY12 Commodity and Minimum Charge Revenues and Water Use by Customer Class 2-5
Table 2-3. Maximum Day Peak Factor for Development of Commodity Charges 2-6
Table 2-4. Water Meter Equivalency Factors 2-7
Table 3-1. City Water System Capital Project Expenditures and Source of Funds 3-2
Table 3-2. Regional and Terminal Facilities Capital Project Expenditures and Source of Funds 3-3
Table 3-3. Projected Cash Flow, FY14 – FY23 – Groundwater Only 3-5
Table 3-4. Projected Cash Flow, FY14 – FY23 – Groundwater + Surface Water 3-5
Table 3-5. Test Year Functional Allocation Factors 3-7
Table 3-6. Test Year Cost Allocation Summary 3-8

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Table 3-7. Distribution of Costs and Development of Unit Costs 3-9
Table 3-8. Development of Commodity Charges for 3 Customer Class Groups 3-9
Table 3-9. Projected Water Rates – Groundwater Only 3-10
Table 3-10. Projected Water Rates – Groundwater + Surface Water 3-10
Table 4-1. FY14 and FY15 Sample Monthly Bills and % Changes for Each Customer Class 4-3
Table 4-2. Affordability Test Results 4-4
Table 4-3. Projected Water Bills – Groundwater Only 4-5
Table 4-4. Projected Water Bills – Groundwater + Surface Water 4-5
Table 4-5. Single Family Bills for FY14 4-6
Table 4-6. Commercial Bills for FY14 4-7
Table 4-7. Projected Annual Water Bills for Industrial Users, FY14 4-8
Table 4-8. Projected Annual Water Bills for TUSD Accounts, FY14 4-9
Table 5-1. Summary of Fixed Assets Valuation 5-6
Table 5-2. Valuation of Water System 5-7
Table 5-3. System Peak Month Production Capacity 5-7
Table 5-4. Unit Cost Peak Month Capacity 5-7
Table 5-5. Single Family Peak Month Use 5-8
Table 5-6. Capacity Charge for 1-inch Meter 5-8
Table 5-7. Unit Cost Peak Month Capacity 5-9
Table 5-8. Current and Recommended Capacity Charges 5-9
Table 5-9. Survey of Single Family Capacity Charges 5-10

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List of Abbreviations

AF	acre feet (equal to 325,851 gallons)
AMR	Automated Meter Reading
CCI	Construction Cost Index
CIP	Capital Improvement Program
City	City of Turlock
DSC	debt service coverage
DWR	Department of Water Resources
FY	Fiscal year (July 1 to June 30)
ENR	Engineering News Record
FY14	July 1, 2013 to June 30, 2014
gpd	gallons per day
HCF	Hundred Cubic Feet (equal to ~ 748.1 gallons)
mgd	million gallons per day
O&M	Operation and maintenance
RSWSP	Regional Surface Water Supply Project
S&P	Standard & Poor's Ratings Services
TID	Turlock Irrigation District
TMC	Turlock Municipal Code

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Executive Summary

The City of Turlock, in conjunction with Municipal Financial Services, has analyzed the adequacy of revenues to meet projected expenditures of the water enterprise fund to determine whether revenues will be adequate to cover operating and maintenance costs as well as needed capital costs while supporting debt service obligations and meeting target reserve levels. Water rates, which generate approximately 98% of water enterprise fund revenues, were developed for the 10-year period Fiscal Year 2013 – 2014 (FY14) through FY23.

Summary of Methodology and New Rate Structure

The new rate structure and rates are completely different from the existing rate structure and rates. Because of the differences, most customers will experience a large percentage change (either up or down) in their bills. The differences in rate structures and rates are summarized below and detailed in this report.

Cost of Service Allocations. The existing rate structure recovers approximately 50% of revenues from commodity charges (including the minimum charge); the new rate structure recovers approximately 35% of revenues from commodity charges and the minimum charge is eliminated.

Rate Structure Components. The existing rate structure has three primary charges – a series of service charges which vary by meter size and recover approximately 30% of revenues; a group of commodity charges (one for each of three tiers) which recover approximately 50% of revenues and a series of minimum commodity charges which vary by meter size which recover approximately 20% of revenues.

The new rate structure has three primary charges - a series of service charges which vary by meter size and recover approximately 60% of revenues; an account charge which is the same for each account and recovers approximately 6% of revenues and a group of commodity charges (one for each of three groups of customer classes) which recovers approximately 34% of revenues. Note that the new rate structure does not have a minimum charge.

Commodity Tier Structure. The existing commodity charge structure consists of three, declining block tiers with Tier 1 use (0 – 50,000 gallons per month) priced at $1.07 per thousand gallons; Tier 2 use (50,001 – 150,000 gallons per month) priced at $0.91 per thousand gallons; and Tier 3 use (over 150,000 gallons per month) priced at $0.39 per thousand gallons.

The new commodity charge structure consists of three different charges for all use for each of three groups of customer classes – Residential (Single Family and Multiple Family accounts); Nonresidential (Commercial, Industrial and Institutional accounts) and Landscape irrigation accounts. The new commodity charge structure does not have tiered rates.

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Significant Assumptions

There are a number of assumptions in this study related to future interest rates, cost inflation, the annual number of new connections, water sales and other items. The unifying theme underlying all assumptions is that water rates based on the assumptions should have a very high probability of recovering annual revenue requirements.

A summary of the most significant assumptions made in this study are listed below.

Assumption 1. Projections of growth in water accounts assume approximately 50 new connections per year with 95% of those connections being 1-inch or less in size.

Assumption 2. Projected metered water use for FY13 is approximately 5,450 million gallons. Projected FY13 water production of 6,540 million gallons (based on projected metered water use plus 20 percent for line losses and other use) is comparable to the recent trend in historical water production which projects approximately 6,975 million gallons for FY13.

Assumption 3. Reductions in metered water use for FY14 – FY18 are projected to be 4 percent per year for single family customers and 2 percent per year for all other customer classes. Water use projected for FY19 – FY23 is increased to reflect only the growth in the number of metered connections.

Assumption 4. The water meter maximum flow capacity assignments used in this study are based on those published by the American Water Works Association (AWWA).

Assumption 5. Preliminary estimates for the Regional Surface Water System Project place the City's financial obligation for this project at $68 million. The preliminary estimate for the City's portion of annual Operation & Maintenance of the Surface Water Plant is approximately $2.6 million. In addition, improvements to the City's system to accept this water source (terminal control facilities) are estimated to be $20 million. Approximately $16.7 million of the $88 million capital expenditures (19%) are projected to be cash funded.

Assumption 6. Estimated capital improvement project expenditures for FY14 – FY23 for the City's water system are approximately $33.5 million. Approximately $6.8 million of the expenditures are funded from 2008 Water Bond disbursements; the remainder is to be cash funded.

Assumption 7. Annual debt service coverage tests for existing and new debt are projected to require Net Revenues equal to 120 percent of the estimated debt service. Water rates developed in this study are set to generate Net Revenues equal to 150 percent of the estimated debt service.

Assumption 8. The target reserve level at the end of 10 years is 150 percent of annual operating expenditures.

Assumption 9. Expenditures for salaries, benefits and insurance are projected to increase at an annual rate of 6%. Expenditures for other operating expenditures are projected to increase at an annual rate of 5%.

Assumption 10. Interest on cash reserves is projected at 0.8% per year for FY14 – FY23.

Assumption 11. Peak water use factors for maximum, noncoincidental demand were used to develop commodity charges. Factors were developed for three groups of customer classes – Residential (Single Family and Multiple Family accounts); Nonresidential (Commercial, Industrial and Institutional accounts) and Landscape irrigation accounts.

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Debt Service Coverage

In its December 2011 review, Standard & Poor's Ratings Services (S&P) affirmed its 'AA' rating on Turlock Public Financing Authority water revenue bonds, issued for the City Turlock. The outlook provided by S&P in the review was “stable.”

As stated in the December 2011 S&P review, “The rating continues to reflect [S&P’s] view of the water system's:

- Track record of strong debt service coverage (DSC) from recurring revenues, most recently at 1.84x for fiscal 2011;
- Extremely strong liquidity position of $25.0 million - more than five years' cash operating expenditures;
- Predominantly residential and very diverse customer base, with the 10 leading customers accounting for 4.8% of water revenues; and
- Manageable capital needs over the next five years, which will likely allow for continued strong liquidity and coverage.”

The bonds are secured by a pledge of Net Revenues of the water system, with connection fees not pledged toward the repayment of bonds. Additional liquidity is provided by a cash-funded debt service reserve funded at the lowest of 10% of par, 125% of average annual debt service, or maximum annual debt service. The City has covenanted to prescribe rates such that a minimum of 1.20x coverage is achieved. In addition, security provisions include a 1.20x additional bonds test that includes additional revenues resulting from rate increases and 95% of net revenues resulting from new customers to the system.

The “Outlook” section in the December 2011 S&P review stated the following: “Over the next two years, ***we do not foresee raising the rating given the declining coverage*** (emphasis added), average economic indicators for the service area, and the industry concentration in the agricultural sector. We could lower the rating if the conversion to new tiered rates leads to materially greater rate sensitivity among customers, thereby impacting management's ability to raise rates to maintain strong coverage, fund necessary capital projects, and begin water supply diversification initiatives.”

Water rates developed in this study are set to generate Net Revenues greater than 150 percent of the estimated debt service in most years.

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Recommended Water Rates

Recommended commodity charges, service charges and account charges for FY14 – FY20, for each water supply scenario, are listed in the table below.

Table ES-1. Recommended Water Rates

GROUNDWATER ONLY SCENARIO

	FY14	FY15	FY16	FY17	FY18	FY19	FY20
effective date >	*1/1/2014*	*1/1/2015*	*1/1/2016*	*1/1/2017*	*1/1/2018*	*1/1/2019*	*1/1/2020*
Commodity Charge, $ per 1000 gallons							
Average	*$0.45*	*$0.51*	*$0.55*	*$0.59*	*$0.63*	*$0.65*	*$0.68*
Single/Multi Residential	$0.48	$0.55	$0.60	$0.64	$0.69	$0.71	$0.74
Commercial/Industrial/Institutional	$0.37	$0.41	$0.44	$0.47	$0.49	$0.51	$0.53
Landscape	$0.51	$0.57	$0.62	$0.65	$0.68	$0.71	$0.74
Capacity Charge, $ per meter per month							
1" or less	$17.50	$19.10	$20.20	$20.90	$21.50	$22.30	$23.20
1-1/2"	$35.00	$38.20	$40.40	$41.80	$43.00	$44.60	$46.40
2"	$56.00	$61.20	$64.70	$66.90	$68.80	$71.40	$74.30
3"	$123.00	$134.00	$142.00	$147.00	$151.00	$157.00	$163.00
4"	$210.00	$230.00	$243.00	$251.00	$258.00	$268.00	$279.00
6"	$438.00	$478.00	$505.00	$523.00	$538.00	$558.00	$580.00
8"	$840.00	$917.00	$970.00	$1,004.00	$1,032.00	$1,071.00	$1,114.00
10"	$1,330.00	$1,452.00	$1,536.00	$1,589.00	$1,634.00	$1,695.00	$1,764.00
Customer Charge, $ per account per month	$2.20	$2.40	$2.50	$2.60	$2.70	$2.80	$2.90

GROUNDWATER + SURFACE WATER SCENARIO

	FY14	FY15	FY16	FY17	FY18	FY19	FY20
effective date >	*1/1/2014*	*1/1/2015*	*1/1/2016*	*1/1/2017*	*1/1/2018*	*1/1/2019*	*1/1/2020*
Commodity Charge, $ per 1000 gallons							
Average	*$0.45*	*$0.51*	*$0.68*	*$0.90*	*$1.19*	*$1.56*	*$1.62*
Single/Multi Residential	$0.48	$0.55	$0.73	$0.98	$1.30	$1.70	$1.77
Commercial/Industrial/Institutional	$0.37	$0.41	$0.54	$0.71	$0.93	$1.21	$1.26
Landscape	$0.51	$0.57	$0.75	$0.99	$1.30	$1.70	$1.76
Capacity Charge, $ per meter per month							
1" or less	$17.50	$19.10	$24.60	$31.70	$40.90	$53.40	$55.40
1-1/2"	$35.00	$38.20	$49.20	$63.40	$81.80	$107.00	$111.00
2"	$56.00	$61.20	$78.80	$102.00	$131.00	$171.00	$178.00
3"	$123.00	$134.00	$173.00	$222.00	$287.00	$374.00	$388.00
4"	$210.00	$230.00	$296.00	$381.00	$491.00	$641.00	$665.00
6"	$438.00	$478.00	$615.00	$793.00	$1,023.00	$1,335.00	$1,385.00
8"	$840.00	$917.00	$1,181.00	$1,522.00	$1,964.00	$2,564.00	$2,660.00
10"	$1,330.00	$1,452.00	$1,870.00	$2,410.00	$3,109.00	$4,059.00	$4,211.00
Customer Charge, $ per account per month	$2.20	$2.40	$3.10	$3.90	$5.10	$6.60	$6.80

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Impact of New Rate Structure and Rates

The impact of the new rate structure and rates are shown in the table below by way of representative average annual bills for each of the six customer classes. The two tables are identical – which emphasizes an important point – the two water supply scenarios have identical rate increases for the first two years.

In the first year of implementation (FY14), the impact of the new rate structure and rates varies between each customer class and within each customer class. In the second year of implementation all customers experience nearly the same percentage increase in average annual bills.

Table ES-2. Current, FY14 and FY15 Average Annual Customer Bills

GROUNDWATER ONLY SCENARIO

Customer Class	Use Level	Water Use (kgal)	Meter Size	Current	Projected Average Annual Bills FY14		FY15	
Single Family	Avg Use	15	1" or less	$24.05	$26.90	12%	$29.75	11%
	High Use	50	1" or less	$55.50	$43.70	-21%	$49.00	12%
Multiple Family	Avg Use	30	1" or less	$34.10	$34.10	0%	$38.00	11%
	High Use	200	4"	$191.50	$308.20	61%	$342.40	11%
Commercial	Low Use	34	1" or less	$38.38	$32.28	-16%	$35.44	10%
	Avg Use	100	2"	$104.50	$95.20	-9%	$104.60	10%
	High Use	400	4"	$191.50	$360.20	88%	$396.40	10%
Industrial	Avg Use	100	2"	$104.50	$95.20	-9%	$104.60	10%
	High Use	6,000	6"	$2,474.50	$2,660.20	8%	$2,940.40	11%
Institutional	Low Use	100	1" or less	$101.00	$67.70	-33%	$76.50	13%
	High Use	1,000	6"	$524.50	$920.20	75%	$1,030.40	12%
Landscape	Avg Use	100	1" or less	$101.00	$70.70	-30%	$78.50	11%
	High Use	2,000	6"	$914.50	$1,460.20	60%	$1,620.40	11%

GROUNDWATER + SURFACE WATER SCENARIO

Customer Class	Use Level	Water Use (kgal)	Meter Size	Current	Projected Average Annual Bills FY14		FY15	
Single Family	Avg Use	15	1" or less	$24.05	$26.90	12%	$29.75	11%
	High Use	50	1" or less	$55.50	$43.70	-21%	$49.00	12%
Multiple Family	Avg Use	30	1" or less	$34.10	$34.10	0%	$38.00	11%
	High Use	200	4"	$191.50	$308.20	61%	$342.40	11%
Commercial	Low Use	34	1" or less	$38.38	$32.28	-16%	$35.44	10%
	Avg Use	100	2"	$104.50	$95.20	-9%	$104.60	10%
	High Use	400	4"	$191.50	$360.20	88%	$396.40	10%
Industrial	Avg Use	100	2"	$104.50	$95.20	-9%	$104.60	10%
	High Use	6,000	6"	$2,474.50	$2,660.20	8%	$2,940.40	11%
Institutional	Low Use	100	1" or less	$101.00	$67.70	-33%	$76.50	13%
	High Use	1,000	6"	$524.50	$920.20	75%	$1,030.40	12%
Landscape	Avg Use	100	1" or less	$101.00	$70.70	-30%	$78.50	11%
	High Use	2,000	6"	$914.50	$1,460.20	60%	$1,620.40	11%

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Recommended Water Capacity Charges

Recommended capacity charges for FY14 are listed in the table below. Charges for FY15 onward may be escalated using an appropriate index such as the *Engineering News Record* Construction Cost Index for the San Francisco region.

Table ES-3. Recommended Water Capacity Charges

	Current Capacity Charges					
		Water		Recommended		
	Water	Frontage		Capacity	Increase	
Meter Size	Grid	@ 60 feet	Total	Charge	Dollars	Percent
1-inch or Less	$2,726	$1,997	$4,723	$4,350	($373)	-8%
1-1/2-inch	$8,725	$1,997	$10,721	$8,700	($2,021)	-19%
2-inch	$10,906	$1,997	$12,903	$13,930	$1,027	8%
3-inch	$24,539	$1,997	$26,536	$30,460	$3,924	15%
4-inch	$68,163	$1,997	$70,159	$52,220	($17,939)	-26%
6-inch	$136,325	$1,997	$138,322	$108,800	($29,522)	-21%
8-inch	$239,933	$1,997	$241,930	$208,900	($33,030)	-14%
10-inch	$381,711	$1,997	$383,708	$330,700	($53,008)	-14%

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Section 1

Introduction

The City's meter and commodity rates are intended to recover revenues sufficient to adequately fund utility operations, maintenance, and capital replacement expenditures, and meet debt service obligations, while keeping rates as competitive as possible and maintaining a prudent level of reserves.

1.1 Organization of the Report

This report is divided into seven sections. This introduction provides an overview of the study objectives and evaluation of the efficiency of the City's water system compared to those of other similar municipalities.

Section 2 discusses characteristics of customers and their use of the water system. The number of metered connections and water use projected for FY14 – FY23 is developed in this section.

Section 3 describes the development of a new water rate structure and water rates for two water supply development scenarios.

Section 4 describes the impact of the new water rate structure and water rates on each customer class.

Section 5 describes the development of a new water capacity charge structure and water capacity charges.

Section 6 describes the public review process and actions to be taken by the City Council.

Section 7 describes the limitations of the study document.

1.2 Overview of Utility Rate Setting Process

Rate studies classically have three categories of technical analysis – the development of revenue required from rates, the allocation of costs among functional cost categories (cost-of-service analysis) and the design of a rate structure. An overview of the rate-setting analytical steps is shown in Figure 1-1.

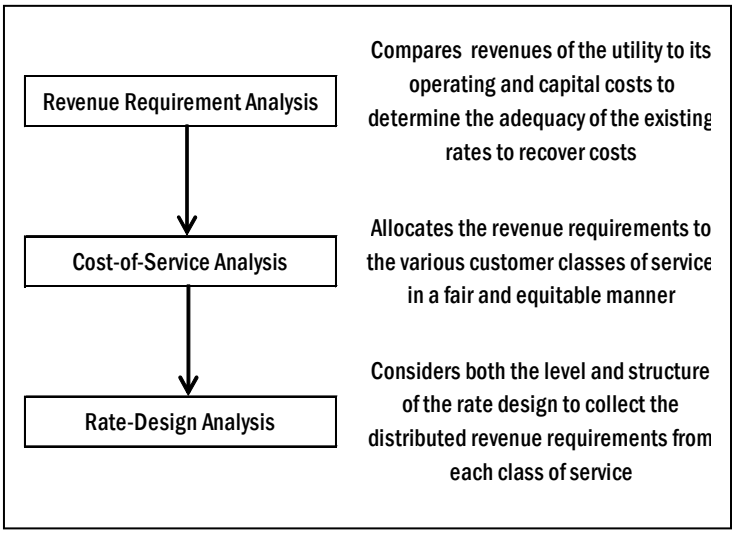

Figure 1-1. Overview of Rate Setting Analytical Steps

The revenue required from rates is net of non-rate revenues (for example interest earned on fund balances, loan disbursements and revenue from new connections to the water system) and other revenues not required from rates (such as revenue from meter turn on/off services). The allocation of costs are structured so that the revenue required from charges is distributed proportionally for every level of service in a manner that allows the development of unit costs. The rate structure uses the unit costs as a basis for aggregating costs into rates that are applicable to the various customer classes.

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Information and data for the development of water rates and preparation of this report comes from a number of documents provided by the City. The list of documents, and the key information and data from each used in this study, are summarized below.

City of Turlock Fiscal Year 2013-14 Adopted Budget. Presented to Council on June 11, 2013, this document shows the recommended FY 2013-14 Annual Budget and Five-Year Capital Improvement Program for the City of Turlock. As noted in the previous budget document, "Enterprise funds include Water, Wastewater, Engineering and Building; these funds are funded primarily from fees and other user charges. For FY 2013-14, the Water Enterprise has a projected budget of approximately $13.6 million.

City of Turlock Municipal Code. Water rates and connection charges are shown in Chapter 6-5 of the Turlock Municipal Code.

***City of Turlock 2010 Urban Water Management Plan* (UWMP).** Dated June 20, 2011, the purpose of the UWMP is to maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during water drought conditions. The UWMP evaluates total projected water use be compared to water supply sources in 5-year increments over a 20-year planning period. Water demand projections from the UWMP were used as a reference for projections shown in this study.

Utility Billing System data. Monthly water use data for each of the City's metered accounts, for the time period February 2011 through April 2013, were provided in an Excel file. Each account record had descriptive information of the account's customer class, meter size, and number of dwelling units.

Department of Water Resources Form 38 Reports. The City submits Form 38 annually to the State of California Department of Water Resources (DWR). This form, titled "Public Water System Statistics", is used to summarize Active Service Connections, Total Water into the System (production), and Metered Water Deliveries for the City's Water System.

1.3 Rate-Making Objectives

There are numerous rate-making objectives that must be considered when developing rates and rate structures.

Revenue sufficiency. Generate sufficient revenue to fund operating costs, capital costs and bonded debt, and maintain adequate reserves.

Revenue stability. Recover revenue from fixed and variable charges that will cover fixed and variable costs (barring water shortages when rationing may be required).

Conservation signal. Reward customer for efficient water use and discourage its waste.

Administrative ease. Enable easy implementation and ongoing administration, including monitoring and updating.

Affordability. Be as affordable as possible while maintaining the utilities sound financial position and credit rating.

Customer acceptance. Be as simple as possible to facilitate customer understanding and acceptance.

Fairness. Provide for each customer class to pay its proportionate share of the required revenue in compliance with legal rate-making requirements.

Economic development. Rates must be competitive with local jurisdictions to retain and attract economic development.

Consideration of water intensive industries and users. Recognize that certain industries and users comprise a critical component of the local and regional community and their constant water demand patterns should be accommodated in the rate structure, not penalized.

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1.4 Turlock Water Utility

The City water utility provides service to its residents, institutions, industries, and businesses through approximately 18,500 service connections. The current city population is approximately 72,000 and it is the second largest city in the region. Turlock is also home to California State University, Stanislaus that has an enrollment of 8,000 students. In the early to mid 2000s, considerable residential and commercial construction took place in Turlock. The build-out (2030) population of the General Plan area is estimated to be 115,363.

The primary assets in the City's water utility are 24 wells that produce potable water, two (2) one million gallon water storage reservoirs (with a third reservoir under construction), 266 miles of transmission mains and distribution lines, and 2,922 fire hydrants.

In 2004, the State Legislature passed a law requiring utilities to charge water customers based on the actual volume of water used. The deadline to comply with this law is 2010 for all homes built since January 1, 1992 and 2025 for all homes built before 1992. The Turlock City Council, in the interest of fairness and to encourage water conservation, chose to install water meters at all accounts. The installation of meters began in 2007 and meter-based (volumetric) billing for all water users commenced on January 1, 2011. In concert with the meter installation project, the City developed a public education campaign to encourage water conservation.

Recent data from the City's Utility Billing System summarizing the number of accounts and water demand, by customer class, are shown in the figures below.

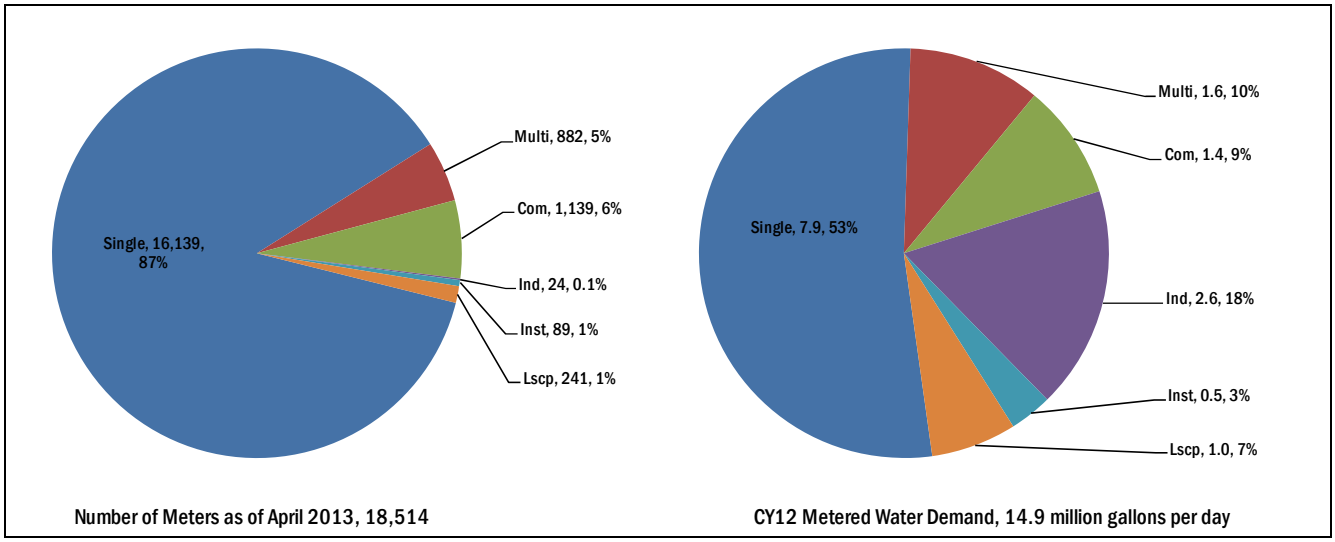

Figure 1-2. Number of Metered Accounts (2013) and Water Demand (CY12)

Customer Class Abbreviations – Single (Single Family); Multi (Multiple Family); Com (Commercial); Ind (Industrial); Inst (Institutional); Lscp (Landscape)

Water demand for CY12 is based on monthly meter read data for February 2012 through January 2013. The units of water demand shown in the figure above (14.9 million gallons per day) are equivalent to approximately 16,700 acre feet or 5.5 billion gallons.

Historical data indicates the groundwater supply will support annual production of up to eight (8) billion gallons per year. Groundwater pumping in excess of eight (8) billion gallons results in the depletion (overdraft) of the groundwater table (aquifer). Because it is not sustainable to overdraft the groundwater over a long period, an additional supply of water will be needed in future years.

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1.5 Water Utility Meter Reading and Billing

Beginning in 2007, the City chose to install an automated meter reading (AMR) system so that the water meter's reading is automatically transmitted to a central computer by a radio signal. The transmitter or "endpoint" is a grey box labeled "Itron" and is attached to the meter by a single black wire. Meters allow customers to pay for the water they actually use. Customers can directly benefit from efficient water use measures they choose to implement. The installation of water meters means that a portion of water bills is based on actual water consumption with other portions of the bill based on the size of the meter and the use of an active connection.

1.6 Current Rates and Customer Classes

Water rates are shown in Chapter 6-5 of the Turlock Municipal Code (TMC). Water rates were last increased in July 1, 2008. The City's current water service charges, standby charges, fire line service charges, construction water charges, usage charges and minimum usage charges are shown below in the sidebar.

The City began installing water meters in 2007. Except for fire line service charges, the list of current rates does not show rates for non-metered customers from Chapter 6-5, Article 6 of the TMC (Non-metered Services) as the number of those customers is now close to zero.

SERVICE CHARGES

Meter Size	Rate Per Month
1" or less	$2.00
1-1/2"	$4.50
2"	$5.50
3"	$13.50
4"	$27.50
6"	$48.50
8"	$86.50
10"	$140.50

STANDBY CHARGES

Meter Size	Rate Per Month
2"	$230
4"	$687
6"	$1,374
8"	$2,405

FIRE LINE SERVICE CHARGES

Unit of Service	Rate Per Month
Linear Feet	$0.25

no charge for inside city private fire service connections

USAGE CHARGES

Gallons	Rate per 1000 Gallons
0 to 50,000	$1.07
50,001 to 150,000	$0.91
Over 150,000	$0.39

MINIMUM USAGE CHARGES

Meter Size	Rate Per Month
1" or less	$22.05
1-1/2"	$34.00
2"	$36.40
3"	$43.60
4"	$55.55
6"	$65.10
8"	$77.05
10"	$91.40

OFF-SITE CONSTRUCTION WATER CHARGES

Unit of Service	Rate Per Month
Per Acre	$248
Water Use per 1000 gallons	$1.93
Minimum Water Use	$21.50

ON-SITE CONSTRUCTION WATER CHARGES

Unit of Service	Rate Per Month
100 sq ft lot size (1x)	$1.25
100 sq ft lot size (1x min)	$50

Each water account has one or more meters and each meter is billed for metered water use at the rates shown (except fire service accounts which are not billed for water use).

The City has six categories of user accounts.

- Single Family
- Multiple Family
- Commercial
- Industrial
- Institutional
- Landscape

It is recommended that many of the current charges *categories* be eliminated, combined or revised (changes to the *rates* for each combined or revised category will also be recommended). Those recommendations, and the basis for the recommendations, will be described in subsequent sections of this report.

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1.7 Basis for Current Rates

Text from the Municipal Code that corresponds with the different categories of current water rates is summarized below.

Service Charges. Section 6-5-501(c), each service connection shall pay a monthly meter rental fee.

Usage Charges. Section 6-5-501(d)(1), rates for usage per one thousand (1,000) gallons, prorated for each fraction thereof.

Minimum Usage Charges. Section 6-5-501(d)(2), charges for water usage should meet the following minimum amounts (in addition to the meter rental fee).

Standby Charges. Section 6-5-501(c), these charges are in addition to the regular monthly water meter rental fee and water use charges and are for customers who use the City water supply as a backup water source.

Article 5. Metered Services

6-5-501	Rates.

Article 6. Non-metered Services

6-5-601	Residences (apartments, mobile home parks, recreation rooms, etc.).
6-5-602	Commercial non-metered accounts.
6-5-603	Fire line service charge.

Article 7. Construction Water Rates

6-5-701	Rates for off-site construction water.
6-5-702	Rates for on-site construction water.
6-5-703	Disconnections from water service.

Fire Line Service Charges. Section 6-5-603, this charge is for water systems using City of Turlock water lines and fire hydrants for fire protection but who supply potable water through their own water lines.

Off-site Construction Water Charges. Section 6-5-701(a)(1), water for construction of off-site improvements shall be charged per acre or fraction of; such water shall be taken from hydrants designated by the Municipal Services Department and delivered directly to an approved tank truck for distribution. All water delivered to water trucks shall be taken from the two and one-half inch (2-1/2") discharge port of the hydrant only.

Section 6-5-701(c) and Section 6-5-701(d), in the event that a fire hydrant meter is requested, the meter may be obtained by depositing Seven Hundred and no/100ths ($700.00) Dollars with the Municipal Services Department In addition to actual consumption, customer shall pay a meter rental as outlined in Section 1 of Article 5 of Chapter 5 of Title 6 of this code (6-5-501 (c)) and pay a hydrant meter rate per 1,000 gallons, provided a minimum charge shall be paid.

On-site Construction Water Charges. Section 6-5-702, On-site construction water will be provided for a one (1) time cost per one hundred (100) square feet of lot size and to be charged on the Building Permit; a minimum charge of Fifty and no/100ths ($50.00) will apply to each site.

The current rates are based on an evaluation conducted in the mid-2000. The metered rates developed at that time were mainly for commercial industrial and large residential users and did not consider the impact of converting the entire residential customer class to metered connections.

1.8 Water System Comparison with Comparable Cities

The City's water system costs and service characteristics were compared with those for four other municipalities in Central California with similar populations and water systems.

1.8.1 Comparison of Comprehensive Annual Financial Reports

In this exercise similar municipalities were chosen based on location, population served and primary water source. Water fund financial information for FY11 (ending June 30, 2011) was obtained from each

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jurisdiction's Comprehensive Annual Financial Report (CAFR) and from the State of California Department of Finance.

