



November 16, 2018

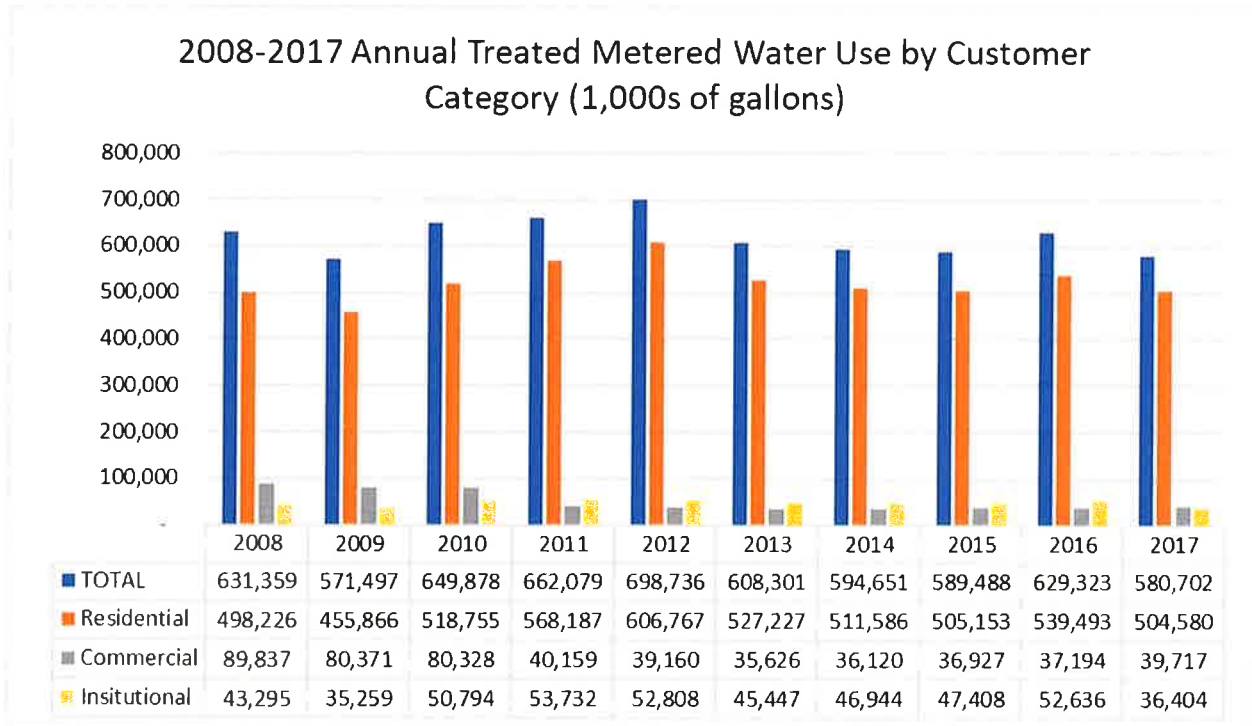
Kevin Reidy  
Colorado Water Conservation Board  
1313 Sherman St Suite 712  
Denver CO 80202

Dear Kevin,

Attached is the updated 2019 Water Conservation Plan for the St. Charles Mesa Water District. The plan was updated by our Consultant, Jean Van Pelt and myself. Ms. Van Pelt can be contacted at [jvp31@yahoo.com](mailto:jvp31@yahoo.com) or 719-251-2845.

The District's retail water deliveries for the past ten years are included in the table below:

**SCMWD Total Customer Retail Water Deliveries 2008 - 2017**



The following is a summary of the facilities and raw water sources that the District utilizes: They are also listed in Appendix A of the plan.

- The Arkansas River Pump Station, which is located approximately 1 mile west of the western district boundary, diverts water from the Arkansas River and pumps the raw water to the raw

water storage reservoir (5.5 miles to the east) via a 14" diameter pipeline. A booster pump station is located midway along the transmission line. This is available from November through March.

- Bessemer Ditch Diversion Number 1 is located at 21<sup>st</sup> Lane and South Road and is pumped to a 90 acre-foot raw water reservoir via a 12" diameter pipeline.
- Bessemer Ditch Diversion Number 2 is located approximately 1 mile west of a 1,800 acre-foot raw water reservoir and is delivered via a 30" diameter gravity pipeline. Both of the Bessemer Ditch Diversions are used during the irrigating season (March 15 – November 15).
- Cottonwood Creek is a primary source which is utilized between April and October.
- Zoeller Ditch is a primary source which can be utilized year-round.
- Velazquez Creek is a supplemental source which can be utilized from November 15 through March 15 and has a winter storage priority.
- Wells #1, #6, #8 and #10 are utilized mainly from March through November.
- The District also attempts to maintain an annual storage of approximately 2,000 acre-feet of Fryingpan-Arkansas Project water stored in Pueblo Reservoir.

Population projections for the District's service area were provided by Pueblo County and are listed below:

2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
9,495	9,540	9,585	9,630	9,675	9,721	9,766	9,812	9,858	9,905	9,951

The 60-day public comment period began on September 11, 2018 and ended on November 13, 2018. On September 11, 2018 the draft Plan was posted on the District's website [www.stcharlesmesawaterdistrict.org](http://www.stcharlesmesawaterdistrict.org) and hard copies were available to any interested community member at the District's office, 1397 Aspen Road. The District did not receive any public comments during the 60-day comment period.

The District is submitting the attached updated 2019 Water Conservation for CWCB's review and approval. Upon receipt of the Plan submittal, the District anticipates receiving from CWCB, within 10 working days, a letter acknowledging receipt of the Plan. The letter from CWCB should inform the District of any deficiencies in the Plan submittal Cover Letter. If CWCB identifies any deficiencies, the District will address them in writing before CWCB can proceed with the plan review and approval process. It is the District's understanding, that once all Plan submittal Cover Letter information has been received by CWCB as specified, CWCB will initiate Plan review and comment and return a written notice of approval, conditional approval, or non-approval within 90 days of receipt of the District's completed Plan submittal Cover Letter. Please feel free to contact Ms. Van Pelt or me if you have any questions. Thank you for your time and consideration,



David K. Simpson  
District Manager

[David.Simpson@scmwd-pueblo.org](mailto:David.Simpson@scmwd-pueblo.org)

# St. Charles Mesa Water District

2019

## WATER CONSERVATION PLAN



Prepared for:

Colorado Water Conservation Board

Prepared by:

