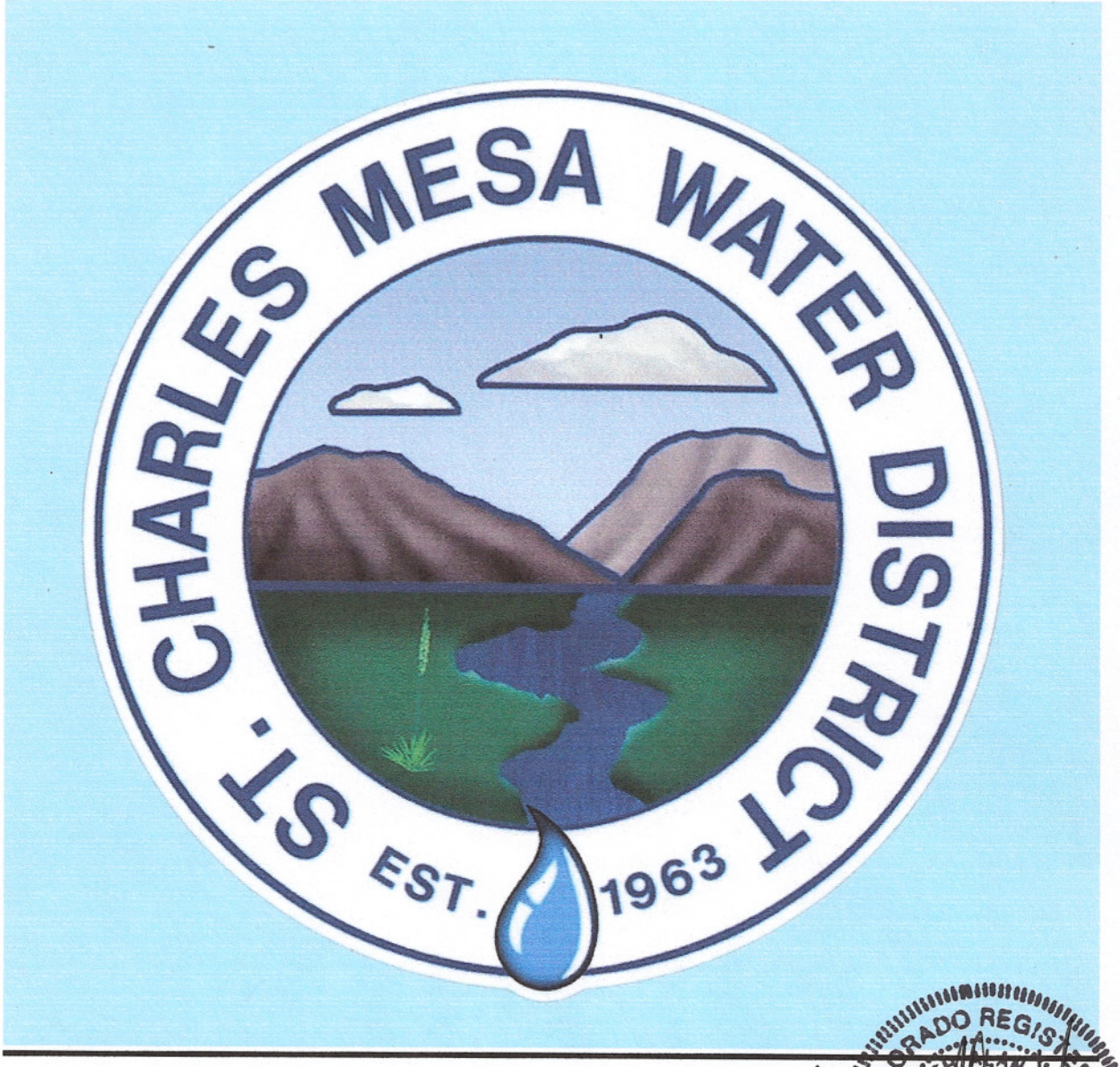
Water Conservation Implementation Grant Application

for

St. Charles Mesa Water District

May 24, 2013
Revised July 22, 2013



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1/22/13

EXECUTIVE SUMMARY

In April, 2008, St. Charles Mesa Water District (District) commenced work to create a Water Conservation Plan.

