CITY OF SALIDA

2008 WATER CONSERVATION PLAN

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EXECUTIVE SUMMARY

The City of Salida ("the City" or "Salida") is the county seat of Chaffee County and its largest city, with a population of approximately 5,400 residents. Salida is seeing a significant change in its demographics as more people are drawn by the natural resources from outside the area. Salida thrives on the tourist season for its main economic income with whitewater rafting and kayaking attracting tourists from all over. The community is experiencing a blending of old and new influences and is poised to become a leader in environmental best practices. The City recognizes the need to conserve water in order to maximize the effectiveness of its currently owned water resources and infrastructure and to delay the need for investments in water purchase and infrastructure expansion or replacement. Most importantly, the City wants to be a steward of its natural resources and implement steps to preserve water in the region for future generations.

To meet this water conservation challenge, Salida has developed a Water Conservation Plan in accordance with the Water Conservation Act of 2004 and to meet the provisions of Colorado Revised Status Section 37-60-126.

Salida's service area encompasses a total area of approximately 2.2 square miles. In 2007, Salida supplied 428.5 million gallons (MG) or 1,315 acre-feet (AF) of potable water to customers within Residential, Multi-Family, Commercial/Industrial, and Municipal Park categories. In order to supply these customers, the City treated approximately 534.3 MG or 1,640 AF of water to overcome various system losses and leaks. On average over the last five years, 13 percent of all water produced was lost.

Projected water demand was determined using water usage per tap averages for Residential, Multi-Family, Commercial, and Industrial customer categories. Projected Municipal Park usage was calculated based on estimated population growth and the City's goal to have parks, trails, and open space within 1/3 mile of each Salida resident. Table ES-1 shows the City's total projected water use.

Table ES-1 – City of Salida Projected Water Use

Year	TOTAL PROJECTED WATER USE (MG)	TOTAL PROJECTED WATER USE (AF)
2010	554	1,701
2015	694	2,130
2020	804	2,469
2025	888	2,726

Water Conservation Goals

Through discussions with staff, the City would like to first look internally at how they can conserve water through the utility maintenance measures and keep regulatory measures to a minimum. Additionally, Salida would like to offer programs that will educate and provide rebates and incentives for all types of water users. A planning horizon of ten years is used to quantify the full benefit of these measures and programs. Salida's goal for this plan is to reduce water use by 13 percent or approximately 960 MG (2,945 AF) over the ten-year planning horizon.

Water Conservation Measures and Programs

In order to meet the water savings goals, a universal list of water conservation measures and programs were subject to an initial screening, cost-benefit analysis, and final screening. Table ES-2 shows the total annual water savings that may be achieved through the chosen measures and programs and the estimated costs to the City. Estimated savings over the next ten years totals 965 MG or 2,960 AF.

Table ES-2 – Combined Water Savings of Selected Conservation Measures and Programs

Conservation Measures and Programs	Estimated Total Water Savings over Planning Period (MG)
Unaccounted for Losses	
Leak Detection & Repair Program	359
Billing Software Upgrades	72
Meter Testing and Replacement Program	36
Subtotal	**467**
Acre-Feet	**1,434**
Residential and Multi-Family	
Water Restrictions - Hours/Day	145
Water Waste Ordinance	14
Inclining Block Water Rate Structure	144
Public education - newsletter, bill stuffers, website	36
School Education Program (K-12)	18
Residential Water Audit Kits	19
Rebate for Low-Flow Toilets	7
Rebate for Low-Flow Faucet	18
Rebate for Low-Flow Showerhead	5
Subtotal	**406**
Acre-Feet	**1,245**
Commercial and Industrial	
Post commercial BMPs on website or as bill stuffers	6
Commercial and Industrial Water Audits	53
Distribute Pre-Rinse Spray Heads to Restaurants and Institutions	30
Subtotal	**89**
Acre-Feet	**272**
Municipal Parks	
Chisholm Park Xeriscape	3
Subtotal	**3**
Acre-Feet	**9**
Grand Total	**965**
Acre-Feet	**2,960**

* Shaded cells represent existing measures.

Meter testing and replacement, which is a City initiative already in progress, are nearly 55% of the total anticipated cost over the ten-year planning period. Without

the cost of meter testing and replacement, the cost of water conservation implementation for Salida over the next ten years is $448,400.

Implementation Plan

The proposed implementation schedule considers the water-saving impact from each measure/program, the projected budget for system improvements, and available staff resources. While this schedule may be optimistic, it spreads initial efforts over the next three years and allows time for researching and obtaining grants and developing sound programs for a higher probability of success.

Table ES-3 – Implementation Schedule

Conservation Measure or Program	2009	2010	2011	2012	Action Required
Rate Structure Changes		Jan.			Apply for grant; Contract for Rate Study, contingent on grant approval
Leak Detection & Repair Program	Aug.				Apply for grant; research equipment and training
Rebate for Low-Flow Faucet			Aug.		Apply for grant; research products and set up rebate
Distribute Pre-Rinse Spray Heads to Restaurants and Institutions			March		Order and install spray heads
Billing Software Upgrades	Aug.				Apply for Grant, research software
Residential Water Audit Kits		March			Have available prior to summer irrigation and tourism season
Rebate for Low-Flow Showerhead			Aug.		Apply for grant; research products and set up rebate
Rebate for Low-Flow Toilets			Aug.		Apply for grant; research products and set up rebate
School Education Program (K-12)		Sept.			Send selected teachers to training
Public education - newsletter, bill stuffers, website		Sept.			Research; identify web developer
Post commercial BMPs on website or as bill stuffers		Sept.			Research; identify web developer
Commercial and Industrial Water Audits		Jan.			Apply for grant; Acquire training; Start with Schools and Institutions, continue with Hospitality during tourist season
Chisholm Park Xeriscape		March			In-house research and planning by staff
Meter Testing and Replacement Program	Aug.				Apply for grant; continue program as planned

CHAPTER 1 - INTRODUCTION

Originally settled by the Ute Indians in the 1800's, the City of Salida ("the City" or "Salida") has a history is full of explorers, miners, farmers, and ranchers. Salida sets just below the Continental Divide in the Upper Arkansas River Valley. Salida's service area encompasses a total area of approximately 2.2 square miles with the Arkansas River running through it. Salida's incorporation as a statutory city in 1880 is attributed to the presence of the Denver and Rio Grande railroad that primarily served the mining industry at this time.

Salida's mild climate is attributed to being surrounded by the Sawatch Mountain Range to the Northwest, Sangre de Cristo Mountain Range to the South and the Mosquito Mountain Range to the North. Set at the heart of the Arkansas River, Salida thrives on the tourist season for its main economic income with whitewater rafting and kayaking attracting tourists from all over. Salida's downtown has maintained its historic roots and has a growing arts community.

Salida has low to moderate density residential areas along with some commercial and industrial land uses. The majority of the commercial development is along Hwy 50. The rural area immediately surrounding the City consists of several two to ten-acre lots along rural country roads for residential use, and a number of larger ranches are also in the near vicinity of Salida. These rural areas are not provided water services by the City.

Salida's water comes from three sources: the South Arkansas River, Pasquale Springs and the South Arkansas Gallery System (Galleries). Water from the South Arkansas River and the Galleries are collected and treated year round. The water collected from Pasquale Springs is used only during the summer irrigation season to help meet peak demands on the system.

These three water sources supply the City's constituents with water and have been reliable sources for the City's needs. However, like other municipalities in the State of Colorado, Salida is faced with the challenges of meeting water demands associated with growth. This growth, coupled with the fact that raw water supplies are becoming less available and more expensive with time, places a premium on water conservation. Salida recognizes the need to conserve water in order to maximize the effectiveness of its currently owned water resources and infrastructure and to delay the need for investments in water purchase and infrastructure expansion or replacement. Most importantly, the City wants to be a steward of its natural resources and implement steps to preserve water in the region for future generations. Salida is also seeing a significant change in its demographics as more people are drawn by the natural resources from outside the area. The community is experiencing a blending of old and new influences and is poised to become a leader in environmental best practices.

As with anything of value, there are challenges associated with water conservation. These challenges include potential lost revenue, potential inequities across socioeconomic classes and the cost of implementation. Salida recognizes these challenges and is determined to develop a water conservation plan that is fair and feasible to all of its customers.

CHAPTER 2 - PROFILE EXISTING WATER SYSTEM

Characteristics of the City of Salida Water Supply System

Population and Service Area

Salida is the county seat of Chaffee County and its largest city, with a population of approximately 5,400 residents. From 2002 to 2006, the City experienced negative growth. However, 2007 saw a one percent growth increase and a new planned development will continue this trend over the next ten years. The community has seen an influx of vacation and second home owners as national magazines such as Outdoor and US News and World Report have featured Salida as a "top town" in various feature articles. In addition, as the Interstate 70 corridor has reached saturation, many Front Range residents have discovered the Arkansas Valley as an alternative for weekend recreation.

Table 2.1 shows the population totals from the Colorado Department of Local Affairs (CDOLA) website, except for 2007, which is estimated based on taps sales. Table 2.1 also shows the total number of taps for 2003 through 2007. The tap data shows the despite a decline in population, the City is seeing significant development. Based on 2007 CDOLA estimated data, Salida averages approximately 2.15 people per dwelling.

Table 2.1 – City of Salida Population

Year	Population	No. of Taps*
2002	5,455	-
2003	5,378	2,183
2004	5,358	2,323
2005	5,333	2,505
2006	5,299	2,739
2007	5,399	2,776

*Tap data was not available for 2002.

The City water service area includes Salida proper, as well as certain areas outside the City limits. In 2000, Salida adopted a Comprehensive Plan, which revealed a planned annexation area of approximately 7.25 square miles.

Water Distribution System

The City delivers water from three different sources in a water delivery system consisting of a water treatment plant (WTP), three pump stations and three treated water storage tanks. Water delivery is made to a low zone and high zone. The three water sources and their production capacities (in millions of

gallons per day – MGD) will be discussed in more detail later in this chapter and are listed below:

- Surface water from the South Arkansas River – 1.3 MGD
- Groundwater from Galleries – 1.4 MGD
- Pasquale Springs – 1.0 MGD

The WTP, constructed in 1959, treats the surface water while the groundwater from the Galleries and Pasquale Springs is chlorinated and pumped directly into the distribution system.

The three pump stations are:

- Reservoir Pump Station – pumps water from the treated storage tank located at the Galleries into the distribution system for delivery to the low zone.
- Pasquale Springs Pump Station – pumps water from Pasquale Springs directly into the distribution system for delivery to the low zone.
- High Zone Pump Station – receives water directly from the WTP storage tank and pumps water to the distribution system in the high zone.

The treated water storage tanks and their capacities are:

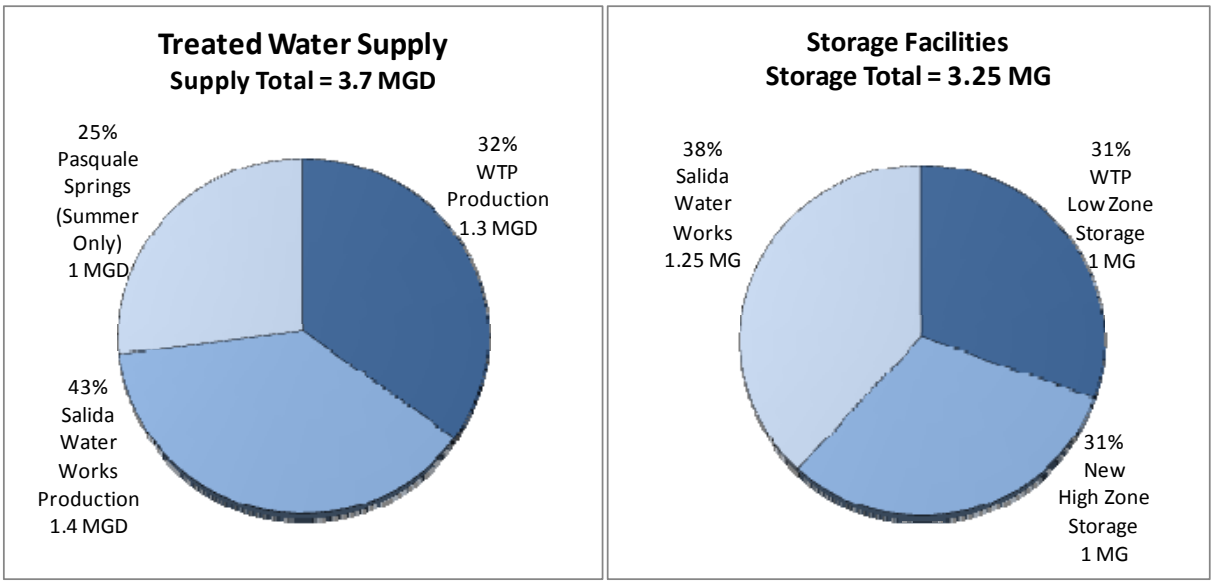
- Reservoir Storage Tank – 1.25 million gallons (MG)
- WTP Tank – 1.0 MG
- New High Zone Tank – 1.0 MG (Will be placed into service in 2009)

Another existing storage tank, the Tenderfoot Tank was previously used by the City to store water from Pasquale Springs; however this tank has been out of service for some time. Substantial upgrades to the Tenderfoot Tank would be needed to bring this storage tank back into service. A new high zone tank will be placed into service in 2009.

The Reservoir Storage Tank stores water from the Galleries and the WTP stores water directly from the WTP. The total treated water storage capacity for Salida is 3.25 MG.

The average annual daily flow from all three sources combined is 1.7 MGD, with the maximum flow being 3.9 MGD and the minimum daily flow being 0.8 MGD. The average flow in summer tourist season and the lawn/garden watering seasons goes up significantly to 3.0 MGD. The following figures show the percentage of water supply from each source and the storage percentages.

Figure 2.1 – Treated Supply Available



The high and low pressure zones are separated by pressure reducing valves. Since the distribution system is interconnected, the lower zone can receive water from any one of the three water sources, but the high zone, installed in 2007, only receives water from the WTP. The distribution system contains approximately 29.4 miles of pipelines that vary in size from 16 inches down to the old two-inch mains located in a small section on the east side of the City.

The City limits, service area and system components, not including pipelines are shown in Figure 2.2.

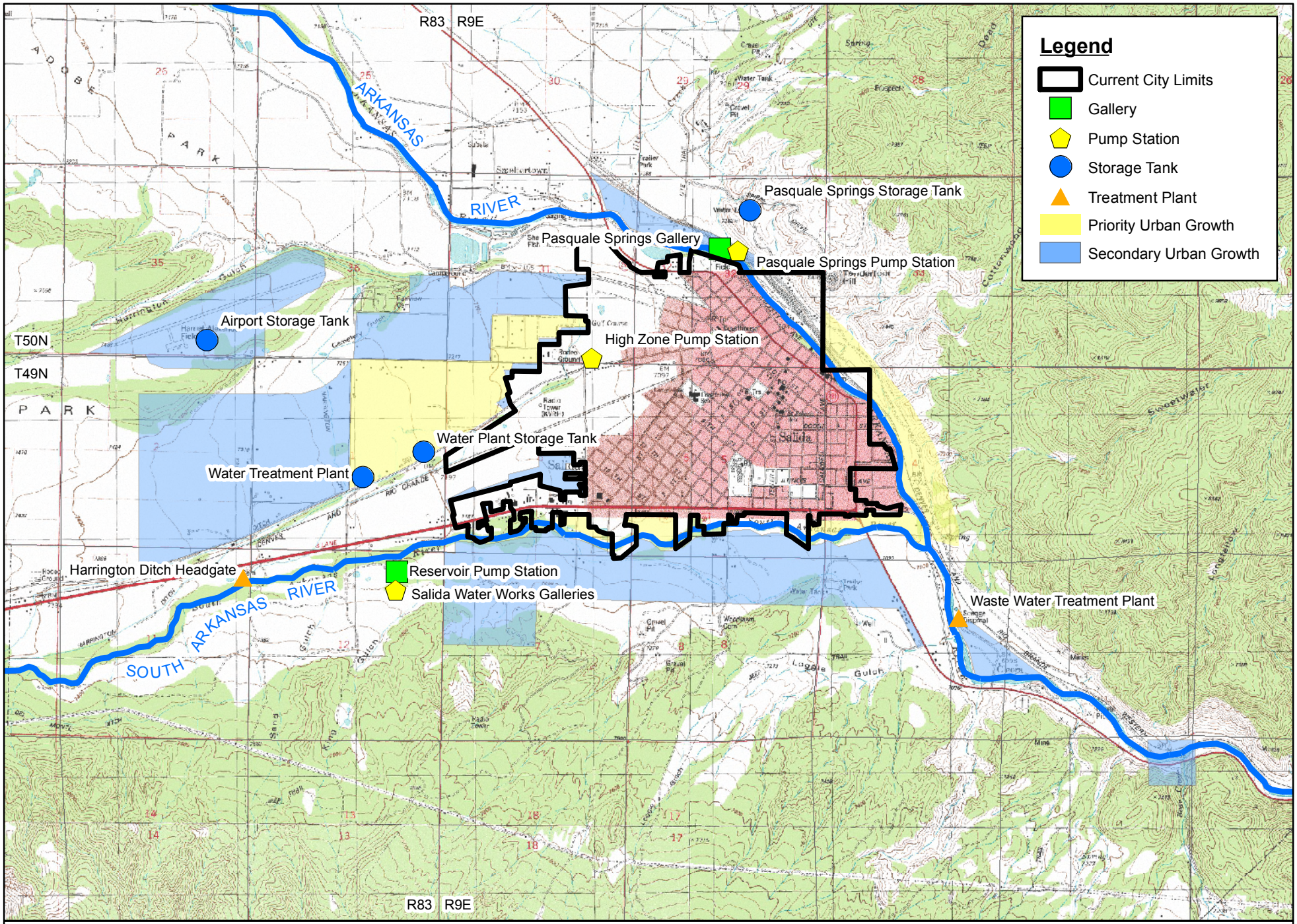


Figure 2.2

CITY OF SALIDA

VICINITY MAP

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Service Connections and Water Demand

The majority of Salida water customers are residential water users. In 2007, Salida had 2,776 service connections consisting of residential, multi-family, and commercial/industrial customers, in addition to City Parks. Of these 2,776 taps, 2,127 were residential. Water demand in 2007 was 1,318 acre-feet (AF). This is shown in Table 2.2 along with the last five years of water demand.

Table 2.2 – Water Use by Customer Category

	Customer Category					
Year	Residential AF	Multi-Family AF	Commercial and Industrial AF	Industrial AF	Parks AF	Total AF
2003	934	60	585	0	54	1,633
2004	720	55	606	1	49	1,431
2005	813	59	546	1	66	1,485
2006	767	66	553	2	73	1,461
2007	665	59	521	2	71	1,318

The City is dependent upon the summer tourism season as the main economic driver. During the summer, water production averages approximately 3 MGD, utilizing 75 percent of the maximum production capacity (4 MGD). Winter usage falls to an average of 0.8 MGD.

The City installed touch-read meters for all water customers between 1997 and 2000. Currently, the City has begun a replacement program using remote-read meters. As the remote-read meters are installed throughout the City, customers will be able to borrow a meter monitor that allows them to monitor their individual water use.

Sources of Water Supply

Salida's water supply originates from the Arkansas River and is obtained in three ways. Surface water is diverted from the South Arkansas River, infiltration galleries collect groundwater along the South Arkansas River year round, and Pasquale Springs collects groundwater from the Arkansas River, which is used only during the summer irrigation season.

Infiltration galleries are used to collect sub-surface flow from rivers. The Salida infiltration galleries include many 12-inch and 15-inch corrugated high density polyethylene pipe which have been placed into the South Arkansas River alluvium. Galleries use the natural geologic media to filter out solids and bacteria and restrict movement of contaminants through absorption.

Water law in Colorado is based on a first in time, first in right basis. Waters put to beneficial use and decreed in Water Court are prioritized according to the first date of use. Some of Salida's water sources are fairly junior and are used out of priority in

order to meet the City's water demands. An Augmentation Plan decreed through Water Court is needed to cover these out-of-priority impacts on the river to prevent injury to more senior water rights. Salida has acquired additional water sources to cover the stream depletions from their out-of-priority diversions.

The City also has some non-potable water sources that can be used for golf course and landscape irrigation. The water supply sources for the City are shown below in Table 2.3 including the sources for potable, non-potable and augmentation uses.