Consultant Jean Van Pelt

# Table of Contents

EXECUTIVE SUMMARY.....	3
1.0 PROFILE OF EXISTING WATER SUPPLY SYSTEM .....	3
1.1 OVERVIEW .....	4
1.2 WATER SUPPLY AND RELIABILITY.....	7
1.3 SUPPLY-SIDE LIMITATIONS AND FUTURE NEEDS.....	8
2.0 PROFILE WAER .....	9
2.1 DEMOGRAPHICS AND KEY CHARACTERISTICS OF SERVICE AREA.....	9
2.2 HISTORICAL WATER DEMANDS.....	9
2.3 PAST AND CURRENT DEMAND MANAGEMENT ACTIVITIES .....	12
2.4 DEMAND FORECASTS .....	13
3.0 INTEGRATED PLANNING AND WATER EFFICIENCY BENEFITS AND GOALS.....	15
3.1 WATER EFFICIENCY AND WATER SUPPLY PLANNING .....	15
3.2 WATER EFFICIENCY GOALS.....	17
4.0 SELECTION OF WATER EFFICIENCY ACTIVITIES .....	18
4.1 SUMMARY OF SELECTION PROCESS .....	18
4.2 DEMAND MANAGEMENT ACTIVITIES .....	19
4.2.1 FOUNDATIONAL ACTIVITIES.....	20
METER REPLACEMENT PROGRAM .....	20
SUBMETERING FOR LARGE USERS .....	22
IDENTIFY AND RECTIFY UNMETERED/UNBILLED TREATMENT WATER USES ..	23
DEMAND DATA COLLECTION AND BILLING SYSTEMS .....	23
WATER EFFICIENCY ORIENTED RATES AND TAP FEES .....	23
SYSTEM WATER LOSS MANAGEMENT AND CONTROL.....	24
4.2.2 TARGETED TECHNICAL ASSISTANCE AND INCENTIVES.....	25
4.2.3 ORDINANCES AND REGULATIONS.....	25
4.2.4 EDUCATION ACTIVITIES .....	25
5.0 IMPLEMENTATION AND MONITORING PLAN.....	26
5.1 IMPLEMENTATION PLAN.....	26
5.2 MONITORING PLAN .....	6
6.0 ADOPTION OF NEW POLICY, PUBLIC REVIEW, AND FORMAL APPROVAL.....	26
6.1 PUBLIC REVIEW PROCESS.....	26
6.2 LOCAL AND STATE APPROVAL PROCESSES .....	27
6.3 PERIODIC REVIEW AND UPDATE .....	27

## APPENDICES

APPENDIX A: SCMWD WATER RIGHTS PORTFOLIO

APPENDIX B: SCMWD 20-YEAR PROJECTION

APPENDIX C: SCMWD CWCW WORKSHEETS D – L

APPENDIX D: SCMWD 2018 TAP FEES AND WATER RATES

APPENDIX E: SCMWD 2018 RULES AND REGULATIONS

APPENDIX F: PUBLIC NOTICE AND OFFICIAL ADOPTION RESOLUTION



## Executive Summary

The goal for the St. Charles Mesa Water District (SCMWD or District) 2019 Water Conservation Plan and program is an annual average savings of approximately 30 AF from 2018 – 2022 or 152 AF for the 5-year period and 20 AF per year in 2023 – 2027 or 100 AF for the 5-year period. The implementation of the plan will provide water savings of 252 AF over the ten-year implementation period.

SCMWD's main area of concern is unaccounted for &/or non-revenue water. This is treated water, which is used by customers, but the water is not properly metered, therefore, not being paid for by the customer. The District has selected three foundational water efficiency activities to implement. The activities are (1) Automatic Meter Reading Installation and Operations, (2) Submetering for Large Users (Indoor and Outdoor), and (3) Identify Unmetered/Unbilled Treated Water Uses.

The District's goal for the Plan is to reduce the amount of non-accounted for and non-revenue water. The installation of new residential AMR meters will reduce non-accounted for water and will increase revenues by having customers pay for the amount of water they are actually using. The installation of a bulk water station master meter and card reader also reduces the amount of non-accounted for water and provides the District with the ability to bill contractors for the water they are currently using for free. It is anticipated that by installing compound meters at two of the highest water use schools, the school managers will be aware of their outdoor irrigation use and will reduce the amount of water they are currently using. The change in irrigation habits will assist with reducing the peak summer water use. The District does not anticipate any negative reactions to the implementation of these activities.

SCMWD has established a plan for implementing the Water Conservation Program that include selected efficiency activities, period of implementation and timeline, actions to implement each activity, milestone goals, and estimated costs of each activity.

The District's Water Conservation Plan will be monitored on a daily, monthly, and yearly basis depending on the methodology. The District will monitor the total water use tracking (total treated water distributed, system per capita water use, total indoor/outdoor water use on high use customers, and system peak day water use), water use by customer category (treated metered water use, per capita water use and indoor/outdoor metered use on high water use customers and annual costs. The District will utilize the demand data for annual reporting to the state and a summary of the monitoring & evaluation results will be presented to the SCMWD Board of Directors every 2 years.

### 1.0 Profile of Existing Water Supply System

St. Charles Mesa Water District:

District Office: 1397 Aspen Road                      Pueblo, CO 81006

Regular Office hours: 10:00 a.m. – 12:00 p.m. & 1:00 p.m. – 4:30 p.m. Monday-Friday

Office Telephone: (719) 542-4380 Fax: (719) 542-4862

Key Personnel:

David K. Simpson, District Manager

William Martin, Operations Manager

Susann F. Long, Administrative Assistant & Bookkeeper

Michael M. Cid, Treatment Plant Operator, Class A Water

### 1.1 Overview of Existing Water Supply System

The St. Charles Mesa is a geographic region located just east and adjacent to the City of Pueblo, Colorado. The area is characterized as a “table top mesa” which is bounded by the Arkansas River on the north, and is bisected by the St. Charles River, a tributary to the Arkansas River.

The St. Charles River is essentially the delineator between the higher density residential and business developments located to the west, and the more agricultural area located to the east of the river.

The St. Charles Mesa Water District (SCMWD) was formed in 1963 as a water association, by a group of residents and land owners who were committed to creating a not-for-profit water utility to provide potable water to the residents and businesses on the St. Charles Mesa. In 1988, the association’s members voted to convert to a Water District.

The District encompasses approximately 65 square miles. The majority of the system is located in Zone 1, which was the original district boundary. The District is currently in the process of incorporating the Zinno Subdivision into Zone 1. The subdivision includes 100 taps. In 1999, the District absorbed the Huerfano Water District into its service area (Zone 2) and includes 152 taps. Zone 2 is currently under a moratorium for new taps.

SCMWD does not currently use treated water from other sources or reclaimed water supply. The District attempts to maintain an annual storage of approximately 2,000 acre-feet of Fryingpan-Arkansas Project water stored in Pueblo Reservoir.

The following is a summary of the facilities and raw water sources that the District utilizes:

- The Arkansas River Pump Station, which is located approximately 1 mile west of the western district boundary, diverts water from the Arkansas River and pumps the raw water to the raw water storage reservoir (5.5 miles to the east) via a 14” diameter pipeline. A booster pump station is located midway along the transmission line. This is available from November through March.
- Bessemer Ditch Diversion Number 1 is located at 21<sup>st</sup> Lane and South Road and is pumped to a 90 acre-foot raw water reservoir via a 12” diameter pipeline.
- Bessemer Ditch Diversion Number 2 is located approximately 1 mile west of a 1,800 acre-foot raw water reservoir and is delivered via a 30” diameter gravity pipeline. Both of the

Bessemer Ditch Diversions are used during the irrigating season (March 15 – November 15).