During the Water Conservation Plan preparation process, several goals and objectives were incorporated into same. They are:

1. Reduce the "Non-Revenue" water (water which is treated but does not show up in the accounting, mainly due to meter inaccuracies).
2. Increase efficient irrigation practices by customers.
3. Reduce overall use per customer, over time, without adversely impacting the District, financially.

During the Development of the Supply Side Conservation Measures and Programs, it was determined that a substantial portion of the "Non-Revenue" water loss was due to the large number of older, inaccurate water meters. The replacement of the existing meters is part of the Long Range Capital Improvement Plan (CIP).

In December, 2010, the District received final approval of its Water Conservation Plan from the Colorado Water Conservation Board (CWCB). In doing so, the District became eligible for the CWCB Water Efficiency Grant Program. This program provides financial assistance to communities, water providers and eligible agencies for water conservation related activities and projects. Eligible entities can receive funding to implement water conservation goals which are specifically outlined in the approved Water Conservation Plan.

In July, 2011, the District sought, and received a Water Conservation Implementation Grant, in the amount of $49,915 (see attached letter), with an in-kind contribution of $38,018 from the District. The total project budget was $87,933 and included the replacement of 400 water meters. Demand Side Measures and Programs shall be targeted at those individuals and businesses which have had the meter recently replaced.

In April, 2012, the District sought, and received a Water Conservation Implementation Grant, in the amount of $49,919.66 (see attached letter), with an in-kind contribution of $43,328.78 from the District. The total project budget was $93,248.44 and included the replacement of 400 residential water meters and 10 Commercial water meters. Demand Side Measures and Programs shall be targeted at those individuals and businesses which have had the meter recently replaced.

The original meter replacement program, which until 2011, was entirely funded by the District, entailed replacement of all existing meters over a 12 year span. The initial implementation commenced in 2009, with the replacement of 85 meters, which the District funded independently. In 2010, the District replaced 200 meters, at its own expense. This benefits the district, and the individual customer(s) in the following manner:

1. The new meters shall provide a more accurate accounting of the individual customer usage. This will allow the district to better determine the amount of water which is being lost through leaks.
2. The new meters shall be radio-read, which will save the district time and money, related to the actual reading of the meters.
3. The new meters shall allow the district a more accurate accounting of the effects of the various conservation measures and programs, which the district implements.
4. In 2011, the District purchased 10 Water Meter Monitors, at a cost of $75.00 each. They have been made available to Customers for a refundable deposit of $80 each. This portion of the Meter Replacement Program was meant to serve as a pilot program in order to gauge the Customer interest in the Water Meter Monitors. To date, not a single customer has expressed a desire to utilize this feature. Therefore, no Water Meter Monitors shall be purchased in 2013. The District shall, however, continue to make the existing Water Meter Monitors available.

The St. Charles Mesa Water District is a legally created and organized existing quasi municipal subdivision created under title 32, Special Districts Article I, 32-1-204.5 Colorado revised statues. St. Charles Mesa Water District was approved by election in May 1988, and The St. Charles Mesa Water Association was dissolved. The St. Charles Mesa Water Association incorporated in 1964. The District currently has a population of 10,473 (based on 2.7 persons per household/tap) and the District boundary encompasses 64 square miles.

The District serves 4,068 customers accounts; 3,879 are residential accounts, 189 are commercial accounts and there are 8 institutional accounts for the public school district number 70 facilities. The annual average raw water usage is

approximately 2,400 acre feet per year. The District utilizes master meters to monitor the amount of water from its surface water plant, and ground water wells going into the system, and each customer account has an individual meter to track water use.

The District is a covered entity as defined in the Guidelines, and is eligible under the Grant Guidelines for Water Conservation Implementation & Public Education and Outreach Project.