Table 2.3 – City of Salida Water Supplies

Source	Amount (cfs)	Dry-Year (Firm) Yield AF	Require Augmentation
City Supply Sources			
Harrington Ditch (No. 1 Priority)	3.24	242.00	
Harrington Ditch (No. 2 Priority)	2.14		
Harrington Ditch (No. 3 Priority)	0.12		yes
Champ Ditch (S. Arkansas WW & Irrigation Co.)	1.60		
Salida Infiltration Galleries	3.50		yes
City of Salida Well No. 1 (no longer in use)	0.00		
City of Salida Well No. 2 (no longer in use)	0.00		
City of Salida Well No. 3	0.89		yes
City of Salida Well No. 4	0.89		yes
Pasquale Springs (Summer Use Only)	1.55		yes
Pasquale Springs Enl. (Summer Use Only)	1.55		yes
Poncha Hot Springs	0.75		yes
Raw Water Sources			
Harrington Ditch (Golf Course Irrigation)	1.00		yes
Airport Well No. 1	25.00 GPD		yes
Airport Well No. 2	20.00 GPD		yes
Salida Waste Water Treatment Plant Well	0.03		yes
Briscoe Ditch	3.80		
Augmentation Supply Sources			
Tenassee Ditch & Tenassee Ditch Enl.	5.77	301.00	
Fryingpan – Arkansas Project Water		293.00	
Harrington Ditch		excess of City use	
Champ Ditch			
North Fork Reservoir Storage		295.00	

City of Salida's Augmentation Plan

In order for the City to divert its junior water supplies out of priority, a plan for augmentation is required by Colorado Water Court to protect senior water rights from being harmed by the out-of-priority diversions. In 1984, the City filed a plan for augmentation in Case No. 84CW158. The plan, which was decreed in 1987, details how depletions to the river from the City's water use will be replaced in time, place and amount for senior water users.

The plan for augmentation also changed the City's Harrington Ditch water rights from agricultural irrigation to municipal purposes and integrated all of its municipal water supply resources into one plan.

The sources of augmentation are:

- Harrington Ditch
- Champ Ditch
- Tenassee Ditch
- Fryingpan-Arkansas (Fry-Ark) Project Water

The water supply sources requiring augmentation are:

- Galleries
- Salida Wells (1 – 4)
- Junior water right for the Harrington Ditch
- Pasquale Springs
- Wastewater Treatment Plant Well
- Poncha Hot Springs
- Airport Well Nos. 1 and 2 (added through Case No. 91CW38)

Historic return flows from the native ditch rights are replaced along with the out-of-priority depletions to the river in the Augmentation Plan. The year 2002 was an exceptional drought year, but it revealed the firm yield, which Salida can rely on for planning. A review of the existing accounting records shows the Harrington and Champ Ditches provided 242 AF of excess augmentation credits during the 2002 irrigation season. The City filed an additional case, No. 87CW61, where it could exchange water to Pueblo Reservoir and use it for augmentation.

Infiltration Galleries

Salida's primary source of groundwater is from the Galleries. These Galleries make up the City's water right for 3.5 cfs. According to the November 2000 Water Supply Master Plan, this water right is seldom in priority and the resulting depletions must be augmented in accordance with the terms and conditions of the Plan for Augmentation.

City of Salida Wells

The City owns several wells (City Wells No.'s 1-4), which were used to supplement the flow from the Galleries. Each well has an associated water right of 0.89 cfs or 400 gallons per minute (gpm). According to the Water Supply Master Plan, only two wells, Well No. 3 and 4 are being used. Water is pumped from Well No. 3 to provide water primarily for construction and fire purposes. Well No. 4 supplements the flow from Well No. 3. Although decreed for more, the delivery rate of Well No. 3 has been found to be approximately 189 gpm.

The airport wells and the well at the wastewater treatment plant are used for outdoor irrigation of the surrounding landscape at these facilities.

Harrington Ditch

Water is diverted from the South Arkansas River by the Harrington Ditch at a point just east of Poncha Springs. Salida owns shares of the ditch company that include three different priorities as shown in Table 2.3 and uses the water for City treated delivery, non-potable irrigation and augmentation.

Pasquale Springs/Enlargement

Pasquale Springs was established as a source of water for the City in the early 1900's. The source for Pasquale Springs originates from an aquifer north of the Arkansas River and can receive seepage water from the northwest as well. After the City's water sources were combined in Case No. 84CW158, the spring system was rehabilitated to enhance production and improve water quality.

Other Raw Water Sources

The Briscoe Ditch is a native source of irrigation water that was not changed to municipal use in Case No. 84CW158, but was kept for irrigation of the nine-hole City golf course.

Another source of water for the golf course is a diversion of 1.0 cfs from the Harrington Ditch into a pipeline to the golf course. This 1.0 cfs was transferred from the South Arkansas Water Works and Irrigation Company Ditch to the Harrington Ditch in Case No. 84CW158.

Augmentation Sources

Salida's ownership in the Tenassee Ditch is part of a pending change of use application in Water Court. The application will change the use of the Tenassee Ditch from irrigation to augmentation to allow continued year-round diversions at the Harrington Ditch. The intent of the addition of the Tenassee Ditch to the City's water right portfolio was to increase the firm yield of its augmentation water.

For the Tenassee Ditch, the total volume of fully-consumable water that Salida could apply directly as an augmentation credit or place into storage during the irrigation season is 301 AF. This is based on the firm-yield evaluation of the Tenassee Ditch during 2002.

Diversion of the Champ Ditch was moved to the South Arkansas Reservoir Ditch, according to the water commissioner, under the name of the South Arkansas Water Works & Irrigation Company. Diversion records can be found under this name in the State's diversion records in Hydrobase. This water right has been decreed for augmentation use in the City's Plan of Augmentation.

The Fry–Ark Project is a Bureau of Reclamation Project, which is administered by the Southeastern Colorado Water Conservancy District (SECWCD). According to the 1986 Resolution of the Board of Directors, a minimum of 51 percent is allocated to municipal and domestic uses which is further divided by allocating no less than four percent of the annual project water supply to the Arkansas Valley cities, towns, and entities lying west of Pueblo. The allocations are premised upon the utilization of carryover storage space in project reservoirs in an amount not less than 12,400 AF for Arkansas valley cities, towns, and entities lying west of Pueblo.

Salida requests an annual allocation of 400 AF of Fry-Ark Project Water each year as a municipality located within the boundaries of the SECWCD. The actual allocation varies each year due to actual snowpack and runoff. Salida releases a portion of its Fry-Ark Project Water allocation each year to meet its winter augmentation obligation. Each year the unused portion of the Fry-Ark Project Water allocation is transferred into what is known as the Carryover Project Water Account within the SECWCD District's Turquoise, Twin Lakes or Pueblo Reservoirs. The unused portion of each annual Project Water allocation can continue to be stored and saved for future years under the SECWCD District's current policy.

In 1993, Salida entered into a 40-year lease with the Upper Arkansas Water Conservancy District for storage of 295 AF in Pueblo Reservoir, which is leased by the District from the State of Colorado. This storage is termed If and When storage by the City and is for short-term storage of excess augmentation credits and water from the Fry–Ark Project according to the lease agreement. The water is exchanged to Pueblo Reservoir pursuant to the decree in Case No. 87CW61.

System Limitations

Along with areas of high water use, system limitations can provide insight into how and where to set water conservation goals. Discussions here will include both current and potential system limitations. Ideally, conservation can help mitigate a portion of the limitations and improve the reliability and efficiency of the system.

Raw Water Storage Limitations

The recent acquisition of the Tenassee Ditch will increase the firm yield of Salida's water right portfolio as soon as Salida obtains a decree. According to Salida's Raw Water Master Plan, the Tenassee Ditch acquisition provides the ability to meet augmentation requirements 15 to 20 years into the future. However, a limiting factor in Salida's plan for augmentation is the ability to store excess augmentation credits created during the summer for release from storage during the winter months.

Currently, Salida stores excess augmentation credits created during the summer months in its If and When storage account in Pueblo Reservoir. With the projected increase in population and the subsequent increase in water usage, there will be times when there will be less excess augmentation credit available from the Harrington, Champ, and Tenassee Ditches. Salida will eventually require reliable year-round water storage to fill with excess augmentation credit during average and wet years in anticipation of its use in dry years. The City is currently considering a Preferred Storage and Operations Program account for 2,000 AF in the SECWCD's Fry-Ark Project reservoirs.

Fry-Ark Project Water Limitations

Salida requests an annual allocation of 400 AF of Fry-Ark Project water each year as a municipality located within the SECWCD. According to the Water Supply Master Plan, the Fry-Ark Project firm water allocation is assumed to be 293 AF, which is an average of the delivery from 2000 to 2006. The actual allocation varies each year due to the snowpack and runoff. It is recognized that the actual yield of the Fry-Ark Project may vary in the future depending on the demand placed on the water by other municipal entities in the upper Arkansas basin, the availability of carryover storage space and other factors. Although Salida is entitled to an allocation of the Fry–Ark water, the quantity of this water is not fixed. Salida's annual Fry-Ark Project Water allocations from 2000 to 2006 are shown below in Table 2.4.

Table 2.4 – City of Salida Fry-Ark Allocations

Year	Allocation AF
2000	500
2001	400
2002	130
2003	183
2004	43
2005	400
2006	394
Average	**293**
Minimum	**43**

Although the Project Water allocation was only 130 AF during the 2002 drought, we will assume that Salida will receive at least the average project water yield of 293 AF annually due to the additional water available in its Carryover Project Water Account.

Water Quality

There exists a water quality concern with respect to residential, commercial and industrial development in the vicinity or up gradient of the City's groundwater sources. The Harrington Ditch may also be subject to contamination from agricultural runoff and other sources. Contamination of these sources could lead to critical water source limitations.

Future Water Distribution Limitations

Pressure and delivery of water to Salida water customers has been a problem in the past. The City is separated into two pressure zones, a high pressure zone and a low pressure zone. In 2007, a new 1-MG tank was constructed to serve areas that are at the same or higher elevation as the WTP. The lower zones can receive water from any one of the three water sources, but the higher zone only receives water directly from the WTP, which currently treats the surface water rights. The majority of development is in the high zone and as that increases, improvements to the system may be needed.

Another issue is the aging infrastructure in the older downtown area. Pipelines are hard to replace in this area because of development and limited knowledge of the location of the infrastructure. A survey and documentation system is needed to record location, maintenance, and replacement of existing and future pipelines and infrastructure.

Growth

Recently, an update to the Raw Water Master plan predicted a growth rate of two percent was used to estimate the population through 2030. Based upon the plan update, two percent was chosen because it is the projected rate used by Chaffee County.

New development is planned which may add new water customers in all customer categories. If the 191-acre development (Vandaveer Ranch) proceeds as planned, it will add approximately 1,000 new residential taps, an increase of over 30 percent from 2007 tap totals.

This development will also support new commercial development including a hotel, restaurants, retail, and office space. The Vandaveer development plan includes approximately 250 new single family homes, 375 condo or apartment units, and 200 new townhouses.

Summer Tourism Industry

Summer tourism contributes a considerable peak in water usage. The City is dependent upon the summer tourism season as its main economic driver. Four of the top ten water users are part of the tourism industry.

Future water use by visitors to Salida is difficult to predict, but it will likely continue to contribute to the peak demands apparent in the summer months. Eventually, summer peaking may meet or exceed the maximum production capacity of Salida's treated water supplies due to new development and summer tourism.

Statewide Water Supply Initiative

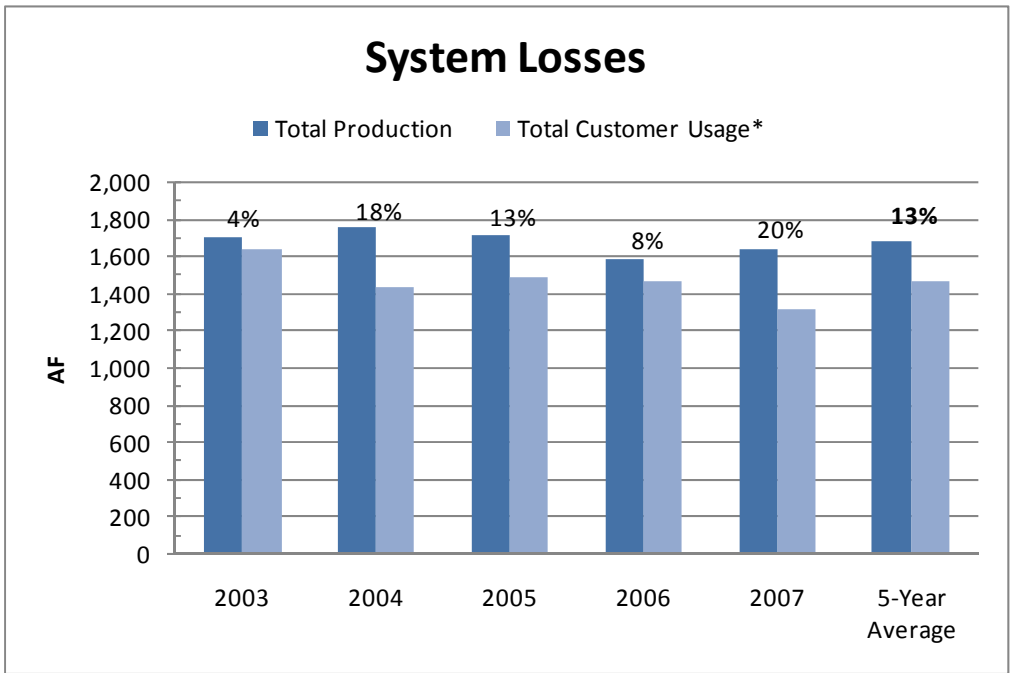
In 2003, the Colorado General Assembly authorized the Colorado Water Conservation Board (CWCB) to implement the Statewide Water Supply Initiative as a result of growing pressure on water supplies in Colorado and the 2002 drought. The study identified current and future water demands, available water supplies, and existing and planned water supply projects in eight major river basins in the State.

The study found a state-wide water supply gap of 118,200 AF by 2030 between projected demands and fully implemented water supply processes and projects, which are 20 percent of the 2030 demand. The gap in the Arkansas River Basin, where Salida is located, is 17,100 AF or 17 percent of the Arkansas River Basin 2030 demand. This makes conservation very important to Salida.

Unaccounted-for Water Use

There are two types of water losses that occur in water utilities, apparent losses and real losses. Apparent losses are paper losses that can be caused by customer meter inaccuracies, billing system data errors or unauthorized consumptions. Real losses are those that are physically lost within the distribution system, including the water treatment process. The City may have both real and apparent losses but City staff does not have a sense of unaccounted-for losses at this time. To date, the City has not pursued identifying or fixing leaks in the municipal water system. Figure 2.3 shows the estimated losses from the last five years.

Figure 2.3 – City of Salida System Losses



*Includes Residential, Multi-Family, Commercial, Industrial, and Municipal Park customer categories.

Losses have averaged 13 percent over the past five years. This is an area that the City would like to explore in this conservation planning effort both to help identify losses and for water savings. For example, according to Salida staff, fire hydrant usage is not metered and one of the City's hydrants is utilized by Public Works for maintenance and construction purposes. This water may account for a portion of the estimated losses shown above.

Water Costs, Billing Practices and Pricing

Charges for Water Service

Customers are separated by category into residential, commercial/industrial, and multi-family residential with different rates for each type of customer. The rates effective January 2008, are shown in Table 2.5. Rate increases are schedule annually (January 1) through the year 2011. Water customers located outside of the City limits pay two times the rates of in-city customers. In 2007, there were 19 water customers outside of the City limits.

These rates are adequate for the current level of water use within the City. However, an increase in water conservation may result in a direct reduction in revenue. A rate study could identify rates that would offset the financial effect of water conservation to the City and also encourage customers to conserve.

Table 2.5 – City of Salida Water Service Rates

Rate Category	Rate Detail	2008 Rate (Inside City Limits)	2008 Rate (Outside City Limits)
Residential quarterly charges **includes first 3,000 gallons*	- Service charge - Residential	$17.00	$34.00
	- Service charge - 2nd living unit	$17.00	$34.00
	- Maintenance charge per quarter	$12.36	$24.72
Commercial/Industrial quarterly charges	- Commercial 3/4-inch	$17.00	$34.00
	- Commercial 1-inch	$20.39	$40.78
	- Commercial 1.5-inch	$28.89	$57.78
	- Commercial 2-inch	$40.79	$81.58
	- Commercial 3-inch	$70.25	$140.50
	- Commercial 4-inch	$113.30	$226.60
Demand charge for Commercial/Industrial Customers	- Up to 100,000 gallons	$20.60	$41.20
	- 101,000 - 500,000 gallons	$41.20	$82.40
	- 500,001 - 1,000,000 gallons	$82.40	$164.80
	- Over 1,000,000 gallons	$123.60	$247.20
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11	$2.22

Water system development charges (tap fees) consist of three charges: a water resource fee dedicated to the payment of water rights, a water plant investment fee (PIF) and a high-zone fee for new customers added in the high pressure zone area. These charges are collected for a new tap purchase.

Revenue from Metered Water Sales

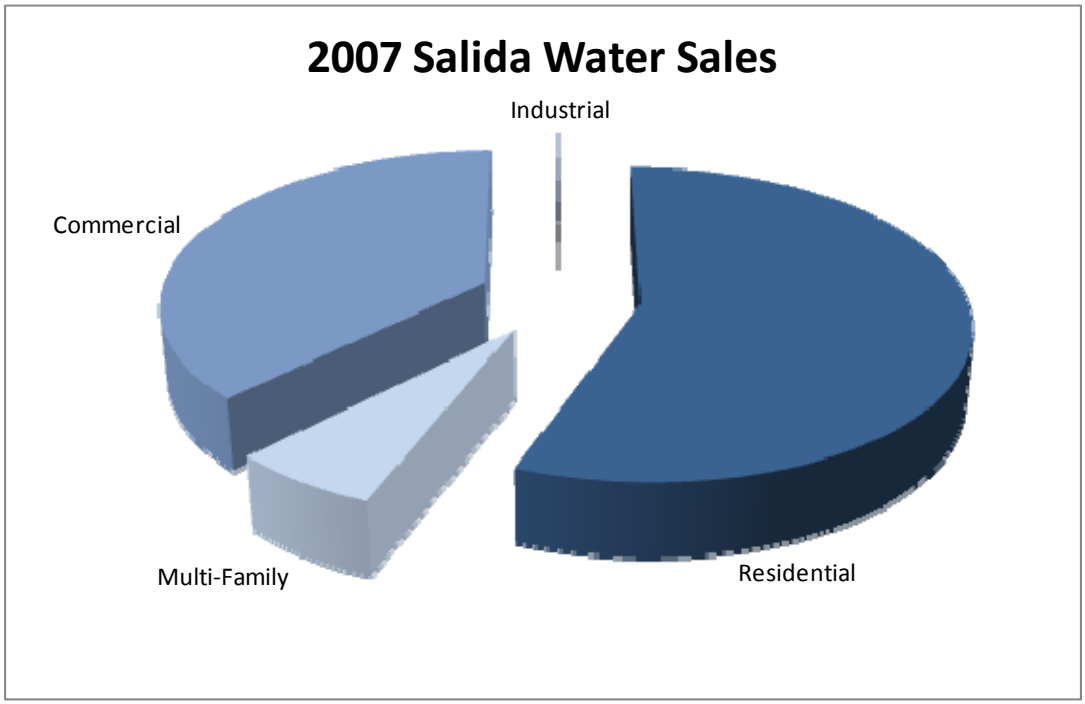
Salida's water sales per customer category from 2003 to 2007 are shown in Table 2.6. The City's General Fund pays the Water Enterprise Fund for water us at all city-owned facilities and parks, although those payments are not included in this summary. The purpose of this table is to show the amount of revenue generated from water sales from each of the customer categories.

Table 2.6 – Water Revenue by Customer Category (2003-2007)

	Customer Category				
Year	**Residential** Annual $	**Multi-Family** Annual $	**Commercial** Annual $	**Industrial** Annual $	**Total Annual $**
2003	$262,015	$16,390	$161,878	$286	**$440,569**
2004	$267,051	$19,556	$191,491	$484	**$478,582**
2005	$340,826	$31,717	$222,993	$720	**$596,257**
2006	$306,036	$33,469	$195,331	$837	**$535,673**
2007	$335,785	$38,807	$224,045	$1,014	**$599,651**

To give a graphic perspective, Figure 2.4 shows the operating revenue collected by the City in 2007 by customer category. The residential category is approximately 56 percent of the total water sales excluding parks.

Figure 2.4 – 2007 Salida Water Sales by Customer Category



Billings and Collections

Bills are mailed on a quarterly basis with customers given 30 days to pay. A late charge of $8.00 per account is charged if the account is not paid 30 days after billing. Second notices are sent out with an additional 30 days to pay and such accounts are charged a penalty. If the bill has not been paid after 60 days, the City sends out a shut-off notice stating that service will be discontinued in 72 hours if the charges remain unpaid. A shut-off charge of $35.00 is assessed to accounts for non-payment.