- Figure 2 shows an average increase of 2.5% of diverted water over produced water. The increase in diversions is based on the Bessemer ditch flow or what the District can request to be diverted. If the Bessemer Ditch has a plentiful water supply year, the District diverts ditch water whether they need it or not in accordance to their water rights.
- Cottonwood Creek is a primary source which is utilized between April and October.
- Zoeller Ditch is a primary source which can be utilized year-round.
- Velazquez Creek is a supplemental source which can be utilized from November 15 through March 15 and has a winter storage priority.
- Wells #1, #6, #8 and #10 are utilized mainly from March through November.

Figure 1. St. Charles Mesa District Boundaries Map

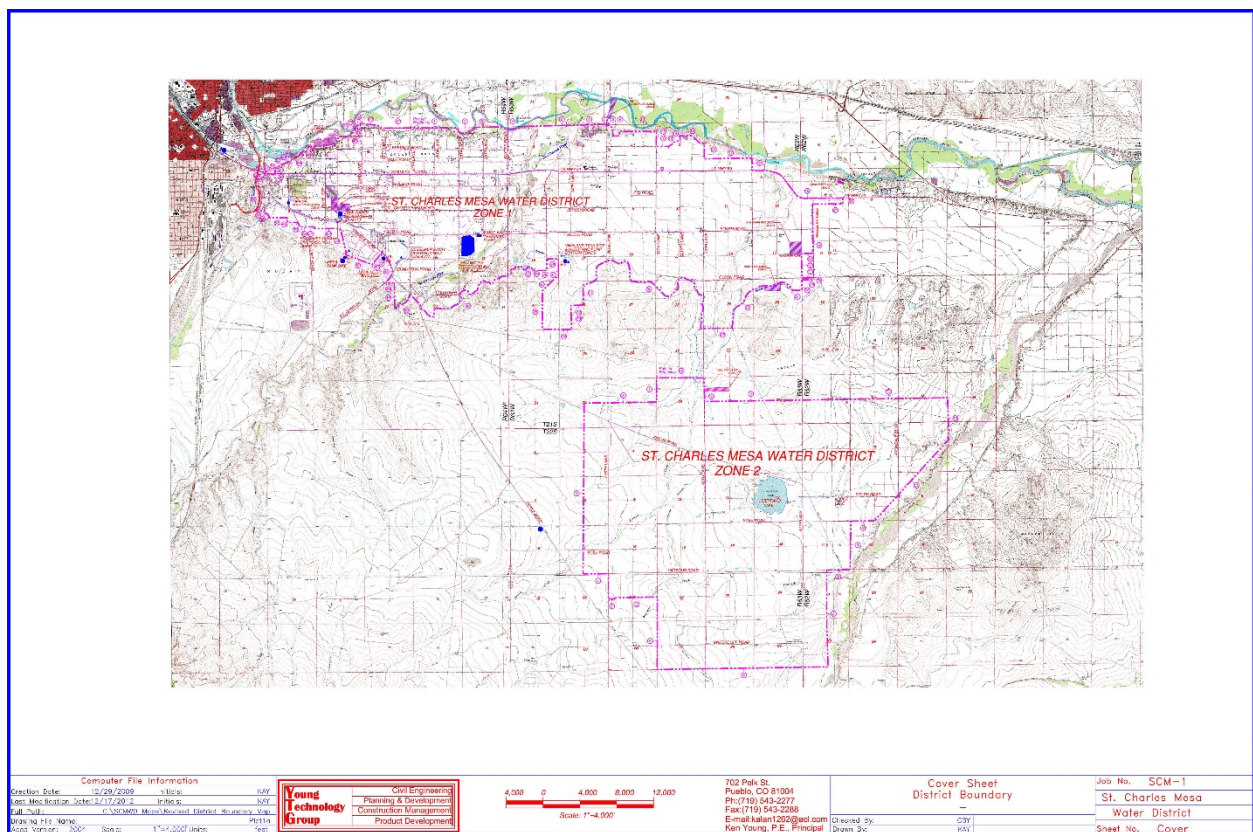
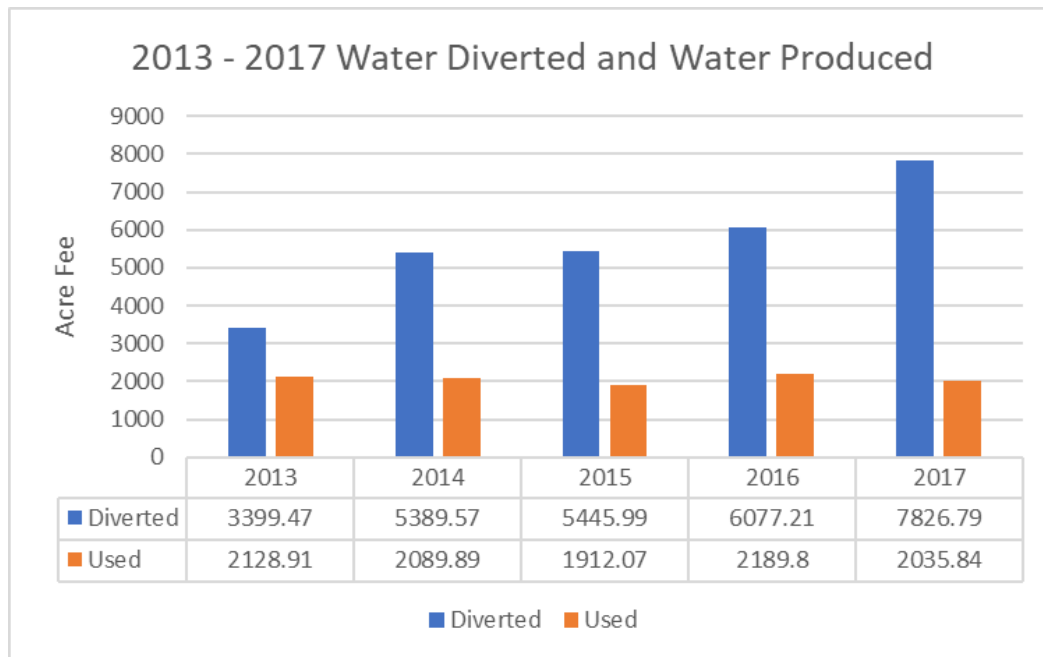


Figure 2. Raw Water Diverted and Water Produced



All of the surface water sources, except Bessemer Ditch Diversion #1, are piped to Raw Water Reservoir #2, which has a storage capacity of 1,800 acre-feet. The wells are piped to a central chlorination facility at 21st Lane. Raw Water Reservoir #1, which has a storage capacity of 90 acre-feet, receives water from Bessemer Ditch diversion #1 at 21st Lane.

The main components of the overall water system are:

- 5 MGD treatment facility, located on the south side of South Road between 29<sup>th</sup> and 30<sup>th</sup> Lanes.
- 90 Acre-Foot Raw Water Storage Reservoir #1, located on County Farm Road, between 21<sup>st</sup> and 23<sup>rd</sup> Lanes.
- 1,800 Acre-Foot Raw Water Storage Reservoir #2, located adjacent to the water treatment plant.
- Raw water delivery pipelines from the Bessemer Ditch diversions #1 and #2 to closest storage reservoirs.
- The Mesa Tank site, located at LaSalle Road and 25<sup>th</sup> Lane, has a 2.5 MG storage tank and a 1 MG storage tank.
- The LaSalle Road Tank Site, located south of LaSalle Rd and Nichols Road has a 6 MG storage tank.
- There are 201 miles of water system distribution piping. SCMWD strives to maintain system pressure at 60 psi. The District has a hydraulic model of its distribution system, that allows staff to locate potential problems with peak day usage. The model also indicates where fire hydrant flows can lower the system pressure and how fast.
- There are also four auxiliary wells located on the St. Charles Mesa.