In 2005, the St. Charles Mesa Water District developed a Long Range Capital Improvement Plan, and it is attached at the end of this report. The proposed improvements contained therein are a comprehensive needs list, and not all of the items are directly related to water use, or conservation. However, the majority of the costs associated are directly relevant to providing additional raw, or treated water, increased storage and distribution capacity. In addition, one of the main areas of concern is non-revenue water. That is, treated water, which is utilized by the customer, but which is not being properly metered, and therefore, not being paid for, by the customer. It is believed that this is due to inaccurate metering due to deterioration in the individual meters themselves. Many of the original water meters, which were installed in the early 1970's, are still in use today. Recently, a sample of these meters were replaced with radio read meters. The old meters were tested by the District, yielding the following results:

Table 3-0 – St. Charles Mesa Water District Meter Testing Data

Table 3-0						
METER TESTS						
TYPE	Flow rate	1/4 GPM		2 GPM		15 GPM
NEPTUNE	Accuracy	0%		90%		97.30%
SENSUS		85.50%		80%		98.40%
HERSEY		0%		20%		83.50%
SENSUS		3%		95%		95.40%
SENSUS		90.20%		100%		99.80%
TRIDENT		70.20%		100%		99.50%
SENSUS		74%		100.50%		99.20%
HERSEY		0%		90%		94.20%
HERSEY		80.10%		100%		98.50%
AVG.		**45%**		**86%**		**96.20%**

As can be seen from the test results, some of the low flows do not even register on 3 of the old meters. The moderate flows are off by an average of 14% (low), while the high flows are still relatively accurate.

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. During the year 2010, the District lost approximately 11.50% of the treated water delivered to the distribution system from the existing treatment facilities. Previous annual loss rates were as high as 19%. 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. Lastly, the automatic read feature will also reduce the cost of reading the meters and of billing. A copy of the meter replacement notification is attached.

The ORION® Automatic Meter Reading (AMR) System is a one-way bubble-up RF system. The AMR system is comprised of an ORION transmitter located at the meter that transmits readings and tamper data to an ORION Receiver when the Receiver is in the proximity range of the transmitted signal. The automated meter reading Receiver may be part of a Handheld Programmer/Data Collector, or an ORION Mobile Reading System. Collected meter data is then uploaded into Badger Meter's ReadCenter® software, where information gathered from each meter is processed and maintained and appropriate consumption data is passed to the utility billing system. One automatic meter reading system can manage and read both water and gas meters.

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 an average of 12.27% to approximately 4%, upon full implementation, a savings of 67.4% of the current "non-revenue" water.

Target reduction of "Non-Revenue" water through the implementation of a program to replace all of the existing meters over a twelve year period, commencing in the year 2008. 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.

APPLICATION

1. Name and contact information for the entity seeking the grant:

St. Charles Mesa Water District
1397 Aspen Rd. Pueblo, CO. 81006
719-542-4380
Contact:
David K. Simpson, District Manager

2. Project Team Members:

This application shall be for the replacement of approximately 400 existing manually read water use meters, and replace them with new, electronic, radio read meters. The St. Charles Mesa Water District (SCMWD) staff shall perform the replacements. The key staff members are as follows:

David K. Simpson, District Manager – Mr. Simpson shall act as the Project Manager, and shall coordinate all transactions between the Water District and the Colorado Water Conservation Board (CWCB).

Don Williams, Distribution System Manager – Mr. Williams has worked for the District for over 40 years, holds a Class A Treatment Plant Operator's License and Class 4 Water Distribution System License. He will oversee all field installations and shall perform the GPS locates after the installations are complete.

Susan Long, Office Manager – Mrs. Long has worked for the District for 17 years and performs numerous duties related to billing, accounting and information systems. She shall perform the data entry for the GPS locations of the new meters.

Travis Orcutt, Water Distribution Technician – Mr. Orcutt has worked for the District for 3 years. He maintains a Class A Operator's License and Class 1 Distribution System License. He shall assist in the physical replacement of the meters.

Dub Martin, Water Distribution Technician – Mr. Martin has worked for the District for 4 years. He maintains a Class 1 Water Distribution System License, and shall also assist in the physical replacement of the meters.

Justin Ball, Water Distribution Technician – Mr. Ball has worked for the District for a little over a year. He maintains a Class 1 Water Distribution System License, and shall also assist in the physical replacement of the meters.