When a property title is transferred, the closing company requests a final read for closing the account. A fee of $50.00 is charged for this service outside the normal billing cycle.

Policies and Planning Initiatives Affecting Water Use

Rules and Regulations

Salida has adopted basic policies for management of the sanitary sewer and water utilities. The utilities have been segregated into the three categories: customer facilities, retail facilities, and wholesale facilities. Customers and developers are to design, construct, and finance the customer and retail facilities to the City established minimum

standards. Wholesale facilities are to be planned, designed, constructed and financed by the City.

An extension of Salida's water system is only given approval based on the water system capacity to meet expected demands from the extension. An engineering feasibility report must accompany a request for extension. It is the policy of the City that all water service provided by the City shall be metered. Any new construction, including adding units to an existing property, within the City water system must be designed to provide 40 pounds per square inch (psi) at the building. If pressure from the main is not adequate, the developer or property owner must install a pressure tank and pump.

Previous Studies

In 2000, Salida had a Comprehensive Plan prepared which established policy framework to provide strategic direction. Some of the guiding principles of the framework include requiring that water be available before approving any new development, directing urban growth in areas where adequate services already exist, and investment in improvements of existing facilities before expanding facilities to serve new development.

Also in 2000, the City completed a Water Supply Master Plan. This Plan guides the City's long-term acquisition and development of reliable water sources.

The Water Supply Master Plan was updated in 2007 and recommended that the City pursue additional raw water storage for the City's augmentation credits.

In 2002, Salida completed an analysis of Water and Sewer Capital Improvement Program status. The study set forth a two-year plan in which the City was to firm their Tenassee Ditch water source, construct a control system for the Harrington Ditch (via pipe or liner) in order to protect water quality and minimize any ditch loss or evaporation, and initiate development of supplemental Arkansas River Sources.

The 2000 Water Supply Master Plan and the 2002 Capital Program Status Report note several studies used as a foundation for the development of said reports. The studies include:

- Potable Water System for City of Salida; June 1975.
- Conceptual Paper: Development of High Zone Service; 1979.
- Cost Allocation and Rate Study; May 1981.
- Report on Salida's Water Resources and Plan for Water Augmentation; December 1984.
- Depletion Analysis of Vandaveer's Rights in the Tenassee Ditch; May 1985.
- Engineering Report for Water Rights and Plan of Water Augmentation; October 1986.
- Preliminary Design Report; Hot Water Transmission Line from the Poncha Hot Springs; May 1992.

- Preliminary Design Report; 1995 Update; Hot Water Transmission Line from the Poncha Hot Springs; June 1995.
- Outline of Utility Management Policies; December 1998.
- Water System Development Fee Study (Equity Approach); February 1999.

Current Water Conservation Activities

Municipal Code

The City municipal code contains a section dedicated to water conservation. The code authorizes the Mayor or City Administrator to impose mandatory restrictions to limit lawn and landscape irrigation as necessary. This section also allows for the issuance of variances for water customers with new landscapes.

Salida, on occasion, provides water conservation information to their water users through billing inserts. Also, water restrictions are presently in place. Customers use water on either even or odd days, based on their address, with no outside watering allowed between 10 am and 4 pm.

The municipal code also outlines mandatory severe drought water conservation measures, which are imposed when the daily demand for water services exceeds, or is anticipated to exceed 90 percent of the City's total water treatment capacity. The restrictions may also be implemented when the City's raw water supply is insufficient to meet the daily water demand. The drought restrictions include:

- No irrigation with potable water including lawns, landscapes, golf courses, gardens, trees or shrubs outside of the days and times established by the City.
- No boat, trailer, automobile, or other motor vehicle washing with potable water except at commercial washing establishments.
- No potable water used to wash sidewalks, streets, driveways, parking areas, tennis courts, patios, building siding, or other paved or impervious areas.
- No swimming pools, hot tubs or water features filled with potable water.
- No new connections.

The City will make at least one public announcement stating the restrictions.

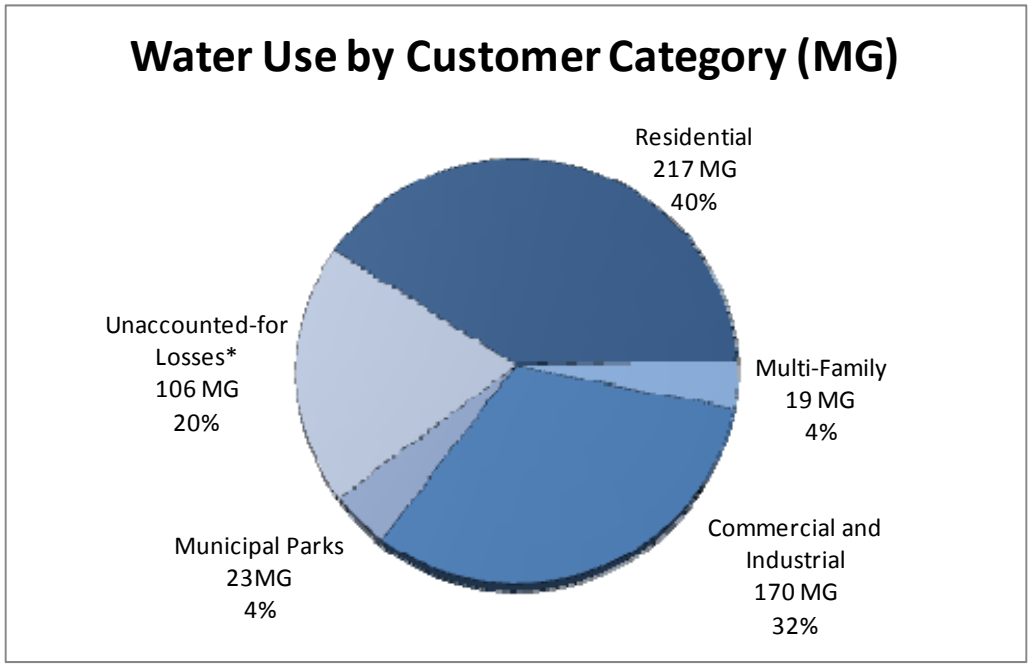
Billing and Meter Upgrades

The City installed touch-read meters for all water customers between 1997 and 2000. Currently, the City has begun a replacement program using remote-read meters. As the remote-read meters are installed throughout the City, customers will be able to borrow a meter monitor that allows them to monitor their individual water use.

2007 Water Use

In 2007, Salida supplied 428.5 MG or 1,315 AF of potable water to customers within Residential, Multi-Family, Commercial/Industrial, and Municipal Park categories. In order to supply these customers, the City treated approximately 534.3 MG or 1,640 AF of water to overcome various system losses and leaks. Figure 3.1 summarize the various water uses per customer category.

Figure 3.1 – Current Water Use by Customer Category (% of Total Produced)



*Unaccounted-for losses include Fire & Hydrant Use

Residential and Multi-Family Water Uses

Residential water use includes both indoor and outdoor uses. Residential water use in Salida is currently 665 AF per year. Multi-Family water use is currently 59 AF per year or four percent of total water supply produced. Mobile home parks are included in the Multi-Family category.

Commercial and Industrial Water Uses

Commercial and Industrial water users within the City include office buildings, hotels, schools, retail stores, restaurants, various commercial businesses, the hospital, and some manufacturing and light industrial facilities. Commercial water use is the second largest water use category at 32 percent of total water produced; current commercial water use in the City is 521 AF per year. The

largest commercial water users include schools, municipal facilities, the hospital, a nursing home facility, and hotels and restaurants.

City of Salida Municipal Parks

The City's General Fund pays the Water Enterprise Fund for water usage at its 12 parks, all of which use potable water except for the municipal golf course. Parks water use is currently 71 AF per year or four percent of total water supply produced.

Unaccounted-for Losses

In 2007, Salida billed customers for approximately 1,351 AF of water, but produced 1,640 AF. The basis for the water billed is the amount of water registered at the customer meters. Salida must produce additional water at their treatment facilities to account for various system and distribution losses that occur during delivery to customers. In 2007, this loss was 20 percent. However, on average over the last five years, 13 percent of all water produced is lost. Some of the losses may be attributed to a hydrant that Public Works uses for maintenance and construction purposes. Currently, the water use from this hydrant is not metered. Unaccounted-for losses also may include leakage, firefighting and theft, as well as billing errors and meter slippage.

Water Use by Tap Size

The total numbers of taps per customer category are shown in Table 3.1. The number of new taps added annually averaged 148 from 2003 to 2007. The number of new taps peaked in 2006 at 234 taps and dropped to only 37 taps in 2007.

Table 3.1 – City of Salida Taps by Customer Category

	Customer Category				
Year	Residential Taps	Multi-Family Taps	Commercial Taps	Industrial Taps	Total
2003	1,671	113	392	7	2,183
2004	1,784	129	403	7	2,323
2005	1,915	148	435	7	2,505
2006	2,094	167	471	7	2,739
2007	2,127	170	472	7	2,776

Table 3.2 shows the water use for each customer category and the total water use for Salida.

Table 3.2 - City of Salida Water Use

	Customer Category				
Year	Residential Water Use AF	Multi-Family Water Use AF	Commercial Water Use AF	Industrial Water Use AF	Total AF
2003	934	60	585	0.4	1,579
2004	720	55	606	0.8	1,382
2005	813	59	546	1	1,419
2006	767	66	553	1.7	1,388
2007	665	59	521	1.7	1,247

The water use per tap shown in Table 3.3 reveals an average water use pattern for Salida customers that is consistent with similar municipalities. The average Residential use is 0.41 AF per tap. Multi-Family water use is slightly higher from that of Residential use at 0.42 AF per tap. Industrial use averaged 0.16 AF per tap and Commercial water users average the highest water use per tap at 1.31 AF per tap.

Table 3.3 – City of Salida Water Use per Tap

	Customer Category				
Year	Residential Water Use AF/Tap	Multi-Family Water Use AF/Tap	Commercial Water Use AF/Tap	Industrial Water Use AF/Tap	Total AF/Tap
2003	0.56	0.53	1.49	0.06	0.72
2004	0.40	0.43	1.50	0.11	0.59
2005	0.42	0.40	1.26	0.14	0.57
2006	0.37	0.40	1.17	0.24	0.51
2007	0.31	0.35	1.10	0.24	0.45
Average	**0.41**	**0.42**	**1.31**	**0.16**	**0.57**

Per Capita Water Use

Per capita water use, both system-wide and residential, is a commonly used way to gage an entity's water use habits. System-wide per capita use can vary significantly between entities depending on the type of non-Residential water users within the system.

Salida's system-wide and residential per capita water use is shown in Table 3.4. The per capita uses reflect the affects of the watering restrictions and the drought shadow that occurred after 2002.

Table 3.4 – City of Salida Water Use in Gallons per Capita per Day (GPCD)

Year	System Wide GPCD	Residential GPCD *(does not include Dual Use)*
2003	262	165
2004	230	129
2005	238	146
2006	234	140
2007	202	117
Avg	233	140

Demand Forecast

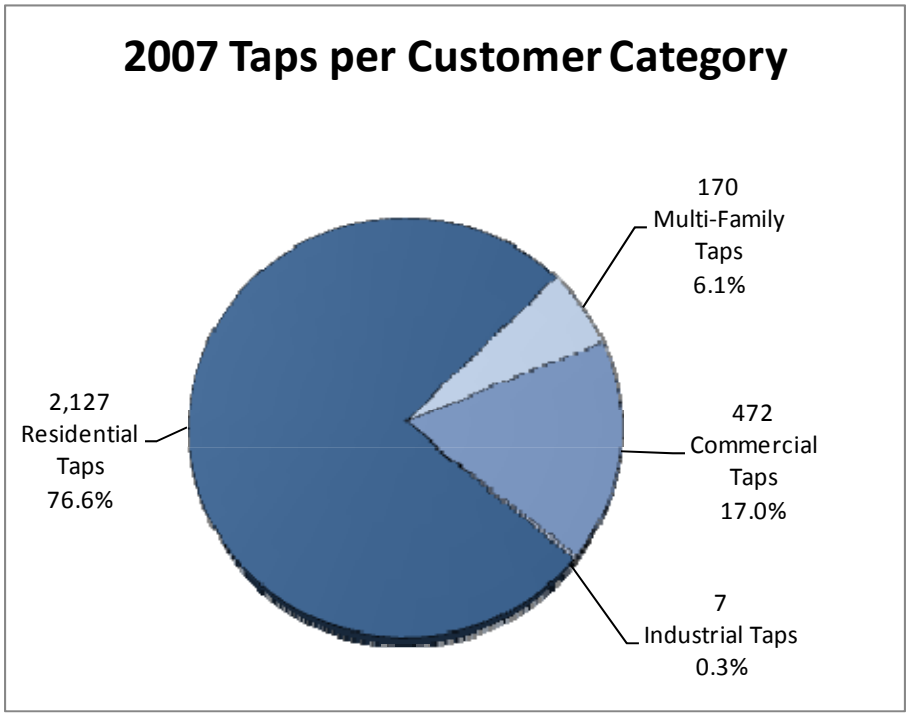
To properly assess future water demands, it is first necessary to conduct an analysis of historical and projected tap growth. Growth in Salida has decreased over the past five years. Currently, new growth has dropped off considerably. Salida's tap growth rate averaged six percent over the last four years (2004 – 2007). This is shown in the table below.

Table 3.5 – Historic Tap Growth

Year	Total Taps	Taps Added per Year	Total Tap Growth
2003	2,183	-	-
2004	2,323	140	6%
2005	2,505	182	8%
2006	2,739	234	9%
2007	2,776	37	1%
Average (2004 thru 2007)	**2,505**	**148**	**6%**

The total number of taps can be projected according to a historic tap growth rate. In order to calculate future tap growth per customer category, the percentage of each category was determined based on 2007 tap data. Figure 3.2 summarizes the total number of taps per customer category

Figure 3.2 – 2007 Taps per Customer Category



As mentioned previously, a 191-acre development has been planned, called Vandaveer Ranch, that if approved will add approximately 1,000 new residential taps; an increase of over 30 percent from 2007 tap totals. Tap growth is estimated to slowly increase over the next ten years as Vandaveer Ranch is developed. After ten years, we expect growth to level out at two percent for the remainder of the 2025 planning horizon.

In this report, our methodology uses a per-tap water usage associated with projected growth in taps. A more typical method used for water demand projections consists of converting water use in all customer categories to a Single-Family Equivalent (SFE). Because various taps for different customers do not necessarily use a like amount of water (example a 4-plex on one tap does not use the same amount of water as an apartment building on one tap), SFE's potentially help to develop better projections. However, due to the lack of data from Salida's billing system and records, a per-tap water usage with projected tap growth was the best method to use and will suffice for the purposes of this study.

Projected Residential and Multi-Family Water Demand

Table 3.6 shows the projected Residential and Multi-Family water demand for the City through 2025. Water usage per tap is based on the (2003 through 2007) 0.41 AF per tap average for Residential customers and 0.42 AF per tap average for Multi-Family customers, as shown above in Table 3.3. Total Residential water usage is projected to reach 1,450 AF by 2025 and total Multi-Family water usage is projected to reach 118 AF by 2025.

Table 3.6 – Projected Residential Water Demand

Year	Tap Growth Rate	Residential Tap Growth	Projected Water Use (0.41 af/tap) (AF)	Multi-Family Tap Growth	Projected Water Use (0.42 af/tap) (AF)
2008	0%	2,127	879	170	71
2009	1%	2,148	888	172	72
2010	2%	2,191	905	175	73
2011	3%	2,257	933	180	76
2012	4%	2,347	970	188	79
2013	5%	2,465	1,018	197	83
2014	6%	2,612	1,079	209	88
2015	5%	2,743	1,133	219	92
2016	4%	2,853	1,179	228	96
2017	4%	2,967	1,226	237	100
2018	3%	3,056	1,263	244	102
2019	2%	3,117	1,288	249	105
2020	2%	3,179	1,314	254	107
2021	2%	3,243	1,340	259	109
2022	2%	3,308	1,367	264	111
2023	2%	3,374	1,394	270	113
2024	2%	3,442	1,422	275	115
2025	2%	3,510	1,450	281	118

Projected Commercial and Industrial Water Demand

Table 3.7 shows the projected Commercial and Industrial water demand for the City through 2025. Water usage per tap is based on the (2003 through 2007) 1.31 AF per tap average for Commercial customers and 0.16 AF per tap average as shown above in Table 3.3. Total Commercial water usage is projected to reach 1,017 AF by 2025 and total Industrial water usage is projected to reach five AF by 2025.

Table 3.7 – Projected Commercial and Industrial Water Demand

Year	Tap Growth Rate	Commercial Tap Growth	Projected Water Use (1.31 af/tap) (AF)	Industrial Tap Growth	Projected Water Use (0.16 af/tap) (AF)
2008	0%	472	616	7	3
2009	1%	477	623	7	3
2010	2%	486	635	7	3
2011	3%	501	654	7	3
2012	4%	521	680	8	3
2013	5%	547	714	8	3
2014	6%	580	757	9	4
2015	5%	609	795	9	4
2016	4%	633	827	9	4
2017	4%	658	860	10	4
2018	3%	678	886	10	4
2019	2%	692	903	10	4
2020	2%	706	921	10	4
2021	2%	720	940	11	4
2022	2%	734	959	11	5
2023	2%	749	978	11	5
2024	2%	764	997	11	5
2025	2%	779	1,017	12	5

Projected Municipal Park Water Demand

The existing Parks, Recreation, Trails and Open Space Master Plan sets a goal of having a park, trail or open space within 1/3 of a mile of each residence. Without knowing the exact location that development will occur, the projected Municipal Park water demand for this study was calculated based on the estimated 2007 number of Salida residents per current irrigated park acres. This method is a close approximation of the City Municipal Park goal and is adequate for this study. The average population per irrigated acre of park for 2002 through 2007 is 166 residents.

Using the average residents per irrigated park acre, water demand was calculated based on the Residential and Multi-Family tap growth. Population projections for planning purposes use a 2.7-persons-per-tap figure provided by City staff. A calculated average of 2.2 AF/acre irrigation rate was used to determine the total Municipal Park water use. Table 3.8 shows the projected Municipal Park water demand

for the City through 2025. Total Municipal Park water usage is projected to reach 135 AF by 2025.

Table 3.8 – Projected Municipal Park Water Demand

Year	Projected Residential Taps	Projected Multi-Family Taps	Total Projected Residential Taps	Projected Total Park Acreage *(based on 166 people per 1 acre of park)*	Total Municipal Park Water Use* (AF)
2008	2,127	170	2,297	37.4	82.1
2009	2,148	172	2,320	37.7	82.9
2010	2,191	175	2,366	38.5	84.5
2011	2,257	180	2,437	39.6	87.1
2012	2,347	188	2,535	41.2	90.6
2013	2,465	197	2,662	43.3	95.1
2014	2,612	209	2,821	45.9	100.8
2015	2,743	219	2,962	48.2	105.8
2016	2,853	228	3,081	50.1	110.1
2017	2,967	237	3,204	52.1	114.5
2018	3,056	244	3,300	53.7	117.9
2019	3,117	249	3,366	54.8	120.3
2020	3,179	254	3,434	55.8	122.7
2021	3,243	259	3,502	57.0	125.1
2022	3,308	264	3,572	58.1	127.6
2023	3,374	270	3,644	59.3	130.2
2024	3,442	275	3,717	60.5	132.8
2025	3,510	281	3,791	61.7	135.4

* An average of 2.2 AF/ac irrigation rate was used to project water use. This is the average irrigation rate for 2003-2007).

Total Projected Water Demand

Table 3.9 shows the total projected water demand for Salida through 2025. Total water usage for the City is projected to reach 2,726 AF by 2025.

Table 3.9 – Total Projected Water Demand

Year	Total Residential Water Use (AF)	Total Multi-Family Water Use (AF)	Total Commercial Water Use (AF)	Total Industrial Water Use (AF)	Total Municipal Park Water Use (AF)	TOTAL WATER USE (AF)
2008	879	71	616	3	82	1,652
2009	888	72	623	3	83	1,668
2010	905	73	635	3	85	1,701
2011	933	76	654	3	87	1,752
2012	970	79	680	3	91	1,823
2013	1,018	83	714	3	95	1,914
2014	1,079	88	757	4	101	2,029
2015	1,133	92	795	4	106	2,130
2016	1,179	96	827	4	110	2,215
2017	1,226	100	860	4	114	2,304
2018	1,263	102	886	4	118	2,373
2019	1,288	105	903	4	120	2,420
2020	1,314	107	921	4	123	2,469
2021	1,340	109	940	4	125	2,518
2022	1,367	111	959	5	128	2,568
2023	1,394	113	978	5	130	2,620
2024	1,422	115	997	5	133	2,672
2025	1,450	118	1,017	5	135	2,726

CHAPTER 4 - PROPOSED FACILITIES

Identification of Future Needs

Potential Facility Needs

The 2000 Water Supply Master Plan outlined a number of proposed major capital improvements. Table 4.1 presents a summary of the capital improvements identified.