The City is currently dependent on groundwater only; however, surface water may be utilized in the future. The Department of Finance estimated that the City of Turlock had a population of 68,813 as of January 1, 2011. Based on these statistics and geographic location, the following cities were selected as similar municipalities:

- City of Davis (Davis), Population 65,421; 100% groundwater supply
- City of Lodi (Lodi), Population 62,344; 100% groundwater supply
- City of Manteca (Manteca), Population 68,265; approximately 70% groundwater supply
- City of Merced (Merced), Population 78,986; 100% groundwater supply

Revenues and expenditures for each jurisdiction are shown in the table below.

Table 1-1. Water System Financial Metrics of Five Cities

	Turlock	Davis	Lodi	Manteca	Merced
Statistics					
Population as of 2010	*68,549*	*65,622*	*62,134*	*67,096*	*78,958*
Population as of January 1, 2011	*68,813*	*65,421*	*62,344*	*68,265*	*78,986*
Groundwater as % of Total Supply (approximate)	*100%*	*100%*	*100%*	*70%*	*100%*
Operating Revenues					
Charges for Services	$8,092,490	$10,131,953	$11,940,022	$13,207,371	$12,627,202
Capacity Charges	$11,049	blank	blank	blank	blank
Other Revenues	$22,850	blank	blank	$709,995	$23,346
Total Operating Revenues	**$8,126,389**	**$10,131,953**	**$11,940,022**	**$13,917,366**	**$12,650,548**
Operating Revenue per 2011 Capita	*$118*	*$155*	*$192*	*$204*	*$160*
Operating Expenses					
Water System Operations	$3,569,443	$6,869,043	$5,253,968	$7,884,868	$8,227,262
Depreciation	$1,774,411	$2,489,601	$652,296	$3,121,483	$2,215,662
Total Operating Expenses	**$5,343,854**	**$9,358,644**	**$5,906,264**	**$11,006,351**	**$10,442,924**
Operating Revenue per 2011 Capita	*$78*	*$143*	*$95*	*$161*	*$132*
Operating Income (Loss)	**$2,782,535**	**$773,309**	**$6,033,758**	**$2,911,015**	**$2,207,624**
Nonoperating Revenues (Expenses)					
Interest and Investment Earnings	$274,624	$85,586	$154,836	$742,114	$382,306
Interest Expense	($1,438,071)	($587,444)	($1,491,550)	($1,986,096)	($481,996)
Other	blank	$213,485	$17,060	blank	$19,888
Total Nonoperating Revenues	**($1,163,447)**	**($288,373)**	**($1,319,654)**	**($1,243,982)**	**($79,802)**
Net Income (Loss) Before Transfers	$1,619,088	$484,936	$4,714,104	$1,667,033	$2,127,822
Net Transfers	($1,017,232)	blank	($563,025)	$1,054,705	($57,208)
Net Income (Loss)	**$601,856**	**$484,936**	**$4,151,079**	**$2,721,738**	**$2,070,614**
Special Item [1]	blank	($4,583,786)	blank	blank	blank
Net Assets					
Beginning of year	$54,104,275	$94,463,173	($3,909,796)	$63,550,602	$76,473,763
Ending of year	**$54,706,131**	**$90,364,323**	**$241,283**	**$66,272,340**	**$78,544,377**

Source: 2010 Population data is from the United States Census Bureau, Profile of General Population and Housing Characteristics 2010.
2011 Population data is from the State of California, Department of Finance, E-4 Population Estimates for Cities, Counties, and the State, 2011-2013, with 2010 Census Benchmark. The 2010 values are identical to the 2010 population data from the United States Census Bureau.
Groundwater as a percent of total water supply was based on data from each City's website or correspondence with selected City staff.
Financial data is from the Fiscal Year ending June 30, 2011 Comprehensive Annual Financial Report (CAFR) for each City.

Note: Only Lodi and Manteca itemized (Capital) Contributions as part of Transfers.

[1] Davis had a Special Item for a change in accounting measurement; Davis listed no Transfers.

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Revenue per capita for Davis ($155), Lodi ($192), Manteca ($204) and Merced ($160) were 31% - 73% higher than for Turlock ($118).

Expenses per capita for Davis ($143), Lodi ($95), Manteca ($161) and Merced ($132) were 22% - 108% higher than for Turlock ($78).

1.8.2 Comparison of Water System Efficiency Metrics

Four efficiency metrics were developed to provide an indicator of how cost-effective water operations are in Turlock compared to other community systems. They are:

- Operating expenses per full time equivalent employee (FTEE)
- Operating expenses per water service connection
- Operating expenses per gallon of water delivered
- Operating expenses per mile of water mains

The efficiency metrics are based on total operating expenditures, as shown in the previous table, and service statistics for FY11 for each City.

Table 1-2. Water System Efficiency Metrics of Five Cities

	Turlock	Davis	Lodi	Manteca	Merced
Statistics					
Population as of January 1, 2011	*68,813*	*65,421*	*62,344*	*68,265*	*78,986*
Housing Units as of January 1, 2011	*24,633*	*25,877*	*23,793*	*23,459*	*27,422*
Groundwater as % of Total Supply (approximate)	*100%*	*100%*	*100%*	*59%*	*100%*
Number of Active Wells	*24*	*20*	*26*	*16*	*23*
Water System Operating Expenses, FY11 CAFRs	$5,343,854	$9,358,644	$5,906,264	$11,006,351	$10,442,924
Efficiency Metric #1					
Number of FTEEs (Full Time Equivalent Employees)	21.00	27.96	15.00	19.00	37.40
Operating Expenses per FTEE (rounded)	*$254,500*	*$334,700*	*$393,800*	*$579,300*	*$279,200*
Efficiency Metric #2					
Number of Water Service Connections	18,500	16,430	17,000	20,071	20,700
Operating Expenses per Service Connection (rounded)	*$290*	*$570*	*$345*	*$550*	*$505*
Efficiency Metric #3					
Amount of Water Delivered - Gallons	6,285,000,000	3,905,135,000	5,500,000,000	4,318,000,000	7,000,000,000
Operating Expenses per Million Gallons	*$850*	*$2,396*	*$1,074*	*$2,549*	*$1,492*
Gallons per Capita (rounded)	*91,300*	*59,700*	*88,200*	*63,300*	*88,600*
Efficiency Metric #4					
Miles of Water Mains	266	180	233	257	350
Operating Expenses per Mile of Water Mains (rounded)	*$20,100*	*$52,000*	*$25,300*	*$42,800*	*$29,800*
Lineal Feet of Water Mains per Housing Unit	*57*	*37*	*52*	*58*	*67*

Source: 2011 Population and Housing Units data are from the State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011 - 2013, with 2010 Census Benchmark.
Groundwater as a percent of total water supply was based on data from each City's website or correspondence with selected City staff.
FTEE, service connection, number of active wells, miles of water mains and water delivery data was provided by Staff from each City, except for those from Lodi which were taken from a 2009 study performed for the City of Turlock.

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The results of the efficiency metric calculations are summarized as follows:

- Turlock had the lowest total operating expense per FTEE at $254,500 per FTEE annually. The city with surface water supply, Manteca, had the highest expense per FTEE at $579,300.
- Turlock had the lowest total operating cost of $290 annually per service connection. Comparison jurisdictions had operating costs between $345 and $570 per service connection.
- Turlock delivered the second most water volume of water, and had the lowest cost of delivery at $850 per million gallons. On a per capita basis, Turlock customers consumed approximately 53% more water than Davis customers, 4% more water than Lodi customers, 44% more than Manteca customers, and 3% less than Merced customers. The figures suggest that Turlock has more water-intensive industrial uses than the comparison jurisdictions.
- Turlock had the lowest cost per mile of water mains at $20,700, and Davis had the highest cost at $52,000 per mile. The jurisdictions have similar linear feet of water main per housing unit (between 52 and 58 feet) with the exception of Davis (37) and Merced (67).

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Section 2

User Characteristics

The purpose of this section is to summarize the identification of residential and nonresidential users and their corresponding water use characteristics. The data used in this section comes from water use reports, the UWMP and the City's billing system.

2.1 Historic and Projected Meters by Customer Class and Size

The number of water meters by customer class and size as of April 2013 is shown below in Table 2-1. Residential (Single Family and Multiple Family) accounts make up approximately 92% of all metered customers. Approximately 93% of all meters are 1-inch or less in size. Another 6% are 1.5-inch or 2-inch meters. The remaining 1% are 3-inch or larger meters. The number of meters by type and size as of April 2013 is used as the basis for the FY13 estimate. The projected number of meters by size for FY13 – FY23 is shown in the lower third of Table 2-1. The projections assume approximately 51 new connections per year with 95% of those connections being 1-inch or less in size.

Table 2-1. Number of Water Meters by Customer Class and Size (April 2013) and Projections

	Meter Size										
Class	0075	0100	0150	0200	0300	0400	0600	0800	1000	Total	% of Total
Single	3,692	12,152	259	36						16,139	87%
Multi	29	586	120	87	16	20	14	10		882	5%
Comm	53	565	156	291	38	30	5	1		1,139	6%
Ind			1	8		4	9		2	24	0.1%
Inst	3	20	7	30	10	11	4	3	1	89	0.5%
Lscp	7	59	46	110	9	5	4		1	241	1.3%
Total	**3,784**	**13,382**	**589**	**562**	**73**	**70**	**36**	**14**	**4**	**18,514**	

	Meter Size									
Class	0075	0100	0150	0200	0300	0400	0600	0800	1000	Total
Single	23%	75%	2%	0%	0%	0%	0%	0%	0%	100%
Multi	3%	66%	14%	10%	2%	2%	2%	1%	0%	100%
Comm	5%	50%	14%	26%	3%	3%	0%	0%	0%	100%
Ind	0%	0%	4%	33%	0%	17%	38%	0%	8%	100%
Inst	3%	22%	8%	34%	11%	12%	4%	3%	1%	100%
Lscp	3%	24%	19%	46%	4%	2%	2%	0%	0%	100%
Total	**20.4%**	**72.3%**	**3.2%**	**3.0%**	**0.4%**	**0.4%**	**0.2%**	**0.1%**	**0.02%**	

	Projected Meters											% of
Meter Size	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Meters
1" or less	17,166	17,215	17,264	17,313	17,362	17,412	17,461	17,511	17,561	17,611	17,661	92.7%
1-1/2"	589	590	591	592	593	595	596	597	598	599	600	3.2%
2"	562	563	563	564	565	565	566	566	567	568	568	3.0%
3"	73	73	73	73	73	73	73	74	74	74	74	0.4%
4"	70	70	70	70	70	70	70	70	71	71	71	0.4%
6"	36	36	36	36	36	36	36	36	36	36	36	0.2%
8"	14	14	14	14	14	14	14	14	14	14	14	0.1%
10"	4	4	4	4	4	4	4	4	4	4	4	0.02%
Total	**18,514**	**18,565**	**18,616**	**18,667**	**18,718**	**18,769**	**18,821**	**18,873**	**18,924**	**18,976**	**19,029**	
Annual Change												
1" or less		49	49	49	49	49	50	50	50	50	50	
All Others		2	2	2	2	2	2	2	2	2	2	

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2.2 Historic Production and Projected Water Demand

Reported historical water delivery (production) data for 2005 and 2010 was taken from the City's 2012 UWMP and is shown in the adjacent table (Table 11 from the UWMP). Note that the reported historical water production for 2010 is 7,462 million gallons and included 368 units for "additional water uses and losses." The units of water for additional water uses and losses are not included in demand estimates developed as part of this study because they do not yield any revenue.

Table 11 Total water use in Turlock							
Water Use	2005	2010	2015	2020	2025	2030	2035 - opt
Total water deliveries (from Tables 3 to 7)	8,293	7,094	8,784	9,541	10,795	12,127	13,721
Sales to other water agencies (from Table 9)	0	0	0	0	0	0	0
Additional water uses and losses (from Table 10)	0	368	400	400	400	400	400
Total	8,293	7,462	9,184	9,941	11,195	12,527	14,121
Units : million gallons per year							

Metered water use by customer class and month for the billing period February 2011 through January 2012 is shown in Figure 2-1 in units of million gallons (MG). This time period is denoted as Calendar Year 2012 (CY12). The chart on the left hand of the figure shows usage in MG; the chart on the right hand of the figure shows usage for each customer class as a percent of total usage in each month.

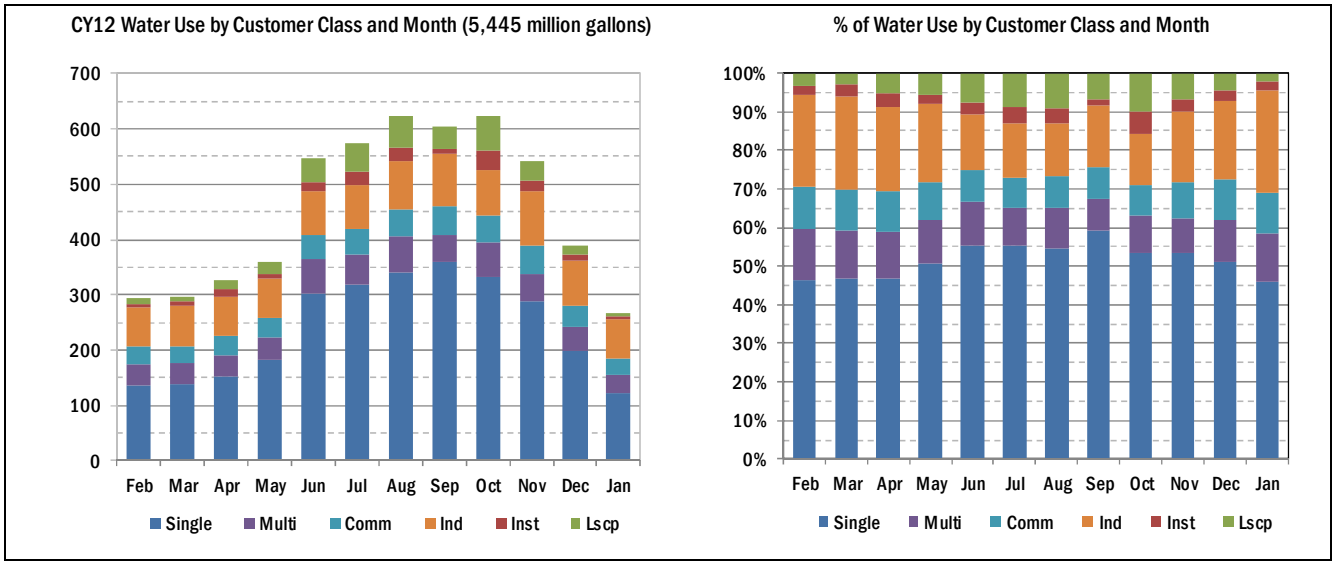

Figure 2-1. Metered Water Use by Tier and Customer Class as a Percent of Total Use

Detailed water use data for CY12 is included in Table A-1 and Table A-2 in Appendix A. Note that headers for the months begin with "Feb" for month 1 and end with "Jan" (of the following year) for month 12. The month headers indicate the month the bill was issued. Metered water use shown in a bill is for the prior month's usage. For example, a bill issued in February is for metered water use in the prior month, January. The billing process explains why metered water use data for "Feb" through the following "Jan" is used to represent a calendar year.

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For the purpose of projecting metered water use for FY13 onward, CY12 is used as a starting point for FY13 water use. Water use projections for FY14 – FY18 are based upon the net impact of two variables: 1) increase in use due to the growth in the number of metered accounts; and 2) decrease in use due to conservation. The decrease in use is based on a percent reduction from the previous years' value. Reductions in metered water use for FY14 – FY18 are projected to be 4 percent per year for single family customers and 2 percent per year for all other customer classes. Projected water use for FY19 – FY23 is increased to reflect only the growth in the number of metered connections. Projected metered water use, by customer class, is shown in the figure below.

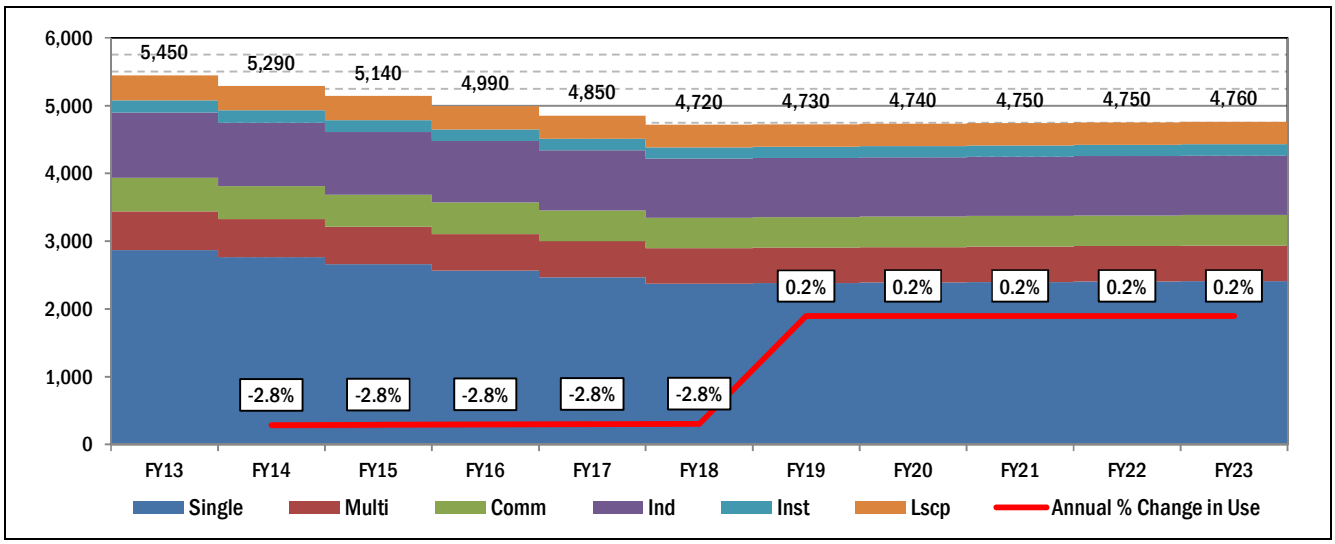

Figure 2-2. Projected Metered Water Use by Customer Class

Historic water production values for the time period 2005 - 2012, and the linear trend of 2010 - 2012 values, were compared with metered water use projections developed for this study (which excludes untreated water and recycled water). Historic production values are those reported annually to the Department of Water Resources on DWR Form 38 ("Public Water System Statistics").

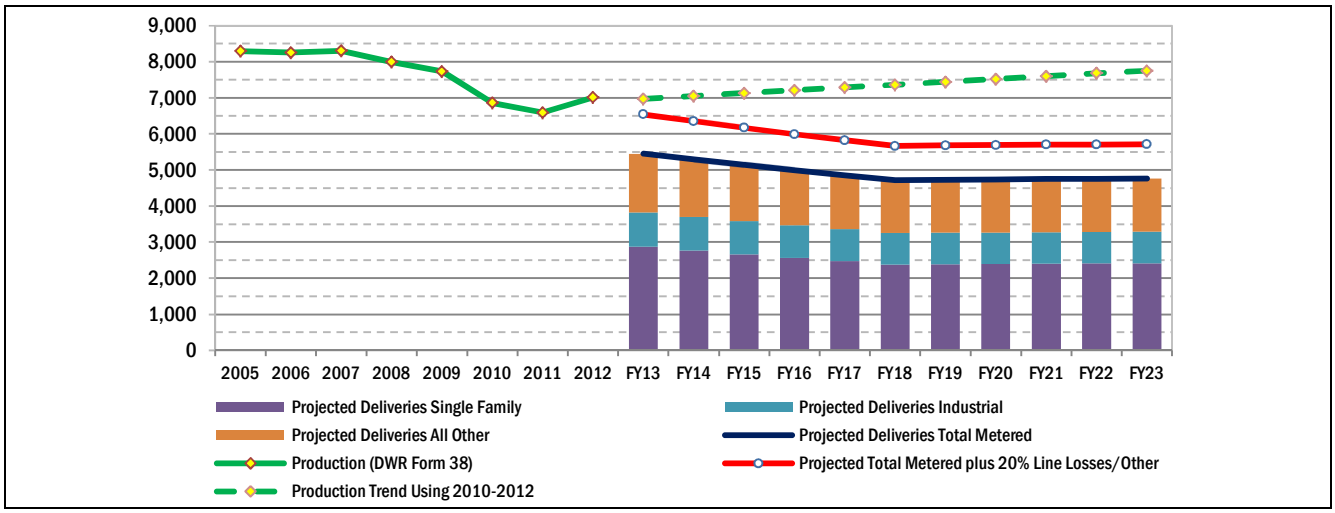

Figure 2-3. Comparison of Historic Water Production and Projected Metered Water Use

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Projected metered water use shown in Figure 2-3 is the same as shown in Figure 2-2 except for consolidated grouping of data for single family residential, industrial customers and all other customers. Total deliveries (metered water use) were then escalated by 20 percent to account for line losses and other (unmetered) uses.

The escalated total water delivery values are comparable, in concept, to the linear trend of historic water production values. Neither set of values is known with much certainty. The two sets of values are compared solely to demonstrate an attempt to reconcile projections of metered water use developed for this study with projections of water deliveries (water production) based on values reported for 2010 - 2012.

The FY13 value for escalated total deliveries (6,540 million gallons) is slightly less than the FY13 value for the linear trend of recent historic production (6,970 million gallons). For FY14 – FY 18, total escalated deliveries are less than the linear trend of historic production by approximately 17 percent.

2.3 Evaluation of Use by Tier and Customer Class

Water use by tier and customer class for CY12 are shown below in Figure 2-4. The chart on the left hand of the figure shows usage in MG; the chart on the right hand of the figure shows usage for each customer class as a percent of total usage. The percent of total usage for the system is 62% in Tier 1 (0 – 50,000 gallons), 9% in Tier 2 (50,001 – 150,000 gallons) and 29% in Tier 3 (over 150,000 gallons).

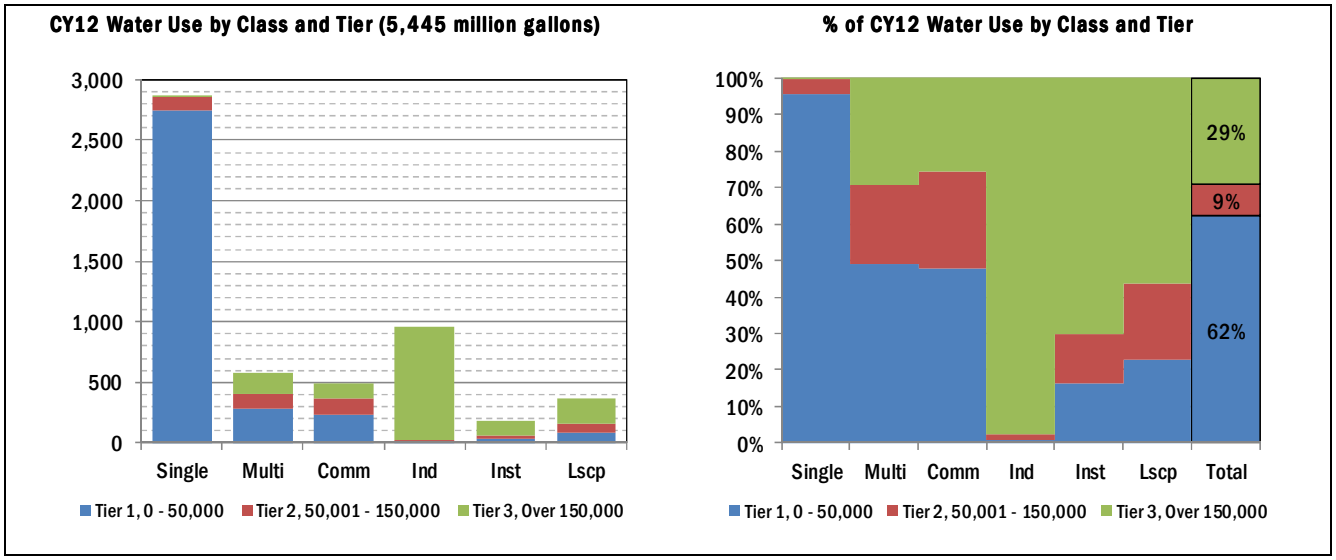

Figure 2-4. Water Use by Tier and Customer Class as a Percent of Total Use

Note that the two customer classes that together account for 71% of all water use (single family and industrial) have only 6% of their use in Tier 2. Note also that these two customer classes are at the extremes of use in terms of the amount of water use in Tier 1 (96% for the single family customer class and 1% for the industrial customer class) and amount of water use in Tier 3 (less than 1% for the single family customer class and 98% for the industrial customer class).

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2.4 CY12 Average Commodity Charge for Each Customer Class

Because the revenues from current commodity charges for each customer class are distributed in radically different patterns, the average commodity charge for each customer class varies significantly. The average commodity charge for each customer class varies from a high of $1.71 per thousand gallons for the Single Family customer class to a low of $0.41 per thousand gallons for the Industrial customer class. Calculations of the average commodity charge for each customer class are shown in the table below. Revenues from the commodity charge and minimum charge, and metered water use values, are for FY12.

Table 2-2. FY12 Commodity and Minimum Charge Revenues and Water Use by Customer Class

Customer Class	Commodity Charge + Minimum Charge Revenue	Metered Use gallons	Unit Cost $/1000 gallons	All Users Average Unit Cost $/1000 gallons	Difference from Average $	Difference from Average %
Single	$5,044,357	2,952,234,396	$1.71	$1.27	$0.44	34%
Multi	$554,960	585,963,136	$0.95	$1.27	($0.33)	-26%
Comm	$624,863	487,145,965	$1.28	$1.27	$0.01	1%
Ind	$385,249	935,653,620	$0.41	$1.27	($0.86)	-68%
Inst	$117,485	179,413,920	$0.65	$1.27	($0.62)	-49%
Lscp	$265,216	353,710,879	$0.75	$1.27	($0.52)	-41%
Totals	$6,992,129	5,494,121,916	$1.27	*<< average unit cost*		

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2.5 Peak Water Use Patterns

Peak water use patterns were evaluated for each customer class. Water use for CY12 (as defined in this report) was used for the evaluation. The evaluation entailed calculation of the following factors and ratios:

- Average Month (AM) water use – average monthly water deliveries for each customer class during CY12.
- Maximum Month (MM) water use – water deliveries for each customer class in the month that each class used the maximum amount of water during CY12; the month of maximum use for each customer class may not be coincidental.
- System Maximum Day (MD) water use – water deliveries for the system on the maximum day in the month of maximum system wide use.
- Maximum Month / Average Month Factor (MM/AM) – water deliveries in the maximum month divided by water deliveries in the average month for each customer class.
- System Maximum Day / System Maximum Month (MD/MM) Ratio - overall System coincident maximum-day (MD) demand divided by overall system maximum month deliveries.
- Customer Class Maximum Day (MD) Peak Factor – the product of the MM/AM factor, the MD/MM ratio and the Weekly Usage Adjustment factor.

The factors and ratios are used to calculate the maximum day, noncoincidental water deliveries for each customer class. The percent of water deliveries for each customer class are used to allocate commodity charge revenue requirements among the customer class for the development of different commodity charges for three groups of customer classes.

The Maximum Day percent allocation for customer classes are combined into three groups – Group 1 for Single and Multi Family Residential (57.6% plus 9.2%); Group 2 for Commercial/Industrial/Institutional (5.7% plus 11.5% plus 4.5%); and Group 3 for Landscape (11.5%). The groupings are based on the similarities in their respective MM/AM factors and operating characteristics of each customer class.

Table 2-3. Maximum Day Peak Factor for Development of Commodity Charges

Class	CY12 Avg Month (AM) Month Use	Maximum Month (MM), Noncoincidental Month Use	Month	MM/AM Factor	Maximum Day (MD), Noncoincidental MD Peak Factor	Day Use	% of Avg Month	% of Max Month	% of Max Day
Single	239,274,016	358,729,284	September	1.50	2.43	29,015,384	52.7%	54.2%	57.6%
Multi	47,608,187	65,101,886	August	1.37	2.21	4,647,884	10.5%	9.8%	9.2%
Comm	41,297,135	51,158,527	August	1.24	1.74	2,867,596	9.1%	7.7%	5.7%
Ind	79,762,941	99,275,830	November	1.24	1.75	5,777,344	17.6%	15.0%	11.5%
Inst	15,209,631	25,186,923	July	1.66	2.79	2,264,721	3.4%	3.8%	4.5%
Lscp	30,621,286	62,552,508	October	2.04	2.87	5,781,864	6.7%	9.4%	11.5%
Total	453,773,196	662,004,958		1.46		50,354,793	100.0%	100.0%	100.0%
Class Groups									
Single/Multi	286,882,204	423,831,170		1.48	3.52	33,663,268	63.2%	64.0%	66.9%
Commercial/Industrial/Institutional	136,269,707	175,621,280		1.29	2.40	10,909,660	30.0%	26.5%	21.7%
Landscape	30,621,286	62,552,508		2.04	5.85	5,781,864	6.7%	9.4%	11.5%
Total	453,773,196	662,004,958		1.46	3.33	50,354,793	100.0%	100.0%	100.0%

Calculation of System MD/MM Ratio			
Overall System coincident maximum-day (MD) production	27.82	< daily high	33.76	< daily high
Average daily production for the System maximum month (MM)	22.95	< June2011	28.08	< July 2012
System MD/MM Ratio	1.21		1.20	

Calculation of MD Peak Factor	Single	Multi	Comm	Ind	Inst	Lscp
MM/AM Delivery Factor	1.50	1.37	1.24	1.24	1.66	2.04
System MD/MM Production Ratio	1.20	1.20	1.20	1.20	1.20	1.20
Weekly Usage Adjustment Factor	1.35	1.35	1.17	1.17	1.40	1.17
Calculated MD Peak Factor	2.43	2.21	1.74	1.75	2.79	2.87

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2.6 Water Meter Equivalency Factors

Meter charges for meter sizes greater than 1-inch are based, in part, on an "equivalency factor" that relates the design maximum flow capacity of a meter (in gallons per minute, gpm) to that of a standard 1-inch meter. Design capacities for meters in use by the City are published by the American Water Works Association (AWWA). The water meter maximum flow capacity assignments used in this study and the calculation of equivalency factors are shown in the table below.

The equivalency factors used in the development of current service charges are not known but may be estimated by calculating the ratio of the monthly charges for each meter size in relation to the monthly charge for a 1-inch meter. The implied equivalency factors based on the current service charges are shown in the table below for comparison to those used in this study.

Table 2-4. Water Meter Equivalency Factors

	Recommended Equivalency Factors				Implied Equivalency Factors	
Meter Size	Meter Type	AWWA Class	AWWA Maximum Flow Rate	1-inch Meter Equiv. Factor	Current Monthly Service Charge	1-inch Meter Equiv. Factor
1.00-inch or less	Displacement	C700	50 gpm	1.0	$2.00	1.0
1.50-inch	Displacement	C700	100 gpm	2.0	$4.50	2.3
2.00-inch	Displacement	C700	160 gpm	3.2	$5.50	2.8
3.00-inch	Class I Turbine	C701	350 gpm	7.0	$13.50	6.8
4.00-inch	Class I Turbine	C701	600 gpm	12.0	$27.50	13.8
6.00-inch	Class I Turbine	C701	1,250 gpm	25.0	$48.50	24.3
8.00-inch	Class II Turbine	C702	2,400 gpm	48.0	$86.50	43.3
10.00-inch	Class II Turbine	C702	3,800 gpm	76.0	$140.50	70.3

Source: American Water Works Association, M6 Water Meters - Selection, Installation, Testing and Maintenance, 2012 Fifth Edition, pages 63 - 65.

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Section 3

Water Rates

Revenue, expenditures, reserve levels, water rates, and debt coverage for the water utility are summarized in this section.

3.1 Water Operating Revenues and Expenditures

The City of Turlock operates its own Water Utility that is responsible for the provision of an adequate and reliable supply of potable water to approximately 18,500 residential, commercial and industrial customers. All water is monitored to ensure compliance with stringent health standards established by the State Department of Public Health (DPH). The water utility is also responsible for ensuring adequate fire flows and pressures for fire suppression purposes. There are 21 full-time employees either fully or partially funded from the Water Enterprise Fund of which 14 work in operations and maintenance, 4 work in the Finance Division and 3 work in Administration.

Amended (for FY13) and Budgeted (for FY14) operating revenues and expenditures are shown in adjacent table. The table has values for Water Fund 420, Division 550, Operations (capital revenues and expenditures are shown in the next section of this report).

Projected revenues (except revenues from commodity charges and meter charges) and expenditures for FY15 – FY 23 are based on annual escalation rates provided by the City.