Ken Young, Principal Engineer for Young Technology Group – Mr. Young shall prepare the 50% and 75% completion reports, as well as the final report. In addition, he will assist with the update to the District's Conservation Plan.

3. a. Table 3-1 Illustrates the total raw water pumped or diverted, and the total retail delivery of water from 2006 through 2012:

Water Source	Raw Water use, by Year, In Acre-Feet						
Table 3-1 a	2006	2007	2008	2009	2010	2011	2012
Bessemer Ditch	496.3	902.5	498.9	884.8	878.8	604.1	902.4
Cottonwood Creek	717.8	530.0	670.6	399.2	530.0	720.4	542.1
Zoeller Creek	529.7	504.6	530.5	421.2	504.6	529.5	486.7
Velazquez Creek	223.3	84.5	207.3	164.2	84.5	195.5	209.8
Well #1	69.7	112.9	133.3	98.9	154.8	143.1	122.4
Well #6	52.8	56.4	68.7	40.7	78.0	65.1	69.1
Well #8	9.4	18.1	11.9	6.0	11.2	10.9	21.1
Well #10	7.3	21.8	15.9	15.0	18.4	21.7	41.3
Project Water (Pueblo Reservoir)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals	2,106.3	2,230.8	2,137.1	2,030.0	2,260.3	2,290.3	2,394.9
Water Source	Retail Water use, by Year, In Acre-Feet						
Table 3-1 b	2006	2007	2008	2009	2010	2011	2012
Totals	1,917.3	1,793.4	1,937.6	1,788.2	2,000.4	2,031.8	2,144.3
Annual "Non-Revenue" Water Lost in Acre-Feet	189.0	437.4	199.5	241.8	259.9	258.5	250.6
Annual "Non-Revenue" Water Lost in Percent (%)	8.97%	19.61%	9.34%	11.91%	11.50%	11.29%	10.46%

The spike in 2007 was caused by a series of breaks and leaks, wherein several days passed before the leaks were discovered and repaired. An extended dry, warm period prior to the winter of 2012 was responsible for heavier than normal lawn irrigation.

Table 3-2 Illustrates the potable water use by category from 2006 through 2012:

Year	# Taps	Growth	Usage	Use/Tap
	Residential	%	Ac.-Ft.	Ac.-Ft./Tap
2006	3,810	-	1,559	0.41
2007	3,835	0.66%	1,499	0.39
2008	3,850	0.39%	1,529	0.40
2009	3,863	0.34%	1,399	0.36
2010	3,883	0.52%	1,592	0.41
2011	3,883	0.00%	1,743.7	0.45
2012	3,879	-0.10%	1,862.1	0.48

Year	# Taps	Growth	Usage	Use/Tap
	Commercial	%	Ac.-Ft.	Ac.-Ft./Tap
2006	177	-	242	1.37
2007	182	2.82%	177	0.97
2008	182	0.00%	250	1.37
2009	182	0.00%	248	1.36
2010	182	0.00%	253	1.39
2011	189	3.85%	165.5	0.88
2012	189	0.00%	163.5	0.87

Year	# Taps	Growth	Usage	Use/Tap
	Institutional	%	Ac.-Ft.	Ac.-Ft./Tap
2006	8	-	116	14.45
2007	8	0.00%	115	14.40
2008	8	0.00%	158	19.75
2009	8	0.00%	141	17.63
2010	8	0.00%	158	19.75
2011	8	0.00%	122.6	15.33
2012	8	0.00%	118.7	14.84

* Increase do to reclassification of 1 residential tap to commercial tap

The decreased use between 2010 and 2011 for the Institutional taps are due to fact that the schools are irrigating more efficiently, particularly Pueblo County High School, which performed an irrigation audit in 2009 and implemented conservation practices in 2011. In 2012 the Commercial use and Institutional use continued to drop. However, in 2012 the residential use increased sharply. This is due to additional residential lawn irrigation, and a longer, dry period from September through the end of 2012.

