Security Water District
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INTRODUCTION

Using water efficiently is an important part of water supply planning for Security Water District. Although the District is small, its system of water supply is complex. It is comprised of both ground and surface water, and entails contracts and agreements with such diverse entities as Colorado Springs Utilities, the Pikes Peak Community Foundation and the U. S. Bureau of Reclamation. Reducing water demands will decrease or delay the need for future additional water supplies. Reductions in systemwide per capita water use will allow the District to serve more customers in the future. Reducing water demands will help the District realize financial gain as capital expenditures related to water and wastewater treatment, distribution and collection facilities can be delayed, perhaps even avoided.

Colorado House Bill 04-1365 encourages water providers to submit a Water Conservation Plan to the Colorado Water Conservation Board (CWCB). Security Water District's Water Conservation Plan is submitted in accordance with this Bill, with Colorado Revised Statutes 37-60-126 and CWCB's Guidelines for developing water conservation plans.

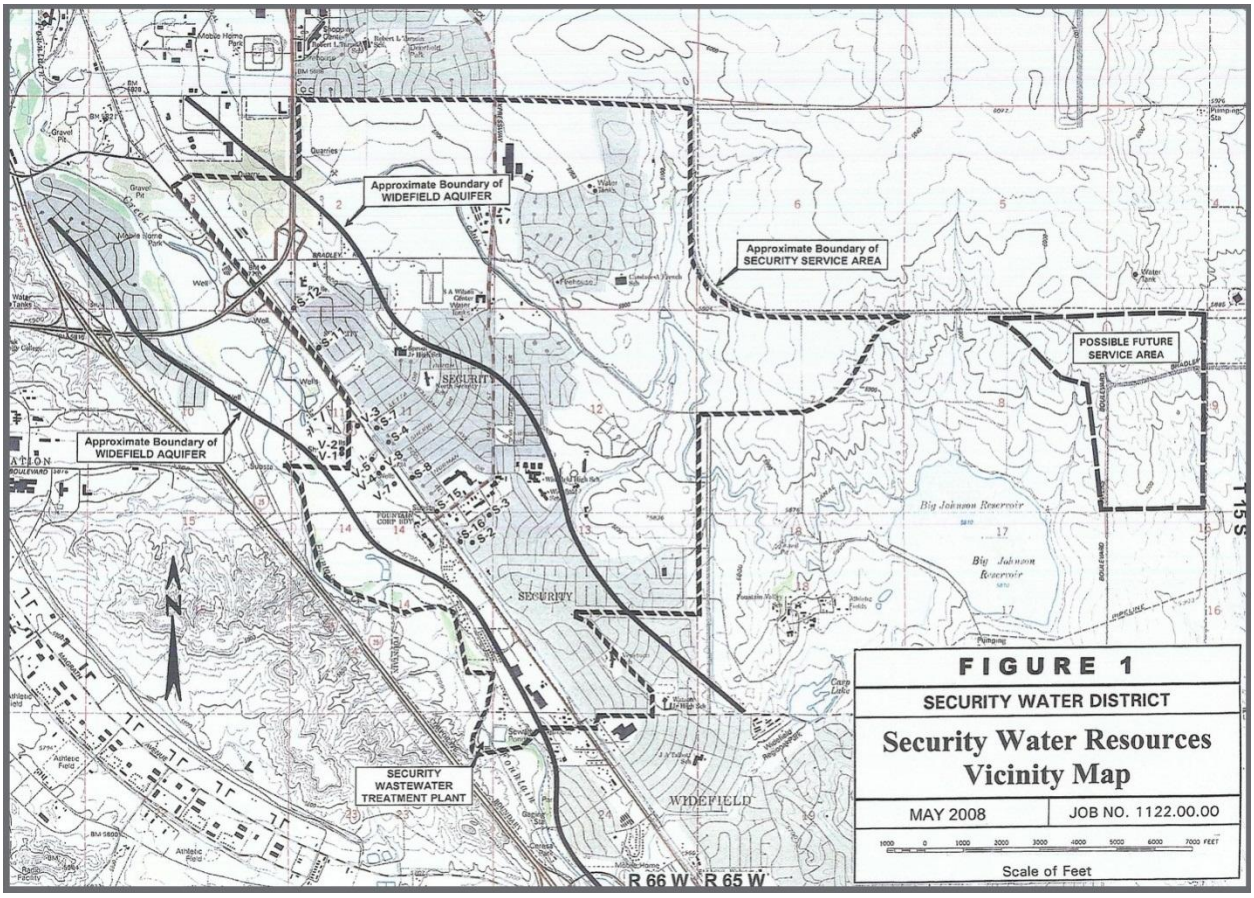
Additionally, Colorado House Bill 10-1051 amends 37-60-126 (4), Colorado Revised Statutes, to require water providers' Plans to include consideration of other specific elements, and beginning in 2013, requires water providers to report annually to the Colorado Water Conservation Board on customers' water use by customer category, and to estimate the amounts of water saved for the year through the implementation of certain elements of those Plans, along with descriptions of any changes made to elements of the Plans.

Security Water District developed its first conservation plan in 2004. That plan will be both updated and expanded in its new Water Conservation Plan. The new Plan has been developed under the direction of Security Water District's staff, with input from its Board of Directors and its customers. The District has invested significant time and resources in evaluating the effectiveness of its existing water conservation programs and measures, and in developing the goals, programs and measures included in its new plan, and is confident that its Plan will meet with the intent and requirements of both HB 04-1365 and HB 10-1051.

SECTION 1
PROFILE THE EXISTING WATER SYSTEM

1.1 PROFILE PHYSICAL CHARACTERISTICS OF THE EXISTING WATER SUPPLY SYSTEM

Security Water District is located in unincorporated El Paso County. It encompasses approximately five square miles, bordered on the north by Drennan Blvd., on the west by I-25, on the east by Grinnel Road and on the south by Fontaine Blvd.



Security Water District currently provides a reliable water supply for a population of over 18,000 people. The District obtains its water supply from numerous wells located in the vicinity of its service area, supplemented by Fryingpan-Arkansas (Fry-Ark) Project water delivered through the Fountain Valley Conduit.

Security's water rights include a complex system of decrees, well permits, agreements and leases, including:

- Wells in the Widefield Aquifer and the Windmill Gulch Aquifer
- Fry-Ark Project water and return flows from this water

- Augmentation plans using senior water rights and Fry-Ark return flows to replace depletions associated with operation of wells in Widefield and Windmill Gulch Aquifers
- Water rights being developed by Security for artificial recharge of the Widefield Aquifer
- Water rights being developed by Security for storage in Pueblo Reservoir and delivery through the Southern Delivery System

Worksheet 1-1: Water System Profile

A	**SERVICE CHARACTERISTICS**			
1	Estimated service population	17620		
2	Estimated service area (square miles)	5		
3	Miles of mains	101		
4	Number of treatment plants	3		
5	Number of separate water systems	1		
6	Interconnection with other systems	5		
B	**ANNUAL WATER SUPPLY**	Annual Volume (gal)	Number of intakes or source points	Percent metered
7	Groundwater	917923475	19	100
8	Surface water	509631635	1	100
9	Purchases, raw	195510857	1	100
10	Purchases, treated	0	0	0
11	Total annual water supply	1623065968	21	100
C	**SERVICE CONNECTIONS**	Connections	Water sales (gal)	Percent metered
12	Residential, single-family	6473	701,918,080	100
13	Residential, multi-family	7	15,161,000	100
14	Commercial	232	58,409,300	100
15	Industrial			
16	Public or governmental			
17	Wholesale			
18	Other: commercial irrigation, schools & parks	64	62,683,000	100
19	Total connections	6776	838,171,380	100
D	**WATER DEMAND**	Annual Volume (gal)	Percent of total	Per connection (gal)
20	Residential sales	717,079,080	71.22%	110660
21	Commercial (nonresidential) sales	58,409,300	5.80%	251764
22	Irrigation (wholesale) sales	62,683,000	6.23%	979422
23	Other sales	172,950	0.02%	
24	Nonbilled water: authorized uses	63,921,245	6.35%	
25	Nonbilled water: unauthorized uses	104,635,687	10.39%	
26	Total system demand (total use)	1,006,901,262	100.00%	
E	**AVERAGE & PEAK DEMAND**	Volume (AC FT/Time)	Total supply capacity (AC FT)	Percent of total capacity
27	Average-day demand	8.7	53	16.42%
28	Maximum-day demand	24	53	45.28%
29	Maximum-hour demand	4	2.2 + 30 (tanks)	12.42%
F	**PLANNING**	Prepared a plan?	Date	Filed with state
30	Capital, facility, or supply plan	Yes	September 2009	No
31	Drought or emergency plan	No		
32	Water conservation plan	Yes	2004	No

Note that Worksheet 1-1 shows a current population of 17,620, where Worksheet 2-1 uses PPACG's figure of 18,200. This apparent discrepancy is because 17,620 is a more accurate population number for 2010, and therefore more defensible for developing per capita numbers at the outset. Going forward, in Worksheet 2-1, we have used PPACG's number of 18,200 and their numbers for population projections through 2020.