Water Fund 420, Division 550 - Operations	Amended FY13	Adopted FY14	
Budget Opening Balance	20,805,134	20,937,923	
Operating Revenues			
Water Sales			
Flat-rate Customers	428,000	352,000	*-18%*
Metered Customers	5,795,580	6,415,000	*11%*
Charges for service (regular) [1]	32,000	37,000	*16%*
Charges for service (other) [2]	4,500	4,500	*0%*
Other fees / charges [3]	4,000	11,750	*194%*
Connection fees	10,000	10,000	*0%*
Total Operating Revenues	6,274,080	6,830,250	*9%*
Operating Expenses			
Salaries	1,338,262	1,420,390	*6%*
Benefits and Insurance	773,963	833,352	*8%*
Contractural			
Regional Mgmt/Planning	75,000	325,000	*333%*
All Other	363,198	355,122	*-2%*
Supplies and maintenance	276,418	313,054	*13%*
Utilities	1,407,900	1,309,100	*-7%*
Vehicle	111,970	101,523	*-9%*
Other Expenses	64,330	70,330	*9%*
Total Operating Expenses	4,411,041	4,727,871	*7%*
Operating Income (loss)	1,863,039	2,102,379	
Nonoperating revenues (expenses)			
Interest income	250,000	0	
Interest income-2008 Water Bond	35,000	0	
Total Nonoperating revenues (expenses)	285,000	0	
Debt Service			
2008 Water Bond Interest	1,381,665	1,381,665	
2008 Water Bond Principal	650,000	650,000	
Total Debt Service	2,031,665	2,031,665	
Transfers			
Revenue Transfers In	268,194	20,000	
Expenditures Transfers In	(918,501)	(454,831)	
Expenditures Transfers Out	(8,910)	(8,910)	
Total Transfers	(659,217)	(443,741)	
Net Income (loss)	(542,843)	(373,027)	

[1] Includes sign-up fees, turn of fee, delinquent charges, and construction water.
[2] Includes water analysis, water meter sets and damage charges.
[3] Includes miscellaneous general, unclaimed property and sale/repairs of City property.

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3.2 Water Capital Revenues and Expenditures

The City's capital expenditures are for replacement and refurbishment of existing assets and for construction of new assets. Currently, the primary assets in the City's water utility are 24 active wells that produce potable water, two (2) one million gallon water storage reservoirs (with a third reservoir under construction), 266 miles of transmission mains and distribution lines, and 2,922 fire hydrants. The City also owns and maintains the service laterals and water meters that connect each customer to the water system.

Water Fund 420, Division 551 - Capital	Amended FY13	Adopted FY14	
Budget Opening Balance	12,648,916	11,938,042	
Charges for Services			
Meter Replacement Fee	450,000	510,000	*13%*
Grid System Revenue	100,000	0	*na*
Water Well Tax	1,000	0	*-100%*
Total Charges for Services	551,000	510,000	*-7%*
Expenditures			
Contractual Services	102,000	95,000	*-7%*
Supplies and Maintenance	105,000	103,150	*-2%*
Capital Outlay	8,866,958	6,171,700	*-30%*
Lease - Muni Building Payment	56,155	56,155	*0%*
Total Expenditures	9,130,113	6,426,005	*-30%*

Amended (for FY13) and Budgeted (for FY14) capital revenues and expenditures are shown in adjacent table. Projected revenues (except revenues from the Meter Replacement Fee) and expenditures for FY15 – FY 23 are based on projected annual capital expenditures provided by the City.

3.2.1 City Water System Projected Capital Project Expenditures and Source of Funds

The City's Water Master Plan (WMP) was completed in August of 2003 and updated in 2009. The WMP identified water supply, water quality and water deficiencies as well as solutions for a number of issues facing the City's potable water system. Since 2003, the City has constructed infrastructure to meet the WMP's recommendations as modified by actual conditions. Projected expenditures and source of funds for City Water System capital projects are shown in the table below. The list of projects does not include expenditures for new regional surface water treatment facilities or for terminal facilities that supplement the regional facilities.

Table 3-1. City Water System Capital Project Expenditures and Source of Funds

City Water System Project	Note	Total Cost	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Replace 10" steel with 1500' of 12" C-900 Main from Palm to Canal to Well 13. Design and Bid Documents FY 11/12 Construction FY 12/13		$735,000	$210,000	$525,000								
Replace existing with C-900 in alley's from Canal to Berkeley between E. Main and Yosemite. Design and Bid Documents FY 10/11 Construction FY 11/12		$500,000	$500,000									
Replace steel lines with 6" C-900 N.Palm (700') and Mitchell Ave (500'). Design and Bid Documents FY 12/13 Construction FY 13/14		$246,600	$45,000	$201,600								
Potable Well #41 in Northeast Turlock. Design, Bid Documents and Construction FY 11/12		$1,000,000	$1,000,000									
Potable Well #42 in Northwest Turlock. Design, Bid Documents and Construction FY 12/13		$1,000,000	$1,000,000									
Northeast Water Storage Tank 2 million gallons. Design, Bid Documents and Construction FY 14/15		$7,000,000		$7,000,000								
Northwest Water Storage Tank 1 million gallons. Design, Bid Documents and Construction FY 12/13		$4,800,000	$4,800,000									
Distribution system improvements for RSWSP. Design, Bid Documents and Construction FY 15/16		$0										
Future Undefined Water Expansion Project (as needed)		$2,515,579	$200,000	$210,000	$220,500	$231,525	$243,101	$255,256	$268,019	$281,420	$295,491	$310,266
Meter replacement expenditures	[1]	$6,477,615	$515,000	$540,750	$567,788	$596,177	$625,986	$657,285	$690,149	$724,657	$760,890	$798,934
Expenditures for depreciated assets	[2]	$9,226,556	$700,000	$742,000	$786,520	$833,711	$883,734	$936,758	$992,963	$1,052,541	$1,115,694	$1,182,635
Total City System Expenditures		**$33,501,350**	**$8,970,000**	**$9,219,350**	**$1,574,808**	**$1,661,413**	**$1,752,821**	**$1,849,299**	**$1,951,132**	**$2,058,618**	**$2,172,074**	**$2,291,835**
Cumulative Expenditures			$8,970,000	$18,189,350	$19,764,158	$21,425,571	$23,178,391	$25,027,691	$26,978,822	$29,037,440	$31,209,515	$33,501,350
Source of Funds												
Disbursement from 2008 Water Bonds		$6,800,000	$6,800,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash		**$26,701,350**	**$2,170,000**	**$9,219,350**	**$1,574,808**	**$1,661,413**	**$1,752,821**	**$1,849,299**	**$1,951,132**	**$2,058,618**	**$2,172,074**	**$2,291,835**
Cumulative Cash			$2,170,000	$11,389,350	$12,964,158	$14,625,571	$16,378,391	$18,227,691	$20,178,822	$22,237,440	$24,409,515	$26,701,350

Source: City of Turlock

[1] Meter replacement expenditures for FY14 are equivalent to the amount of revenue generated by the current service charges. Expenditures for FY15 onward are based on a 5% annual escalation of the previous years' value.

[2] Expenditures for depreciated assets for FY14 are approximately equivalent to 1% of the replacement value of the water system. Expenditures for FY15 onward are based on a 6% annual escalation of the previous years' value.

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3.2.2 TID RSWSP Projected Capital Project Expenditures and Source of Funds

Historical data indicates the groundwater supply will support annual production of up to eight (8) billion gallons per year. Groundwater pumping in excess of eight (8) billion gallons results in the depletion (overdraft) of the groundwater table (aquifer). Because it is not sustainable to overdraft the groundwater over a long period, an additional supply of water will be needed in future years. The timing of this overdraft situation is uncertain due to a number of factors - most importantly the rate of population growth, industrial expansion, and efforts to conserve water.

The City made a financial commitment to the Turlock Irrigation District (TID) for the design, environmental review and legal challenges for the future construction of a Regional Surface Water Treatment Project (RSWSP or Project). At this point in time the City has informally committed to 15 MGD of the capacity of this facility; however, no contracts have been signed. Treated surface water will provide the City with an additional water supply and increased supply reliability. Recent preliminary estimates place the City's financial obligation to this project at $68 million. The preliminary estimate for the City's portion of annual Operation/Maintenance (O&M) of the Surface Water Plant is approximately $2.6 million. In addition, improvements to the City's system to accept this water source (terminal control facilities) are estimated to be $20 million.

The proposed mechanism for funding Turlock's portion of Project expenditures is shown in the table below.

Table 3-2. Regional and Terminal Facilities Capital Project Expenditures and Source of Funds

Cost Component	*Assumptions*	Cost Estimate
Total Capital Cost for the TID RSWSP		**$182,460,000**
Estimated Turlock Share of Project Costs [1]	37.3%	$68,072,265
Total Capital Cost for City Terminal Facilities [2]		**$20,000,000**
Turlock Capital Funding Projections		
Turlock Share of Regional Facilities plus Terminal Facilities		$88,072,265
Portion Cash Funded	**19%**	**$16,733,730**
Portion Debt Funded	81%	$71,338,535
Capitalized Interest	*0 months*	$0
Issuance Costs	*3.0%*	$2,042,000
Underwriter's Discount	*1.0%*	$681,000
Bond Reserve Fund	*1 year debt service*	$5,635,000
Estimated Bond Size [3]		$79,697,000
Bond Size Adjusted for Rounding		**$79,690,000**
Principal		$79,690,000
Interest		$89,371,312
Estimated Annual Debt Service		**$5,635,000**
Operations and Maintenance Cost		
Total Estimated Cost - Initial Year 2019		$6,000,000
Estimated Turlock Share of O&M Cost [4]	**43.6%**	**$2,618,000**
Turlock Projected Cash and Annual Costs		
Capital, Cash Funded		$16,733,730
Capital, Annual Debt Service		$5,635,000
Operation and Maintenance Annual Cost		$2,618,000
Total City of Turlock Annual Cost		**$8,253,000**

Source: City of Turlock and Municipal Financial Services

[1] Turlock's share is based on the October 2008 Cost Estimate.
[2] Facilities solely for the City of Turlock to supplement regional facilities.
[3] Bond Issue Assumptions:

Issue Year and Month of 1st Payment	2017, February
Interest Rate	5.75%
Term	30
Bond Load (Bond Size / Amount Debt Funded)	1.117

[4] Turlock's share is calculated as 11.3 MGD of 25.9 MGD initial water treatment plant production.

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3.3 Debt Service Coverage

Issuers of public enterprise revenue bonds generally covenant in the bond resolution or indenture to establish rates and charges for the products or services provided by the enterprise in a manner sufficient to provide revenues to pay such amounts and to provide coverage.

In its December 2011 review, Standard & Poor's Ratings Services (S&P) affirmed its 'AA' rating on Turlock Public Financing Authority 2008 water revenue bonds, issued for the City Turlock. The outlook provided by S&P in the review was “stable.”

As stated in the December 2011 S&P review, “The rating continues to reflect [S&P’s] view of the water system's:

- Track record of strong debt service coverage (DSC) from recurring revenues, most recently at 1.84x for fiscal 2011;
- Extremely strong liquidity position of $25.0 million - more than five years' cash operating expenditures;
- Predominantly residential and very diverse customer base, with the 10 leading customers accounting for 4.8% of water revenues; and
- Manageable capital needs over the next five years, which will likely allow for continued strong liquidity and coverage.”

The bonds are secured by a pledge of Net Revenues of the water system, with connection fees not pledged toward the repayment of bonds. Additional liquidity is provided by a cash-funded debt service reserve funded at the lowest of 10% of par, 125% of average annual debt service, or maximum annual debt service. The City has covenanted to prescribe rates such that a minimum of 1.20x coverage is achieved. In addition, security provisions include a 1.20x additional bonds test that includes additional revenues resulting from rate increases and 95% of net revenues resulting from new customers to the system.

The “Outlook” section in the December 2011 S&P review stated the following: “Over the next two years, ***we do not foresee raising the rating given the declining coverage*** (emphasis added), average economic indicators for the service area, and the industry concentration in the agricultural sector. We could lower the rating if the conversion to new tiered rates leads to materially greater rate sensitivity among customers, thereby impacting management's ability to raise rates to maintain strong coverage, fund necessary capital projects, and begin water supply diversification initiatives.”

Water rates developed in this study are set to generate Net Revenues equal to 150 percent of the estimated debt service.

3.4 Target Reserve Fund Levels

Reserves and reserve funds are prudent fiscal management tools, which are a cornerstone of long-term financial planning. Water Fund 420 reserves for the end of FY13 (June 30, 2013) are estimated at approximately $33 million. The City intends to spend a large portion of the reserves during the next 10 years to fund capital projects. The target reserve level at the end of 10 years is 150 percent of annual operating expenditures.

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3.5 Cash Flow for Two Water System Development Scenarios

Revenue requirements and rates were developed for two scenarios – a "Groundwater Only" scenario which would fund operations expenditures, capital expenditures and debt service associated with a water system supplied only by groundwater and a "Groundwater + Surface Water" scenario which would fund operations expenditures, capital expenditures and debt service associated with a water system supplied predominantly by treated surface water and supplemented by groundwater supplies.

Groundwater Only Scenario

Projected cash flow for the Groundwater Only scenario is shown in the table below. Detailed expenditure and revenue projections are shown in tables included in Appendix B.

Table 3-3. Projected Cash Flow, FY14 – FY23 – Groundwater Only

	1st Five Years FY14 - FY18	2nd Five Years FY19 - FY23	Total 10 Years FY14 - FY23	% of Totals
Beginning Balance	**$32,875,965**	$20,287,447		
Expenditures				
Operating	$30,143,556	$39,258,636	$69,402,192	59%
Capital	$16,378,391	$10,322,958	$26,701,350	23%
Debt Service	$10,439,100	$10,439,100	$20,878,200	18%
Total	**$56,961,047**	**$60,020,694**	**$116,981,741**	**100%**
Revenues				
Commodity Charges	$14,284,264	$16,233,538	$30,517,802	31%
Capacity Charges	$24,895,821	$33,892,862	$58,788,683	59%
Account Charges	$3,839,252	$3,350,285	$7,189,537	7%
Other	$1,353,192	$1,047,537	$2,400,729	2%
Total	**$44,372,529**	**$54,524,222**	**$98,896,751**	**100%**
Ending Balance	$20,287,447	**$14,790,975**		
Use / (Add) Fund Balance	$12,588,518	$5,496,472	**$18,084,990**	

Groundwater + Surface Water Scenario

Projected cash flow for the Groundwater + Surface Water scenario is shown in the table below. Detailed expenditure and revenue projections are shown in tables included in Appendix C.

Table 3-4. Projected Cash Flow, FY14 – FY23 – Groundwater + Surface Water

	1st Five Years FY14 - FY18	2nd Five Years FY19 - FY23	Total 10 Years FY14 - FY23	% of Totals
Beginning Balance	**$32,875,965**	$11,477,999		
Expenditures				
Operating	$30,143,556	$64,444,450	$94,588,006	50%
Capital	$33,112,122	$10,322,958	$43,435,080	23%
Debt Service	$13,256,600	$38,614,100	$51,870,700	27%
Total	**$76,512,278**	**$113,381,508**	**$189,893,786**	**100%**
Revenues				
Commodity Charges	$17,224,712	$37,482,306	$54,707,018	30%
Capacity Charges	$31,959,514	$78,890,759	$110,850,274	62%
Account Charges	$4,536,520	$7,711,986	$12,248,506	7%
Other	$1,393,566	$950,287	$2,343,853	1%
Total	**$55,114,312**	**$125,035,339**	**$180,149,651**	**100%**
Ending Balance	$11,477,999	**$23,131,829**		
Use / (Add) Fund Balance	$21,397,966	($11,653,830)	**$9,744,136**	

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3.6 Comparison of Two Water System Development Scenarios

Rate increases, debt service coverage ratios and cash flow associated with each water system development scenario are compared in this section.

Groundwater Only Scenario

Projected rate increases (represented by the % increase in Single Family monthly bills), debt service coverage ratios and cash flow are shown in the figure below for the Groundwater Only scenario.

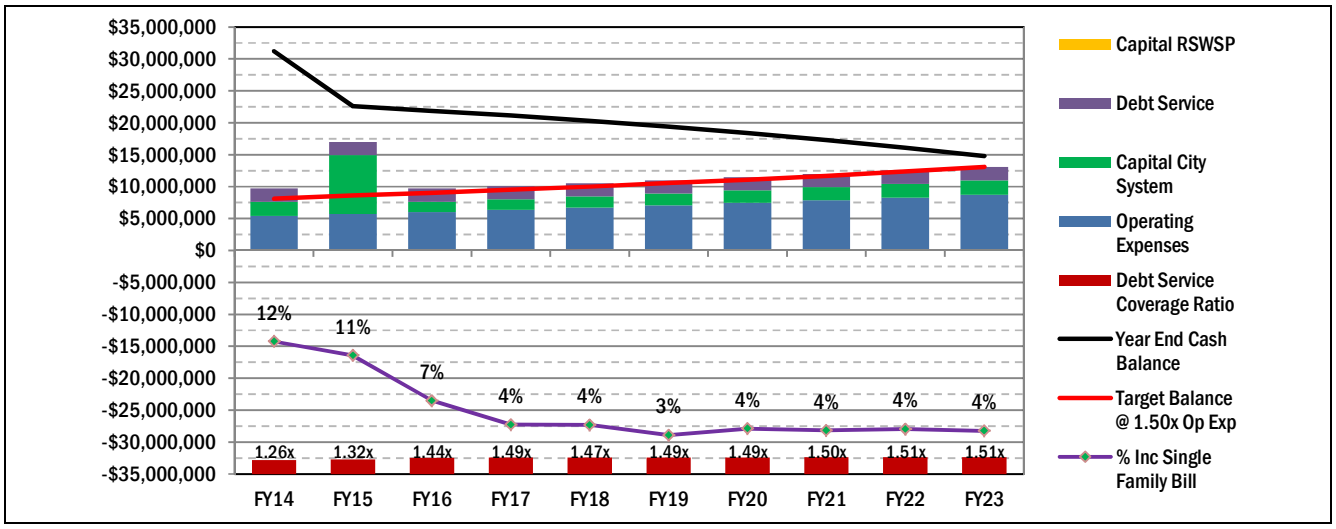

Figure 3-1. Increase in Monthly Bills, Debt Service and Cash Flow – Groundwater Only

Groundwater + Surface Water Scenario

Projected rate increases (represented by the % increase in Single Family monthly bills), debt service coverage ratios and cash flow are shown in the figure below for the Groundwater + Surface Water scenario.

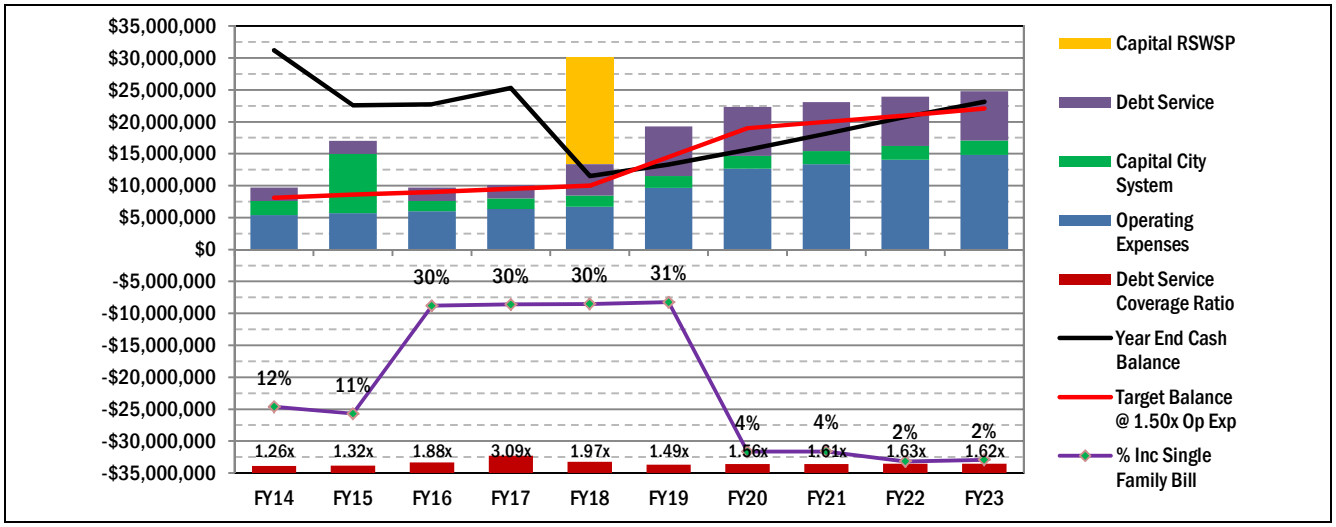

Figure 3-2. Increase in Monthly Bills, Debt Service and Cash Flow – Groundwater + Surface Water

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3.7 Allocation of Costs

Cost of service allocation is a method to equitably allocate the revenue requirements of the water utility between the various customer classes of service (residential, commercial, industrial, institutional, landscape). Cost of service allocations help ensure that rates are fair, equitable and provide an accurate price signal and that interclass subsidies are avoided.

The three analytical steps of cost of service allocation methodology are summarized below.

Functionalization. The preliminary arrangement of costs according to functions performed by the water system. Major functions usually defined as wells (source of supply), pumping, storage, transmission, distribution, etc.

Allocation. The process of allocating the functionalized costs to commodity, capacity, meters and service laterals and customer related cost components.

Distribution. The distribution of allocated costs to customer classes of service using prescribed distribution techniques.

The cost categories used for functionalization are commodity, capacity, meters and service laterals and customer related cost components. Each of those categories is described as follows:

- Commodity Costs. These costs are associated with the total production of water over a specified period of time.
- Demand (Capacity) costs. Costs associated with the maximum size of facilities required to meet peak production.
- Service and lateral costs. Costs associated with the individual customer service connections to the distribution system, including the service lateral and water meter.
- Customer related costs. Costs associated with having a customer on the water system. These costs vary with the addition or deletion of customers on the system.

Development of functional allocation factors is shown in the table below.

Table 3-5. Test Year Functional Allocation Factors

Plant in Service	Replacement Values [1]	Commodity (COM)	Capacity (CAP)	Meters and Service Lat. (MTR)	Customer (CUS)	Basis of Allocation (COM)	(CAP)	(MTR)	(CUS)
Wells	$24,000,000	$19,200,000	$4,800,000			80% COM	20% CAP		
Pumps	$36,000,000	$28,800,000	$7,200,000			80% COM	20% CAP		
Storage	$10,000,000		$10,000,000				100% CAP		
Transmission Mains	$89,430,483		$89,430,483				100% CAP		
Distribution Lines	$157,385,022		$118,038,767		$39,346,256		75% CAP		25% CUS
Hydrants	$17,532,000		$17,532,000				100% CAP		
Meters	$13,950,000			$13,950,000				100% MTR	
Service Laterals	$48,360,000			$48,360,000				100% MTR	
Total	$396,657,505	$48,000,000	$247,001,249	$62,310,000	$39,346,256				
% of Total		***12%***	***62%***	***16%***	***10%***	**Factor "Plant in Service"**			

[1] Replacement values are similar to those used for the development of capacity charges.

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The process of allocating the functionalized costs to commodity, capacity, meters and service laterals and customer related cost components is shown in the table below. The allocation is performed using the FY14 adopted budget as the Test Year.

Table 3-6. Test Year Cost Allocation Summary

Item	Adopted FY14	Commodity (COM)	Capacity (CAP)	Meters and Service Lat. (MTR)	Customer (CUS)	Basis of Allocation [1]
Operating and Capital Expenses						
Salaries	$1,420,390	$171,883	$884,486	$223,126	$140,895	Factor "Plant in Service"
Benefits and Insurance	$833,352	$100,845	$518,934	$130,909	$82,664	Factor "Plant in Service"
Contractural-Regional Mgmt	$325,000	$39,329	$202,380	$51,053	$32,238	Factor "Plant in Service"
Contractural-Other	$355,122	$42,974	$221,137	$55,785	$35,226	Factor "Plant in Service"
Supplies and maintenance	$511,204	$61,861	$318,330	$80,304	$50,709	Factor "Plant in Service"
Utilities	$1,309,100	$1,309,100	$0	$0	$0	100% COM
Fleet expense	$101,523	$12,285	$63,219	$15,948	$10,071	Factor "Plant in Service"
Other Expenses	$70,330	$8,511	$43,795	$11,048	$6,976	Factor "Plant in Service"
Capital, City System Cash Funded [2]	$1,500,000	$181,517	$934,060	$235,631	$148,792	Factor "Plant in Service"
Capital, RSWSP Cash Funded	$0	$0	$0	$0	$0	
Net Transfers	$483,741	$58,538	$301,229	$75,990	$47,984	Factor "Plant in Service"
Additional O&M for RSWSP	$0	$0	$0	$0	$0	Factor "Plant in Service"
Total Operating Expenses	**$6,909,762**	**$1,986,843**	**$3,487,569**	**$879,795**	**$555,555**	
Debt Service						
Lease Payment for City Building	$56,155	$20,478	$35,677	$0	$0	Factor "Net Op/Cap"
2008 Water Revenue Bonds	$2,031,665	$740,883	$1,290,782	$0	$0	Factor "Net Op/Cap"
New Debt Service - City System	$0	$0	$0	$0	$0	Factor "Net Op/Cap"
New Debt Service - RSWSP, City Portion	$0	$0	$0	$0	$0	Factor "Net Op/Cap"
Total Debt Service	**$2,087,820**	**$761,361**	**$1,326,459**	**$0**	**$0**	
Other Impacts (Credits)						
Other Charges for Service and Misc Inc	($53,250)	($6,444)	($33,159)	($8,365)	($5,282)	Factor "Plant in Service"
Connection Fees	($10,000)	($1,210)	($6,227)	($1,571)	($992)	Factor "Plant in Service"
Interest Income	$0	$0	$0	$0	$0	Factor "Plant in Service"
Add/(Use) Fund Balance	$0	$0	$0	$0	$0	Factor "Plant in Service"
Total Other Impacts (Credits)	**($63,250)**	**($7,654)**	**($39,386)**	**($9,936)**	**($6,274)**	
Total Revenue Requirement	**$8,934,332**	**$2,740,550**	**$4,774,642**	**$869,859**	**$549,281**	
TOTAL REVENUE REQUIREMENT ALLOCATION		**31%**	**53%**	**10%**	**6%**	

[1] The "Plant in Service" factor is from Table 3-5 and allocates costs as shown below.

Total	Commodity	Capacity	Meters/Laterals	Account
100%	12%	62%	16%	10%

[2] The"Net Op/Cap" factor is calculated using expenses that exclude those related to debt service, individual services and laterals (MTR) and accounts (CUS).

	Total	Commodity	Capacity
Operating and Other Impacts (Credits)	$5,427,372	$1,979,189	$3,448,183
Factor "Net Op/Cap"	100%	36%	64%

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The percent allocation of revenue requirements among commodity, capacity, meters and service laterals and customer related cost components for the Test Year is used to allocate the revenue required from water rates for FY14 – FY23 as shown in the table below for the Groundwater Only scenario. The table also shows the development of unit costs.

Table 3-7. Distribution of Costs and Development of Unit Costs

		Projected Fiscal Year									
		FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Revenue Required from Rates		$15,564,111	$17,009,958	$9,674,444	$10,086,964	$30,073,331	$17,925,105	$19,718,297	$20,359,970	$21,036,241	$21,748,990
Commodity	*allocation*										
Revenue Requirement	*31%*	$4,774,193	$5,217,697	$2,967,575	$3,094,112	$9,224,805	$5,498,413	$6,048,463	$6,245,292	$6,452,734	$6,671,365
Units of Use (thousand gallons)		5,290,135	5,139,851	4,994,265	4,853,218	4,716,558	4,726,031	4,735,527	4,745,047	4,754,591	4,764,159
Avg Commodity Rate ($/1000 gallons)		$0.90	$1.02	$0.59	$0.64	$1.96	$1.16	$1.28	$1.32	$1.36	$1.40
Capacity											
Revenue Requirement	*53%*	$8,317,696	$9,090,378	$5,170,169	$5,390,626	$16,071,642	$9,579,446	$10,537,755	$10,880,675	$11,242,085	$11,622,988
Units of Use (equivalent meters)		23,426	23,482	23,539	23,596	23,653	23,710	23,767	23,824	23,882	23,940
Capacity ($/eq mtr per month)		$29.59	$32.26	$18.30	$19.04	$56.62	$33.67	$36.95	$38.06	$39.23	$40.46
Meters and Service Laterals											
Revenue Requirement	*10%*	$1,515,344	$1,656,113	$941,917	$982,081	$2,927,982	$1,745,213	$1,919,801	$1,982,275	$2,048,118	$2,117,512
Units of Use (equivalent meters)		23,426	23,482	23,539	23,596	23,653	23,710	23,767	23,824	23,882	23,940
Mtrs/Svc Lats ($/eq mtr per month)		$5.39	$5.88	$3.33	$3.47	$10.32	$6.13	$6.73	$6.93	$7.15	$7.37
Customer											
Revenue Requirement	*6%*	$956,879	$1,045,769	$594,783	$620,145	$1,848,903	$1,102,032	$1,212,277	$1,251,727	$1,293,304	$1,337,124
Units of Use (accounts)		18,565	18,616	18,667	18,718	18,769	18,821	18,873	18,924	18,976	19,029
Customer ($/account per month)		$4.30	$4.68	$2.66	$2.76	$8.21	$4.88	$5.35	$5.51	$5.68	$5.86

Commodity charges for three groups of customer classes were developed using the average commodity unit cost and the maximum daily use factors and operating characteristics of each customer class. The table shows the development of commodity charges for three groups of customer classes for the Groundwater Only scenario.

Table 3-8. Development of Commodity Charges for 3 Customer Class Groups

		Projected Fiscal Year									
		FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Commodity											
Revenue Requirement		$2,377,326	$2,612,446	$2,764,127	$2,869,193	$2,956,657	$3,075,981	$3,209,167	$3,341,304	$3,485,113	$3,634,937
Units of Use (thousand gallons)		5,290,135	5,139,851	4,994,265	4,853,218	4,716,558	4,726,031	4,735,527	4,745,047	4,754,591	4,764,159
Average Commodity Rate ($/1000 gallons)		$0.45	$0.51	$0.55	$0.59	$0.63	$0.65	$0.68	$0.70	$0.73	$0.76
Single & Multi Family Residential	*% Revenue Allocation [1]*										
Revenue Requirement	*67%*	$1,589,294	$1,746,477	$1,847,879	$1,918,117	$1,976,589	$2,056,360	$2,145,397	$2,233,734	$2,329,874	$2,430,034
Units of Use (thousand gallons)		3,325,494	3,212,539	3,103,571	2,998,447	2,897,029	2,904,682	2,912,357	2,920,053	2,927,772	2,935,513
Commodity Rate ($/1000 gallons)		$0.48	$0.55	$0.60	$0.64	$0.69	$0.71	$0.74	$0.77	$0.80	$0.83
Commercial/Industrial/Institutional											
Revenue Requirement	*22%*	$515,062	$566,002	$598,864	$621,627	$640,577	$666,429	$695,285	$723,913	$755,070	$787,530
Units of Use (thousand gallons)		1,425,119	1,398,042	1,371,479	1,345,421	1,319,858	1,321,178	1,322,499	1,323,822	1,325,145	1,326,471
Commodity Rate ($/1000 gallons)		$0.37	$0.41	$0.44	$0.47	$0.49	$0.51	$0.53	$0.55	$0.57	$0.60
Landscape											
Revenue Requirement	*11%*	$272,971	$299,968	$317,384	$329,448	$339,491	$353,192	$368,485	$383,657	$400,169	$417,373
Units of Use (thousand gallons)		539,522	529,271	519,214	509,349	499,672	500,171	500,672	501,172	501,673	502,175
Commodity Rate ($/1000 gallons)		$0.51	$0.57	$0.62	$0.65	$0.68	$0.71	$0.74	$0.77	$0.80	$0.84

[1] Percent revenue allocation values are based on maximum daily use factors shown in Table 2-3.

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3.8 Comparison of Water Rates for Each Scenario

Water rates were developed that would meet revenue requirements, satisfy debt service coverage requirements with a ratio of 1.50x (for most years) and satisfy target reserve requirements of 1.50 times annual operating expenditures.

Groundwater Only Scenario

Projected rates for the Groundwater Only scenario are listed in the table below. Rates would be effective January 1 of each year.

