East Larimer County Water District

Water Rate Study

Final Report

December 17, 2013

Water
CONSULTING GROUP

Table of Contents

East Larimer County Water District
Water Rate Study

Executive Summary

Background

In March, 2013, the Water Consulting Group was retained by East Larimer County (ELCO) Water District to conduct a comprehensive water rate study. The rate study was authorized to determine the suitability of the District's water rates to fund anticipated capital improvements, fund the acquisition and conversion of water rights, promote water conservation and insure equity between customer categories.

The District anticipates financing a portion of the cost of future capital projects through a bond issue tentatively planned in 2014. Before initiating a bond issue, the District felt it was necessary to review its current water rates.

District staff applied for and received a Water Conservation Implementation Grant from Colorado Water Conservation Board to fund 75% of the cost of the study.

Key Results of Water Rate Study

Based on the cost-of-service analysis and other technical investigations performed during this water rate study, it was determined that:

- A water rate increase is required in 2014 to fund the District's anticipated O&M expenses, capital improvements, water rights acquisition, raw water storage projects, debt service obligations and reserve requirements.

- To allocate District costs to the various customer categories in proportion to the demands they place on the water system, the rate adjustments shown below need to be implemented in 2014:

Customer Category	Rate Increase Required to Recover Cost-of-Service	Rate Decrease Required to Recover Cost-of-Service
Residential	7.15%	
Commercial		10.16%
Irrigation-Only	6.14%	
Multi-Family		2.98%
Mobile Home		24.23%
NCWA	5.50%	
Sunset		6.12%

- With the District's current water rates, a typical single family customer has no incentive to use less than 4,000 gallons per month for six months of the year (November through April). ELCO customers that have lots irrigated with non-potable water have no incentive to use less than 4,000 gallons per month year-round. Reducing or eliminating the 4,000 gallon water allowance provided with payment of the monthly minimum would address this issue.

- The monthly minimum charges paid by single family customers generate 54% of the total annual revenue collected in the residential customer category. A water suppliers rates are consistent with the industry definition of conservation pricing when its fixed charges from monthly minimum charges does not exceed 30% of revenue.

Water Rate Design

The District's existing rate structure for residential and non-residential customers is shown in Table ES-1. It consists of: (1) a monthly minimum charge that varies with meter size and includes a water use allowance of 4,000 gallons per account or 2,000 gallons per mobile home pad, and (2) a usage charge levied on each 1,000 gallons of water used once the monthly allowance is exceeded

Table ES-1

East Larimer County Water District Rates
Effective July 1, 2013

Size of Water Meter	Minimum Charge Per Month	Monthly Minimum Water Allowance
3/4"	$20.37	4,000 gallons
1 "	$21.33	4,000 gallons
1-1/2"	$22.28	4,000 gallons
2 "	$24.91	4,000 gallons
3 "	$44.26	4,000 gallons
Mobile Home Park	$10.18 per space	2,000 gallons per space
All use over the Monthly Minimum water allowance is billed at: **$2.76 per thousand gallons**		

Four residential alternative water rate schedules were developed in this study for consideration by the District. The alternatives were discussed with District staff and analyzed for their respective impact on equity between customers, revenue stability, customer understanding, water conservation, and ease of implementation. Based on this analysis and discussion, residential Alternative #3 is recommended for implementation in 2014.

Recommended Residential Water Rate Alternative #3

Alternative #3 applies cost-of-service methodology to the monthly minimum charge and introduces tiered rates to promote water conservation. Tiered water rates are designed to reward customers who use less water by charging lower rates for water used in lower tiers. The more water a customer uses, the higher the tier(s), resulting in higher charges for water use. In addition to encouraging water conservation, tiered rates provide customers the opportunity to control household costs. Consumers who use less water pay a lower-tier rate.

Table ES-2 shows rates and charges developed for Alternative #3.

Table ES-2

Proposed Residential Water Rate with Rate Alternative #3

Meter Size	Monthly Minimum Charge	Gallons	$/ thousand gallons
3/4" meter	$ 12.43	0	
Tier 1		0 to 4,000	$ 2.00
Tier 2		4,000 to 17,000	$ 3.25
Tier 3		Over 17,000	$ 4.50

Table ES-3 shows the percentage increase (or decrease) in annual charges for three representative residential customers (10th percentile usage, average usage and 90th percentile usage) with Alternative #3 rates.

Table ES-3

Annual Charges and % Change in Charges with Rate Alternative #3

Customer Type	Annual Use (gallons)	2013 Rates	Annual Charges and % Change from 2013 Residential Rates	
			Alternate #3	% Change
10th Percentile	32,000	$ 244	$ 213	(12.8%)
Average	113,000	$ 438	$ 484	10.6%
90th Percentile	227,000	$ 738	$ 947	28.3%

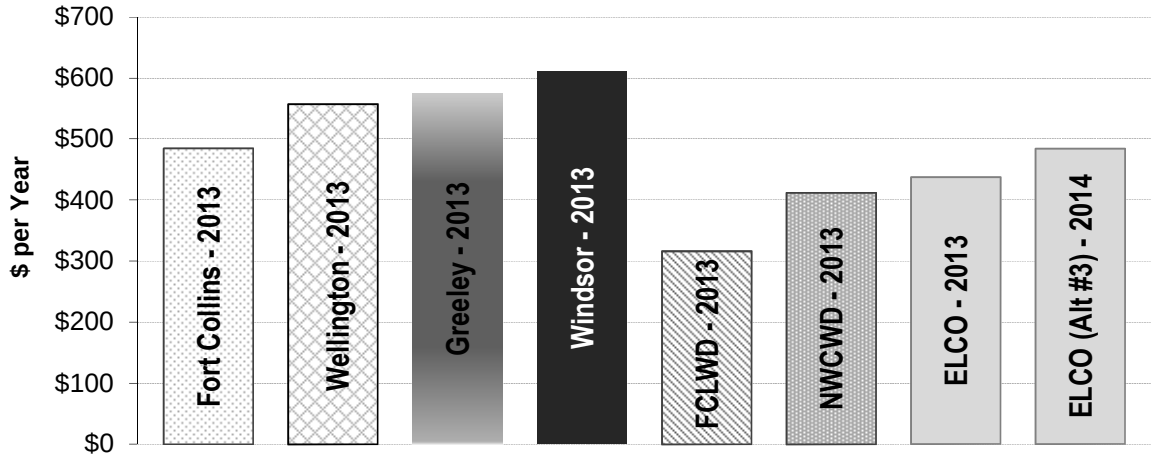
Comparison of Residential Water Charges

Figure ES-1 compares the annual cost of water for the average District single family customer using 113,000 gallons per year with the amount that customer would pay for the same amount of water in nearby communities or water districts. The annual amount the average residential customer would pay with existing water rates and rates proposed with Alternative #3 is also shown.

Figure ES-1

Comparison of Annual Charge for Residential Water Service

(based on average water use of 113,000 gal / yr)



Recommended Non-Residential Water Rate Alternative #2

Alternative #2 is one of three alternatives developed in this study for non-residential customers. It is recommended for implementation in 2014.

Non-residential Alternative #2 applies cost-of-service rates to all non-residential customer categories. Monthly minimum charges for different size meters match figures calculated in the cost-of-service analysis. No water allowance is provided with payment of the monthly minimum. Mobile home accounts are considered identical to all other non-residential accounts; no monthly minimum water allowance is provided regardless of the number of mobile home pads. The monthly minimum charge for mobile home parks is established by meter size.

Usage charges are unique for each customer category to reflect relative differences in water use characteristics between categories and costs related to those water use characteristics.

Minimum monthly charges recommended in Alternative #2 recovers customer costs by distributing those costs among all customers based upon relative meter capacity. Relative meter capacity is a measure of how much water a meter can accurately measure compared to a standard 3/4" meter. It is used in rate making to reflect the fact that larger meters are proportionally more expensive to maintain, repair, test and replace.

Table ES-4 shows rates and charges developed for Non-residential Alternative #2.

Table ES-4

Proposed Non-Residential Water Rates with Alternative #2

Meter Size	Monthly Minimum Charge ($/month)	Gallons Included with Monthly Minimum	Usage Charge ($ / 1,000 gallons)			
			Commercial	Multi-Family	Irrigation	Mobile Home Parks
3/4 "	$12.43	0	$2.35	$2.20	$3.05	$2.60
1 "	$16.80	0	$2.35	$2.20	$3.05	$2.60
1 ½ "	$27.62	0	$2.35	$2.20	$3.05	$2.60
2 "	$40.66	0	$2.35	$2.20	$3.05	$2.60
3 "	$71.10	0	$2.35	$2.20	$3.05	$2.60
4"	$207.21 (1)	0	N/A	N/A	N/A	$2.60
6"	$414.33 (1)	0	N/A	N/A	N/A	$2.60

(1) Monthly minimum charges for 4" and 6" meters are specific to existing mobile home parks

Summary

The previous discussion provides an overview of results from the rate study undertaken on behalf of East Larimer County Water District. A more detailed description of the analyses and data utilized during the rate study is presented within the remainder of this report.

Chapter 1 - Introduction

Introduction

In March, 2013, the Water Consulting Group was retained by East Larimer County (ELCO) Water District to conduct a comprehensive water rate study. The rate study was authorized to determine the suitability of the District's water rates to fund anticipated capital improvements, fund acquisition and conversion of water rights, promote water conservation and insure equity between customer categories.

The District anticipates financing a portion of the cost of future capital projects through a bond issue tentatively planned in 2014. Before initiating a bond issue, the District felt it was necessary to review its current water rates.

District staff applied for and received a Water Conservation Implementation Grant from Colorado Water Conservation Board to fund 75% of the cost of the rate study.

Objectives

The rate study performed on behalf of the District addresses a number of objectives. Most of these objectives are common to all rate studies but some are unique to East Larimer County Water District. Objectives of this study are as follows:

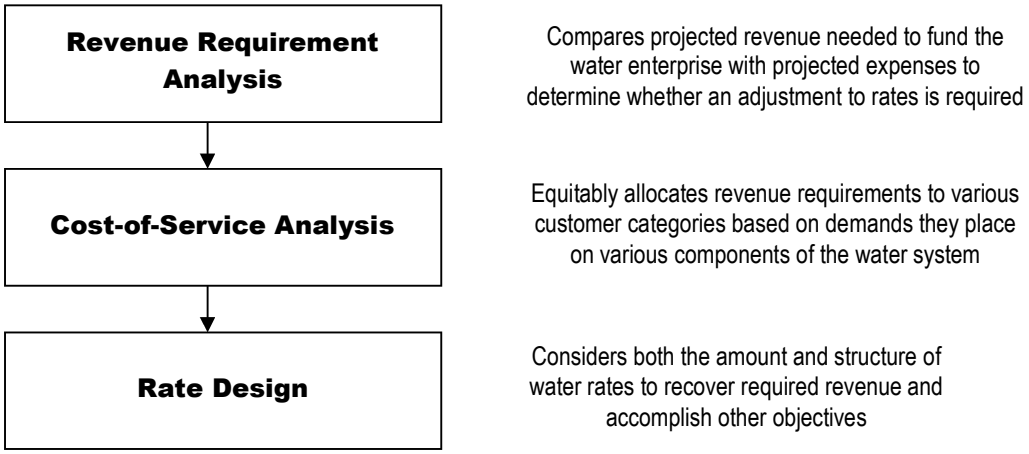
- Insure rates are adequate to fund the District's anticipated O&M expenses, system improvements, acquisition and conversion of water rights, development of raw water storage and debt service obligations.
- Develop a cash flow projection to identify long-term financial needs and determine the timing and amount of future water rate increases.
- Establish rates that prevent any category of customer from subsidizing another customer category.
- Encourage water conservation through rates that provide financial incentives for customers to reduce their water use.
- Develop rates that are relatively easy to administer, can be understood by customers and insure revenue stability.

Overview

This study develops cost based water rates through a comprehensive analysis of:
(1) revenue requirements, (2) cost-of-service, and (3) rate design. Figure 1.1 provides a representation and description of the three steps required to complete a rate study.

Figure 1.1

Analyses Performed in a Comprehensive Water Rate Study



The analyses performed in this rate study follow steps summarized above. In this study, the Water Consulting Group followed generally accepted rate making methodology established in American Water Works Association (AWWA) Manuals of Practice M1, "Principles of Water Rates, Fees, and Charges," and M54, "Developing Rates for Small Systems."

Chapter 2 - Water System

Background

East Larimer County (ELCO) Water District provides drinking water to homes and businesses within a 53 square mile service area located north and east of Fort Collins, Colorado. The District was created by court decree in 1962 after voters in Larimer and Weld Counties approved formation of the District. ELCO Water District is a political subdivision of the State of Colorado. It is governed and operated in accordance with the Colorado Special Districts Act by a directly elected five-member Board. Figure 2.1 shows the District service area and its treatment plant, pump stations and treated water storage reservoirs.

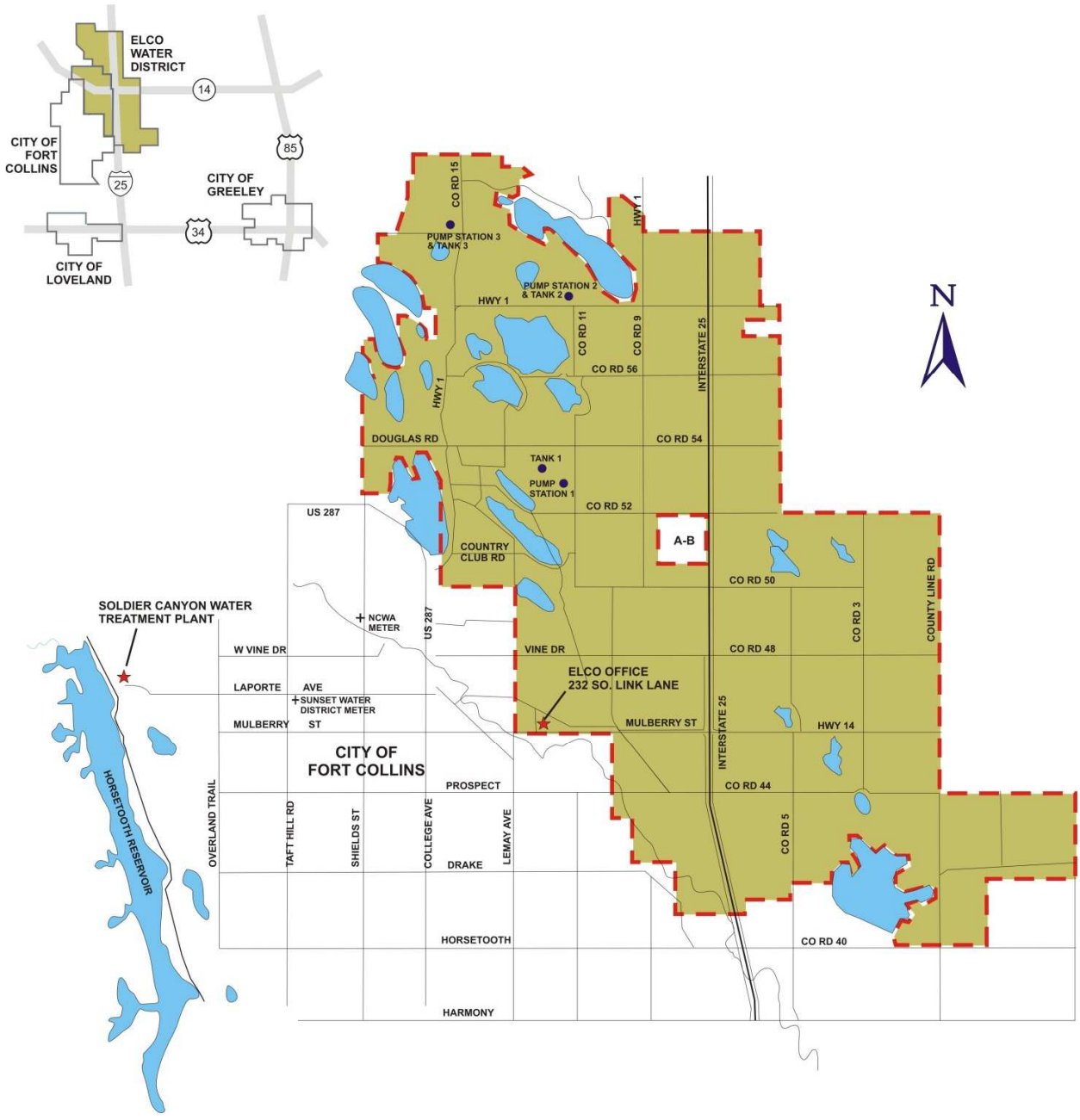
The Anheuser-Busch brewery is located within the service area of the District but it does not receive water from ELCO. The City of Fort Collins provides water service to the brewery.

Until the mid-1990s, ELCO served primarily low-density rural subdivisions, dairies, farmsteads, mobile home parks, motels, rural residential acreages, industrial parks, and two small wholesale water suppliers. Originally, ELCO customers were in subdivisions approved by Larimer County and located primarily along the Colorado Highway 14 corridor between I-25 and the Fort Collins city limits. More recently, ELCO's new customers have been located in developments approved by the City of Fort Collins rather than Larimer County.

Standards adopted by the City of Fort Collins create very different types of developments from those traditionally served by ELCO. In recent years, ELCO has issued water taps to a Home Depot, Wal-Mart, and new homes in several large City approved high-density residential developments. The minimum density currently allowed in new residential developments within the City of Fort Collins is five dwelling units per acre.

At this time, approximately 40% of the 53 square miles served by the District are within the corporate boundaries of Fort Collins or within the City's Growth Management Area (GMA). The GMA was established by agreement between Larimer County and the City of Fort Collins in 1980. The two entities entered into an intergovernmental agreement that required all land within the GMA to be annexed into the City before development or, if not eligible for annexation, developed under the City's density and service level standards and annexed as soon as it became eligible. It is projected that by the time the City is completely developed, 90% of the water provided by ELCO will be delivered to homes and businesses within the City of Fort Collins.

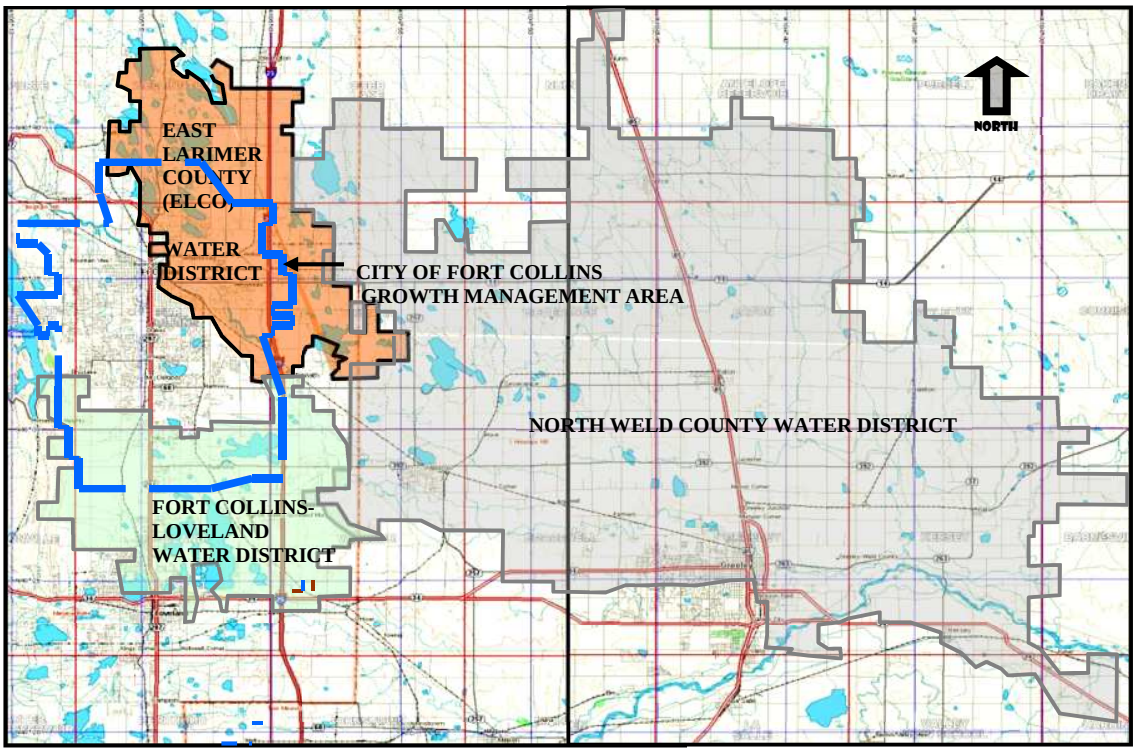
Figure 2.1
ELCO Water District Service Area



Source of Treated Water

ELCO is one of three water Districts that share ownership of the Soldier Canyon Filter Plant, a regional water treatment facility. Soldier Canyon provides treated water to ELCO, North Weld County and Fort Collins-Loveland Water Districts. Figure 2.2 shows the service area boundaries of the three Districts that own Soldier Canyon.