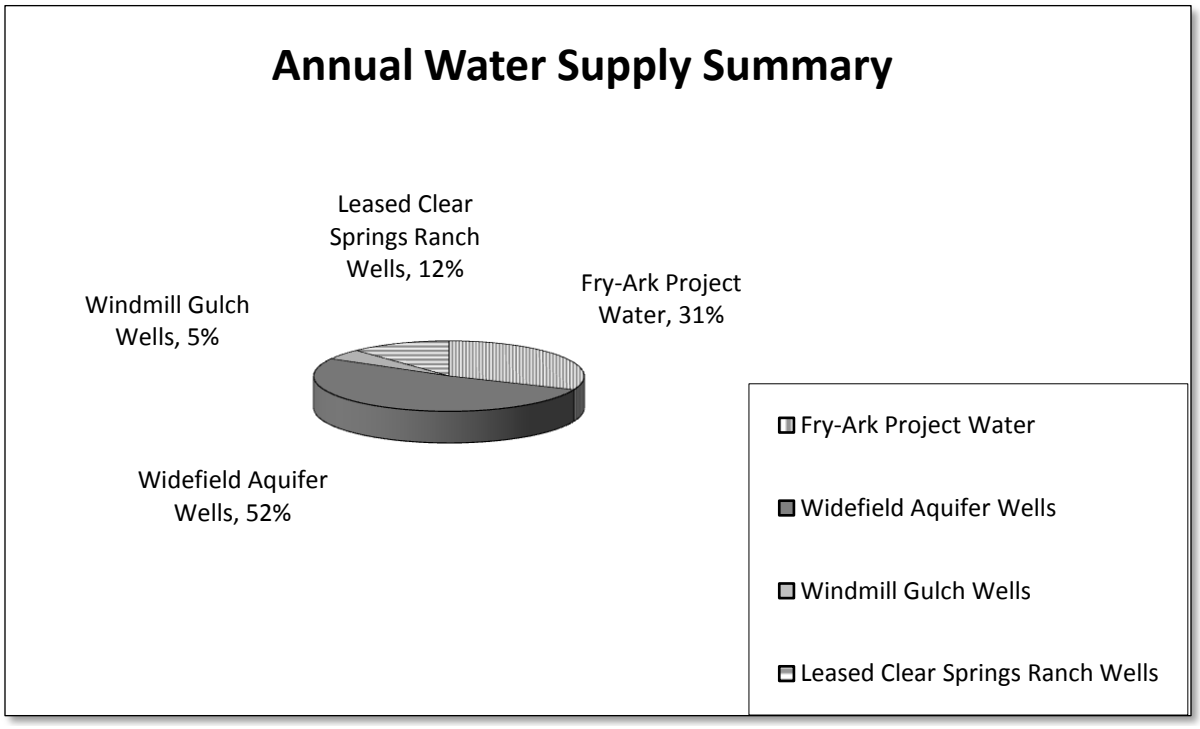
1.2 IDENTIFY ALL SOURCES OF WATER

The District obtains its water supply from the Frying Pan-Arkansas Project and from 19 groundwater wells located in the Widefield and Windmill Gulch aquifers. The Fry-Ark Project water is pumped from Pueblo Reservoir under the auspices of the Fountain Valley Authority. Security has contracted for delivery of up to 1646 acre-feet per year of Fry-Ark Project water, minus evaporation and delivery losses of approximately 5%. This water is used directly in Security's water system for municipal purposes as a supplemental base-load supply.

A summary of the water supply currently available to Security on a firm annual basis follows:

Fry-Ark Project Water	1,564 acre feet
Widefield Aquifer Wells	2,577 acre feet
Windmill Gulch Wells	240 acre feet
Leased Clear Springs Ranch Wells	600 acre feet
Total	**4,981 acre feet**

Graph A



Although Security Water District has annual supplies that are both reliable and adequate, like all front range communities, it is subject to the ever present probability of recurring drought. Although the Colorado Springs area has an annual average precipitation rate of just over 17 inches, a sampling of annual precipitation rates from 1999 to 2009 includes 27.58 inches in 1999, and only 7.84 inches in 2002. In fact, only twice in those eleven years were amounts recorded that equaled or exceeded the elusive "average precipitation".

Security Water District is well aware that its location within the Arkansas River Basin makes it a party to the Basin's predicted shortfall of eighteen percent by the year 2030 (Statewide Water Supply Initiative, 2004).

In the spirit of being a responsible member of the Arkansas River Basin, and of doing the right thing by making the most efficient use of its enviable water supplies, Security Water District has prepared its Water Conservation Plan.

Worksheet 1-2: Summary of System Conditions

PLANNING QUESTIONS	Y	N	Comment
Is the system in a designated critical water supply area?		X	
Does the system experience frequent shortages or supply emergencies?		X	
Does the system have substantial unaccounted-for and lost water?		X	
Is the system experiencing a high rate of population and/or demand growth?		X	
Is the system planning substantial improvements or additions?	X		Connection to the Southern Delivery System
Are increases to the wastewater system capacity anticipated within the planning horizon?		X	Improving treatment, not capacity

1.3 IDENTIFY SYSTEM LIMITATIONS

Security Water District has a reliable and adequate water supply as discussed in Section 1.2. Because of the diverse water sources and its interconnected water system, the District does not experience frequent outages or supply emergencies. In cases of unusually high water demands, the Security water system is limited in the water it can deliver from its wells by their pumping capacity, but has 30 acre-feet of water storage to compensate. Reducing per capita water use with this Water Conservation Plan would also reduce the amount of water required during high water demand periods and relieve stress on the District's pumping facilities, extending facility life and ensuring the District's ability to continue to provide water without outages.

1.4 CHARACTERIZE WATER COSTS AND PRICING

Security Water District's water operations are financially self-sufficient with funding for operatingand capital requirements derived primarily from rates and tap fees. In January 2009, Red Oak Consulting analyzed the District's financial status and recommended rate adjustments to assure continuing financial viability.

The District's staff has developed a $33 million water capital improvement program for the next ten years, comprised of water rights purchases, the Southern Delivery project, well upgrades and water main replacements.

Revenue under the existing rates (pre-2009) was inadequate to meet projected revenue requirements. The study recommended annual rate increases over the next ten years in order to reach and maintain revenues equal to the cost of service. These charges vary by meter size and eliminate the volume allowance beginning in 2010.

Proposed residential monthly service charges range from $7.50 per bill for a ¾ inch meter to $49.90 for a 10 inch meter. Nonresidential monthly service charges range from $10.00 for a ¾ inch meter to $49.90 for a 10 inch meter.

In 2010, residential volume charges use a 4-tier increasing rate structure. The second tier volume charge is 25% greater than the first tier. The third tier is 25% greater than the second, and the fourth tier is 50% greater than the third. Table 1 shows proposed residential water volume charges for 2010 and 2011.

Table 1

Existing and Proposed Residential Water Volume Charges

Block	**2010**	**Proposed 2011**
Kgal	**$/Kgal**	**$/Kgal**
First 2.5	1.01	1.20
Next 2.5	1.01	1.20
Next 10	1.26	1.50
Next 10	1.58	1.88
Over 25	2.37	2.82

Security Water District bills monthly, and currently uses the postcard format for billing. One of the conservation measures included in this plan is conversion to an expanded bill providing more information about water – use history, comparisons, etc. The new format will also allow the District to add educational bill stuffers and/or newsletters.

Security Water District charges the following fees for new construction (Table 2).

Table2

Effective September 1, 2008	
Tap fees	
¾ inch	$4,700.00
1 inch	$5,900.00
1 ½ inch	$8,600.00

2 inch	$10,700.00
3 inch	$19,300.00
4 inch	$30,500.00
6 inch	$70,500.00
Water Meters and Installation	
¾ inch Spectrum #22	$353.00
1 inch Spectrum #50	$555.50
Prices upon request for 1 ½ meters and larger	$ -
Water Development Fee	
Typical Single Family Res.	$11,000.00
(3/4 inch tap size with approximately one-half acre-foot of water diversion)	
Inspection Fee and Construction Water Fee	
Residential and Commercial Inspection Fee	$25.00
Residential and Construction Water Fees	$30.00
Commercial Construction Water Fee, determined at time of plan review	$ -

Fees are contained in District Resolution No. W-2008-1.

1.5 REVIEW CURRENT POLICIES AND PLANNING INITIATIVES

Security Water District believes that an inclining block rate structure that reflects the cost of providing water to its customers is an effective way to impact water use in both normal and drought conditions. In 2009 the District enacted a phased approach to bringing rates in line with actual cost of service, including phasing out its policy of delivering the first 5,000 gallons of water to customers at no cost. In 2010, the second half of that free allowance was eliminated. The District expects that the significantly higher rates, tied directly to water use will make consumers more aware of consumption.

The District is not a regulatory agency, and therefore has no powers to enact or enforce new regulatory measures. It does, however, prohibit wasteful use of water by Resolution, and anticipates working with the County or other regulatory bodies to promulgate appropriate conservation legislation.

The District plans to develop a Water and Sewer Master Plan in the near future. The Master Plan will be used to provide general information on the status of the District's infrastructure, to estimate infrastructure improvements that may be necessary to accommodate future growth, and to provide general budgeting information. This Water Conservation Plan will be used in conjunction with the Master Plan to prepare for and budget future improvements.

1.6 SUMMARIZE CURRENT WATER CONSERVATION ACTIVITIES

Security Water District has had a Water Conservation Plan in place since 2004. This plan met the requirements of the Water Conservation Act of 1991, and prior requirements of the U.S. Bureau of Reclamation (such compliance is a condition of the District's contract with the Bureau for Frying Pan Arkansas water). This updated Water Conservation Plan will satisfy the more stringent conservation requirements of the Bureau as recently revised (Reclamation Manual Directives and Standards, 1/17/03) as well as the requirements of CWCB.

The District has several conservation programs and measures in place to encourage its domestic, commercial, industrial and public facilities customers to use water more efficiently. These programs and measures will continue, and in some cases be enhanced to produce more consistent and reliable results. The District employs an array of supply side conservation measures, which have – although difficult to quantify – no doubt significantly impacted water use in Security.

Security is fortunate among Colorado communities in that it has an adequate and reliable supply of water and water rights to carry it well into the future. This environment allows Security to concentrate its conservation planning *not on water use curtailment*, but on the broader ends of *increasing the productivity of its water supply and use* so as to satisfy water needs without compromising desired water services.