In Table 3-1, the effect of a wetter than average year (precipitation) can be seen for 2009. This is also reflected in Table 3-2. Also, the impact of the meter replacement program, which was initiated in 2009, is apparent. The "non-revenue" water, by percentage, is beginning to drop below 12%. We expect this trend to continue, and to increase, as a direct result of the enhancement of the program. In 2012 this was verified, as the "Non-Revenue" water continues to drop.

b. i. Table 3-1 Summarizes the total and retail water delivery from 2006 through 2011. In 2009, there were more spring and summer rainstorms, which reduced the amount of use for lawn irrigation. The average total use for this period was 2,175.8 acre-feet per year. The average retail water delivery for this period was 1,911.5 acre-feet.

b. ii. Table 3-2 Summarizes the per capita water use by customer class. Originally, this table was divided into commercial use and residential use only. The Institutional use category was created to separate the 8 Public School facilities which are presently served.

b. iii. Table 3-3 Summarizes the number of past, present and future residential taps. The future forecasts are based on the assumption of a 1% growth rate, and 2.7 persons per household. The previous totals are based on actual residential tap sales. The growth rates after 2011 are projected, pre-recession growth rates. The number of residential taps in 2012 was reduced by 4. However, one of these was a tap that was revised to a Commercial tap.

Year	# Taps	Growth	# Persons	Population
	Residential	%	per Tap	-
2006	3,810	-	2.7	10,287
2007	3,835	0.66%	2.7	10,355
2008	3,850	0.39%	2.7	10,395
2009	3,863	0.34%	2.7	10,430
2010	3,883	0.52%	2.7	10,484
2011	3,883	0.00%	2.7	10,484
2012	3,879	-0.10%	2.7	10,473
2017	4,077	1.00%	2.7	11,008
2022	4,285	1.00%	2.7	11,569

Table 3-3

b. iv. Table 3-4 summarizes the projected water savings to be gained by the meter replacement program for residential customers. The average of the Non-Revenue water lost over the period from 2006 – 2011 is 12.27%. The target for Non-Revenue water is 4.0%. There is no efficiency depreciation on the replaced meters for the thirteen year period shown below. The original time frame of 10 years for this program, has been modified to allow for the replacement of all residential meters during the course of the entire program.

Table 3-4

Year	Growth Rate	Residential Taps	Residential Usage	# Replaced Meters	% Replaced Meters	Non-Revenue Water Lost	Projected Water Savings	Projected Water Savings
	%	-	Acre-Feet	-	%	Without Conservation	With Conservation	With Conservation
		-	-	-	-	Acre-Feet	Acre-Feet	%
2008	0.39%	3,850	1,529	0	0	142.8	**0.0**	**0.00%**
2009	0.34%	3,863	1,399	85	2.20%	166.6	**2.5**	**1.48%**
2010	0.52%	3,883	1,592	285	7.34%	259.9	**12.9**	**4.95%**
2011	0.00%	3,883	1,743.7	675	17.38%	258.5	**30.3**	**11.72%**
2012	-0.10%	3,879	1,943.3	1,065	27.46%	238.4	**44.1**	**18.51%**
2013	1.00%	3,918	1,778.7	1,455	37.14%	218.2	**54.6**	**25.03%**
2014	1.00%	3,957	1,796.5	1,845	46.63%	220.4	**69.3**	**31.43%**
2015	1.00%	3,997	1,814.5	2,235	55.92%	222.6	**83.9**	**37.69%**
2016	1.00%	4,037	1,832.6	2,625	65.03%	224.8	**98.5**	**43.83%**
2017	1.00%	4,077	1,850.9	3,015	73.95%	227.0	**113.2**	**49.84%**
2018	1.00%	4,118	1,869.4	3,405	82.69%	229.3	**127.8**	**55.74%**
2019	1.00%	4,159	1,888.1	3,795	91.25%	231.6	**142.4**	**61.50%**
2020	1.00%	4,200	1,907.0	4,185	99.63%	233.9	**157.1**	**67.15%**
2021	1.00%	4,242	1,926.1	4,242	100.00%	236.3	**159.2**	**67.40%**

b. v. Table 3-5 Summarizes the projected water savings to be gained by the meter replacements program for commercial customers. The average of the Non-Revenue water lost over the period from 2006 – 2011 is 12.27%. The target for Non-Revenue water is 4.0%. The original time frame of 10 years for this program has been modified to allow for the replacement of all commercial meters during the course of the program. In the final year, 2022, all of the remaining commercial meters shall be replaced.