**Table 1. Auxiliary Well Permit and State Identification Numbers**

Well #	Permit #	State ID #
1	9711-FR	1406208
6	RF-1189	1406207
8	4557-F	1406206
10	RF-185	1406210

Additional upgrades in pumping and distribution are included in the Capital Improvement Plan (CIP) which is planned through the year 2025. The improvements are intended to provide additional capacity and higher system pressure.

At present, there are three small sanitation districts which provide sanitary sewer service to some of the customers in the St. Charles Mesa Water District. They are: (1) St. Charles Mesa Sanitation District, (2) Salt Creek Sanitation District, and (3) Blende Sanitation District.

The vast majority of the residences and businesses located in the District's service boundary are presently using Individual Sewage Disposal Systems (ISDS) consisting of a septic tank and leach field. The fact that no further sanitary sewer service is anticipated, has tended to limit dense development, particularly for the future, as the minimum lot size required for an ISDS system has increased to 30,000 square feet minimum.

## **1.2 Water Supply Reliability**

The St. Charles Mesa Water District is not located within a designated critical water supply area, as identified in the State Water Supply Initiative nor does the system experience frequent water supply shortages. In fact, the District has never had to institute mandatory water restrictions. During the summer of 2002, during a region-wide drought, the District did institute voluntary lawn watering restrictions for the first time since its inception. This was done to protect the stored raw water reserve, in the event of a protracted drought.

Currently, and for the foreseeable future, SCMWD has an abundance of raw water, in the form of senior surface water rights, wells, raw water storage and Fryingpan - Arkansas project water. SCMWD water rights portfolio is included in Appendix A. In addition, new customers of the District are required to provide shares in the Bessemer Irrigation Ditch Company or purchase shares from the District's water bank, as a tap fee, prior to connecting to the District's water system. SCMWD maintains a long-range capital improvement plan. A majority of the proposed improvements are relevant to provide additional raw or treated water and to increase storage and/or distribution capacity. The District has excess supplies after meeting municipal demands in normal and wet years. The District leases this water to agriculture. The District currently uses 55% of its water supply with the other 45% being leased to agriculture.

As stated in Appendix A, SCMWD has available water rights of 6,391 AF in an average year & 4,466 AF available in a dry year. The District conducted a 20- year projection of population and

residential and commercial/industrial water demands using an estimate of an annual increase of .47%. This growth percentage was provided by Pueblo County. The projection indicates that in 20 years (2038) SCMWD will need an additional 1,975 AF to meet demands. (Appendix B). This projection was performed without considering any water savings through the implementation of a water conservation plan.

### **1.3 Supply-Side Limitations and Future Needs**

SCMWD is not located in a designated critical water supply shortage area. The system does not experience frequent water supply shortages and/or emergencies. SCMWD has experienced some growth in population but not at a rate that it has affected the demand water supply, even with the additional demand of the Zinno subdivision's 100 new taps that was recently included in the District boundaries in 2018. Currently, and for the foreseeable future, the District has an abundance of raw water that could be used for drought reserves, in the form of senior surface water rights, wells, raw water storage and Fry-Ark Project water. The District has no drinking water quality compliance issues, nor does it have issues with water pressure in the distribution system.

SCMWD focused the 2010 Water Conservation Plan on the recovery of non-revenue water. The priority was the reduction of non-revenue water. This is the difference between the total, treated finished water which is delivered from the treatment plant, and the sum of the individual meters at the customer's location. In 2010, the District losses were 19% of the treated finished water. The majority of this was due to the inaccuracies in the older existing water meters. The reasons this item was given top priority was to increase the overall water accounting efficiency by reducing the quantity of treated water put into the distribution system, that is not registered by the individual customer meters. Secondly, it was to encourage water conservation by requiring the customers to pay for water that they are utilizing. One of the nine meters that was 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 decreased treatment costs because water accounting was more accurate, and customers increased their efficiency.

A result of the 2010 Water Conservation Plan was the installation of 2,977 Automated Meter Reading (AMR) units. The AMRs that were installed offered the option of an individual Water Meter Monitor (WMM), which the individual customer could use to track water usage. The WMM unit also came with a Leak Detection Alarm. SCMWD felt that the WMM could help individual customers conserve water, and that it offered a method by which the customer could track their water usage, other than their monthly bill. Lastly, the automatic read feature would reduce the cost of reading the meters and of billing.

The District had an estimated 12% unaccounted for water loss in 2017. SCMWD is working to integrate the construction water and system flushing use into the commercial and residential water use to lower the loss. This District also monitors system pressure and checks areas that indicate some variability for potential leaks.



The addition of the Zinno Subdivision into the District is a substantial addition to the District's customer base. Although the water demand from the subdivision will not affect the District's water supply portfolio, the subdivision's distribution system infrastructure will need to be replaced. The distribution system was poorly maintained and is reaching its life expectancy. The District has secured grants and loans to install new water mains, service lines, and meters. The project is scheduled to be completed by the end of 2018. The District has no other plans for substantial improvements or additions that would affect its water supply limitations and future needs.

The District conducts annual capital improvement projects to maintain its infrastructure and has no aging infrastructure in the need of immediate repair. SCMWD has a Long-Range Plan for Capital Improvement projects.

## **2.0 Profile of Water Demands and Historical Demand Management**

### **2.1 Demographics and Key Characteristics of the Service Area**

The District currently serves a population of 9,540. As of December 2017, there are 4,243 residential taps and 200 commercial (non-residential) taps and 12 Institutional (School District No. 70) taps. The current gallons per day per capita is 165.6 gallons. The largest water user is School District No. 70 which utilizes water mostly for lawn irrigation. The customers with the highest irrigation usage are Pueblo County High School and South Mesa Elementary School. The largest commercial, non-irrigation user is Mission Foods.