Figure 2.2
Service Areas of Special Districts Receiving Water from the Soldier Canyon Filter Plant



Soldier Canyon operates under an Amended Intergovernmental Agreement between the three Districts that own the plant. Executed in December, 1995, the Agreement establishes Soldier Canyon as a separate governmental entity created under the provisions of C.R.S. §29-1-203. The Agreement confirms an undivided one-third ownership in the facility by each District and establishes the method of payment for capital improvements and treated water. A Steering Committee consisting of two members from each District governs operations at the Soldier Canyon Filter Plant.

Through connections with the three Districts that own Soldier Canyon, water is also supplied through wholesale agreements to the towns of Windsor, Timnath, Severance, Eaton, Ault and Nunn.

Through wholesale connections with ELCO, the Northern Colorado Water Association (NCWA) and Sunset Water District also receive water from Soldier Canyon.

Source of Water Supply

East Larimer County Water District receives water from two sources: (1) the Colorado-Big Thompson (C-BT) project, and (2) native water rights that originate in the Poudre River basin.

C-BT facilities divert water from the western slope of Colorado to the Front Range to supplement the region's native water supply. It is the largest transmountain water diversion project in Colorado and was constructed by the Bureau of Reclamation between 1938 and 1957. It imports an average of 213,000 acre feet of water each year to northeastern Colorado for agricultural, municipal and industrial uses.

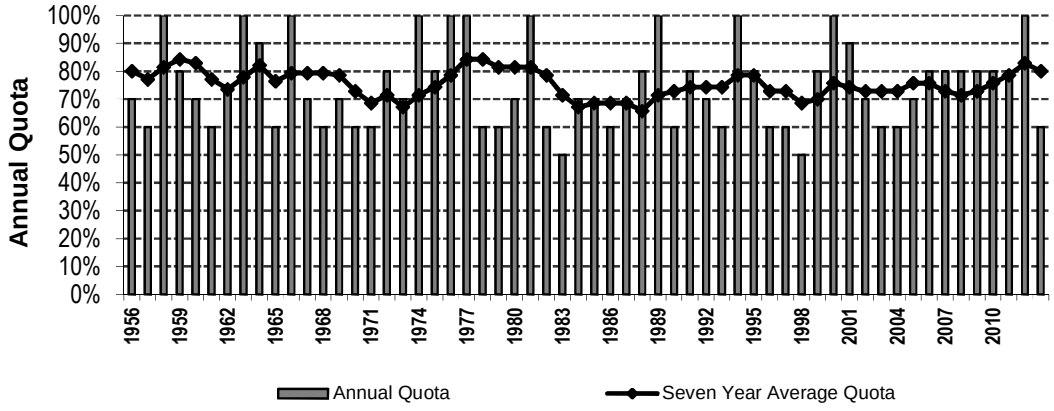
C-BT water originates in the Colorado River Basin and is pumped from Lake Granby into Grand Lake. Water flows from Grand Lake through the Adam's Tunnel to one of several Front Range reservoirs including Horsetooth Reservoir. That is the reservoir that supplies the Soldier Canyon Filter Plant, the facility that treats water for use in East Larimer County Water District.

The yield of C-BT units is established each year by the Board of the Northern Colorado Water Conservancy District through what is known as the quota-setting process. The basis for setting the quota is to attempt to make every year look like an average year. The Board examines the region's native supplies and local storage before declaring a quota that meets the supplemental need of the region as a whole. As a result, the quota is typically lower in wet years because native supplies are plentiful and local reservoirs are full, so less C-BT water is required to satisfy water demands.

In fifty-seven years of operation, the average C-BT yield has been 0.75 AF per unit. The commonly used average quota is 70 percent. The yield has never been less than 0.50 AF per unit (50 percent quota) or more than 1.0 AF per unit (100 percent quota). The annual quota established by the Northern Colorado Water Conservancy District Board since 1956 is shown in Figure 2.3.

Figure 2.3

C-BT Quota (1956-2013)



In the late 1990s, ELCO began obtaining a variety of water rights originating in the Poudre River basin. At that time, ELCO anticipated the day C-BT water would be difficult and costly to acquire as it became wholly owned by cities, districts and industrial water users.

Delivery of Poudre River water to the Soldier Canyon Filter Plant became possible upon completion of the Pleasant Valley Pipeline in 2004. The Pleasant Valley pipeline is an 8 ½ mile raw water transmission line funded by the Soldier Canyon Filter Plant, City of Fort Collins and City of Greeley. The entities that funded the pipeline entered into long-term contracts with Northern Colorado Water Conservancy District to construct and operate the Pleasant Valley Pipeline.

Table 2.1 lists all water supplies owned by ELCO at the end of 2012. Some of the native water rights shown in Table 2.1 need to be converted from agricultural to municipal use. Until converted in Water Court, those water rights are not available for delivery to the Solider Canyon Filter Plant.

Table 2.1

Summary of Water Supplies Owned or Available to ELCO Water District (12/31/2012)

Water Rights	Shares or C-BT Units Owned	Average Delivery (AF/year)	Dry-Year Delivery (AF/year)
Colorado Big Thompson (C-BT) Project	3,426	2,398	1,713
North Poudre Irrigation Company	575	1,506	1,150
Divide Canal Company Class A*	22	41	25
New Cache La Reservoir Company	24	72	72
Water Supply and Storage Company (WSSC)	16.55	1,432	1,217
WSSC (inactive or unchanged)	8	692	588
Jackson WSSC unchanged	0.2552	22	19
John R Brown (Case No 05W264)	0.25	72	72
John R Brown (unchanged)	0.25	51	51
Divide Canal Company Class B Creek)	0.25	65	36
Jackson Ditch	0.62	129	113
Coy Ditch (35% interest)	100%	118	118
Future Coy Ditch (15%) interest)	100%	51	51
98CW435 Pleasant Valley Pipeline water right	0.25	144	-
Lake Canal Reservoir	3		
New Mercer Ditch	0.063	2	2
Larimer County No. 2	0.25	11	8
TOTAL		**6,806**	**5,235**

Customer Categories

For billing and accounting purposes, East Larimer County Water District maintains six customer categories: Residential, Commercial, Irrigation-Only, Multi-Family, Mobile Homes and Wholesale. A breakdown of the number of customers in each customer category as of March, 2013 is shown in Table 2.2.

Table 2.2

Summary of Customers by Category (March, 2013)

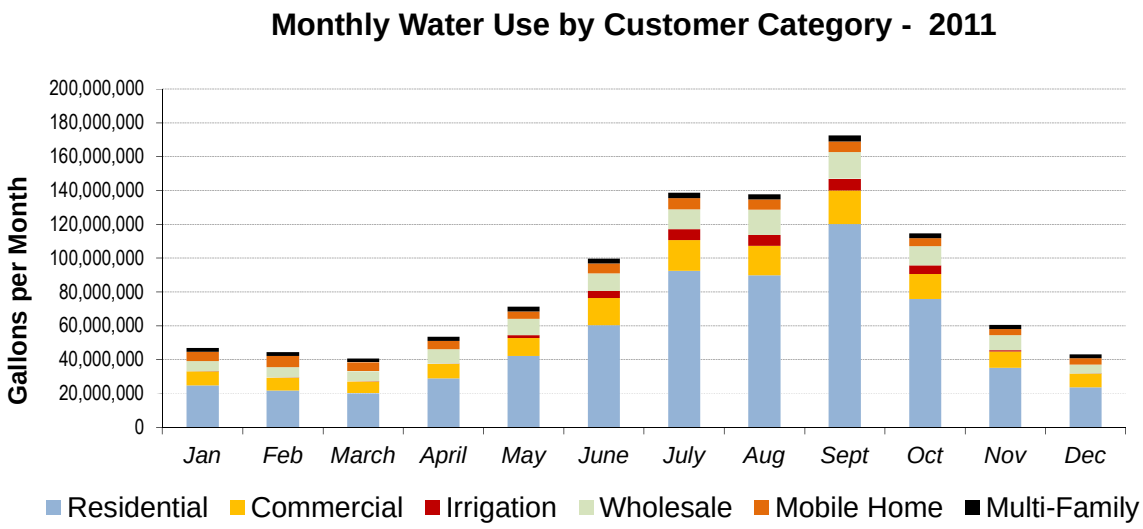
Customer Category	Number of Accounts
Residential	5,633
Commercial	431
Irrigation-Only	65
Multi-Family	144
Mobile Homes	14
Wholesale	2
Total	6,289

Water Use

Water use data for 2011 was used to estimate future water demands, calculate water rate revenue and develop water rate alternatives. Data from 2011 was selected for this analysis because that year had a fairly typical pattern of summer weather. Unlike the summer of 2012, the summer of 2011 was not unusually hot and there were measurable rains scattered at regular intervals throughout the summer months.

Figure 2.4 shows the amount of water used per month in each customer category during 2011. Temperature and rainfall during summer weather months has the greatest influence on District water use since the majority of residential customers use potable water to irrigate their lawns and landscaping. Figure 2.4 illustrates how water use increases during summer months due to irrigation demands.

Figure 2.4

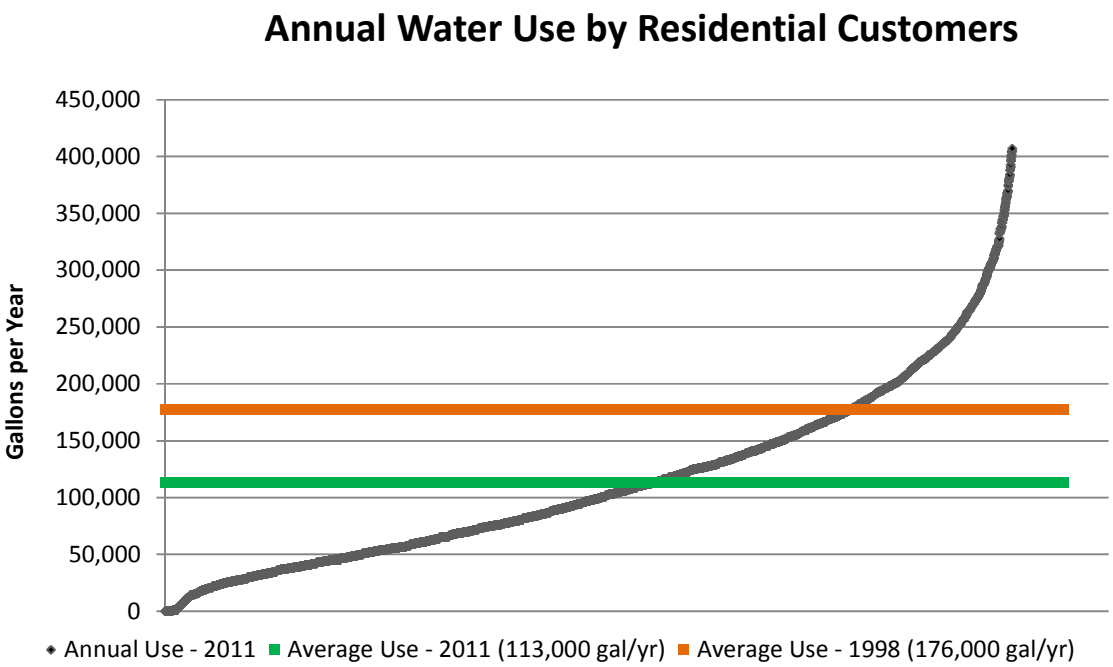


The District historically served large residential lots in rural, county-approved subdivisions. Owners of many of those residential lots installed and maintained large lawns which required significant amounts of water during summer months. In recent years, residential lots served by ELCO have been developed in subdivisions within the City of Fort Collins. The minimum density allowed in new residential developments in Fort Collins is five dwelling units per acre. That policy results in much smaller residential lots with smaller lawns than the residential lots historically served by ELCO.

Figure 2.5 illustrates the wide range of water use by single family residential customers during 2011. Figure 2.5 also shows the annual water use of an average residential customer in 2011 was 113,000 gallons per year. The average annual water use of residential customers in 1998 was 176,000 gallons per year, 56% more than the amount of water used by the average residential customer in 2011.

The reduction in residential water use in recent years is primarily a result of smaller lots but the District's policies and programs have also helped reduce outdoor water use. Some of the new residential developments served by ELCO have installed raw water irrigation systems that deliver non-potable irrigation water to each lot. Customers in those developments use significantly less potable water on an annual basis since their outdoor water needs are met with non-potable water.

Figure 2.5



To equitably allocate costs to customer categories, it is necessary to identify customers with similar water use characteristics. Ideally, customers with similar water use during peak demand periods are in the same customer category.

Figure 2.6 shows the monthly water use of all customers that are not classified as residential: commercial, irrigation-only, wholesale, mobile home and multi-family.

Figure 2.6

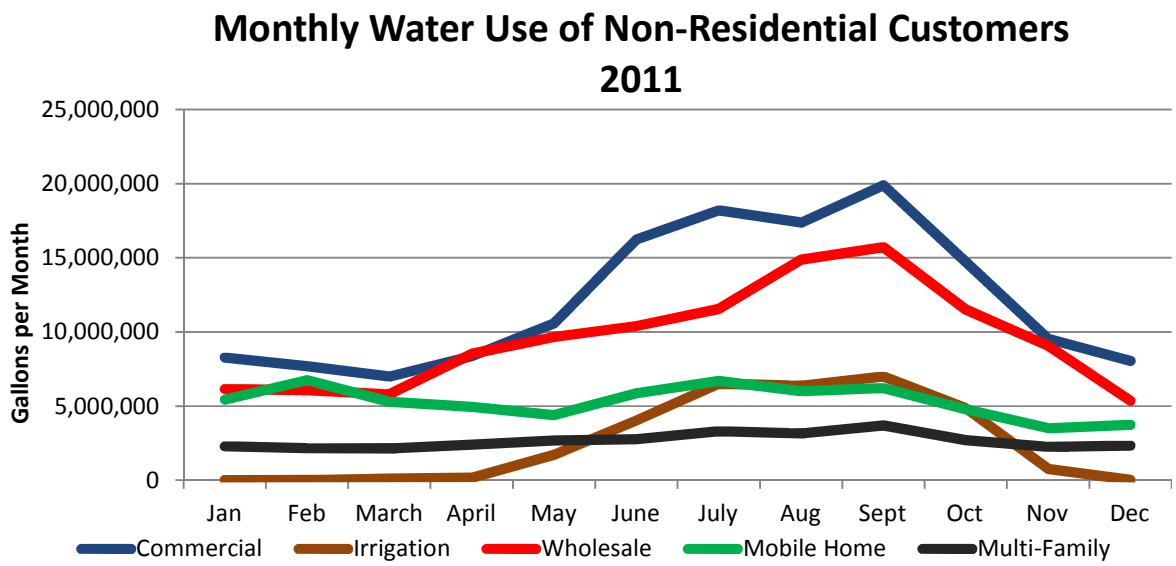


Figure 2.6 shows that the water use of multi-family and mobile home customers does not vary much from month to month. Unlike customers in other categories, mobile home and multi-family accounts do not have much of a summer peak.

In many cases, multi-family developments have separate irrigation water services so summer irrigation demand is not reflected in the water use of multi-family accounts. Some of the larger mobile homes served by ELCO also have non-potable systems to supply irrigation demands. Many mobile home pads are too small for residents to have much if any turf.

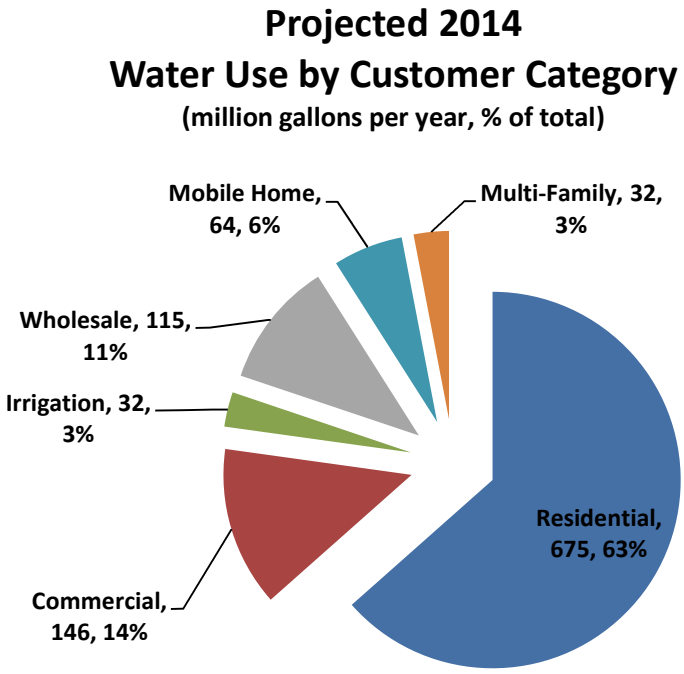
For these and other reasons, mobile home and multi-family accounts do not generate the peak demands typical of customers in other categories. The relatively consistent water use of mobile home and multi-family customers relieves those customers of the responsibility to pay as much for services and facilities related to peak water demands. That will become more evident as the District's revenue requirements are allocated to different customer categories.

Test Year

To estimate future water rate revenue, a test year needs to be selected. In rate-making, the test year is typically the first calendar year in which new rates are expected to take effect.

In this analysis, 2014 will be used as the test year. Residential water demands for 2014 were calculated by using actual demands in 2011 and increasing water use in that category by the number of actual and projected new residential accounts multiplied by the average water use of existing residential accounts. Actual 2011 water demands were used for other customer categories. Adjustments were made for the few commercial accounts added in 2012 and 2013. The projected 2014 water use in each customer category is shown in Figure 2.7.

Figure 2.7



Preliminary estimates of expenditures developed by staff during preparation of the Cash Flow Projection were used to estimate revenue requirements for the test year. Revenue requirements for the District are described in greater detail in Chapter 3.

Customer demands derived from projected 2014 water use were utilized to calculate the cost-of-service for each customer category. Cost-of-service calculations are summarized in Chapter 4.

Water rate alternatives designed to generate the amount of revenue required in 2014 from each customer category are summarized in Chapter 5 of this report.