Table 4.1 – City of Salida Facilities Improvement Needs from Water Supply Master Plan

Potential Facilities Improvement Needs	Description
Fry-Ark Project PSOP Storage	*Firm Fry-Ark storage availability-600 AF minimum, primarily for winter return flow obligation.*
Additional Augmentation Storage	*Acquire or develop augmentation storage -preferably in Turquoise Lake and/or Pueblo Reservoir in the range of 2,000 AF, to 1,000 AF of reoperation storage and 1,000 AF of future enlargement storage space.*
South Arkansas Well Development Program	*Complete the South Arkansas well development program as needed to obtain reliable physical yield of 2.0 MGD (combined galleries and wells) and potentially add additional wells to the collection system.*
Arkansas River Water Right Acquisition and Treatment	*Acquire water rights in the Arkansas River (or Fry-Ark water) reflecting approximately 1,730 AF/yr of additional consumptive use. Construct an Arkansas River Diversion and terminal reservoir. Construct (in phases) an Arkansas Water Treatment Plant.*
Adobe Park Groundwater Exploration	*Initiate a groundwater exploration program in the general area of Adobe Park, including acquisition of existing wells if the opportunity presents itself.*

Table 4.2 shows the projected capital improvement costs as set forth in Salida's 2008 Water and Sewer Fund Capital Budget.

Table 4.2 – City of Salida Water and Sewer Project Capital Improvements

Capital Improvement	Five Year Estimated Costs	Ten Year Estimated Cost
Motors & Pump replacement	$25,000	$25,000
South Ark Measuring Device	$5,000	$0
Upgrade billing software	$20,000	$25,000
Computer and Software Upgrade	$2,000	$4,000
Leak Detector	$20,000	$0
Reservoir lining	$100,000	$0
Reservoir Roof	$120,000	$0
Fire Hydrants (6)	$67,500	$84,000
Replace lines for paving	$475,000	$125,000
Install radio read meters	$410,000	$0
Replace old/failing lines	$60,000	$0
Champ headgate	$7,500	$0
Install Microfiltration	$3,050,000	$0
Pump station for Pasquales	$75,000	$0
Pasquale controls	$8,000	$0
Move gas generator to plant	$10,000	$0
Pumps at plant for Tank	$250,000	$0
Water Tank at Airport	$100,000	$0
Water Rights Transfer	$20,000	$0
Engineering Tank/Plant	$100,000	$0
Upgrade Pasquales to year round	$150,000	$0
Lines to & from tank	$600,000	$0
Engineering lines	$30,000	$0
Waste WTP Plant expansion	$0	$4,000,000
Waste WTP Design/Eng on plant expansion	$120,000	$100,000
Total Cost	**$5,899,726**	**$4,426,000**

Table 4.3 shows the schedule of costs to make upgrades to existing and new components of the water supply and distribution system over the next ten years. The projects and associated costs are estimated according to growth estimates and system needs. Some of the planned upgrades could be delayed or eliminated by a successful water conservation plan. This schedule will be re-evaluated in Chapter 9 to determine if water savings due to conservation will have an impact on the timing or costs. Wastewater facility upgrades are not shown here, but would also be affected by reducing water demands through conservation.

Table 4.3 – Ten-Year Equipment and Infrastructure Projection for Water Facilities and Infrastructure

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Reason
Water Facilities											
Motors & Pump replacement	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	
Chlorimeters	$1,500							$1,500			
16" Valve CR 120 Tank (Trail)											
South Ark Measuring Device	$5,000										
Grounds Equipment	$1,800				$10,000			$200			
Vehicle Replacement			$19,000								
Upgrade billing software	$20,000					$25,000					5 year replacement plan
Computer and Software Upgrade	$2,000					$4,000					
Reservoir lining		$100,000									
Reservoir Roof			$120,000								
Champ headgate	$1,500	$3,000	$3,000								
Install Microfiltration			$50,000	$3,000,000							
Pump station for Pasquales				$75,000							
Pasquale controls				$8,000							
Move gas generator to plant	$10,000										
Pumps at plant for Tank	$250,000										
Water Tank at Airport	$100,000										
Water Rights Transfer	$20,000										
Engineering Tank/Plant	$100,000										
Water Infrastructure											
Share of Heavy Equipment	$30,923	$30,923	$30,923								loaders, backhoes, dump trucks
Leak Detector		$20,000									
Hydraulic tapping machine		$4,000									
Hydraulic valve opener			$15,000								
Tool & small equipment maint/replacement	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	
Fire Hydrants (6)	$12,500	$12,500	$12,500	$15,000	$15,000	$15,000	$15,000	$18,000	$18,000	$18,000	
Replace lines for paving		$100,000	$100,000	$150,000	$125,000	$125,000					
Replace left-handed valves											
Install radio read meters	$410,000										equipment purchased in 2007
Replace old/failing lines	$30,000			$15,000	$15,000						
Upgrade Pasquales to year round				$150,000							
Lines to & from tank	$600,000										
Engineering lines	$30,000										
Total	$1,635,223	$280,423	$360,423	$3,423,000	$175,000	$179,000	$25,000	$29,700	$28,000	$28,000	

CHAPTER 5 - WATER CONSERVATION GOALS

Water Conservation Goals

Establishing water conservation goals is an iterative process that begins with quantifying the future demand for water based on current water-use habits and identifying areas water use can feasibly and effectively be reduced. Reduction of future water demand through water conservation can potentially delay planned water supply acquisition and the need for infrastructure improvements.

Salida is a deep-rooted community with a mix of new and aging infrastructure. The downtown area is over 100 years old and in need of upgrades. The economy of Salida has evolved from dependence upon the railroad, mining, and agricultural industries to recreation and tourism. Its vicinity to the mountains and rivers make it an attractive vacation destination. This also creates an unusually high demand for water in the summer months.

Early discussions with City staff focused on the need to reduce unaccounted-for losses, which would include a thorough survey of the City's distribution system and upgrading the billing and record keeping system. The complexity of the City's water rights and the price of future water acquisition also make saving water a necessary part of water supply planning.

In setting initial water savings goals for the City, we looked at the current water use per customer category and the limitations of the water supply and distribution system. Table 5.1 shows initial estimates for each customer category.

Table 5.1 – Salida's Water Conservation Goals

Water Use Categories:	Projected Water Use (2008 to 2017)	Reduction Goals for Planning Horizon	
	(AF)	(%)	(AF)
Residential	10,211	10%	1021
Multi-Family	829	10%	83
Commercial	7,161	4%	286
Industrial	34	4%	1
Parks	953	1%	10
Unaccounted-for Losses (13%)	2,867	7%	1,544
Total Water Production:	22,054		
Total Demand Reduction:			2945
Total Percent Reduction:			13%

Residential and Multi-Family

The per-capita Residential use in Salida is fairly low compared to the average in Colorado. This is typical for a small, older or rural town where lots tend not to be fully landscaped or irrigated. The reduction goal was set at ten percent for both residential and multi-family categories considering there are numerous new measures that can be introduced.

Commercial

The Commercial category includes hospitality and restaurants crucial to the tourism industry, as well as parks, schools, hospitals and institutions. The top ten water users for the City fall into this category and the average water use per tap is 1.31 AF. Little is known about the water use habits of these customers and until audits are performed and results from conservation measures have been monitored, the City will set a goal of four percent. Savings for the next water conservation plan will be easier to estimate and likely more effective.

Industrial

The goal for the Industrial category was also set at four percent. Little is known about the water use in this category as well, and may be more easily estimated after implementation of this water conservation plan.

Unaccounted-for Losses

This category is where the City wants to pursue the largest water savings. Leak detection and repair has not been done in a formal manner and the potential from an organized leak detection program has good potential for saving treated, but unused water. The average loss in the system due to leaks, record keeping errors, theft, or lack of measurement over the last five years is 13 percent of the water production. The goal for the City is to reduce the system losses by seven percent to six percent.

Goal Development Process

The development of water-savings goals for Salida was a collaborative process involving Clear Water Solutions and City staff. Information was gathered from billing records and existing planning documents to properly characterize the system, resources and water use. Development of this data showed Salida's highest water use customer categories, seasonal usage, system limitations and losses, and outlined the City's existing conservation efforts and their estimated effectiveness.

Once the largest areas of water use were identified, we met with staff to discuss water-savings goals and the potential methods to reach those goals. Initial reduction percentages were established and a universal list of measures and programs were compiled for consideration. The goals focused on the water use areas that could be

successfully impacted considering factors such as water savings potential, costs, control, and public acceptance.

CHAPTER 6 – CONSERVATION MEASURES AND PROGRAMS

Water Conservation Measures and Programs

We developed a universal list of conservation measures and programs. The measures and programs were placed into one of four major categories as an aid to understanding and possible implementation. The four major categories that were considered are Utility Maintenance, Regulatory Controls, Educational Programs, and Rebates and Incentives. The universal list is shown in Table 6.1 with existing measures highlighted in green.

Screening Criteria

The following screening criteria were compiled based on discussions with staff. The criteria were chosen as a general screening to pare down the universal list to a list of measures and programs to evaluate further, including reviewing costs to implement, expected water savings, and loss of revenue from the water savings. Each measure and program in Table 6.1 was screened with the following criteria.

1. System limitations
2. Staff and Council approval
3. Financial implications
4. Public acceptance

Screening of Conservation Measures and Programs

The purpose of the initial screening was to create a list of measures and programs that *would be evaluated further in the planning process* via a cost-benefit analysis. A meeting was held with the City staff to discuss each measure/program on the universal list and eliminate ones that were not feasible using the established screening criteria.

The list of measures was also evaluated to determine if the CWCB Minimum Required Water Conservation Plan Elements were addressed. The required CWCB elements to evaluate that pertain to measures and programs are listed as follows:

- Water-efficient fixtures and appliances, including toilets, showerheads, and faucets
- Low water use landscapes, drought resistant vegetation, removal of phreatophytes, and efficient irrigation
- Water-efficient industrial and commercial water-using processes
- Water reuse systems
- Distribution system leak identification and repair

- Dissemination of information regarding water use efficiency measures, including by public education, customer water use audits, and water-saving demonstrations
- Water rate structures and billing systems designed to encourage water use efficiency in a fiscally responsible manner
- Regulatory measures designed to encourage water conservation
- Incentives to implement water conservation techniques, including rebates to customers to encourage the installation of water conservation measures

Due to Colorado water law restraints, Salida's raw water sources are available on a one time use only basis and therefore water reuse measures were not considered for the planning effort.

The screening was completed on June 23, 2008 at the City offices. The resulting decisions are noted on Table 6.1.

Table 6.1 – Universal List of Conservation Measures and Programs

Conservation Measure or Program		Existing	Further Evaluation	Comment
Supply side measures & programs	**Utility Maintenance**			
	Meter Testing and Replacement Program	Yes	Yes	The City started this program in March 2008. Completion of the project will take approximately 1.5 to 2 years with calibration every 5 years.
	Recycling WTP Filter Backwash	Yes	No	Currently utilizing this water for construction purposes. Continue as is.
	Billing Software Upgrades	No	Yes	Target to reduce system losses from 13% to 6% between leak detection, billing software upgrades and meter testing and replacement.
	Leak Detection & Repair Program	No	Yes	Target to reduce system losses from 13% to 6% between leak detection, billing software upgrades and meter testing and replacement.
	Leak Detection in Mobile Home Parks	No	No	Mobile home parks are phasing out and no new parks are planned in the future.
	Park Irrigation Efficiency Audits	No	Yes	City Staff will examine infrastructure at the City Parks, and make water saving repairs as necessary.
	Water Reuse System	No	No	Potential sources of reuse are already accounted for in Salida's Augmentation Plan.
Demand side measures & programs	**Regulatory Controls**			
	Water Restrictions-Hours/Days	Yes		Continue as is.
	Water Waste Ordinance	Yes		Municipal Code Section 13-3-90. Continue as is.
	High Efficiency Appliance Requirements/Standards for New Construction	No	No	Re-evaluate with future planning efforts.
	Rate Structure Changes	No	Yes	A rate study will be conducted to determine a fair structure that will help maximize water savings.
	Irrigation System Audit & Improvements for Irrigation Taps	No	No	It is difficult to find someone, in the area, with the expertise to perform such audits.
	Irrigation System Requirements/Standards for New Construction	No	No	Re-evaluate with future planning efforts.
	Landscape & Irrigation System Standards for New Development	No	No	Re-evaluate with future planning efforts.

Demand side measures & programs	**Regulatory Controls**			
	Laundry and Laundromat Requirements/Standards for New Construction	No	Yes	Include with Commercial & Industrial Water Audits.
	Low Water Use and Appliance Codes	No	No	Already extensively covered in State and National Plumbing standards and codes.
	New Landscape/Lawn Permits	Yes	No	Currently, require water users to get permits for Landscaping.
	Removal of Phreatophytes e.g. Cottonwoods	No	No	Not acceptable to the public.
	Requiring Wind and/or Rain Sensors for Commercial and Open Space Irrigation	No	No	This will be looked at again for the next water conservation plan update.
	Restrict High Water-Use Turf on Medians or 6:1 Slopes	No	No	Re-evaluate with future planning efforts.
	Restrictive Covenants Ordinance	No	No	Re-evaluate with future planning efforts.
	Soil Amendment Ordinance for New Landscapes	No	No	Re-evaluate with future planning efforts.
	Temporary Irrigation Taps for Native Landscaping	No	No	Re-evaluate with future planning efforts.
	Turf and Landscape Restrictions/Standards for New Construction	No	No	Re-evaluate with future planning efforts.
	Educational Programs			
	Commercial/Irrigator Education and Training	No	No	No vendors close by to perform training.
	Designated Water Conservation Officer	No	No	Not enough staff resources.
	Educational Kits	No	Yes	This effort will be combined with residential audit kits (see below).
	Online Access to Water Bill and History	No	No	This will be looked at again for the next water conservation plan update.
	Post commercial BMPs on website or as bill stuffers	No	Yes	
	Public Education - Newsletter, Bill Stuffers, Website	No	Yes	
	School Education Program (K-12 Education and K-12 Teacher Education and Training)	No	Yes	
	Send ET Irrigation Scheduling in Water Bill	No	Yes	This effort will be combined with public education (see above).

Demand side measures & programs	**Educational Programs**			
	Xeriscape Garden Demonstration	No	Yes	City would like to establish a demonstration garden at Chisholm Park.
	Xeriscape Program for Commercial	No	No	This will be looked at again for the next water conservation plan update.
	Xeriscape Program for Open Space (HOAs)	No	No	This will be looked at again for the next water conservation plan update.
	Rebates and Incentives			
	Commercial & Industrial water audits	No	Yes	
	Commercial Toilet Rebates	No	Yes	
	Distribute Pre-rinse Spray Heads to Restaurants & Institutions	No	Yes	
	Rebate Programs for Toilets, Clothes Washers, Dishwashers, Faucets and Showerheads	No	Yes	
	Rebates for ET (SMART) Sprinkler System Controllers	No	No	Re-evaluate with future planning efforts.
	Residential Audit Kit	No	Yes	Will make this a joint effort between education kits and audit kits.
	Sprinkler System Audit Kit and Instructions	No	No	This will be looked at again for the next water conservation plan update.
	Wind and/or Rain Sensor Rebates for Residential or Commercial	No	No	This will be looked at again for the next water conservation plan update.

* Shaded cells represent existing measures.

CHAPTER 7 – EVALUATION AND SELECTION

The initial screening of the measures and programs with Salida staff resulted in eliminating 26 measures and selecting 19 for continuation or further evaluation. Some of the measures have been combined as noted in Table 7.1. The benefits and costs of the selected measures and programs are shown in Table 7.1. The grouping of the measures enabled us to consider like measures and avoid double counting savings. Details about the cost and benefit evaluation and information about each measure can be found in Appendix A.

Costs and Water Savings of Conservation Options

Prior to evaluating the potential cost effectiveness of the measures/programs, it is important to understand the magnitude of typical indoor and outdoor uses and the contribution of each to total demand. There is a wide range of use related to each indoor and outdoor measure that can affect the potential water savings and cost effectiveness accordingly. The assumptions for calculating water savings used for this analysis were on the conservative end of the ranges found in the available water conservation research to avoid overestimating savings.

Many resources were used to estimate water savings including Amy Vickers Handbook of Water Use and Conservation, studies and papers from California and Arizona, local studies available from the American Water Resources Association (AWRA), the Environmental Protection Agency (EPA), Western Resource Advocates, information from other Colorado municipalities, and the CWCB website.

Table 7.1 provides a cost-benefit analysis for all of the measures and programs previously identified to be evaluated further. A planning horizon of ten years is used to quantify the full benefit of these measures and programs. The costs and water savings over the planning period are calculated assuming the measures/programs all start in year one. This provides an equitable ranking of the measures, so they can be compared on an apples-to-apples basis. In reality, the measures and programs will be implemented according to the implementation schedule developed in Chapter 8 and 9.

The first five columns (Columns A-E) of Table 7.1 identify the conservation measure or program and quantify the costs to the City. These costs include unit or annual costs for materials, staff time, and one-time start up costs. The table then quantifies water savings annually and for the entire ten-year planning horizon. Annual water savings and projected lost revenue are based on full implementation. This gives the City an idea of the anticipated water savings and revenue impacts after full implementation.

The cost per 1,000 gallons of water saved is found by dividing the total cost by the total water savings for the entire ten-year period. The measures and programs are then ranked by cost per 1,000 gallons saved. This ranking helps to determine which measures will be more effective and to suggest a useful order of implementation.

Table 7.1 – Cost/Savings Analysis of Conservation Measures and Programs

Conservation Measure or Program		Total Cost to Water Provider				# of Participants per Year	Gallons Saved per Unit per Year	Estimated Annual Water Savings (gallons)	Estimated Total Water Savings over Planning Period (gallons)	Annual Revenue Loss Related to Water Savings	Estimated Annual Cost	Estimated Total Cost over Planning Period including Set-up	Cost per 1000 Gallons Saved	Rank
		Rebate (B)	One time Labor and Material Cost (C)	Annual Labor (D)	Annual Materials (E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)
Supply side measures & programs	**Utility Maintenance Programs**													
	Leak Detection & Repair Program	$0	$25,000	$9,200	$0	0	0	37,283,199	372,831,988	$0	$9,200	$117,000	$0.31	2
	Billing Software Upgrades	$0	$50,000	$4,000	$0	0	0	7,456,640	74,566,398	$0	$4,000	$54,000	$0.72	5
	Meter Testing and Replacement Program	$0	$0	$6,000	$269,900	300	0	7,456,640	37,283,199	$0	$275,900	$1,379,500	$37.00	18
	Chisholm Park Xeriscape	$0	$12,000	$2,000	$500	0	0	305,500	3,055,000	$0	$2,500	$37,000	$12.11	16
	Park Irrigation Efficiency Audit	$0	$12,000	$6,000	$0	0	0	1,611,694	16,116,936	$0	$6,000	$72,000	$4.47	14
Demand side measures &	**Regulatory Controls**													
	Rate Structure Changes	$0	$37,500	$0	$0	0	0	14,929,628	149,296,284	$0	$0	$37,500	$0.25	1
	Educational Programs													
	Post commercial BMPs on website or as bill stuffers	$0	$400	$500	$417	556.48546	0	605,248	6,052,481	$672	$1,589	$16,292	$2.69	12
	Public education - newsletter, bill stuffers, website	$0	$2,250	$2,100	$2,001	2,669	0	3,732,407	37,324,071	$4,143	$8,244	$84,694	$2.27	11
	School Education Program (K-12)	$0	$5,500	$200	$500	0	0	1,866,204	18,662,035	$2,071	$2,771	$33,215	$1.78	10
	Rebates and Incentives													
	Residential Water Audit Kits	$0	$3,214	$800	$0	42	8,114	340,775	18,742,624	$378	$1,178	$14,997	$0.80	6
	Rebate for Low-Flow Toilets	$50	$200	$125	$0	10	12,063	120,625	6,634,386	$134	$759	$7,789	$1.17	8
	Rebate for High Efficiency Clothes Washers	$100	$200	$125	$0	20	5,834	116,683	6,417,576	$130	$2,255	$22,745	$3.54	13
	Rebate for High Efficiency Dishwashers	$50	$200	$125	$0	20	641	12,812	704,633	$14	$1,139	$11,592	$16.45	17
	Rebates and Incentives cont.													
	Rebate for Low-Flow Faucet	$5	$100	$100	$0	50	6,701	335,070	18,428,850	$372	$722	$7,319	$0.40	3
	Rebate for Low-Flow Showerhead	$5	$100	$100	$0	50	1,774	88,695	4,878,225	$98	$448	$4,585	$0.94	7
	Distribute Pre-Rinse Spray Heads to Restaurants and Institutions	$0	$200	$400	$500	5	109,200	546,000	30,030,000	$606	$1,506	$15,261	$0.51	4
	Commercial Toilet Rebate	$50	$200	$125	$0	30	9,125	273,750	15,056,250	$304	$1,929	$19,489	$1.29	9
	Commercial and Industrial Water Audits	$0	$2,500	$10,100	$0	20	47,900	958,002	52,690,107	$27,001	$37,101	$373,511	$7.09	15

Column Explanations:

(B) A rebate provided upon approval of customer application

(C) One time labor and material costs involved in set up program or measure

(D) Labor involved each year for operation of measure or program

(E) Materials needed each year for each unit if listed or for the whole measure or program

(F) Number of participants expected to participate and resulting units or audits needed

(G) Gallons of water saved per unit as a result of participating in the program or measure

(H) Total water savings seen in a year from the measure or program

(I) Total water savings seen over entire ten year planning period; could be based on increasing water demand or a fixed use per account.