The District's existing conservation programs and measures include:

- ***Water efficient fixtures*** -new construction in the District's service area complies with the Energy Policy Act of 1992 and the Uniform Plumbing Code of 1997 as adopted by the Pikes Peak Regional Building Department. At this time the District does not offer rebates or replacements to accelerate the Act's effect on water use. However, even without acceleration, the Arkansas River Basin can anticipate water savings on the order of 18,900 to 35,100 acre feet due to "passive savings" (Great Western Institute ,SWSI Conservation Levels Analysis, Final Draft Report, May 2010). Passive savings are those realized through the normal replacement of older, higher water use fixtures and appliances by 2030. The District will realize – and has realized - a proportional percentage of those savings.
- ***Landscape efficiency*** - The District's existing plan includes a list of low water using trees, shrubs and perennials which is available to all customers.
    - Multi-family, commercial and industrial developments are encouraged to use the list of low water plant materials.
    - District regulations require commercial and industrial developments to submit landscaping for approval prior to implementation.
- ***Public education*** - The District's website includes a list of both indoor and outdoor water saving tips. EPA estimates that public education programs can result in savings of as much as 4% of total water use. The District's landscape efficiency outreach as well as its website content would be included in this estimate of water savings.
- ***Overall System efficiencies***
    - Security Sanitation District has eliminated lagoons, saving substantial amounts of water previously lost to evaporation. As part of Security's decreed augmentation plan, evaporation losses at the wastewater treatment plant are assessed against Security's water rights. Eliminating evaporation losses, therefore, results in a direct increase in supply. ***This increase is estimated to be approximately 100 acre feet per year***.
    - In accordance with the District's contract for Frying-Pan Arkansas water, the project water is used directly for municipal purposes. A significant portion of that water returns to Fountain Creek in the form of treated sewage effluent and lawn irrigation flows. Since this water is almost entirely transbasin water from the headwaters of the Colorado River, these return flows become a new source of water to the stream system. This water is available for use as a replacement source in augmentation plans. Security has the right to purchase annually the return flows associated with its Frying-Pan Arkansas Water under a perpetual contract. Security's decreed augmentation plan (Case No. 90CW28) provides for quantification of its wastewater return flows.

Quantification of the lawn irrigation return flow is included in the District's pending Case No. 01CW149. ***As with lagoon elimination, return flows have the effect of providing an increase in existing supply***, thus reducing or delaying the need to obtain new supply.

- Security Water District and Widefield Water and Sanitation District formed a partnership in 2003 (WARA) to evaluate the feasibility of recharging the Widefield Aquifer to increase their base pumping amounts as allowed by the Widefield Aquifer Stipulation. A ruling was made in 2010 in this case. The ruling is anticipated to increase the District's annual pumping allotment from the Widefield Aquifer from 2228 to 2898 acre feet, an annual increase of 670 acre feet. The ruling allows Security to replenish the aquifer with water from any source (e.g., Fry-Ark water, groundwater, ditch water, et al), and by doing so, increase the amount the District can pump out by an equal amount. ***WARA is, in effect, a reuse program that will significantly increase the District's supply*** within the next ten years***.***

- ***Distribution System Efficiencies*** -the District's meter department scrutinizes high water consumption and investigates for possible leaks that customers may not be aware of. District policy requires property owners to initiate repairs within 24 hours if deemed necessary.
  - Security Water District monitors water pumped versus water sold on a regular basis by examining its production records versus consumption records. It conducts daily inspections (through observation) of the service area for leaks and uses leak detection equipment to locate leaks. The District's SCADA system can identify leaks or pressure changes in tanks or pumps. The District also has an ongoing program to replace cast iron mains with ductile iron mains; copper service lines with polyethylene service lines.
  - The District evaluates and upgrades its Water Distribution System Design and Construction Specifications on an ongoing basis. Specific attention is given to use of materials not subject to corrosion and leakage and to minimize system component failure.
  - All service connections are metered, a program is in place for meter testing and replacement. Metering of service connections was completed in 2004, meters are too new to be subject to replacement at this time.
  - All source water is metered and accounted for according to the District's various water supply agreements.

CWCB Worksheet 1-3 Summary of Current Conservation Activities

Water Conservation Measures/Programs	Approx. Annual Water Savings (1000 gal.)	Date Implemented	Continue?
Low water use requirements for new fixtures	Exact savings unknown, full impact of EPAct will be realized during this planning period. At that time, savings of 35% of indoor use are anticipated	1992	Yes
Education/information dissemination	EPA est. educational programs to save 4% of total use		
Drought resistant vegetation	-	2004 - Present	Yes
Low water use landscapes/commercial plan assist.	-	2004 - Present	Yes
Website	-	2006 - Present	Yes
Water Returns Sponsorship	Makes conservation experts avail. to customers, inc. in 4%	-	-
Rate Structure and billing systems			
Volume billing	Less than 1%	2002	-
Conservation rate structure	Less than 1%	2004	Yes
Monthly billing	Unknown, savings should be included in "Education"	Ongoing	Yes
Regulation/Ordinances			
Water waste prohibition	-	-	-
Water Reuse Systems	-	-	-
Evaporation loss control at wastewater plant	100 acre feet per year	2004	Yes
Lawn irrigations return flows	-	2004	Yes
Distribution System Efficiency			
Leak Repair	.5% of produced water	Ongoing	Yes
Leak identification	-	Ongoing	Yes
Meter source water	-	Ongoing	Yes
Meter service connections	Estimated to save 20%, not yet evidenced	Ongoing	Yes
Meter testing and replacement	In place, but too new to evaluate	Ongoing	Yes

CWCB Worksheet 1-3 identifies several water conservation activities for which water savings data are not known. In the future, the District will be able to track actual savings from measures and programs, using the Alliance for Water Efficiency's Tracking Tool which it has recently acquired.

For purposes of the Water Conservation Plan, the District has estimated its overall water savings to date by comparing the systemwide gallons per capita per day use recorded in 2004 (the year its existing conservation plan went into effect) to its 2009 systemwide gallons per capita per day use. In 2004,

customers of Security Water District used 158 gallons per capita per day. By 2009, customers had reduced daily consumption to 128 gallons per capita. This reduction of 19 percent reflects the District's conservation efforts, the impact of "passive conservation" that occurs as old fixtures are replaced under requirements of EPAct of 1992, as well as the prevailing attitude among its customers (and customers nationwide) that conserving water is the right thing to do. Per capita use was examined for the years immediately preceeding the drought through the drought and up to the present. Because no restrictions were in effect during the drought (Security's supply held sufficient to meet these needs during that time period), per capita use increased during the years of drought, probably due to increased irrigation and outdoor use. There is a decreasing trend over the last four years as noted above and demonstrated in the tables, but we are not comfortable identifying this as a drought effect. It is more likely to be attributable to changing attitudes toward water use, the implementation of water meters and the District's efforts to encourage conservation.

Security Water District's past water conservation efforts have realized significant water savings in just five years. Based on per capita per day use, as stated earlier, the District has achieved savings of 19 percent over the period 2004 – 2009. At the same time, its population has increased by 5 percent. Education, increased water rates, metering, leak detection and landscape plan approvals for commercial development are no doubt the significant contributors to per capita use reductions. At the same time, significant increases in supply have been achieved by efficient reduction of evaporation losses, achieving credit for wastewater return flows, and soon to come credit for lawn irrigation return flows. We believe it is reasonable to say that the District's conservation programs, both supply and demand, have resulted in a savings of 300 acre feet annually. Passive conservation and changing attitudes have arguably added another 300 acre feet of annual savings.

This Water Conservation Plan examines expansion of existing programs and measures, as well as the addition of new programs and measures that meet the District's screening criteria. Upon selection of cost-effective, implementable programs and measures that enable the District to meet its conservation goals, the Plan then recalculates demand forecasts based on implementation of the new menu of conservation programs and measures.

SECTION 2

CHARACTERIZE WATER USE AND FORECAST DEMAND

2.1 CHARACTERIZE WATER USE AND FORECAST DEMAND

Security Water District's customers are largely single-family residential. During 2009-2010, the District had 6,473 single family homes with domestic water taps. These customers represented approximately 70 percent of all District water use. The District currently has one multi-family residential development which provides approximately 2 percent of the District's annual water demand.

The next largest category of water use in Security Water District is commercial irrigation which includes irrigation at the District's one industrial use, as well as schools and parks in the District. These water users represent approximately 6 percent of the District's water use.

Security Water District clearly experiences large seasonal fluctuations in water demand given that 78 percent of District water users include irrigation as part of their domestic water use. The District also experiences variation in water use from year to year based on the precipitation received because of the large percentage of irrigation demands. There is further discussion of the District's precipitation in Section 1.2.

Approximately 5 percent of the District's water use is by commercial customers. The District provides water to primarily small businesses, but does also provide water to one Walmart and one industrial user.

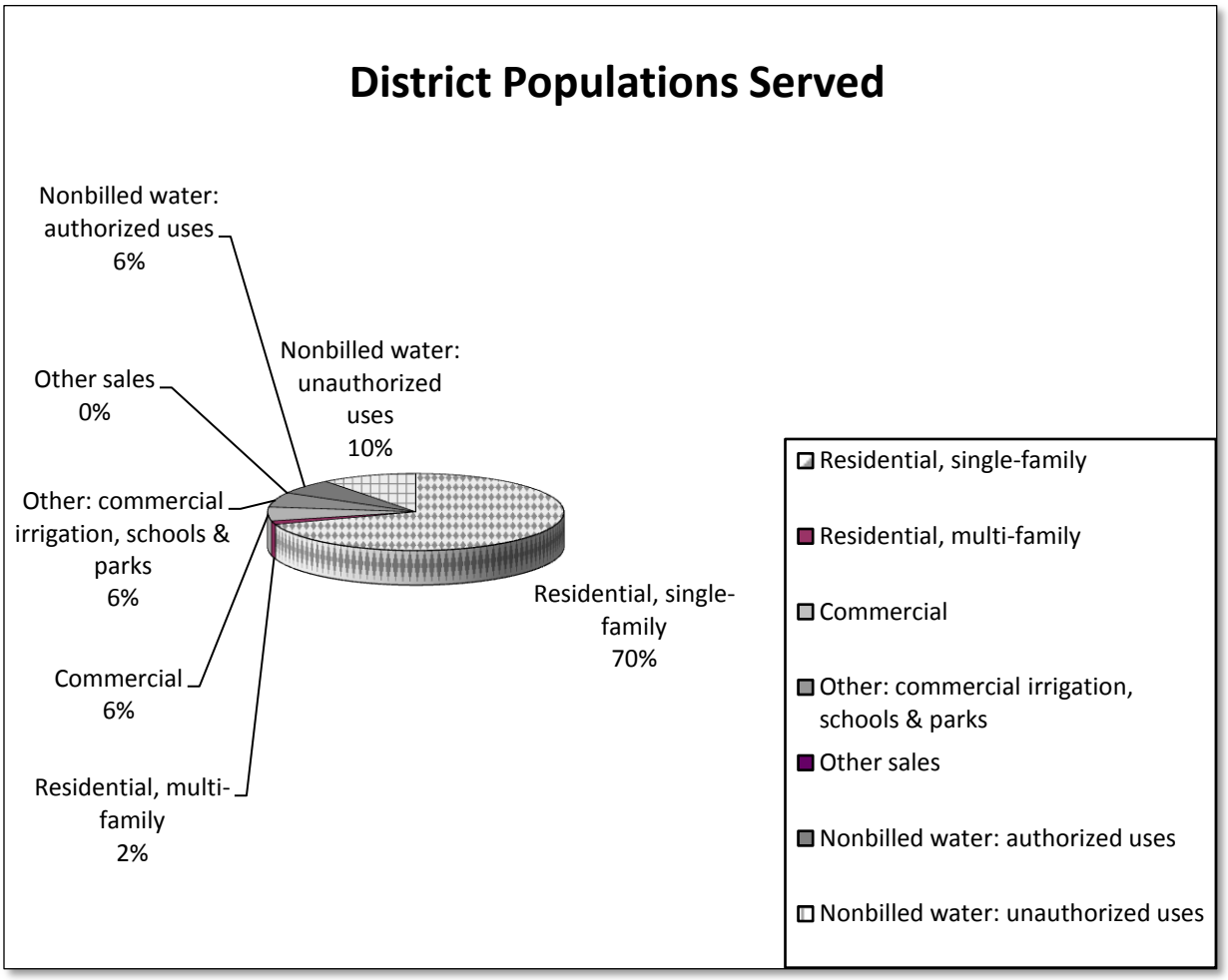
The District provides less than one percent of its annual water used to customers quantified in CWCB Worksheet 1-1 as Other Sales (line 23). The uses captured in this line item are hydrant meters and El Paso County street sweepers.