Chapter 3 - Revenue Requirements

Study Period

The initial step in calculating revenue requirement for East Larimer County Water District was establishing a study period or time frame in which to perform the analysis. A five-year study period (2014 – 2018) was selected as the time frame for this rate study.

A multi-year study period is generally recommended to identify any major expenses that may be on the horizon. Anticipating major financial commitments in the near future allows the District to begin planning for necessary rate adjustment sooner rather than later. Proactively planning for and phasing in future rate adjustments decreases the burden to existing customers that may result from significant rate increases in any one year.

Methodology

A review of the District's water revenue requirements is the next step in the rate study process. Analysis of revenue requirements determines the overall funding needs of the District. From this analysis, a determination can be made as to whether water rate adjustments are needed to adequately fund capital improvements, reserves, O&M and debt service obligations.

To determine the water revenue requirements over the study period, a 10-year cash flow projection was prepared by District staff. The consultant provided a template for use by staff in preparing the cash flow projection.

Considerable effort was made to complete the cash flow projection, which resulted in a better overall understanding and definition of the District's funds and allocation of those funds. The cash flow projection was reviewed and approved by the District Board prior to initiation of this analysis. The first five years of the final cash flow projection used to develop revenue requirements over the study period is included in Appendix A.

The District's cash flow projection anticipates implementation of annual water rate increases to fund anticipated capital projects and debt service associated with existing and planned bond issues. The cash flow projection also anticipates adoption of a new storage fee of $1,000 paid by each new residential customer. The storage fee will help fund development and acquisition of water rights and raw water storage projects necessary to improve the reliability of the District's native water supplies. Also reflected in the cash flow projection is the addition of approximately 170 new residential customers per year and a $5,000,000 bond issue in 2014. Other assumptions used in the cash flow projection are summarized on page 1 of Appendix A.

Projected water sales revenue required to fully fund the District and percentage increases over the study period are summarized in Table 3.1.

Projected water sales revenue during the study period is based on the water use of District customers in 2011. As discussed earlier, 2011 water use is representative of demands expected during a typical year which is most appropriate for rate-making.

Typical water demands are not necessarily best for budgeting and financial planning purposes. Projected water use in a year with slightly lower water demands is more prudent for budgeting. Revenues based on such a year are more conservative and guard against water sales revenue falling short of projections in a year with an unusually cool, wet summer.

In the most simplified explanation of rate-making, customer water use multiplied by rates generates water sales revenue. If water use data from a wet year were used in rate-making, new rates would be too high since irrigation demands decline in summer months with higher than average rainfall. If water use data from a dry year were used to develop rates, rates would be too low since demands are greater than average due to hot, dry weather and associated increases in irrigation. Weather experienced during 2012 is an example of such an atypical year. The District's actual water sales for 2012 was much higher than budget amounts.

Projected water sales revenue from water customers and percentage increases in water sales projected in the District's cash flow projection are summarized in Table 3.1. The 2.4% projected rate increase in 2014 for general customers was calculated in this analysis. A 9% rate increase implemented on July 1, 2013 reduced the amount of the projected rate increase needed for 2014.

Table 3.1

Projected Rate Increases and Water Sales Revenue from General Customers

	Projected 2014	Projected 2015	Projected 2016	Projected 2017	Projected 2018
Total Metered Sales from General Customers	$ 3,556,168	$ 3,933,122	$ 4,302,836	$ 4,664,274	$ 5,056,073
Increase in Metered Sales from Growth	2.6%	2.6%	2.4%	2.4%	2.4%
Projected Increase in Rates for General Customers	2.4%	8.0%	7.0%	6.0%	6.0%

Water sales revenue shown in Table 3.1 represents total annual revenue generated from monthly minimum charges and usage charges paid by all retail customers. Wholesale revenue is not reflected in Table 3.1.

Contracts between ELCO and its two wholesale customers, Northern Colorado Water Association (NCWA) and Sunset Water District stipulate that charges for water be based upon AWWA cost-of-service methodology. That contractual provision results in wholesale rate increases that are different from rate increases applied to all other customer categories. AWWA cost-of-service methodology was utilized in this analysis to calculate equitable rates for NCWA and Sunset. Wholesale rates and the methodology used to determine those rates are discussed in detail in Chapter 4.

Water Revenue

The revenue requirement calculation is based on projections of water sales revenue derived from all customer categories. This calculation requires developing projected monthly bills for each customer category based on historical water use and an estimate of growth in the number and type of customers served. This method of independently calculating water rate revenue insures consistency in data used throughout the rate study.

The amount of revenue requirements recovered through rates is reduced by the availability of funds generated from other sources. Revenue is generated from renting surplus raw water, fees assessed for final reads, customer transfers, turn-on and turn-off of water service, returned checks, fire sprinkler systems, construction water and fire hydrants. All revenue generated from these sources reduces the amount of water sales revenue that needs to be collected from retail customers. All sources of operating revenue projected during the study period are summarized in Table 3.2.

Table 3.2

Summary of Water Operating Revenue

	Projected 2014	Projected 2015	Projected 2016	Projected 2017	Projected 2018
OPERATING REVENUES					
Unmetered Sales / Standby Charges	$ 9,720	$ 10,498	$ 11,232	$ 11,906	$ 12,621
Conservation Charges	$ 204,155	$ 208,238	$ 212,403	$216,651	$ 220,984
Hydrant Metered Water	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Fireline Protection Charges	$ 15,718	$ 15,718	$ 15,718	$ 15,718	$ 15,718
Ag Rental Water Sales	$ 57,500	$ 57,500	$ 57,500	$ 57,500	$ 57,500
Other Miscellaneous Fees	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500
Meter Inspection Fees	$ 4,167	$ 4,275	$ 4,049	$ 4,146	$ 4,245
Subtotal Operating Revenues	$ 312,760	$ 317,729	$ 322,402	$ 327,421	$ 332,568
NON-OPERATING REVENUES					
Customer Service Charges	$ 47,250	$ 49,613	$ 52,093	$ 54,698	$ 57,433
Change of Use Fees	$ 43,737	$ 44,874	$ 45,123	$ 65,279	$ 66,846
Plan Review Fees	$ 500	$ 500	$ 500	$ 500	$ 500
Miscellaneous (Scrap Metal, Rebates)	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Project Construction Fees	$ 5,250	$ 5,250	$ 5,250	$ 5,250	$ 5,250
Boxelder Meter Reading Fees	$ 2,400	$ 2,400	$ 2,400	$ 2,400	$ 2,400
Interest Income	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000
Bond IMA Gain / Loss	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
Bond Proceeds	$ 5,000,000				
Subtotal Non-Operating Revenues	$5,150,137	$ 153,636	$ 156,366	$ 179,127	$ 183,428
Total Non-Rate Revenue	**$ 5,462,896**	**$ 471,365**	**$ 478,768**	**$ 506,548**	**$ 515,996**

Operation and Maintenance Expenses

Operation and maintenance (O&M) expenditures include all costs associated with administration, engineering, Soldier Canyon Filter Plant, Water Resources and the District's storage tanks, pump stations, transmission and distribution lines, meters and services. Also included are costs for performing water quality tests, C-BT and ditch company assessments, meter reading and customer billing. These and other related costs are necessary to support the water enterprise and are met with operating revenues as costs are incurred. All projected O&M expenses over the study period are summarized in Table 3.3.

Table 3.3

Summary of Expenditures for O&M

Expenditure Category	Projected 2014	Projected 2015	Projected 2016	Projected 2017	Projected 2018
Administration	$1,124,151	$1,179,256	$1,274,321	$ 1,300,130	$ 1,401,294
Operations	$2,419,278	$2,517,730	$2,620,845	$ 2,728,664	$ 2,740,034
Total O & M	**$3,543,429**	**$3,696,985**	**$3,895,166**	**$ 4,028,794**	**$ 4,141,327**

Debt Service

All of the District's outstanding bonds were consolidated and refinanced in 2009. Currently, the 2009 Series A and B bonds are the District's only debt obligation. A $5,000,000 bond issue is projected for mid-year 2014 to fund capital projects included in the District's Capital Improvement Plan (CIP). Annual payments on existing and projected bond issues are shown in Table 3.4

Table 3.4

Summary of Debt Service Obligations

	Projected 2014	Projected 2015	Projected 2016	Projected 2017	Projected 2018
Projected 2014 Bond Issue	$ 175,214	$ 350,428	$ 350,428	$ 350,428	$ 350,428
SERIES A BONDS ADMIN FEE	$ 400	$ 400	$ 400	$ 500	$ 500
SERIES B BOND ADMIN FEE	$ 400	$ 400	$ 400	$ 500	$ 500
2009-A INTEREST EXPENSE	$ 150,005	$ 149,730	$ 149,430	$ 149,130	$ 148,805
2009-B INTEREST EXPENSE	$ 94,125	$ 85,188	$ 75,288	$ 65,088	$ 53,550
SERIES 2009-A BOND PRINCIPLE	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000
SERIES 2009-B BOND PRINCIPLE	$ 325,000	$ 330,000	$ 340,000	$ 355,000	$ 365,000
Total Debt Service	**$ 755,144**	**$ 926,147**	**$ 925,946**	**$ 930,646**	**$ 928,783**

Water Capital Improvements

East Larimer County Water District has developed a comprehensive water Capital Improvement Plan (CIP) to address current and future water system capital needs and the development of water resources. Capital improvements planning is the multiyear scheduling of improvements accompanied by the intended funding sources and strategies for completing those improvements.

Capital improvements planned for the future include system improvements, enhancements, replacements, restorations and expansions. These projects will be funded by a combination of water sales revenue, bond proceeds, plant investment fees, storage fees and other sources of non-operating revenue. Capital projects planned over the study period are shown in Table 3.5.

Table 3.5

5-Year Capital Improvement Plan

	Projected 2014	Projected 2015	Projected 2016	Projected 2017	Projected 2018
Water Rights					
Coy Ditch Engineering	$ 50,000	$ 50,000			
Coy Ditch Legal	$ 25,000	$ 25,000			
Jackson Ditch Engineering 08CW277	$ 16,667	$ 16,667			
Jackson Ditch Legal 08CW277	$ 20,833	$ 8,333			
JR Brown Ditch Legal	$ 6,250				
Exchange 07CW328	$ 7,500				
Purchased Water Rights-Change	$ 516,604	$ 250,000	$ 250,000	$ 250,000	$ 250,000
WSSC Change of Use Engineering			$ 7,755	$ 7,755	$ 7,755
WSSC Change of Use Legal			$ 15,565	$ 15,565	$ 15,565
WSSC Change of Use Legal			$ 31,680	$ 31,680	$ 31,680
Storage Alternatives (Acquisitions)	$ 233,773	$ 233,772	$ 233,772	$ 233,772	$ 233,772
PVP Pre-Sed Basin Construction	$ 218,905				
Filter Plant Expenses					
Investment in Soldier Canyon	$ 50,000	$ 52,500	$ 55,125	$ 57,881	$ 60,775
Soldier Canyon Plant Expansion	$ 352,800	$ 1,587,600	$ 1,587,600		
Soldier Canyon Equipment	$ 48,342	$ 24,570	$ 33,264	$ 36,750	$ 16,800
Storage Alternatives					
Overland Trail Ponds	$ 275,000	$ 529,552	$ 279,455	$ 118,339	$ 314,848
Land & Right-of-Way					
NEWT 2 Easement Acquisition	$ 162,000	$ -	$ -	$ -	$ -
Transmission & Distribution System					
Transmission & Distribution System	$ 427,680	$ 270,600	$ 865,820	$ 444,620	$ 362,120
NEWT 2 Design & Construction	$ 1,850,000	$ -	$ -	$ -	$ -
Equipment for Admin & Operations					
Office Furniture & Equipment	$ -	$ -	$ 5,500	$ -	$ -
Field Equipment	$ -	$ -	$ 70,000	$ 70,000	$ -
Programs & Updates	$ 6,500	$ 6,565	$ 6,631	$ 6,697	$ 6,764
Transportation Equipment	$ 25,000	$ -	$ 20,000	$ 50,000	$ 50,000
Pump Station Improvements					
Scada System	$ 6,000	$ 6,600	$ 7,260	$ 7,986	$ 8,785
Pump Station Improvement Project	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000
Total Capital Project Expenses	**$ 4,313,854**	**$ 3,076,759**	**$ 3,489,677**	**$ 1,346,046**	**$ 1,454,114**

On its own, ELCO would not be funding all the projects shown in Table 3.5. In some cases, projects included in ELCO's Capital Improvement Plan are not necessarily needed by the District at this time. Some projects are driven by partnership agreements and/or opportunities to purchase capacity in joint projects. By purchasing the incremental capacity in some joint projects, ELCO will be able to obtain capacity at a fraction of the cost of a similar project funded solely by the District. Long-term cost savings and the need to avoid lost opportunities are driving some of the District's planned capital projects.

Revenue Requirements

Having determined the amount of revenue required to fund O&M and capital improvements, total system revenue requirements can be calculated. This amount is shown in Table 3.6 and becomes the basis for allocating costs to customer categories and designing water rates.

Table 3.6

Revenue Requirements

Expenditure Category	Projected 2014	Projected 2015	Projected 2016	Projected 2017	Projected 2018
Operation and Maintenance	$ 3,543,429	$ 3,696,985	$ 3,895,166	$ 4,028,794	$ 4,141,327
Debt Service Requirements	$ 755,144	$ 926,147	$ 925,946	$ 930,646	$ 928,783
Capital Improvements	$ 4,313,854	$ 3,076,759	$ 3,489,677	$ 1,346,046	$ 1,454,114
Total Non-Operating Expenses	$8,612,428	$7,699,891	$8,310,789	$6,305,486	$6,524,225
NON-OPERATING REVENUE					
Tap Fees (Current Year)	$ 1,268,949	$ 1,124,451	$ 1,064,942	$ 1,090,500	$ 1,116,672
Storage Fees	$ 166,660	$ 170,993	$ 161,944	$ 165,830	$ 169,810
Total Non-Operating Revenue	$1,435,609	$1,295,444	$1,226,885	$1,256,331	$1,286,482
Total Cash Required	$7,176,818	$6,404,446	$7,083,904	$5,049,155	$5,237,742
ADEQUACY OF EXISTING RATES					
Total Cash Requirement	$ 7,176,818	$ 6,404,446	$ 7,083,904	$ 5,049,155	$ 5,237,742
Wholesale Revenue – NCWA	$ 126,433	$ 128,962	$ 131,541	$ 131,541	$ 131,541
Wholesale Revenue - Sunset	$ 20,113	$ 20,515	$ 20,926	$ 20,926	$ 20,926
Non-Rate Revenue (Including $5M bond issue)	$ 5,462,896	$ 471,365	$ 478,768	$ 506,548	$ 515,996
Water Sales Revenue from General Customers	$ 3,556,168	$ 3,933,122	$ 4,302,836	$ 4,664,274	$ 5,056,073
(Shortfall) or Surplus	$ 1,988,792	$ (1,850,483)	$(2,149,834)	$ 274,133	$ 486,793
% Shortage(-) or Surplus	28%	-29%	-30%	5%	9%

Table 3.6 shows the District is expected to contribute $1,988,792 to its reserves in 2014. That sum represents the unspent portion of the $5,000,000 bond issue planned for 2014. All remaining bond proceeds plus a portion of the District's current reserves will be spent in 2015 and 2016 before a reduction in expenditures for capital improvements in 2017 and 2018 allows the District to start adding to its reserves.

Water sales revenue from general customers is projected to total $3,556,168 in 2014, the test year utilized in this analysis. That amount will become the target for water sales revenue calculated in the cost-of-service analysis discussed in Chapter 4.

Chapter 4 - Cost-of-Service

The total cash requirement shown in Table 3.6 represents the projected cost of providing water service to District customers during the study period. These figures are used to allocate costs to the various customer categories in proportion to the demands they place on the water system. The concept of proportionate allocation to customer categories implies that the allocation process consider not only the quantity of water used but also the rate of use. In this study, rates that customers use water are labeled "peak demands."

There are measurable costs associated with facilities required to meet peak demands. These costs need to be allocated appropriately so that customers with higher rates of water use pay proportionately more in recognition of the peak demands they place on the water system.

Functional Cost Components

The water system consists of various facilities designed and operated to fulfill one or more specific functions. To provide adequate service to customers at all times, the water system must be capable of providing the total amount of water used in any given year as well as the amount of water required on any given day or time of day to supply peak rates of use.

Identification of costs by functional components provides a means for distributing such costs to customer categories on the basis of their respective responsibilities for each particular type of service. In this rate study, costs are assigned to four functional cost components:
(1) base costs, (2) extra capacity costs, (3) customer costs and, (4) meter costs.

Base costs are those O&M and capital costs associated with providing water at a constant rate of use or average day use. C-BT and ditch company assessments are examples of O&M expenditures assigned totally to base costs. Assessments paid to the Northern Colorado Water Conservancy District or Water Supply and Storage Company do not vary with the rate of water use by District customers.

Extra capacity costs represent those O&M and capital costs incurred to meet customer peak demands in excess of average day use. The cost of operating the Soldier Canyon Filter Plant and O&M costs associated with the water transmission and distribution system are examples of costs that vary with the rate of water use. Extra capacity costs are further segregated into costs associated with supplying peak day and peak hour demands.

Customer and meter costs include expenditures independent of water use. The cost of meter reading, billing, collections, accounting, software maintenance and IT support are included in customer costs and are the same for each customer regardless of water use. Meter costs include expenditures for maintaining, testing, repairing and replacing meters and services. Those costs are allocated based on meter size or meter capacity and are proportionally greater for customers with larger water meters. Customer costs and meter costs are recovered through monthly minimum charges and vary with meter size.

Determination of Allocation Percentages

Allocation percentages used to assign costs to the applicable function are determined by utilizing historical water demand. Based on analysis of water use in 2011 and system-wide peaking factors utilized in the "Water System Master Plan" completed in November, 2012, the water demands and peaking factors shown in Table 4.1 were developed for the different customer categories served by ELCO.

Table 4.1

Calculation of Peak Demands and Peak Factors for Customer Categories

Customer Class	Peak-Day Factor from 2012 Master Plan	Peak-Hour Factor from 2012 Master Plan	2011 Average Day Demand (gal)	2011 Average Day Peak Month (gal)	Estimated Peak Hour Demand (gal)	Estimated Peak Day Factor	Estimated Peak Hour Factor
Residential	2.17	2.97	1,741,077	3,946,970	5,407,350	2.27	3.11
Commercial	2.17	2.97	399,992	654,207	896,263	1.64	2.24
Irrigation Only	2.17	2.97	86,696	230,397	315,645	2.66	3.64
Multi-Family	2.17	2.97	87,490	121,906	167,011	1.39	1.91
Mobile Home	2.17	2.97	174,573	221,718	303,754	1.27	1.74
NCWA	1.71	2.34	277,104	473,848	649,172	1.71	2.34
Sunset	1.90	2.60	37,258	70,789	96,981	1.90	2.60
			2,804,189	5,719,835	7,836,175		

Based on water demands in 2011, allocation percentages shown in Table 4.2 were calculated. These percentages were used to allocate O&M costs to base and extra capacity functions. Assigning functional costs to different customer categories is necessary to develop unit costs of capacity and perform the cost-of-service calculations.