Table 3-9. Projected Water Rates – Groundwater Only

	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
effective date >	*1/1/2014*	*1/1/2015*	*1/1/2016*	*1/1/2017*	*1/1/2018*	*1/1/2019*	*1/1/2020*	*1/1/2021*	*1/1/2022*	*1/1/2023*
Commodity Charge, $ per 1000 gallons										
Average	*$0.45*	*$0.51*	*$0.55*	*$0.59*	*$0.63*	*$0.65*	*$0.68*	*$0.70*	*$0.73*	*$0.76*
Single/Multi Residential	$0.48	$0.55	$0.60	$0.64	$0.69	$0.71	$0.74	$0.77	$0.80	$0.83
Commercial/Industrial/Institutional	$0.37	$0.41	$0.44	$0.47	$0.49	$0.51	$0.53	$0.55	$0.57	$0.60
Landscape	$0.51	$0.57	$0.62	$0.65	$0.68	$0.71	$0.74	$0.77	$0.80	$0.84
Capacity Charge, $ per meter per month										
1" or less	$17.50	$19.10	$20.20	$20.90	$21.50	$22.30	$23.20	$24.10	$25.10	$26.10
1-1/2"	$35.00	$38.20	$40.40	$41.80	$43.00	$44.60	$46.40	$48.20	$50.20	$52.20
2"	$56.00	$61.20	$64.70	$66.90	$68.80	$71.40	$74.30	$77.20	$80.40	$83.60
3"	$123.00	$134.00	$142.00	$147.00	$151.00	$157.00	$163.00	$169.00	$176.00	$183.00
4"	$210.00	$230.00	$243.00	$251.00	$258.00	$268.00	$279.00	$290.00	$302.00	$314.00
6"	$438.00	$478.00	$505.00	$523.00	$538.00	$558.00	$580.00	$603.00	$628.00	$653.00
8"	$840.00	$917.00	$970.00	$1,004.00	$1,032.00	$1,071.00	$1,114.00	$1,157.00	$1,205.00	$1,253.00
10"	$1,330.00	$1,452.00	$1,536.00	$1,589.00	$1,634.00	$1,695.00	$1,764.00	$1,832.00	$1,908.00	$1,984.00
Customer Charge, $ per account per month	$2.20	$2.40	$2.50	$2.60	$2.70	$2.80	$2.90	$3.00	$3.10	$3.20

Groundwater + Surface Water Scenario

Projected rates for the Groundwater + Surface Water scenario are listed in the table below. Rates would be effective January 1 of each year.

Table 3-10. Projected Water Rates – Groundwater + Surface Water

	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
effective date >	*1/1/2014*	*1/1/2015*	*1/1/2016*	*1/1/2017*	*1/1/2018*	*1/1/2019*	*1/1/2020*	*1/1/2021*	*1/1/2022*	*1/1/2023*
Commodity Charge, $ per 1000 gallons										
Average	*$0.45*	*$0.51*	*$0.68*	*$0.90*	*$1.19*	*$1.56*	*$1.62*	*$1.68*	*$1.72*	*$1.76*
Single/Multi Residential	$0.48	$0.55	$0.73	$0.98	$1.30	$1.70	$1.77	$1.83	$1.87	$1.91
Commercial/Industrial/Institutional	$0.37	$0.41	$0.54	$0.71	$0.93	$1.21	$1.26	$1.31	$1.34	$1.37
Landscape	$0.51	$0.57	$0.75	$0.99	$1.30	$1.70	$1.76	$1.84	$1.88	$1.92
Capacity Charge, $ per meter per month										
1" or less	$17.50	$19.10	$24.60	$31.70	$40.90	$53.40	$55.40	$57.60	$58.80	$60.20
1-1/2"	$35.00	$38.20	$49.20	$63.40	$81.80	$107.00	$111.00	$116.00	$118.00	$121.00
2"	$56.00	$61.20	$78.80	$102.00	$131.00	$171.00	$178.00	$185.00	$189.00	$193.00
3"	$123.00	$134.00	$173.00	$222.00	$287.00	$374.00	$388.00	$404.00	$412.00	$422.00
4"	$210.00	$230.00	$296.00	$381.00	$491.00	$641.00	$665.00	$692.00	$706.00	$723.00
6"	$438.00	$478.00	$615.00	$793.00	$1,023.00	$1,335.00	$1,385.00	$1,440.00	$1,470.00	$1,505.00
8"	$840.00	$917.00	$1,181.00	$1,522.00	$1,964.00	$2,564.00	$2,660.00	$2,765.00	$2,823.00	$2,890.00
10"	$1,330.00	$1,452.00	$1,870.00	$2,410.00	$3,109.00	$4,059.00	$4,211.00	$4,378.00	$4,469.00	$4,576.00
Customer Charge, $ per account per month	$2.20	$2.40	$3.10	$3.90	$5.10	$6.60	$6.80	$7.10	$7.20	$7.40

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Section 4

Evaluation of Water Bills

Implementation of a new rate structure and rates will produce impacts on customer classes, and on customers within a customer class, that will cause monthly bills to vary significantly from those based on current rates.

4.1 Design of New Rate Structure

The new rate structure is based on AWWA (American Water Works Association) methodology, satisfies the substantive requirements applicable to fees contained in the State of California Constitution and is designed to recover approximately 31% of revenue from rates from the commodity charge.

The figures below illustrate the design concept of the new rate structure. The figure on the left shows revenue by charge type (commodity, service and account) for FY14 – FY23. Note that new rates are projected to be effective midway through FY14 so revenue by charge type is a combination of revenue using the current rate structure and revenue using the new rate structure and rates. For simplification purposes in FY14, revenue from the minimum charge is characterized as commodity charge revenue.

The figure on the right is based on the same data as was used to prepare the figure on the left. The only difference is that values for each charge type are shown on a percentage basis.

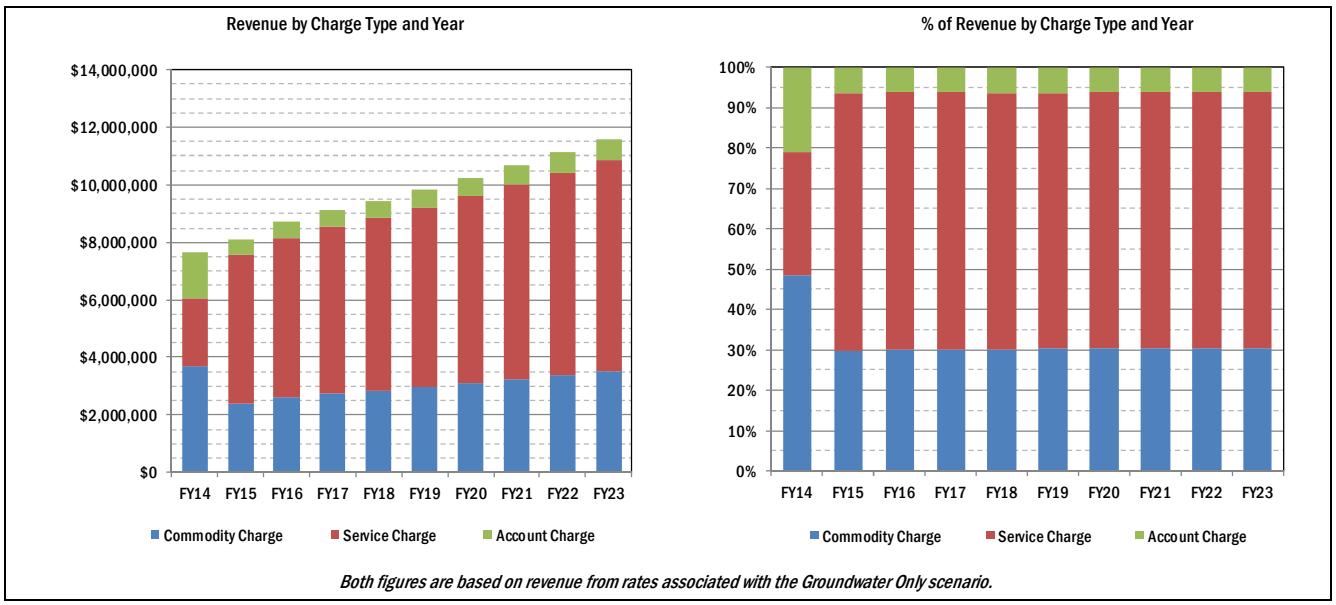

Figure 4-1. Design of the New Rate Structure

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4.2 Impact of New Rate Structure

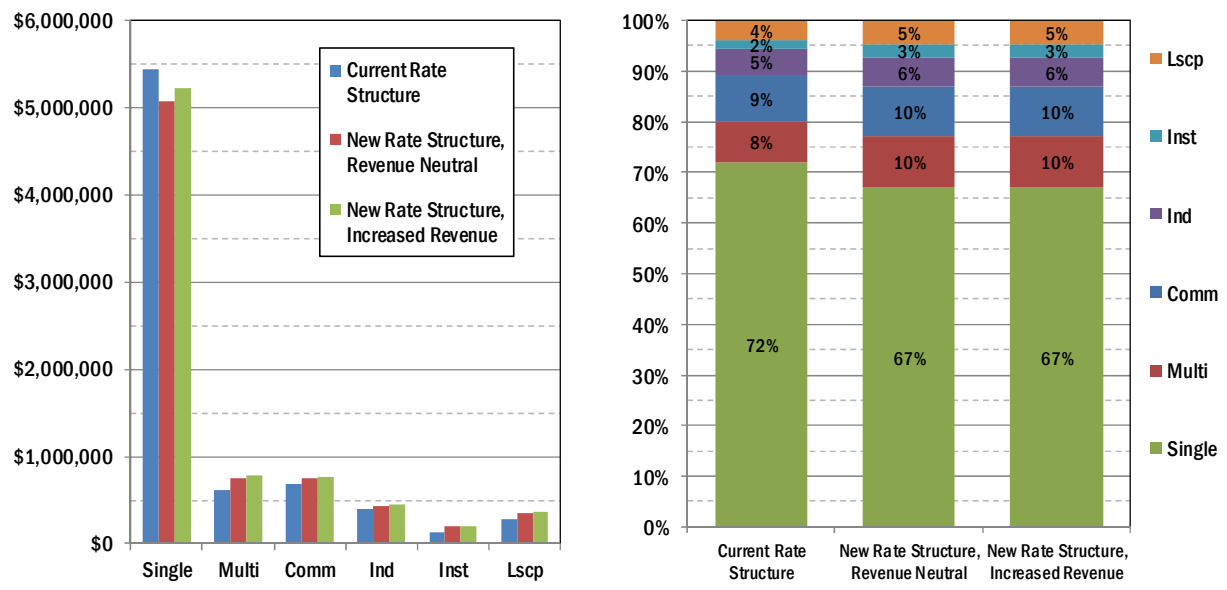
Water bills for each of the six customer classes were compared using current rates and the projected rate structure and rates. In the first year of implementing the new rate structure and rates, the impact on customer classes, and on customers within a customer class, will vary significantly.

The figures below isolate the impact of the new rate structure from the impact of the increase in revenue from rates. In the figure on the left, the amount of revenue for each customer class is shown using the current rate structure (blue bar), the new rate structure with total revenue from all customers ***equal to*** that from the current rate structure (red bar), and the new rate structure with total revenue from all customers ***greater than*** that from the current rate structure (green bar).

The difference in height between the blue bar and the red bar indicates how much revenue is shifted between customer classes while still yielding the same amount of total revenue from all classes.

The difference in height between the red bar and the green bar indicates how much additional revenue is generated from each customer class based on an increase in rates.

The figure on the right is based on the same data as was used to prepare the figure on the left. The only difference is that values for each customer class are shown on a percentage basis. Note that the new rate structure shifts revenue between customer classes but the rate increase, while increasing revenue from each customer class, does not shift the percentage of revenue between classes. For example, under the current rate structure, Single Family customers account for 72% of revenues; under the new rate structure the amount is 67%.



Both figures are based on revenue from rates associated with the Groundwater Only scenario.

Figure 4-2. Impact of the New Rate Structure and Rates on Customer Classes

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4.3 Impact of New Rate Structure Upon Customer Classes

Water bills for each of the six customer classes were compared using current rates and the projected rates and rate structure. In the first year of implementing the new rate structure and rates, the impact on customer classes and on customers within a customer class will vary significantly. To help illustrate the impact on customer classes as a whole, a monthly bill was calculated based on two or three levels of usage common within each customer class. The adjacent table lists each customer class, the relative water use level within the class (low, average, or high), the water use level used as an example, and the meter size used as an example.

Customer Class	Use Level	Water Use (kgal)	Meter Size
Single Family	Avg Use	15	1" or less
	High Use	50	1" or less
Multiple Family	Avg Use	30	1" or less
	High Use	200	4"
Commercial	Low Use	34	1" or less
	Avg Use	100	2"
	High Use	400	4"
Industrial	Avg Use	100	2"
	High Use	6,000	6"
Institutional	Low Use	100	1" or less
	High Use	1,000	6"
Landscape	Avg Use	100	1" or less
	High Use	2,000	6"

Water bills using the current rates and the projected rates and rate structure were calculated using the common usage levels for each customer class.

Table 4-1 shows monthly bills based on current rates and the projected rate structure and rates for FY14 and FY15. The annual percent increase in bills varies significantly in FY14 between customer classes and within customer classes depending on the meter size and usage level. The large variation in percentage increases in FY14 is due primarily to the change in rate structure and the development of rates based upon cost of service principles.

There is only a slight variance in the annual percent increase in bills for FY15 between customer classes (only 1% – 2%) as the only change that varies among customer classes is the projected levels of water use and growth in accounts.

Table 4-1. FY14 and FY15 Sample Monthly Bills and % Changes for Each Customer Class

Customer Class	Use Level	Water Use (kgal)	Meter Size	Current	Projected Average Annual Bills FY14		FY15	
Single Family	Avg Use	15	1" or less	$24.05	$26.90	12%	$29.75	11%
	High Use	50	1" or less	$55.50	$43.70	-21%	$49.00	12%
Multiple Family	Avg Use	30	1" or less	$34.10	$34.10	0%	$38.00	11%
	High Use	200	4"	$191.50	$308.20	61%	$342.40	11%
Commercial	Low Use	34	1" or less	$38.38	$32.28	-16%	$35.44	10%
	Avg Use	100	2"	$104.50	$95.20	-9%	$104.60	10%
	High Use	400	4"	$191.50	$360.20	88%	$396.40	10%
Industrial	Avg Use	100	2"	$104.50	$95.20	-9%	$104.60	10%
	High Use	6,000	6"	$2,474.50	$2,660.20	8%	$2,940.40	11%
Institutional	Low Use	100	1" or less	$101.00	$67.70	-33%	$76.50	13%
	High Use	1,000	6"	$524.50	$920.20	75%	$1,030.40	12%
Landscape	Avg Use	100	1" or less	$101.00	$70.70	-30%	$78.50	11%
	High Use	2,000	6"	$914.50	$1,460.20	60%	$1,620.40	11%

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4.4 Affordability Test

The California Department of Public Health bases its evaluation of affordability of water rates on two criteria:

1. The median household income of the community compared to the State median household income, and
2. The percentage of median household income spent on water bills.

Generally water rates are considered to be burdensome if they are greater than 2.0% of median household income. If a community's median household income is less than 80% of the State median household income, the community is considered "disadvantaged", in which case a rate greater than 1.5% of median household income is considered burdensome.

Turlock does not meet the definition of disadvantaged since median household income is greater than 80% of the State median household income. Under the calculated water rates for FY14, a typical household using 15,000 gallons of water in a month would pay $27.05 under both the Groundwater Only and Groundwater + Surface Water scenarios, which is 0.7% of the 2011 median household income for Turlock. The proposed water rates are, per the California Department of Public Health, affordable. These calculations are shown below in Table 4-2. Note that monthly water bills for FY14 would need to increase to approximately $62 per month in Turlock to be considered (by the State of California) "a concern" and increase to approximately $83 per month to be considered "not affordable".

Table 4-2. Affordability Test Results

Median Household Income (MHI)			
Statewide California Median Household Income [1]	$57,287		
Turlock Median Household Income [1]	$49,823		
Turlock MHI as a percentage of the State MHI [2]	**87%**		
Monthly Water Bill	**Projected FY14 Monthly Bill**	**1.5% of MHI Water Bill**	**2.0% of MHI Water Bill**
Turlock Monthly Median Household Income	$4,152	$4,152	$4,152
Average Monthly Water Bill (Single Family Customer) Projected FY14	$26.90	**$62.28**	**$83.04**
Average Monthly Water Bill as Percentage of Household Income [3]	**0.6%**	1.5%	2.0%

Source: Municipal Financial Services

[1] United States Census Bureau 2011 American Community Survey 1-Year Estimates.

[2] Per the California Department of Public Health, a community with a MHI <80% of the Statewide MHI is disadvantaged.

[3] Water bills that are <1.5% of MHI are considered affordable, between 1.5% and 2.0% a concern, particularly if the community is disadvantaged, and not affordable if greater than 2.0%.

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4.5 Projected Water Bills for Each Scenario

Water bills for each of the six customer classes and the two water supply scenarios are presented in this section.

Groundwater Only Scenario

Projected water bills based on common usage levels in each of the six customer classes are shown in the table below for the Groundwater Only scenario.

Table 4-3. Projected Water Bills – Groundwater Only

Customer Class	Use Level	Current	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Single Family	Avg Use	$24.05	$26.90	$29.75	$31.70	$33.10	$34.55	$35.75	$37.20	$38.65	$40.20	$41.75
	High Use	$55.50	$43.70	$49.00	$52.70	$55.50	$58.70	$60.60	$63.10	$65.60	$68.20	$70.80
Multiple Family	Avg Use	$34.10	$34.10	$38.00	$40.70	$42.70	$44.90	$46.40	$48.30	$50.20	$52.20	$54.20
	High Use	$191.50	$308.20	$342.40	$365.50	$381.60	$398.70	$412.80	$429.90	$447.00	$465.10	$483.20
Commercial	Low Use	$38.38	$32.28	$35.44	$37.66	$39.48	$40.86	$42.44	$44.12	$45.80	$47.58	$49.70
	Avg Use	$104.50	$95.20	$104.60	$111.20	$116.50	$120.50	$125.20	$130.20	$135.20	$140.50	$146.80
	High Use	$191.50	$360.20	$396.40	$421.50	$441.60	$456.70	$474.80	$493.90	$513.00	$533.10	$557.20
Industrial	Avg Use	$104.50	$95.20	$104.60	$111.20	$116.50	$120.50	$125.20	$130.20	$135.20	$140.50	$146.80
	High Use	$2,474.50	$2,660.20	$2,940.40	$3,147.50	$3,345.60	$3,480.70	$3,620.80	$3,762.90	$3,906.00	$4,051.10	$4,256.20
Institutional	Low Use	$101.00	$67.70	$76.50	$82.70	$87.50	$93.20	$96.10	$100.10	$104.10	$108.20	$112.30
	High Use	$524.50	$920.20	$1,030.40	$1,107.50	$1,165.60	$1,230.70	$1,270.80	$1,322.90	$1,376.00	$1,431.10	$1,486.20
Landscape	Avg Use	$101.00	$70.70	$78.50	$84.70	$88.50	$92.20	$96.10	$100.10	$104.10	$108.20	$113.30
	High Use	$914.50	$1,460.20	$1,620.40	$1,747.50	$1,825.60	$1,900.70	$1,980.80	$2,062.90	$2,146.00	$2,231.10	$2,336.20

Groundwater + Surface Water Scenario

Projected water bills based on common usage levels in each of the six customer classes are shown in the table below for the Groundwater + Surface Water scenario.

Table 4-4. Projected Water Bills – Groundwater + Surface Water

Customer Class	Use Level	Current	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Single Family	Avg Use	$24.05	$26.90	$29.75	$38.65	$50.30	$65.50	$85.50	$88.75	$92.15	$94.05	$96.25
	High Use	$55.50	$43.70	$49.00	$64.20	$84.60	$111.00	$145.00	$150.70	$156.20	$159.50	$163.10
Multiple Family	Avg Use	$34.10	$34.10	$38.00	$49.60	$65.00	$85.00	$111.00	$115.30	$119.60	$122.10	$124.90
	High Use	$191.50	$308.20	$342.40	$445.10	$580.90	$756.10	$987.60	$1,025.80	$1,065.10	$1,087.20	$1,112.40
Commercial	Low Use	$38.38	$32.28	$35.44	$46.06	$59.74	$77.62	$101.14	$105.04	$109.24	$111.56	$114.18
	Avg Use	$104.50	$95.20	$104.60	$135.90	$176.90	$229.10	$298.60	$310.80	$323.10	$330.20	$337.40
	High Use	$191.50	$360.20	$396.40	$515.10	$668.90	$868.10	$1,131.60	$1,175.80	$1,223.10	$1,249.20	$1,278.40
Industrial	Avg Use	$104.50	$95.20	$104.60	$135.90	$176.90	$229.10	$298.60	$310.80	$323.10	$330.20	$337.40
	High Use	$2,474.50	$2,660.20	$2,940.40	$3,858.10	$5,056.90	$6,608.10	$8,601.60	$8,951.80	$9,307.10	$9,517.20	$9,732.40
Institutional	Low Use	$101.00	$67.70	$76.50	$100.70	$133.60	$176.00	$230.00	$239.20	$247.70	$253.00	$258.60
	High Use	$524.50	$920.20	$1,030.40	$1,348.10	$1,776.90	$2,328.10	$3,041.60	$3,161.80	$3,277.10	$3,347.20	$3,422.40
Landscape	Avg Use	$101.00	$70.70	$78.50	$102.70	$134.60	$176.00	$230.00	$238.20	$248.70	$254.00	$259.60
	High Use	$914.50	$1,460.20	$1,620.40	$2,118.10	$2,776.90	$3,628.10	$4,741.60	$4,911.80	$5,127.10	$5,237.20	$5,352.40

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4.6 Single Family Customer Bills for FY14

The new rate structure and rates are projected to be effective January 1, 2014 (midway through FY14). The impact on Single Family customers will vary depending on the level of use and meter size. The table below compares monthly bills for a 1-inch meter connection at various levels of water use from 0 gallons per month to 100,000 gallons per month using both the current rates and the new rate structure and rates. Average use for the customer class is approximately 15,000 gallons per month.

Table 4-5. Single Family Bills for FY14

Monthly Water Use		Current Rates and Rate Structure Commodity or Minimum				New Rates and Rate Structure				Current Bills vs Projected Bills				Average Use = 15,542 gallons/acct Accounts at Each Use Level		
		Service Charge	$1.07 $0.91 $0.39 per kgal or	0-50kgal >50k<150k >150kgal	Total Monthly	Service Charge	Commodity Charge	Account Charge	Total Monthly	Current Rates Monthly	New Rates Monthly	Monthly Change				
kgal	gpd	$2.00 per mo		$22.05 per mo	Bill	$17.50 per mo	$0.48 per kgal	$2.20 per mo	Bill	Bill	Bill	$	%	#	Cumul. #	Cumul. %
0	0	$2.00	$0.00	$22.05	$24.05	$17.50	$0.00	$2.20	$19.70	$24.05	$19.70	($4.35)	-18%	443	443	3%
2,000	66	$2.00	$2.14	$22.05	$24.05	$17.50	$0.96	$2.20	$20.66	$24.05	$20.66	($3.39)	-14%	391	834	5%
4,000	132	$2.00	$4.28	$22.05	$24.05	$17.50	$1.92	$2.20	$21.62	$24.05	$21.62	($2.43)	-10%	753	1,587	10%
6,000	197	$2.00	$6.42	$22.05	$24.05	$17.50	$2.88	$2.20	$22.58	$24.05	$22.58	($1.47)	-6%	1,154	2,741	17%
8,000	263	$2.00	$8.56	$22.05	$24.05	$17.50	$3.84	$2.20	$23.54	$24.05	$23.54	($0.51)	-2%	1,618	4,359	27%
10,000	329	$2.00	$10.70	$22.05	$24.05	$17.50	$4.80	$2.20	$24.50	$24.05	$24.50	$0.45	2%	1,736	6,095	38%
12,000	395	$2.00	$12.84	$22.05	$24.05	$17.50	$5.76	$2.20	$25.46	$24.05	$25.46	$1.41	6%	1,741	7,836	49%
14,000	460	$2.00	$14.98	$22.05	$24.05	$17.50	$6.72	$2.20	$26.42	$24.05	$26.42	$2.37	10%	1,516	9,352	58%
16,000	526	$2.00	$17.12	$22.05	$24.05	$17.50	$7.68	$2.20	$27.38	$24.05	$27.38	$3.33	14%	1,344	10,696	66%
18,000	592	$2.00	$19.26	$22.05	$24.05	$17.50	$8.64	$2.20	$28.34	$24.05	$28.34	$4.29	18%	1,125	11,821	73%
20,000	658	$2.00	$21.40	$22.05	$24.05	$17.50	$9.60	$2.20	$29.30	$24.05	$29.30	$5.25	22%	872	12,693	79%
22,000	723	$2.00	$23.54	$0.00	$25.54	$17.50	$10.56	$2.20	$30.26	$25.54	$30.26	$4.72	18%	716	13,409	83%
24,000	789	$2.00	$25.68	$0.00	$27.68	$17.50	$11.52	$2.20	$31.22	$27.68	$31.22	$3.54	13%	545	13,954	87%
26,000	855	$2.00	$27.82	$0.00	$29.82	$17.50	$12.48	$2.20	$32.18	$29.82	$32.18	$2.36	8%	417	14,371	89%
28,000	921	$2.00	$29.96	$0.00	$31.96	$17.50	$13.44	$2.20	$33.14	$31.96	$33.14	$1.18	4%	312	14,683	91%
30,000	986	$2.00	$32.10	$0.00	$34.10	$17.50	$14.40	$2.20	$34.10	$34.10	$34.10	$0.00	0%	257	14,940	93%
32,000	1,052	$2.00	$34.24	$0.00	$36.24	$17.50	$15.36	$2.20	$35.06	$36.24	$35.06	($1.18)	-3%	205	15,145	94%
34,000	1,118	$2.00	$36.38	$0.00	$38.38	$17.50	$16.32	$2.20	$36.02	$38.38	$36.02	($2.36)	-6%	171	15,316	95%
36,000	1,184	$2.00	$38.52	$0.00	$40.52	$17.50	$17.28	$2.20	$36.98	$40.52	$36.98	($3.54)	-9%	131	15,447	96%
38,000	1,249	$2.00	$40.66	$0.00	$42.66	$17.50	$18.24	$2.20	$37.94	$42.66	$37.94	($4.72)	-11%	111	15,558	96%
40,000	1,315	$2.00	$42.80	$0.00	$44.80	$17.50	$19.20	$2.20	$38.90	$44.80	$38.90	($5.90)	-13%	86	15,644	97%
42,000	1,381	$2.00	$44.94	$0.00	$46.94	$17.50	$20.16	$2.20	$39.86	$46.94	$39.86	($7.08)	-15%	67	15,711	97%
44,000	1,447	$2.00	$47.08	$0.00	$49.08	$17.50	$21.12	$2.20	$40.82	$49.08	$40.82	($8.26)	-17%	61	15,772	98%
46,000	1,512	$2.00	$49.22	$0.00	$51.22	$17.50	$22.08	$2.20	$41.78	$51.22	$41.78	($9.44)	-18%	40	15,812	98%
48,000	1,578	$2.00	$51.36	$0.00	$53.36	$17.50	$23.04	$2.20	$42.74	$53.36	$42.74	($10.62)	-20%	35	15,847	98%
50,000	1,644	$2.00	$53.50	$0.00	$55.50	$17.50	$24.00	$2.20	$43.70	$55.50	$43.70	($11.80)	-21%	29	15,876	98%
52,000	1,710	$2.00	$55.32	$0.00	$57.32	$17.50	$24.96	$2.20	$44.66	$57.32	$44.66	($12.66)	-22%	41	15,917	99%
54,000	1,775	$2.00	$57.14	$0.00	$59.14	$17.50	$25.92	$2.20	$45.62	$59.14	$45.62	($13.52)	-23%	31	15,948	99%
56,000	1,841	$2.00	$58.96	$0.00	$60.96	$17.50	$26.88	$2.20	$46.58	$60.96	$46.58	($14.38)	-24%	28	15,976	99%
58,000	1,907	$2.00	$60.78	$0.00	$62.78	$17.50	$27.84	$2.20	$47.54	$62.78	$47.54	($15.24)	-24%	19	15,995	99%
60,000	1,973	$2.00	$62.60	$0.00	$64.60	$17.50	$28.80	$2.20	$48.50	$64.60	$48.50	($16.10)	-25%	13	16,008	99%
62,000	2,038	$2.00	$64.42	$0.00	$66.42	$17.50	$29.76	$2.20	$49.46	$66.42	$49.46	($16.96)	-26%	11	16,019	99%
64,000	2,104	$2.00	$66.24	$0.00	$68.24	$17.50	$30.72	$2.20	$50.42	$68.24	$50.42	($17.82)	-26%	13	16,032	99%
66,000	2,170	$2.00	$68.06	$0.00	$70.06	$17.50	$31.68	$2.20	$51.38	$70.06	$51.38	($18.68)	-27%	14	16,046	99%
68,000	2,236	$2.00	$69.88	$0.00	$71.88	$17.50	$32.64	$2.20	$52.34	$71.88	$52.34	($19.54)	-27%	10	16,056	100%
70,000	2,301	$2.00	$71.70	$0.00	$73.70	$17.50	$33.60	$2.20	$53.30	$73.70	$53.30	($20.40)	-28%	8	16,064	100%
72,000	2,367	$2.00	$73.52	$0.00	$75.52	$17.50	$34.56	$2.20	$54.26	$75.52	$54.26	($21.26)	-28%	4	16,068	100%
74,000	2,433	$2.00	$75.34	$0.00	$77.34	$17.50	$35.52	$2.20	$55.22	$77.34	$55.22	($22.12)	-29%	3	16,071	100%
76,000	2,499	$2.00	$77.16	$0.00	$79.16	$17.50	$36.48	$2.20	$56.18	$79.16	$56.18	($22.98)	-29%	4	16,075	100%
78,000	2,564	$2.00	$78.98	$0.00	$80.98	$17.50	$37.44	$2.20	$57.14	$80.98	$57.14	($23.84)	-29%	5	16,080	100%
80,000	2,630	$2.00	$80.80	$0.00	$82.80	$17.50	$38.40	$2.20	$58.10	$82.80	$58.10	($24.70)	-30%	5	16,085	100%
82,000	2,696	$2.00	$82.62	$0.00	$84.62	$17.50	$39.36	$2.20	$59.06	$84.62	$59.06	($25.56)	-30%	3	16,088	100%
84,000	2,762	$2.00	$84.44	$0.00	$86.44	$17.50	$40.32	$2.20	$60.02	$86.44	$60.02	($26.42)	-31%	6	16,094	100%
86,000	2,827	$2.00	$86.26	$0.00	$88.26	$17.50	$41.28	$2.20	$60.98	$88.26	$60.98	($27.28)	-31%	2	16,096	100%
88,000	2,893	$2.00	$88.08	$0.00	$90.08	$17.50	$42.24	$2.20	$61.94	$90.08	$61.94	($28.14)	-31%	4	16,100	100%
90,000	2,959	$2.00	$89.90	$0.00	$91.90	$17.50	$43.20	$2.20	$62.90	$91.90	$62.90	($29.00)	-32%	1	16,101	100%
92,000	3,025	$2.00	$91.72	$0.00	$93.72	$17.50	$44.16	$2.20	$63.86	$93.72	$63.86	($29.86)	-32%	0	16,101	100%
94,000	3,090	$2.00	$93.54	$0.00	$95.54	$17.50	$45.12	$2.20	$64.82	$95.54	$64.82	($30.72)	-32%	2	16,103	100%
96,000	3,156	$2.00	$95.36	$0.00	$97.36	$17.50	$46.08	$2.20	$65.78	$97.36	$65.78	($31.58)	-32%	6	16,109	100%
98,000	3,222	$2.00	$97.18	$0.00	$99.18	$17.50	$47.04	$2.20	$66.74	$99.18	$66.74	($32.44)	-33%	3	16,112	100%
100,000	3,288	$2.00	$99.00	$0.00	$101.00	$17.50	$48.00	$2.20	$67.70	$101.00	$67.70	($33.30)	-33%	1	16,113	100%
												greater than 100,000 gallons >		14	16,127	100%

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4.7 Commercial Customer Bills for FY14

The new rate structure and rates are projected to be effective January 1, 2014 (midway through FY14). The impact on Commercial customers will vary depending on the level of use and meter size. The table below compares monthly bills for a 1-inch meter connection at various levels of water use from 0 gallons per month to 100,000 gallons per month using both the current rates and the new rate structure and rates. Average use for the customer class is approximately 35,000 gallons per month.