(J) Revenue the water provider will not be paid if the water savings occur.

(K) Total annual cost to water provider plus the annual revenue loss.

(L) Total cost to implement and operate measure or program over entire planning period, including annual operation, one time set up costs and annual revenue lost due to water savings.

(M) Cost per 1000 gallons saved = total cost over planning period divided by total water saved over planning period.

(N) Ranks the measures and programs according to the price per 1000 gallons of water saved, lowest to highest.

Comparison of Benefits and Costs

The resulting rank of measures by cost-benefit is shown in Table 7.2 below. The cost per 1,000 gallons saved ranges from $0.26 to $38.39. The measures are ranked fairly evenly throughout the utility maintenance programs, educational programs, and rebates and incentives.

The rankings are a result of the ratio of cost, including lost revenue, to water savings. For instance, commercial and industrial water audits may save a lot of water, but also results in a lot of lost revenue, so it ranks lower than one might expect. This is only a cost ranking and there are other factors to consider, which can be accomplished in a second screening.

Table 7.2 – Cost/Benefit Ranking

Conservation Measure or Program	Cost per 1000 Gallons Saved	Rank
Rate Structure Changes	$0.26	1
Leak Detection & Repair Program	$0.33	2
Rebate for Low-Flow Faucet	$0.40	3
Distribute Pre-Rinse Spray Heads to Restaurants and Institutions	$0.51	4
Billing Software Upgrades	$0.75	5
Residential Water Audit Kits	$0.80	6
Rebate for Low-Flow Showerhead	$0.94	7
Rebate for Low-Flow Toilets	$1.17	8
Commercial Toilet Rebate	$1.29	9
School Education Program (K-12)	$1.80	10
Public education - newsletter, bill stuffers, website	$2.31	11
Post commercial BMPs on website or as bill stuffers	$2.75	12
Rebate for High Efficiency Clothes Washers	$3.54	13
Park Irrigation Efficiency Audit	$4.64	14
Commercial and Industrial Water Audits	$6.90	15
Chisholm Park Xeriscape	$12.11	16
Rebate for High Efficiency Dishwashers	$16.45	17
Meter Testing and Replacement Program	$38.39	18

Evaluation Criteria

After each of the conservation measures and programs were ranked by *cost per 1,000 gallons saved*, as shown in Table 7.2, the next step was to select conservation measures and programs for implementation. Similar criteria as was used in the first screening were used for selecting conservation measures and programs for implementation, but to a higher degree. The criteria used for selection are as follows:

1. Staff and Council approval
2. Financial implications
3. Additional staff time required
4. Existing or planned City project

Selected Conservation Measures and Programs

The City would like to first look internally at how they can conserve water through the utility maintenance measures and keep regulatory measures to a minimum. Additionally, they would like to offer programs that will educate and provide rebates and incentives for all types of water users. The second screening was accomplished by evaluating each measure/program based on the screening criteria and Salida's overall goal of this water conservation plan. Table 7.3 shows the final measures selected through the secondary screening process.

Table 7.3 – Selection of Conservation Measures and Programs

Conservation Measure or Program	Rank	Final Selection	Criteria for Selecting of Rejecting Measure or Program
Utility Maintenance Programs			
Leak Detection & Repair Program	2	yes	The City of Salida's unaccounted for losses are fairly high at 13%. A leak detection and repair program is necessary to reducing these losses.
Billing Software Upgrades	5	yes	The current billing system is difficult to work with and is an inadequate tool in analyzing past water use. The City would like to upgrade to software that is easy to use and will help them in quickly analyzing water use and water conservation.
Meter Testing and Replacement Program	18	yes	The City started this program in March 2008. Completion of the project will take approximately 2 years with calibration every 5 years. The City would like to continue this program.
Chisholm Park Xeriscape	16	yes	An excellent measure to improve an existing park and educate the public to the water savings evident from xericscape.
Park Irrigation Efficiency Audit	14	no	This is a high potential savings area. However, the City will re-evaluate this measure for another plan.
Regulatory Controls			
Rate Structure Changes	1	yes	A rate study will be conducted to determine a fair structure that will help maximize water savings.
Educational Programs			
Post commercial BMPs on website or as bill stuffers	12	yes	Setting up a section on the website, dedicated to water conservation, would add an efficient way to distribute a lot of information and enhance public perception.
Public education - newsletter, bill stuffers, website	11	yes	
School Education Program (K-12)	10	yes	An education program would be beneficial at future water conservation savings.
Rebates and Incentives			
Residential Water Audit Kits	6	yes	This is a high potential savings area. Online versions will be provided on the website as well as kits in the office.
Rebate for Low-Flow Toilets	8	yes	
Rebate for High Efficiency Clothes Washers	13	no	Salida will evaluate for next plan.
Rebate for High Efficiency Dishwashers	17	no	Not enough guarantee of participation.
Rebate for Low-Flow Faucet	3	yes	These measures have a high potential for savings.
Rebate for Low-Flow Showerhead	7	yes	
Distribute Pre-Rinse Spray Heads to Restaurants and Institutions	4	yes	This is a high potential savings area.
Commercial Toilet Rebate	9	no	This measure is of mid-priority. Salida will evaluate for next plan.
Commercial and Industrial Water Audits	15	yes	

The cost-benefit ranking was helpful in making most of the selections; however, there are three high ranking measures that were selected for other reasons. The meter testing and replacement program is an existing program that is replacing old meters with radio-read meters which will make water use data more quickly available. The Chisholm Park Xeriscape measure is something the City has been planning and may actually have educational benefits to residents for years to come that were not considered in this analysis. The commercial and industrial audits are necessary to understand the nature of water use in this area for future planning measures.

In Chapter 5, conservation goals were established for six customer categories (Residential/Multi-Family and Commercial/Industrial were combined):

- Residential and Multi-Family: 10%
- Commercial and Industrial: 4%
- Municipal Parks: 1%
- Unaccounted-for Losses: 7%

The selected conservation measures/programs and associated water savings were arranged within the targeted customer categories to more easily compare the savings to the original goals. Table 7.4 shows the water savings for the selected measures combined in each of these categories.

The annual savings after full implementation of the water conservation measures in Table 7.4 are sub-totaled for each category. These savings were compared to the original goals set in Chapter 5. As mentioned earlier, water conservation goal setting is an iterative process; original goals are established, conservation measures are evaluated and selected based on appropriate criteria, and the resulting water savings are compared to the original goals. The resulting water savings are very similar to the original goals.

Table 7.4 – Combined Water Savings of Selected Conservation Measures and Programs

Conservation Measures and Programs	Estimated Annual Water Savings after full Implementation (gallons)	Estimated Total Water Savings over Planning Period (gallons)	Annual Revenue Loss Related to Water Savings	Estimated Annual Cost	Estimated Total Cost over Planning Period including Set-up	Cost per 1000 Gallons Saved
Unaccounted for Losses						
EXISTING MEASURES						
Leak Detection & Repair Program	35,932,377	359,323,767	$0	$9,200	$117,000	$0.33
Billing Software Upgrades	7,186,475	71,864,753	$0	$4,000	$54,000	$0.75
Meter Testing and Replacement Program	7,186,475	35,932,377	$0	$275,900	$1,379,500	$38.39
Subtotal	50,305,327	467,120,897		$289,100	$1,550,500	
Acre-Feet	154	1,434				
Residential and Multi-Family						
Water Restrictions - Hours/Day	14,476,638	144,766,382	$32,914	$33,014	$330,140	$2.28
Water Waste Ordinance	1,447,664	14,476,638	$3,291	$3,341	$33,414	$2.31
Inclining Block Water Rate Structure	14,388,707	143,887,072	$0	$0	$37,500	$0.26
Public education - newsletter, bill stuffers, website	3,597,177	35,971,768	$3,993	$8,094	$83,193	$2.31
School Education Program (K-12)	1,798,588	17,985,884	$1,996	$2,696	$32,464	$1.80
Residential Water Audit Kits	340,775	18,742,624	$378	$1,178	$14,997	$0.80
Rebate for Low-Flow Toilets	120,625	6,634,386	$134	$759	$7,789	$1.17
Rebate for Low-Flow Faucet	335,070	18,428,850	$372	$722	$7,319	$0.40
Rebate for Low-Flow Showerhead	88,695	4,878,225	$98	$448	$4,585	$0.94
Subtotal	36,593,940	405,771,828	$43,177	$50,254	$551,401	
Acre-Feet	112	1,245				
Commercial and Industrial						
Post commercial BMPs on website or as bill stuffers	583,319	5,833,191	$647	$1,565	$16,048	$2.75
Commercial and Industrial Water Audits	958,002	52,690,107	$26,023	$36,123	$363,728	$6.90
Distribute Pre-Rinse Spray Heads to Restaurants and Institutions	546,000	30,030,000	$606	$1,506	$15,261	$0.51
Subtotal	2,087,321	88,553,298	$27,276	$39,194	$395,037	
Acre-Feet	6	272				
Municipal Parks						
Chisholm Park Xeriscape	305,500	3,055,000	$0	$2,500	$37,000	$12.11
Subtotal	305,500	3,055,000	$0	$2,500	$37,000	
Acre-Feet	1	9				
Grand Total	89,292,088	964,501,023	$70,454	$381,047	$2,533,938	$0
Acre-Feet	274	2,960				

Table 7.5 compares the anticipated water savings from the selected measures with the original goals.

Table 7.5 – Water Conservation Goals Comparison

Water Use Categories:	Total Projected Water Use (2008 to 2017)	Reduction Goals for Planning Horizon		Total Water Savings from Selected Programs	Resulting Reduction
	(AF)	(%)	(AF)	(AF)	(%)
Residential	10,211	10%	1,104	1,245	11%
Multi-Family	829				
Commercial	7,161	4%	288	272	4%
Industrial	34				
Municipal Parks	953	1%	10	9	1%
Unaccounted-for Losses (13% of total production)	2,867	7%	1,544	1,434	7%
Total Water Production:	22,054			2,960	
Total Demand Reduction:			2,945		
Total Percent Reduction:			13%	13%	

Over the ten-year planning period the selected measures/programs provide an overall water savings of 2,960 AF or 13 percent of the water that would be used in that time period. This is almost identical to the initial water savings goals set in Chapter 5.

The estimated water savings from the Residential and Multi-Family measures and programs are slightly higher than our initial water savings goal. The water savings goal for this category will remain at ten percent.

The estimated water savings from commercial and industrial measures is slightly lower than the originally established goal. At this point in time, little is known about this category and the interest that will be generated. The goal will remain at four percent. Salida will commit to the commercial and industrial audits to better understand the water use in this category.

The Unaccounted-for Losses is a major contributor to the water savings of this water conservation plan. The goal is to lower the losses from an average of 13 percent to six percent. This is a reduction of seven percent and will result in a water savings of 1,245 AF over the planning period.

The Municipal Parks water savings goal matched the estimated savings from measures in that category so will remain at one percent. This is an area that could be further evaluated in the next water conservation plan.

CHAPTER 8 – FORECAST MODIFICATION AND RESOURCE INTEGRATION

Implementation Schedule

Water savings will occur gradually as the City has the resources to implement each selected measure and program. Grant availability will be crucial in the timing of implementation for a small municipality like Salida.

The following table shows the selected measures/programs with their total water savings over the ten-year planning period and the total cost to implement them. Lost revenues from lower water sales are not included in this table in hopes that adjustments in the rate structure indentified in a future rate study will help defray those costs. The table also shows the percent of the total water saved over the planning period that each measure contributes.

These costs will occur incrementally over the ten-year planning horizon. The annual lost revenue at the current water rates after all of the conservation measures and programs have been fully implemented will be $73,490.

Table 8.1 – Cost and Water Savings from Selected Measures/Programs

Conservation Measure or Program	Estimated Total Water Savings over Planning Period	Estimated Cost over Planning Period not including Lost Revenue	Percentage of Total Water Saved
	(AF)		
Rate Structure Changes	442	$37,500	17.9%
Leak Detection & Repair Program	1,103	$117,000	44.6%
Rebate for Low-Flow Faucet	57	$3,600	2.3%
Distribute Pre-Rinse Spray Heads to Restaurants and Institutions	92	$9,200	3.7%
Billing Software Upgrades	221	$54,000	8.9%
Residential Water Audit Kits	58	$11,214	2.3%
Rebate for Low-Flow Showerhead	15	$3,600	0.6%
Rebate for Low-Flow Toilets	20	$6,450	0.8%
School Education Program (K-12)	55	$12,500	2.2%
Public education - newsletter, bill stuffers, website	110	$43,264	4.5%
Post commercial BMPs on website or as bill stuffers	18	$9,573	0.7%
Commercial and Industrial Water Audits	162	$103,500	6.5%
Chisholm Park Xeriscape	9	$37,000	0.4%
Meter Testing and Replacement Program	110	$1,379,500	4.5%

The total cost to implement the conservation plan is $1.8 million with the meter testing and replacement program. Without the meter testing and replacement program the cost to implement the plan is $448,400. The meter program is something the City needs to pursue despite the high cost to reduce system leaks and increase data availability.

An implementation schedule can be estimated by reviewing the water-saving impact from each measure/program and the projected budget for system improvements. The following implementation schedule considers those criteria as well as available staff resources.

While this schedule may be optimistic, it spreads the effort over the next three years and allows time for researching and obtaining grants and developing sound programs for higher probability of success.

Table 8.2 – Implementation Schedule for Salida

Conservation Measure or Program	2009	2010	2011	Action Required
Rate Structure Changes		Jan.		Apply for grant
Leak Detection & Repair Program	Aug.			Apply for grant; research equipment and training
Rebate for Low-Flow Faucet			Aug.	Apply for grant; research products and set up rebate
Distribute Pre-Rinse Spray Heads to Restaurants and Institutions			March	Order and install spray heads
Billing Software Upgrades	Aug.			Apply for Grant, research software
Residential Water Audit Kits		March		Have available prior to summer irrigation and tourism season
Rebate for Low-Flow Showerhead			Aug.	Apply for grant; research products and set up rebate
Rebate for Low-Flow Toilets			Aug.	Apply for grant; research products and set up rebate
School Education Program (K-12)		Sept.		Send selected teachers to training
Public education - newsletter, bill stuffers, website		Sept.		Research; identify web developer
Post commercial BMPs on website or as bill stuffers		Sept.		Research; identify web developer
Commercial and Industrial Water Audits		Jan.		Apply for grant; Acquire training; Start with Schools and Institutions, continue with Hospitality during tourist season
Chisholm Park Xeriscape		March		In-house research and planning by staff
Meter Testing and Replacement Program	Aug.			Apply for grant; continue program as planned

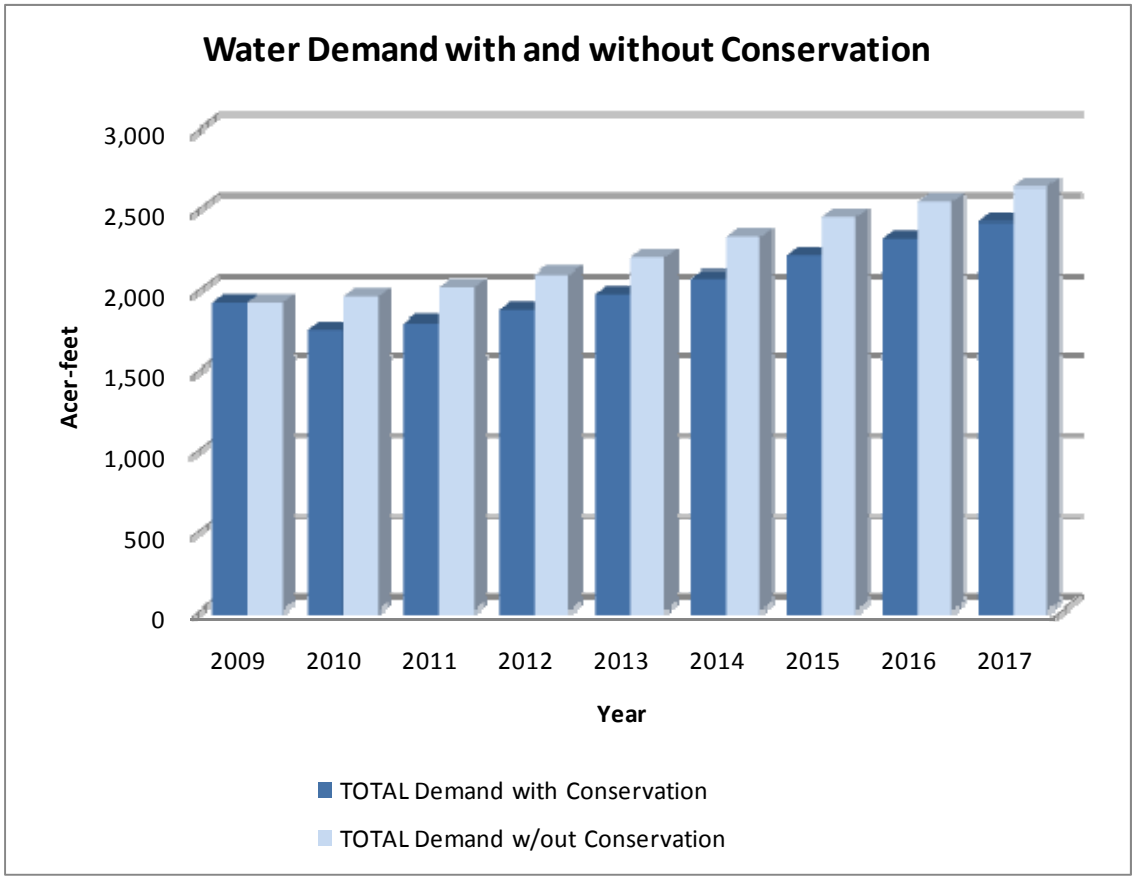
Modified Demand Forecast

The total demands for Salida are shown in the following graph with and without water conservation. The water savings follow the implementation schedule and are delayed to the next year if implementation starts after August because there is a lag before water savings are realized. The savings are compiled according to the assumptions used in the cost-benefit analysis and are carried through the end of the planning period.

Effects of implementing the water conservation measures will last well beyond the planning horizon.

The annual savings after full implementation of the conservation plan are 274 AF per year. The goal is to fully realize this savings by 2017. The total water saved over the planning period given the estimated implementation schedule shown in Table 8.2 will be 2,960 AF.

Figure 8.1 – Comparison of Demand Forecast with and without Conservation



Water Supply and Capacity Upgrade Forecast Modification

Water Supply

Table 4.1 shows options that Salida will be exploring and eventually implementing for increasing its water supply to meet future demands. Approximately 2,000 AF of additional storage for augmentation water is being sought as well as additional groundwater development in the vicinity. Due to the junior nature of some of the City's water supplies, augmentation water is as important as new water supply.

Water savings from the water conservation plan can act as a new supply by reducing the need for that amount of new supply or augmentation. The estimated savings from the Plan will be 274 AF per year at the end of the ten-year planning period. Storage requirements for augmentation water will not likely be reduced due to the variability in delivery of those waters and the need for dry-year firming. However, it is possible that 274 AF of water development could be delayed indefinitely or provide a cushion for drought or an unexpected increase in growth, taking the build-out supply farther out into the future. By 2025, the additional water supply needed per year is approximately 50 AF. The conservation savings could push this demand out by five years or more.

Capacity Upgrade

The following table shows hypothetical cost savings by delaying capital improvement projects that would be impacted by the water savings from conservation. While WTP or microfiltration upgrades are generally driven by increased need for capacity, there are other reasons for improving treatment plants that are regulatory driven. These savings are shown assuming the only reason for the upgrade is due to demand.