Table 4.2

Calculation of Allocation Percentages

Functional Cost Component	Base	Extra Capacity	
		Peak Day	Peak Hour
Base	100.0% (1)		
Peak Day	49.0% (2)	51.0% (3)	
Peak Hour	35.8% (4)	37.2% (5)	27.0% (6)

(1) 2,804,189 / 2,804,189
(2) (5,719,835 – 2,804,189) / 5,719,835
(3) 2,804,189 / 5,719,835
(4) 2,804,189 / 7,836,175
(5) (5,719,835 – 2,804,189) / 7,836,175
(6) (7,836,175 – 5,719,835) / 7,836,175

Wholesale Customer Costs

ELCO serves two wholesale customers: Northern Colorado Water Association (NCWA) and Sunset Water District. Contracts between ELCO and their two wholesale customers are similar in that rates for both are determined by a periodic cost-of-service analysis. This analysis satisfies that contractual condition.

NCWA and Sunset are treated the same way in this analysis. Costs are assigned strictly based on water demands, the number of bills they receive and the size of their master meters. Costs that do not apply to the wholesale customers are instead allocated to all other customers.

Both wholesale customers own their water rights and transfer those water rights for use by ELCO each year. They pay assessments on the water rights they own, bill their own customers, maintain their own separate water distribution systems and are each served through a master meter. ELCO has no responsibility for acquiring and developing water rights to serve wholesale customers. ELCO does not read individual meters or send bills to individual customers. There is little effort required on the part of ELCO to administer existing wholesale accounts. All these factors are taken into consideration when allocating costs to ELCO's wholesale customers.

To accurately allocate costs to retail and wholesale customers, this analysis assigns costs to one of four cost categories. "Joint" costs are those that are common to both retail and wholesale customers. All customers including wholesale customers are allocated joint costs. "Non-Wholesale" costs are allocated to all customers except NCWA and Sunset. "NCWA" costs are unique to that wholesale customer so 100% of those costs are assigned to NCWA. The same is true for "Sunset" costs; Sunset Water District pays 100% of costs so allocated.

Allocations to different cost categories were first developed in a March, 2008 study by Red Oak Consulting. That study, titled "2007 Plant Investment Fee, Financial Plan, and Rate Update," allocated costs to joint customers, non-wholesale customers, NCWA and Sunset. The same system of allocation was utilized in this analysis to avoid deviations from results of the earlier study.

Allocation of O&M Expenses

O&M expenses for the test year were allocated to functional cost components based on the allocation percentages shown in Table 4.2 and customer type (Joint, Non-Wholesale, NCWA and Sunset.) The following tables list O&M costs assigned to the different customer types.

Table 4.3

Allocation of Joint O&M Costs to Customer Service Characteristics

Item	Total	Base	Max-Day	Max-Hour	Customer	Meter
Supply	($141,104)	$ (141,104)	$ -	$ -	$ -	$ -
Transmission	$50,709	$ 18,146	$ 18,867	$ 13,695	$ -	$ -
Treatment	$708,402	$ 347,299	$ 361,103	$ -	$ -	$ -
Storage	$0	$ -	$ -	$ -	$ -	$ -
Pumping	$16,675	$ 8,175	$ 8,500	$ -	$ -	$ -
Distribution	$84,090	$ 30,092	$ 31,288	$ 22,710	$ -	$ -
Meter	$84,029	$ -	$ -	$ -	$ -	$ 84,029
Administration	$514,261	$ -	$ -	$ -	$ 514,261	$ -
Total	$1,317,062	$262,608	$419,758	$36,405	$514,261	$84,029

Table 4.4

Allocation of Non-Wholesale O&M Costs to Customer Service Characteristics

Item	Total	Base	Max-Day	Max-Hour	Customer	Meter
Supply	$318,674	$ 318,674	$ -	$ -	$ -	$ -
Transmission	$264,161	$ 94,531	$ 98,288	$ 71,343	$ -	$ -
Treatment	$124,558	$ 61,065	$ 63,493	$ -	$ -	$ -
Storage	$0	$ -	$ -	$ -	$ -	$ -
Pumping	$94,357	$ 46,259	$ 48,098	$ -	$ -	$ -
Distribution	$438,057	$ 156,760	$ 162,990	$ 118,307	$ -	$ -
Meter	$460,066	$ -	$ -	$ -	$ -	$ 460,066
Admin	($12,379)	$ -	$ -	$ -	$ (12,379)	$ -
Total	$1,687,495	$677,289	$372,869	$189,650	($12,379)	$460,066

Table 4.5

Allocation of NCWA O&M Costs to Customer Service Characteristics

Item	Total	Base	Max-Day	Max-Hour	Customer	Meter
Supply	$0	$ -	$ -	$ -	$ -	$ -
Transmission	$19,462	$ 6,964	$ 7,241	$ 5,256	$ -	$ -
Treatment	$0	$ -	$ -	$ -	$ -	$ -
Storage	$0	$ -	$ -	$ -	$ -	$ -
Pumping	$0	$ -	$ -	$ -	$ -	$ -
Distribution	$32,274	$ 11,549	$ 12,008	$ 8,716	$ -	$ -
Meter	$13,178	$ -	$ -	$ -	$ -	$ 13,178
Admin	$0	$ -	$ -	$ -		$ -
Total	$64,913	$18,514	$19,250	$13,972	$0	$13,178

Table 4.6

Allocation of Sunset O&M Costs to Customer Service Characteristics

Item	Total	Base	Max-Day	Max-Hour	Customer	Meter
Supply	$0	$ -	$ -	$ -	$ -	$ -
Transmission	$3,317	$ 1,187	$ 1,234	$ 896	$ -	$ -
Treatment	$0	$ -	$ -	$ -	$ -	$ -
Storage	$0	$ -	$ -	$ -	$ -	$ -
Pumping	$0	$ -	$ -	$ -	$ -	$ -
Distribution	$5,501	$ 1,968	$ 2,047	$ 1,486	$ -	$ -
Meter	$2,246	$ -	$ -	$ -	$ -	$ 2,246
Admin	$0	$ -	$ -	$ -	$ -	$ -
Total	$11,063	$3,155	$3,281	$2,381	$0	$2,246

Allocation of Capital Costs and Debt Service

Capital costs include expenditures for capital improvements funded from water rates, bond issues and other sources of long-term financing. Capital project costs and debt service payments for the test year were allocated to functional cost components in the same manner as O&M expenses. That is, capital projects and associated debt service payments support specific, identifiable services provided by the District. Once classified by the type of service provided, capital projects costs and debt service payments were allocated to functional cost components as shown in Table 4.7.

Table 4.7

Allocation of Capital Improvements, Debt Service and Non-Operating Revenue

Capital	Total	Base	Max-Day	Max-Hour	Customer	Meter
Supply	$1,370,532	$ 1,370,532	$ -	$ -	$ -	$ -
Transmission	$2,015,000	$ 721,071	$ 749,732	$ 544,197	$ -	$ -
Treatment	$476,142	$ 233,432	$ 42,710	$ -	$ -	$ -
Storage	$0	$ -	$ -	$ -	$ -	$ -
Pumping	$15,000	$ 7,354	$ 7,646	$ -	$ -	$ -
Distribution	$430,680	$ 154,120	$ 60,245	$ 116,315	$ -	$ -
Meter	$0	$ -	$ -	$ -	$ -	$ -
Admin	$6,500	$ -	$ -	$ -	$ 6,500	$ -
Subtotal Capital	$4,313,854	$2,486,509	$1,160,333	$660,512	$6,500	$0
Debt Service	**Total**	**Base**	**Max-Day**	**Max-Hour**	**Customer**	**Meter**
Supply	$239,913	$ 239,913	$ -	$ -	$ -	$ -
Transmission	$352,728	$ 126,224	$ 131,241	$ 95,262	$ -	$ -
Treatment	$83,349	$ 40,862	$ 42,487	$ -	$ -	$ -
Storage	$0	$ -	$ -	$ -	$ -	$ -
Pumping	$2,626	$ 1,287	$ 1,338	$ -	$ -	$ -
Distribution	$75,391	$ 26,979	$ 28,051	$ 20,361	$ -	$ -
Meter	$0	$ -	$ -	$ -	$ -	$ -
Admin	$1,138	$ -	$ -	$ -	$ 1,138	$ -
Subtotal Debt Service	$755,144	$ 435,266	$ 203,117	$ 115,623	$ 1,138	$ -
Total Capital and Debt Service	$5,068,998	$2,921,775	$1,363,451	$776,135	$7,638	$0
% of Total (Used to Allocate PIFs)		57.6%	26.9%	15.3%	0.2%	0.0%
Non-Operating Revenue Available to Offset Capital and Debt Service	**Total**	**Base**	**Max-Day**	**Max-Hour**	**Customer**	**Meter**
Plant Investment Fees (PIFs)	$1,268,949	$731,423	$ 341,320	$ 194,294	$ 1,912	$ -
Storage Fee	$166,660	$166,660				
Total Revenue for Capital	$1,435,609	$898,083	$341,320	$194,294	$1,912	$0
Total Capital and Debt Service Cost	$3,633,389	$2,023,691	$1,022,131	$581,841	$5,726	$0

Table 4.8 consolidates all costs shown in Tables 4.3 through 4.7 and shows the amount each customer type is required to pay in 2014 to recover their respective costs-of-service.

Table 4.8

Summary Allocation of O&M and Capital to Customer Service Characteristics

	Total	Base	Max Day	Peak Hour	Customer	Meters
O & M Expense by Customer Type						
Joint	$1,317,062	$262,608	$419,758	$36,405	$514,261	$84,029
Non-Wholesale	$1,687,495	$677,289	$372,869	$189,650	-$12,379	$460,066
NCWA	$64,913	$18,514	$19,250	$13,972	$0	$13,178
Sunset	$11,063	$3,155	$3,281	$2,381	$0	$2,246
Total O&M Costs Recoverable from Rates	$3,080,533	$961,566	$815,157	$242,409	$501,882	$559,519
Capital Costs						
Total Capital and Debt Service from Rates	$3,633,389	$2,023,691	$1,022,131	$581,841	$5,726	$0
Required Revenue	$6,713,922	$2,985,257	$1,837,288	$824,251	$507,608	$559,519
Projected Water Sales	$3,702,714					
Transfer from Reserves w/o Bond Proceeds	($3,011,208)	($1,735,663)	($809,950)	($461,059)	($4,537)	$0
Projected Bond Proceeds	$5,000,000					
Transfer to (from) Reserves	$1,988,792					

Units of Service

The measure of demand customers impose on District facilities and services was based on data summarized in Table 4.9. Water demands, number of services and equivalent meters shown in Table 4.9 are projected values for 2014. The annual water use of customers was based on actual 2011 data increased by actual customer growth in 2012 and 2013 and projected growth in 2014.

Table 4.9

Projected Units of Service (2014)

Customer Classification	Meter	Base	Max Day		Peak Hour		Customer Costs	
		Annual Use gallons	Capacity Factor	Extra Capacity (gal/day)	Capacity Factor	Extra Capacity (gal/day)	(# Services)	Equivalent Meters
Residential								
	3/4"	674,591,000	2.27	4,189,803	3.11	5,740,031	5,963	5,963
	Subtotals	674,591,000	2.27	4,189,803	3.11	5,740,031	5,963	5,963
Commercial								
	3/4"	48,833,000	1.64	218,819	2.24	299,782	351	354
	1"	29,122,000	1.64	130,494	2.24	178,777	44	73
	1 1/2"	21,488,000	1.64	96,287	2.24	131,913	18	60
	2"	27,278,000	1.64	122,232	2.24	167,457	9	48
	3"	19,276,000	1.64	86,375	2.24	118,334	6	60
	Subtotals	145,997,000		654,207		896,263	428	595
Irrigation-Only								
	3/4"	10,901,000	2.66	79,369	3.64	108,736	48	48
	1"	8,947,000	2.66	65,142	3.64	89,245	11	18
	1 1/2"	11,796,000	2.66	85,886	3.64	117,663	6	20
	Subtotals	31,644,000		230,397		315,645	65	86
Multi-Family								
	3/4"	15,207,000	1.39	58,052	1.91	79,531	91	91
	1"	4,861,000	1.39	18,556	1.91	25,422	26	43
	1 1/2"	11,866,000	1.39	45,298	1.91	62,058	27	90
	Subtotals	31,934,000		121,906		167,011	144	224
Mobile Home								
	3/4"	6,640,000	1.27	23,105	1.74	31,653	46	8
	1 1/2"	2,879,000	1.27	10,018	1.74	13,724	28	3
	2"	7,803,000	1.27	27,152	1.74	37,198	52	11
	3"	15,357,000	1.27	53,437	1.74	73,208	115	10
	4"	9,280,000	1.27	32,291	1.74	44,239	82	17
	6"	21,760,000	1.27	75,717	1.74	103,732	165	33
	Subtotals	63,719,000		221,718		303,754	487	82
Wholesale								
	NCWA	101,143,000	1.71	473,848	2.34	649,172	1	17
	Sunset	13,599,000	1.90	70,789	2.60	96,981	1	17
	Subtotals	114,742,000		544,637	2.37	746,153	2	33
	Totals	1,062,627,000	2.05	5,962,668	2.81	8,168,856	7,089	6,984
	gal/day	2,911,307						

Unit Costs of Capacity

To equitably allocate costs-of-service to the District's retail and wholesale customers, unit costs of capacity were calculated for each functional cost component and customer type. Unit costs were determined by dividing the total annual costs shown in Table 4.8 by the applicable units of service shown in Table 4.9.

Not all unit costs apply to all customer types. Wholesale customers should not pay for capital projects related to water resources since they own their water rights and transfer those rights to ELCO annually. Existing wholesale contracts require NCWA and Sunset to repay their proportionate share of capacity in the Soldier Canyon Filter Plant and the Soldier Canyon Dam Outlet through their monthly minimum charges. For these and other reasons, wholesale customers were not assigned any costs for capital and debt service.

The following matrix shows which unit costs were assigned to the different customer types. Assignment of unit costs as shown below insures each customer type pays only their proportionate share of the cost of O&M, capital improvements and annual debt service.

	Joint	Non-Wholesale	NCWA	Sunset	Capital and Debt Service
Residential	✓	✓			✓
Commercial	✓	✓			✓
Irrigation-Only	✓	✓			✓
Multi-Family	✓	✓			✓
Mobile Home	✓	✓			✓
NCWA	✓		✓		
Sunset	✓			✓	

Different units were used for different cost components. O&M and capital expenditures allocated to base costs were divided by total annual water use to determine the base unit cost of capacity. Peak day and peak hour capacity costs were divided by the maximum daily use and maximum hourly use to determine those unit costs. Customer costs were based on the total number of retail accounts served by the District and were calculated for a customer with a 3/4 inch meter. Customers with larger meters pay certain customer costs based on the capacity of their meter relative to a standard 3/4 inch meter. Table 4.11 shows unit costs of capacity for each functional cost component and cost category.

Table 4.11

Calculation of Unit Costs of Capacity

	Total	Base Cost	Extra Capacity		Customer	
			Max Day	Peak Hour	Billing	Meters
O & M Expenses						
Joint Cost Responsibility	$1,317,062	$0.25	$70.40	$4.46	$72.55	$12.03
Non-Wholesale Cost Responsibility	$1,687,495	$0.71	$68.82	$25.55	($1.75)	$66.19
NCWA Cost Responsibility	$64,913	$0.18	$40.62	$21.52	$0.00	$790.50
Sunset Cost Responsibility	$11,063	$0.23	$46.35	$24.55	$0.00	$134.73
Subtotal O&M	$3,080,533					
Capital and Debt Service						
Non-Wholesale Cost Responsibility	$3,633,389	$2.13	$188.65	$78.39	$0.81	
Transfer from Reserves w/o Bond Proceeds	($3,011,208)	($1.83)	($149.49)	($62.11)	($0.64)	
Net Capital Contributed by Non-Wholesale	$622,181	$0.30	$39.16	$16.27	$0.17	
Total Revenue Recovered from Rates	$3,702,714					

Customer Category Costs

The applicable unit costs for each of the functional cost components shown in Table 4.11 were multiplied by the projected water use (base, peak day and peak hour) and number of accounts and equivalent 3/4 inch meters in each customer category to determine cost responsibility. Table 4.12 shows the amount each customer category needs to pay toward their respective cost-of-service.

Table 4.12

Cost-of-Service by Customer Category

	Meter Size	Base Cost	Extra Capacity Costs		Customer Costs		Totals
			Max Day	Peak Hour	Billing	Meters	
Residential							
	5/8"	$853,710	$747,376	$265,641	$423,191	$466,411	$2,756,329
	Subtotal	$853,710	$747,376	$265,641	$423,191	$466,411	$2,756,329
Commercial							
	3/4"	$61,799	$39,033	$13,874	$24,910	$27,689	$167,305
	1"	$36,855	$23,278	$8,274	$3,123	$5,747	$77,276
	1 1/2"	$27,194	$17,176	$6,105	$1,277	$4,688	$56,440
	2"	$34,521	$21,804	$7,750	$639	$3,752	$68,465
	3"	$24,394	$15,408	$5,476	$426	$4,693	$50,397
	Subtotal	$184,762	$116,697	$41,478	$30,375	$46,570	$419,882
Irrigation Only							
	3/4"	$13,795	$14,158	$5,032	$3,407	$3,754	$40,146
	1"	$11,323	$11,620	$4,130	$781	$1,437	$29,290
	1 1/2"	$14,928	$15,320	$5,445	$426	$1,563	$37,682
	Subtotal	$40,046	$41,098	$14,608	$4,613	$6,754	$107,119
Multi-Family							
	3/4"	$19,245	$10,355	$3,681	$6,458	$7,118	$46,857
	1"	$6,152	$3,310	$1,177	$1,845	$3,396	$15,880
	1 1/2"	$15,017	$8,080	$2,872	$1,916	$7,033	$34,917
	Subtotal	$40,413	$21,745	$7,729	$10,220	$17,547	$97,654
Mobile Home							
	3/4"	$8,403	$4,121	$1,465	$3,229	$626	$17,844
	1 1/2"	$3,643	$1,787	$635	$1,952	$260	$8,278
	2"	$9,875	$4,843	$1,721	$3,690	$834	$20,964
	3"	$19,435	$9,532	$3,388	$8,161	$782	$41,298
	4"	$11,744	$5,760	$2,047	$5,819	$1,304	$26,675
	6"	$27,538	$13,506	$4,801	$11,674	$2,607	$60,126
	Subtotal	$80,638	$39,550	$14,057	$34,527	$6,413	$175,185
Subtotal (Rate Revenue from Retail Customers)							$3,556,169
Wholesale							
NCWA		$43,509	$52,607	$16,865	$73	$13,378	$126,433
Sunset		$6,516	$8,264	$2,814	$73	$2,446	$20,113
Subtotal (Rate Revenue from Wholesale Customers)							$146,546
TOTAL RATE REVENUE		$1,249,594	$1,027,338	$363,192	$503,070	$559,519	$3,702,714

Table 4.13 expands upon data shown in Table 4.12 and shows cost-of-service based minimum monthly charges for different size meters and usage charges ($/1,000 gallons) for the different customer categories. Table 4.13 identifies the amount of revenue collected through assessment of minimum monthly charges and usage charges from customers with different size meters within each category and from the entire customer category. These revenue amounts become the basis for designing rates in Chapter 5.