Table 3-5								
Year	Growth Rate	Commercial Taps	Commercial Usage	# Replaced Meters	% Replaced Meters	Non-Revenue Water Lost	Projected Water Savings	Projected Water Savings
	%	-	Acre-Feet	-	%	(Without Conservation)	(With Conservation)	(With Conservation)
	-	-	-	-	-	Acre-Feet	Acre-Feet	%
		-	-	-	-			
2008	0.39%	182	250	0	0	23.4	**0.0**	**0.00%**
2009	0.34%	182	248	0	0.00%	29.5	**0.0**	**0.00%**
2010	0.21%	182	253	0	0.00%	29.1	**0.0**	**0.00%**
2011	1.00%	189	165.5	10	5.29%	20.3	**0.7**	**3.57%**
2012	1.00%	185	163.5	20	10.81%	20.1	**1.5**	**7.29%**
2013	1.00%	187	165.1	30	16.06%	20.3	**2.2**	**10.82%**
2014	1.00%	189	166.8	40	21.20%	20.5	**2.9**	**14.29%**
2015	1.00%	191	168.5	50	26.23%	20.7	**3.7**	**17.68%**
2016	1.00%	193	170.1	60	31.17%	20.9	**4.4**	**21.01%**
2017	1.00%	194	171.8	70	36.00%	21.1	**5.1**	**24.26%**
2018	1.00%	196	173.6	80	40.74%	21.3	**5.8**	**27.46%**
2019	1.00%	198	175.3	90	45.38%	21.5	**6.6**	**30.58%**
2020	1.00%	200	177.0	100	49.92%	21.7	**7.3**	**33.64%**
2021	1.00%	202	178.8	110	54.37%	21.9	**8.0**	**36.64%**
2022	1.00%	204	180.6	205	100.00%	22.2	**14.9**	**67.40%**

b. vi. Table 3-1 indicates a decrease of 9.15% of lost, Non-Revenue water from 2007 to 2012. During that period approximately 1,294 residential meters have been replaced. The lost, or Non-Revenue water from 2006 to 2012 fluctuates to the extent that it is difficult to associate this decrease entirely to the small percentage of meters which have been replaced, to date. Other factors, such as leaks may have accounted for the large percentage of Non-Revenue water lost in 2007.

b. vii. The St. Charles Mesa Water District has an annual average use of 2,207.1 acre-feet of raw water, and an annual average retail use of 1,944.7 acre feet of potable water. Currently, the District has total raw water availability of 7,122 acre-feet, as indicated in Table 3-6.

Water Source	Raw Water Availability
	acre-feet
Arkansas River & Bessemer Ditch	2,568.0
Cottonwood Creek	949.0
Zoeller Creek	620.0
Velazquez Creek	340.0
Well #1	215.0
Well #6	215.0
Well #8	107.5
Well #10	107.5
Project Water (Pueblo Reservoir - Drought Reserve)	2,000.0
Totals	7,122.0

Table 3-6

The District's present treatment capacity is 6 Million Gallons per Day (MGD). In addition, the current potable water storage capacity from the existing storage tanks is 4.7 Million Gallons. The existing main Treatment Plant also has space for one more filter bay, which would boost treatment capacity to 8 MGD, and the existing storage tank site at 25th Lane and LaSalle Road has space for an additional 2.5 Million Gallon Storage tank, which the District intends to construct in 2013.

c. All of the grant monies shall be utilized to purchase new water meters. The program shall be implemented in stages of 400 to 410 new meters annually. Typically, Commercial customers shall constitute 10 of the 410 meter replacements annually, although this may fluctuate according to present need. The remaining 390 meters shall be for residential replacements, annually. Table 3-7 is a cost estimate for the replacement of 410 existing meters. The material and labor unit costs are based on current material costs from a local supplier, and the District's wage rates.