### **2.2 Historical Water Demands**

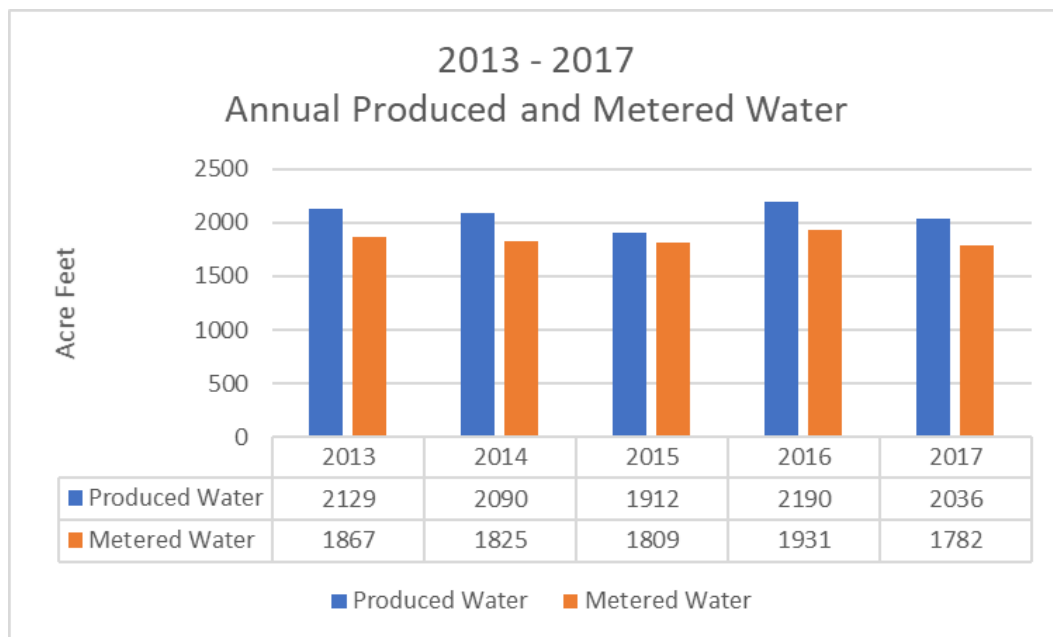
SCMWD has not encountered limitations associated with collecting demand data. The billing system is able to distinguish between customer categories and satisfactorily displays monthly water use data. The District has not experienced any loss of data during an update process and has rarely experienced errors in billing data. An anomaly the District experienced was in 2015 SCMWD had a twelve-year low in water that was produced and delivered. This was due to weather conditions.

In 2017, the difference between the amount of water produced and the amount registered by meters indicated the District's water loss was 12%. This is a reduction of 7% in water losses when compared with the 19% losses in 2010.

The District has continually strived to properly address its water demands. Recapturing not-accounted for and non-revenue water has always been a priority. The replacement of existing inaccurate meters was a key component of the 2010 Water Conservation Plan. Meter replacement is also in the current and future Long-Range Capital Improvement Plan and the 2019 Updated Water Conservation Plan. Another source of non-revenue water loss the District intends to address is unauthorized use of fire hydrants. This type of unmetered water use contributes to the District's overall non-revenue water loss. As a new efficiency activity, the District intends to

construct a new bulk water station to monitor the commercial and residential water use. SCMWD's largest water user is School District 70. County High School and South Mesa Elementary School have the highest water use out of the eight District 70 water taps. SCMWD has recognized this fact and intends to continue to work with the School District to submeter the two schools in an attempt to lower their outdoor water consumption.

**Figure 3 - 2013 – 2017 Annual Produced and Metered Water**



**Figure 4 - 2013 – 2017 Non-Revenue Water**

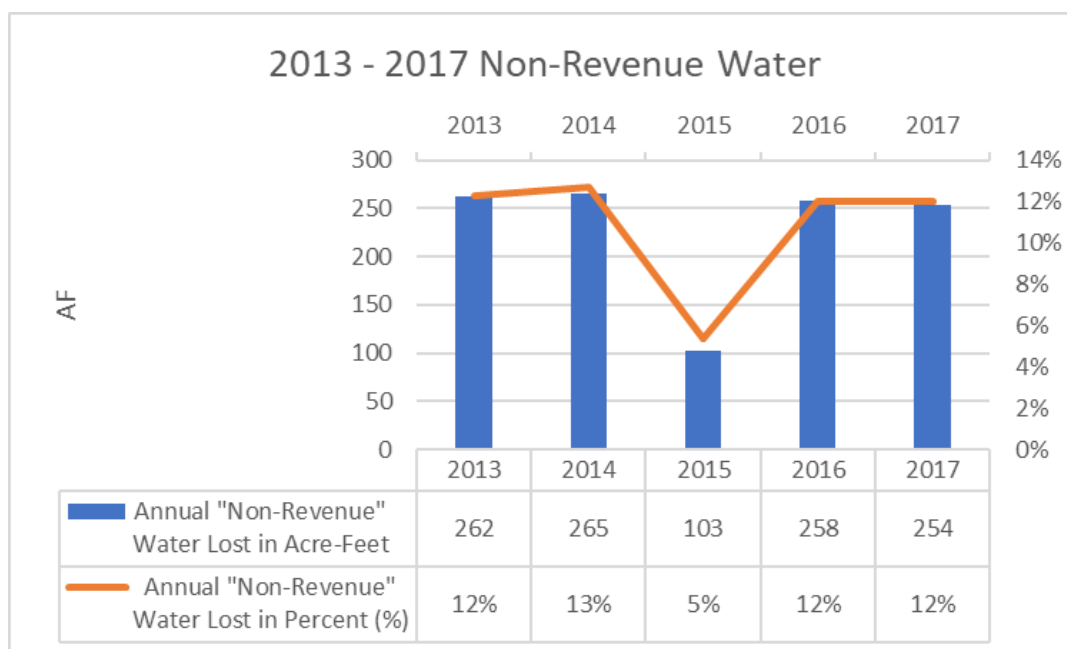


Figure 5 - 2013 – 2017 Average Annual Treated Metered Water Use by Customer Category