Table 4.13

Average Annual Cost-of-Service per Account for Customer Categories (2014)

Meter Size	Number of Accounts	Average Annual Charge/Account ($/year)	Customer Costs ($/year)	Charge for Water Use ($/year)	Monthly Minimum ($ / month)	$ per 1,000 gal
Residential						
5/8"	5,963	$462	$149	$313	$12.43	$2.77
	5,963					
Commercial						
3/4"	351	$477	$150	$327	$12.43	$2.37
1"	44	$1,756	$202	$1,555	$16.80	$2.35
1 1/2"	18	$3,136	$331	$2,804	$27.62	$2.35
2"	9	$7,607	$488	$7,119	$40.66	$2.35
3"	6	$8,399	$853	$7,546	$71.10	$2.35
	428					$2.35
Irrigation-Only						
3/4"	48	$836	$149	$687	$12.43	$3.03
1"	11	$2,663	$202	$2,461	$16.80	$3.03
1 1/2"	6	$6,280	$331	$5,949	$27.62	$3.03
	65					$3.03
Multi-Family						
3/4"	91	$515	$149	$366	$12.43	$2.19
1"	26	$611	$202	$409	$16.80	$2.19
1 1/2"	27	$1,293	$331	$962	$27.62	$2.19
	144					$2.19
Mobile Home						
3/4"	46	$392	$85	$307	$7.06	$2.11
1 1/2"	28	$301	$80	$221	$6.70	$2.11
2"	52	$403	$87	$316	$7.25	$2.11
3"	115	$359	$78	$281	$6.48	$2.11
4"	82	$325	$87	$238	$7.24	$2.11
6"	165	$366	$87	$279	$7.23	$2.11
	487					$2.11
Wholesale						
NCWA	1	$126,433	$13,451	$112,982	$1,121	$1.12
Sunset	1	$20,113	$2,519	$17,594	$210	$1.29
	2					
Total (2014)	7,089					

Chapter 5 - Rate Design

Based on the analysis discussed in Chapter 4, the percentage change in water sales revenue from each customer category to recover their respective costs-of-service can be calculated. That calculation is shown in Table 5.1. The revenue amounts used to calculate the percentages in Table 5.1 are shown in more detail in Table 5.2.

Table 5.1

Percentage Increase or Decrease in 2014 Water Rates to Recover Cost-of-Service

	Increase in Water Sales Revenue Required to Equal Cost-of-Service	Decrease in Water Sales Revenue Required to Equal Cost-of-Service
Residential	7.15%	
Commercial		10.16%
Irrigation-Only	6.14%	
Multi-Family		2.98%
Mobile Home		24.23%
NCWA	5.50%	
Sunset		6.12%

Water rates never generate an amount that equals cost-of-service because of variability in water use and peak period demands. The purpose of a cost-of-service analysis is to merely indicate how close current rates are to generating cost-of-service. With information presented in this analysis, the Board can elect to adjust water rates to reflect cost-of-service for individual customer categories, some combination of customer categories or all retail customer categories.

Table 5.2 compares cost-of-service revenue requirements for each retail and wholesale customer category with water sales revenue projected in 2014 with current rates. Table 5.2 shows total cost-of-service revenue that needs to be collected from monthly minimum charges (customer costs) and from water sales (base / extra capacity costs).

Projected water sales revenue in 2014 for the residential customer category with current rates is $2,572,513. That amount was calculated by using actual total residential water sales in 2011, then increasing that amount by 2% to reflect the rate increase implemented January 1, 2012, and then increasing that sum by another 9% to reflect the rate increase implemented July 1, 2013.

Water sales revenue for all other customer categories shown in Table 5.1 was calculated by applying current rates to actual 2011 water use. When applicable, the number of accounts was increased by actual and projected growth in the number of new customers in the respective categories added since 2011.

Table 5.2

Comparison of Projected 2014 Revenue with Cost-of-Service

Meter Size	Total Annual Charges per Customer Category				Projected 2014 Revenue with Current Rates	% Adjustment in Rates to Equal COS	Increase or (Decrease) in 2014 Revenue
	$ per Customer Class (Minimum)	% Monthly Minimum to Total	$ per Customer Category for Water Use	Total Cost-of-Service Revenue			
Residential							
5/8"	$889,602	32%	$1,866,727	$2,756,329			
Subtotal	$889,602	32%	$1,866,727	$2,756,329	$2,572,513	7.15%	$183,816
Commercial							
3/4"	$52,599	31%	$114,706	$167,305			
1"	$8,870	11%	$68,406	$77,276			
1 1/2"	$5,966	11%	$50,474	$56,440			
2"	$4,391	6%	$64,074	$68,465			
3"	$5,119	10%	$45,278	$50,397			
Subtotal	$76,945	18%	$342,937	$419,882	$467,342	-10.16%	($47,460)
Irrigation-Only							
3/4"	$7,161	18%	$32,985	$40,146			
1"	$2,218	8%	$27,073	$29,290			
1 1/2"	$1,989	5%	$35,694	$37,682			
Subtotal	$11,367	11%	$95,752	$107,119	$100,925	6.14%	$6,194
Multi-Family							
3/4"	$13,576	29%	$33,281	$46,857			
1"	$5,241	33%	$10,638	$15,880			
1 1/2"	$8,949	26%	$25,969	$34,917			
Subtotal	$27,766	28%	$69,888	$97,654	$100,652	-2.98%	($2,998)
Mobile Home							
3/4"	$3,855	22%	$13,989	$17,844	$24,334	-26.67%	
1 1/2"	$2,212	27%	$6,066	$8,278	$11,022	-24.90%	
2"	$4,524	22%	$16,440	$20,964	$27,352	-23.36%	
3"	$8,944	22%	$32,355	$41,298	$55,247	-25.25%	
4"	$7,123	27%	$19,551	$26,675	$34,784	-23.31%	
6"	$14,281	24%	$45,845	$60,126	$78,455	-23.36%	
Subtotal	$40,940	23%	$134,245	$175,185	$231,194	-24.23%	($56,009)
Total Retail	$1,046,620	29%		$3,556,169	$3,472,626	2.41%	$83,543
Wholesale							
NCWA	$13,451	11%	$112,982	$126,433	$119,844	5.50%	$6,589
Sunset	$2,519	13%	$17,594	$20,113	$21,423	-6.12%	($1,310)
Subtotal	$15,970	11%	$130,576	$146,546	$141,267		$5,278
Total (2014)	$1,062,590	29%	$2,640,125	$3,702,714	$3,613,893	2.46%	$88,821

Water rate alternatives developed for consideration by the District and presented later in this chapter were designed to recover the total 2014 projected cost-of-service revenue shown in Table 5.2: $3,702,714. That amount of revenue consists of $3,556,169 from retail customers and $146,546 from wholesale customers.

Generating the total cost-of-service revenue requirement would entail an increase of 2.46% in water sales revenue collected with current rates. Water sales revenue from retail customers needs to increase by 2.41% to generate revenue that reflects their cost-of-service.

Considerations in Water Rate Design

Water rates can be designed to address a number of issues but the most critical considerations in development of rates proposed in this study are:

- Rates must derive revenue requirements which include O&M expenses, reserves, debt service obligations and all capital costs.
- Revenue requirements derived from water rates must be equitably allocated to all customer categories commensurate with their cost-of-service.
- Rates should be designed to discourage the wasteful use of water.
- Rates must be relatively easy to administer, understood by customers, non-punitive and insure revenue stability.

Existing Water Rates

The District's existing rate structure consists of: (1) a minimum monthly charge based on meter size entitling each customer to use 4,000 gallons of water each month before incurring additional charges, and (2) a usage charge levied on each 1,000 gallons of water used once water use exceeds 4,000 gallons. The District's existing water rates are summarized in Table 5.3.

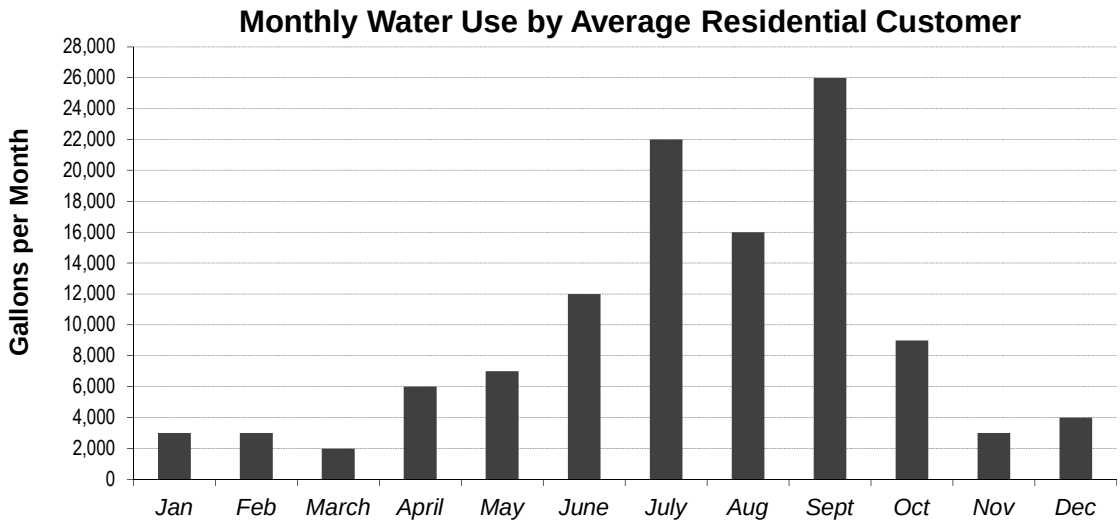
Table 5.3

Existing Water Rates Effective July 1, 2013

Size of Water Meter	Minimum Charge Per Month	Monthly Minimum
3/4 "	$20.37	4,000 gallons
1 "	$21.33	4,000 gallons
1-1/2 "	$22.28	4,000 gallons
2 "	$24.91	4,000 gallons
3 "	$44.26	4,000 gallons
Mobile Home Park	$10.18 per space	2,000 gallons per space
All water use over the Monthly Minimum of 4,000 gallons is billed at: **$2.76 per thousand gallons**		

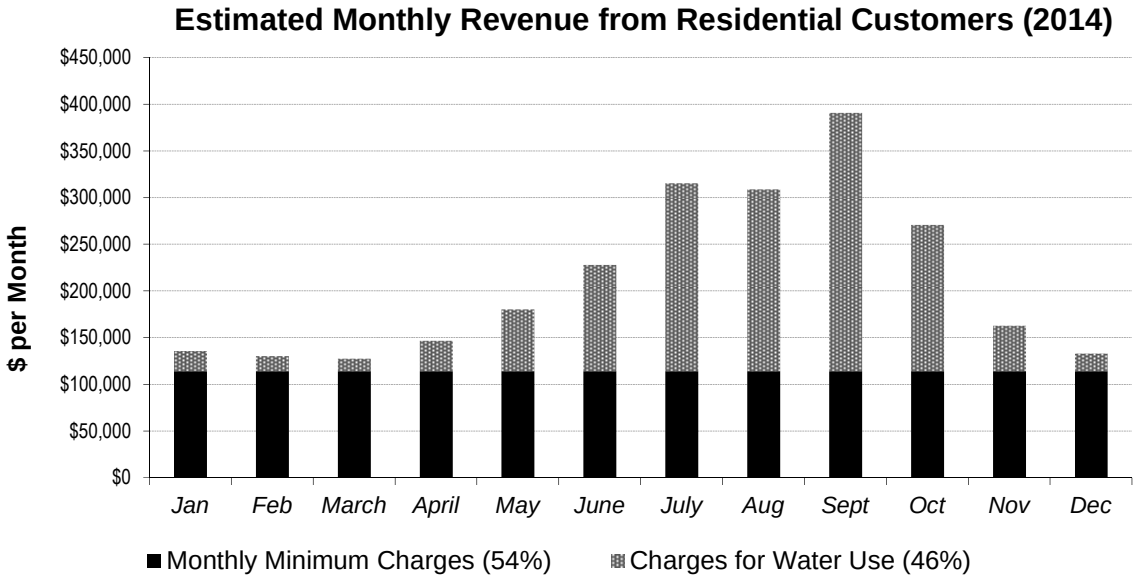
The 4,000 gallons that ELCO provides with the monthly minimum charge is approximately the amount of water used indoors in a typical single family home. Figure 5.1 shows the monthly water use in 2011 of the average residential customer served by ELCO. The average annual water use in 2011 was 113,000 gallons. Water use during non-irrigation months is between 2,000 and 4,000 gallons. With the District's current water rates, a typical residential customer has no incentive to use less than 4,000 gallons per month for six months of the year (November through April). ELCO customers that have lots irrigated with non-potable water have no incentive to use less than 4,000 gallons per month year-round.

Figure 5.1



During fall and winter months, residential monthly minimum charges ($20.37 per account per month) represent 80% to 90% of monthly residential water sales. During summer months, residential monthly minimum charges represent 30% of residential water sales. On an annual basis, approximately 54% of residential water sales consist of monthly minimum charges paid by single family customers. Figure 5.2 shows monthly revenue from the residential customer category and the amount attributable to monthly minimum charges and water use.

Figure 5.2



Residential water rate alternatives presented later in this chapter introduce rates that eliminate the provision of water with payment of the monthly minimum and lower the amount of monthly minimum. Reducing both the quantity of water provided with payment of the monthly minimum charge and the amount of the monthly minimum charge will decrease the percentage of annual revenue that is fixed. Any reduction in fixed charges increases the amount generated through user charges.

Water rates with lower minimum charges are more conservation oriented. Such rates provide customers additional incentive to reduce water use. Reducing minimum monthly charges results in more revenue being derived from usage charges. That can introduce additional variability in annual revenues. A particularly wet summer can reduce lawn watering and the amount of revenue generated from usage charges. Conversely, an especially hot and dry summer can increase lawn watering which increases the amount of revenue generated from usage charges. Water rates that balance the need for revenue stability with incentives for conservation best serve the water provider and its customers.

Conservation Charge

In addition to the monthly charge for water service, ELCO imposes a conservation charge when customers use more water than the amount provided at the time their water service was purchased and the District's raw water requirements satisfied. The amount of raw water dedicated at the time of development establishes the "annual allotment" for each customer account. Each customer's annual allotment is permanent and non-transferable.

If a customer's annual allotment is exceeded during the calendar year, a conservation charge is assessed. Currently, the conservation charge is $1.93 per 1,000 gallons for every 1,000 gallons in excess of the annual allotment. All ELCO customers are subject to the conservation charge. Customers that keep their cumulative water use below their annual allotment are not subject to the conservation charge. The conservation charge was not addressed in this report. It will be the subject of an independent analysis performed by the consultant at a later date.

Proposed Residential Cost-of-Service Rate Alternatives

The cost-of-service analysis prepared for this report indicates water rates for residential customers need to increase by 7.15%. Increasing residential rate revenue by that percentage insures there is no subsidy between customer categories.

Four rate alternatives are presented for consideration. Each alternative generates an amount of revenue approximately equal to the amount required to recover the cost-of-service calculated for the residential customer category in 2014: $2,756,329.

Residential Rate Alternative #1

Alternative #1 simply increases the monthly minimum charge and usage charge by a similar percentage to generate residential water sales that are approximately 7.15% greater than the amount generated with existing rates. As discussed earlier in this report, residential water sales revenue needs to increase by 7.15% to equal the calculated cost-of-service. The quantity of water provided with the monthly minimum is maintained at 4,000 gallons per month in Alternative #1.

Alternative #1 essentially maintains the status quo. It provides little incentive for residential customers to use less than 4,000 gallons per month outside of the irrigation season. The amount of annual residential revenue derived from monthly minimums remains at 54%. Table 5.5 shows rates and charges developed for Alternative #1.

Table 5.5

Proposed Residential Water Rate with Rate Alternative #1

Meter Size	Monthly Minimum Charge	Gallons Provided with Minimum	$/ thousand gallons (> 4,000 gallons)
3/4" meter (residential)	$ 21.75	4,000	$ 3.00

Residential Rate Alternative #2

Alternative #2 eliminates the provision of water with the monthly minimum and reduces the monthly minimum charge to equal monthly customer costs calculated in the cost-of-service analysis. Residential customers would be charged for each increment of water use. Alternative #2 rewards customers that use less than 4,000 gallons of water per month. Customer with higher water use would see a greater increase in their annual water bill with rates proposed in Alternative #2.

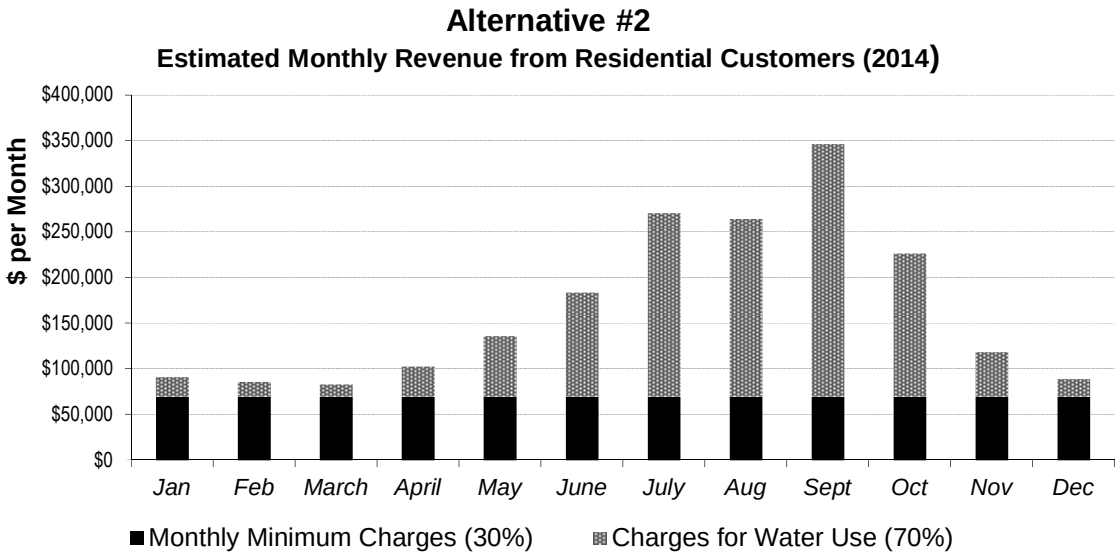
Table 5.6 shows rates developed for Alternative #2. Figure 5.3 shows that the amount of residential water revenue derived from monthly minimum charges decreases to 30% with Alternative #2.

Table 5.6

Proposed Residential Water Rate with Rate Alternative #2

Meter Size	Monthly Minimum Charge	Gallons Provided with Minimum	$/ thousand gallons
3/4" meter (residential)	$ 12.43	0	$ 3.10

Figure 5.3



Residential Rate Alternative #3

Alternative #3 applies cost-of-service methodology to the monthly minimum charge and introduces tiered rates to promote water conservation. Tiered water rates are designed to reward customers who use less water by charging lower rates for water used in lower tiers. The more water a customer uses, the higher the tier(s), resulting in higher charges for water use. In addition to encouraging water conservation, tiered rates provide customers the opportunity to control household costs. Consumers who use less water pay a lower-tier rate.