Approximately 6 percent of the water used annually in Security Water District is not billed but is quantified for authorized users who include the fire station, District sewer truck and street sweepers and water chlorine analyzers. Home builders are also not billed for their water use until they install the new home's tap and meter prior to landscaping installation.

Worksheet 2-1: Preliminary Water Demand Forecast -++++++++

Line	Item	Current Year	5 Year Forecast	10 Year Forecast	20 Year Forecast
A	**RESIDENTIAL DEMAND**				
1	Current annual water residential sales (total gallons)	717,079,080			
2	Current population served	18200			
3	Residential sales per capita (line 1 divided by line 2)	39400			
4	Projected population		20000	22000	27000
5	Projected annual residential water demand (line 3 multiplied by line 4)		787,998,989	866,798,888	1,063,798,635
B	**NONRESIDENTIAL DEMAND**				
6	Current annual water nonresidential sales (total gallons)	121,092,300			
7	Current number of employees or jobs	1850			
8	Water use per employee or job (line 6 divided by line 7)	65455			
9	Projected number of employees of jobs		2033	2236	2745
10	Projected annual nonresidential water demand (line 8 multiplied by line 9)		133,068,462	146,375,308	179,642,423
C	**NONACCOUNT WATER (WATER NOT SOLD TO CUSTOMERS)**				
11	Current and forecast amount	168,729,882	185,134,558	203,648,013	249,931,653
D	**WATER SYSTEM TOTAL DEMAND**				
12	Current total annual water demand (add lines 1, 6, and 11)	1,006,901,262			
13	Projected total annual water demand (add lines 5, 10, and 11)		1,106,202,008	1,216,822,209	1,493,372,711
14	Adjustments to forecast (+ or -)				
15	Current and adjusted total annual water demand forecast	1,006,901,262	1,106,202,008	1,216,822,209	1,493,372,711
16	Current and projected annual supply capacity	1,623,065,968	1,826,723,111	2,457,571,478	2,457,571,478
17	Difference between total use and total supply capacity (+ or -)	616,164,706	720,521,103	1,240,749,269	964,198,767
E	**AVERAGE-DAY AND MAXIMUM-DAY DEMAND**				
18	Average-day demand	2,758,634	3,030,690	3,333,759	4,091,432
19	Current maximum day demand	7,820,434			
20	Maximum-day to average-day demand ratio	2.83			
21	Projected maximum-day demand		8,591,687	9,450,855	11,598,777
22	Adjustment to maximum-day demand forecast				
23	Current and adjusted maximum day forecast	7,820,434	8,591,687	9,450,855	11,598,777
24	Daily supply capacity	4,446,756	5,004,721	6,733,073	6,733,073
25	Ratio of maximum-day demand to daily supply capacity	1.76	1.72	1.40	1.72

Graph B



2.2 FORECASTING METHOD

The Colorado Water Conservation Board's water use forecasting method was used for this Plan. This forecasting method assumes that per capita water use and the distribution of use across classes of users will remain the same as the population grows. This is a conservative forecasting method because water conservation efforts should increase customers' awareness of water use and lead to lower water per capita water use.

2.3 FUTURE USE FORECAST

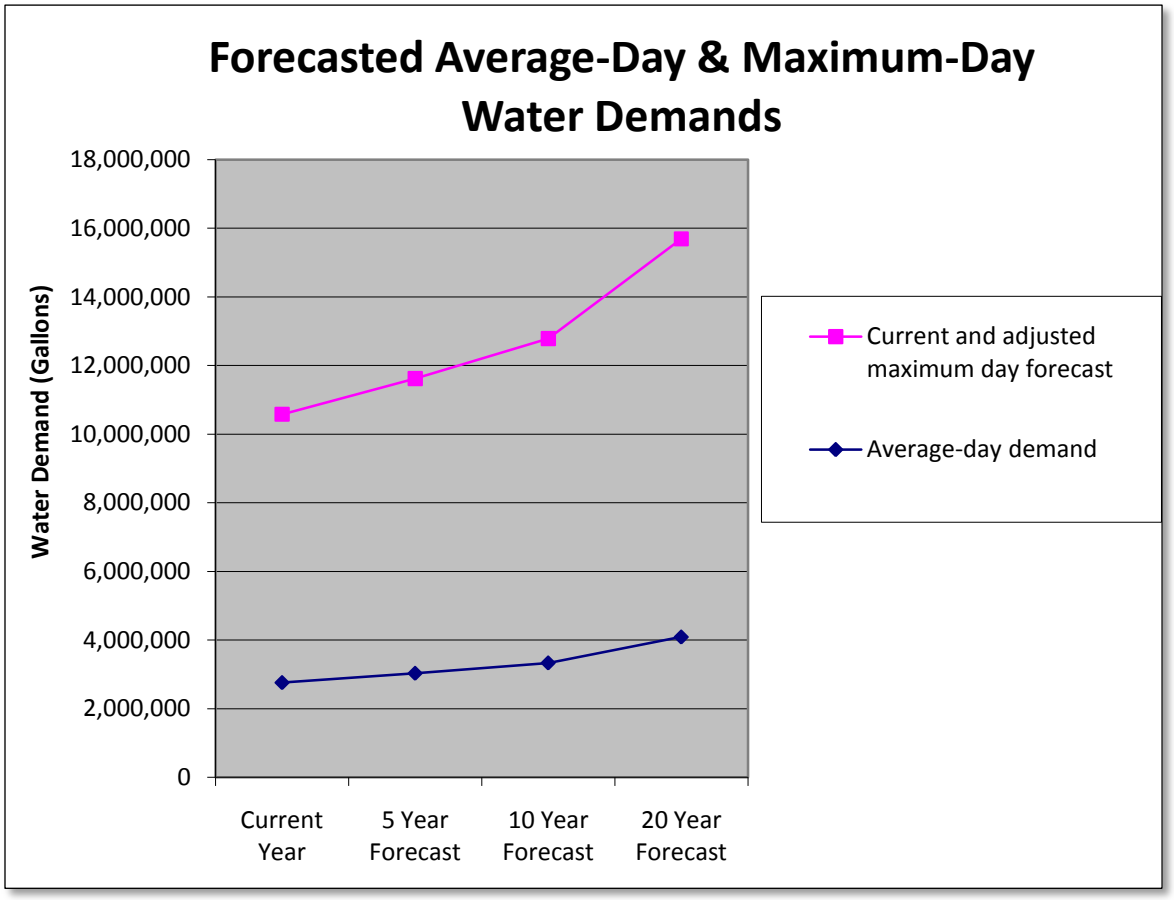
Population projections used for this forecast are based on the PPACG 208 Plan prepared in 2010. The population projections used in this plan are 20,000 residents in 5 years; 22,000 residents in 10 years, and 27,000 residents in 20 years, which represent complete build out in Security Water District.

These numbers represent an optimistic population projection and therefore a conservative estimate to use for water demand planning purposes. The District's capital improvement program meets the needs of this projected population, and is discussed in Section 3.

In order to maximize efficiency of the District's current water supplies, the District recently improved its wastewater treatment facilities. By eliminating use of lagoons, Security Water District eliminated evaporation losses which were assessed against Security's water rights. At this time, the District does not anticipate a need to improve its wastewater treatment capacity.

Applying the current per capita water use to the projected populations yields the water system demands shown in CWCB Worksheet 2.1. The ratio of average-day demand to maximum-day demand was determined on CWCB Worksheet 1-1 and is assumed to remain steady in this demand forecast.