The purpose of the meter replacement program is to reduce Non-Revenue water, which is most likely due to inaccurate meter readings due to old meters. This program is being initiated first, in order to more effectively track potential savings from the other conservation measures and programs which are outlined in the Water Conservation Plan.

In order to offset the potential loss of revenue caused by initial implementation of demand side measures, the replacement of the existing individual meters shall be top priority. This will allow the coincidental implementation of some of the demand side measures. For the fiscal years 2009 through 2022 the replacement of all of the older individual meters shall take place. This will coincide with the customer water audits, pilot programs and efficient irrigation and landscaping programs.

In 2011, customers who were targeted for meter replacement received written notification regarding the timing of the meter replacement. A copy of the notification is attached at the end of this application. Upon approval, the notification shall be modified so that each customer shall be given the option of receiving a Water Meter Monitor, with the new meter installation. They are available for a refundable $80 deposit. Customers shall be given the opportunity to utilize a Water Meter Monitor at the time of notification, by the District. This device is approximately the same size as a television remote controller, and allows the customer to track water usage. The Monitor has several features, including a leak detection alarm, which is outlined in detail on page 9 of the Design Manual in the Approved Conservation Plan.

In addition to the Water Meter Monitor, the customers who receive new meters shall be encouraged to participate in any or all of the Demand Side Programs and Measures. These customers who receive new meters shall be targeted for the other Demand Side Measures, so that the District can keep an accurate accounting of potential water savings.

d. The impact of the meter replacement will be monitored monthly, during the District's normal monthly billing cycle. The intended outcome to the District should match the anticipated decrease in Non-Revenue water which are outlined in Tables 3-4 and 3-5. The sum of all customers' use, which shall be measured by the individual water meters, is subtracted from the reading of the main meter at the main treatment plant. This method will give a monthly tally of the Non-Revenue water, which is expected to show a steady decrease, as the meter replacement program progresses. In addition, the annual report shall indicate the annual Non-Revenue water volume. Also, the District shall track the monthly use of the individual customers who receive the new meters, and compare the total use and billing to the previous year's use and billing, for each month. This will provide individual customer use tracking as well as total Non-Revenue Water.

5. Scope of Work

The purpose of this program is to reduce the Non-Revenue water, that is water that is treated and delivered into the potable water distribution system, but is not accounted for, generates no income and is essentially wasted. This is mainly due to inaccurate meters which are under reporting the use, due mainly to age. The Meter Replacement Program shall attempt to replace 400 - 410 meters annually.

In order to reduce costs, the District shall only replace the actual meter. In other words, the replacement shall involve physically removing the old meter from the existing meter yoke, and replacing just that part, the meter, into the existing meter yoke. This will eliminate the high cost of replacing the meter pit and will avoid having the individual customers have to hire a plumber to reconnect the service line, on the customers side of the meter.

Once in place, the new meters will be located with a GPS device, which records the horizontal and vertical location of the existing meter pit. This data is then downloaded into the District's GIS database, which is accessible through the Pueblo County GIS database. The final step is the entry into the District's billing software database, for billing and

tracking for the Final Report and Conservation Plan update. The project timeline is attached at the end of this application.

6. Detailed Project Budget

Table 3-7 is a detailed cost estimate based on actual material and labor costs, and consulting fees. The total project budget is $112,469.27. The In-Kind contribution by the District shall be the Installation (Labor) Costs ($10,996.80), the GPS Locate Costs ($3,442.40), the Data Entry Costs ($663.60), the Consultant Fee ($950.00) and the purchase of 141 of the new Residential meters and 9 Commercial and Institutional Meters. In addition, the District shall replace all 409 existing meter box lids with Renric Pacific Meter Covers.