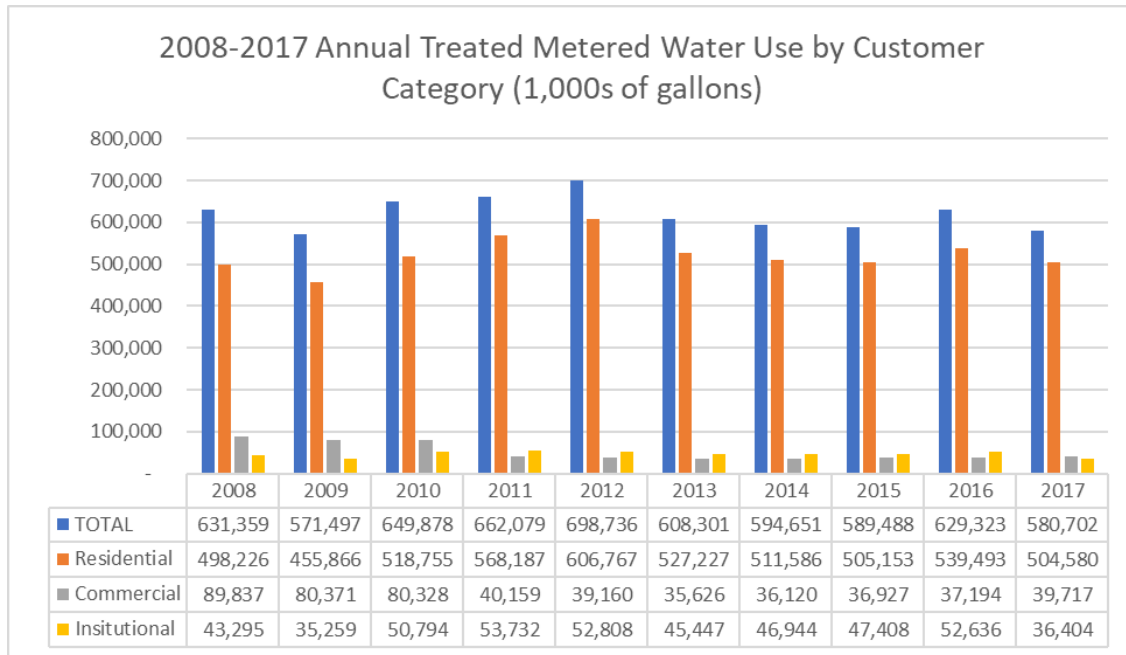
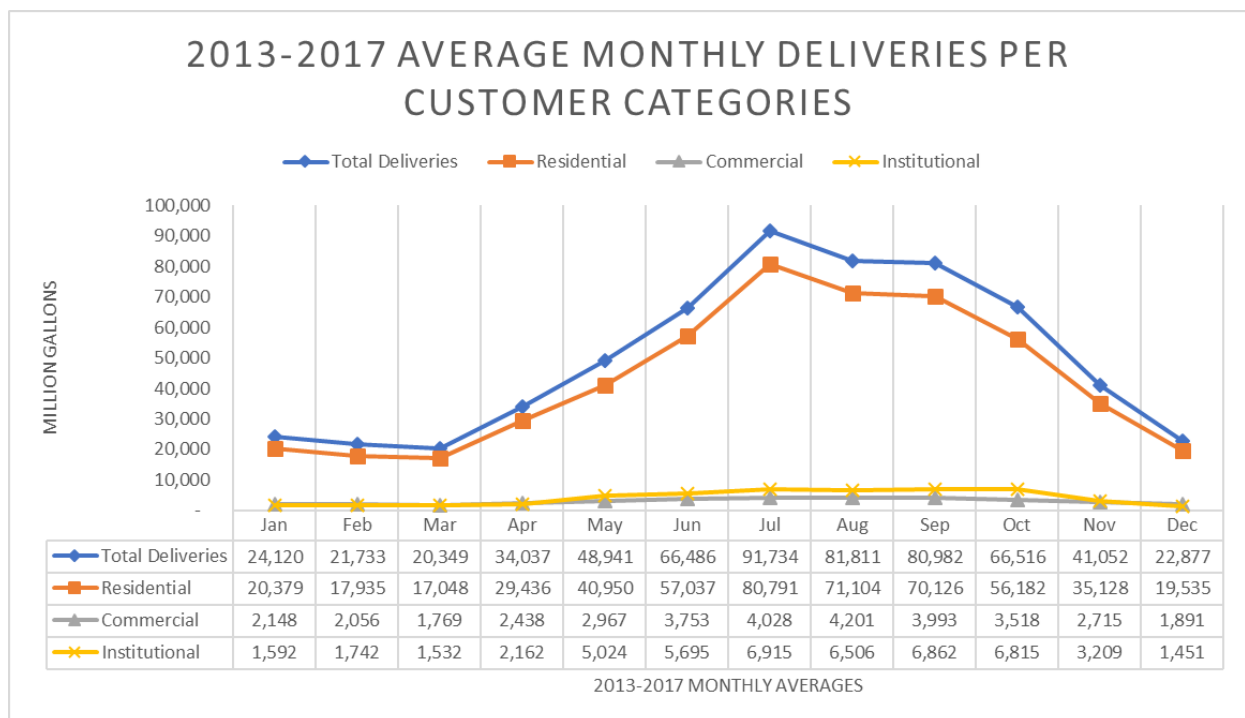


Figure 6 - 2013 – 2017 Average Monthly Water Treated Water Deliveries



### 2.3 Past and Current Demand Management Activities

The previous, 2010 Water Conservation Plan programs and measures were initially limited in scope. The purpose was to identify the programs and measures which were most effective, and consider wider application, if appropriate. The purpose was to also identify any programs and measures which were not effective and either eliminate or modify them. The programs in the 2010 Water Conservation Plan consisted of Foundational Activities and Targeted Technical Assistance and Incentive programs that included the following:

- Meter Replacement Program
- Leak Detection and replacement of leaky water mains
- Installation of 10 low flow toilets
- Installation of 10 low flow urinals
- Installation of 20 low flow showerheads
- Installation of 20 low flow kitchen faucets
- Install 10 efficient washing machines
- Encourage the installation of low-water use landscapes
- The installation of 20 rain sensors

The seven-year implementation period was from 2010 – 2017. The strategy was to monitor the Conservation Plan annually. This should have provided enough information to determine the effectiveness of the various programs and measures. The District notified customers of the availability of rebates for water conserving devices through monthly billing statements and website. They did not receive any requests for these products from the customers. The District discovered that the time it took to promote and educate their customers on the benefits of efficient plumbing fixtures and appliances took much more time than the District could provide. Unfortunately, SCMWD found they did not have customer interest or demand nor the staff resources to fully implement the plan and to perform an in-depth data analysis. Thus, since there were no requests for these products, there was no program to implement and no data to collect.

Thus, the District has chosen a qualitative discussion of the plan's elements and how they have historically influenced demands and contributed to the uncertainty of water saving estimates. The District is estimating its water savings by comparing historical annual per capita water demands prior to and after the implementation of the programs in the previous plan.

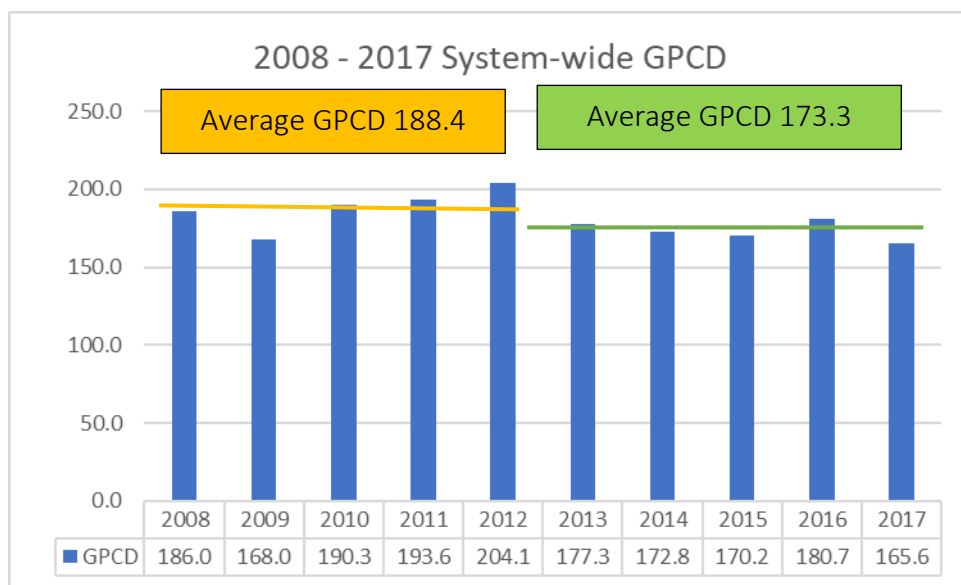
The successful programs in the 2010 Water Conservation Plan involved meter replacement. This type of program is considered active savings, because they are a result of replacing older less water efficient meters with newer more water efficient models. Demand management activities implemented by the District from 2011 – 2017 promoted the replacement of old inefficient meters.