Graph C



SECTION 3
PROFILE PROPOSED FACILITIES

The District's water supply system is being expanded to provide additional capacity in anticipation of growth within the water service area. The Venetucci Wells project was recently completed and additional projects are in the process of being planned and implemented to enhance Security's water supply, including the following:

- Development of additional water supplies in Widefield Aquifer through a lease for water rights and production capacity of the Venetucci Wells
- Purchase of senior water rights along Fountain Creek
- Participation in the planned Southern Delivery System, a regional water delivery project that is being developed in cooperation with Colorado Springs Utilities, the City of Fountain and Pueblo West Metropolitan District
- Acquisition of additional long-term storage capacity in Pueblo Reservoir
- Participation in the planned Widefield Aquifer recharge project in cooperation with Widefield Water and Sanitation District and the City of Fountain.
-

A summary of the near-term future water system annual yield follows (Table 3):

Table 3

	Acre Feet
Fry-Ark Project Water	**1,564**
Widefield Aquifer Wells	**2,343**
Windmill Gulch Wells	**240**
Venetucci Wells (by 2012 or later)	**570**
Southern Delivery System (by 2016)	**900**
Dependable Supply	**5,617**
10% Widefield Aquifer Allocation	**289**
Leased Clear Springs Ranch Wells	**600**
Total	***5,617 to 6,505 acre feet beginning about 2012 or later***

The 5,617 acre-feet of annual water supply is a firm figure for water supply planning because facilities to support delivery of water from the Venetucci Wells are currently available. Completion of the Southern Delivery System (Colorado Springs Utilities) in about 2016 is considered to be firm for water supply planning purposes, although there could be small changes in the completion date.

Security has sufficient replacement sources to replace all depletions associated with its near-term water system yield.

In the long term, Security expects to realize the remaining 600 acre-feet of long-term yield associated with its 1,500 acre-feet of annual capacity in SDS delivered through the Fountain Valley Pipeline or the

SDS pipeline, available upon its acquisition of additional water supplies at Pueblo Reservoir. Additionally, Security should realize its volumetric limit for the Widefield Aquifer stipulation.

Security may not need to develop all of its long-term projects, depending on water supply demands and other factors. The 10 percent temporary increase in Widefield Aquifer pumping is excluded from this total.

Section 3.1 IDENTIFY AND COST POTENTIAL FACIITY NEEDS

Security Water District staff prepared a $33 million capital improvement program for the next 10 years which identifies the District's facility needs. These needs include well upgrades, water main replacements, water rights purchases and capital improvement projects including connection to the Southern Delivery System. The capital improvement projects will all ensure that the District can continue to meet average-day and maximum-day demand as the District's population grows and will also provide redundancy for existing water supplies to ensure continued reliability of the District's water system. These projects are summarized in CWCB Worksheet 3-1.

The largest project that Security is participating in is the Southern Delivery System. This pipeline will bring water from Pueblo Reservoir to Security, Colorado Springs and surrounding communities. This project has been underway for more than a decade and is now projected to be completed in 2016 (Year 6), Security is participating in order to fully utilize existing water rights in Pueblo Reservoir. As part of this project, the District will also gain additional capacity to transport water from the reservoir and will likely purchase water to fully utilize this capacity in year 10 of this conservation plan. The current anticipated project cost to the District is $15,840,000. Currently the District plans to finance this project through 30-year bonds at an interest rate of 4.555 percent. This would provide a financing cost of $14,244,404, leading to a total capital cost of approximately 30 million dollars.

Security Water District has formed a partnership with Widefield Water and Sanitation District in the Widefield Aquifer Recharge Association to evaluate the feasibility of recharging the Widefield Aquifer with treated wastewater flows, allowing the District to fully utilize its local water supplies. Recharging the aquifer as planned would result in an increase in the District's annual pumping allotment from 2228 acre-feet to 2898 acre-feet. The District has received the ruling in this case. The project is projected to start in 2013 and the District could begin receiving additional water supplies in 2018, year 8 of this plan. The anticipated project cost is approximately 5.3 million dollars. If the project is financed with 20-year bonds at 3.9788 percent interest, the financing cost would be nearly 2.7 million dollars, leading to a total capital cost of approximately 8 million dollars.

Security Water District has already participated in new well development on the Venetucci Farm property. The District received one-third ownership of the 4 wells for their participation. This project had a total cost of $879,800 and was paid for from District funds so there were no financing costs. The project is completed, but the District does not anticipate taking water from any of the wells until year 2 of this plan.

Worksheet 3-1: Anticipated Improvements and Additions

Types of Projects	Improvement	New Capacity	Start Date	End Date
Source of supply: Southern Delivery System	X	X	2001	2016
Water treatment facilities				
Treated water storage				
Major transmission lines				
Other: Widefield Aquifer Recharge Assoc.		X	2003	2018

Needs for Projects	Yes	No
Enhance compliance with regulations		X
Supplement older equipment or facilities	X	
Meet average-day demand	X	
Meet maximum-day demand	X	
Meet future growth needs	X	
Other: Fully utilize existing water rights	X	
Other: Fully utilize local water supplies	X	

Funding

Project	Project Cost	Financing Cost	Total Capital Cost
Southern Delivery System	$15,840,000	$14,244,404	$30,084,404
Widefield Aquifer Recharge Association	$5,284,000	$2,658,811	$7,942,811
Venetucci Project	$879,800	None (Cash)	$879,800

Water Purchases

Anticipated future water purchases	195,510,600 gallons per year
Cost of water purchases	$0.03 dollars per gallon

3.2 PREPARE AN INCREMENTAL COST ANALYSIS

Based on the capital costs quantified in CWCB Worksheet 3-1 and the forecasted average-day demand from CWCB Worksheet 2-1, below is an incremental cost analysis prepared over a 20-year analysis term in a method modified from CWCB Worksheet 3-3.

Worksheet 3-3 (Modified): Cost of Supply-Side Facilities

Year	Year	Forecasted ADD, gal	Operation Costs, $/gal	Operation Costs, $	Maintenance Costs, $	Capital Costs, $	Present Worth Total Costs, $
0	2010	2758634	$1.02	$2,813,259	$471,250	$0	$3,284,509
1	2011	2813045	$1.07	$3,012,185	$504,572	$595,804	$4,112,562
2	2012	2867456	$1.12	$3,223,971	$540,048	$1,191,609	$4,955,628
3	2013	2921868	$1.18	$3,449,405	$577,811	$1,787,413	$5,814,629
4	2014	2976279	$1.24	$3,689,322	$618,000	$2,383,218	$6,690,539
5	2015	3030690	$1.30	$3,944,607	$660,763	$2,979,022	$7,584,392
6	2016	3091304	$1.37	$4,224,674	$707,677	$3,642,744	$8,575,095
7	2017	3151918	$1.43	$4,522,887	$757,630	$4,306,465	$9,586,982
8	2018	3212532	$1.51	$4,840,359	$810,810	$4,970,186	$10,621,355
9	2019	3273146	$1.58	$5,178,270	$867,414	$5,633,907	$11,679,591
10	2020	3333759	$1.66	$5,537,872	$927,651	$6,297,628	$12,763,152
11	2021	3409527	$1.74	$5,946,920	$996,171	$7,127,280	$14,070,370
12	2022	3485294	$1.83	$6,383,027	$1,069,223	$7,956,931	$15,409,182
13	2023	3561061	$1.92	$6,847,878	$1,147,090	$8,786,583	$16,781,552
14	2024	3636829	$2.02	$7,343,257	$1,230,071	$9,616,234	$18,189,563
15	2025	3712596	$2.12	$7,871,053	$1,318,483	$10,445,886	$19,635,422
16	2026	3788363	$2.23	$8,433,271	$1,412,660	$11,275,537	$21,121,469
17	2027	3864130	$2.34	$9,032,034	$1,512,959	$12,105,189	$22,650,182
18	2028	3939898	$2.45	$9,669,589	$1,619,756	$12,934,840	$24,224,186
19	2029	4015665	$2.58	$10,348,320	$1,733,451	$13,764,492	$25,846,262
20	2030	4091432	$2.71	$11,070,750	$1,854,465	$14,594,143	$27,519,358

The annual operations and maintenance costs in Worksheet 3-3 are based on 2010 costs. The operations costs include production costs, water purchases, office payroll and expenses, insurance, professional services, trade services, tax collection fees, and Fountain Valley Authority costs, as well as half of production payroll and truck expenses. Operations costs were assumed to increase 5 percent per year to account for aging infrastructure and increased power and pumping costs. The maintenance costs include equipment and maintenance as well as half of production payroll and truck expenses. Maintenance costs are projected to rise 5% per year to account for increased material costs.

Annual capital costs in Worksheet 3-3 include anticipated total costs for the Southern Delivery System and WARA averaged over the 20 year analysis period. Start and end dates of these projects were assumed to match those on CWCB Worksheet 3-1 but are subject to change since both projects are collaborations with other entities.

The incremental cost analysis in Worksheet 3-3 uses present worth costs because future worth cost information is not applied elsewhere in this plan. Since this analysis is prepared using present worth costs, this plan does not account for inflation.

Worksheet 3-4: Preliminary Supply-Capacity Forecast

Year	Additions (annual AC FT)	Retirements	Total supply capacity for the system (annual, AC FT)
2010			4981
1			4981
2	625		5606
3			5606
4			5606
5			5606
6	900		6506
7			6506
8	725	289	6942
9			6942
10	600		7542
11			7542
12			7542
13			7542
14			7542
15			7542
16			7542
17			7542
18			7542
19			7542
20			7542

SECTION 4
IDENTIFY CONSERVATION GOALS

4.1 DEVELOP CONSERVATION GOALS

Water conservation plays a significant role in Security's water supply planning. Water conservation will help ensure a safe, adequate and reliable water supply for the District's customers in the future. The District and its Board also understand that conserving water is "the right thing to do". Conservation can be relied on to provide resource, economic and community benefits to the District and to the community it serves.

- For every gallon of water saved, one less gallon of water must be acquired, delivered, stored and treated.

- Saving a gallon of water often costs less than providing a gallon of new water.

- Conservation will help the District's customers lower utility bills and preserve water for future generations.

Defining goals for the Water Conservation Plan for the period 2010 to 2020 is a critical first step, and an important one to ensure that the District will succeed in implementing its Plan. Because the District appears to have firm supplies that are adequate well into the future, its goals for water savings are defined primarily in terms of avoided supply-side costs to the water system. These goals will help the District avoid or postpone the construction and operation of costly supply-side facilities. As discussed earlier, the District will use AWE's tracking tool to monitor its actual savings for each program and measure. Accurate monitoring of water savings will help the District make sound decisions about what programs and measures will be most effective and should be included or deleted from the Plan in future updates.