Table 4-6. Commercial Bills for FY14

Monthly Water Use		Current Rates and Rate Structure Commodity or Minimum				New Rates and Rate Structure				Current Rates Monthly Bill	New Rates Monthly Bill	Monthly Change		Average Use = 34,760 gallons/acct Accounts at Each Use Level		
kgal	gpd	Service Charge $2.00 per mo	$1.07 $0.91 $0.39 per kgal or	0-50kgal >50k<150k >150kgal $22.05 per mo	Total Monthly Bill	Service Charge $17.50 per mo	Commodity Charge per kgal $0.37	Account Charge $2.20 per mo	Total Monthly Bill			$	%	#	Cumul. #	Cumul. %
0	0	$2.00	$0.00	$22.05	$24.05	$17.50	$0.00	$2.20	$19.70	$24.05	$19.70	($4.35)	-18%	284	284	26%
2,000	66	$2.00	$1.82	$22.05	$24.05	$17.50	$0.74	$2.20	$20.44	$24.05	$20.44	($3.61)	-15%	121	405	38%
4,000	132	$2.00	$3.64	$22.05	$24.05	$17.50	$1.48	$2.20	$21.18	$24.05	$21.18	($2.87)	-12%	83	488	45%
6,000	197	$2.00	$5.46	$22.05	$24.05	$17.50	$2.22	$2.20	$21.92	$24.05	$21.92	($2.13)	-9%	50	538	50%
8,000	263	$2.00	$7.28	$22.05	$24.05	$17.50	$2.96	$2.20	$22.66	$24.05	$22.66	($1.39)	-6%	37	575	53%
10,000	329	$2.00	$9.10	$22.05	$24.05	$17.50	$3.70	$2.20	$23.40	$24.05	$23.40	($0.65)	-3%	41	616	57%
12,000	395	$2.00	$10.92	$22.05	$24.05	$17.50	$4.44	$2.20	$24.14	$24.05	$24.14	$0.09	0%	37	653	61%
14,000	460	$2.00	$12.74	$22.05	$24.05	$17.50	$5.18	$2.20	$24.88	$24.05	$24.88	$0.83	3%	31	684	63%
16,000	526	$2.00	$14.56	$22.05	$24.05	$17.50	$5.92	$2.20	$25.62	$24.05	$25.62	$1.57	7%	33	717	67%
18,000	592	$2.00	$16.38	$22.05	$24.05	$17.50	$6.66	$2.20	$26.36	$24.05	$26.36	$2.31	10%	18	735	68%
20,000	658	$2.00	$18.20	$22.05	$24.05	$17.50	$7.40	$2.20	$27.10	$24.05	$27.10	$3.05	13%	17	752	70%
22,000	723	$2.00	$20.02	$22.05	$24.05	$17.50	$8.14	$2.20	$27.84	$24.05	$27.84	$3.79	16%	20	772	72%
24,000	789	$2.00	$21.84	$22.05	$24.05	$17.50	$8.88	$2.20	$28.58	$24.05	$28.58	$4.53	19%	18	790	73%
26,000	855	$2.00	$23.66	$0.00	$25.66	$17.50	$9.62	$2.20	$29.32	$25.66	$29.32	$3.66	14%	12	802	74%
28,000	921	$2.00	$25.48	$0.00	$27.48	$17.50	$10.36	$2.20	$30.06	$27.48	$30.06	$2.58	9%	17	819	76%
30,000	986	$2.00	$27.30	$0.00	$29.30	$17.50	$11.10	$2.20	$30.80	$29.30	$30.80	$1.50	5%	15	834	77%
32,000	1,052	$2.00	$29.12	$0.00	$31.12	$17.50	$11.84	$2.20	$31.54	$31.12	$31.54	$0.42	1%	13	847	79%
34,000	1,118	$2.00	$30.94	$0.00	$32.94	$17.50	$12.58	$2.20	$32.28	$32.94	$32.28	($0.66)	-2%	11	858	80%
36,000	1,184	$2.00	$32.76	$0.00	$34.76	$17.50	$13.32	$2.20	$33.02	$34.76	$33.02	($1.74)	-5%	15	873	81%
38,000	1,249	$2.00	$34.58	$0.00	$36.58	$17.50	$14.06	$2.20	$33.76	$36.58	$33.76	($2.82)	-8%	7	880	82%
40,000	1,315	$2.00	$36.40	$0.00	$38.40	$17.50	$14.80	$2.20	$34.50	$38.40	$34.50	($3.90)	-10%	6	886	82%
42,000	1,381	$2.00	$38.22	$0.00	$40.22	$17.50	$15.54	$2.20	$35.24	$40.22	$35.24	($4.98)	-12%	8	894	83%
44,000	1,447	$2.00	$40.04	$0.00	$42.04	$17.50	$16.28	$2.20	$35.98	$42.04	$35.98	($6.06)	-14%	14	908	84%
46,000	1,512	$2.00	$41.86	$0.00	$43.86	$17.50	$17.02	$2.20	$36.72	$43.86	$36.72	($7.14)	-16%	7	915	85%
48,000	1,578	$2.00	$43.68	$0.00	$45.68	$17.50	$17.76	$2.20	$37.46	$45.68	$37.46	($8.22)	-18%	8	923	86%
50,000	1,644	$2.00	$45.50	$0.00	$47.50	$17.50	$18.50	$2.20	$38.20	$47.50	$38.20	($9.30)	-20%	6	929	86%
52,000	1,710	$2.00	$46.28	$0.00	$48.28	$17.50	$19.24	$2.20	$38.94	$48.28	$38.94	($9.34)	-19%	8	937	87%
54,000	1,775	$2.00	$47.06	$0.00	$49.06	$17.50	$19.98	$2.20	$39.68	$49.06	$39.68	($9.38)	-19%	1	938	87%
56,000	1,841	$2.00	$47.84	$0.00	$49.84	$17.50	$20.72	$2.20	$40.42	$49.84	$40.42	($9.42)	-19%	6	944	88%
58,000	1,907	$2.00	$48.62	$0.00	$50.62	$17.50	$21.46	$2.20	$41.16	$50.62	$41.16	($9.46)	-19%	7	951	88%
60,000	1,973	$2.00	$49.40	$0.00	$51.40	$17.50	$22.20	$2.20	$41.90	$51.40	$41.90	($9.50)	-18%	6	957	89%
62,000	2,038	$2.00	$50.18	$0.00	$52.18	$17.50	$22.94	$2.20	$42.64	$52.18	$42.64	($9.54)	-18%	8	965	90%
64,000	2,104	$2.00	$50.96	$0.00	$52.96	$17.50	$23.68	$2.20	$43.38	$52.96	$43.38	($9.58)	-18%	7	972	90%
66,000	2,170	$2.00	$51.74	$0.00	$53.74	$17.50	$24.42	$2.20	$44.12	$53.74	$44.12	($9.62)	-18%	3	975	90%
68,000	2,236	$2.00	$52.52	$0.00	$54.52	$17.50	$25.16	$2.20	$44.86	$54.52	$44.86	($9.66)	-18%	3	978	91%
70,000	2,301	$2.00	$53.30	$0.00	$55.30	$17.50	$25.90	$2.20	$45.60	$55.30	$45.60	($9.70)	-18%	4	982	91%
72,000	2,367	$2.00	$54.08	$0.00	$56.08	$17.50	$26.64	$2.20	$46.34	$56.08	$46.34	($9.74)	-17%	5	987	92%
74,000	2,433	$2.00	$54.86	$0.00	$56.86	$17.50	$27.38	$2.20	$47.08	$56.86	$47.08	($9.78)	-17%	3	990	92%
76,000	2,499	$2.00	$55.64	$0.00	$57.64	$17.50	$28.12	$2.20	$47.82	$57.64	$47.82	($9.82)	-17%	1	991	92%
78,000	2,564	$2.00	$56.42	$0.00	$58.42	$17.50	$28.86	$2.20	$48.56	$58.42	$48.56	($9.86)	-17%	2	993	92%
80,000	2,630	$2.00	$57.20	$0.00	$59.20	$17.50	$29.60	$2.20	$49.30	$59.20	$49.30	($9.90)	-17%	1	994	92%
82,000	2,696	$2.00	$57.98	$0.00	$59.98	$17.50	$30.34	$2.20	$50.04	$59.98	$50.04	($9.94)	-17%	3	997	92%
84,000	2,762	$2.00	$58.76	$0.00	$60.76	$17.50	$31.08	$2.20	$50.78	$60.76	$50.78	($9.98)	-16%	2	999	93%
86,000	2,827	$2.00	$59.54	$0.00	$61.54	$17.50	$31.82	$2.20	$51.52	$61.54	$51.52	($10.02)	-16%	2	1,001	93%
88,000	2,893	$2.00	$60.32	$0.00	$62.32	$17.50	$32.56	$2.20	$52.26	$62.32	$52.26	($10.06)	-16%	3	1,004	93%
90,000	2,959	$2.00	$61.10	$0.00	$63.10	$17.50	$33.30	$2.20	$53.00	$63.10	$53.00	($10.10)	-16%	2	1,006	93%
92,000	3,025	$2.00	$61.88	$0.00	$63.88	$17.50	$34.04	$2.20	$53.74	$63.88	$53.74	($10.14)	-16%	4	1,010	94%
94,000	3,090	$2.00	$62.66	$0.00	$64.66	$17.50	$34.78	$2.20	$54.48	$64.66	$54.48	($10.18)	-16%	2	1,012	94%
96,000	3,156	$2.00	$63.44	$0.00	$65.44	$17.50	$35.52	$2.20	$55.22	$65.44	$55.22	($10.22)	-16%	0	1,012	94%
98,000	3,222	$2.00	$64.22	$0.00	$66.22	$17.50	$36.26	$2.20	$55.96	$66.22	$55.96	($10.26)	-15%	2	1,014	94%
100,000	3,288	$2.00	$65.00	$0.00	$67.00	$17.50	$37.00	$2.20	$56.70	$67.00	$56.70	($10.30)	-15%	3	1,017	94%
											greater than 100,000 gallons >			61	1,078	100%

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4.8 Industrial Customer Bills for FY14

The City has 13 active industrial water accounts. Some industries have multiple accounts and some individual accounts have multiple meters. Projected annual water bills for industrial users were calculated using current rates and the new rate structure and rates. Both calculations were based on water use for the 12 month period ending July 2012. Calculation of annual water bills are shown in the table below.

Most accounts will experience a decrease in annual bills using the new rate structure and rates. A few, with large meters and relatively low water use (compared to other industrial users), will experience a high percentage increase due to an increase in the service charge. As a whole, industrial users will experience a moderate increase (12%) in bills.

Table 4-7. Projected Annual Water Bills for Industrial Users, FY14

	Current Rates and Rate Structure				New Rates and Rate Structure				Current Rates Annual	New Rates Annual	Annual Change	
Iser No.	Service	Commodity	Minimum	Total	Capacity	Commodity	Account	Total	Bill	Bill	$	%
User 1	$1,164	$152,250	$0	$153,414	$10,512	$143,463	$26	$154,001	$153,414	$154,001	$588	0%
User 2	$648	$1,455	$570	$2,673	$5,928	$646	$26	$6,600	$2,673	$6,600	$3,927	147%
User 3	$582	$42,385	$0	$42,967	$5,256	$39,232	$26	$44,515	$42,967	$44,515	$1,548	4%
User 4	$582	$2,339	$0	$2,921	$5,256	$1,530	$26	$6,813	$2,921	$6,813	$3,892	133%
User 5	$582	$18,238	$0	$18,820	$5,256	$16,324	$26	$21,606	$18,820	$21,606	$2,786	15%
User 6	$66	$3,279	$0	$3,345	$672	$2,132	$26	$2,830	$3,345	$2,830	($515)	-15%
User 7	$3,372	$84,318	$0	$87,690	$31,920	$79,015	$26	$110,962	$87,690	$110,962	$23,271	27%
User 8	$768	$44,069	$0	$44,837	$7,020	$40,830	$26	$47,876	$44,837	$47,876	$3,039	7%
User 9	$1,572	$2,755	$1,856	$6,183	$12,816	$1,721	$26	$14,563	$6,183	$14,563	$8,380	136%
User 10	$330	$14,370	$0	$14,700	$2,520	$12,654	$26	$15,201	$14,700	$15,201	$500	3%
User 11	$66	$3,460	$0	$3,526	$672	$2,304	$26	$3,002	$3,526	$3,002	($524)	-15%
User 12	$66	$5,674	$0	$5,740	$672	$4,404	$26	$5,102	$5,740	$5,102	($638)	-11%
User 13	$66	$2,160	$0	$2,226	$672	$1,151	$26	$1,850	$2,226	$1,850	($376)	-17%
Total	$9,864	$376,752	$2,426	$389,042	$89,172	$345,406	$343	$434,921	**$389,042**	**$434,921**	**$45,879**	**12%**
% of Total	*3%*	*97%*	*0.6%*	*100%*	*21%*	*79%*	*0.1%*	*100%*				

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4.9 Turlock Unified School District Bills for FY14

Turlock Unified School District (TUSD) became unified on July 1, 2004. Prior to the unification, the district was composed of two separately governed, but commonly administered districts - Turlock Joint Elementary School District and Turlock Joint Union High School District.

There are currently 751 certificated teachers/administrators and 675 classified employees who provide excellent educational opportunities to over 13,500 students. The District includes the following:

- 9 Elementary schools
- 1 Middle School and 1 Junior High School
- 2 large comprehensive High Schools
- 2 small alternative high schools
- 1 adult school (same location as Turlock High School)

Some schools have multiple accounts and some individual accounts have multiple meters.[1] Projected annual water bills for TUSD users were calculated using current rates and the new rate structure and rates. Both calculations were based on water use for the 12 month period ending July 2012. Calculation of annual water bills are shown in the table below.

All accounts will experience an increase in annual bills using the new rate structure and rates. A few, with meter sizes over 3-inch, will experience a high percentage increase due to an increase in the service charge. As a whole, TUSD will experience a 743% increase in bills.

Table 4-8. Projected Annual Water Bills for TUSD Accounts, FY14

		Current Rates and Rate Structure				New Rates and Rate Structure				Current Rates Annual	New Rates Annual	Annual Change	
Code	School Name/Location	Service	Commodity	Minimum	Total	Capacity	Commodity	Account	Total	Bill	Bill	$	%
BRO	Brown Elementary School	$684	$6,197	$0	$6,881	$5,040	$4,804	$26	$9,871	$6,881	$9,871	$2,990	43%
CRO	Crowell Elementary School	$330	$1,883	$0	$2,213	$2,520	$881	$26	$3,428	$2,213	$3,428	$1,215	55%
CUN	Cunningham Elementary School	$1,494	$3,513	$0	$5,007	$13,032	$1,962	$26	$15,021	$5,007	$15,021	$10,014	200%
DUT	Dutcher Middle School	$660	$9,181	$0	$9,841	$5,040	$8,814	$26	$13,880	$9,841	$13,880	$4,039	41%
EAR	Earl Elementary School	$912	$418	$0	$1,330	$7,776	$145	$26	$7,947	$1,330	$7,947	$6,617	498%
ECC	eCadamy Charter at Crane	$180	$1,478	$0	$1,658	$1,344	$718	$26	$2,089	$1,658	$2,089	$431	26%
JUL	Julien Elementary School	$330	$3,493	$0	$3,823	$2,520	$2,427	$26	$4,973	$3,823	$4,973	$1,150	30%
MED	Medeiros Elementary School	$1,014	$2,921	$0	$3,935	$7,560	$2,628	$26	$10,214	$3,935	$10,214	$6,279	160%
OSB	Osborn Two-Way Immersion Academy	$492	$5,066	$0	$5,558	$3,996	$4,024	$26	$8,046	$5,558	$8,046	$2,488	45%
PHS	Pitman High School	$2,268	$16,470	$0	$18,738	$21,216	$18,423	$26	$39,665	$18,738	$39,665	$20,928	112%
THS	Turlock High School	$1,284	$16,082	$0	$17,366	$11,064	$9,718	$26	$20,808	$17,366	$20,808	$3,442	20%
TJH	Turlock Junior High School	$1,164	$13,486	$0	$14,650	$10,512	$15,638	$26	$26,176	$14,650	$26,176	$11,527	79%
TUSD	District Maintenance Office	$162	$871	$0	$1,033	$1,260	$408	$26	$1,694	$1,033	$1,694	$660	64%
WAK	Wakefield Elementary School	$582	$4,550	$0	$5,132	$5,256	$3,408	$26	$8,690	$5,132	$8,690	$3,558	69%
WAL	Walnut Elementary Education Center	$348	$8,936	$0	$9,284	$2,952	$9,987	$26	$12,965	$9,284	$12,965	$3,681	40%
	Total	$11,904	$94,545	$0	$106,449	$101,088	$83,985	$396	$185,469	**$106,449**	**$185,469**	**$79,020**	**74%**
	% of Total	*11%*	*89%*	*0.0%*	*100%*	*55%*	*45%*	*0.2%*	*100%*				

[1] Water use data for TUSD accounts was provided by the City. The Roselawn Continuation High School is not connected to the City's Water System.

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4.10 Single Family Customer Bills for FY4 – FY23

Single Family customer bills for the past 10 years and those projected for next 10 years are shown in the figure below. Bills for FY4 – FY8 were based on rates applicable at the time for a 7,000 square foot lot with 6-8 rooms. Bills for FY9 onward are based on a 1-inch meter connection with average annual use of 15,000 gallons per month.

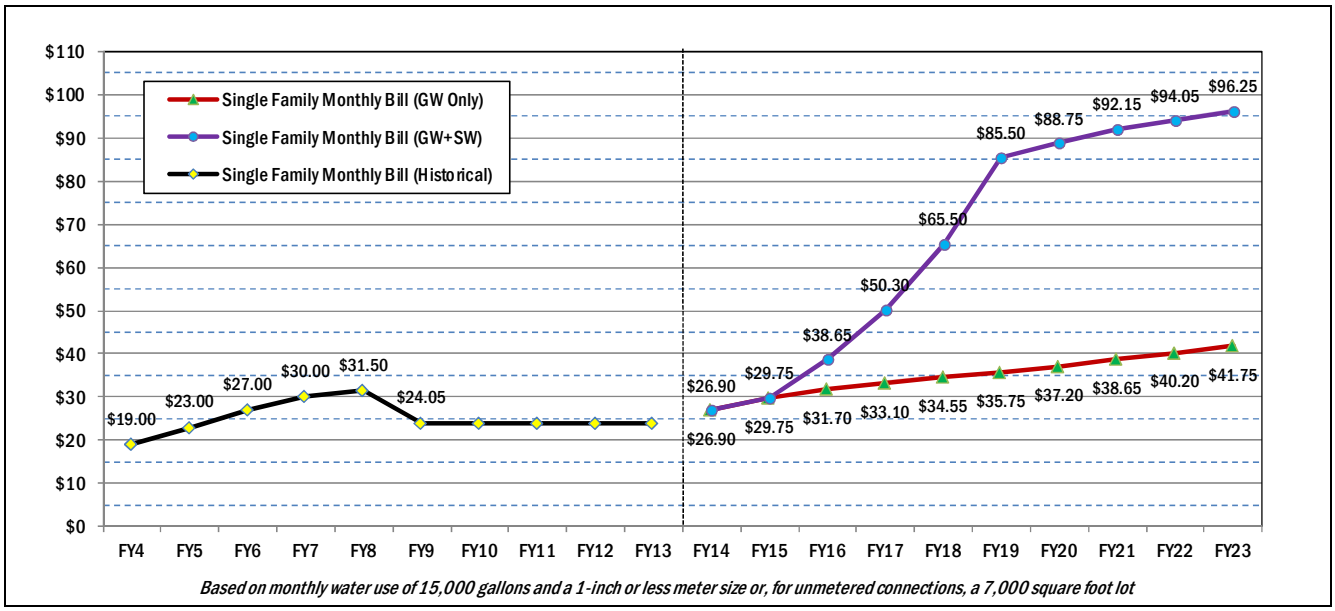

Figure 4-3. Single Family Customer Bills, FY4 – FY23

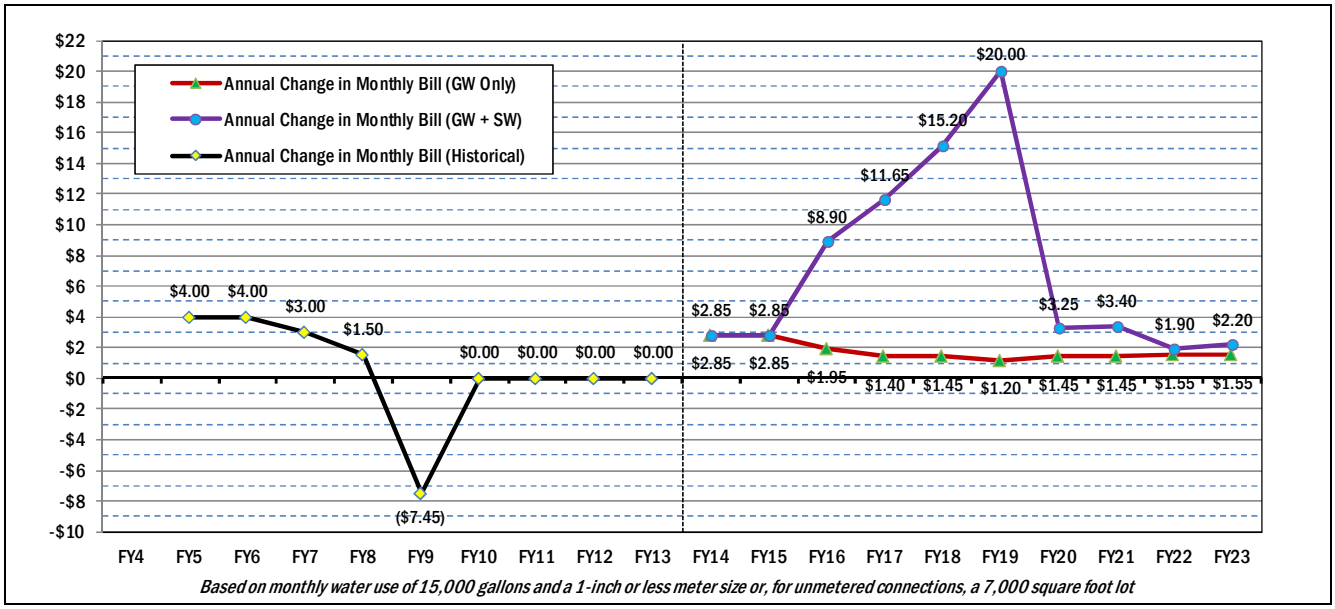

Figure 4-4. Annual Dollar Change in Single Family Customer Bills, FY4 – FY23

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4.11 Survey of Single Family Customer Bills

Current and projected FY14 Single Family customer bills forTurlock were compared to those in the cities of Ceres, Merced and Modesto.

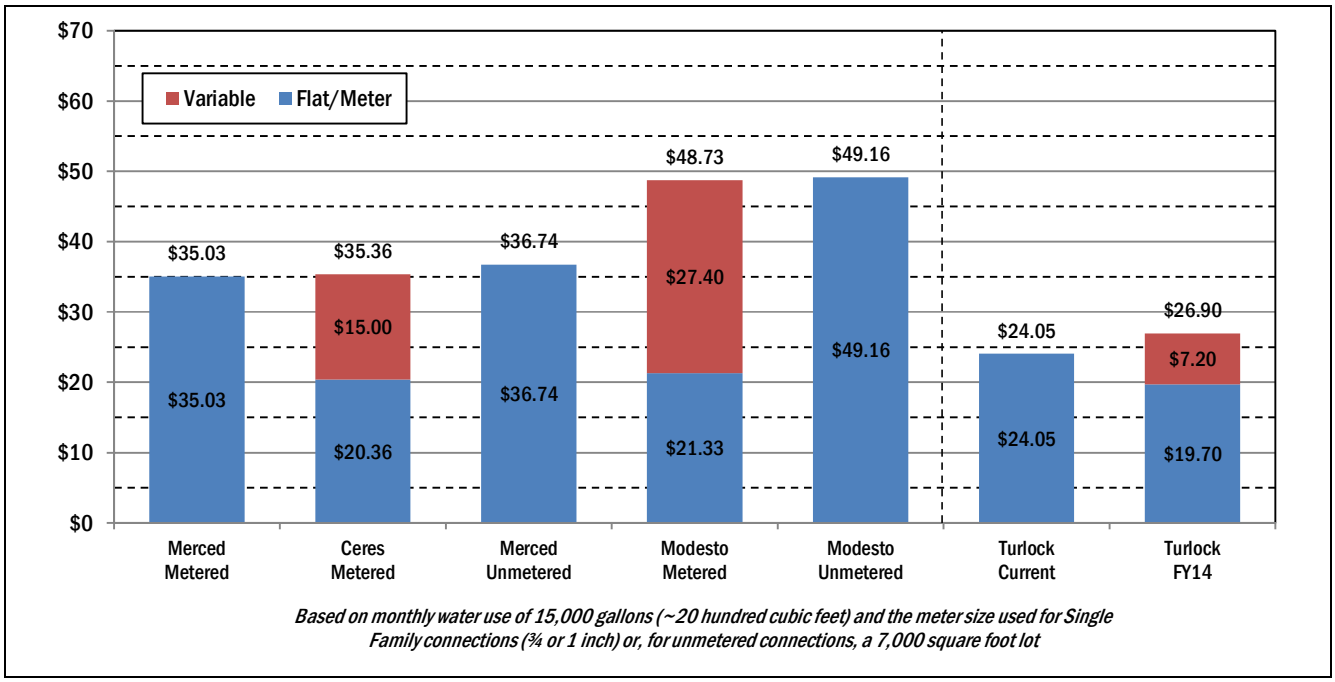

Figure 4-5. Survey of Single Family Customer Bills

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Section 5

Water Capacity Charges

Capacity charges are intended to recover both a portion of the City's proposed Capital Improvement Program (CIP) cost, and utility rate payers' prior investment in capital facilities that support land development by providing capacity for new connections. The capacity charges that are developed in this report meet the regulatory requirements found in Government Code Section 66000 *et sequentia* regarding the establishment of capacity charges.[2]

5.1 Regulatory Requirements

Government Code Section 66013 defines a capacity charges as "a charge for public facilities in existence at the time a charge is imposed or charges for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged, including supply or capacity contracts for rights or entitlements, real property interests, and entitlements and other rights of the local agency involving capital expense relating to its use of existing or new public facilities. A 'capacity charge' does not include a commodity charge."

Section 66013 also describes requirements related to use of revenue from capacity charges and providing information to the public. This study does not examine the City's practices regarding those requirements.

5.2 Conceptual Approach

In developing capacity charges, we have endeavored to satisfy the rational nexus criteria generally applied to these types of charges. A rational nexus-based capacity charge must:

- Be rationally based on public policy that demonstrates a nexus between new development (connections) and the need to expand or build facilities to accommodate it.
- Not exceed the new development's proportional share of the cost of facilities needed to serve that development, after crediting it for other contributions that it has already made or will make toward that cost.
- Not be arbitrary or discriminatory in its application to individuals or customer classes.

A capacity charge is a charge to pay for public agencies' facilities in existence at the time the charge is imposed or to pay for new facilities that will be constructed in the future that are of benefit to the person or property being charged (new development or increases to existing service capacity). Capacity charges help ensure that the "growth pays for growth" by allocating the cost of new facilities and the cost of unused capacity in existing facilities to new development while allocating the cost of repairing and refurbishing facilities used by current customers to rates.

[2] The terms "water capital charges "and "water front footage charges", as used by the City, and "capacity charge", as defined in the Government Code and used in this study, are synonymous.

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5.3 Current Water Connection Charges

Water connection charges are shown in Chapter 6-5, Article 4, of the Turlock Municipal Code (TMC). Water connection charges were last increased in April 2013. The TMC also contains detailed requirements regarding construction of water lines and reimbursements in Chapter 6-5, Article 2. The water connection charges and requirements regarding construction of water lines and reimbursements are complimentary in the sense that the connection charges reflect the general requirement that developers construct water lines and appurtenances to provide new service.

Current water connection charges and fees from the City's *Development Impact Fees* publication are shown in the table below. The table also shows how the current charges were developed using the *Engineering News Record* (ENR) Construction Cost Index (CCI) to escalate the charges from March 2004.[3] Description of the current water development charges and fees from the *Development Impact Fees* publication is reprinted below.

Water Grid. Section 6-5-402(a)(1), Water Capital Charges - includes capital and fire hydrant (fire protection). Water Grid fees are for the purpose of buying into the City of Turlock Water System. The system is made up of a number of deep wells and water transmission lines. This fee is used to construct future water wells that will need to be developed due to the impact of growth. In addition the fee pays for the oversizing of water lines so that a grid system can be maintained to provide adequate water pressure and volume throughout the City for fire fighting, domestic, commercial and industrial needs.

WATER GRID

Meter Size	Basis	Original (March 2004)		Current (April 2013)		When Due
		Charge	ENR Index	ENR Index	Charge	
1" or less	Service	$2,048.00	615.36	819.15	$2,726.24	Building Permit
1-½"	Service	$6,554.00	615.36	819.15	$8,724.50	Building Permit
2"	Service	$8,193.00	615.36	819.15	$10,906.29	Building Permit
3"	Service	$18,434.00	615.36	819.15	$24,538.82	Building Permit
4"	Service	$51,205.00	615.36	819.15	$68,162.66	Building Permit
6"	Service	$102,410.00	615.36	819.15	$136,325.32	Building Permit
8"	Service	$180,242.00	615.36	819.15	$239,933.10	Building Permit
10"	Service	$286,748.00	615.36	819.15	$381,710.91	Building Permit

WATER FRONTAGE FEE

Land Use	Basis	Original (March 2004)		Current (April 2013)		When Due
		Charge	ENR Index	ENR Index	Charge	
All Land Uses	Front Footage	$25.00	615.36	819.15	$33.28	Map Recording or Building Permit

WATER CONNECTION CHARGES

Street Right of Way	Service Size (Costs Include Meter Installation)				When Due
	1" or Less	1-½"	2"	Over 2"	
Local Street	$2,250.00	$3,000.00	$3,150.00	Estimate	Water Permit
Collector Street	$2,450.00	$3,600.00	$3,750.00	Estimate	Water Permit
Arterial Street	$3,500.00	$4,200.00	$4,350.00	Estimate	Water Permit

WATER METER CHARGES

Meter Size	Basis	Charges		Charges	When Due
		Box and Installation Cost	Meter Cost		
¾ inch	Service	$700.00	$350.00	$1,050.00	Building Permit or Water Permit
1 inch	Service	$750.00	$350.00	$1,100.00	Building Permit or Water Permit
1-½ inch	Service	$875.00	$350.00	$1,225.00	Building Permit or Water Permit
2 inch	Service	$900.00	$450.00	$1,350.00	Building Permit or Water Permit
Over 2 inch	Service	Estimate	Estimate	Estimate	Building Permit or Water Permit

[3] The City had historically used the ENR Construction Cost Index - San Francisco with a Base Year of 1967. ENR also published the CCI with a Base Year of 1913. For a long time ENR published all its CCI indexes using both Base Years (1913 and 1967). ENR now publishes only the 1913 index. The ENR "Index" used by the City is a ratio / conversion of the 1913 index to get a calculated 1967 value.

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Water Frontage. Section 6-5-402(a)(2), Water Front Footage Charges. Water Frontage fees are for the purpose of buying into the water line that exists in the roadway adjacent to the property. The fee is supposed to simulate ½ of the cost of constructing the water line. This fee is also used to reimburse the installer of the line under separate reimbursement agreements with the installer of the line. For single family dwellings the frontage of corner lots shall be the sum of the two frontages less 100 feet. For all other developments, the charges is per front foot of street frontage of the property plus the charge per front foot of the property located adjacent to or abutting an alley, court, place, easement or other non-street right-of-way in which there is an existing water line at the time of development.

Water Connection Charges. Section 6-5-401, Water Connection Charges are the City of Turlock work forces costs for the installation of the service and meter. The payment is made at the time a Water Permit is executed which is a work order for the installation of the water service to the property line of the requested property.

Water Meter Charges. Water Meter Charges pay for the City of Turlock Work Forces to buy and install the meter at the requested location.

5.4 Construction of Water Assets and Reimbursements

The TMC contains detailed requirements regarding construction of water lines and reimbursements in Chapter 6-5, Article 2. The requirements influence the development of capacity charges and how the capacity charges are implemented for every new connection. The sections of Article 2 that is relevant to the development of capacity charges are copied below.

