



Step 5 – Identifying Conservation Measures and Programs

Supply Side Measures

1. Target reduction of “Non-Revenue” water through the implementation of a program to replace all of the existing meters over a ten year period, commencing in the year 2010. The District intends to target the customers which have new radio-read meters installed, with the other demand side measures and programs. This is due to the uncertainty involved with the majority of the existing meters. Targeting the customers with new meters will provide more accurate tracking of the demand side conservation measures proposed.
2. Leak Detection and Repair– SCMWD intends to enact a leak detections system. This procedure shall be performed annually, in the month of April. Each year the District shall identify older portions of the distribution system, or any suspect areas. The Leak Detection Company shall then perform a limited evaluation of that particular portion of the system which has been previously identified by the District. Upon detection of a major leak, the District shall revise the Long Range CIP, in order to affect repair of the leak. Approximately 1% of the District’s 185 miles of water distribution main (1.85 miles) will be evaluated annually.
Analysis of this program (Worksheet 6-1 Leak Detection) indicates that any leaks discovered, should be repaired immediately. Most of these mains are already targeted for replacement in the Long Range CIP. Based on the results of the Leak Detection Program, the Long Range CIP may be modified to expedite repairs and replacement of problems which are identified by the Leak Detection Company.
3. Water Revenue Systems – The District has had an inclining block rate since its inception. It was later refined in the mid 1970’s. This was done to help promote efficient irrigation and landscaping and to offset the cost of securing future water sources. In 2006, the District retained the services of Integrated Utilities Group, Inc. (IUG) to perform a study on the water rates and tap fees. The recommendations contained in the report suggested the following:
 - a. Firstly, as it applies to the Plant Investment Fee (PIF) and Tap Fees, the District would be split into two areas and categories. The first being that portion of the District which is located to the west of the St. Charles River, and the second being the remainder of the District located east of the St. Charles River. The tap fees are detailed in Table 1.4a.
 - b. Secondly, IUG recommended a revised set of water rates which are shown on Table 1.4b.

Demand Side Measures

1. Efficient Irrigation – The District shall implement a rebate program for the first 20 customers, annually, who install rain sensors for automated irrigation systems. In addition, Individual audits shall be performed on each of the Institutional Users. The audit program was implemented at Pueblo County High School, in the summer of 2009, by “Water Returns”, a private auditing company. The results of that audit were not available at the time of this report.
2. Low Water Use Landscapes and Drought Resistant Vegetation– A program for replacement of existing lawn with xeriscaping and low water use plants has been analyzed. A cost analysis was performed for



the installation and water savings, based on a 1,000 square foot area (Worksheet 6-1 LWU Landscapes). As a result, the District intends to offer a rebate of \$1.00/square foot of lawn area which is replaced with Low Water Use Landscapes and Drought Resistant Vegetation. Currently, there is no mechanism which requires a Landscape Plan for new developments in Pueblo County.

3. Low Flow Plumbing Fixtures and Water Efficient Appliances – This includes the installation, by individual customers, of Low Flush Toilets and Urinals, Low Flow Showerheads and Faucets, and Water Efficient Washing Machines. The District shall offer rebates, on a limited annual basis, to customers who install these devices. This program shall be targeted at the customers with new meters in order to provide accurate tracking of water savings, but will be available to all interested customers. This program shall also be contingent upon the availability of grant monies.
4. Education – The District will coordinate with the Southeastern Colorado Water Conservation District (SECWCD), to offer classes in outdoor irrigation practices and conservation landscapes. The SECWCD is currently preparing a conservation plan for the Arkansas Valley Conduit. The St. Charles Mesa Water District (SCMWD) is a strong supporter of the conduit, and support the conservation plan being prepared, and will provide information on training that will be provided. The SCMWD has participated in funding for the SECWCD xeriscape garden, and has the link to the SECWCD web site, on their web site. The SCMWD also provides information to customers of the District on lawn watering guides prepared by the SECWCD.
5. Institutional Irrigation Audits – Commencing this in the spring of 2009, Water Returns (a non-profit water conservation group) commenced a comprehensive Irrigation Audit at Pueblo County High School. The audit includes analysis of the existing irrigation system, soil analysis, materials for consumer communication, informal training of grounds crews and a status report and outline of long range planning considerations. As of this date, the following low/no cost recommendations have been implemented:
 - a. Adjust sprinkler head alignment and height.
 - b. Increase fertilization and aeration to at least 3 times per year
 - c. Significantly reduce watering in accordance with recommended irrigation schedule

The goal of the audit is to reduce irrigation use by 30% to 50% once all recommendations are implemented.



Table 5.1 – St. Charles Mesa Water District Water Conservation Measures and Programs

	Conservation Measure or Program	Date of Implementation	Comments
Supply Side Measures and Programs	Target reduction of "non-revenue" water	April, 2010	Commencing in 2010, the District shall replace approximately 10% of the existing customer meters, annually, to be completed by 2019. In addition, the District shall provide rebates to customers who wish to purchase a Flow Monitor. This device tracks water consumption and also provides leak detection. The rebates shall be based on grant availability.
	Leak Detection and Repair	April, 2010	This process had previously been performed on an as-needed basis, based on customer complaints, pressure losses and visual inspection. The new program shall target the oldest portions of the distribution system and other suspect areas.
	Water Revenue System (Inclining Block Rates and Tap fees)	1963	The District has continuously had an Inclining Block Rate since its inception. This has been revised based on the IUG study, which was adopted in 2006. The study also recommended revisions to the tap fees, based upon the plant investment fee, location of service and water rights.
Demand Side Measures and Programs	Efficient Irrigation	2002	The District began providing literature related to efficient irrigation practices to its largest irrigators via the customer's monthly bill. This information was later added to the District's web-site, along with links related to efficient irrigation. A new program shall be implemented which provides rebates to customers who install a rain sensor on their irrigation controllers. The rebates shall be subject to grant availability, and will commence, on a limited basis, in the year 2010.
	Low Water Use Landscapes and Drought Resistant Vegetation	2000	The District has disseminated information regarding xeriscaping and drought resistant vegetation, since the year 2000. This was added to the web site in 2003. A pilot program has been evaluated to provide limited annual rebates to customers who replace existing lawn with low water use landscapes. This program shall commence in 2010 on a limited basis, and shall be subject to grant availability.