At full implementation of the conservation plan, 274 AF will be saved per year. This equates to 0.24 MGD average reduction or 0.61 MGD peaking demand reduction using a conservative peaking factor of 2.5. The demand projection shows up to approximately 100 AF demand increase per year at the most. The assumed delays are loosely based on this demand increase and are mainly shown to illustrate the value of conservation.

The formula for the calculation in Table 8.3 is taken from a planning manual produced by the American Water Works Association in 2006. It shows the difference in present values by delaying a project, but doesn't consider inflation, which would reduce the actual cost savings somewhat.

Table 8.3 – Cost Savings from Delayed Capital Improvements

Water Supply/Facility Upgrades	Assumed Delay	Cost in 2010	Cost in 2011	Present Value Cost if Built in 2010	Present Value Cost if Built in 2011	Present Value Cost if Built in 2013	Present Value Cost if Built in 2014	Cost Savings[1]
Pump station for Pasquales	2		$75,000		$68,636	$64,696		$3,940
Upgrade Pasquales to year round	2		$150,000		$137,271	$129,391		$7,880
Install Microfiltration	3	$50,000		$47,130		$43,130		$3,999
Install Microfiltration	3		$3,000,000		$2,745,425		$2,512,453	$232,972
							TOTAL	**$248,791**

Notes: 1. Water Conservation Programs - A Planning Manual, AWWA Manual M52, pg. 77, formula (4-11)

Summary of Modifications and Benefits of Conservation

One of the biggest benefits to implementing water conservation is to delay the need for more expensive water acquisition and capital improvement projects.

There is a potential savings of $248,000 or more in delaying capital improvement projects that pertain to increased water delivery. For Salida, the capital improvement projects may not be delayed substantially, but the water demand in 2017 will be 274 AF less than what is forecasted for that year. If the cost of water acquisition were assumed to be $5,000 per AF, the savings from delaying or eliminating that water acquisition would equal $1.37 million.

The cost to implement the entire conservation plan not including lost revenue from water sales is $1.8 million. However, 75 percent of this cost is the meter testing and replacement program and could be considered normal maintenance outside of the water conservation plan. Without the cost of meter testing and replacement, which is a City initiative already in progress, the cost of water conservation implementation over the ten-year planning period is $448,400.

Comparing the cost to implement the water conservation plan to the potential cost of acquiring the amount of water that could be saved and the money saved by delaying capital improvement projects clearly demonstrates the benefit of water conservation.

CHAPTER 9 – PLAN OF IMPLEMENTATION AND MONITORING

Salida's implementation schedule is presented in Chapter 8.

Public Participation

One of the CWCB requirements for a Water Conservation Plan is to publish a draft plan, give public notice of the plan, make the plan publicly available, and solicit comments from the public for not less than a 60-day period unless otherwise specified by City policy.

Through this water conservation planning process, the public was notified and given 60 days to comment. The plan was available on Salida's website and in its office for review. A written comment was received and is included in Appendix D. The public comment that was received is not pertinent to this water conservation plan and the City staff will take it under consideration as a health and public safety issue.

Monitoring and Evaluation

Monitoring the success of this Water Conservation Plan includes measuring water use as well as money spent on the selected conservation measures and programs. Software upgrades will be one of the first programs implemented and will allow City staff the ability to quickly and easily retrieve water usage data.

Many of the costs evaluated in the cost-benefit analysis include annual costs for follow-up. This will allow staff to specifically set aside time to monitor and evaluate the success of the conservation measures and programs. Participants in the audit and rebate programs can be recorded and individual accounts tracked for specific water reductions.

Expenditures for conservation will be documented by Salida staff and reported to the Board on a regular basis. This will be valuable information in evaluating the cost-benefit ratio and to validate the success of implementing the selected conservation measures and programs. Since the programs will be implemented in phases, there will be time to evaluate and establish the appropriate method to monitor success of each program and measure.

Plan Updates and Revisions

The required schedule for updating the Water Conservation Plan is seven years. The progress towards achieving the water savings goals will be monitored on an annual basis by Salida. The City will update this plan prior to seven years if implementation and actual water savings deviate too much. This deviation may be caused by several factors including higher or lower than

expected growth, less than anticipated participation and the inability to implement the plan due to lack of funding.

Plan Adoption and Approval

The Salida City Council formally adopted the plan on April 7, 2009, prior to submittal to CWCB for final approval. Implementation will begin after CWCB approval is received. It is only after final CWCB approval that Salida will be eligible for a water-efficiency grant through CWCB for plan implementation.

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APPENDIX A

Conservation Measures and Programs

Leak Detection and Repair Program

The Leak Detection and Repair program entails running billing software reports on high and low use customers, possibly creating weekly pressure charts and monthly node reports, or having a third party thoroughly evaluate the system on an annual basis. Additionally, old lines and areas of high activity are walked by maintenance staff and reports from customers are used to identify and repair leaks. Mapping of the water distribution system is necessary to properly identify system problems.

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Water Production without Savings	745,663,975	gallons/yr
Estimated Water Production over Planning Period without Savings	7,456,639,752	gallons
Annual Estimated Savings Rate	5.00%	
Estimated Annual Water Savings	**37,283,199**	gallons/yr
Estimated Savings over Planning Period	**372,831,988**	gallons

Notes:

Current system leakage/loss rate is estimated at 13%. Leak detection and repair is estimated to reduce real losses that occur due to billing system errors by 5%.
The estimated production (without savings) equals the projected water usage plus 13%.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	80	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$4,000.00	
Third Party Costs (Leak Detection Consult)	$4,200.00	/year
Evaluation and Follow-up Costs (Labor/Consultant)	$1,000.00	/year
Annual Labor	**$9,200.00**	/year
Materials Costs		
Unit Cost	$0.00	/participant
Number of Participants	0	/year
Gallons Saved per Unit per Year	0	gallons
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	0	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$0.00	
Third Party Costs (Mapping of System)	$25,000.00	
One Time Labor/Material Cost	**$25,000.00**	

Notes:

Third Party Costs include:
- Leak survey preformed annually by a consultant.
Assumptions - consultant can inspect approx. 7 miles of system per day at approximately $1000/day. Salida has approximately 29.4 miles of pipeline allowing approximately 1 work week for the consultant to inspect the system.

- Mapping of system by outside consultants. This is a one time cost to Salida. Up-to-date and comprehensive mapping of Salida's water distribution system is necessary to properly identify system problems.

Estimated Annual Cost	**$9,200.00**	/year
Estimated Total Cost over Planning Period Including Set-up	**$117,000.00**	
Cost per 1000 Gallons Saved	**$0.31**	

Billing Software Upgrades

Software Upgrades will allow water providers to quickly and easily retrieve water usage data and relay that data to their customers, helping customers to monitor their water usage and conservation. Software upgrades will also help staff to identify system problems and faulty meters.

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	1

Estimated Water Savings

Annual Estimated Water Production without Savings	745,663,975	gallons/yr
Estimated Water Production over Planning Period without Savings	7,456,639,752	gallons
Annual Estimated Savings Rate	1.00%	
Estimated Annual Water Savings	**7,456,640**	gallons/yr
Estimated Savings over Planning Period	**74,566,398**	gallons

Notes:

Current system leakage/loss rate is estimated at 13%. Software upgrades are estimated to reduce apparent losses that occur due to billing system errors by 1 %.

The estimated production (without savings) equals the projected water usage plus 13%.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	80	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$4,000.00	
Third Party Costs	$0.00	/year
Evaluation and Follow-up Costs (Labor/Consultant)	$0.00	/year
Annual Labor	**$4,000.00**	/year
Materials Costs		
Unit Cost	$0.00	/participant
Number of Participants	0	/year
Gallons Saved per Unit per Year	0	gallons
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	0	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$50,000.00	
One Time Staff Costs	$0.00	
One Time Labor/Material Cost	**$50,000.00**	

Notes:

Estimated one time staff costs include transition from quarterly to monthly billing and publicity of new billing system. Estimate that Staff would spend approximately 80 hours at $50.00/hour, completing the search for billing software, training to understand and utilize that software to it's fullest extent, and possibly time spent transitioning from quarterly billing to monthly billing.

Staff estimates that a new billing system would cost approximately $50,000.

Estimated Annual Cost	**$4,000.00**	/year
Estimated Total Cost over Planning Period Including Set-up	**$54,000.00**	
Cost per 1000 Gallons Saved	**$0.72**	

Meter Testing and Replacement Program

Existing meters are tested periodically for leaks and accuracy and are replaced as necessary. Faulty meters account for apparent losses, or losses due to meter inaccuracies, and real losses also known as physical losses.

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	5

Estimated Water Savings

Annual Estimated Water Production without Savings	745,663,975	gallons/yr
Estimated Water Production over Planning Period without Savings	7,456,639,752	gallons
Annual Estimated Savings Rate	1.00%	
Estimated Annual Water Savings	**7,456,640**	gallons/yr
Estimated Savings over Planning Period	**37,283,199**	gallons

Notes:

Current system loss rate is estimated at 13%. A portion of these losses may be attributed to faulty meters. The City of Salida would like to reduce these losses by 1% over the planning period.

We anticipate that the program will affect losses over 5 years of the total 10 year planning period (2 years left in current program and 3 years in the future).

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	120	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$6,000.00	
Third Party Costs	$0.00	/year
Evaluation and Follow-up Costs (Labor/Consultant)	$0.00	/year
Annual Labor	**$6,000.00**	/year
Materials Costs		
Unit Cost	$300.00	/participant
Number of Participants	900	/year
Gallons Saved per Unit per Year	0	gallons
Annual Materials	**$269,900.00**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	0	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$0.00	
Third Party Costs	$0.00	
One Time Labor/Material Cost	**$0.00**	

Notes:

The City is currently 1/3 of the way through a replacement program and will update and replace further meters again within the 10 year period.

Costs include the remaining 2/3rds of the current program (which will continue into 2009 and 2010) and a testing and re-replacement program that will take place sometime within the next 10 years. Total future replacement program length is approximately 3 years.

Anticipate that 2,699 (average taps over ten years) tap customers will need meter testing within the next ten year period. The City estimates that 1/3 of the average tap customer's taps will be replaced in one year.

The $300 unit cost includes meter testing, replacement costs, and labor.

Estimated Annual Cost	**$275,900.00**	/year
Estimated Total Cost over Planning Period Including Set-up	**$1,379,500.00**	
Cost per 1000 Gallons Saved	**$37.00**	

Chisholm Park Xeriscape

The City of Salida would like to educate the public about the water savings evident from xericscape through xeriscaping approximately 30% of Chisholm Park. Chisholm Park is approximately 0.42 acres and in 2007 the Park water usage totaled approximately 600,000 gallons.

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

2007 Chisholm Park Water Production without Savings	611,000	gallons/yr
Estimated Parks Water Production over Planning Period without Savings	6,110,000	gallons
Annual Estimated Savings Rate*	50.00%	
Estimated Annual Water Savings	**305,500**	gallons/yr
Estimated Savings over Planning Period	**3,055,000**	gallons

**Based on "Handbook of Water Use and Conservation" by Amy Vickers*

Notes:

Chisholm Park is approximately 0.42 acres. Average Park water use is 2.2 acre-feet per acre (~717,000 gallons per acre). In 2007 park water usage totaled approximately 600,000 gallons.

*Studies have shown that implementing Xeriscape landscaping practices can achieve at least a 50 % reduction in water use **

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	40	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$2,000.00	
Third Party Costs	$0.00	/year
Evaluation and Follow-up Costs (Labor/Consultant)	$0.00	/year
Annual Labor	**$2,000.00**	/year
Materials Costs		
Annual Materials Budget	$500	/year
Annual Materials	**$500.00**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	0	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$12,000.00	
Third Party Costs	$0.00	
One Time Labor/Material Cost	**$12,000.00**	

Notes:

Cost is for garden design (one time cost), installation, plants and planting materials, and on-going maintenance.

The City will also include signage and budget permitting, may provide education brochures for the garden.

Estimated Annual Cost	**$2,500.00**	/year
Estimated Total Cost over Planning Period Including Set-up	**$37,000.00**	
Cost per 1000 Gallons Saved	**$12.11**	

Park Irrigation Efficiency Audits

The City of Salida Irrigates 12 parks within the City. In 2007, the City used approximately 71 AF to irrigate those parks. A park irrigation audit would assist Salida in finding system leaks and inefficiencies.

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Parks Water Production without Savings	32,233,871	gallons/yr
Estimated Parks Water Production over Planning Period without Savings	322,338,713	gallons
Annual Estimated Savings Rate	5.00%	
Estimated Annual Water Savings	**1,611,694**	gallons/yr
Estimated Savings over Planning Period	**16,116,936**	gallons

Notes:

Assume a conservative reduction of 5% of projected total billed water.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	120	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$6,000.00	
Third Party Costs	$0.00	/year
Evaluation and Follow-up Costs (Labor/Consultant)	$0.00	/year
Annual Labor	**$6,000.00**	/year
Materials Costs		
Unit Cost	$0.00	/participant
Number of Participants	0	/year
Gallons Saved per Unit per Year	0	gallons
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	0	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$12,000.00	
Third Party Costs	$0.00	
One Time Labor/Material Cost	**$12,000.00**	

Notes:

Estimate 10 staff hours for each of the City's 12 parks. Equipment upgrades are estimated to cost approximately $1,000 per park.

Estimated Annual Cost	**$6,000.00**	/year
Estimated Total Cost over Planning Period Including Set-up	**$72,000.00**	
Cost per 1000 Gallons Saved	**$4.47**	

Water Rate Structure Changes

Based on many water conservation studies, an inclining block water rate design most effectively encourages efficient water use. The inclining block rate structure charges higher unit prices to customers who place a higher demand or strain on the water supply system and lower unit prices to customers who use average or below average amounts of water.

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	1

Estimated Water Savings

Annual Estimated Water Use without Savings	373,240,709	gallons/yr
Estimated Water Use over Planning Period without Savings	3,732,407,089	gallons
Annual Estimated Savings Rate	4.00%	
Estimated Annual Water Savings	**14,929,628**	gallons/yr
Estimated Savings over Planning Period	**149,296,284**	gallons

Notes:

Assume a conservative reduction of 4% of projected total billed water. Rate studies have shown a greater savings (Southwest Florida Water Management District study - 13%).

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	0	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$0.00	
Third Party Costs	$0.00	/year
Evaluation and Follow-up Costs (Labor/Consultant)	$0.00	/year
Annual Labor	**$0.00**	/year
Materials Costs		
Unit Cost	$0.00	/participant
Number of Participants	0	/year
Gallons Saved per Unit per Year	0	gallons
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	0	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
One Time City Staff Labor	$7,500.00	
Rate Study performed by Consultants	$30,000.00	
One Time Labor/Material Cost	**$37,500.00**	

Notes:

Labor costs include estimated staff time for researching water rate options and implementing those options (~150 hours at $50/hour).

Costs also include at water right study completed by a Consultant. Before a new rate is adopted, a rate study would need to be completed by an outside consulting firm.

Water Rates

Rate Category	Rate Detail	2008 Rate (Inside City Limits)
Residential quarterly charges **includes first 3,000 gallons*	- Service charge - Residential	$17.00
	- Service charge - 2nd living unit	$17.00
	- Maintenance charge per quarter	$12.36
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Because Commercial and Industrial customers already have an inclining rate, the inclining rate estimates will only apply to the residential category.

Estimated Revenue assumes that the current rates will not change over the planning period.

Estimated Average Annual Revenue without Water Savings	$718,808.20	/year
Estimated Average Annual Revenue with Water Savings	$702,236.32	/year
Estimated Inclining Block Revenue (with savings)	$719,955.02	/year
Annual Revenue Loss Related to Water Savings	**$0.00**	/year

Estimated Annual Cost	**$0.00**	/year
Estimated Total Cost over Planning Period Including Set-up	**$37,500.00**	
Cost per 1000 Gallons Saved	**$0.25**	

Vater Rate Structure Changes

Lost Revenue Calculations

Year	Total Projected Residential Taps	Annual Base Charge *includes first 3,000 gal	Usage Charge w/out Savings	Usage Charge with Savings	Estimated Revenue without Savings	Estimated Revenue with Savings	Lost Revenue
2008	2,297	$269,759.68	$339,477.54	$325,592.47	$609,237.22	$595,352.15	$13,885.06
2009	2,320	$272,457.28	$346,343.58	$332,180.81	$618,800.85	$604,638.09	$14,162.76
2010	2,366	$277,906.42	$356,811.14	$342,223.49	$634,717.56	$620,129.92	$14,587.65
2011	2,437	$286,243.62	$371,162.39	$355,991.23	$657,406.00	$642,234.85	$15,171.15
2012	2,535	$297,693.36	$389,801.67	$373,871.96	$687,495.03	$671,565.32	$15,929.71
2013	2,662	$312,578.03	$413,274.18	$396,388.69	$725,852.21	$708,966.72	$16,885.49
2014	2,821	$331,332.71	$433,849.26	$416,119.49	$765,181.97	$747,452.20	$17,729.77
2015	2,962	$347,899.34	$451,109.28	$432,670.32	$799,008.62	$780,569.67	$18,438.96
2016	3,081	$361,815.32	$469,153.65	$449,977.13	$830,968.97	$811,792.45	$19,176.52
2017	3,204	$376,287.93	$483,125.67	$463,373.86	$859,413.60	$839,661.79	$19,751.81
Total	26,686	$3,133,973.69	$4,054,108.34	$3,888,389.47	$7,188,082.03	$7,022,363.15	$165,718.87
Average	2,669	$313,397.37	$405,410.83	$388,838.95	$718,808.20	$702,236.32	$16,571.89

Inclining Block example

Tier 1	$1.12	per 1,000 gallons for use from 3,000 gal (base) to 16,000 gal (12,000 gallons)
Tier 2	$1.17	per 1,000 gallons for use from 16,000 gal to 31,000 gal (15,000 gallons)
Tier 3	$1.22	per 1,000 gallons over 31,000 gal

Average Customer Charges

Total Residential Use per Tap (w/ savings)	130,699.85
Water Use after 3,000 gal base rate gallons	127,699.85
Use per Quarter gallons	31,924.96
Current Usage Cost per Year with Estimated Savings	$328,525.74
Tier 1 Cost per Quarter	$13.44
Tier 2 Cost per Quarter	$17.55
Tier 3 Cost per Quarter	$6.01

Year	Total Projected Residential Taps	Estimated Block Rate Usage Revenue per year*	Estimated Block Rate Revenue per year**
2008	2,297	$339,941.80	$609,701.48
2009	2,320	$347,003.87	$619,461.14
2010	2,366	$357,679.85	$635,586.27
2011	2,437	$372,258.23	$658,501.85
2012	2,535	$391,150.47	$688,843.83
2013	2,662	$414,909.99	$727,488.02
2014	2,821	$435,350.47	$766,683.18
2015	2,962	$452,441.17	$800,340.51
2016	3,081	$470,538.81	$832,354.13
2017	3,204	$484,301.91	$860,589.84
		Average =	$719,955.02

Notes:

* Equals Tier 1, 2, & 3 charge for average customer multiplied by 4 (quarters) and multiplied by the total number of projected taps.

** Usage Rate plus the Annual Base Charge.

Water Waste Ordinance - Existing Measure

Municipal Code Section 13-3-90 establishes a water wasting ordinance.

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Water Use without Savings	300,417,299	gallons/yr
Estimated Water Use over Planning Period without Savings	3,004,172,994	gallons
Annual Estimated Savings Rate	0.50%	
Estimated Annual Water Savings	**1,502,086**	gallons/yr
Estimated Savings over Planning Period	**15,020,865**	gallons

Notes:

This measure only affects Projected Residential Multi-Family and Commercial water usage.

Outdoor use is estimated to be 49% of total residential multi-family and commercial uses. Assume a conservative estimate of 0.5% savings of projected outdoor water usage (residential, multi-family, and commercial).

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	1	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$50.00	
Third Party Costs	$0.00	/year
Evaluation and Follow-up Costs	$0.00	/year
Annual Labor	**$50.00**	/year
Materials Costs		
Annual Materials Budget	$0	/year
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	0	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
One Time Labor Costs	$0.00	
One Time Material Costs	$0.00	
One Time Labor/Material Cost	**$0.00**	

Notes:

Costs include public notification costs (web, newspaper, bill stuffers, etc.).

Water Rates

Rate Category	Rate Detail	2008 Rate (Inside City Limits)
Residential quarterly charges **includes first 3,000 gallons*	- Service charge - Residential	$17.00
	- Service charge - 2nd living unit	$17.00
	- Maintenance charge per quarter	$12.36
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates ($1.11/1,000 gal) will not change over the planning period.

Estimated Revenue does not include the Commercial/Industrial quarterly base rate. Estimates are based only on the usage charge for all customer categories.

