



Step 4 – Identifying Conservation Goals

4.1 Water Conservation Goals

The District, currently, has the following conservation measures in place:

Supply Side Measures:

1. Inclining block rate for water usage. This tiered rate structure encourages efficient water usage (particularly as it applies to lawn irrigation) by increasing the per gallon charge as monthly usage increases. This was the first attempt, by the District, of encouraging conservation, and was implemented during the first year of its existence (1963) and shall remain in place.
2. Revised rates and tap fees. This was implemented in 2006, and was the result of a Study performed by Integrated Utilities. There were some adjustments made to the original tiered rate structure, however, the most dramatic revision was the increase in tap fees for users located east of the St. Charles River, in the more rural area of Zone 1. This was due to the increased cost of water delivery infrastructure in the less urbanized area of the district. These policies have been approved by the District Board, and shall remain in place.

Demand Side Measures:

1. Alternate Landscape Practices. The District began encouraging larger users (mainly the Institutional Users) to implement water saving measures related to watering of large areas of lawn. This began as somewhat of an informal process of contacting the Institutional users and suggesting conservation measures which would decrease irrigation usage and reduce the user's water bills. When this program was implemented (2000), most of the users were not very receptive. However, after the drought of 2003, some Institutional users did modify their irrigating practices. Currently, Water Returns has participated with Pueblo County High School in a water audit. The full implementation of all recommendations made by Water Returns has not been completed, due to the costs associated with upgrading the irrigation system, and due to decreased School District budgets. The intent is to have Water Returns perform 1 audit per year on each of the 8 Institutional taps.
2. Lawn water information provided to all customers. This information was originally disseminated via mailers with the monthly water bills. It is also available on the District's web site. The intent is to provide the customer with the most effective water application rates, which minimizes total usage related to lawn irrigation. The effect of this program can be seen in Figure 2.1, when in 2003 and 2004, lawn irrigation usage showed a dramatic drop off. This was mostly due to the drought of 2003, even though mandatory watering restrictions were not implemented. This program is ongoing.

The main conservation goals of the District are to reduce usage through a carefully thought out and implemented series of Capital Improvements, along with promotion of efficient irrigation practices, low water use landscaping and incentive programs for low-flow plumbing fixtures. The current savings goal is 0.4% overall use reduction per year.



The first priority shall be the reduction of non-revenue water. This is the difference between the total, treated finished water which is delivered from the treatment plants, and the sum of the individual meters at the customer's location. At present, the District loses 19% of the treated finished water. It is believed that the vast majority of this is due to the inaccuracies in the older existing water meters. The reasons for this item being given top priority are, firstly, this will, increase the overall water accounting efficiency by reducing the quantity of treated water which is put into the distribution system, but not registered by the individual customer meters. Secondly, it will encourage water conservation by requiring the customers to pay for the amount of water that they are actually utilizing. One of the nine meters tested was not registering 80% of the use at a moderate flow rate, and 16.5% of the use at a high flow rate. Thirdly, this program shall, eventually, decrease treatment costs as water accounting becomes more accurate and increased efficiency on the part of the customers. The Automated Meter Reading (AMR) units offer the option of an individual Water Meter Monitor (WMM), which the individual customer can use to track water usage. The WMM unit also comes with a Leak Detection Alarm. We feel that the WMM will help individual customers conserve water, and that it offers the only method by which the customer can track their water usage, other than their monthly bill. Lastly, the automatic read feature will also reduce the cost of reading the meters and of billing.

Upon full implementation, almost all of the "non-revenue" water shall be accounted for. This will be tracked by comparing the monthly meter reading at the treatment plant, versus the sum of the individual meters. We expect the percentage of unaccounted for water to drop from approximately 19% to approximately 4%, upon full implementation, a savings of 15%.

The second priority shall be the promotion of efficient irrigation. This process shall be two-fold. The first step shall be to identify the largest irrigation users, and provide information and incentives to reduce consumption due to inefficient irrigation practices. The second step shall be to encourage all residential and non-residential users to systematically implement efficient irrigation practices, along with incentives to replace a portion of their lawns with Low Water Use Landscaping. The perfect balance would be a reduction in irrigation use which is slightly more than new use from growth. This will allow for a reduction in overall usage, while not negatively impacted the District financially.

The impact of efficient irrigation can be seen in Figure 2.1 – St. Charles Mesa District Total Annual Raw Water Consumption. The vast reduction in irrigation use during the year 2003, was due to the institution of voluntary lawn water restrictions which were implemented in June of that year. The voluntary restrictions were lifted in April, 2004, but the non-potable use for the calendar year of 2004 was actually less than the previous (drought) year. This is partially due to a very wet spring, but also, most likely due to the fact that the customers realized that they could save money by irrigating the lawns less frequently, but more efficiently. This is borne out by the fact that, although the district has added approximately 150 new taps since 2002, the irrigation use has remained well below the rate from the year 2002.

Additional Demand Side measures shall include the installation of Low Flow Plumbing Fixtures and Efficient Appliances. These measures shall be promoted to customers through the use of rebates from the District. The District shall pursue grant money to fund the rebates.



4.2 Goal Development Process

The main resource in this process has been the interaction between Young Technology Group (YTG) and the staff of the St. Charles Mesa Water District (SCMWD). This process has been ongoing since April, 2008, when the District made application to the State for a grant to offset the cost of the Conservation Plan. In June, 2008 Mr. Ken Young of YTG and Mr. David Simpson, District Manager for SCMWD, both attended the Water Conservation Plan Development Workshop, which was presented by Great Western Institute.

Since that time, there have been numerous discussions between SCMWD staff and YTG, concerning the type of goals which the District wishes to achieve through the implementation of the plan. A good deal of the observations related to the goal setting process came from the day to day operation of the water system.

In addition, the District solicited a presentation from "Water Returns" of Colorado Springs, in September, 2008, which detailed some of the goals and programs related to efficient irrigation and also low-flow plumbing devices.

Data was collected from the District's Water Revenues and Service records for fiscal years 2000 through 2007, Overall Water Usage Records for fiscal years 1994 through 2007 and Individual billing records.

This data was utilized, along with recommendations from the District Staff, to identify the most crucial conservation goals, those being the reduction of "non-revenue" water by the replacement of individual meters, and targeting irrigation use through promotion of efficient irrigation and low water use landscapes. In addition, several demand-side measures are to be implemented on a small scale, to determine which are most effective.