The District's primary conservation goals are to reduce its systemwide per capita per day water use by one and one half percent per year over the ten year period covered by this Conservation Plan, and by doing so, reduce day and hour demands so as to relieve stress on the pumping facilities during high irrigation periods – thereby extending facility life.

The District believes that these primary goals will be achieved substantially through expansion of its education programs to make customers aware of the value of water and water conservation and through improved leak detection methods to reduce "unauthorized" losses. All "educational" programs and measures will impact water demand. To that end:

- The District will establish a demonstration garden and information center to help customers learn about the District's water system and install sustainable landscapes. The demonstration garden will become the centerpiece of the education programs the District will implement, and provide a rallying point for customer interface with District personnel.
- The website will be enhanced to carry more conservation information, links to resources, etc.

- The District will design and implement a new bill which provides more customer information about the water used, comparisons to average water used and tracking graphs to show use trends at each address over time. Concurrent with new billing formats, the District will implement measures to allow more accurate and segmented tracking of water use by customer type and location, enabling future measures and programs to be selected based on quantitative data.
- A rebate program for rain sensors and a targeted (based on indoor water use mapping) toilet replacement program will be put into place to provide conservation incentives for both ends of the demographic spectrum.
- The District will appoint a "Conservation Officer" to assist customers with residential and business conservation planning.
- Residential irrigation inspections will be offered on a first come, first served basis.
- Limited commercial audits (very large users – Schlage Lock and the school district) will be offered through Water Returns. The potential for savings through these commercial audits is significant, but savings are dependent on customer acceptance and compliance. Should a trial offering for these properties prove successful, such commercial audits will be made a part of the Plan.

The effects of demand side conservation measures and programs on water use will be measured by tracking both systemwide demand per capita and residential demand per capita.

On the supply side of conservation planning, the District will embark on an aggressive program to identify and repair leaks, including an extensive water audit according to AWWA's 2009 M36 water loss methodology, and the purchase of sonic leak detection equipment. It is anticipated that these efforts will reduce "unauthorized" losses on the order of 4% of total systemwide water use.

As noted in Section 3, the District has a capital improvement plan in excess of $33 million. A 1.5 percent reduction in per capita use each year may allow some of these projects to be delayed. As noted in the System Profile discussion, it may not be necessary for the District to implement several of its long-term development projects depending on water demands, among other factors.

4.2 DOCUMENT THE GOAL DEVELOPMENT PROCESS

Security Water District's conservation goals were developed based on a "gap analysis" of existing conservation measures, an analysis of current water use and past trends in water use and extensive discussion with District staff. The draft goals were presented to the District Board for review and discussion.

Additionally, Security Water District has partnered with Water Returns (a program of the non-profit agency Green Legacies, dedicated to sustainability) to assist with water conservation efforts. That partnership includes assistance with the Water Conservation Plan. Water Returns board members provided a sounding board and expertise in developing goals for Security Water District.

The selected goals will be further evaluated by the public during the District's public review period.

SECTION 5
IDENTIFY CONSERVATION MEASURES AND PROGRAMS

5.1 IDENTIFY CONSERVATION MEASURE AND PROGRAMS

Security Water District evaluated all programs and measures listed on Worksheets 5-1 and 5-2. The worksheets show which programs and measures were already in place, which were evaluated further in this plan, and which were chosen for implementation. Because of the District's size, its budget for conservation is not large. The District intends to fully implement its programs, through careful budgeting and phased implementation. Programs and measures were selected for their ease of implementation, for their cost effectiveness and for their appeal to a broad spectrum of the District's customers.

Both the percent savings goal (1.5% of systemwide use per year) and the dollars to be budgeted for annual conservation efforts (approximately one percent of the District's operating budget) are in line with those of other Front Range communities.

To the District's credit, it was enthusiastic about conservation and the variety of measures and programs it wanted to offer from the earliest discussions with WM. The list included in the previous section's goal discussion includes nearly all the elements required for consideration in CWCB's guidelines. Not surprisingly, their intuitive choices appear to be both cost effective and implementable over the life of the Plan.

Worksheet 5-1: Conservation Measures Identified in the Planning Process

Measure	*Already Implemented*	*Evaluated in this plan*	Comments
Demand-Side Measures			
Water efficient fixtures and appliances	Yes	Yes	Currently in compliance with EPAct, enhancements to be considered
Toilets		Yes	
Urinals			
Showerheads		Yes	
Faucets		No	Not cost effective at this time
Washing Machines		Yes	
Landscape Efficiency			
Low water use landscapes	Yes	Yes	
Drought resistant vegetation	Yes	Yes	
Efficient Irrigation	Yes	Yes	
Equipment	No	Yes	
Scheduling	No	No	Not cost effective at this time
Industrial and commercial efficiency			
Water efficient processes	No	No	Only one commercial plant exists in District
Cooling equipment efficiency	No	No	Only one commercial plant exists in District
Supply Side Measures			
Water reuse systems	Yes	Yes	
No lagoons	Yes	No	No opportunity exists
Distribution system efficiency			
Leak Repair	Yes	Yes	
Removal of phreatophytes	No	No	None identified in service area
Temporary transfers from agriculture			
Dry year leasing	No	No	
Rotational fallowing	No	No	
Water salvage	No	No	
Source Optimization			
Conjunctive use	Yes	Yes	
System integration with other utilities	Yes	Yes	

Worksheet 5-2: Conservation Programs Identified in the Planning Process

Program	*Already Implemented*	*Evaluated in this plan*	**Comments**
DEMAND SIDE PROGRAMS			
Education/Information Dissemination	Yes	Yes	
Public Education	Yes	Yes	
Water-saving demonstrations	No	Yes	
School Programs	No	Yes	
Informative & Understandable Water Bill	No	Yes	
Water bill inserts	No	Yes	
Technical Assistance			
Customer water use audits			
Large users	No	Yes	Will provide as requested through Water Returns
Large landscapes	No	Yes	
Residential landscapes	No	Yes	
Water conservation expert available	No	Yes	
Rate structures/billing systems designed to encourage efficiency			
Volume billing	Yes	Yes	
Conservation (tiered) rates	Yes	Yes	
Monthly billing	Yes	No	
Regulations/ordinances			
Addressing fixtures & appliances			
Standards for fixtures & appliances			To the extent required by Plumbing Code
Time of sale upgrades	No	No	
Addressing landscapes			
Turf restrictions	No	No	Outside the purview of Security Water District
Landscape design/layout	No	No	Outside the purview of Security Water District
Soil preparation	No	No	Outside the purview of Security Water District
Irrigation equipment	No	No	Outside the purview of Security Water District
Water waste prohibition	Yes	Yes	
Incentives			
Rebates	No	Yes	
Giveaways	No	Yes	

Supply Side Programs		
Distribution system efficiency		
Leak identification	Yes	Yes
Meter source water	Yes	Yes
Meter service connections	Yes	Yes
Meter testing and replacement	Yes	Yes
Improved water accounting	Yes	Yes
Analysis of non-account water	Yes	Yes

5.2 DEVELOP AND DEFINE SCREENING CRITERIA

Early in the planning process, the District and WM developed a list of criteria for screening measures and programs for further evaluation. Table 4 lists the points considered in selecting measures and programs.

Table 4

Screening Criteria for Measures and Programs

Screening Criteria Categories	Category Number
Public Acceptance	1
Ratepayer Impact	2
Ease of Implementation	3
Staff/Resource Impact	4
Legal/Regulatory	5
Timeliness of Savings	6
Consistency with Existing Programs	7
Cost	8
Cost Effectiveness	9

5.3 SCREEN CONSERVATION MEASURES AND PROGRAMS

Worksheets 5-1 and 5-2 show which measures and programs were selected for further evaluation, or for inclusion in the Plan without evaluation. The programs and measures evaluated are discussed below.

Discussion of Programs and Measures Given Further Consideration

DEMAND SIDE PROGRAMS

Education and Information Dissemination and Public Education were part of the existing conservation plan. They will be expanded and enhanced. **School programs** (the Children's Water Festival at the garden), **water-saving demonstrations** (through seminars and workshops at the garden), **a water conservation expert, an improved water bill , water bill inserts, informational brochures and a newsletter** will added to help both residential and commercial customers achieve sustainability goals.

Customer Water Use Audits have not been available to Security's customers in the past. Water audits (more correctly termed "inspections" or "evaluations" as applied to residential water use) will be implemented toward the end of the Plan's run.

Rate Structures and Billing Systems Designed to Encourage Efficiency have been put into effect, and their impact has been included in projected water savings for this Plan. Billing is already done on a monthly basis, however, the bills will be improved to add an educational/informational component and to allow the use of stuffers.

Regulations and ordinances, other than the Water Wasting prohibition which is already in effect, were not considered because the District has no authority to pass either. In its close association with other entities, particularly Colorado Springs Utilities, the El Paso County Water Authority and the Fountain Valley Authority, the District will be in a position to extend influence to agencies with regulatory authority.

SUPPLY SIDE PROGRAMS

Leak identification is already in place at the District, an expansion of the program will be undertaken as part of the Plan. Analysis of non-account water was also part of the existing conservation plan, a more rigorous analysis will be included in this Plan. Both source water and service connections have been metered for some time, and have contributed significantly to water already saved by the District. As discussed in Section 3, the District's agreements for supply meticulously define acre-feet to be taken and accounted for.

Demand Side Measures:

Water efficient fixtures and appliances, such as toilets, urinals, showerheads, faucets and washing machines were considered in two ways. First, as indicated earlier, toilets, urinals, showerheads and faucets will continue to accrue "passive" conservation benefits of about 0.3% per year due to the replacement effect of the EPAct. Unless otherwise stated, this "passive" conservation is NOT counted towards the goals of this Plan. Next, each of the four was considered separately.

- Toilets – several studies have shown that most effective savings related to low or ultra low flush toilets are achieved when the toilets are purchased and installed by the utility. Next most effective is a program that provides an accepted toilet for installation by the customer, and provides inspection. Security's plan is to target older homes (built in 1990 or earlier) where indoor water use is highest, and offer a defined number of toilet rebates equal to the price of a

modest ultra low flush toilet in these targeted areas. This measure will include inspecting for proper installation and then tracking water use by address. This approach will assure accurate tracking of water savings from toilets.