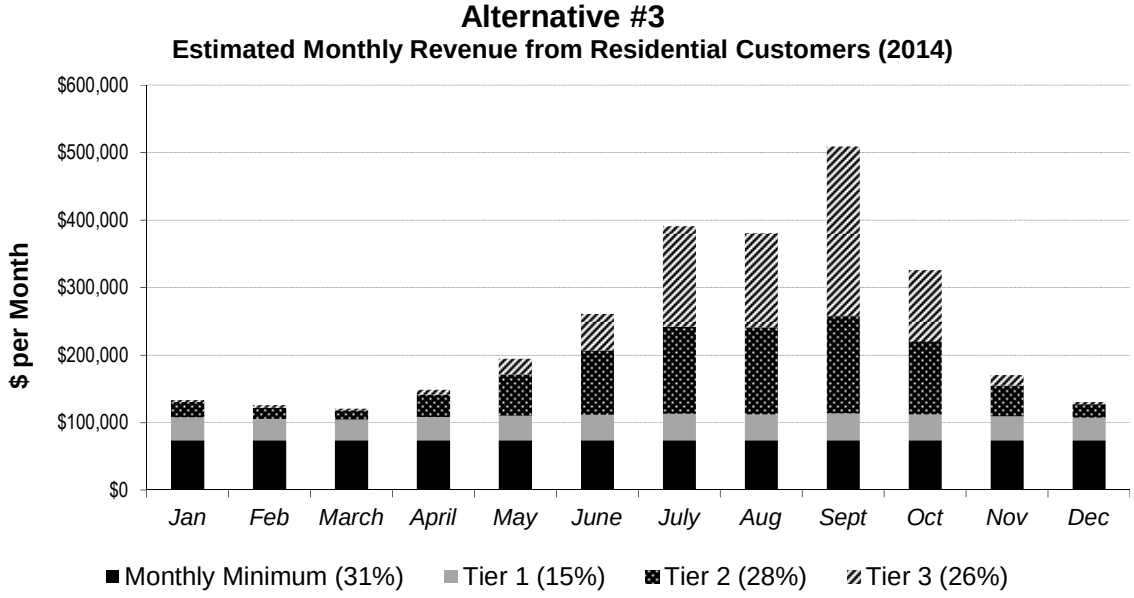
Table 5.7 shows rates and charges developed for Alternative #3. Figure 5.4 shows annual residential water revenue from monthly minimum charges and within each tier and the percentage of annual revenue represented by those amounts.

Table 5.7

Proposed Residential Water Rate with Rate Alternative #3

Meter Size	Monthly Minimum Charge	Gallons	$/ thousand gallons
3/4" meter	$ 12.43	0	
Tier 1		0 to 4,000	$ 2.00
Tier 2		4,000 to 17,000	$ 3.25
Tier 3		Over 17,000	$ 4.50

Figure 5.4



Alternative #3 is designed to generate bills during non-irrigation months that resemble current charges. A customer that uses 4,000 gallons would pay $20.43 with rates proposed in Alternative #3 versus the current monthly minimum charge of $20.37. Customers using less than 4,000 gallons would be rewarded with lower monthly water bills. The reduction in revenue resulting from lower monthly bills for those customers that use less water would be recovered from higher monthly bills from those customers that use more water. The additional revenue from customers with higher water use would be recovered in Tier 3.

A water use reduction of approximately 5% is anticipated with Alternative #3 rates. That reduction in water use is factored into the calculation of total annual revenue with Alternative #3 rates.

Residential Rate Alternative #4

Alternative #4 reduces the amount of water provided with payment of the monthly minimum charge from 4,000 gallons per month to 2,000 gallons and reduces the monthly minimum charge for residential customers by an amount that would result in 45% of annual residential water sales being generated from monthly minimum charges.

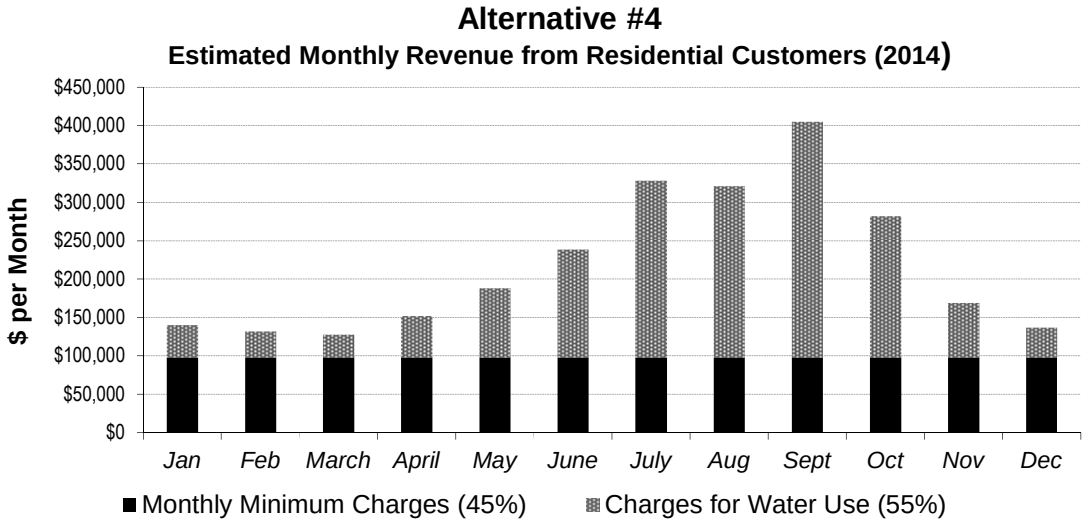
Table 5.8 shows rates and charges developed for Alternative #4. Figure 5.5 shows annual residential water sales derived from monthly minimum charges would equal 45% in 2014.

Table 5.8

Proposed Residential Water Rate with Rate Alternative #4

Meter Size	Monthly Minimum Charge	Gallons Provided with Minimum	$/ thousand gallons (> 2,000 gallons)
3/4" meter (residential)	$ 17.50	2,000	$ 2.80

Figure 5.5



Summary of Residential Rate Alternatives

Residential rate alternatives presented in this chapter represent a range of alternatives to make the necessary cost-of-service adjustments and deliver different degrees of conservation messages to single family customers. Each alternative generates the required amount of water sales revenue from the residential customer category. The more aggressive residential Alternative #3 anticipates some measure of conservation by customers with higher than average water use so revenue generated with that alternative is slightly higher than cost-of-service.

Table 5.9 compares annual charges with all alternatives to the amount paid with existing rates by single family customers at the 10th percentile, average and 90th percentile of annual water use.

Table 5.9

Comparison of Annual Charges with Residential Rate Alternatives

Customer Type	Annual Use (gallons)	Annual Charges and % Change from 2013 Residential Rates								
		2013 Rates	Alt #1	%	Alt #2	%	Alt #3	%	Alt #4	%
10th %	32,000	$ 244	$ 261	6.8%	$ 248	1.6%	$ 213	-12.8%	$ 232	-5.0%
Average	113,000	$ 438	$ 471	7.6%	$ 499	14.1%	$ 484	10.6%	$ 459	5.0%
90th %	227,000	$ 738	$ 798	8.1%	$ 853	15.5%	$ 947	28.3%	$ 778	5.0%

Table 5.10 shows monthly minimum charges and usage charges for all residential rate alternatives and compares them to existing charges. For comparative purposes, all existing and proposed usage tiers are shown in Table 5.10. When one charge applies in two or more consecutive tiers, the usage charge is highlighted.

Table 5.10

Monthly Minimum Charges and Usage Charges for Residential Alternatives

		2013 Rates	Alt #1	Alt #2	Alt #3	Alt #4
	Monthly Minimum Charge	$ 20.37	$ 21.75	$ 12.43	$ 12.43	$17.50
Usage Tiers (gallons)						
0 – 2,000		$ 0	$ 0	$ 3.10	$ 2.00	$ 0
2,000 – 4,000		$ 0	$ 0	$ 3.10	$ 2.00	$2.80
4,000 – 17,000		$ 2.76	$ 3.00	$ 3.10	$ 3.25	$2.80
> 17,000		$ 2.76	$ 3.00	$ 3.10	$ 4.50	$2.80

Proposed Non-Residential Cost-of-Service Rate Alternatives

The cost-of-service analysis summarized in Chapter 4 indicates water rates for ELCO's non-residential customer categories need to be adjusted to reflect cost-of-service. Individual residences within the multi-family and mobile home customer categories are residential but for purposes of this report, those two categories are considered non-residential along with the commercial and irrigation-only customer categories.

Minor adjustments are necessary in the commercial, irrigation-only and multi-family customer categories to equitably recover cost-of-service. The cost-of-service analysis indicates rate revenue collected from customers in the mobile home category needs to be reduced by 24.13%. The rate reduction calculated in the mobile home category is a result of ELCO charging too high a monthly minimum to mobile home parks.

Currently, ELCO charges a monthly minimum based on the number of mobile home pads served, whether occupied or vacant. The current charge is $10.18 per pad and is equal to 50% of the monthly minimum charge for a 3/4 inch meter. The mobile home monthly minimum charge permits 2,000 gallons of water use per mobile home pad before the usage charge is applied to the entire water use within the mobile home park.

One mobile home park currently served by ELCO has a single 3" water meter and 230 mobile home pads; its monthly minimum charge is $2,341.40 and is allowed 460,000 gallons per month before the usage charge takes effect. A commercial customer served by a 3" water meter currently pays a monthly minimum charge of $44.26 and is allowed to use 4,000 gallons before the usage charge is applied. The cost of billing, maintaining and reading meters for both 3" accounts is similar yet the monthly minimum charges and water allowances are very different.

To more accurately reflect base costs associated with the different size water meters serving mobile home parks, the monthly minimum charge per pad should be reduced. That modification and several others changes to the District's rate structure are proposed in the two non-residential rate alternatives presented below.

Non-Residential Alternative #1

Non-residential Alternative #1 continues the current practice of providing 4,000 gallons per account and a uniform usage charge for all non-residential accounts. Monthly minimum charges are similar to existing monthly minimums in that they do not vary much as meter size increases.

The monthly minimum charge for mobile home parks is lowered to $6.00 per pad in Alternative #1 to more accurately reflect cost-of-service calculated for the mobile home category. Alternative #1 continues the policy of providing 2,000 gallons per mobile home pad with the monthly minimum charge.

Table 5.11 shows rates and charges developed for Alternative #1. The monthly minimums and usage charges shown in Table 5.11 recover the calculated cost-of-service from all non-residential customer categories.

Table 5.11

Proposed Non-Residential Water Rates with Alternative #1

Meter Size	Monthly Minimum ($/month)	Gallons Included with Monthly Minimum	Usage Charge Once Use Exceeds Minimum ($ / 1,000 gallons)
3/4 "	$21.75	4,000	$2.44
1 "	$22.78	4,000	$2.44
1 ½ "	$23.79	4,000	$2.44
2 "	$26.60	4,000	$2.44
3 "	$47.26	4,000	$2.44
Mobile Home	$6.00 per MH pad	2,000 per MH pad	$2.44

Alternative #1 recovers revenue from the mobile home customer category that is equal to the calculated cost-of-service. Alternative #1 rates generate revenue from the commercial and multi-family customer categories that exceeds cost-of-service by only 2% to 3%.

Revenue from the irrigation-only customer category falls short of the cost-of-service for that category by 16%. The subsidy created by a usage charge of $2.44 per 1,000 gallons could be eliminated by charging irrigation-only customers a usage charge of $2.95 per 1,000 gallons.

Usage charges that are different for certain customer categories complicates the District's rate schedule but does resolve any subsidy between customer categories. It also reflects the fact that irrigation-only customers have the highest peak demand characteristics of any of ELCO's customers.

Non-Residential Alternative #2

Non-residential Alternative #2 applies cost-of-service rates to all non-residential customer categories. Monthly minimum charges for different size meters match figures calculated in the cost-of-service analysis. No water is provided with payment of the monthly minimum. Usage charges are unique for each customer category to reflect relative differences in the water use characteristics between categories and costs related to those water use characteristics.

Alternative #2 recovers customer costs by distributing those costs among all customers based upon relative meter capacity. Relative meter capacity is a measure of how much water a meter can accurately measure compared to a standard 3/4" meter. It is used in rate making to reflect the fact that larger meters are proportionally more expensive to maintain, repair, test and replace.

Table 5.12 shows rates and charges developed for Alternative 2. The monthly minimums and usage charges shown in Table 5.12 recover the appropriate cost-of-service based revenue from each individual non-residential customer category. The percentage change in the annual bill of non-residential customers with rates shown in Table 5.12 would equal the percentages calculated in the cost-of-service analysis and summarized earlier in Table 5.1.

Table 5.12

Proposed Non-Residential Water Rates with Alternative #2

Meter Size	Monthly Minimum Charge ($/month)	Gallons Included with Monthly Minimum	Usage Charge ($ / 1,000 gallons)			
			Commercial	Multi-Family	Irrigation	Mobile Home Parks
3/4 "	$12.43	0	$2.35	$2.20	$3.05	$2.60
1 "	$16.80	0	$2.35	$2.20	$3.05	$2.60
1 ½ "	$27.62	0	$2.35	$2.20	$3.05	$2.60
2 "	$40.66	0	$2.35	$2.20	$3.05	$2.60
3 "	$71.10	0	$2.35	$2.20	$3.05	$2.60
4"	$207.21 (1)	0	N/A	N/A	N/A	$2.60
6"	$414.33 (1)	0	N/A	N/A	N/A	$2.60

(2) Monthly minimum charges for 4" and 6" meters are specific to existing mobile home parks

Non-Residential Alternative #3

Non-residential Alternative #3 is similar to Alternative #2 except for the provision of 2,000 gallons per month with payment of the monthly minimum. Alternative #3 also assesses a monthly minimum charge for mobile home parks based on the number of mobile home pads served rather than the size of the water meter. Usage charges are unique for each customer category to reflect relative differences in the water use characteristics between categories and costs related to those water use characteristics.

Table 5.13 shows rates and charges developed for Alternative #3. The monthly minimums and usage charges shown in Table 5.13 recover the appropriate cost-of-service based revenue from each individual non-residential customer category. The percentage change in the annual bill of non-residential customers with rates shown in Table 5.13 would equal the percentages calculated in the cost-of-service analysis and summarized earlier in Table 5.1.

Table 5.13

Proposed Non-Residential Water Rates with Alternative #3

Meter Size	Monthly Minimum Charge ($/month)	Gallons Included with Monthly Minimum	Usage Charge ($ / 1,000 gallons)			
			Commercial	Multi-Family	Irrigation	Mobile Home Parks (1)
3/4 "	$17.50	2,000	$2.40	$2.55	$3.00	$2.80
1 "	$18.32	2,000	$2.40	$2.55	$3.00	$2.80
1 ½ "	$19.14	2,000	$2.40	$2.55	$3.00	$2.80
2 "	$21.40	2,000	$2.40	$2.55	$3.00	$2.80
3 "	$38.02	2,000	$2.40	$2.55	$3.00	$2.80
4"	N/A	2,000	N/A	N/A	N/A	$2.80
6"	N/A	2,000	N/A	N/A	N/A	$2.80

(1) Monthly minimum charge for mobile home spaces would be $5.35 per space per month

Proposed Cost-of-Service Wholesale Rates

The cost-of-service analysis indicates the water rate for Northern Colorado Water Association needs to increase by 5.5%; the water rate for Sunset Water District needs to decrease by 6.1%.

The necessary modifications to wholesale rates could be achieved by changing the usage charges and leaving the monthly minimums at current amounts. That would result in the following rates:

	Monthly Minimum	Usage Charge	Total Annual Charge
NCWA	$ 4,677	$ .70 per 1,000 gallons	$ 126,925
Sunset	$720	$ .85 per 1,000 gallons	$ 20,200

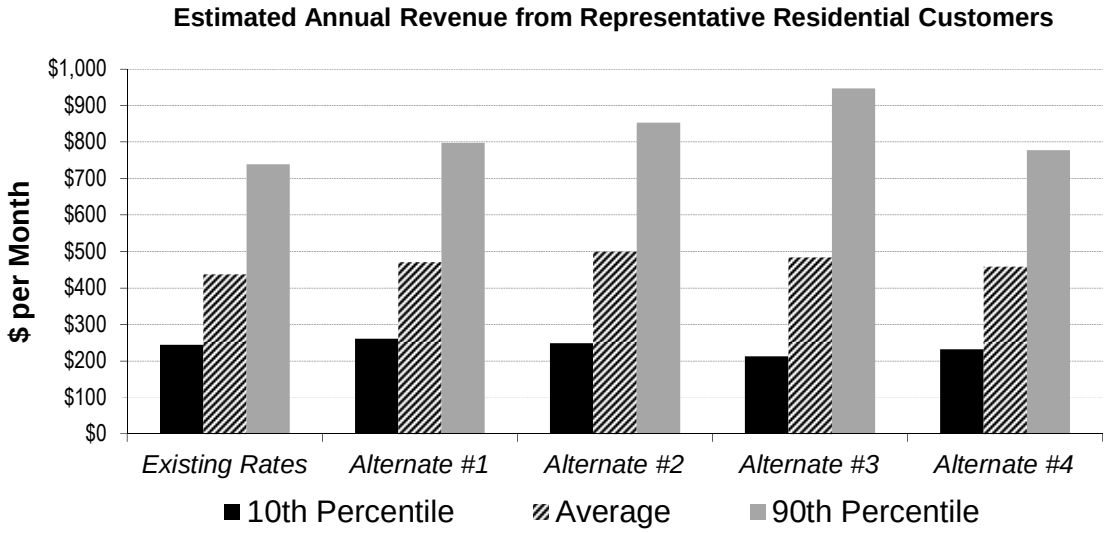
Chapter 6 - Comparison and Impact Analysis

Residential customers represent 90% of all accounts in East Larimer County Water District and use approximately 63% of total retail water deliveries. Because residential customers are responsible for such a significant portion of water use and revenue, the impact of proposed rate alternatives adjustments on individual residential customers warrants additional examination.

Comparison of Annual Residential Water Charges

To measure the effect of the three proposed rate alternatives on residential customers, the annual water use of customers at the 10th percentile, average and 90th percentile were analyzed. Figure 6.1 shows the amount of annual charges paid by those representative customers with existing rates and with rates proposed in each alternative.

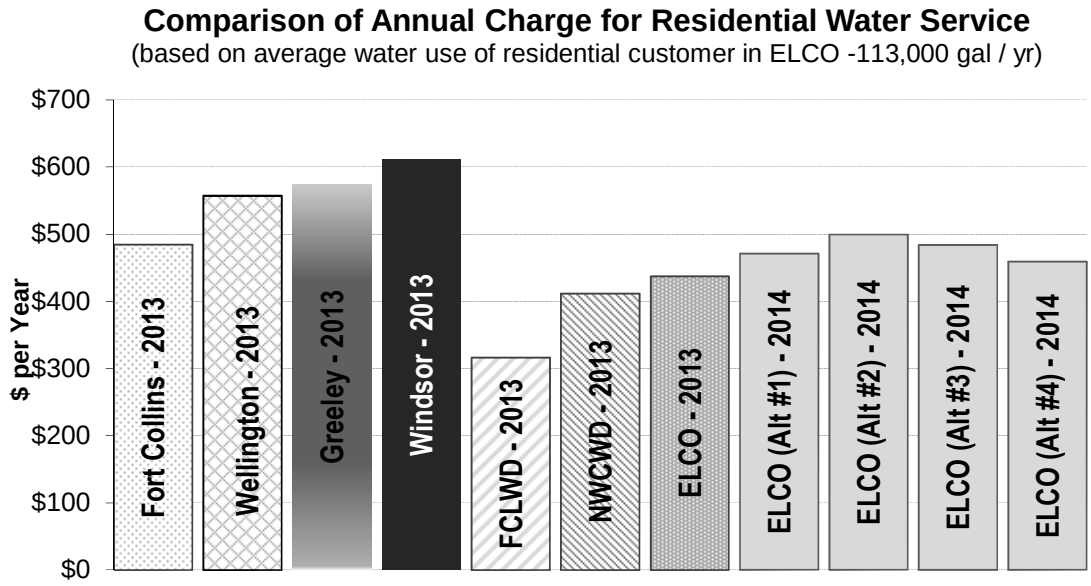
Figure 6.1



Comparison of Residential Water Charges in Nearby Communities

Figure 6.4 compares the annual cost of water for the average ELCO residential customer using 113,000 gallons per year with the amount that customer would pay for the same amount of water in nearby communities or water districts. The annual amount paid by the average residential customer with existing (2013) and proposed (2014) residential water rate alternatives is shown.