	Low Flow Plumbing Fixtures and Water Efficient Appliances	2010	The District shall provide rebates to a limited number of customers, annually, who install low flush toilets and urinals, low flow showerheads and faucets, and water efficient clothes washers. These programs are to be implemented on a limited basis, and targeted at the customers who receive new water meters, so as to provide accurate tracking of water savings.
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5.2 Screening Criteria for Conservation Measures and Programs

Table 5.2 – St. Charles Mesa Water District Screening Criteria for Proposed Water Conservation Measures and Programs

Supply Side Measures	Measure or Program	Screening Criteria for Conservation Measures and Programs	Yes	Not Sure	No
	Supply Side Measures	Target Reduction of "Non-Revenue" Water	Does the proposed Measure or Program have a positive economic impact on the District?	X	
Are Federal, State or Local Grants available for implementation or rebates?				X	
Does the proposed Measure or Program provide enough water savings to justify its economic viability?			X		
Is the proposed Measure or Program sustainable?			X		
Is the proposed Measure or Program acceptable to the Customers?				X	
Does the Measure or Program comply with District By Laws?			X		
TOTAL			4	2	0
	Measure or Program	Screening Criteria for Conservation Measures and Programs	Yes	Not Sure	No
Supply Side Measures	Leak Detection and Repair	Does the proposed Measure or Program have a positive economic impact on the District?		X	
		Are Federal, State or Local Grants available for implementation or rebates?		X	
		Does the proposed Measure or Program provide enough water savings to justify its economic viability?		X	
		Is the proposed Measure or Program sustainable?	X		
		Is the proposed Measure or Program acceptable to the Customers?		X	



	Does the Measure or Program comply with District By Laws?	X			
TOTAL		2	4	0	
Measure or Program	Screening Criteria for Conservation Measures and Programs	Yes	Not Sure	No	
Water Revenue Systems	Does the proposed Measure or Program have a positive economic impact on the District?	X			
	Are Federal, State or Local Grants available for implementation or rebates?		X		
	Does the proposed Measure or Program provide enough water savings to justify its economic viability?	X			
	Is the proposed Measure or Program sustainable?	X			
	Is the proposed Measure or Program acceptable to the Customers?		X		
	Does the Measure or Program comply with District By Laws?	X			
TOTAL		4	2	0	
Demand Side Measures	Measure or Program	Screening Criteria for Conservation Measures and Programs	Yes	Not Sure	No
	Efficient Irrigation	Does the proposed Measure or Program have a positive economic impact on the District?			X
		Are Federal, State or Local Grants available for implementation or rebates?		X	
		Does the proposed Measure or Program provide enough water savings to justify its economic viability?		X	
		Is the proposed Measure or Program sustainable?	X		
		Is the proposed Measure or Program acceptable to the Customers?	X		
		Does the Measure or Program comply with District By Laws?	X		
	TOTAL		3	2	1
Measure or Program	Screening Criteria for Conservation Measures and Programs	Yes	Not Sure	No	
Low Water use Landscapes	Does the proposed Measure or Program have a positive economic impact on the District?			X	
	Are Federal, State or Local Grants available for implementation or rebates?		X		



	Does the proposed Measure or Program provide enough water savings to justify its economic viability?	X		
	Is the proposed Measure or Program sustainable?	X		
	Is the proposed Measure or Program acceptable to the Customers?	X		
	Does the Measure or Program comply with District By Laws?	X		
TOTAL		4	1	1
Measure or Program	Screening Criteria for Conservation Measures and Programs	Yes	Not Sure	No
Low Flow Plumbing Fixtures and Water Efficient Appliances	Does the proposed Measure or Program have a positive economic impact on the District?			X
	Are Federal, State or Local Grants available for implementation or rebates?	X		
	Does the proposed Measure or Program provide enough water savings to justify its economic viability?		X	
	Is the proposed Measure or Program sustainable?	X		
	Is the proposed Measure or Program acceptable to the Customers?	X		
	Does the Measure or Program comply with District By Laws?	X		
TOTAL		4	1	1



5.3 Application of Screening Criteria

For each of the “yes” answers from Table 5.2, 2 points will be allotted. For each “don’t know” answer 1 point will be allotted. For each “no” answer, 0 points will be allotted. The following Table 5.3 tallies the screening evaluation for each measure and program:

Supply Side Measures	Measure or Program	Score
		Target Reduction of Non-Revenue Water
	Leak Detection and Repair	8
	Water Revenue Systems	10
Demand Side	Efficient Irrigation	8
	Low Water Use Landscapes	9
	Low Flow Plumbing Fixtures and Water Efficient Appliances	9

The Average Score, based on 2-“yes”, 2-“don’t know”, and 2-“no” answers is 6. From Tables 5.2 and 5.3, all of the proposed measures and programs listed shall merit evaluation in the Design Worksheets.