- Urinals – were not considered at this time, although they will be revisited at plan update. It was felt that in a District where commercial use is limited to schools, one WalMart and one manufacturing plant, this measure was not a priority, and its impact on water savings would be small compared to water loss control, for example.
- Showerheads – the District will undertake a showerhead giveaway program.
- Faucets – this fixture will not be replaced as part of this Plan. Aerators can be added as a giveaway in later Plan years, but were not considered a priority because of installation issues – put in wrong, taken out in just a few weeks, etc. Again, other measures offered more significant and lasting savings potential.
- Washing machines – rebates for high efficiency washers will be implemented. Fifty rebates per year will be budgeted for late in the Plan's run, but depending on availability of funds and demonstrated effectiveness, this number could be increased later in the program. The District believes that rebates for high efficiency washers and targeted toilet replacements make conservation assistance available to its full range of customers.

Landscape efficiency measures, such as low water use landscapes, drought resistant vegetation and efficient irrigation will be included with the District's suite of programs and measures surrounding its planned demonstration garden. The District will offer two seminars, a children's water festival and a conservation expert along with special events to demonstrate water saving techniques and assist customers with their own landscapes. Lists of drought resistant plant materials, already disseminated by the District will continue to be available at the garden and online. The District plans to implement its demonstration garden and its attendant programs on the grounds of its Fire Station. This location should increase the program's appeal to the community, and increase its communitywide outreach.

The District will offer rebates for rain sensors – devices that turn off water in case of rain – but will not offer rebates for controllers. Although controllers are potentially effective at curbing peak demands, the District prefers to begin its program with the widest array of conservation measures and programs it can within its budget constraints. Controller rebates may be considered at Plan update time.

Industrial and commercial efficiency measures were not considered because Security includes only one manufacturing and one commercial facility of note. Should these facilities or the District's schools desire individual assistance, it will be provided through the Water Conservation Expert on a case by case basis, or through consultation with Water Returns partners. The District does include a few small food service facilities, individual assistance will be offered to them as well.

Supply Side Measures

Water Reuse Systems, namely the newly implemented WARA project and the wastewater and lawn irrigation return flow projects reuse the District's water, expanding its available supplies. No changes to these programs are planned.

Conjunctive use and system integration with other utilities have long been part of Security's water system. Both ground and surface water are used daily, and cooperation with Colorado Springs Utilities, Fountain, Widefield and Stratmoor Hills are hallmarks of Security's system. Conjunctive use will remain an integral part of Security's water supply, as will integration with other utilities.

SECTION 6

EVALUATE AND SELECT CONSERVATION MEASURES AND PROGRAMS

6.1 CREATE COMBINATIONS OF MEASURES AND PROGRAMS

Worksheets 6-2 and 6-3 list programs and measures evaluated in depth. The work accomplished in Step 5 determined which components would be eliminated and why.

The following measures and programs have been selected for inclusion in Sec urity's Water Conservation Plan.

The first and largest grouping includes those **educational efforts** that are centered around the demonstration garden. They are the elements that endeavor to **inform the public about water** in general and Security's water system in particular. This program will create an awareness of how far water must travel to serve the District's customers, and at what cost. Its premise is that customers must understand the value of water before they can commit to conserving it. The program will offer assistance to customers in achieving sustainable landscapes and in using less water to maintain affordable water bills in the face of rising costs. This program includes:

- establishing a demonstration garden
- obtaining a conservation expert, available approximately 20 hours a week
- offering two seminars, two special events and a Childrens' Water Festival held at the garden each year
- Upgrading the website
- Producing supporting brochures and handouts
- Publishing a newsletter
- Improving the bill format and making use of stuffers each month (the Newsletter, for example)

Savings realized from this effort are estimated to be between 2% and 5% of systemwide water use per year. Giving the program a focal point, (the demonstration garden) and offering special events make the program appealing to the community. This, in turn, makes the social marketing aspects of the conservation program more effective.

The District will also **give away showerheads** in connection with its programs at the demonstration garden. It will budget for 100 showerheads per year on a first-come, first-served basis¸starting in Year Seven. This program is expected to save 730,000 gallons annually. The savings for showerhead giveaways are calculated separately from the education program, although the devices will be promoted through the education programs and at the special events. The actual point of distribution will be determined as the Plan progresses. At this time it appears that giveaways will be handled at the District office.

The District will offer 350 **rebates on rain sensors** each year, on a first come-first served basis, beginning in Year Four. Rain sensors are devices that shut off automatic sprinkler systems when it rains. Water savings from rain sensor rebates are anticipated to be 348,500 gallons a year.

Leak detection in particular **and water loss control** in general are very important to the District. It will utilize the AWWA's 2009 M36 water loss method for conducting an intensive water audit to determine the cause of lost water (apparent losses which include meter inaccuracy, systematic data handling errors or unauthorized consumption or real losses like leaks). These audits will be repeated periodically, according to AWWA's recommendations. It will also launch a program of active leak detection based on magnetized loggers, which are acoustic devices placed on the tops of valves to detect leaks. They detect running water in the system and identify the location of a leak. The District expects to phase implementation of this program in two separate plan years, for potential savings of 2,013,803 gallons. This savings number is based on savings estimates indicated by Colorado Water Wise in its Best Practices Manual.

The District has estimated an expense during Plan life of $10,000 to begin its purchase of loggers. Consultation with Colorado Springs Utilities indicates costs of as much as $50,000 to acquire an adequate set of equipment to cover the District's geographic area. In addition to equipment, the question of manpower is a factor. Literature suggests that to fully monitor a District the size of Security, using magnetic loggers, one person would need to be assigned to the task fulltime. Other factors will impact the reality of the projected costs and savings. For example, leaks identified by the loggers which are not large and do not create an immediate and extensive impact on the distribution system will be repaired as the operational budget allows. In aging systems, one leak may be identified and repaired, only to be replaced by another.

The District understands that leak detection is critical to maintaining its operational viability, but like other water providers, is not certain how implementation will relate to direct water savings. Therefore, conservative estimates of both potential savings and Plan life costs are included in this Plan. The District assumes that it will budget the $10,000 shown in Plan life costs, and that it will proceed with leak detection implementation as funds are available. With these caveats and uncertainties in mind, leak detection has been included in the Plan. Water loss control will be carefully tracked by the District, with revisions to the Plan made as tracking results become available.

Based on the analysis performed in this Step, education programs and leak detection are the most cost effective for the District. Showerheads, rain sensors and toilet replacements are the next most cost effective, but are important for publically demonstrating the District's commitment to conservation and demonstrating that water conservation is a communitywide issue. Water audits do not appear to be as cost effective as the other selected measures, but again are a very visible way of demonstrating the District's commitment to conservation, and a particularly effective way to build constituencies for the District. They will be offered as part of the District's suite of educational programs and measures. District outdoor use will be mapped, and targeted audits will be offered through Water Returns.

As pointed out in an earlier section, the District has very little commercial use (less than 6%). It will, therefore, prioritize its efforts in this Plan so as to ***emphasize water conservation on the supply side, that is, managing District water loss, and to assisting its residential customers in managing their water use.*** Commercial and irrigation customers will be assisted on an individual basis. Large landscapes (specifically Schlage Lock and the school district) will be offered water audits through Water Returns to meet specific needs. We believe that these large landscape audits have potential to save significant water. A review of usage records and Water Returns' experience with District 60 Schools in Pueblo indicate that as much as 25% of irrigation use could be saved. Unfortunately, this potential can only be realized if the customers are willing to accept this offer, if they believe it to be economically

feasible to make changes recommended, and if they continue to follow the recommended practices. Based on the effectiveness of this effort, future rebates may be offered to large landscape users.

Measures and programs selected for implementation, as discussed above, and their estimated savings are shown in worksheets 6-2 and 6-3 below.

MODIFIED Worksheet 6-2: Comparison of Benefits and Costs of the Conservation Measures and Programs

Line	Conservation Measure/Program	Project Duration	Total Cost for the Measure/Program	Annual Cost for the Measure/Program	Anticipated Annual Water Savings (gallons)	Cost of the Water Saved by the Measure ($/gal)	Annual Cost of the Water Saved by the Measure ($/gal)	Net Benefit of Implementing the Measure/Program ($)
1	Demonstration Garden	Ongoing	$267,300	$26,730	16,110,420	$0.016592	$0.001659	$4,565,826
2	Toilet Replacement	Ongoing	$4,400	$1,100	76,650	$0.057404	$0.014351	$4,798
3	Showerhead Giveaway	Ongoing	$4,000	$1,000	730,000	$0.005479	$0.001370	$83,600
4	Rain Sensor Rebates	Ongoing	$22,500	$3,214	348,500	$0.064562	$0.009223	$50,685
5	Leak Detection	Ongoing	$10,000	$1,000	2,013,803	$0.004966	$0.000497	$594,141
6	Residential Audits	Ongoing	$7,200	$2,400	75,000	$0.096000	$0.032000	-$450
7	High Efficiency Washing Machine Rebates	Ongoing	$3,300	$1,100	42,780	$0.077139	$0.025713	$550
8	Commerical Irrigation Audits	Ongoing	$1,000	$1,000	6,268,300	$0.000160	$0.000160	$1,879,490

Line	Conservation Measure/Program	Selected	Primary Criteria for Selecting or Rejecting the Conservation Measure/Program for Implementation	Estimated Reduction in Demand for Selected Measures/Programs (Gallons Per Day)	
				Average-Day Demand	Maximum-Day Demand
1	Demonstration Garden	Yes	1,2,7,9	44,138	124,911
2	Toilet Replacement	Yes	1,2,6	210	594
3	Showerhead Giveaway	Yes	1,2,6	2,000	5,660
4	Rain Sensor Rebates	Yes	1,2,6	955	2,702
5	Leak Detection	Yes	1,2,6,9	5,517	15,614
6	Residential Audits	Yes	2,4	205	582
7	High Efficiency Washing Machine Rebates	Yes	1	117	332
8	Commerical Irrigation Audits	Yes	7,9	17,173	48,601

SECTION 7
INTEGRATE RESOURCES AND MODIFY FORECASTS

7.1 REVISE DEMAND FORECASTS

This Water Conservation Plan selected new conservation measures and programs to implement in Security Water District as listed in Section 6. These measures and programs will reduce the water demand in the District. These reductions are summarized in CWCB Worksheet 7-1.