6-5-201 Construction of water lines. The owner of property, at the option of the City, shall construct or pay the cost of constructing water lines and appurtenances and fire hydrants to serve his property, regardless of water line size. The owner of property, at the option of the City, shall also construct or pay the cost of constructing water lines and appurtenances to connect or tie in with existing water lines of the City system adjacent to his property, regardless of distances or water line size.

6-5-202 Charges for water lines or water assessment fees. Any person who connects to a water line or develops property shall pay a charge for existing water lines, including a grid system, which will serve the property at the time a building permit or a water permit is obtained. The charges shall be established by resolution and this Code and shall be adjusted quarterly based on the Engineering Record Index to reflect current construction costs.

6-5-203 Water construction fund. Frontage fees shall be placed in a waterline construction fund and shall be used to construct, or to reimburse the City for constructing, water lines and appurtenances, or to reimburse developers or property owners that have entered into a reimbursement agreement with the City for constructing water lines and appurtenances, or for the other water purposes established by ordinance.

Water grid fees shall be placed in the water fund and shall be used to construct water grid improvements and to reimburse developers and property owners that oversize the water line to compliment the City grid system, or for other water purposes established by the ordinance.

6-5-204 Reimbursements. The amounts paid to a developer or property owner for reimbursements for the construction of new water lines and appurtenances shall be established by written agreement as approved by the City Council and shall be based upon the frontage fee amount at the time of the development, and will be adjusted quarterly in January, April, July and October by the Engineering Record Index.

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6-5-205 Reimbursement formula. The City shall reimburse the original developer or property owners a proportionate share of the cost of the construction of regular water lines (regular water lines are considered to be eight (8") inches in diameter) constructed around the perimeter of a development and for water lines extended to a development. The reimbursement will be limited in time to ten (10) years after the date of the acceptance of such lines by the City and applies only to charges received from owners of the land adjacent to these lines who connect within the ten (10) year period.

The City shall reimburse developers or property owners for over-sizing of water lines within thirty (30) days of acceptance of the water lines or a notice of completion. Over sizing shall be considered as any water lines installed that are greater than eight (8") inches in diameter. The formula for reimbursement is Six and no/100ths ($6.00) Dollars per linear foot of installed water line for every pipe size increment larger than eight (8") inches.

6-5-206 Reimbursement for City property. The City will reimburse the developer a proportionate share of the cost of the lines constructed in front of or adjacent to City property, except City water well sites, at the water frontage fee rate in place at the time of the execution of the reimbursement agreement and within the ten (10) year period.

6-5-207 Water well sites. When a new City water well is required to be drilled by the City to serve City water to a property or development, the property owner will deed to the City the lands necessary for the construction and maintenance of the well. The size of the well site shall be sufficient to accommodate any future water treatment system that may be required. At the time the property is deeded to the City, the City will reimburse the developer/owner the current value of the unimproved land from the water fund. The City will pay all costs for developing the well and well facilities and retain ownership of these facilities.

6-5-208 Booster pumps. When a booster pump is required by the City or is requested by the customer to serve a property or development, the property owner, at the option of the City, shall pay the cost to construct, install, make site improvements, and provide the necessary land for such pump. This work will require the developer or property owner to pay for a water permit and the City will review the plans and inspect the installation of improvements. An approved backflow preventer(s) will be required to be installed on all water lines entering the property.

6-5-209 Oversized lines. For the purposes of this article, “oversized lines” shall mean all water lines in excess of eight (8") inches in diameter.

6-5-210 Major extensions. Major extensions of oversized lines shall have prior Council approval. The Council may approve major extensions with reimbursement or without reimbursement and may enter into a written agreement with the developer and owner concerning major extensions.

6-5-211 Ownership of water lines. All water lines and appurtenant facilities constructed in or under streets, easements, or alleys shall become the property of the City upon the complete installation and final inspection and approval of the lines by the Municipal Services Director.

5.5 Conceptual Approach

The capacity charges developed in this study are based on the buy-in cost method for valuation of the system.

The system buy-in method recovers the replacement cost of capacity in those portions of the existing system in which there is capacity available (for example, the transmission, distribution, storage and pumping components of the system). The buy-in method excludes service laterals and meters as these assets do not benefit new users connecting to the system. The value of the water system is adjusted to account for contributed capital and assets, working capital, and the amount of debt service principal outstanding.

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The buy-in method excludes the future cost of capacity (and the additional water supply capacity) in the City's portion of the Turlock Irrigation District (TID) Regional Surface Water Supply Project. Future costs for the RSWSP are excluded because the Project is in preliminary planning stages, Project costs are not well defined and a significant portion of the Project is expected to be debt funded.

Capacity charges should be updated at the time the City makes formal commitments for Project water and contracts have been signed.

Financial commitments to the Turlock Irrigation District for the design, environmental review and legal challenges for the future construction of the Project are included in the valuation of the water system.

Capacity charge development methodology is summarized in the figure below.

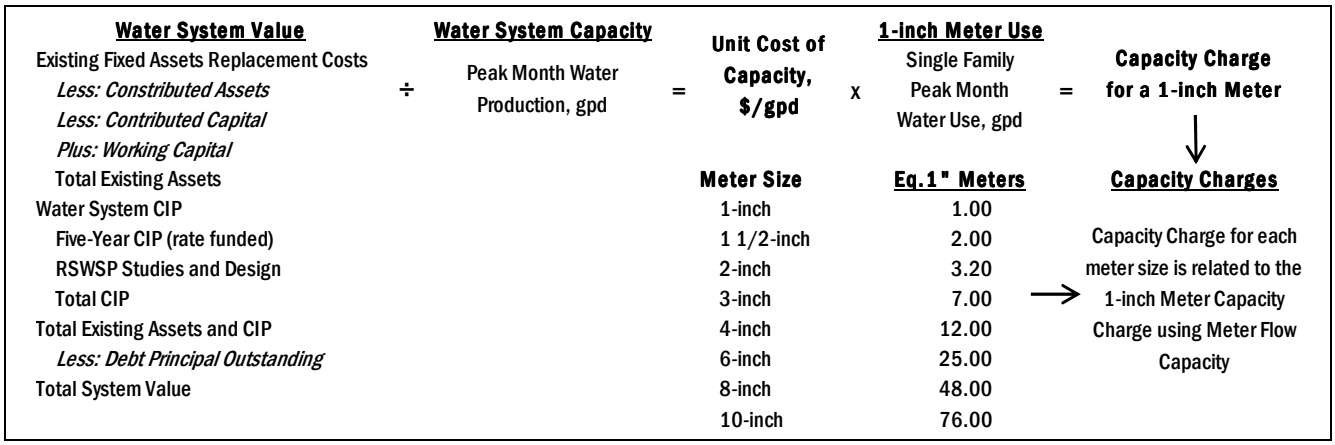

Figure 5-1. Capacity Charge Development Methodology

5.6 Water System Valuation

The system buy-in method of the capacity charge recovers the cost of capacity in those portions of the existing system in which there is capacity available (for example, the transmission, distribution, storage and pumping components of the system). The value of the existing system was developed using data for the following elements:

- Existing Fixed Assets
- Contributed Assets
- Contributed Capital
- City System Capital Improvement Program
- TID RSWSP Planning and Design
- Long Term Debt Principal Outstanding
- Working Capital

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Existing Fixed Assets. The City compiled a list of its water system assets and grouped them into eight categories. The list includes 60 items and each item was assigned a replacement value (in current dollars). A detailed list of assets with showing the valuation for each item is included in Table D-1 in Appendix D.

Table 5-1. Summary of Fixed Assets Valuation

		Contributions	
Category	Total Value	Percent	Dollars
Wells	$24,000,000	0%	$0
Pumps	$36,000,000	0%	$0
Storage	$10,000,000	0%	$0
Transmission Mains	$89,430,483	0%	$0
Distribution Lines	$157,385,022	100%	$157,385,022
Hydrants	$17,532,000	100%	$17,532,000
Meters	$13,950,000	100%	$13,950,000
Service Laterals	$48,360,000	100%	$48,360,000
Total	$396,657,505		$237,227,022

Contributed Assets. The City requires owners to construct and contribute assets needed to serve their development. The value of contributed assets is subtracted from the value of the asset base for development of capacity charges. The amount of contributed assets was estimated by the City for each group of assets. The replacement value for each group, the contributed value for each group and the total system replacement value (with and without contributed assets) are summarized in Table 5-1.

Contributed Capital. The amount of revenue collected from Water Capital Charges and Water Frontage Fees for FY4 – FY13 was obtained from City records. The amount of revenue collected from these charges and fees for FY63 (1962-1963) – FY3 was estimated. Annual revenue values were adjusted upward for the time value of money. The adjusted total of contributed capital is shown in Table D-2 in Appendix D.

Five Year Capital Improvement Program. Projected expenditures and source of funds for City Water System capital projects were listed in Table 3-1. The list of projects does not include expenditures for new regional surface water treatment facilities or for terminal facilities that supplement the regional facilities. Projected capital expenditures for FY14 – FY18 (five years) are adjusted to exclude expenditures funded by disbursements from the 2008 Water Revenue Bond and use of fund balance.

TID RSWSP Planning and Design. The City has reimbursed TID $2,841,023.25 for design and environmental work.

Long Term Debt Principal Outstanding. The City has one debt issue outstanding – a 2008 Water Revenue Bond. Biannual amounts of the interest and principal due, and the principal outstanding, are listed in Table D-3 in Appendix D. Debt principal outstanding is subtracted from the value of the asset base for development of capacity charges.

Working Capital. The City maintains a large cash balance in the Water Fund. During FY14 – FY18, cash from the fund balance will be used to fund a portion of capital expenditures. The projected level of funding using cash reserves is approximately $12,000,000.

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The valuation of the Water System, net of adjustments, is shown in Table 5-2.

Table 5-2. Valuation of Water System

Total Fixed Asset Valuation	$396,657,505
Adjustments	
1. Contributed Assets	
Less: Contributed Assets	($237,227,022)
2. Contributed Capital	
Less: Capital Charges and Frontage Fees	($2,519,627)
3. Debt Principal Outstanding	
Less: 2008 Debt Service Principal Outstanding	($29,300,000)
4. Water System Five-Year CIP (funded by rates)	
Plus: CIP funded by rates, FY14 - FY18	$4,308,000
5. Reimbursement to TID for RSWSP	
Plus: Reimbursement to TID for RSWSP Design/Studies	$2,841,000
6. Working Capital	
Plus: Fund 420 Use of Unrestricted Reserves, FY14 - FY18	$12,000,000
Net Valuation	$146,759,855
round to $1,000 >	$146,760,000

5.7 Water System Capacity

The capacity of the water system was estimated using recent peak month water production data. The average of peak production during the summer of 2011 and 2012 was calculated as shown in Table 5-3. The monthly production values are from Department of Water Resources Form 38 Reports.

Table 5-3. System Peak Month Production Capacity

Calendar Year	Peak Month Production	Million Gallons	Days	Gallons per Day
2012	July	870	31	28,078,276
2011	August	795	31	25,652,882
Average		833		26,865,579
			round to 1,000 >	26,870,000

5.8 Unit Cost Peak Month Capacity

The calculation of capacity charges involves developing a unit charge applicable to any new connection (or increase in size for an existing connection). The unit charge is developed by dividing the adjusted value of the water system by the peak month production capacity of the system. The calculation is shown in Table 5-4.

Table 5-4. Unit Cost Peak Month Capacity

System Net Valuation		Peak Month Gallons per Day		Unit Cost Peak Month Capacity
$146,760,000	÷	26,870,000	=	$5.46 / gpd

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5.9 Single Family Peak Month Use

Single Family peak month use was estimated using recent water delivery data. Peak month water use during the summer of 2011 and 2012 was calculated as shown in Table 5-5. The monthly water use values and annual average number of accounts are from Department of Water Resources Form 38 Reports.

The projected peak month water use assigned to a 1-inch meter connection for the development of capacity charges is 797 gallons per day.

Table 5-5. Single Family Peak Month Use

Calendar Year	Peak Month Deliveries	Million Gallons	Days	Gallons per Day	Average Number of Accounts	Gallons per Day per Account
2012	August	353	31	11,383,871	15,911	715
2011	August	435	31	14,025,806	15,951	879
Average		394		12,704,839	15,931	797
					round to 1,000 >	797

5.10 Capacity Charge for 1-inch Meter

The capacity charge for a 1-inch meter is calculated using the unit cost for peak month capacity (shown in Table 5-4) multiplied by the peak month water use assigned to a 1-inch meter connection shown in Table 5-5. The calculation of the capacity charge for a 1-inch meter is shown in Table 5-6.

Table 5-6. Capacity Charge for 1-inch Meter

Unit Cost Peak Month Capacity		Peak Month Gallons per Day		Capacity Charge 1-inch Meter
$5.46 / gpd	÷	797	x	$4,352
		round to $1,000 >		$4,350

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5.11 Schedule of Capacity Charges

The capacity charges for other meter sizes are based on an "equivalency factor" that relates the design maximum flow capacity of a meter size (in gallons per minute, gpm) to that of a standard 1-inch size meter. Design capacities for meters are based on values published by the American Water Works Association (AWWA) and are the same capacities used in the development of monthly water service charges.[4] The equivalency factors and calculation of capacity charges for meter sizes up to 10-inch are shown in Table 5-7.

Table 5-7. Unit Cost Peak Month Capacity

Meter Size	Equivalency Factor	Capacity Charge
1-inch or Less	1.0	$4,350
1-1/2-inch	2.0	$8,700
2-inch	3.2	$13,930
3-inch	7.0	$30,460
4-inch	12.0	$52,220
6-inch	25.0	$108,800
8-inch	48.0	$208,900
10-inch	76.0	$330,700

5.12 Comparison of Current vs. Recommended Capacity Charges

The current and recommended schedule of capacity charges are shown in Table 5-8. The recommended capacity charges are for FY14. Charges for FY15 onward may be escalated using an appropriate index such as the *Engineering News Record* Construction Cost Index for the San Francisco region.

Table 5-8. Current and Recommended Capacity Charges

	Current Capacity Charges					
				Recommended	Increase	
Meter Size	Water Grid	Water Frontage @ 60 feet	Total	Capacity Charge	Dollars	Percent
1-inch or Less	$2,726	$1,997	$4,723	$4,350	($373)	-8%
1-1/2-inch	$8,725	$1,997	$10,721	$8,700	($2,021)	-19%
2-inch	$10,906	$1,997	$12,903	$13,930	$1,027	8%
3-inch	$24,539	$1,997	$26,536	$30,460	$3,924	15%
4-inch	$68,163	$1,997	$70,159	$52,220	($17,939)	-26%
6-inch	$136,325	$1,997	$138,322	$108,800	($29,522)	-21%
8-inch	$239,933	$1,997	$241,930	$208,900	($33,030)	-14%
10-inch	$381,711	$1,997	$383,708	$330,700	($53,008)	-14%

The Water Frontage Charge is paid only when development fronts an existing water main. Generally, water capacity charges are for “infill” type development and comprise only the Water Grid Charge. When implementing the recommended capacity charge, all development will pay a single charge.

[4] American Water Works Association, M6 Water Meters - Selection, Installation, Testing and Maintenance, 2012 Fifth Edition, pages 63 - 65.

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5.13 Survey of Single Family Capacity Charges

The City's current and recommended capacity charges for 2014 were compared to the capacity charges for other agencies. The comparison is made using the charge that is typical for a single family connection at each agency. Table 5-9 shows the results of the survey.

Table 5-9. Survey of Single Family Capacity Charges

Agency	Meter Size	Basic
Turlock, Current	1-inch or Less	$2,726
Manteca	⅝ x ¾-inch	$3,784
Merced	1-inch	$3,867
Turlock, Proposed	**1-inch or Less**	**$4,350**
Ceres	Single Family	$4,985
Modesto	1-inch	$5,436

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Section 6

Public Review and Council Action

A summary of the public review process and actions taken by the City Council, the City's Finance Committee and other groups during the course of the studies will be included in this section.

A list of groups that may be specifically included in the public review process are listed below.

Building Industry Association of Central California.

Industrial Users.

Turlock Unified School District.

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Section 7

Limitations

This document was prepared solely for the City of Turlock in accordance with professional standards at the time the services were performed and in accordance with the contract between the City of Turlock and Municipal Financial Services. This document is governed by the specific scope of work authorized by the City of Turlock in an Agreement dated May 14, 2013; it is not intended to be relied upon by any other party. We have relied on information or instructions provided by the City of Turlock and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

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Appendix A: Monthly Water Use Data for CY12

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Table A-1
Calendar Year 2012 Water Use by Customer Class and Month and Monthly Average Use

CY 12 Use

Class	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total	% of Tot
Single	135,843,685	138,890,279	152,431,324	182,149,121	302,808,181	317,486,350	339,546,069	358,729,284	332,766,877	289,105,434	198,451,103	123,080,487	2,871,288,194	53%
Multi	39,017,820	37,032,347	39,077,770	40,514,070	60,607,737	54,865,198	65,101,886	49,346,218	61,381,626	48,642,378	43,114,620	32,596,579	571,298,249	10%
Comm	32,349,668	31,597,037	35,077,258	34,918,680	44,990,130	46,637,042	51,158,527	50,565,217	49,541,207	50,152,925	39,763,724	28,814,206	495,565,621	9%
Ind	70,206,800	71,314,830	71,231,070	72,474,490	78,991,810	79,187,220	86,707,530	95,501,130	82,026,510	99,275,830	79,584,440	70,653,628	957,155,288	18%
Inst	6,495,848	9,901,217	11,553,454	8,196,378	17,432,526	25,186,923	23,732,682	9,876,852	35,588,319	18,007,114	10,596,331	5,947,929	182,515,573	3%
Lscp	10,100,070	8,514,426	16,547,496	20,593,551	41,515,571	50,308,161	56,622,584	41,635,548	62,552,508	36,114,332	17,337,510	5,613,669	367,455,426	7%
Total	294,013,891	297,250,136	325,918,372	358,846,290	546,345,955	573,670,894	622,869,278	605,654,249	623,857,047	541,298,013	388,847,728	266,706,498	5,445,278,351	
MGD	10.50	9.59	10.86	11.58	18.21	18.51	20.09	20.19	20.12	18.04	12.54	8.60	14.92	
Acre Feet	902	912	1,000	1,101	1,677	1,761	1,912	1,859	1,915	1,661	1,193	818	16,711	
% of Total	5%	5%	6%	7%	10%	11%	11%	11%	11%	10%	7%	5%		

CY 12 Average Use per Account (gallons)

Class	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total
Single	8,417	8,606	9,445	11,286	18,763	19,672	21,039	22,227	20,619	17,913	12,296	7,626	14,826
Multi	44,238	41,987	44,306	45,934	68,716	62,205	73,812	55,948	69,594	55,150	48,883	36,958	53,978
Comm	28,402	27,741	30,797	30,657	39,500	40,946	44,915	44,394	43,495	44,032	34,911	25,298	36,257
Ind	2,925,283	2,971,451	2,967,961	3,019,770	3,291,325	3,299,468	3,612,814	3,979,214	3,417,771	4,136,493	3,316,018	2,943,901	3,323,456
Inst	72,987	111,250	129,814	92,094	195,871	282,999	266,659	110,976	399,869	202,327	119,060	66,831	170,895
Lscp	41,909	35,330	68,662	85,450	172,264	208,748	234,948	172,762	259,554	149,852	71,940	23,293	127,059
Total	15,881	16,055	17,604	19,382	29,510	30,986	33,643	32,713	33,697	29,237	21,003	14,406	24,510

Single Family CY 12 Use

Class	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total
Single	135,843,685	138,890,279	152,431,324	182,149,121	302,808,181	317,486,350	339,546,069	358,729,284	332,766,877	289,105,434	198,451,103	123,080,487	2,871,288,194
Accounts	16,138	16,138	16,138	16,138	16,138	16,138	16,138	16,138	16,138	16,138	16,138	16,138	16,138
Days	28	31	30	31	30	31	31	30	31	30	31	31	365
Average													
gallons	8,418	8,606	9,445	11,287	18,764	19,673	21,040	22,229	20,620	17,915	12,297	7,627	14,827
gpd	301	278	315	364	625	635	679	741	665	597	397	246	487
HCF	11	12	13	15	25	26	28	30	28	24	16	10	20

Source: City of Turlock Billing System Data

Table A-2
Calendar Year 2012 Water Use by Customer Class, Tier and Month

CY 12 Tier 1

Class	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total	
Single	134,147,052	137,268,596	150,570,028	179,585,224	289,164,495	298,254,310	316,128,402	334,829,063	313,913,117	276,591,003	194,444,340	121,397,940	2,746,293,570	81%
Multi	19,650,113	19,614,305	20,916,713	21,847,985	27,374,169	26,910,019	28,845,163	25,744,109	25,599,427	24,088,145	21,858,310	17,932,522	280,380,980	8%
Comm	17,164,148	17,320,957	18,472,538	18,508,451	21,377,464	21,344,717	22,750,673	21,480,026	21,918,443	21,631,489	19,531,707	16,019,660	237,520,273	7%
Ind	700,100	700,000	682,200	650,000	627,000	582,000	650,000	649,200	650,100	650,000	648,500	696,000	7,885,100	0.2%
Inst	2,304,416	2,285,759	2,541,278	2,412,298	2,673,092	2,617,231	2,672,425	1,987,554	2,568,329	2,671,255	2,554,727	2,078,580	29,366,944	1%
Lscp	4,682,239	4,298,031	5,912,038	6,666,984	8,110,398	8,452,415	9,057,595	8,480,317	8,938,984	8,906,939	6,865,376	2,950,926	83,322,242	2%
Total	178,648,068	181,487,648	199,094,795	229,670,942	349,326,618	358,160,692	380,104,258	393,170,269	373,588,400	334,538,831	245,902,960	161,075,628	3,384,769,109	100%
% of Total	5%	5%	6%	7%	10%	11%	11%	12%	11%	10%	7%	5%	*% of All Tiers >*	*62%*
Cumulative %	5%	11%	17%	23%	34%	44%	55%	67%	78%	88%	95%	100%		

CY 12 Tier 2

Class	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total	
Single	1,696,633	1,614,835	1,776,367	2,348,674	12,835,024	18,125,428	21,516,430	22,271,879	16,914,566	11,625,481	3,879,522	1,546,766	116,151,605	24%
Multi	7,918,190	7,665,095	8,610,812	9,253,138	13,296,843	12,154,056	14,211,017	10,789,041	11,676,248	10,726,474	9,056,281	7,048,153	122,405,348	25%
Comm	8,442,541	8,415,491	9,234,300	9,205,693	12,300,950	12,551,837	14,156,718	13,356,961	13,178,379	12,961,750	10,462,119	7,742,118	132,008,857	27%
Ind	1,315,800	1,400,000	1,270,100	1,136,100	1,139,800	1,023,700	1,231,900	1,169,200	1,133,500	1,291,500	1,090,900	1,185,500	14,388,000	3%
Inst	1,353,182	1,319,648	2,067,716	1,947,930	2,624,924	2,799,980	2,911,085	1,815,919	2,585,461	2,673,529	2,049,624	1,150,769	25,299,767	5%
Lscp	2,614,261	2,427,505	4,512,368	5,562,997	8,228,183	8,897,550	10,165,580	9,743,312	10,033,352	8,809,124	4,723,377	1,548,703	77,266,312	16%
Total	23,340,607	22,842,574	27,471,663	29,454,532	50,425,724	55,552,551	64,192,730	59,146,312	55,521,506	48,087,858	31,261,823	20,222,009	487,519,889	100%
% of Total	5%	5%	6%	6%	10%	11%	13%	12%	11%	10%	6%	4%	*% of All Tiers >*	*9%*
Cumulative %	5%	9%	15%	21%	31%	43%	56%	68%	80%	89%	96%	100%		

CY 12 Tier 3

Class	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total	
Single	0	6,848	84,929	215,223	808,662	1,106,612	1,901,237	1,628,342	1,939,194	888,950	127,241	135,781	8,843,019	1%
Multi	11,449,517	9,752,947	9,550,245	9,412,947	19,936,725	15,801,123	22,045,706	12,813,068	24,105,951	13,827,759	12,200,029	7,615,904	168,511,921	11%
Comm	6,742,979	5,860,589	7,370,420	7,204,536	11,311,716	12,740,488	14,251,136	15,728,230	14,444,385	15,559,686	9,769,898	5,052,428	126,036,491	8%
Ind	68,190,900	69,214,830	69,278,770	70,688,390	77,225,010	77,581,520	84,825,630	93,682,730	80,242,910	97,334,330	77,845,040	68,772,128	934,882,188	59%
Inst	2,838,250	6,295,810	6,944,460	3,836,150	12,134,510	19,769,712	18,149,172	6,073,379	30,434,529	12,662,330	5,991,980	2,718,580	127,848,862	8%
Lscp	2,803,570	1,788,890	6,123,090	8,363,570	25,176,990	32,958,196	37,399,409	23,411,919	43,580,172	18,398,269	5,748,757	1,114,040	206,866,872	13%
Total	92,025,216	92,919,914	99,351,914	99,720,816	146,593,613	159,957,651	178,572,290	153,337,668	194,747,141	158,671,324	111,682,945	85,408,861	1,572,989,353	100%
% of Total	6%	6%	6%	6%	9%	10%	11%	10%	12%	10%	7%	5%	*% of All Tiers >*	*29%*
Cumulative %	6%	12%	18%	24%	34%	44%	55%	65%	77%	87%	95%	100%		

CY 12 All Use

Class	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total	
Single	135,843,685	138,890,279	152,431,324	182,149,121	302,808,181	317,486,350	339,546,069	358,729,284	332,766,877	289,105,434	198,451,103	123,080,487	2,871,288,194	53%
Multi	39,017,820	37,032,347	39,077,770	40,514,070	60,607,737	54,865,198	65,101,886	49,346,218	61,381,626	48,642,378	43,114,620	32,596,579	571,298,249	10%
Comm	32,349,668	31,597,037	35,077,258	34,918,680	44,990,130	46,637,042	51,158,527	50,565,217	49,541,207	50,152,925	39,763,724	28,814,206	495,565,621	9%
Ind	70,206,800	71,314,830	71,231,070	72,474,490	78,991,810	79,187,220	86,707,530	95,501,130	82,026,510	99,275,830	79,584,440	70,653,628	957,155,288	18%
Inst	6,495,848	9,901,217	11,553,454	8,196,378	17,432,526	25,186,923	23,732,682	9,876,852	35,588,319	18,007,114	10,596,331	5,947,929	182,515,573	3%
Lscp	10,100,070	8,514,426	16,547,496	20,593,551	41,515,571	50,308,161	56,622,584	41,635,548	62,552,508	36,114,332	17,337,510	5,613,669	367,455,426	7%
Total	294,013,891	297,250,136	325,918,372	358,846,290	546,345,955	573,670,894	622,869,278	605,654,249	623,857,047	541,298,013	388,847,728	266,706,498	5,445,278,351	100%
% of Total	5%	5%	6%	7%	10%	11%	11%	11%	11%	10%	7%	5%		
Cumulative %	5%	11%	17%	23%	33%	44%	55%	67%	78%	88%	95%	100%		

Source: City of Turlock Billing System Data

Appendix B: Water Rate Development Tables – Groundwater Only Scenario

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Table B-1
Revenue Requirements for Water Fund 420 , Division 550 and 551
Groundwater Only Scenario

Expense Category	Amended FY13	Adopted FY14	*Cost Esc. Proj.*	Projected Fiscal Year FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Operating and Capital Expenses												
Salaries	$1,338,262	$1,420,390	*6%*	$1,505,613	$1,595,950	$1,691,707	$1,793,210	$1,900,802	$2,014,850	$2,135,741	$2,263,886	$2,399,719
Benefits and Insurance	$773,963	$833,352	*6%*	$883,353	$936,354	$992,536	$1,052,088	$1,115,213	$1,182,126	$1,253,053	$1,328,236	$1,407,931
Contractural-Regional Mgmt	$75,000	$325,000	*5%*	$341,250	$358,313	$376,228	$395,040	$414,792	$435,531	$457,308	$480,173	$504,182
Contractural-Other	$363,198	$355,122	*5%*	$372,878	$391,522	$411,098	$431,653	$453,236	$475,897	$499,692	$524,677	$550,911
Supplies and maintenance	$483,418	$511,204	*5%*	$536,764	$563,602	$591,783	$621,372	$652,440	$685,062	$719,315	$755,281	$793,045
Utilities	$1,407,900	$1,309,100	*5%*	$1,374,555	$1,443,283	$1,515,447	$1,591,219	$1,670,780	$1,754,319	$1,842,035	$1,934,137	$2,030,844
Fleet expense	$111,970	$101,523	*5%*	$106,599	$111,929	$117,526	$123,402	$129,572	$136,051	$142,853	$149,996	$157,495
Other Expenses	$64,330	$70,330	*5%*	$73,847	$77,539	$81,416	$85,487	$89,761	$94,249	$98,961	$103,909	$109,105
Capital, City System Cash Funded	$8,866,958	$6,171,700	*varies*	$9,219,350	$1,574,808	$1,661,413	$1,752,821	$1,849,299	$1,951,132	$2,058,618	$2,172,074	$2,291,835
Capital, RSWSP Cash Funded	$0	$0	*na*	$0	$0	$0	$0	$0	$0	$0	$0	$0
Net Transfers	$1,195,605	$483,741	*5%*	$507,928	$533,324	$559,991	$587,990	$617,390	$648,259	$680,672	$714,706	$750,441
O&M for RSWSP	$0	$0	*5%*	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Expenses	**$14,680,604**	**$11,581,462**		**$14,922,138**	**$7,586,624**	**$7,999,144**	**$8,434,280**	**$8,893,285**	**$9,377,477**	**$9,888,250**	**$10,427,076**	**$10,995,508**
Debt Service												
Lease Payment for City Building	$56,155	$56,155	*0%*	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155
2008 Water Revenue Bonds	$2,031,665	$2,031,665	*0%*	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665
New Debt - City System			*na*	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Debt - RSWSP, City Portion			*na*	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Debt Service	**$2,087,820**	**$2,087,820**		**$2,087,820**	**$2,087,820**	**$2,087,820**	**$2,087,820**	**$2,087,820**	**$2,087,820**	**$2,087,820**	**$2,087,820**	**$2,087,820**
Other Impacts (Credits)												
Other Charges and Misc Inc	($141,500)	($53,250)	*0%*	($53,250)	($53,250)	($53,250)	($53,250)	($53,250)	($53,250)	($53,250)	($53,250)	($53,250)
Connection Fees	($10,000)	($10,000)	*0%*	($10,000)	($10,000)	($10,000)	($10,000)	($10,000)	($10,000)	($10,000)	($10,000)	($10,000)
Interest Income	($285,000)	$0	*na*	($250,000)	($250,000)	($250,000)	($250,000)	($250,000)	($250,000)	($250,000)	($250,000)	($250,000)
Add/(Use) Fund Balance	$0	$0	*na*	($8,180,000)	($350,000)	($420,000)	($570,000)	($640,000)	($690,000)	($770,000)	($840,000)	($920,000)
Total Other Impacts (Credits)	**($436,500)**	**($63,250)**		**($8,493,250)**	**($663,250)**	**($733,250)**	**($883,250)**	**($953,250)**	**($1,003,250)**	**($1,083,250)**	**($1,153,250)**	**($1,233,250)**
TOTAL REVENUE REQUIREMENT	**$16,331,924**	**$13,606,032**		**$8,516,708**	**$9,011,194**	**$9,353,714**	**$9,638,850**	**$10,027,855**	**$10,462,047**	**$10,892,820**	**$11,361,646**	**$11,850,078**

Table B-2
Functional Allocation of Revenue Requirements
Groundwater Only Scenario

Item	Adopted FY14	Commodity (COM)	Capacity (CAP)	Meters and Service Lat. (MTR)	Customer (CUS)	Basis of Allocation [1,2]
Operating and Capital Expenses						
Salaries	$1,420,390	$171,883	$884,486	$223,126	$140,895	Factor "Plant in Service"
Benefits and Insurance	$833,352	$100,845	$518,934	$130,909	$82,664	Factor "Plant in Service"
Contractural-Regional Mgmt	$325,000	$39,329	$202,380	$51,053	$32,238	Factor "Plant in Service"
Contractural-Other	$355,122	$42,974	$221,137	$55,785	$35,226	Factor "Plant in Service"
Supplies and maintenance	$511,204	$61,861	$318,330	$80,304	$50,709	Factor "Plant in Service"
Utilities	$1,309,100	$1,309,100	$0	$0	$0	100% COM
Fleet expense	$101,523	$12,285	$63,219	$15,948	$10,071	Factor "Plant in Service"
Other Expenses	$70,330	$8,511	$43,795	$11,048	$6,976	Factor "Plant in Service"
Capital, City System Cash Funded [2]	$1,500,000	$181,517	$934,060	$235,631	$148,792	Factor "Plant in Service"
Capital, RSWSP Cash Funded	$0	$0	$0	$0	$0	
Net Transfers	$483,741	$58,538	$301,229	$75,990	$47,984	Factor "Plant in Service"
Additional O&M for RSWSP	$0	$0	$0	$0	$0	Factor "Plant in Service"
Total Operating Expenses	**$6,909,762**	**$1,986,843**	**$3,487,569**	**$879,795**	**$555,555**	
Debt Service						
Lease Payment for City Building	$56,155	$20,478	$35,677	$0	$0	Factor "Net Op/Cap"
2008 Water Revenue Bonds	$2,031,665	$740,883	$1,290,782	$0	$0	Factor "Net Op/Cap"
New Debt Service - City System	$0	$0	$0	$0	$0	Factor "Net Op/Cap"
New Debt Service - RSWSP, City Portion	$0	$0	$0	$0	$0	Factor "Net Op/Cap"
Total Debt Service	**$2,087,820**	**$761,361**	**$1,326,459**	**$0**	**$0**	
Other Impacts (Credits)						
Other Charges for Service and Misc Inc	($53,250)	($6,444)	($33,159)	($8,365)	($5,282)	Factor "Plant in Service"
Connection Fees	($10,000)	($1,210)	($6,227)	($1,571)	($992)	Factor "Plant in Service"
Interest Income	$0	$0	$0	$0	$0	Factor "Plant in Service"
Add/(Use) Fund Balance	$0	$0	$0	$0	$0	Factor "Plant in Service"
Total Other Impacts (Credits)	**($63,250)**	**($7,654)**	**($39,386)**	**($9,936)**	**($6,274)**	
Total Revenue Requirement	**$8,934,332**	**$2,740,550**	**$4,774,642**	**$869,859**	**$549,281**	
TOTAL REVENUE REQUIREMENT ALLOCATION		**31%**	**53%**	**10%**	**6%**	

[1] The "Plant in Service" factor is from Table 3-5 and allocates costs as shown below.