Another positive result of the 2010 Water Conservation Plan, SCMWD implemented a Water Main Leak Detection Program. Each year the District identifies older portions of the distribution

system, or any suspect areas. The District contracts with the Leak Detection Company, who performs a limited evaluation of that particular portion of the system identified by the District. Upon detection of a major leak, the District revises the Long-Range Capital Improvement Plan (CIP), to repair the leak. The Long-Range CIP may be modified to expedite repairs and replacement of water main problems which are identified through the leak detection program. Approximately 1% of the District’s 201 miles of water distribution main (2 miles) is evaluated annually. In the past, this had only been performed on a complaint basis only. The District has not collected data on the amount of water conserved through this program. Although, the District is sure that the Leak Detection Program has contributed to lowering the system-wide GPCD.

Figure 7 illustrates the system-wide water savings from 2008 – 2017. From 2008 to 2012 the average GPCD was 188.4. The average GPCD from 2013 – 2017 was 173.3 during the full implementation of the Meter Replacement and Leak Detection Programs. Overall the GPCD was reduced by 15.1 GPCD or 9%.

**Figure 7 - 2008 – 2017 System-wide GPCD**



## 2.4 Demand Forecasts

SCMWD will utilize a ten-year planning horizon. The Water Conservation Plan will be monitored on an annual basis and updated every seven years.

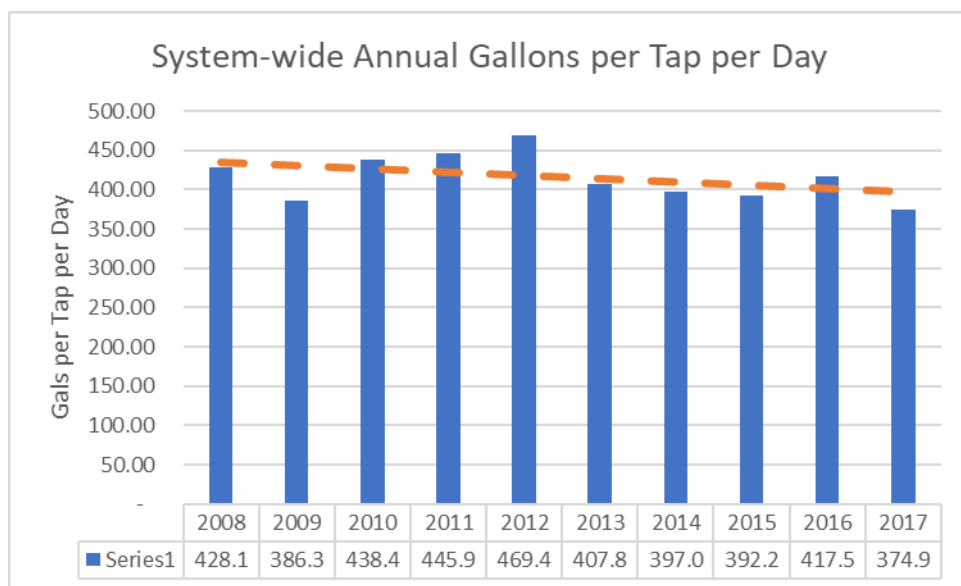


One of the main goals of the previous water conservation plan was to reduce per unit consumption, without adversely effecting District revenues. This required initial, minimal implementation, to avoid a negative impact on the District.

The model that was used predicted a minor reduction in overall water consumption, assuming the conservation measures and programs are effective. A growth rate of 1% was predicted. It was assumed the loss in revenue, due to a drop in per capita use, would be offset by growth and collection of tap fees. Also, the per capita reduction in use would allow the postponement of some of the system's upgrades which are related to supply capacity. This would allow the District additional time to accumulate capital reserves prior to performing some of the supply capacity upgrades.

The demands presented in Figure 8 are "unmodified" demands, meaning that they do not incorporate any new water efficiency programs, yet they reflect the existing "status quo" where the passive savings achieved through the current and existing efficiency programs are assumed to continue.

**Figure 8 - 2008 – 2017 System-Wide Annual Gallons per Tap per Day**

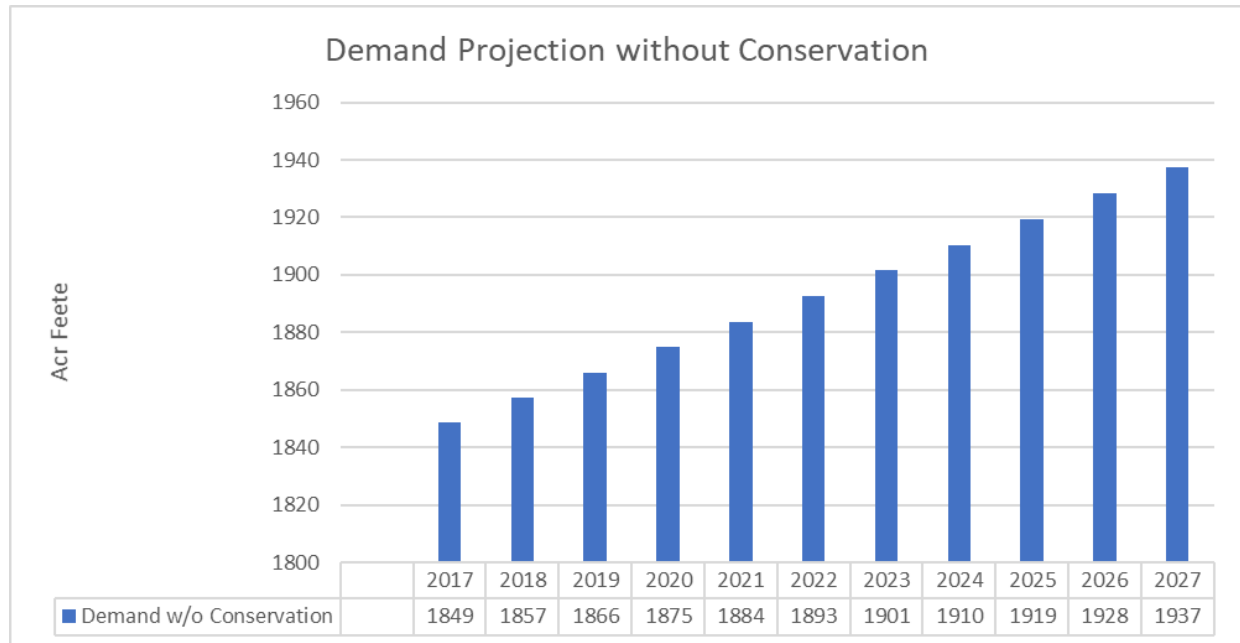


SCMWD has selected to use a simple projection based on system-wide per tap per day water demands and anticipated growth within the District boundaries to prepare the Demand Forecast. The growth percentage was derived from Pueblo County's growth projection within the District boundaries of .47% each year. The projected gallons per tap per day demand in Figure 9 was derived by using Pueblo County's growth projection of .47% for the District each year for a ten-year period. The projected demands presented are "unmodified" demands, meaning that they do not incorporate any new water efficiency activities. They reflect the existing "status quo" where the savings achieved through the current and existing water efficiency efforts are assumed



to continue into the future. The projection assumes that SCMWD does not make changes to its existing water efficiency efforts.