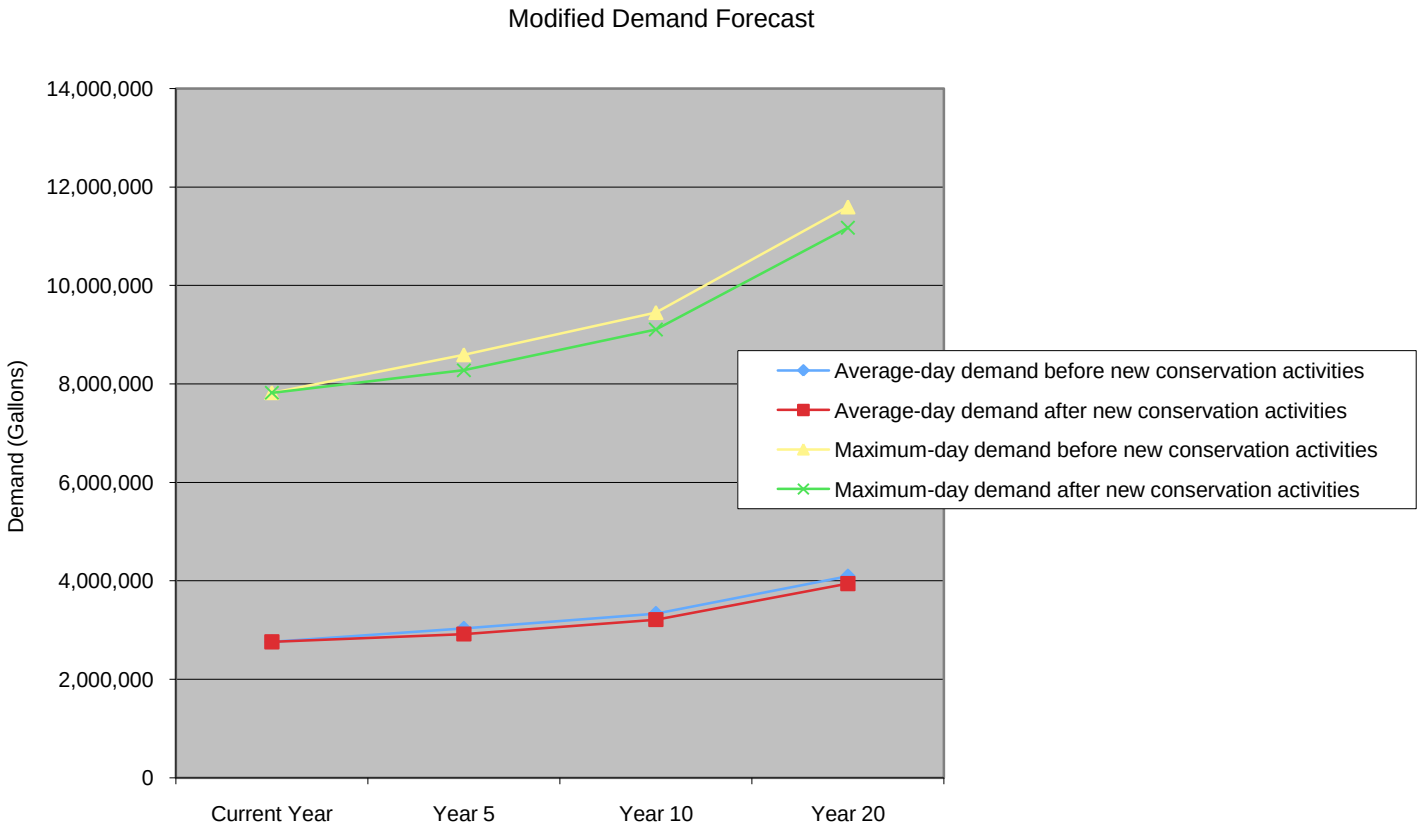
Worksheet 7-1: Modified Demand Forecast

Line	Item	Current Year	Year 5	Year 10	Year 20
1	Average-day demand before new conservation activities	2,758,634	3,030,690	3,333,759	4,091,432
2	Average-day demand after new conservation activities		2,919,390	3,211,329	3,941,177
3	Reduction in average-day demand (line 1 less line 2)		111,300	122,430	150,255
4	Maximum-day demand before new conservation activities	7,820,434	8,591,687	9,450,855	11,598,777
5	Maximum-day demand after new conservation activities		8,276,163	9,103,779	11,172,820
6	Reduction in maximum-day demand (line 4 less line 5)		315,524	347,076	425,957
7	Ratio maximum-day to average-day demand before new conservation activities (line 4 divided by line 1)	2.83	2.83	2.83	2.83
8	Ratio maximum-day to average-day demand after new conservation activities (line 5 divided by line 2)		2.83	2.83	2.83

The average-day (ADD) and maximum-day demands in this worksheet are taken from CWCB Worksheet 2-1. This forecast assumes that the water conservation efforts will have no significant effect on the ratio of maximum-day demand to average-day demand. These demands are reduced based on the conservation measures listed in Section 6, implemented based on the schedule in Section 8. Assuming the same reduction in ADD for years 10 and 20 is a conservative assumption because total water savings are anticipated to increase in the long term as water awareness grows within the community and older plumbing fixtures in the community are replaced with more water efficient fixtures.

The reduction of average-day demand based on the measures implemented from this Water Conservation Plan is forecasted to exceed the plan goal stated in Section 4 of reducing per capita use by 1.5 percent each year. This aspect of the forecast validates the choices of the conservation measures and programs selected in this Water Conservation Plan.

Graph D



7.2 CONSIDER REVENUE EFFECTS

As shown in Section 7.2, implementing this Water Conservation Plan will reduce water demands in Security Water District. Reducing per capita water sales will reduce District income, however, this decreased water demand will also offset increased water demand based on population increases, postponing future capital projects.

SECTION 8
DEVELOP IMPLEMENTATION PLAN

8.1 DEVELOP IMPLEMENTATION SCHEDULE

Table 5 shows the District's schedule for implementing the Plan.

Table 5

Implementation Schedule

Measure/Program	Implementation Date	Completion Date
Education Program		
Conservation Expert	Year One	ongoing
4 Brochures	Year One	ongoing
Demonstration Garden	Year One	2014
Water Returns Partnership	Year One	ongoing
Special Events at Garden	Year Three	ongoing
Seminars at Garden	Year Two	ongoing
Water Festival for kids	Year Three	ongoing
Newsletter	Year Four	ongoing
Bill Improvements	Year Four	ongoing
First half leak detection	Year One	ongoing
Second half leak detection	Year Six	2016
Rebates		
Rain sensor	Year Four	ongoing
Washing machine	Year Eight	ongoing
Toilets	Year Seven	ongoing
Giveaways		
Showerheads	Year Seven	ongoing
Faucet aerators	Year Seven	Ongoing
Commercial Audits, schools & Schlage	Year Two	ongoing
Residential audits	Year Eight	Ongoing

8.2 DEVELOP PLAN FOR PUBLIC PARTICIPATION IN IMPLEMENTATION

This fall, the District will hold a lunch and learn for its staff so that they can become familiar with the Plan, its components and its implementation. This lunch and learn will coincide with the public notification period. These two events will provide the input to the Plan, and provide an opportunity for dialogue on its content. Fall lunch and learns will be held annually so that staff can be aware of the Plan's progress and provide input.

Prior to each "milestone" event on the schedule (groundbreaking for the demonstration garden, purchase of leak detection equipment, kickoff of the rebate and giveaway components), the public will be invited to an "open house" where program details will be provided and feedback invited. Security Water District is a host sponsor partner of Water Returns, as previously mentioned. Water Returns will assist the District in its implementation efforts by hosting events to support implementation of the Plan, including workshops and seminars.

Should the public participation efforts produce produce constructive feedback that could change the direction of the Plan, such feedback will be screened and evaluated and, if appropriate, included in the Plan's next update. The Plan is designed to be flexible and to be revised when circumstances change.

8.3 DEVELOP PLAN FOR MONITORING AND EVALUATION PROCESSES

Security Water District is a member of the Alliance for Water Efficiency (AWE). As a member, the District has access to the Alliance's excellent Tracking Tool. The District will use this tool to track its water savings for each selected measure, program and the Plan as a whole. It will continue its internal methods of tracking water use on a daily basis, including systemwide and residential daily per capita use. Following the AWWA water audit methodology will help the District to more accurately account for its "unauthorized" water use on a monthly basis. Therefore, its monitoring and evaluation plan consists of:

- continued internal monitoring of daily use by customer class so as to evaluate the Plan's impact on residential daily per capita use
- enhanced water accounting so as to monitor and evaluate water losses more accurately
- a combination of the above two components to monitor and evaluate systemwide per capita use
- use of AWE's Tracking Tool to monitor each measure and each program's effectiveness, and to prepare for required water use reporting as required by HB 10-1051 in 2013, and to make sound decisions about adding, changing or expanding programs as the Plan is updated.

8.4 DEVELOP PLAN FOR UPDATING AND REVISING THE CONSERVATION PLAN

The District will update its Plan in seven years, as required by CWCB's guidelines. This schedule for updating also complies with the US Bureau of Reclamation's requirements, which, although calling for an update every five years, make exception for "Districts that have prepared water conservation plans….for other Federal or State agencies…". Therefore, unless advised otherwise by the Bureau, Revisions and updates will be based on results of the above monitoring and evaluation plan.

8.5 DEFINE PLAN ADOPTION DATE/PLAN COMPLETED/PLAN APPROVED DATE

The Security Water District Board of Directors adopted the Plan by Resolution on March 16. Although the Plan was posted on the District's website, the public comment period was advertised on the site and in the local newspaper, and two Board meetings were advertised as open to the public for comment on the Plan, no public comments were received.

The advertisements, a note stating that no comments were received and the adoption Resolution are included as Appendices A, B and C.