Estimated Average Annual Revenue without Water Savings	$985,685.25	/year * Does not incl. Commercial base rates
Estimated Average Annual Revenue with Water Savings	$982,270.11	/year * Does not incl. Commercial base rates
Annual Revenue Loss Related to Water Savings	**$3,415.14**	/year * Does not incl. Commercial base rates

Estimated Annual Cost	**$3,465.14**	/year
Estimated Total Cost over Planning Period Including Set-up	**$34,651.37**	
Cost per 1000 Gallons Saved	**$2.31**	

Post Commercial BMPs on Website or as Bill Stuffers

BMPs regarding commercial businesses can be posted on a website or sent out as bill stuffers to help encourage commercial water users to conserve.

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Commercial Water Use without Savings	242,099,229	gallons/yr
Estimated Water Use over Planning Period without Savings	2,420,992,286	gallons
Annual Estimated Savings Rate	0.25%	
Estimated Annual Water Savings	**605,248**	gallons/yr
Estimated Savings over Planning Period	**6,052,481**	gallons

Notes:

This measure only affects projected commercial water usage.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	8	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$400.00	
Third Party Costs	$0.00	/year
Evaluation and Follow-up Costs (Website updates, etc.)	$100.00	/year
Annual Labor	**$500.00**	/year
Materials Costs		
Unit Cost (cost of Bill Stuffers)	$0.75	/participant
Number of Participants	556	/year
Gallons Saved per Unit per Year	0	gallons
Annual Materials	**$417.36**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	0	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$0.00	
Commercial BMP Website Set Up	$400.00	
One Time Labor/Material Cost	**$400.00**	

Notes:

Over the planning period, there are projected to be an average of 556 commercial tap accounts per year.

The AWWA has bill stuffers available for purchase. Average cost per bill stuffer ranged from $0.50 to $0.75 per item.

Water Rates

Rate Category	Rate Detail	2008 Rate (Inside City Limits)
Commercial/Industrial quarterly charges	- Commercial 3/4-inch	$17.00
	- Commercial 1-inch	$20.39
	- Commercial 1.5-inch	$28.89
	- Commercial 2-inch	$40.79
	- Commercial 3-inch	$70.25
	- Commercial 4-inch	$113.30
Demand charge for Commercial/Industrial Customers	- Up to 100,000 gallons	$20.60
	- 101,000 - 500,000 gallons	$41.20
	- 500,001 - 1,000,000 gallons	$82.40
	- Over 1,000,000 gallons	$123.60
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates will not change over the planning period.

Estimated Revenue does not include the Commercial/Industrial quarterly base rate. Estimates are based only on the usage charge for all customer categories.

Estimated Average Annual Revenue without Water Savings	$266,877.05	/year	* Does not incl. Commercial base rates
Estimated Average Annual Revenue with Water Savings	$266,205.22	/year	* Does not incl. Commercial base rates
Annual Revenue Loss Related to Water Savings	**$671.83**	/year	* Does not incl. Commercial base rates

Estimated Annual Cost	**$1,589.19**	/year
Estimated Total Cost over Planning Period Including Set-up	**$16,291.89**	
Cost per 1000 Gallons Saved	**$2.69**	

Public Education - newsletter, bill stuffers, website

Water providers may periodically provide customers with water conservation tips in water bills, on their website, and at the front desk of their office.

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Water Use without Savings	373,240,709	gallons/yr
Estimated Water Use over Planning Period without Savings	3,732,407,089	gallons
Annual Estimated Savings Rate	1.00%	
Estimated Annual Water Savings	**3,732,407**	gallons/yr
Estimated Savings over Planning Period	**37,324,071**	gallons

Notes:

This measure only affects Projected Residential and Multi-Family water usage.

Estimated saving for bill stuffers, website, and web based ET irrigation schedule.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	40	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$2,000.00	
Third Party Costs	$0.00	/year
Evaluation and Follow-up Costs (Website updates, etc.)	$100.00	/year
Annual Labor	**$2,100.00**	/year
Materials Costs		
Unit Cost (cost of Bill Stuffers)	$0.75	/participant
Number of Participants	2,669	/year
Gallons Saved per Unit per Year	0	gallons
Annual Materials	**$2,001.43**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	0	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$0.00	
Water Conservation Website Set Up	$2,250.00	
One Time Labor/Material Cost	**$2,250.00**	

Notes:

Staff hours include time spent preparing newsletter, updating website, and preparing bill stuffers.

Website should include an ET Irrigation Schedule (aka Lawn Watering Guide).

Over the planning period, there are projected to be an average of 3,056 Residential and Multi-Use tap accounts each year.

The AWWA has bill stuffers available for purchase. Average cost per bill stuffer ranged from $0.50 to $0.75 per item.

Water Rates

Rate Category	Rate Detail	2008 Rate (Inside City Limits)
Residential quarterly charges **includes first 3,000 gallons*	- Service charge - Residential	$17.00
	- Service charge - 2nd living unit	$17.00
	- Maintenance charge per quarter	$12.36
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates ($1.11/1,000 gal) will not change over the planning period.

Estimated Average Annual Revenue without Water Savings	$718,808.20	/year
Estimated Average Annual Revenue with Water Savings	$714,665.23	/year
Annual Revenue Loss Related to Water Savings	**$4,142.97**	/year

Estimated Annual Cost	**$8,244.40**	/year
Estimated Total Cost over Planning Period Including Set-up	**$84,694.03**	

School Education Program (K-12 Education and K-12 Teacher Education and Training)

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Water Use without Savings	373,240,709	gallons/yr
Estimated Water Use over Planning Period without Savings	3,732,407,089	gallons
Annual Estimated Savings Rate	0.50%	
Estimated Annual Water Savings	**1,866,204**	gallons/yr
Estimated Savings over Planning Period	**18,662,035**	gallons

Notes:

This measure only affects Projected Residential and Multi-Family water usage.

Assume 0.5% savings of projected Residential and Multi-Family water usage.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	4	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$200.00	
Third Party Costs	$0.00	/year
Evaluation and Follow-up Costs (Website updates, etc.)	$0.00	/year
Annual Labor	**$200.00**	/year
Materials Costs		
Annual Materials Budget	$500	/year
Annual Materials	**$500.00**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	0	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
Project WET teacher scholarship	$3,000.00	
ion Program Set Up (May be completed by 3rd party)	$2,500.00	
One Time Labor/Material Cost	**$5,500.00**	

Notes:

Staff hours include time spent preparing (see 1x cost) and updating an education program, ordering and preparing educational materials, and training educators.

The City could offer a rebate for teachers who attend the project WET training or provide the tuition fee for attending the training. 3 teachers may be selected over the planning period. Estimate that training will cost approx. $1,000.

Material costs include a $500 annual budget for education materials costs.

For more information please see:
www.projectwet.org
www.cfwe.org/SchoolPrograms/
www.coloradowatershed.org/

Water Rates

Rate Category	Rate Detail	2008 Rate (Inside City Limits)
Residential quarterly charges **includes first 3,000 gallons*	- Service charge - Residential	$17.00
	- Service charge - 2nd living unit	$17.00
	- Maintenance charge per quarter	$12.36
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates ($1.11/1,000 gal) will not change over the planning period.

Estimated Average Annual Revenue without Water Savings	$718,808.20	/year
Estimated Average Annual Revenue with Water Savings	$716,736.72	/year
Annual Revenue Loss Related to Water Savings	**$2,071.49**	/year

Estimated Annual Cost	**$2,771.49**	/year
Estimated Total Cost over Planning Period Including Set-up	**$33,214.86**	
Cost per 1000 Gallons Saved	**$1.78**	

Commercial and Industrial Water Audits

Commercial customers are often the highest water users and have been an area of increasing focus for water conservation. Commercial customers who participate in a water audit could identify ways to reduce their operating costs over the long term. Water audits can be performed by a third party consultant and is an effective way to educate businesses on how they can save water.

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Commercial Water Use Per Tap without Savings	426,865	gallons/tap
Annual Estimated Industrial Water Use Per Tap without Savings	52,136	gallons/tap
Total	479,001	gallons/tap
Annual Estimated Savings Rate	10.00%	
Annual Program Participants	20	/year
Maximum No. of Participants over Planning Period	200	
Estimated Annual Water Savings	**958,002**	gallons/yr
Estimated Savings over Planning Period	**52,690,107**	gallons

Notes:

Estimated Water Use is based on a 1.31 AF/tap use for Commercial Taps and 0.16 AF/tap use for Industrial Taps. This is the average tap use for 2003 through 2007.

Estimated Savings over Planning Period is calculated by compounding the estimated annual water savings per the total number of audit participants for each given year. For example, in the first year of the program, there are 20 participants. In the second year of the program, there are water savings from the 20 participants from last year's program, and new participants thereby compounding the savings.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	200	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$10,000.00	
Third Party Costs	$0.00	/year
Evaluation and Follow up Costs	$100.00	/year
Annual Labor	**$10,100.00**	/year
Materials Costs		
Unit Cost	$0.00	/participant
Number of Participants	20	/year
Gallons Saved per Unit per Year	47,900	gallons
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	20	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
One Time Program Training	$1,000.00	
One Time Labor Cost (program setup assistance through 3rd party)	$1,500.00	
One Time Labor/Material Cost	**$2,500.00**	

Notes:

Staff hours include 10 hours to perform each audit.

May require training time for staff.

Commercial and Industrial Water Audits

Water Rates

Rate Category	Rate Detail	**2008 Rate** (Inside City Limits)
Commercial/Industrial quarterly charges	- Commercial 3/4-inch	$17.00
	- Commercial 1-inch	$20.39
	- Commercial 1.5-inch	$28.89
	- Commercial 2-inch	$40.79
	- Commercial 3-inch	$70.25
	- Commercial 4-inch	$113.30
Demand charge for Commercial/Industrial Customers	- Up to 100,000 gallons	$20.60
	- 101,000 - 500,000 gallons	$41.20
	- 500,001 - 1,000,000 gallons	$82.40
	- Over 1,000,000 gallons	$123.60
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates will not change over the planning period.

Estimated Revenue does not include the Commercial/Industrial quarterly base rate. Estimates are based only on the usage charge for all customer categories.

Estimated Average Annual Revenue without Water Savings	$269,644.62	/year	* Does not incl. Commercial base rates
Estimated Average Annual Revenue with Water Savings	$242,643.53	/year	* Does not incl. Commercial base rates
Annual Revenue Loss Related to Water Savings	**$27,001.09**	/year	* Does not incl. Commercial base rates

Estimated Annual Cost	**$37,101.09**	/year
Estimated Total Cost over Planning Period Including Set-up	**$373,510.92**	
Cost per 1000 Gallons Saved	**$7.09**	

Residential Audit Kit

Self-guided residential audit kits can be designed to include items such as leak detection tablets, surveys, and sprinkler testing cones. Instructions for conducting the audit and evaluating the results can give residential customers insight and direction on how they can save water and money. The guidance offered in the instructions could lead the customer to take part in other conservation programs offered, including rebates. The City will have customers provide their name and address and will track the customers account to obtain savings information. If savings is not readily evident, the City will work to follow up with participating customers.

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Residential Water Use Per Tap without Savings	133,599	gallons/tap
Annual Estimated Multi-Family Water Use Per Tap without Savings	136,857	gallons/tap
Total	270,456	gallons/tap
Annual Estimated Savings Rate	3.00%	
Annual Program Participants	42	/year
Maximum No. of Participants over Planning Period	420	
Estimated Annual Water Savings	**340,775**	gallons/yr
Estimated Savings over Planning Period	**18,742,624**	gallons

Notes:

Estimated Water Use is based on a 0.41 AF/tap use for Residential Taps and 0.42AF/tap use for Multi-Family Taps (2003-2007).

Estimate that by 2025, 20% of residential accounts will have participated (756). Assume annual participation of 42 and 3% savings of average household use.

Estimated Savings over Planning Period is calculated by compounding the estimated annual water savings per the total number of audit participants for each given year.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours (Website updates, etc.)	16	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$800.00	
Evaluation and Follow up Costs	$0.00	/year
Annual Labor	**$800.00**	/year
Materials Costs		
Unit Cost	$0.00	/participant
Number of Participants	42	/year
Gallons Saved per Unit per Year	8,114	gallons
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	42	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost (Bulk Purchase of Audit Kits)	$2,814.00	
Water Audit Website Set Up	$400.00	
One Time Labor/Material Cost	**$3,214.00**	

Notes:

Online instruction can be set up on City Website. Customer information will be gathered in exchange for the kit and City staff will work to track water savings.

Residential audit kits are available at wholesalers like AM Conservation Group, Inc. for $6.70 per unit.

Residential Audit Kit

Water Rates

Rate Category	Rate Detail	**2008 Rate** (Inside City Limits)
Residential quarterly charges **includes first 3,000 gallons*	- Service charge - Residential	$17.00
	- Service charge - 2nd living unit	$17.00
	- Maintenance charge per quarter	$12.36
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates will not change over the planning period.

Estimated Revenue does not include the Commercial/Industrial quarterly base rate. Estimates are based only on the usage charge for all customer categories.

Estimated Average Annual Revenue without Water Savings	$718,808.20	/year
Estimated Average Annual Revenue with Water Savings	$718,429.94	/year
Annual Revenue Loss Related to Water Savings	**$378.26**	/year

Estimated Annual Cost	**$1,178.26**	/year
Estimated Total Cost over Planning Period Including Set-up	**$14,996.60**	
Cost per 1000 Gallons Saved	**$0.80**	

Low-Flow Toilet Rebate

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Residential Water Use Per Tap without Savings	133,599	gallons/tap
Annual Estimated Multi-Family Water Use Per Tap without Savings	136,857	gallons/tap
Total	270,456	gallons/tap
People per Household	2.7	
Average Flushes per Household*	5.1	flushes
Saving Per Flush with a low flow toilet (1.6 gal/flush)	2.4	gallons/flush
Gallons Saved per Household per Year	12,063	gallons/yr
Annual Program Participants	10	/year
Maximum No. of Participants over Planning Period	100	
Estimated Annual Water Savings	**120,625**	gallons/yr
Estimated Savings over Planning Period	**6,634,386**	gallons

**Based on "Handbook of Water Use and Conservation" by Amy Vickers*

Notes:

Estimated Water Use is based on a 0.41 AF/tap use for Residential Taps and 0.42AF/tap use for Multi-Family Taps (2003-2007).

*Savings based on 5.1 flushes per person per day *. Saving 2.4 gal per flush (4.0 gal ave flush rate - 1.6 gal conservation flush rate1) and 2.7 people per household.*

Estimated Savings over Planning Period is calculated by compounding the estimated annual water savings per the total number of audit participants for each given year.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	2.5	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$125.00	
Evaluation and Follow up Costs	$0.00	/year
Annual Labor	**$125.00**	/year
Materials Costs		
Unit Cost	$0.00	/participant
Number of Participants	10	/year
Gallons Saved per Unit per Year	12,063	gallons
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$50.00	
Number of Participants	10	/year
Annual Rebate Cost	**$500.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$0.00	
One Time Labor Cost	$200.00	
One Time Labor/Material Cost	**$200.00**	

Notes:

Cost for program development split between all rebate measures.

Costs are split between all rebate programs.

Old toilets cannot be resold.

Customer information will be gathered and City staff will work to track water savings.

Low-Flow Toilet Rebate

Water Rates

Rate Category	Rate Detail	**2008 Rate** (Inside City Limits)
Residential quarterly charges **includes first 3,000 gallons*	- Service charge - Residential	$17.00
	- Service charge - 2nd living unit	$17.00
	- Maintenance charge per quarter	$12.36
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates will not change over the planning period.

Estimated Revenue does not include the Commercial/Industrial quarterly base rate. Estimates are based only on the usage charge for all customer categories.

Estimated Average Annual Revenue without Water Savings	$718,808.20	/year
Estimated Average Annual Revenue with Water Savings	$718,674.31	/year
Annual Revenue Loss Related to Water Savings	**$133.89**	/year

Estimated Annual Cost	**$758.89**	/year
Estimated Total Cost over Planning Period Including Set-up	**$7,788.94**	
Cost per 1000 Gallons Saved	**$1.17**	

High Efficiency Clothes Washer Rebate

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Residential Water Use Per Tap without Savings	133,599	gallons/tap
Annual Estimated Multi-Family Water Use Per Tap without Savings	136,857	gallons/tap
Total	270,456	gallons/tap
People per Household	2.7	
Laundry loads per person per day*	0.37	
Saving Per Load with a high efficiency washer (1.6 gal/flush)	16	gallons/load
Gallons Saved per Household per Year	5,834	gallons/yr
Annual Program Participants	20	/year
Maximum No. of Participants over Planning Period	200	
Estimated Annual Water Savings	**116,683**	gallons/yr
Estimated Savings over Planning Period	**6,417,576**	gallons

**Based on "Handbook of Water Use and Conservation" by Amy Vickers*

Notes:

Estimated Water Use is based on a 0.41 AF/tap use for Residential Taps and 0.42AF/tap use for Multi-Family Taps (2003-2007).

*Savings based on 0.37 loads per person per day *. Saving 16 gal per load (43 gal/load ave. rate - 27 gal/load conservation rate*) and 2.65 people per household.*

Estimated Savings over Planning Period is calculated by compounding the estimated annual water savings per the total number of audit participants for each given year.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	2.5	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$125.00	
Evaluation and Follow up Costs	$0.00	/year
Annual Labor	**$125.00**	/year
Materials Costs		
Unit Cost	$0.00	/participant
Number of Participants	20	/year
Gallons Saved per Unit per Year	5,834	gallons
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$100.00	
Number of Participants	20	/year
Annual Rebate Cost	**$2,000.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$0.00	
One Time Labor Cost	$200.00	
One Time Labor/Material Cost	**$200.00**	

Notes:

Cost for program development split between all rebate measures.

Costs are split between all rebate programs.

Customer information will be gathered and City staff will work to track water savings.

High Efficiency Clothes Washer Rebate

Water Rates

Rate Category	Rate Detail	**2008 Rate** (Inside City Limits)
Residential quarterly charges **includes first 3,000 gallons*	- Service charge - Residential	$17.00
	- Service charge - 2nd living unit	$17.00
	- Maintenance charge per quarter	$12.36
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates will not change over the planning period.

Estimated Revenue does not include the Commercial/Industrial quarterly base rate. Estimates are based only on the usage charge for all customer categories.

Estimated Average Annual Revenue without Water Savings	$718,808.20	/year
Estimated Average Annual Revenue with Water Savings	$718,678.68	/year
Annual Revenue Loss Related to Water Savings	**$129.52**	/year

Estimated Annual Cost	**$2,254.52**	/year
Estimated Total Cost over Planning Period Including Set-up	**$22,745.18**	
Cost per 1000 Gallons Saved	**$3.54**	

High Efficiency Dishwasher Rebate

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Residential Water Use Per Tap without Savings	133,599	gallons/tap
Annual Estimated Multi-Family Water Use Per Tap without Savings	136,857	gallons/tap
Total	270,456	gallons/tap
People per Household	2.7	
Dishwasher loads per person per day*	0.1	
Saving Per load with a high efficiency dishwasher (1.6 gal/flush)	6.5	gallons/load
Gallons Saved per Household per Year	641	gallons/yr
Annual Program Participants	20	/year
Maximum No. of Participants over Planning Period	200	
Estimated Annual Water Savings	**12,812**	gallons/yr
Estimated Savings over Planning Period	**704,633**	gallons

**Based on "Handbook of Water Use and Conservation" by Amy Vickers*

Notes:

Estimated Water Use is based on a 0.41 AF/tap use for Residential Taps and 0.42AF/tap use for Multi-Family Taps (2003-2007).

Annual savings is based on a 4.5 gallon per load dishwasher vs. a 10 to 12 gpl dishwasher, 0.1 loads per day per person.*

Estimated Savings over Planning Period is calculated by compounding the estimated annual water savings per the total number of audit participants for each given year.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	2.5	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$125.00	
Evaluation and Follow up Costs	$0.00	/year
Annual Labor	**$125.00**	/year
Materials Costs		
Unit Cost	$0.00	/participant
Number of Participants	20	/year
Gallons Saved per Unit per Year	641	gallons
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$50.00	
Number of Participants	20	/year
Annual Rebate Cost	**$1,000.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$0.00	
One Time Labor Cost	$200.00	
One Time Labor/Material Cost	**$200.00**	

Notes:

Cost for program development split between all rebate measures.

Costs are split between all rebate programs.

Customer information will be gathered and City staff will work to track water savings.

High Efficiency Dishwasher Rebate

Water Rates

Rate Category	Rate Detail	**2008 Rate** (Inside City Limits)
Residential quarterly charges **includes first 3,000 gallons*	- Service charge - Residential	$17.00
	- Service charge - 2nd living unit	$17.00
	- Maintenance charge per quarter	$12.36
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates will not change over the planning period.