Total	Commodity	Capacity	Meters/Laterals	Account
100%	12%	62%	16%	10%

[2] The "Net Op/Cap" factor is calculated using expenses that exclude those related to debt service, individual services and laterals (MTR) and accounts (CUS).

	Total	Commodity	Capacity
Operating and Other Impacts (Credits)	$5,427,372	$1,979,189	$3,448,183
Factor "Net Op/Cap"	100%	36%	64%

Table B-3
"Plant in Service" Factors
Groundwater Only Scenario

Plant in Service	Replacement Values [1]	Commodity (COM)	Capacity (CAP)	Meters and Service Lat. (MTR)	Customer (CUS)	Basis of Allocation (COM)	(CAP)	(MTR)	(CUS)
Wells	$24,000,000	$19,200,000	$4,800,000			80% COM	20% CAP		
Pumps	$36,000,000	$28,800,000	$7,200,000			80% COM	20% CAP		
Storage	$10,000,000		$10,000,000				100% CAP		
Transmission Mains	$89,430,483		$89,430,483				100% CAP		
Distribution Lines	$157,385,022		$118,038,767		$39,346,256		75% CAP		25% CUS
Hydrants	$17,532,000		$17,532,000				100% CAP		
Meters	$13,950,000			$13,950,000				100% MTR	
Service Laterals	$48,360,000			$48,360,000				100% MTR	
Total	$396,657,505	$48,000,000	$247,001,249	$62,310,000	$39,346,256				
% of Total		***12%***	***62%***	***16%***	***10%***	**Factor "Plant in Service"**			

[1] Replacement values are similar to those used for the development of capacity charges.

Table B-4
Revenue Requirement Allocations
Groundwater Only Scenario

		Projected Fiscal Year [1]									
		FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
TOTAL REVENUE REQUIREMENT	*allocation*	**$7,792,787**	**$8,516,708**	**$9,011,194**	**$9,353,714**	**$9,638,850**	**$10,027,855**	**$10,462,047**	**$10,892,820**	**$11,361,646**	**$11,850,078**
Commodity	*31%*	$2,390,388	$2,612,446	$2,764,127	$2,869,193	$2,956,657	$3,075,981	$3,209,167	$3,341,304	$3,485,113	$3,634,937
Capacity	*53%*	$4,164,583	$4,551,457	$4,815,718	$4,998,766	$5,151,147	$5,359,037	$5,591,076	$5,821,287	$6,071,835	$6,332,860
Meters and Service Laterals	*10%*	$758,717	$829,199	$877,343	$910,691	$938,452	$976,326	$1,018,600	$1,060,540	$1,106,186	$1,153,740
Customer	*6%*	$479,099	$523,606	$554,006	$575,064	$592,595	$616,511	$643,205	$669,688	$698,512	$728,540

[1] FY14 revenue requirements set at 91.5% of the FY15 value.
Values for FY15 onward are from Table B-1.

Table B-5
Unit Costs
Groundwater Only Scenario

		Projected Fiscal Year									
		FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Revenue Required from Rates		$7,792,787	$8,516,708	$9,011,194	$9,353,714	$9,638,850	$10,027,855	$10,462,047	$10,892,820	$11,361,646	$11,850,078
Commodity	*allocation*										
Revenue Allocation	*31%*	$2,390,388	$2,612,446	$2,764,127	$2,869,193	$2,956,657	$3,075,981	$3,209,167	$3,341,304	$3,485,113	$3,634,937
Units of Use (thousand gallons)		5,290,135	5,139,851	4,994,265	4,853,218	4,716,558	4,726,031	4,735,527	4,745,047	4,754,591	4,764,159
Avg Commodity Rate ($/1000 gallons)		$0.45	$0.51	$0.55	$0.59	$0.63	$0.65	$0.68	$0.70	$0.73	$0.76
Capacity											
Revenue Allocation	*53%*	$4,164,583	$4,551,457	$4,815,718	$4,998,766	$5,151,147	$5,359,037	$5,591,076	$5,821,287	$6,071,835	$6,332,860
Units of Use (equivalent meters)		23,426	23,482	23,539	23,596	23,653	23,710	23,767	23,824	23,882	23,940
Capacity ($/eq mtr per month)		$14.81	$16.15	$17.05	$17.65	$18.15	$18.84	$19.60	$20.36	$21.19	$22.04
Meters and Service Laterals											
Revenue Allocation	*10%*	$758,717	$829,199	$877,343	$910,691	$938,452	$976,326	$1,018,600	$1,060,540	$1,106,186	$1,153,740
Units of Use (equivalent meters)		23,426	23,482	23,539	23,596	23,653	23,710	23,767	23,824	23,882	23,940
Mtrs/Svc Lats ($/eq mtr per month)		$2.70	$2.94	$3.11	$3.22	$3.31	$3.43	$3.57	$3.71	$3.86	$4.02
Customer											
Revenue Allocation	*6%*	$479,099	$523,606	$554,006	$575,064	$592,595	$616,511	$643,205	$669,688	$698,512	$728,540
Units of Use (accounts)		18,565	18,616	18,667	18,718	18,769	18,821	18,873	18,924	18,976	19,029
Customer ($/account per month)		$2.15	$2.34	$2.47	$2.56	$2.63	$2.73	$2.84	$2.95	$3.07	$3.19

Table B-6
Commodity Charge Unit Costs
Groundwater Only Scenario

			Projected Fiscal Year								
		FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Commodity											
Revenue Requirement		$2,390,388	$2,612,446	$2,764,127	$2,869,193	$2,956,657	$3,075,981	$3,209,167	$3,341,304	$3,485,113	$3,634,937
Units of Use (thousand gallons)		5,290,135	5,139,851	4,994,265	4,853,218	4,716,558	4,726,031	4,735,527	4,745,047	4,754,591	4,764,159
Average Commodity Rate ($/1000 gallons)		$0.45	$0.51	$0.55	$0.59	$0.63	$0.65	$0.68	$0.70	$0.73	$0.76
Single & Multi Family Residential	*% Revenue Allocation [1]*										
Revenue Requirement	*67%*	$1,598,026	$1,746,477	$1,847,879	$1,918,117	$1,976,589	$2,056,360	$2,145,397	$2,233,734	$2,329,874	$2,430,034
Units of Use (thousand gallons)		3,325,494	3,212,539	3,103,571	2,998,447	2,897,029	2,904,682	2,912,357	2,920,053	2,927,772	2,935,513
Commodity Rate ($/1000 gallons)		$0.49	$0.55	$0.60	$0.64	$0.69	$0.71	$0.74	$0.77	$0.80	$0.83
Commercial/Industrial/Institutional											
Revenue Requirement	*22%*	$517,892	$566,002	$598,864	$621,627	$640,577	$666,429	$695,285	$723,913	$755,070	$787,530
Units of Use (thousand gallons)		1,425,119	1,398,042	1,371,479	1,345,421	1,319,858	1,321,178	1,322,499	1,323,822	1,325,145	1,326,471
Commodity Rate ($/1000 gallons)		$0.37	$0.41	$0.44	$0.47	$0.49	$0.51	$0.53	$0.55	$0.57	$0.60
Landscape											
Revenue Requirement	*11%*	$274,470	$299,968	$317,384	$329,448	$339,491	$353,192	$368,485	$383,657	$400,169	$417,373
Units of Use (thousand gallons)		539,522	529,271	519,214	509,349	499,672	500,171	500,672	501,172	501,673	502,175
Commodity Rate ($/1000 gallons)		$0.51	$0.57	$0.62	$0.65	$0.68	$0.71	$0.74	$0.77	$0.80	$0.84

[1] Percent revenue allocation values are based on maximum daily use factors shown in Table 2-3.

Table B-7
Water Rates
Groundwater Only Scenario

	Projected Fiscal Year									
	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
effective date >	*1/1/2014*	*1/1/2015*	*1/1/2016*	*1/1/2017*	*1/1/2018*	*1/1/2019*	*1/1/2020*	*1/1/2021*	*1/1/2022*	*1/1/2023*
Commodity Charge, $ per 1000 gallons										
Average	*$0.45*	*$0.51*	*$0.55*	*$0.59*	*$0.63*	*$0.65*	*$0.68*	*$0.70*	*$0.73*	*$0.76*
Single/Multi Residential	$0.49	$0.55	$0.60	$0.64	$0.69	$0.71	$0.74	$0.77	$0.80	$0.83
Commercial/Industrial/Institutional	$0.37	$0.41	$0.44	$0.47	$0.49	$0.51	$0.53	$0.55	$0.57	$0.60
Landscape	$0.51	$0.57	$0.62	$0.65	$0.68	$0.71	$0.74	$0.77	$0.80	$0.84
Capacity Charge, $ per meter per month										
1" or less	$17.60	$19.10	$20.20	$20.90	$21.50	$22.30	$23.20	$24.10	$25.10	$26.10
1-1/2"	$35.20	$38.20	$40.40	$41.80	$43.00	$44.60	$46.40	$48.20	$50.20	$52.20
2"	$56.40	$61.20	$64.70	$66.90	$68.80	$71.40	$74.30	$77.20	$80.40	$83.60
3"	$124.00	$134.00	$142.00	$147.00	$151.00	$157.00	$163.00	$169.00	$176.00	$183.00
4"	$212.00	$230.00	$243.00	$251.00	$258.00	$268.00	$279.00	$290.00	$302.00	$314.00
6"	$440.00	$478.00	$505.00	$523.00	$538.00	$558.00	$580.00	$603.00	$628.00	$653.00
8"	$845.00	$917.00	$970.00	$1,004.00	$1,032.00	$1,071.00	$1,114.00	$1,157.00	$1,205.00	$1,253.00
10"	$1,338.00	$1,452.00	$1,536.00	$1,589.00	$1,634.00	$1,695.00	$1,764.00	$1,832.00	$1,908.00	$1,984.00
Customer Charge, $ per account per month	$2.20	$2.40	$2.50	$2.60	$2.70	$2.80	$2.90	$3.00	$3.10	$3.20

Note: All monthly charges are rounded to the nearest $0.10 if less than $100 and to the nearest $1.00 if greater than or equal to $100.

Table B-8
Estimated FY14 Revenue from Rates
Groundwater Only Scenario

Rate Component	Projected Units	Revenue @ Current Rates: *Estimated Split*	FY14 Budget Revenue	Percent [1]	Partial Year Revenue	Revenue @ New Rates: Full Year Revenue at New Rates	Percent [1]	Partial Year Revenue	FY14 Revenue Combined Rates
Commodity	5,290,000 MG	*68%*	$4,362,200	67%	$2,902,300	$2,380,500	33%	$796,683	$3,698,983
Minimum		*32%*	$2,052,800	58%	$1,197,467	na		na	$1,197,467
Flat			$352,000	58%	$205,333	na		na	$205,333
Capacity	23,426 Eq. Mtrs.		$510,000	58%	$297,500	$4,949,480	42%	$2,062,283	$2,359,783
Customer	18,565 Accounts		na		na	490,111	42%	204,213	204,213
Total			$7,277,000		$4,602,600	$7,820,091		$3,063,179	$7,665,779

[1] The percent of time that current and new rates are in effect are based on a January 1 effective date. It is estimated that implementation of new rates will lag one month after adoption of rates.
The estimated percent reduction in revenue from commodity charges and meter/flat/account charges due to partial year implementation of rate increases is shown below.

5	*< months at new rates*	% Reduction Per Month	
Month in FY	Month	Commodity	Meter/Flat/Acct
1	Jul	0%	0%
2	Aug	11%	8%
3	Sep	22%	17%
4	Oct	33%	25%
5	Nov	45%	33%
6	Dec	54%	42%
7	Jan	62%	50%
8	Feb	67%	58%
9	Mar	72%	67%
10	Apr	77%	75%
11	May	83%	83%
12	Jun	90%	92%

Table B-9
Projected Revenue from Rates
Groundwater Only Scenario

	Projected Fiscal Year [1]									
	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Single Family										
Commodity Charges		$1,358,213	$1,453,231	$1,514,664	$1,561,699	$1,661,693	$1,722,530	$1,799,681	$1,877,279	$1,955,327
Capacity Charges		$3,650,117	$3,920,427	$4,112,274	$4,255,059	$4,408,748	$4,593,616	$4,789,675	$4,997,022	$5,215,752
Account Charges		$448,113	$478,770	$499,806	$520,965	$542,246	$563,650	$585,177	$606,829	$628,605
Total		$5,456,442	$5,852,428	$6,126,745	$6,337,724	$6,612,687	$6,879,796	$7,174,533	$7,481,130	$7,799,684
Multi Family										
Commodity Charges		$280,440	$305,667	$324,544	$340,877	$361,979	$374,484	$390,476	$406,501	$422,557
Capacity Charges		$511,319	$548,018	$573,643	$592,272	$612,472	$636,963	$662,795	$690,127	$718,881
Account Charges		$24,392	$26,009	$27,097	$28,188	$29,281	$30,376	$31,473	$32,573	$33,675
Total		$816,151	$879,693	$925,284	$961,337	$1,003,733	$1,041,823	$1,084,744	$1,129,201	$1,175,112
Commercial										
Commodity Charges		$182,842	$196,516	$206,552	$214,627	$223,856	$233,103	$242,368	$251,651	$262,467
Capacity Charges		$587,785	$629,881	$659,238	$680,527	$703,803	$732,056	$761,752	$793,130	$826,166
Account Charges		$31,499	$33,587	$34,993	$36,402	$37,813	$39,227	$40,644	$42,064	$43,487
Total		$802,127	$859,985	$900,783	$931,556	$965,472	$1,004,386	$1,044,764	$1,086,845	$1,132,120
Industrial										
Commodity Charges		$353,149	$379,560	$398,942	$414,540	$432,364	$450,224	$468,119	$486,049	$506,939
Capacity Charges		$99,945	$107,126	$112,125	$115,786	$119,727	$124,496	$129,561	$134,925	$140,546
Account Charges		$664	$708	$737	$767	$797	$827	$856	$886	$916
Total		$453,757	$487,393	$511,805	$531,093	$552,888	$575,546	$598,537	$621,861	$648,402
Institutional										
Commodity Charges		$67,340	$72,377	$76,072	$79,047	$82,446	$85,851	$89,263	$92,682	$96,666
Capacity Charges		$144,744	$155,115	$162,358	$167,598	$173,324	$180,282	$187,585	$195,311	$203,446
Account Charges		$2,461	$2,624	$2,734	$2,844	$2,955	$3,065	$3,176	$3,287	$3,398
Total		$214,546	$230,116	$241,165	$249,489	$258,724	$269,198	$280,024	$291,281	$303,510
Landscape										
Commodity Charges		$187,450	$203,541	$214,412	$220,354	$230,599	$240,865	$251,152	$261,459	$272,909
Capacity Charges		$178,729	$191,538	$200,467	$206,953	$214,024	$222,604	$231,641	$241,192	$251,238
Account Charges		$6,665	$7,107	$7,404	$7,702	$8,001	$8,300	$8,600	$8,900	$9,201
Total		$372,843	$402,186	$422,283	$435,009	$452,624	$471,770	$491,393	$511,550	$533,348
All Classes										
Commodity Charges	$3,698,983	$2,429,433	$2,610,892	$2,735,186	$2,831,144	$2,992,938	$3,107,057	$3,241,059	$3,375,621	$3,516,864
Capacity Charges	$2,359,783	$5,172,639	$5,552,104	$5,820,105	$6,018,195	$6,232,098	$6,490,017	$6,763,009	$7,051,708	$7,356,030
Account Charges	$1,607,013	$513,794	$548,804	$572,772	$596,868	$621,092	$645,445	$669,927	$694,539	$719,282
Total Revenue	**$7,665,779**	**$8,115,866**	**$8,711,801**	**$9,128,064**	**$9,446,207**	**$9,846,128**	**$10,242,519**	**$10,673,995**	**$11,121,868**	**$11,592,176**

[1] Values are adjusted for implementation of rate increases for a partial year.
Values for FY14 are from Table B-8.

Table B-10
Projected Cash Flow, Coverage Ratios and Target Cash for Water Fund 420
Groundwater Only Scenario

		Projected Fiscal Year									
		FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Beginning Cash Balance, July 1	[1]	**$32,875,965**	**$31,200,420**	**$22,619,182**	**$21,900,743**	**$21,180,299**	**$20,337,098**	**$19,428,068**	**$18,423,965**	**$17,332,532**	**$16,141,414**
Operating Expenditures											
Operating		$5,409,762	$5,702,788	$6,011,817	$6,337,730	$6,681,459	$7,043,985	$7,426,345	$7,829,632	$8,255,001	$8,703,673
O&M for RSWSP		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures		$5,409,762	$5,702,788	$6,011,817	$6,337,730	$6,681,459	$7,043,985	$7,426,345	$7,829,632	$8,255,001	$8,703,673
Revenues											
Commodity Charges		$3,698,983	$2,429,433	$2,610,892	$2,735,186	$2,831,144	$2,992,938	$3,107,057	$3,241,059	$3,375,621	$3,516,864
Capacity Charges		$2,359,783	$5,172,639	$5,552,104	$5,820,105	$6,018,195	$6,232,098	$6,490,017	$6,763,009	$7,051,708	$7,356,030
Account Charges		$1,607,013	$513,794	$548,804	$572,772	$596,868	$621,092	$645,445	$669,927	$694,539	$719,282
Other Charges		$53,250	$53,250	$53,250	$53,250	$53,250	$53,250	$53,250	$53,250	$53,250	$53,250
Connection Fees		$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
Interest Income	[2]	$263,008	$249,603	$180,953	$175,206	$169,442	$162,697	$155,425	$147,392	$138,660	$129,131
Total Revenues		$7,992,037	$8,428,720	$8,956,004	$9,366,520	$9,678,899	$10,072,075	$10,461,193	$10,884,636	$11,323,778	$11,784,557
Revenues less Expenditures		$2,582,275	$2,725,932	$2,944,188	$3,028,789	$2,997,440	$3,028,090	$3,034,848	$3,055,005	$3,068,777	$3,080,884
Capital Expenditures and Debt Service											
Capital, City System		$2,170,000	$9,219,350	$1,574,808	$1,661,413	$1,752,821	$1,849,299	$1,951,132	$2,058,618	$2,172,074	$2,291,835
Capital, RSWSP		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Bonds Disbursement											
Debt Service											
Lease		$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155
2008 Bonds		$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665
New Bonds		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Capital and Debt Service		$4,257,820	$11,307,170	$3,662,628	$3,749,233	$3,840,641	$3,937,119	$4,038,952	$4,146,438	$4,259,894	$4,379,655
Ending Cash Balance, June 30		**$31,200,420**	**$22,619,182**	**$21,900,743**	**$21,180,299**	**$20,337,098**	**$19,428,068**	**$18,423,965**	**$17,332,532**	**$16,141,414**	**$14,842,643**
Debt Service Coverage											
Adjusted Net Revenues	[3]	$2,572,275	$2,715,932	$2,934,188	$3,018,789	$2,987,440	$3,018,090	$3,024,848	$3,045,005	$3,058,777	$3,070,884
Debt Service		$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665
Coverage Ratio		**1.27**	**1.34**	**1.44**	**1.49**	**1.47**	**1.49**	**1.49**	**1.50**	**1.51**	**1.51**
$ Over/(Under) Coverage Reqt		$32,694	$176,351	$394,607	$479,208	$447,858	$478,509	$485,267	$505,423	$519,195	$531,303
Target Cash Balance @ 1.50x Op Exp	[4]	$8,100,000	$8,600,000	$9,000,000	$9,500,000	$10,000,000	$10,600,000	$11,100,000	$11,700,000	$12,400,000	$13,100,000

[1] The Beginning Balance for FY14 is the sum of the Opening Balances shown in the FY14 budget for Division 550 (Operating) and Division 551 (Capital).

[2] Interest income is calculated as a percent of the Beginning Balance. The annual percentage rates are listed below:

FY14	*FY15*	*FY16*	*FY17*	*FY18*	*FY19*	*FY20*	*FY21*	*FY22*	*FY23*
0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%

[3] Net Revenues for Debt Service Coverage exclude revenue from Connection Fees.

[4] Target reserves are 1.50 times operating expenses.

Appendix C: Water Rate Development Tables – Groundwater + Surface Water Scenario

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Table C-1
Revenue Requirements for Water Fund 420 , Division 550 and 551
Groundwater + Surface Water Scenario

Expense Category	Amended FY13	Adopted FY14	*Cost Esc. Proj.*	Projected Fiscal Year FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Operating and Capital Expenses												
Salaries	$1,338,262	$1,420,390	*6%*	$1,505,613	$1,595,950	$1,691,707	$1,793,210	$1,900,802	$2,014,850	$2,135,741	$2,263,886	$2,399,719
Benefits and Insurance	$773,963	$833,352	*6%*	$883,353	$936,354	$992,536	$1,052,088	$1,115,213	$1,182,126	$1,253,053	$1,328,236	$1,407,931
Contractural-Regional Mgmt	$75,000	$325,000	*5%*	$341,250	$358,313	$376,228	$395,040	$414,792	$435,531	$457,308	$480,173	$504,182
Contractural-Other	$363,198	$355,122	*5%*	$372,878	$391,522	$411,098	$431,653	$453,236	$475,897	$499,692	$524,677	$550,911
Supplies and maintenance	$483,418	$511,204	*5%*	$536,764	$563,602	$591,783	$621,372	$652,440	$685,062	$719,315	$755,281	$793,045
Utilities	$1,407,900	$1,309,100	*5%*	$1,374,555	$1,443,283	$1,515,447	$1,591,219	$1,670,780	$1,754,319	$1,842,035	$1,934,137	$2,030,844
Fleet expense	$111,970	$101,523	*5%*	$106,599	$111,929	$117,526	$123,402	$129,572	$136,051	$142,853	$149,996	$157,495
Other Expenses	$64,330	$70,330	*5%*	$73,847	$77,539	$81,416	$85,487	$89,761	$94,249	$98,961	$103,909	$109,105
Capital, City System Cash Funded	$8,866,958	$6,171,700	*varies*	$9,219,350	$1,574,808	$1,661,413	$1,752,821	$1,849,299	$1,951,132	$2,058,618	$2,172,074	$2,291,835
Capital, RSWSP Cash Funded	$0	$0	*na*	$0	$0	$0	$16,733,730	$0	$0	$0	$0	$0
Net Transfers	$1,195,605	$483,741	*5%*	$507,928	$533,324	$559,991	$587,990	$617,390	$648,259	$680,672	$714,706	$750,441
O&M for RSWSP	$0	$0	*5%*	$0	$0	$0	$0	$1,309,000	$2,618,000	$2,748,900	$2,886,345	$3,030,662
Total Operating Expenses	**$14,680,604**	**$11,581,462**		**$14,922,138**	**$7,586,624**	**$7,999,144**	**$25,168,011**	**$10,202,285**	**$11,995,477**	**$12,637,150**	**$13,313,421**	**$14,026,170**
Debt Service												
Lease Payment for City Building	$56,155	$56,155	*0%*	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155
2008 Water Revenue Bonds	$2,031,665	$2,031,665	*0%*	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665
New Debt - City System			*na*	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Debt - RSWSP, City Portion			*na*	$0	$0	$0	$2,817,500	$5,635,000	$5,635,000	$5,635,000	$5,635,000	$5,635,000
Total Debt Service	**$2,087,820**	**$2,087,820**		**$2,087,820**	**$2,087,820**	**$2,087,820**	**$4,905,320**	**$7,722,820**	**$7,722,820**	**$7,722,820**	**$7,722,820**	**$7,722,820**
Other Impacts (Credits)												
Other Charges and Misc Inc	($141,500)	($53,250)	*0%*	($53,250)	($53,250)	($53,250)	($53,250)	($53,250)	($53,250)	($53,250)	($53,250)	($53,250)
Connection Fees	($10,000)	($10,000)	*0%*	($10,000)	($10,000)	($10,000)	($10,000)	($10,000)	($10,000)	($10,000)	($10,000)	($10,000)
Interest Income	($285,000)	$0	*na*	($250,000)	($250,000)	($250,000)	($250,000)	($250,000)	($250,000)	($250,000)	($250,000)	($250,000)
Add/(Use) Fund Balance	$0	$0	*na*	($8,200,000)	$1,640,000	$4,410,000	($11,400,000)	$6,400,000	$5,600,000	$6,000,000	$5,950,000	$5,900,000
Total Other Impacts (Credits)	**($436,500)**	**($63,250)**		**($8,513,250)**	**$1,326,750**	**$4,096,750**	**($11,713,250)**	**$6,086,750**	**$5,286,750**	**$5,686,750**	**$5,636,750**	**$5,586,750**
TOTAL REVENUE REQUIREMENT	**$16,331,924**	**$13,606,032**		**$8,496,708**	**$11,001,194**	**$14,183,714**	**$18,360,081**	**$24,011,855**	**$25,005,047**	**$26,046,720**	**$26,672,991**	**$27,335,740**

Table C-2
Functional Allocation of Revenue Requirements
Groundwater + Surface Water Scenario

Item	Adopted FY14	Commodity (COM)	Capacity (CAP)	Meters and Service Lat. (MTR)	Customer (CUS)	Basis of Allocation [1,2]
Operating and Capital Expenses						
Salaries	$1,420,390	$171,883	$884,486	$223,126	$140,895	Factor "Plant in Service"
Benefits and Insurance	$833,352	$100,845	$518,934	$130,909	$82,664	Factor "Plant in Service"
Contractural-Regional Mgmt	$325,000	$39,329	$202,380	$51,053	$32,238	Factor "Plant in Service"
Contractural-Other	$355,122	$42,974	$221,137	$55,785	$35,226	Factor "Plant in Service"
Supplies and maintenance	$511,204	$61,861	$318,330	$80,304	$50,709	Factor "Plant in Service"
Utilities	$1,309,100	$1,309,100	$0	$0	$0	100% COM
Fleet expense	$101,523	$12,285	$63,219	$15,948	$10,071	Factor "Plant in Service"
Other Expenses	$70,330	$8,511	$43,795	$11,048	$6,976	Factor "Plant in Service"
Capital, City System Cash Funded [2]	$1,500,000	$181,517	$934,060	$235,631	$148,792	Factor "Plant in Service"
Capital, RSWSP Cash Funded	$0	$0	$0	$0	$0	
Net Transfers	$483,741	$58,538	$301,229	$75,990	$47,984	Factor "Plant in Service"
Additional O&M for RSWSP	$0	$0	$0	$0	$0	Factor "Plant in Service"
Total Operating Expenses	**$6,909,762**	**$1,986,843**	**$3,487,569**	**$879,795**	**$555,555**	
Debt Service						
Lease Payment for City Building	$56,155	$20,478	$35,677	$0	$0	Factor "Net Op/Cap"
2008 Water Revenue Bonds	$2,031,665	$740,883	$1,290,782	$0	$0	Factor "Net Op/Cap"
New Debt Service - City System	$0	$0	$0	$0	$0	Factor "Net Op/Cap"
New Debt Service - RSWSP, City Portion	$0	$0	$0	$0	$0	Factor "Net Op/Cap"
Total Debt Service	**$2,087,820**	**$761,361**	**$1,326,459**	**$0**	**$0**	
Other Impacts (Credits)						
Other Charges for Service and Misc Inc	($53,250)	($6,444)	($33,159)	($8,365)	($5,282)	Factor "Plant in Service"
Connection Fees	($10,000)	($1,210)	($6,227)	($1,571)	($992)	Factor "Plant in Service"
Interest Income	$0	$0	$0	$0	$0	Factor "Plant in Service"
Add/(Use) Fund Balance	$0	$0	$0	$0	$0	Factor "Plant in Service"
Total Other Impacts (Credits)	**($63,250)**	**($7,654)**	**($39,386)**	**($9,936)**	**($6,274)**	
Total Revenue Requirement	**$8,934,332**	**$2,740,550**	**$4,774,642**	**$869,859**	**$549,281**	
TOTAL REVENUE REQUIREMENT ALLOCATION		**31%**	**53%**	**10%**	**6%**	

[1] The "Plant in Service" factor is from Table 3-5 and allocates costs as shown below.

Total	Commodity	Capacity	Meters/Laterals	Account
100%	12%	62%	16%	10%

[2] The "Net Op/Cap" factor is calculated using expenses that exclude those related to debt service, individual services and laterals (MTR) and accounts (CUS).

	Total	Commodity	Capacity
Operating and Other Impacts (Credits)	$5,427,372	$1,979,189	$3,448,183
Factor "Net Op/Cap"	100%	36%	64%

Table C-3
"Plant in Service" Factors
Groundwater + Surface Water Scenario

Plant in Service	Replacement Values [1]	Commodity (COM)	Capacity (CAP)	Meters and Service Lat. (MTR)	Customer (CUS)	Basis of Allocation (COM)	(CAP)	(MTR)	(CUS)
Wells	$24,000,000	$19,200,000	$4,800,000			80% COM	20% CAP		
Pumps	$36,000,000	$28,800,000	$7,200,000			80% COM	20% CAP		
Storage	$10,000,000		$10,000,000				100% CAP		
Transmission Mains	$89,430,483		$89,430,483				100% CAP		
Distribution Lines	$157,385,022		$118,038,767		$39,346,256		75% CAP		25% CUS
Hydrants	$17,532,000		$17,532,000				100% CAP		
Meters	$13,950,000			$13,950,000				100% MTR	
Service Laterals	$48,360,000			$48,360,000				100% MTR	
Total	$396,657,505	$48,000,000	$247,001,249	$62,310,000	$39,346,256				
% of Total		***12%***	***62%***	***16%***	***10%***	**Factor "Plant in Service"**			

[1] Replacement values are similar to those used for the development of capacity charges.