Figure 6.4



Each water provider has unique challenges and costs that determine their water rates. Revenue requirements are affected by the availability of water, age of system, rate and location of growth, financial policies, contractual obligations, capital needs, distance to treatment plant, pumping requirements, source water quality and a number of other variables. These variables make it difficult to fully understand differences in the cost of water from one community to another.

Comparing the cost of water in different communities is of interest but should not drive decisions on water rates. Water rates in any community or water district are ultimately determined by the budgets and policies adopted by their governing boards.

Chapter 7 - Water Conservation

Although conservation oriented water rates are an important step in managing water demand, they are most effective when part of a comprehensive conservation plan that addresses a variety of issues. This rate study was performed as a result of recommendations contained in the District's Water Conservation Plan; staff is in the process of implementing other recommendations included in that plan. When fully implemented, the proposed water rates and other measures contained in the Water Conservation Plan are expected to reduce build-out water use by at least 10%.

Water rate revisions proposed in this rate study create incentives for customers to use water more efficiently. Proposed changes in rates that encourage water conservation are described below:

- Reducing the amount of the monthly minimum charge from $20.37 to $12.43 per month for single family customers and adopting tiered rates reduces total residential revenue derived from fixed charges from 54% to 30%. With a higher percentage of customers' water bills determined by water usage, there will be greater incentive for them to monitor water use and make modifications when possible.

- Eliminating the policy of providing a water allowance with the monthly minimum charge (currently 4,000 gallons per month) rewards those customers that use less than the monthly water allowance. Currently, there is no economic incentive to use less than the amount of water provided with the monthly minimum.

- Single family customers at the ninetieth percentile of water use will experience a 28% increase in the amount they pay each year for water. Their highest monthly water bill during irrigation season will increase by 45%. Such significant increases in charges for customers that use more water will provide the kind of price signal necessary to motivate those customers to lower their water use.

- The proposed rate for irrigation-only customers is higher than the rate recommended for any other customer category. Irrigation-only customers have the highest peak water demands of any customer category. If irrigation-only customers respond to the higher rate by decreasing their use, water will be conserved while reducing demand on treatment, transmission, distribution, storage and pumping facilities.

Chapter 8 - Conclusions and Recommendations

The discussion presented in this report provides a summary of the rate analyses performed on behalf of ELCO Water District. Water rates developed in this rate study eliminate inequities between customer categories, fund ongoing operations and planned capital improvements, promote revenue stability and encourage water conservation.

Recommendations

The following recommendations are offered as a result of the analyses described in this report:

- Implement the following cost-of-service rate adjustments in 2014 for the different customer categories receiving water service from the District:

Customer Category	Rate Increase Required to Recover Cost-of-Service	Rate Decrease Required to Recover Cost-of-Service
Residential	7.15%	
Commercial		10.16%
Irrigation-Only	6.14%	
Multi-Family		2.98%
Mobile Home		24.23%
NCWA	5.50%	
Sunset		6.12%

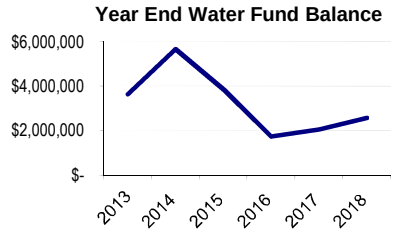
- Adopt by resolution the following water rates developed in this analysis: Alternative #3 for the residential customer category and Alternative #2 water rates for the non-residential customer categories.

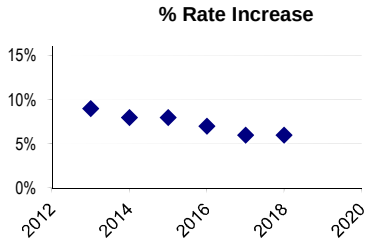
- Develop a customer information program that alerts residential customers to the financial consequences associated with tiered water rates. A tiered rate structure by itself will not necessarily produce the desired conservation savings, simply because the vast majority of customers do not understand rates and do not have any idea that the more they use, the higher the usage charge.

- Some reduction in the water use of large single family is anticipated and built in to tiered usage charges. The District should carefully monitor revenues and water use within tiers to gauge the impact of any new tiered residential water rates. The District may determine that it can be more strategic in establishing usage blocks that increase customer awareness and encourage water conservation.

- Independently audit bills after implementation of rate changes to insure the utility billing system generates the correct charges for all customers.

- Update the cost-of-service analysis every three to five years or whenever significant changes to the budget occur. Changes in the makeup of customers, the rate of growth within the District, revisions in the cost and timing of capital projects, and changes in water use patterns may alter the District's cost-of-service.





APPENDIX 'A'

East Larimer County Water District - 11 Year Cash Flow Projection - Water Fund

Assumptions for Cash Flow Proje		2013	2014	2015	2016	2017	2018
Number of Customers		6,200	6,410	6,577	6,748	6,910	7,075
Number of Equivalent Meters		6,563	6,773	6,939	7,110	7,272	7,438
Number of New Customers		210	167	171	162	166	170
Growth - Number of Customers			2.6%	2.6%	2.4%	2.4%	2.4%
Tap Fee		$6,576	$7,614	$6,576	$6,576	$6,576	$6,576
Tap Connection Fee		$0	$232	$232	$232	$232	$232
Storage Fee			$1,000	$1,000	$1,000	$1,000	$1,000
Growth - O&M and Administration, Assessments			5.0%	5.0%	5.0%	5.0%	5.0%
Growth - SCFP Treatment Costs			2.5%	2.5%	2.5%	2.5%	2.5%
Investment Income - Interest Rate			1.0%	1.0%	1.0%	1.0%	1.0%
Financing							
20 Year Revenue Bonds @	3.25%		**$ 5,000,000**	**$ -**	**$ -**	**$ -**	**$ -**
Issuance Cost (% of Principal) @	1.90%		**$ 95,000**	**$ -**	**$ -**	**$ -**	**$ -**
Total Financed			**$ 5,095,000**	**$ -**	**$ -**	**$ -**	**$ -**

BOND MAINTENANCE TEST

	2013	2014	2015	2016	2017	2018
Operating Revenue	$ 3,838,070	$ 4,176,275	$ 4,565,634	$ 4,943,641	$ 5,333,761	$ 5,735,932
Operating Expenses	$ 3,202,822	$ 3,543,429	$ 3,696,985	$ 3,895,166	$ 4,028,794	$ 4,141,327
Net Operating Income	$ 635,248	$ 632,846	$ 868,649	$ 1,048,476	$ 1,304,967	$ 1,594,604
Other Revenue Excluding System Development Fees	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000
Net Revenue Available for Retirement of Bond Indebtedness	$ 638,248	$ 635,846	$ 871,649	$ 1,051,476	$ 1,307,967	$ 1,597,604
Debt Service Requirement	$ 576,443	$ 576,443	$ 754,344	$ 925,346	$ 925,146	$ 929,646
Projected Coverage	**111%**	**110%**	**116%**	**114%**	**141%**	**172%**

	2012 Actual	2013 Budgeted	2013 Actual	2014	2015	2016	2017	2018
Starting Balance	**$ 5,443,398**	**$ 5,876,513**	**$ 5,876,513**	**$ 3,641,556**	**$ 5,669,013**	**$ 3,858,201**	**$ 1,745,938**	**$ 2,058,544**
Ending Fund Balance	**$ 6,429,073**	**$ 3,641,556**	**$ 3,641,556**	**$ 5,669,013**	**$ 3,858,201**	**$ 1,745,938**	**$ 2,058,544**	**$ 2,584,733**
INCOME								
Contributed Capital/System Development Fees								
25210 Contribution in Aid of Construction-In Kind Contribution	$ 236,844	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000
25213 North Weld Reimbursement Fee	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
25220 Plant Investment Fees	$ 1,130,611	$ 918,572	$ 918,572	$ 1,268,949	$ 1,124,451	$ 1,064,942	$ 1,090,500	$ 1,116,672
25230 Raw Water Fee (Purchased from the District)	$ 45,368	$ -	$ -	$ -	$ -	$ -	$ -	$ -
25231 Raw Water Turned Over-In Kind Contribution	$ -	$ -	$ -			$ 68,740	$ 569,959	$ 583,638
XXXXX Storage Fee				$ 166,660	$ 170,993	$ 161,944	$ 165,830	$ 169,810
25235 Tap Connection Fees	$ 37,424	$ 42,319	$ 42,319	$ 38,665	$ 39,670	$ 37,571	$ 38,473	$ 39,396
Total Contributed Capital Revenue	**$ 1,213,403**	**$ 960,891**	**$ 960,891**	**$ 1,474,274**	**$ 1,335,115**	**$ 1,264,456**	**$ 1,294,803**	**$ 1,325,878**

OPERATING REVENUES										
Increase in Water Sales from Growth					$ 83,599	$ 92,460	$ 94,395	$ 103,268	$ 111,943	
% Rate Adjustment		**9.00%**	**9.00%**		**8.00%**	**8.00%**	**7.00%**	**6.00%**	**6.00%**	
NEW BASE RATE WITH % INCREASE (3/4" METER)			**$ 20.37**		**$ 22.00**	**$ 23.76**	**$ 25.42**	**$ 26.95**	**$ 28.56**	
NEW VOLUME CHARGE WITH % INCREASE			**$ 2.76**		**$ 2.98**	**$ 3.22**	**$ 3.44**	**$ 3.65**	**$ 3.87**	
% INCREASE IN WHOLESALE RATE		**8.00%**	**0.00%**		**2.00%**	**2.00%**	**2.00%**	**0.00%**	**0.00%**	
Increase in Water Sales from Rate Adjustment					$ 257,227	$ 284,493	$ 275,319	$ 258,170	$ 279,856	
% Conservation Rate Adjustment			**0.00%**		**2.00%**	**2.00%**	**2.00%**	**2.00%**	**2.00%**	
NEW CONSERVATION CHARGE WITH % INCREASE			**N/A**		**$ 1.97**	**$ 2.01**	**$ 2.05**	**$ 2.09**	**$ 2.13**	
30110 UNMETERED SALES/STANDBY CHARGES	$ 53,373	$ 53,517	$ 53,517	$	9,720	$ 10,498	$ 11,232	$ 11,906	$ 12,621	
30120 METERED SALES/GEN. CUSTOMERS	$ 3,415,892	$ 3,215,342	$ 3,215,342	$	3,556,168	$ 3,933,122	$ 4,302,836	$ 4,664,274	$ 5,056,073	
30121 CONSERVATION CHARGES	$ 269,653	$ 200,152	$ 200,152	$	204,155	$ 208,238	$ 212,403	$ 216,651	$ 220,984	
30122 HYDRANT METERED WATER	$ 25,205	$ 17,249	$ 17,249	$	20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	
30130 FIRELINE PROTECTION CHARGES	$ 15,718	$ 15,718	$ 15,718	$	15,718	$ 15,718	$ 15,718	$ 15,718	$ 15,718	
30160 AG RENTAL WATER SALES	$ 150,675	$ 57,500	$ 57,500	$	57,500	$ 57,500	$ 57,500	$ 57,500	$ 57,500	
30181 NORTHERN COLORADO WATER ASSOC-WHOLESALE	$ 130,208	$ 125,751	$ 125,751	$	126,433	$ 128,962	$ 131,541	$ 131,541	$ 131,541	
30182 SUNSET WATER - WHOLESALE	$ 23,310	$ 22,415	$ 22,415	$	20,113	$ 20,515	$ 20,926	$ 20,926	$ 20,926	
31400 OTHER MISC FEES	$ 5,507	$ 1,500	$ 1,500	$	1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	
31600 METER INSPECTION FEES	$ 4,720	$ 4,190	$ 4,190	$	4,167	$ 4,275	$ 4,049	$ 4,146	$ 4,245	
Total Operating Revenues	**$ 4,094,261**	**$ 3,713,334**	**$ 3,713,334**	**$**	**4,015,474**	**$ 4,400,328**	**$ 4,777,704**	**$ 5,144,161**	**$ 5,541,107**	

NON OPERATING REVENUES	2012 Actual	2013 Budgeted	2013 Actual	2014	2015	2016	2017	2018
38703 PENALTIES	$ 8,966	$ 18,000	$ 18,000	$ 18,000	$ 18,000	$ 18,000	$ 18,000	$ 18,000
38801 CUSTOMER SERVICE CHARGES	$ 27,190	$ 45,000	$ 45,000	$ 47,250	$ 49,613	$ 52,093	$ 54,698	$ 57,433
38806 CHANGE OF USE FEES	$ 52,135	$ 5,767	$ 5,767	$ 43,737	$ 44,874	$ 45,123	$ 65,279	$ 66,846
38903 PLAN REVIEW FEES	$ 1,500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500
38904 PETITION FOR INCLUSIONS	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ -
38905 MISC-OTHER (SCRAP METAL, REBATES)	$ 14,113	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
38908 PROJ. CONST FEE-NONREFUNDABLE	$ 4,350	$ 5,250	$ 5,250	$ 5,250	$ 5,250	$ 5,250	$ 5,250	$ 5,250
38910 BOXELDER METER READING FEES	$ 11,161	$ 2,900	$ 2,900	$ 2,400	$ 2,400	$ 2,400	$ 2,400	$ 2,400
38915 GRANT MONEY	$ 3,700	$ -	$ -	$ -	$ -	$ -	$ -	$ -
38905 INTEREST INCOME	$ 3,890	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000
38952 BOND IMA GAIN/LOSS	$ 3,002	$ -	$ -	$ -	$ -	$ -	$ -	$ -
38955 FNB IMA GAIN/LOSS	$ 25,657	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
XXXX BOND PROCEEDS				$ 5,000,000				
38960 GAIN/LOSS-SALE OF ASSETS	$ 8,212			$ -	$ -	$ -	$ -	$ -
Total Non-Operating Revenues	**$ 128,320**	**$ 110,417**	**$ 110,417**	**$ 5,150,137**	**$ 153,636**	**$ 156,366**	**$ 179,127**	**$ 183,428**
TOTAL INCOME	**$ 5,435,984**	**$ 4,784,642**	**$ 4,784,642**	**$ 10,639,885**	**$ 5,889,078**	**$ 6,198,527**	**$ 6,618,091**	**$ 7,050,414**

EXPENSES	2012 Actual	2013 Budgeted	2013 Actual	2014	2015	2016	2017	2018
Administration								
91053 EQUIPMENT NOTE INTEREST	$ 960	$ -	$ -	$ -	$ -	$ -	$ -	$ -
92010 ACCOUNTING SERVICES/AUDIT	$ 7,300	$ 8,000	$ 8,000	$ 8,400	$ 8,820	$ 9,261	$ 9,724	$ 10,210
92011 UNCOLLECTABLE REVENUE	$ -	$ 100	$ 100	$ 105	$ 110	$ 116	$ 122	$ 128
92015 BANK ANALYSIS MONTHLY CHARGES	$ 4,380	$ 6,000	$ 6,000	$ 6,300	$ 6,615	$ 6,946	$ 7,293	$ 7,658
92020 DIRECTORS FEES	$ 5,850	$ 6,500	$ 6,500	$ 6,825	$ 7,166	$ 7,525	$ 7,901	$ 8,296
92021 BOARD MEETING EXPENSES	$ 937	$ 1,100	$ 1,100	$ 1,155	$ 1,213	$ 1,273	$ 1,337	$ 1,404
92022 DIRECTORS TRAVEL & LODGING EXPENSES	$ 522	$ 1,150	$ 1,150	$ 1,208	$ 1,268	$ 1,331	$ 1,398	$ 1,468
92023 DIRECTORS REGISTRATION FEES	$ 410	$ 1,000	$ 1,000	$ 1,050	$ 1,103	$ 1,158	$ 1,216	$ 1,276
92026 DIRECTORS OTHER EXPENSE	$ -	$ 1,500	$ 1,500	$ 1,575	$ 1,654	$ 1,736	$ 1,823	$ 1,914
92027 DIRECTORS ELECTION EXPENSES	$ -	$ -	$ -	$ 1,050	$ -	$ 1,103		$ 1,158
92031 INSURANCE (AUTO, LIABILITY)	$ 20,527	$ 20,549	$ 20,549	$ 21,576	$ 22,655	$ 23,788	$ 24,977	$ 26,226
92033 INSURANCE (WORKER'S COMP)	$ 15,966	$ 18,595	$ 18,595	$ 19,525	$ 20,501	$ 21,526	$ 22,602	$ 23,732
92035 OUTSIDE SERV-VISION GRAPHICS	$ 10,965	$ 11,501	$ 11,501	$ 12,076	$ 12,680	$ 13,314	$ 13,980	$ 14,679
92036 OUTSIDE SERV. - COMPUTER BACKUP	$ 3,886	$ 6,500	$ 6,500	$ 6,825	$ 7,166	$ 7,525	$ 7,901	$ 8,296
92037 OUTSIDE SERV.-MISC	$ 6,629	$ 20,500	$ 20,500	$ 21,525	$ 22,601	$ 23,731	$ 24,918	$ 26,164
92038 OUTSIDE SERV.-ONLINE PAYMENT FEES	$ 7,912	$ 8,500	$ 8,500	$ 8,925	$ 9,371	$ 9,840	$ 10,332	$ 10,848
92039 OUTSIDE SERV. - RATE MODEL UPDATE	$ -	$ 30,000	$ 30,000	$ -	$ -	$ -	$ -	$ 35,000
92040 LEGAL FEES	$ 11,380	$ 15,000	$ 15,000	$ 15,750	$ 16,538	$ 17,364	$ 18,233	$ 19,144
92041 OPPOSITION CASE EXPENSE	$ 4,402	$ 38,500	$ 38,500	$ 10,000	$ 10,500	$ 11,025	$ 11,576	$ 12,155
92043 WATER CONSERVATION PLAN	$ -	$ -	$ -	$ -	$ -	$ 35,000		$ -
92044 WATER CONSERVATION EXPENSE	$ 2,850	$ 5,000	$ 5,000	$ 5,250	$ 5,513	$ 5,788	$ 6,078	$ 6,381
92048 MISC	$ 9,546	$ 7,000	$ 7,000	$ 7,350	$ 7,718	$ 8,103	$ 8,509	$ 8,934
92049 MEMBERSHIP DUES	$ 4,364	$ 4,515	$ 4,515	$ 4,741	$ 4,978	$ 5,227	$ 5,488	$ 5,762
92055 ENGINEERING SUPPLIES	$ 613	$ 1,500	$ 1,500	$ 1,575	$ 1,654	$ 1,736	$ 1,823	$ 1,914
92056 OFFICE SUPPLIES	$ 9,344	$ 14,470	$ 14,470	$ 15,194	$ 15,953	$ 16,751	$ 17,588	$ 18,468
92058 NEWSPAPER PUBLICATIONS	$ 1,291	$ 1,000	$ 1,000	$ 1,050	$ 1,103	$ 1,158	$ 1,216	$ 1,276
92061 JANITORIAL	$ 6,900	$ 7,400	$ 7,400	$ 7,770	$ 8,159	$ 8,566	$ 8,995	$ 9,444
92064 OTHER BUILDING R & M	$ 4,146	$ 3,000	$ 3,000	$ 3,150	$ 3,308	$ 3,473	$ 3,647	$ 3,829