Estimated Revenue does not include the Commercial/Industrial quarterly base rate. Estimates are based only on the usage charge for all customer categories.

Estimated Average Annual Revenue without Water Savings	$718,808.20	/year
Estimated Average Annual Revenue with Water Savings	$718,793.98	/year
Annual Revenue Loss Related to Water Savings	**$14.22**	/year

Estimated Annual Cost	**$1,139.22**	/year
Estimated Total Cost over Planning Period Including Set-up	**$11,592.21**	
Cost per 1000 Gallons Saved	**$16.45**	

Low-Flow Faucet Rebate

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Residential Water Use Per Tap without Savings	133,599	gallons/tap
Annual Estimated Multi-Family Water Use Per Tap without Savings	136,857	gallons/tap
Total	270,456	gallons/tap
People per Household	2.7	
Annual residential water use for a 2.75 gpm rated faucet*	14,684	gallons/yr
Estimated Water Use for a 1.5 gpm rated faucet*	8.1	gpcd
Annual residential water use for a 1.5 gpm rated faucet*	7,983	gallons/yr
Gallons Saved per Household per Year	6,701	gallons/yr
Annual Program Participants	50	Households/year
Maximum No. of Participants over Planning Period	500	
Estimated Annual Water Savings	**335,070**	gallons/yr
Estimated Savings over Planning Period	**18,428,850**	gallons

**Based on "Handbook of Water Use and Conservation" by Amy Vickers. Please refer to Table 2.15 on page 103.*

Notes:

Estimated Water Use is based on a 0.41 AF/tap use for Residential Taps and 0.42AF/tap use for Multi-Family Taps (2003-2007).

Average water savings of 6,701 gal. per household per year for 1.5 gpm faucets (1.5gpm vs. 2.75gpm).*

Estimated Savings over Planning Period is calculated by compounding the estimated annual water savings per the total number of audit participants for each given year.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	2	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$100.00	
Evaluation and Follow up Costs	$0.00	/year
Annual Labor	**$100.00**	/year
Materials Costs		
Unit Cost	$0.00	/participant
Number of Participants	50	/year
Gallons Saved per Unit per Year	6,701	gallons
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$5.00	
Number of Units	50	/year
Annual Rebate Cost	**$250.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$0.00	
One Time Labor Cost	$100.00	
One Time Labor/Material Cost	**$100.00**	

Notes:

Cost for program development split between all rebate measures.

$5.00 rebate for up to 2 faucets per household.

Customer information will be gathered and City staff will work to track water savings.

Low-Flow Faucet Rebate

Water Rates

Rate Category	Rate Detail	**2008 Rate** (Inside City Limits)
Residential quarterly charges **includes first 3,000 gallons*	- Service charge - Residential	$17.00
	- Service charge - 2nd living unit	$17.00
	- Maintenance charge per quarter	$12.36
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates will not change over the planning period.

Estimated Revenue does not include the Commercial/Industrial quarterly base rate. Estimates are based only on the usage charge for all customer categories.

Estimated Average Annual Revenue without Water Savings	$718,808.20	/year
Estimated Average Annual Revenue with Water Savings	$718,436.28	/year
Annual Revenue Loss Related to Water Savings	**$371.93**	/year

Estimated Annual Cost	**$721.93**	/year
Estimated Total Cost over Planning Period Including Set-up	**$7,319.28**	
Cost per 1000 Gallons Saved	**$0.40**	

Low-Flow Showerhead Rebate

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Residential Water Use Per Tap without Savings	133,599	gallons/tap
Annual Estimated Multi-Family Water Use Per Tap without Savings	136,857	gallons/tap
Total	270,456	gallons/tap
People per Household	2.7	
Annual residential water use for a 2.75 gpm rated faucet*	10,446	gallons/yr
Estimated Water Use for a 1.5 gpm rated faucet*	8.8	gpcd
Annual residential water use for a 2.5 gpm rated faucet*	8,672	gallons/yr
Gallons Saved per Household per Year	1,774	gallons/yr
Annual Program Participants	50	Households/year
Maximum No. of Participants over Planning Period	500	
Estimated Annual Water Savings	**88,695**	gallons/yr
Estimated Savings over Planning Period	**4,878,225**	gallons

**Based on "Handbook of Water Use and Conservation" by Amy Vickers. Please refer to Table 2.11 on page 88.*

Notes:

Estimated Water Use is based on a 0.41 AF/tap use for Residential Taps and 0.42AF/tap use for Multi-Family Taps (2003-2007).

Average water savings of 1,774 gal. per household per year for 2.5 gpm faucets (2.5gpm vs. 3gpm).*

Estimated Savings over Planning Period is calculated by compounding the estimated annual water savings per the total number of audit participants for each given year.

Customer information will be gathered and City staff will work to track water savings.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	2	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$100.00	
Evaluation and Follow up Costs	$0.00	/year
Annual Labor	**$100.00**	/year
Materials Costs		
Unit Cost	$0.00	/participant
Number of Participants	50	/year
Gallons Saved per Unit per Year	1,774	gallons
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$5.00	
Number of Units	50	/year
Annual Rebate Cost	**$250.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$0.00	
One Time Labor Cost	$100.00	
One Time Labor/Material Cost	**$100.00**	

Notes:

Cost for program development split between all rebate measures.

Low-Flow Showerhead Rebate

Water Rates

Rate Category	Rate Detail	**2008 Rate** (Inside City Limits)
Residential quarterly charges **includes first 3,000 gallons*	- Service charge - Residential	$17.00
	- Service charge - 2nd living unit	$17.00
	- Maintenance charge per quarter	$12.36
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates will not change over the planning period.

Estimated Revenue does not include the Commercial/Industrial quarterly base rate. Estimates are based only on the usage charge for all customer categories.

Estimated Average Annual Revenue without Water Savings	$718,808.20	/year
Estimated Average Annual Revenue with Water Savings	$718,709.75	/year
Annual Revenue Loss Related to Water Savings	**$98.45**	/year

Estimated Annual Cost	**$448.45**	/year
Estimated Total Cost over Planning Period Including Set-up	**$4,584.51**	
Cost per 1000 Gallons Saved	**$0.94**	

Commercial Toilet Rebate

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Commercial Water Use Per Tap without Savings	426,865	gallons/tap
Annual Estimated Industrial Water Use Per Tap without Savings	52,136	gallons/tap
Total	479,001	gallons/tap
Saving Per day with a commercial low flow toilet*	25	gpd
Gallons Saved per Household per Year	9,125	gallons/yr
Annual Program Participants	30	/year
Maximum No. of Participants over Planning Period	300	
Estimated Annual Water Savings	**273,750**	gallons/yr
Estimated Savings over Planning Period	**15,056,250**	gallons

**Based on "Handbook of Water Use and Conservation" by Amy Vickers - analysis of water billing records for non-residential sites in the Metropolitan Water District of Southern California*

Notes:

Estimated Water Use is based on a 1.31 AF/tap use for Commercial Taps and 0.16 AF/tap use for Industrial Taps. This is the average tap use for 2003 through 2007.

Average savings per toilet for commercial accounts is 25 gpd.*

Estimated Savings over Planning Period is calculated by compounding the estimated annual water savings per the total number of audit participants for each given year.

Customer information will be gathered and City staff will work to track water savings.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	2.5	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$125.00	
Evaluation and Follow up Costs	$0.00	/year
Annual Labor	**$125.00**	/year
Materials Costs		
Unit Cost	$0.00	/participant
Number of Participants	30	/year
Gallons Saved per Unit per Year	9,125	gallons
Annual Materials	**$0.00**	/year
Rebates		
Rebate Cost	$50.00	
Number of Participants	30	/year
Annual Rebate Cost	**$1,500.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$0.00	
One Time Labor Cost	$200.00	
One Time Labor/Material Cost	**$200.00**	

Notes:

Cost for program development split between all rebate measures.

Old toilets cannot be resold.

Commercial Toilet Rebate

Water Rates

Rate Category	Rate Detail	**2008 Rate** (Inside City Limits)
Commercial/Industrial quarterly charges	- Commercial 3/4-inch	$17.00
	- Commercial 1-inch	$20.39
	- Commercial 1.5-inch	$28.89
	- Commercial 2-inch	$40.79
	- Commercial 3-inch	$70.25
	- Commercial 4-inch	$113.30
Demand charge for Commercial/Industrial Customers	- Up to 100,000 gallons	$20.60
	- 101,000 - 500,000 gallons	$41.20
	- 500,001 - 1,000,000 gallons	$82.40
	- Over 1,000,000 gallons	$123.60
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates will not change over the planning period.

Estimated Revenue does not include the Commercial/Industrial quarterly base rate. Estimates are based only on the usage charge for all customer categories.

Estimated Average Annual Revenue without Water Savings	$268,157.82 /year	* Does not incl. Commercial base rates
Estimated Average Annual Revenue with Water Savings	$267,853.96 /year	* Does not incl. Commercial base rates
Annual Revenue Loss Related to Water Savings	**$303.86** /year	* Does not incl. Commercial base rates

Estimated Annual Cost	**$1,928.86** /year	
Estimated Total Cost over Planning Period Including Set-up	**$19,488.62**	
Cost per 1000 Gallons Saved	**$1.29**	

Distribute Pre-Rinse Spray Heads to Restaurants & Institutions

Pre-rinse spray heads can be found in most restaurants and institutions. Old pre-rinse spray heads use up to 3 gpm. New spray-head technology is available that only uses 1.4 gpm.

Planning Period	2008 to 2017
Years in Planning Period	10
Program Length	10

Estimated Water Savings

Annual Estimated Commercial Water Use Per Tap without Savings	426,865	gallons/tap
Annual Estimated Industrial Water Use Per Tap without Savings	52,136	gallons/tap
Total	479,001	gallons/tap
Old pre-rinse spray head water flow rate	3	gpm
Operating Hours per Day	5	hours/day
Operating Days per Year	260	days/yr
Low-Flow pre-rinse spray valves water flow rate*	1.6	gpm
Old pre-rinse spray head water flow rate	234,000	gallons/yr
Low-Flow pre-rinse spray valves water flow rate	124,800	gallons/yr
Gallons Saved per spray head per year	109,200	gallons/yr
Annual Program Participants	5	/year
Maximum No. of Participants over Planning Period	50	
Estimated Annual Water Savings	**546,000**	gallons/yr
Estimated Savings over Planning Period	**30,030,000**	gallons

**Based on Western Regional Power Administration's Pre-Rinse Valve Fact Sheet, November 2005. http://www.wapa.gov/ES/pubs/fctsheet/PreRinseValves.pdf*

Notes:

Estimated Water Use is based on a 1.31 AF/tap use for Commercial Taps and 0.16 AF/tap use for Industrial Taps. This is the average tap use for 2003 through 2007.

Average savings per low-flow spray head is 1.4 gpm.*

Estimated Savings over Planning Period is calculated by compounding the estimated annual water savings per the total number of audit participants for each given year.

Customer information will be gathered and City staff will work to track water savings.

Costs

Total Cost to Water Provider

Labor Costs		
Staff Hours	8	/year
Hourly Cost	$50.00	/hour
Annual Staff Costs	$400.00	
Evaluation and Follow up Costs	$0.00	/year
Annual Labor	**$400.00**	/year
Materials Costs		
Unit Cost	$100.00	/participant
Number of Participants	5	/year
Gallons Saved per Unit per Year	109,200	gallons
Annual Materials	**$500.00**	/year
Rebates		
Rebate Cost	$0.00	
Number of Participants	5	/year
Annual Rebate Cost	**$0.00**	/year
One Time Labor and Material Costs		
One Time Materials Cost	$0.00	
One Time Labor Cost	$200.00	
One Time Labor/Material Cost	**$200.00**	

Notes:

Cost for program development split between all rebate measures.

Prices for new spray heads range from $75.00 to $100.00.

Installation of spray heads performed by City staff

Distribute Pre-Rinse Spray Heads to Restaurants & Institutions

Water Rates

Rate Category	Rate Detail	**2008 Rate** (Inside City Limits)
Commercial/Industrial quarterly charges	- Commercial 3/4-inch	$17.00
	- Commercial 1-inch	$20.39
	- Commercial 1.5-inch	$28.89
	- Commercial 2-inch	$40.79
	- Commercial 3-inch	$70.25
	- Commercial 4-inch	$113.30
Demand charge for Commercial/Industrial Customers	- Up to 100,000 gallons	$20.60
	- 101,000 - 500,000 gallons	$41.20
	- 500,001 - 1,000,000 gallons	$82.40
	- Over 1,000,000 gallons	$123.60
Charges for All Customer Categories	- Usage charge - per 1,000 gallons over the initial 3,000 gallons	$1.11

Notes:

The annual revenue loss was estimated based on inside City limit rates only.

Estimated Revenue assumes that the current rates will not change over the planning period.

Estimated Revenue does not include the Commercial/Industrial quarterly base rate. Estimates are based only on the usage charge for all customer categories.

Estimated Average Annual Revenue without Water Savings	$268,157.82 /year	* Does not incl. Commercial base rates
Estimated Average Annual Revenue with Water Savings	$267,551.76 /year	* Does not incl. Commercial base rates
Annual Revenue Loss Related to Water Savings	**$606.06** /year	* Does not incl. Commercial base rates

Estimated Annual Cost	**$1,506.06** /year	
Estimated Total Cost over Planning Period Including Set-up	**$15,260.60**	
Cost per 1000 Gallons Saved	**$0.51**	

APPENDIX B

Public-Review Process

Public Review Process

The City of Salida held its public-review period from January 14, 2009 through March 16, 2009. Notification was posted in the Mountain Mail on January 14, 2009, announcing the review period and that a draft plan would be available for the public to review at the City's office. An announcement asking for public comments and draft plan was also posted on the City of Salida website on January 14, 2009.

The notice that was posted on the website for notification of the comment period is included as follows.

The City of Salida has completed a Draft Water Conservation Plan. The goal of the Plan is for the City of Salida to develop strategies and programs for efficient and sustainable water use.

Some of the existing conservation efforts implemented by the City of Salida:

- *Meter testing and replacement program*
- *Water Restrictions – Hours/Days*
- *Water Waste Ordinance*

Before finalizing the water conservation plan, the City of Salida welcomes input from its customers. The City of Salida shall have a 60-day public review period. All written comments are due March 16, 2009 and can be e-mailed to utilities@cityofsalida.com or mailed to City Hall at PO Box 417, Salida, CO 81201.

PROOF OF PUBLICATION

STATE OF COLORADO } SS

County of Chaffee

I, MERLE J. BARANCZYK,

Being first duly sworn according to law, on oath depose and say, that I am, and at all the times herein mentioned, was the publisher of the Mountain Mail and that said Mountain Mail is a daily newspaper of general circulation, in said County and State, printed and published in the City of Salida, County of Chaffee and State of Colorado, and that copies of each number thereof are, and at all the times herein mentioned were, regularly distributed and delivered, by carrier or mail, to each of the subscribers said newspaper, in accordance with the customary method of business in newspaper offices.

That the annexed PUBLIC NOTICE/CITY OF SALIDA

In the matter of SUSTAINABLE WATER USE

This is a true copy of the original, and the same was regularly published in the newspaper proper and not in a supplement, for the full period of ONE (1) INSERTION

of said newspaper, and that the first publicati on was in the issue dated JANUARY 14, 2009

And that the last publication of the same was in the issue dated

That the said Mountain Mail has been established, printed and published for the full period of fifty-two consecutive weeks, and continuously and uninterruptedly prior to the said date of the first publication of the notice aforesaid, in the City of Salida, County of Chaffee and State of Colorado, and is a newspaper duly qualified for the publishing of said notice within the meaning of an Act of the General Assembly of the State of Colorado, approved May 30th, 1923, and entitled "An act to Amend an Act Entitled 'An Act Concerning Legal Notices, Advertisements and Publications and the Fees of Printers and Publishers thereof, and to Repeal all Acts and Parts of Acts in Conflict with the Provisions of this Act'," and within the meaning of an Act amendatory thereof, approved May 18th, 1931 and entitled "An Act to Amend Section 4, of Chapter 139, Session Laws 'of Colorado, 1923, relating to Legal Notices and Advertisements," and within the meaning of any and all other Acts amendatory thereof or supplemental thereto. And further affiant saith not.

The above certificate of publication was subscribed and sworn to before me by the above named Merle J. Baranczyk who is personally known to me to be the identical person described in the above certificate, on the 14H Day of January, 2009 A.D.

FEIN # 84-0718607

Karen Hasselbrunk

NOTARY PUBLIC

My Commission Expires October 16, 2010

PUBLIC NOTICE

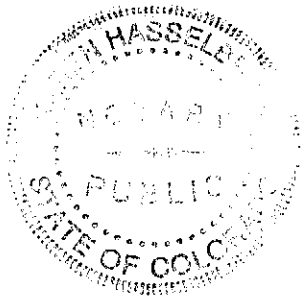
The City of Salida has completed a Draft Water Conservation Plan. The goal of the Plan is for the City of Salida to develop strategies and programs for efficient and sustainable water use. Some of the existing conservation efforts implemented by the City of Salida:

- Meter testing and replacement program
- Water Restrictions – Hours/Days
- Water Waste Ordinance

Before finalizing the water conservation plan, the City of Salida welcomes input from its customers. The City of Salida shall have a 60-day public review period beginning the date of this notice through March 16, 2009. A complete draft copy will be available for your review on the City of Salida website at www.cityofsalida.com. Additionally, a copy will be kept at the City of Salida's office located at 124 E Street, Salida.

All written comments are due March 16, 2009 and can be e-mailed to utilities@cityofsalida.com, mailed to the office at 124 E Street, Salida, CO 81201, or may be dropped off at the office.

Published in The Mountain Mail January 14, 2009.



APPENDIX C

City Council Plan Adoption

RESOLUTION NO. 15
(Series 2009)

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SALIDA, COLORADO, ADOPTING A WATER CONSERVATION PLAN

WHEREAS, the City Council of the City of Salida recognizes the importance of conserving water and improving water use efficiency; and

WHEREAS, under the Colorado Revised Statute 37-60-126 prompted by the Water Conservation Act of 2004, requiring water providers delivering over 2,000 acre feet or more per calendar year are required to develop, adopt, and make publicly available and implement a water use efficiency plan; and

WHEREAS, having a state-approved water conservation plan is required before seeking financial assistance from the Colorado Water Conservation Board or the Colorado Water Resources and Power Development Authority; and

WHEREAS a Draft Water Conservation Plan (the Plan) that describes the role of water use efficiency plans in the City's water supply planning was presented for review and comment at the Council meeting held on November 4, 2008; and

WHEREAS, a public notice announcing the availability of the Plan for review and comment was published and the Plan a 60-day public review period was held from January 14, 2009 through March 16, 2009, which did not result in any changes to the draft plan.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SALIDA, COLORADO THAT:

The City of Salida hereby adopts the Water Conservation Plan attached hereto as Exhibit "A" and incorporated herein by reference.

RESOLVED, APPROVED, AND ADOPTED this 7th day of April, 2009.

CITY OF SALIDA

By: _____
Mayor

[SEAL]

ATTEST:

_____
City Clerk

APPENDIX D

Public Comments and Response

The City of Salida has completed its 60-day public review period for the Water Conservation Plan that began on January 14, 2009 through March 16, 2009. Notification was posted in the Mountain Mail and was also posted on the City of Salida website. During the public review period the City received one public comment on the Water Conservation Plan.

Comment: *include anti-backflow devices on all services.* Provided by Shawn Shuey on January 14, 2009.

Response: *The public comment that was received is not pertinent to this water conservation plan and the City staff will take it under consideration as a health and public safety issue.*

Salida Citizen

About

The Salida Citizen is a tool for building community created by the residents of Salida, Colorado.
Learn more »

Input needed for draft water conservation plan

By The City of Salida
January 12th, 2009

- 1 Comment
- ShareThis

Salida, CO — The City of Salida has completed a draft water conservation plan which defines strategies and programs for efficient and sustainable water use. Some of the existing conservation efforts implemented by the City of Salida include meter testing and replacement, water restrictions and a waste water ordinance.

Before finalizing the water conservation plan, the City of Salida welcomes input from its customers. A 60-day public review period is open through March 16, 2009. A complete draft copy is available for your review on the City of Salida website. Additionally, a copy will be kept at City Hall at 124 E Street, Salida.

All written comments are due March 16, 2009 and can be emailed, mailed to City Hall at P.O. Box 417, Salida, CO 81201 or dropped off at City Hall at 124 E Street.

Filed under City | Tagged as city of salida

shawn shuey
January 14th, 2009

include anti-backflow devices on all services.

Add a Comment

Name (required)
Email (will not be published) (required)
Website URL

Message