Table C-4
Revenue Requirement Allocations
Groundwater + Surface Water Scenario

		Projected Fiscal Year [1]									
		FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
TOTAL REVENUE REQUIREMENT	*allocation*	**$7,774,487**	**$8,496,708**	**$11,001,194**	**$14,183,714**	**$18,360,081**	**$24,011,855**	**$25,005,047**	**$26,046,720**	**$26,672,991**	**$27,335,740**
Commodity	*31%*	$2,384,775	$2,606,311	$3,374,547	$4,350,765	$5,631,839	$7,365,485	$7,670,140	$7,989,667	$8,181,772	$8,385,066
Capacity	*53%*	$4,154,803	$4,540,769	$5,879,204	$7,579,991	$9,811,904	$12,832,298	$13,363,074	$13,919,760	$14,254,449	$14,608,632
Meters and Service Laterals	*10%*	$756,935	$827,251	$1,071,092	$1,380,946	$1,787,563	$2,337,828	$2,434,526	$2,535,945	$2,596,920	$2,661,446
Customer	*6%*	$477,974	$522,376	$676,351	$872,012	$1,128,774	$1,476,244	$1,537,305	$1,601,347	$1,639,850	$1,680,596

[1] FY14 revenue requirements set at 91.5% of the FY15 value.
Values for FY15 onward are from Table C-1.

Table C-5
Unit Costs
Groundwater + Surface Water Scenario

		Projected Fiscal Year									
		FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Revenue Required from Rates		$7,774,487	$8,496,708	$11,001,194	$14,183,714	$18,360,081	$24,011,855	$25,005,047	$26,046,720	$26,672,991	$27,335,740
Commodity	*allocation*										
Revenue Allocation	*31%*	$2,384,775	$2,606,311	$3,374,547	$4,350,765	$5,631,839	$7,365,485	$7,670,140	$7,989,667	$8,181,772	$8,385,066
Units of Use (thousand gallons)		5,290,135	5,139,851	4,994,265	4,853,218	4,716,558	4,726,031	4,735,527	4,745,047	4,754,591	4,764,159
Avg Commodity Rate ($/1000 gallons)		$0.45	$0.51	$0.68	$0.90	$1.19	$1.56	$1.62	$1.68	$1.72	$1.76
Capacity											
Revenue Allocation	*53%*	$4,154,803	$4,540,769	$5,879,204	$7,579,991	$9,811,904	$12,832,298	$13,363,074	$13,919,760	$14,254,449	$14,608,632
Units of Use (equivalent meters)		23,426	23,482	23,539	23,596	23,653	23,710	23,767	23,824	23,882	23,940
Capacity ($/eq mtr per month)		$14.78	$16.11	$20.81	$26.77	$34.57	$45.10	$46.85	$48.69	$49.74	$50.85
Meters and Service Laterals											
Revenue Allocation	*10%*	$756,935	$827,251	$1,071,092	$1,380,946	$1,787,563	$2,337,828	$2,434,526	$2,535,945	$2,596,920	$2,661,446
Units of Use (equivalent meters)		23,426	23,482	23,539	23,596	23,653	23,710	23,767	23,824	23,882	23,940
Mtrs/Svc Lats ($/eq mtr per month)		$2.69	$2.94	$3.79	$4.88	$6.30	$8.22	$8.54	$8.87	$9.06	$9.26
Customer											
Revenue Allocation	*6%*	$477,974	$522,376	$676,351	$872,012	$1,128,774	$1,476,244	$1,537,305	$1,601,347	$1,639,850	$1,680,596
Units of Use (accounts)		18,565	18,616	18,667	18,718	18,769	18,821	18,873	18,924	18,976	19,029
Customer ($/account per month)		$2.15	$2.34	$3.02	$3.88	$5.01	$6.54	$6.79	$7.05	$7.20	$7.36

Table C-6
Commodity Charge Unit Costs
Groundwater + Surface Water Scenario

			Projected Fiscal Year								
		FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Commodity											
Revenue Requirement		$2,384,775	$2,606,311	$3,374,547	$4,350,765	$5,631,839	$7,365,485	$7,670,140	$7,989,667	$8,181,772	$8,385,066
Units of Use (thousand gallons)		5,290,135	5,139,851	4,994,265	4,853,218	4,716,558	4,726,031	4,735,527	4,745,047	4,754,591	4,764,159
Average Commodity Rate ($/1000 gallons)		$0.45	$0.51	$0.68	$0.90	$1.19	$1.56	$1.62	$1.68	$1.72	$1.76
Single & Multi Family Residential	*% Revenue Allocation [1]*										
Revenue Requirement	*67%*	$1,594,274	$1,742,376	$2,255,958	$2,908,580	$3,765,006	$4,923,986	$5,127,655	$5,341,265	$5,469,691	$5,605,598
Units of Use (thousand gallons)		3,325,494	3,212,539	3,103,571	2,998,447	2,897,029	2,904,682	2,912,357	2,920,053	2,927,772	2,935,513
Commodity Rate ($/1000 gallons)		$0.48	$0.55	$0.73	$0.98	$1.30	$1.70	$1.77	$1.83	$1.87	$1.91
Commercial/Industrial/Institutional											
Revenue Requirement	*22%*	$516,675	$564,673	$731,115	$942,619	$1,220,171	$1,595,775	$1,661,781	$1,731,008	$1,772,629	$1,816,674
Units of Use (thousand gallons)		1,425,119	1,398,042	1,371,479	1,345,421	1,319,858	1,321,178	1,322,499	1,323,822	1,325,145	1,326,471
Commodity Rate ($/1000 gallons)		$0.37	$0.41	$0.54	$0.71	$0.93	$1.21	$1.26	$1.31	$1.34	$1.37
Landscape											
Revenue Requirement	*11%*	$273,826	$299,263	$387,474	$499,566	$646,662	$845,724	$880,705	$917,394	$939,452	$962,794
Units of Use (thousand gallons)		539,522	529,271	519,214	509,349	499,672	500,171	500,672	501,172	501,673	502,175
Commodity Rate ($/1000 gallons)		$0.51	$0.57	$0.75	$0.99	$1.30	$1.70	$1.76	$1.84	$1.88	$1.92

[1] Percent revenue allocation values are based on maximum daily use factors shown in Table 2-3.

Table C-7
Water Rates
Groundwater + Surface Water Scenario

	Projected Fiscal Year									
	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
effective date >	*1/1/2014*	*1/1/2015*	*1/1/2016*	*1/1/2017*	*1/1/2018*	*1/1/2019*	*1/1/2020*	*1/1/2021*	*1/1/2022*	*1/1/2023*
Commodity Charge, $ per 1000 gallons										
Average	*$0.45*	*$0.51*	*$0.68*	*$0.90*	*$1.19*	*$1.56*	*$1.62*	*$1.68*	*$1.72*	*$1.76*
Single/Multi Residential	$0.48	$0.55	$0.73	$0.98	$1.30	$1.70	$1.77	$1.83	$1.87	$1.91
Commercial/Industrial/Institutional	$0.37	$0.41	$0.54	$0.71	$0.93	$1.21	$1.26	$1.31	$1.34	$1.37
Landscape	$0.51	$0.57	$0.75	$0.99	$1.30	$1.70	$1.76	$1.84	$1.88	$1.92
Capacity Charge, $ per meter per month										
1" or less	$17.50	$19.10	$24.60	$31.70	$40.90	$53.40	$55.40	$57.60	$58.80	$60.20
1-1/2"	$35.00	$38.20	$49.20	$63.40	$81.80	$107.00	$111.00	$116.00	$118.00	$121.00
2"	$56.00	$61.20	$78.80	$102.00	$131.00	$171.00	$178.00	$185.00	$189.00	$193.00
3"	$123.00	$134.00	$173.00	$222.00	$287.00	$374.00	$388.00	$404.00	$412.00	$422.00
4"	$210.00	$230.00	$296.00	$381.00	$491.00	$641.00	$665.00	$692.00	$706.00	$723.00
6"	$438.00	$478.00	$615.00	$793.00	$1,023.00	$1,335.00	$1,385.00	$1,440.00	$1,470.00	$1,505.00
8"	$840.00	$917.00	$1,181.00	$1,522.00	$1,964.00	$2,564.00	$2,660.00	$2,765.00	$2,823.00	$2,890.00
10"	$1,330.00	$1,452.00	$1,870.00	$2,410.00	$3,109.00	$4,059.00	$4,211.00	$4,378.00	$4,469.00	$4,576.00
Customer Charge, $ per account per month	$2.20	$2.40	$3.10	$3.90	$5.10	$6.60	$6.80	$7.10	$7.20	$7.40

Note: All monthly charges are rounded to the nearest $0.10 if less than $100 and to the nearest $1.00 if greater than or equal to $100.

Table C-8
Estimated FY14 Revenue from Rates
Groundwater + Surface Water Scenario

		Revenue @ Current Rates				Revenue @ New Rates			FY14 Revenue
Rate Component	Projected Units	*Estimated Split*	FY14 Budget Revenue	Percent [1]	Partial Year Revenue	Full Year Revenue at New Rates	Percent [1]	Partial Year Revenue	Combined Rates
Commodity	5,290,000 MG	*68%*	$4,362,200	67%	$2,902,300	$2,380,500	33%	$796,683	$3,698,983
Minimum		*32%*	$2,052,800	58%	$1,197,467	na		na	$1,197,467
Flat			$352,000	58%	$205,333	na		na	$205,333
Capacity	23,426 Eq. Mtrs.		$510,000	58%	$297,500	$4,920,057	42%	$2,050,024	$2,347,524
Customer	18,565 Accounts		na		na	490,111	42%	204,213	204,213
Total			$7,277,000		$4,602,600	$7,790,667		$3,050,920	$7,653,520

[1] The percent of time that current and new rates are in effect are based on a January 1 effective date. It is estimated that implementation of new rates will lag one month after adoption of rates.
The estimated percent reduction in revenue from commodity charges and meter/flat/account charges due to partial year implementation of rate increases is shown below.

5	*< months at new rates*	% Reduction Per Month	
Month in FY	Month	Commodity	Meter/Flat/Acct
1	Jul	0%	0%
2	Aug	11%	8%
3	Sep	22%	17%
4	Oct	33%	25%
5	Nov	45%	33%
6	Dec	54%	42%
7	Jan	62%	50%
8	Feb	67%	58%
9	Mar	72%	67%
10	Apr	77%	75%
11	May	83%	83%
12	Jun	90%	92%

Table C-9
Projected Revenue from Rates
Groundwater + Surface Water Scenario

	Projected Fiscal Year [1]									
	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Single Family										
Commodity Charges		$1,340,497	$1,564,793	$2,009,227	$2,585,089	$3,419,939	$4,122,902	$4,295,201	$4,436,377	$4,546,241
Capacity Charges		$3,640,153	$4,359,356	$5,633,231	$7,285,927	$9,492,243	$10,985,062	$11,444,392	$11,824,391	$12,124,334
Account Charges		$448,113	$537,395	$686,009	$884,657	$1,153,505	$1,325,071	$1,378,638	$1,422,566	$1,456,767
Total		$5,428,763	$6,461,544	$8,328,467	$10,755,674	$14,065,687	$16,433,035	$17,118,231	$17,683,334	$18,127,341
Multi Family										
Commodity Charges		$276,782	$329,133	$430,513	$564,255	$744,991	$896,332	$931,929	$960,640	$982,467
Capacity Charges		$509,790	$609,369	$785,945	$1,014,328	$1,318,478	$1,523,021	$1,584,185	$1,633,670	$1,671,441
Account Charges		$24,392	$29,193	$37,192	$47,867	$62,289	$71,411	$74,149	$76,359	$78,039
Total		$810,964	$967,696	$1,253,650	$1,626,450	$2,125,758	$2,490,763	$2,590,263	$2,670,669	$2,731,947
Commercial										
Commodity Charges		$182,842	$212,174	$273,952	$352,822	$461,377	$553,432	$576,566	$596,719	$610,890
Capacity Charges		$585,847	$700,437	$903,815	$1,166,147	$1,515,108	$1,750,799	$1,821,920	$1,878,982	$1,921,942
Account Charges		$31,499	$37,700	$48,030	$61,814	$80,439	$92,219	$95,755	$98,609	$100,779
Total		$800,189	$950,311	$1,225,797	$1,580,784	$2,056,924	$2,396,450	$2,494,241	$2,574,310	$2,633,611
Industrial										
Commodity Charges		$353,149	$409,802	$529,122	$681,455	$891,123	$1,068,922	$1,113,602	$1,152,526	$1,179,898
Capacity Charges		$99,672	$119,111	$153,607	$198,264	$257,686	$297,599	$309,436	$319,069	$326,503
Account Charges		$664	$794	$1,012	$1,302	$1,695	$1,943	$2,018	$2,078	$2,124
Total		$453,484	$529,707	$683,741	$881,021	$1,150,503	$1,368,464	$1,425,056	$1,473,674	$1,508,525
Institutional										
Commodity Charges		$67,340	$78,143	$100,896	$129,944	$169,924	$203,828	$212,348	$219,770	$224,989
Capacity Charges		$144,271	$172,482	$222,438	$287,026	$373,009	$430,842	$448,103	$462,083	$472,780
Account Charges		$2,461	$2,946	$3,753	$4,830	$6,285	$7,206	$7,482	$7,705	$7,875
Total		$214,073	$253,571	$327,087	$421,800	$549,219	$641,876	$667,933	$689,558	$705,644
Landscape										
Commodity Charges		$187,450	$218,634	$282,570	$365,146	$479,174	$575,396	$598,303	$621,230	$635,272
Capacity Charges		$178,159	$212,987	$274,909	$354,717	$460,781	$532,534	$554,206	$571,563	$584,598
Account Charges		$6,665	$7,977	$10,163	$13,079	$17,020	$19,512	$20,261	$20,865	$21,324
Total		$372,273	$439,598	$567,642	$732,943	$956,974	$1,127,442	$1,172,770	$1,213,657	$1,241,193
All Classes										
Commodity Charges	$3,698,983	$2,408,059	$2,812,679	$3,626,280	$4,678,711	$6,166,529	$7,420,811	$7,727,948	$7,987,262	$8,179,757
Capacity Charges	$2,347,524	$5,157,893	$6,173,743	$7,973,945	$10,306,410	$13,417,305	$15,519,857	$16,162,242	$16,689,758	$17,101,598
Account Charges	$1,607,013	$513,794	$616,005	$786,158	$1,013,550	$1,321,232	$1,517,362	$1,578,303	$1,628,182	$1,666,907
Total Revenue	**$7,653,520**	**$8,079,746**	**$9,602,427**	**$12,386,383**	**$15,998,671**	**$20,905,066**	**$24,458,029**	**$25,468,493**	**$26,305,202**	**$26,948,261**

[1] Values are adjusted for implementation of rate increases for a partial year.
Values for FY14 are from Table C-8.

Table C-10
Projected Cash Flow, Coverage Ratios and Target Cash for Water Fund 420
Groundwater + Surface Water Scenario

		Projected Fiscal Year									
		FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Beginning Cash Balance, July 1	[1]	**$32,875,965**	**$31,188,160**	**$22,570,704**	**$22,742,502**	**$25,287,112**	**$11,477,999**	**$13,304,034**	**$15,595,450**	**$18,143,086**	**$20,734,097**
Operating Expenditures											
Operating		$5,409,762	$5,702,788	$6,011,817	$6,337,730	$6,681,459	$8,352,985	$10,044,345	$10,578,532	$11,141,346	$11,734,335
O&M for RSWSP		$0	$0	$0	$0	$0	$1,309,000	$2,618,000	$2,748,900	$2,886,345	$3,030,662
Total Expenditures		$5,409,762	$5,702,788	$6,011,817	$6,337,730	$6,681,459	$9,661,985	$12,662,345	$13,327,432	$14,027,691	$14,764,997
Revenues											
Commodity Charges		$3,698,983	$2,408,059	$2,812,679	$3,626,280	$4,678,711	$6,166,529	$7,420,811	$7,727,948	$7,987,262	$8,179,757
Capacity Charges		$2,347,524	$5,157,893	$6,173,743	$7,973,945	$10,306,410	$13,417,305	$15,519,857	$16,162,242	$16,689,758	$17,101,598
Account Charges		$1,607,013	$513,794	$616,005	$786,158	$1,013,550	$1,321,232	$1,517,362	$1,578,303	$1,628,182	$1,666,907
Other Charges		$53,250	$53,250	$53,250	$53,250	$53,250	$53,250	$53,250	$53,250	$53,250	$53,250
Connection Fees		$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
Interest Income	[2]	$263,008	$249,505	$180,566	$181,940	$202,297	$91,824	$106,432	$124,764	$145,145	$165,873
Total Revenues		$7,979,777	$8,392,502	$9,846,242	$12,631,573	$16,264,218	$21,060,140	$24,627,712	$25,656,506	$26,513,597	$27,177,384
Revenues less Expenditures		$2,570,015	$2,689,714	$3,834,426	$6,293,843	$9,582,758	$11,398,155	$11,965,367	$12,329,075	$12,485,905	$12,412,387
Capital Expenditures and Debt Service											
Capital, City System		$2,170,000	$9,219,350	$1,574,808	$1,661,413	$1,752,821	$1,849,299	$1,951,132	$2,058,618	$2,172,074	$2,291,835
Capital, RSWSP		$0	$0	$0	$0	$16,733,730	$0	$0	$0	$0	$0
New Bonds Disbursement											
Debt Service											
Lease		$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155	$56,155
2008 Bonds		$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665	$2,031,665
New Bonds		$0	$0	$0	$0	$2,817,500	$5,635,000	$5,635,000	$5,635,000	$5,635,000	$5,635,000
Total Capital and Debt Service		$4,257,820	$11,307,170	$3,662,628	$3,749,233	$23,391,871	$9,572,119	$9,673,952	$9,781,438	$9,894,894	$10,014,655
Ending Cash Balance, June 30		**$31,188,160**	**$22,570,704**	**$22,742,502**	**$25,287,112**	**$11,477,999**	**$13,304,034**	**$15,595,450**	**$18,143,086**	**$20,734,097**	**$23,131,829**
Debt Service Coverage											
Adjusted Net Revenues	[3]	$2,560,015	$2,679,714	$3,824,426	$6,283,843	$9,572,758	$11,388,155	$11,955,367	$12,319,075	$12,475,905	$12,402,387
Debt Service		$2,031,665	$2,031,665	$2,031,665	$2,031,665	$4,849,165	$7,666,665	$7,666,665	$7,666,665	$7,666,665	$7,666,665
Coverage Ratio		**1.26**	**1.32**	**1.88**	**3.09**	**1.97**	**1.49**	**1.56**	**1.61**	**1.63**	**1.62**
$ Over/(Under) Coverage Reqt		$20,434	$140,133	$1,284,844	$3,744,261	$3,511,302	$1,804,823	$2,372,036	$2,735,743	$2,892,574	$2,819,056
Target Cash Balance @ 1.50x Op Exp	[4]	$8,100,000	$8,600,000	$9,000,000	$9,500,000	$10,000,000	$14,500,000	$19,000,000	$20,000,000	$21,000,000	$22,100,000

[1] The Beginning Balance for FY14 is the sum of the Opening Balances shown in the FY14 budget for Division 550 (Operating) and Division 551 (Capital).

[2] Interest income is calculated as a percent of the Beginning Balance. The annual percentage rates are listed below:

FY14	*FY15*	*FY16*	*FY17*	*FY18*	*FY19*	*FY20*	*FY21*	*FY22*	*FY23*
0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%

[3] Net Revenues for Debt Service Coverage exclude revenue from Connection Fees.

[4] Target reserves are 1.50 times operating expenses.

Appendix D: Water Capacity Charge Development Tables

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Table D-1
List of Assets and Estimated Replacement Values

Item	Category	Description	Capacity	Count	Units	Unit Cost	Total Cost
1	Wells			1	each	$1,000,000	$1,000,000
2	Wells			1	each	$1,000,000	$1,000,000
3	Wells			1	each	$1,000,000	$1,000,000
4	Wells			1	each	$1,000,000	$1,000,000
5	Wells			1	each	$1,000,000	$1,000,000
6	Wells			1	each	$1,000,000	$1,000,000
7	Wells			1	each	$1,000,000	$1,000,000
8	Wells			1	each	$1,000,000	$1,000,000
9	Wells			1	each	$1,000,000	$1,000,000
10	Wells			1	each	$1,000,000	$1,000,000
11	Wells			1	each	$1,000,000	$1,000,000
12	Wells			1	each	$1,000,000	$1,000,000
13	Wells			1	each	$1,000,000	$1,000,000
14	Wells			1	each	$1,000,000	$1,000,000
15	Wells			1	each	$1,000,000	$1,000,000
16	Wells			1	each	$1,000,000	$1,000,000
17	Wells			1	each	$1,000,000	$1,000,000
18	Wells			1	each	$1,000,000	$1,000,000
19	Wells			1	each	$1,000,000	$1,000,000
20	Wells			1	each	$1,000,000	$1,000,000
21	Wells			1	each	$1,000,000	$1,000,000
22	Wells			1	each	$1,000,000	$1,000,000
23	Wells			1	each	$1,000,000	$1,000,000
24	Wells			1	each	$1,000,000	$1,000,000
25	Pumps			1	each	$1,500,000	$1,500,000
26	Pumps			1	each	$1,500,000	$1,500,000
27	Pumps			1	each	$1,500,000	$1,500,000
28	Pumps			1	each	$1,500,000	$1,500,000
29	Pumps			1	each	$1,500,000	$1,500,000
30	Pumps			1	each	$1,500,000	$1,500,000
31	Pumps			1	each	$1,500,000	$1,500,000
32	Pumps			1	each	$1,500,000	$1,500,000
33	Pumps			1	each	$1,500,000	$1,500,000
34	Pumps			1	each	$1,500,000	$1,500,000
35	Pumps			1	each	$1,500,000	$1,500,000
36	Pumps			1	each	$1,500,000	$1,500,000
37	Pumps			1	each	$1,500,000	$1,500,000
38	Pumps			1	each	$1,500,000	$1,500,000
39	Pumps			1	each	$1,500,000	$1,500,000
40	Pumps			1	each	$1,500,000	$1,500,000
41	Pumps			1	each	$1,500,000	$1,500,000
42	Pumps			1	each	$1,500,000	$1,500,000
43	Pumps			1	each	$1,500,000	$1,500,000
44	Pumps			1	each	$1,500,000	$1,500,000
45	Pumps			1	each	$1,500,000	$1,500,000
46	Pumps			1	each	$1,500,000	$1,500,000
47	Pumps			1	each	$1,500,000	$1,500,000
48	Pumps			1	each	$1,500,000	$1,500,000
49	Storage			1	each	$5,000,000	$5,000,000
50	Storage			1	each	$5,000,000	$5,000,000
51	Transmission Mains	10-inch diameter		181,922	lineal feet	$250	$45,480,618
52	Transmission Mains	12-inch diameter		175,143	lineal feet	$250	$43,785,728
53	Transmission Mains	16-inch diameter		657	lineal feet	$250	$164,138
54	Distribution Lines	2-inch diameter		13,516	lineal feet	$150	$2,027,345
55	Distribution Lines	4-inch diameter		76,747	lineal feet	$150	$11,511,986
56	Distribution Lines	6-inch diameter		450,080	lineal feet	$150	$67,511,933
57	Distribution Lines	8-inch diameter		508,892	lineal feet	$150	$76,333,760
58	Hydrants			2,922	each	$6,000	$17,532,000
59	Meters			18,600	each	$750	$13,950,000
60	Service Laterals			18,600	each	$2,600	$48,360,000
Total							**$396,657,505**

Table D-1
List of Assets and Estimated Replacement Values

Summary

Category	Total Value	Contributions Percent	Contributions Dollars
Wells	$24,000,000	0%	$0
Pumps	$36,000,000	0%	$0
Storage	$10,000,000	0%	$0
Transmission Mains	$89,430,483	0%	$0
Distribution Lines	$157,385,022	100%	$157,385,022
Hydrants	$17,532,000	100%	$17,532,000
Meters	$13,950,000	100%	$13,950,000
Service Laterals	$48,360,000	100%	$48,360,000
Total	$396,657,505		$237,227,022

Table D-2
Revenue from Capital Charges and Frontage Fees

Fiscal Year	Revenue [1]	Time Value Factor [2] Annual %	Year	Factor	Adjusted Revenue
FY13	$34,784	3.0%	0	1.00	$34,784
FY12	$56,585	3.0%	1	1.03	$58,283
FY11	$11,049	3.0%	2	1.06	$11,722
FY10	$17,957	3.0%	3	1.09	$19,622
FY9	$83,109	3.0%	4	1.13	$93,540
FY8	$103,755	3.0%	5	1.16	$120,281
FY7	$120,089	3.0%	6	1.19	$143,393
FY6	$193,160	3.0%	7	1.23	$237,562
FY5	$105,392	3.0%	8	1.27	$133,507
FY4	$96,095	3.0%	9	1.30	$125,382
FY3	$40,000	3.0%	10	1.34	$53,757
FY2	$40,000	3.0%	11	1.38	$55,369
FY1	$40,000	3.0%	12	1.43	$57,030
FY0	$40,000	3.0%	13	1.47	$58,741
FY99	$40,000	3.0%	14	1.51	$60,504
FY98	$40,000	3.0%	15	1.56	$62,319
FY97	$40,000	3.0%	16	1.60	$64,188
FY96	$40,000	3.0%	17	1.65	$66,114
FY95	$40,000	3.0%	18	1.70	$68,097
FY94	$40,000	3.0%	19	1.75	$70,140
FY93	$40,000	3.0%	20	1.81	$72,244
FY92	$40,000	3.0%	21	1.86	$74,412
FY91	$40,000	3.0%	22	1.92	$76,644
FY90	$40,000	3.0%	23	1.97	$78,943
FY89	$40,000	3.0%	24	2.03	$81,312
FY88	$40,000	3.0%	25	2.09	$83,751
FY87	$40,000	3.0%	26	2.16	$86,264
FY86	$40,000	3.0%	27	2.22	$88,852
FY85	$40,000	3.0%	28	2.29	$91,517
FY84	$40,000	3.0%	29	2.36	$94,263
FY83	$40,000	3.0%	30	2.43	$97,090
FY82	$40,000	3.0%	31	2.50	$100,003
FY81	$40,000	3.0%	32	2.58	$103,003
FY80	$40,000	3.0%	33	2.65	$106,093
FY79	$40,000	3.0%	34	2.73	$109,276
FY78	$40,000	3.0%	35	2.81	$112,554
FY77	$40,000	3.0%	36	2.90	$115,931
FY76	$40,000	3.0%	37	2.99	$119,409
FY75	$40,000	3.0%	38	3.07	$122,991
FY74	$40,000	3.0%	39	3.17	$126,681
FY73	$40,000	3.0%	40	3.26	$130,482
FY72	$40,000	3.0%	41	3.36	$134,396
FY71	$40,000	3.0%	42	3.46	$138,428
FY70	$40,000	3.0%	43	3.56	$142,581
FY69	$40,000	3.0%	44	3.67	$146,858
FY68	$40,000	3.0%	45	3.78	$151,264
FY67	$40,000	3.0%	46	3.90	$155,802
FY66	$40,000	3.0%	47	4.01	$160,476
FY65	$40,000	3.0%	48	4.13	$165,290
FY64	$40,000	3.0%	49	4.26	$170,249
FY63	$40,000	3.0%	50	4.38	$175,356
Total	$1,661,975				$2,519,627

[1] Revenue for FY4 - FY13 is from the City's accounting system. The annual average value for years prior to FY4 were estimated by the City.
[2] The annual percent adjustment is for the time value of money.

Table D-3
2008 Water Revenue Bonds - Existing Debt Service

Fiscal Year	Payment Date	Payments			Principal Balance	Total Fiscal Year Payments
		Principal	Interest	Total		
	14-May-08			$0	$32,365,000	$0
	01-Nov-08		$684,300	$684,300	$32,365,000	
2008-09	01-May-09	$610,000	$737,569	$1,347,569	$31,755,000	$2,031,869
	01-Nov-09		$725,369	$725,369	$31,755,000	
2009-10	01-May-10	$580,000	$725,369	$1,305,369	$31,175,000	$2,030,738
	01-Nov-10		$713,769	$713,769	$31,175,000	
2010-11	01-May-11	$600,000	$713,769	$1,313,769	$30,575,000	$2,027,538
	01-Nov-11		$701,769	$701,769	$30,575,000	
2011-12	01-May-12	$625,000	$701,769	$1,326,769	$29,950,000	$2,028,538
	01-Nov-12		$690,831	$690,831	$29,950,000	
2012-13	01-May-13	$650,000	$690,831	$1,340,831	$29,300,000	$2,031,663
	01-Nov-13		$679,456	$679,456	$29,300,000	
2013-14	01-May-14	$670,000	$679,456	$1,349,456	$28,630,000	$2,028,913
	01-Nov-14		$666,056	$666,056	$28,630,000	
2014-15	01-May-15	$700,000	$666,056	$1,366,056	$27,930,000	$2,032,113
	01-Nov-15		$652,056	$652,056	$27,930,000	
2015-16	01-May-16	$725,000	$652,056	$1,377,056	$27,205,000	$2,029,113
	01-Nov-16		$637,556	$637,556	$27,205,000	
2016-17	01-May-17	$755,000	$637,556	$1,392,556	$26,450,000	$2,030,113
	01-Nov-17		$622,456	$622,456	$26,450,000	
2017-18	01-May-18	$785,000	$622,456	$1,407,456	$25,665,000	$2,029,913
	01-Nov-18		$606,756	$606,756	$25,665,000	
2018-19	01-May-19	$815,000	$606,756	$1,421,756	$24,850,000	$2,028,513
	01-Nov-19		$586,381	$586,381	$24,850,000	
2019-20	01-May-20	$855,000	$586,381	$1,441,381	$23,995,000	$2,027,763
	01-Nov-20		$569,281	$569,281	$23,995,000	
2020-21	01-May-21	$890,000	$569,281	$1,459,281	$23,105,000	$2,028,563
	01-Nov-21		$551,481	$551,481	$23,105,000	
2021-22	01-May-22	$925,000	$551,481	$1,476,481	$22,180,000	$2,027,963
	01-Nov-22		$532,981	$532,981	$22,180,000	
2022-23	01-May-23	$965,000	$532,981	$1,497,981	$21,215,000	$2,030,963
	01-Nov-23		$513,681	$513,681	$21,215,000	
2023-24	01-May-24	$1,000,000	$513,681	$1,513,681	$20,215,000	$2,027,363
	01-Nov-24		$488,681	$488,681	$20,215,000	
2024-25	01-May-25	$1,055,000	$488,681	$1,543,681	$19,160,000	$2,032,363
	01-Nov-25		$464,944	$464,944	$19,160,000	
2025-26	01-May-26	$1,100,000	$464,944	$1,564,944	$18,060,000	$2,029,888
	01-Nov-26		$440,194	$440,194	$18,060,000	
2026-27	01-May-27	$1,150,000	$440,194	$1,590,194	$16,910,000	$2,030,388
	01-Nov-27		$413,744	$413,744	$16,910,000	
2027-28	01-May-28	$1,200,000	$413,744	$1,613,744	$15,710,000	$2,027,488
	01-Nov-28		$385,994	$385,994	$15,710,000	
2028-29	01-May-29	$1,260,000	$385,994	$1,645,994	$14,450,000	$2,031,988
	01-Nov-29		$356,069	$356,069	$14,450,000	
2029-30	01-May-30	$1,320,000	$356,069	$1,676,069	$13,130,000	$2,032,138
	01-Nov-30		$324,719	$324,719	$13,130,000	
2030-31	01-May-31	$1,380,000	$324,719	$1,704,719	$11,750,000	$2,029,438
	01-Nov-31		$291,944	$291,944	$11,750,000	
2031-32	01-May-32	$1,445,000	$291,944	$1,736,944	$10,305,000	$2,028,888
	01-Nov-32		$257,625	$257,625	$10,305,000	
2032-33	01-May-33	$1,515,000	$257,625	$1,772,625	$8,790,000	$2,030,250
	01-Nov-33		$219,750	$219,750	$8,790,000	
2033-34	01-May-34	$1,590,000	$219,750	$1,809,750	$7,200,000	$2,029,500
	01-Nov-34		$180,000	$180,000	$7,200,000	
2034-35	01-May-35	$1,670,000	$180,000	$1,850,000	$5,530,000	$2,030,000
	01-Nov-35		$138,250	$138,250	$5,530,000	
2035-36	01-May-36	$1,755,000	$138,250	$1,893,250	$3,775,000	$2,031,500
	01-Nov-36		$94,375	$94,375	$3,775,000	
2036-37	01-May-37	$1,840,000	$94,375	$1,934,375	$1,935,000	$2,028,750
	01-Nov-37		$48,375	$48,375	$1,935,000	
2037-38	01-May-38	$1,935,000	$48,375	$1,983,375	$0	$2,031,750
Total		**$32,365,000**	**$28,530,956**	**$60,895,956**		**$60,895,956**

Source: City of Turlock.

MUNICIPAL
FINANCIAL
SERVICES

871 Coronado Center Drive,
Suite 200,
Henderson, NV 89052