Table 3-7			
Meter Replacement Costs for the installation of 400 new residential and 10 Commercial radio read water Meters			
for			
St. Charles Mesa Water District, Pueblo County, Colorado			
Description	**Unit Cost**	**Units**	**Total Cost**
Material Costs			
Badger BR 25 Radio Read Meter w/Orion Data Profile	$192.74	400	$ 77,096.00
Badger BR 25 Radio Read Meter w/Orion Data Profile	$1,033.33	9	$ 9,299.97
For Commercial & Institutional Meters (1-1/2"-4")			
Renric Pacific Meter Cover	$24.50	409	$ 10,020.50
Installation (Labor) Costs	**Rate**	**Time**	**Total Cost**
Senior Water Distribution Technician	$28.69	160.0	$4,590.40
Junior Water Distribution Technician	$21.32	160.0	$3,411.20
Water Distribution Technician	$18.72	160.0	$2,995.20
Sub-Total	-	-	$10,996.80
GPS Locate Costs	**Rate**	**Time**	**Total Cost**
Distribution System Manager	$43.03	80.0	$3,442.40
Data Entry Costs	**Rate**	**Time**	**Total Cost**
Office Manager	$27.65	24.0	$663.60
Consultant Fees	**Rate**	**Time**	**Total Cost**
Young Technology Group (Engineer)	-	-	$950.00
GRAND TOTAL	-	-	**$112,469.27**
Summary of In-Kind Contributions			
Material Costs			
Badger BR 25 Radio Read Meter w/Orion Data Profile	$192.74	141	$ 27,176.34
Badger BR 25 Radio Read Meter w/Orion Data Profile	$1,033.33	9	$ 9,299.97
For Commercial & Institutional Meters (1-1/2"-4")			
Renric Pacific Meter Cover	$24.50	409	$ 10,020.50
Installation (Labor) Costs	-	-	$10,996.80
GPS Locate Costs	-	-	$3,442.40
Data Entry Costs	-	-	$663.60
Consultant Fees	-	-	$ 950.00
Sub-Total	-	-	**$ 62,549.61**
% of Total Budget	-	-	**55.61%**
Summary of Grant Request Costs			
Material Costs			
Badger BR 25 Radio Read Meter w/Orion Data Profile	$192.74	259	$ 49,919.66
Sub-Total	-	-	**$ 49,919.66**
% of Total Budget	-	-	**44.39%**

The total Grant request is in the amount of $49,919.66.

The following Table 3-8 illustrates the Demand Side Measures and Programs which shall also be implemented by the District, for 2013.

Table 3-8

Material Costs for Demand Side Conservation Measures

for

St. Charles Mesa Water District, Pueblo County, Colorado

Description	Unit Cost	Units	Total Cost (Customer)	Rebate (District)	Saving (to customer) %
Material Costs					
Low Flush Toilets	$500.00	10	$5,000	$500	10.00%
Low Flush Urinals	$225.00	10	$2,250	$500	22.22%
Low-Flow Showerhead	$90.00	20	$1,800	$200	11.11%
Low-Flow Kitchen Faucets	$275.00	20	$5,500	$200	3.64%
Low-Flow Bathroom Faucets	$180.00	20	$3,600	$200	5.56%
Efficient Washing Machines	$750.00	10	$7,500	$1,000	13.33%
Rainbird RSD-Bex Series Rain Sensor	$30.03	20	$600.60	$200	33.30%
GRAND TOTAL			**$26,250.60**	**$2,800**	**10.67%**

On behalf of the St. Charles Mesa, I respectfully submit the grant application for the Meter Replacement program.

David K Simpson 7-23-2013

David K. Simpson, District Manager **Date**

Project Timeline for Meter Replacement Program - St. Charles Mesa Water District, Pueblo County, Colorado July 22, 2013								
Description	**Personnel**	**Sept. 4-7**	**Sept. 10-14**	**Sept. 17-21**	**Sept. 24-28**	**Oct. 1-5**	**Oct. 9-12**	**Oct. 15-19**
1. Identify area and individual meters to be replaced	David Simpson, Don Williams							
2. Order 400 New meters (and 10 Commercial Meters	Don Williams							
3. Commence Installation Procedure	Justin Ball, Travis Orcutt, Dub Martin							
4. Locate new meter installations with GPS Unit	Don Williams							
5. 50% Progress Report	Ken Young							
6. Enter data into GIS database	Don Williams							
7. Enter data into Billing Software	Susan Long							
8. 75% Progress Report	Ken Young							
9. Final Report	Ken Young							
10. Meter Installation Complete	David Simpson, Ken Young							
The start date for the above timeline is contingent on grant approval and availability								