92072 ANSWERING SERVICE	$ 1,320	$ 1,500	$ 1,500	$ 1,575	$ 1,654	$ 1,736	$ 1,823	$ 1,914	
92073 PHONE SERVICE	$ 7,004	$ 7,100	$ 7,100	$ 7,455	$ 7,828	$ 8,219	$ 8,630	$ 9,062	
92077 CELLULAR PHONE SERVICES	$ 3,791	$ 3,900	$ 3,900	$ 4,095	$ 4,300	$ 4,515	$ 4,740	$ 4,977	
92081 MEALS, MILEAGE, & LODGING	$ 2,862	$ 1,500	$ 1,500	$ 1,575	$ 1,654	$ 1,736	$ 1,823	$ 1,914	
92091 OFFICE SEWER SERVICES	$ 677	$ 711	$ 711	$ 747	$ 784	$ 823	$ 864	$ 907	
92093 OFFICE ELECTRIC SERV	$ 6,628	$ 8,000	$ 8,000	$ 8,400	$ 8,820	$ 9,261	$ 9,724	$ 10,210	
92094 OFFICE GAS SERVICE	$ 1,629	$ 3,000	$ 3,000	$ 3,150	$ 3,308	$ 3,473	$ 3,647	$ 3,829	
92096 TRASH SERVICE	$ 1,224	$ 1,285	$ 1,285	$ 1,349	$ 1,417	$ 1,488	$ 1,562	$ 1,640	
92097 OFFICE ALARM	$ 2,225	$ 2,310	$ 2,310	$ 2,426	$ 2,547	$ 2,674	$ 2,808	$ 2,948	
93020 POSTAGE	$ 29,419	$ 33,000	$ 33,000	$ 34,650	$ 36,383	$ 38,202	$ 40,112	$ 42,117	
93031 OPERATING SUPPLIES	$ 10,308	$ 15,148	$ 15,148	$ 15,905	$ 16,701	$ 17,536	$ 18,412	$ 19,333	
93052 OFFICE EQUIPMENT MAIN. CONTRACT	$ 20,497	$ 24,228	$ 24,228	$ 25,439	$ 26,711	$ 28,047	$ 29,449	$ 30,922	
93054 OFFICE EQUIP. REPAIRS & MNT	$ 2,273	$ 7,400	$ 7,400	$ 7,770	$ 8,159	$ 8,566	$ 8,995	$ 9,444	
94010 NEWSLETTERS	$ 1,171	$ 2,500	$ 2,500	$ 2,625	$ 2,756	$ 2,894	$ 3,039	$ 3,191	
94011 CCR	$ 1,899	$ 2,400	$ 2,400	$ 2,520	$ 2,646	$ 2,778	$ 2,917	$ 3,063	
95011 ADMIN PERA/MC/LIFE INSURANCE	$ 184,725	$ 213,811	$ 213,811	$ 224,502	$ 235,727	$ 247,513	$ 259,889	$ 272,883	
95021 TRAINING & EDUCATION	$ 5,883	$ 5,500	$ 5,500	$ 5,775	$ 6,064	$ 6,367	$ 6,685	$ 7,020	
95031 ADMIN SALARIES	$ 422,022	$ 466,013	$ 466,013	$ 552,412	$ 580,032	$ 609,034	$ 639,486	$ 671,460	
95032 ADMIN - CONTINGENT SALARIES	$ -	$ 18,641	$ 18,641	$ 19,573	$ 20,552	$ 21,579	$ 22,658	$ 23,791	
95033 ADMIN OVERTIME	$ 1,805	$ 1,951	$ 1,951	$ 2,313	$ 2,428	$ 2,550	$ 2,677	$ 2,811	
95034 ADMIN - SALARY BONUS	$ 3,850	$ 4,500	$ 4,500	$ 4,725	$ 4,961	$ 5,209	$ 5,470	$ 5,743	
95039 ACCRUED VACATION	$ 2,179	$ 3,500	$ 3,500	$ 3,675	$ 3,859	$ 4,052	$ 4,254	$ 4,467	
95040 ADMIN UNEMPLOYMENT TAX	$ 1,280	$ 1,473	$ 1,473	$ 1,547	$ 1,624	$ 1,705	$ 1,790	$ 1,880	
Total Administration	**$ 855,751**	**$ 1,068,251**	**$ 1,068,251**	**$ 1,124,151**	**$ 1,179,256**	**$ 1,274,321**	**$ 1,300,130**	**$ 1,401,294**	

Operations	2012 Actual	2013 Budgeted	2013 Actual	2014	2015	2016	2017	2018
41011 REA TANK # 1-JUANITA CT	$ 612	$ 564	$ 564	$ 592	$ 622	$ 653	$ 686	$ 720
41012 XCEL ENERGY - PS #1 50/05	$ 31,296	$ 38,000	$ 38,000	$ 39,900	$ 41,895	$ 43,990	$ 46,189	$ 48,499
41015 REA PS#1-E CO. RD 58	$ 13,772	$ 15,264	$ 15,264	$ 16,027	$ 16,829	$ 17,670	$ 18,553	$ 19,481
41017 REA PS #3- N CO. RD. 15	$ 14,859	$ 16,329	$ 16,329	$ 17,145	$ 18,003	$ 18,903	$ 19,848	$ 20,840
41018 REA PS #4-TERRY LAKE RD	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
41019 N. POUDRE ASSESSMENT	$ 62,590	$ 62,700	$ 62,700	$ 65,835	$ 69,127	$ 72,583	$ 76,212	$ 80,023
41020 CBT ASSESSMENT	$ 87,363	$ 90,583	$ 90,583	$ 95,112	$ 99,868	$ 104,861	$ 110,104	$ 115,609
41021 ASSESSMENTS - MISC	$ 10,552	$ 11,836	$ 11,836	$ 12,428	$ 13,049	$ 13,702	$ 14,387	$ 15,106
41022 WSSC ASSESSMENT	$ 50,760	$ 52,640	$ 52,640	$ 55,272	$ 58,036	$ 60,937	$ 63,984	$ 67,183
41023 SPWRAP ASSESSMENT	$ 5,863	$ -	$ -	$ -	$ -	$ -	$ -	$ -
41025 PVP YEARLY EST O & M	$ -	$ 4,453	$ 4,453	$ 4,676	$ 4,909	$ 5,155	$ 5,413	$ 5,683
41026 RENTAL OF WATER BY ELCO	$ 7,775	$ 6,000	$ 6,000	$ 6,300	$ 6,615	$ 6,946	$ 7,293	$ 7,658
41027 CARRYOVER ASSESSMENT	$ 41,133	$ 67,550	$ 67,550	$ 70,928	$ 74,474	$ 78,198	$ 82,107	$ 86,213
41028 RULE 11 CHARGE	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
41029 CARRIAGE CONTRACTS	$ 18,347	$ 55,000	$ 55,000	$ 57,750	$ 60,638	$ 63,669	$ 66,853	$ 70,195
41031 FIRE MITIGATION COSTS	$ 61,853	$ 122,094	$ 122,094	$ 128,199	$ 134,609	$ 141,339	$ 148,406	$ 155,826
41060 REPAIR & MNTC - PUMPING	$ 17,431	$ 15,469	$ 15,469	$ 16,242	$ 17,055	$ 17,907	$ 18,803	$ 19,743
41065 GROUNDS MAINT - PUMP STATIONS	$ 3,923	$ 4,700	$ 4,700	$ 4,935	$ 5,182	$ 5,441	$ 5,713	$ 5,999
43020 FILTER PLANT O & M	$ 527,386	$ 569,080	$ 569,080	$ 583,307	$ 597,890	$ 612,837	$ 628,158	$ 643,862
44005 CHEMICALS	$ 1,495	$ 1,700	$ 1,700	$ 1,785	$ 1,874	$ 1,968	$ 2,066	$ 2,170
44011 OPERATIONS - PERA/MC/LIFE INSURANCE	$ 183,193	$ 207,790	$ 207,790	$ 218,180	$ 229,088	$ 240,543	$ 252,570	$ 265,199
44021 PERMITS	$ 820	$ 1,100	$ 1,100	$ 1,155	$ 1,213	$ 1,273	$ 1,337	$ 1,404
44023 MISC	$ 1,059	$ 1,807	$ 1,807	$ 1,897	$ 1,992	$ 2,092	$ 2,196	$ 2,306
44025 LOCATE SUPPLIES	$ 186	$ 200	$ 200	$ 210	$ 221	$ 232	$ 243	$ 255
44031 UNIFORM EXPENSE	$ 1,418	$ 3,300	$ 3,300	$ 3,465	$ 3,638	$ 3,820	$ 4,011	$ 4,212
44032 TOOLS & OTHER SUPPLIES	$ 5,743	$ 7,580	$ 7,580	$ 7,959	$ 8,357	$ 8,775	$ 9,214	$ 9,674
44033 SAFETY SUPPLIES	$ 1,219	$ 1,100	$ 1,100	$ 1,155	$ 1,213	$ 1,273	$ 1,337	$ 1,404
44041 OUTSIDE SERVICES - MISC	$ 2,471	$ 13,820	$ 13,820	$ 14,511	$ 15,237	$ 15,998	$ 16,798	$ 17,638
44042 OUTSIDE SERVICES-LAB FEES	$ 6,920	$ 6,900	$ 6,900	$ 7,245	$ 7,607	$ 7,988	$ 8,387	$ 8,806
44043 OUTSIDE SERVICES - MASTER PLAN UPDATE	$ 49,699	$ -	$ -	$ -	$ -	$ -	$ -	$ 80,000

44044 OUTSIDE SERVICES - SAFETY TRAINING	$ 1,874	$ 2,500	$ 2,500	$ 2,625	$ 2,756	$ 2,894	$ 3,039	$ 3,191
44045 OUTSIDE SERVICES - LEAK DETECTION	$ 5,277	$ 5,832	$ 5,832	$ 6,124	$ 6,430	$ 6,751	$ 7,089	$ 7,443
44051 REPAIR & MNTC - EQUIPMENT	$ 23,207	$ 25,000	$ 25,000	$ 26,250	$ 27,563	$ 28,941	$ 30,388	$ 31,907
44061 SAND, GRAVEL & BARRICADES	$ 11,438	$ 48,000	$ 48,000	$ 50,400	$ 52,920	$ 55,566	$ 58,344	$ 61,262
44063 MAIN LINES - REPAIRS	$ 48,101	$61,000	$61,000	$ 64,050	$ 67,253	$ 70,615	$ 74,146	$ 77,853
44064 SERVICE LINE - REPAIRS	$ 70,837	$ 114,244	$ 114,244	$ 282,649	$ 289,034	$ 295,662	$ 302,543	$ 128,311
XXXXX MASTER METER REPAIRS	$ 3,900	$ 5,000	$ 5,000	$ 5,250	$ 5,513	$ 5,788	$ 6,078	$ 6,381
44066 MEALS FOR FIELD CREW - LEAKS	$ 115	$ 200	$ 200	$ 210	$ 221	$ 232	$ 243	$ 255
44071 OPERATION SALARIES	$ 402,336	$ 408,543	$ 408,543	$ 456,424	$ 479,245	$ 503,208	$ 528,368	$ 554,787
44072 OPERATION - CONTINGENCY	$ -	$ 12,256	$ 12,256	$ 12,869	$ 13,512	$ 14,188	$ 14,897	$ 15,642
44073 OPERATIONS OVERTIME	$ 30,229	$ 30,641	$ 30,641	$ 34,232	$ 35,944	$ 37,741	$ 39,628	$ 41,609
44074 OPERATION - BONUS	$ 3,825	$ 4,200	$ 4,200	$ 4,410	$ 4,631	$ 4,862	$ 5,105	$ 5,360
44078 UNEMPLOYMENT TAX	$ 1,290	$ 1,367	$ 1,367	$ 1,435	$ 1,507	$ 1,582	$ 1,662	$ 1,745
44079 OPERATIONS - ACCRUED VACATION	$ (857)	$ 3,500	$ 3,500	$ 3,675	$ 3,859	$ 4,052	$ 4,254	$ 4,467
44091 FUEL	$ 28,628	$ 34,563	$ 34,563	$ 36,291	$ 38,106	$ 40,011	$ 42,012	$ 44,112
92095 MASTER METER VAULT	$ -	$ 166	$ 166	$ 174	$ 183	$ 192	$ 202	$ 212
Total Operations	**$ 1,839,938**	**$ 2,134,571**	**$ 2,134,571**	**$ 2,419,278**	**$ 2,517,730**	**$ 2,620,845**	**$ 2,728,664**	**$ 2,740,034**

	2012 Actual	2013 Budgeted	2013 Actual	2014	2015	2016	2017	2018
Debt Service								
XXXXX Debt Service on New Issues				$175,214	$350,428	$350,428	$350,428	$350,428
91037 SERIES A BONDS ADMIN FEE	$ 300	$ 300	$ 300	$ 400	$ 400	$ 400	$ 500	$ 500
91039 SERIES B BOND ADMIN FEE	$ 300	$ 300	$ 300	$ 400	$ 400	$ 400	$ 500	$ 500
91054 2009-A INTEREST EXPENSE	$ 150,430	$ 150,230	$ 150,230	$ 150,005	$ 149,730	$ 149,430	$ 149,130	$ 148,805
91056 2009-B INTEREST EXPENSE	$ 107,413	$ 101,213	$ 101,213	$ 94,125	$ 85,188	$ 75,288	$ 65,088	$ 53,550
20700 SERIES 2009-A BOND PRINCIPLE	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000
20900 SERIES 2009-B BOND PRINCIPLE	$ 310,000	$ 315,000	$ 315,000	$ 325,000	$ 330,000	$ 340,000	$ 355,000	$ 365,000
Total Debt Service	**$ 578,443**	**$ 577,043**	**$ 577,043**	**$ 755,144**	**$ 926,147**	**$ 925,946**	**$ 930,646**	**$ 928,783**
Water Fund Operating Expenses	**$ 3,274,132**	**$ 3,779,865**	**$ 3,779,865**	**$ 4,298,573**	**$ 4,623,132**	**$ 4,821,112**	**$ 4,959,440**	**$ 5,070,111**

	2012 Actual	2013 Budgeted	2013 Actual	2014	2015	2016	2017	2018
Capital Projects								
Water Rights								
16000 Coy Ditch Engineering	$ 22,632	$ -	$ -	$ 50,000	$ 50,000			
16001 Coy Ditch Legal	$ 23,046	$ -	$ -	$ 25,000	$ 25,000			
16004 Jackson Ditch Engineering 08CW277	$ 1,885	$ 64,750	$ 64,750	$ 16,667	$ 16,667			
16005 Jackson Ditch Legal 08CW277	$ 8,373	$ 18,750	$ 18,750	$ 20,833	$ 8,333			
16006 JR Brown Ditch Engineering	$ -	$ -	$ -					
16007 JR Brown Ditch Legal	$ -	$ 7,500	$ 7,500	$ 6,250				
XXXXX Exchange 07CW328	$ -	$ 7,500	$ 7,500	$ 7,500				
16009 Purchased Water Rights-Pending Chg of Use	$ 553,961	$ 1,045,045	$ 1,045,045	$ 516,604	$ 250,000	$ 250,000	$ 250,000	$ 250,000
16012 Contributed Water Rights - Pending Change of Use	$ -	$ -	$ -					
XXXXX Purchased or Contributed Water Rights - Change of Use	$ -	$ -	$ -					$ 75,000
16013 WSSC Change of Use Engineering	$ 7,413	$ -	$ -			$ 7,755	$ 7,755	$ 7,755
16014 WSSC Change of Use Legal	$ 3,607	$ -	$ -			$ 15,565	$ 15,565	$ 15,565
16024 WSSC Capital Contribution (Paid to WSSC - Op. Agreement)						$ 31,680	$ 31,680	$ 31,680
XXXXX North Poudre Agreement	$ 689	$ -	$ -	$ -				
16025 Due Diligence 98CW435		$ 2,500	$ 2,500					
16018 Storage Alternatives (Acquisitions)		$ 75,000	$ 75,000	$ 233,773	$ 233,772	$ 233,772	$ 233,772	$ 233,772
XXXXX PVP Pre-Sed Basin Construction				$ 218,905				
Filter Plant Expenses								
16015 Investment in Soldier Canyon	$ 21,148	$ 80,398	$ 80,398	$ 50,000	$ 52,500	$ 55,125	$ 57,881	$ 60,775
16210 Soldier Canyon Plant-Capital Improvements & Reallocation	$ (141,150)	$ (50,000)	$ (50,000)		$ -	$ -	$ -	$ -
16713 Soldier Canyon Plant Expansion	$ 28,612	$ 304,055	$ 304,055	$ 352,800	$ 1,587,600	$ 1,587,600		
16714 Soldier Canyon Equipment	$ 1,776	$ -	$ -	$ 48,342	$ 24,570	$ 33,264	$ 36,750	$ 16,800
16715 Soldier Canyon Transportation Equipment	$ -	$ -	$ -	$ -	$ -	$ 5,250	$ -	$ 5,250
Storage Alternatives								
16017 Overland Trail Ponds	$ 365,668	$ 295,058	$ 295,058	$ 275,000	$ 529,552	$ 279,455	$ 118,339	$ 314,848

Land & Right-of-Way									
16022 NEWT 1 Easement Acquisition	$ 60	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
16023 NEWT 2 Easement Acquisition	$ 19,062	$ 88,475	$ 88,475	$ 162,000	$ -	$ -	$ -	$ -	$ -
Transmission & Distribution System									
16230 Transmission & Distribution System	$ 197,018	$ 1,151,910	$ 1,151,910	$ 427,680	$ 270,600	$ 865,820	$ 444,620	$ 362,120	
16231 Contributed Transmission & Distribution (non-expense)	$ 236,844	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	
16250 NEWT 1 Design & Construction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
16255 NEWT 2 Design & Construction	$ -	$ 35,000	$ 35,000	$ 1,850,000	$ -	$ -	$ -	$ -	
Equipment for Admin & Operations									
16410 Office Furniture & Equipment	$ 5,522	$ -	$ -	$ -	$ -	$ 5,500	$ -	$ -	
16420 Field Equipment	$ 32,000	$ 52,480	$ 52,480	$ -	$ -	$ 70,000	$ 70,000	$ -	
16430 Programs & Updates	$ -	$ 6,313	$ 6,313	$ 6,500	$ 6,565	$ 6,631	$ 6,697	$ 6,764	
16500 Transportation Equipment	$ -	$ 48,000	$ 48,000	$ 25,000	$ -	$ 20,000	$ 50,000	$ 50,000	
Pump Station Improvements									
16720 Scada System	$ 5,705	$ -	$ -	$ 6,000	$ 6,600	$ 7,260	$ 7,986	$ 8,785	
16734 Pump Station Improvement Project	$ 19,151	$ 7,000	$ 7,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	
Total Capital Project Expenses	**$ 1,176,178**	**$ 3,239,734**	**$ 3,239,734**	**$ 4,313,854**	**$ 3,076,759**	**$ 3,489,677**	**$ 1,346,046**	**$ 1,454,114**	

	2012 Actual	2013 Budgeted	2013 Actual	2014	2015	2016	2017	2018
Ending Fund Balance	**$ 6,429,073**	**$ 3,641,556**	**$ 3,641,556**	**$ 5,669,013**	**$ 3,858,201**	**$ 1,745,938**	**$ 2,058,544**	**$ 2,584,733**

Appendix 'B' - Public Notice and Customer Comments

A draft of this report was available for public review and comment between October 1 and December 1, 2013, a period of 60 days. One customer submitted comments during the public comment period. That customer's comments are summarized below.

D. Boes - ELCO residential customer called the ELCO office to express his preference for Residential Alternative #3 recommended in the draft report.