**Figure 9 - Ten Year Demand Projection Acre Feet per Tap**



### 3.0 Integrated Planning and Water Efficiency Benefits and Goals

#### 3.1 Water Efficiency and Water Supply Planning

St. Charles Mesa Water District adheres to a Long-Range Capital Improvement Plan. The proposed improvements contained therein are a comprehensive needs list, and not all items are directly related to water use or conservation. However, most of the costs associated are directly relevant to providing additional raw, or treated water, and increasing storage and distribution capacity. Additional upgrades in pumping and distribution are planned through the year 2025, which are intended to provide additional capacity and higher system pressure. SCMWCD anticipates that by completing many of the capital improvement projects the result would be a reduction in water supply demand.

One of the District's main areas of concern related to water efficiency and supply planning is non-revenue water. This is treated water, which is used by customers, but the water is not properly metered, therefore, not being paid for by the customer. This is partly due to inaccurate metering due to age and deterioration in the individual meters themselves. Many of the original water meters, were installed in the early 1970's. From 2009 to current the District has implemented its meter replacement program by replacing 2,977 Automated Meter Reading (AMR) units, approximately 69% of all meters. The replacement of all remaining older meters is a top priority

of the District. Installing efficient metering devices will increase water efficiency measures to reduce demand.

Another source of non-revenue water loss is the use of the District's fire hydrants for dust control on construction projects, etc. This use is currently not metered. This type of un-metered water use contributes to the District's overall non-revenue water loss.

The District has also experienced frequent theft of water by others illegally tapping into fire hydrants within the District boundaries. This type of water use is also not tracked and contributes to the non-revenue water loss. As a part of the District's water efficiency and supply planning the District is considering implementing efficiency programs to track water use and recover the costs associated with water use for construction dust control and to prevent unauthorized use of fire hydrants.

Another component of SCMWD's water efficiency and supply planning is working to reduce the water demands of the District's largest water users. SCMWD's largest institutional water user is School District 70. SCMWD intends to partner with the School District to submeter the schools. Submetering allows school managers to distinguish the amount of water used inside the building and the amount of water being used for outdoor irrigation. The intent is for school managers to recognize the quantity of water and the costs associated with water use outside of the building. By recognizing this fact, it is anticipated that managers would reduce their consumption by using more efficient irrigation methods, reducing the size of irrigated areas, or utilizing more water efficient plants and grasses.

For a secure water future, water efficiency and supply planning should be built into the framework of community planning and development. Land use and water planning could be integrated in a manner that decreases the water use of new development within the District's service area. The District has examined the following policies and mechanisms related to land and water use.

1. **Removing Existing Barriers:** Many municipalities across the arid west have barriers within their land use codes that discourage water conservation. One example is mandatory landscaping requirements that do not allow or limit xeriscape options. Neither Pueblo County or SCMWD has a land use code that requires a certain amount of turf or that does not allow xeric landscapes.
2. **Create New Incentives:** Incentivizing water conservation through a variety of mechanisms may show considerable success in reducing the water use of new developments. Municipalities and counties across the west have provided density bonuses, offered discounted tap or connection fees, and extend utility rebate programs to homebuilders engaged in water-smart development. The District is not able to offer density bonuses due to a Pueblo County's land size requirements to install and maintain individual septic systems. At this time, the District is unwilling to offer discounted tap fees due to the staffing requirements necessary to review and monitor efficiency plans submitted by

developers or land owners. In the past, the District failed at implementing a rebate program mostly due to uninterested customers and a lack of staff time to implement the program.

3. **Adopt New Regulations:** Adopting new regulation to reduce water use has yielded some water reductions on new development. Many jurisdictions across the arid west have integrated requirements for WaterSense plumbing and fixtures into their building codes. Pueblo County's adoption of the 2015 International Plumbing Code includes the use of WaterSense products in both new development and retrofitting older housing stock.
4. **Comprehensive Plans and Subdivision Regulations:** Colorado law requires that some municipalities adopt a comprehensive plan to guide the development of the municipality in accordance with present and future needs to promote the health, safety, and general welfare. One key step to lay a strong foundation is to include a water conservation element in the community's comprehensive plan. Pueblo County has adopted a Rural Land Use process. The purpose of the rural land use process is to provide an alternative method of land division that encourages the clustering of single-family residential dwellings and the preservation of open spaces in the rural portions of the County. The intent is to allow the County to consider flexible and creative subdivision design concepts under cluster development. The County identified a number of goals for this process which one of the goals is to preserve and conserve water resources.
5. **Water Pricing and Rate Structures:** Adopting water pricing rate structures that accurately reflect the amount of water consumed by different sizes and types of residential development can produce significant reductions in water use. The District's tap fee and rate structures are designed to promote efficient water use. A customer's tap fee is determined by the size of service line they need. Customers with larger lines have a higher tap fee than customers with a normal service line. The District has had for some time an inclining water rate structure in place that encourages efficient water use and conservation practices. The District is also considering submetering the largest water users to illustrate to the customers the amount of water that is being consumed for outdoor irrigation.

Currently, and for the foreseeable future, the District has an abundance of raw water, in the form of senior surface water rights, wells, raw water storage and project water. Monitoring and protecting the District's water rights are also important components of the District's water efficiency and supply planning. Due to having a plentiful and secure water supply the District is not considering a water reuse program now or in the near future.

### 3.2 Water Efficiency Goals

St. Charles Mesa Water District has established the goal of reducing forecast baseline demand by approximately 13% over the next 10 years through water efficiency programs. This amounts to an estimated total savings of 252 acre-feet or an annual reduction in demand of 25.2 AF per year.

To accomplish this goal, SCMWD will continue to implement and expand its water efficiency program. SCMWD's water efficiency program (described in detail in Section 4.0) is designed to encourage efficiency among all water users in the District – residential and non-residential. Anticipated water savings by customer class was considered:

- Residential - 5%
- Commercial – 6%
- Institutional - 2%

SCMWD's water efficiency goal was developed through a process where a variety of water efficiency options were considered based on cost and efficiency. The efficiency plan was developed after careful analysis of all options. The anticipated costs of this option were among the lowest (per AF) that the District considered. Furthermore, the anticipated benefits of implementing this approach are expected to be substantial from a water supply, service, and reliability standpoint while helping to keep water rates reasonably low.

#### **4.0 Selection of Water Efficiency Activities**

St. Charles Mesa Water District considered a variety of water efficiency programs and measures before selecting the final components for inclusion in this plan. Efficiency measures were screened using a variety of criteria including:

- Feasibility and practicality – can this measure be implemented by the District at this time?
- Estimated cost per AF – Is this measure cost effective when compared with the supply alternatives?
- Water savings – are the water savings likely to be significant? Do they justify the effort of implementing the activity?

SCMWD used the activity selection worksheets D, E, F, G and H developed by CWCB to assist in the screening process. Copies of these worksheets are provided in Appendix C.

#### **4.1 Summary of Selection Process**

The District implemented a screening and selection process for evaluating the potential water efficiency activities. A four-phased approach for selecting and evaluating the water efficiency activities was used. The four phases included: 1) assessment; 2) identification; 3) qualitative screening; and 4) evaluation and selection.

In the assessment phase information on the District's current water efficiency activities and other aspects of their water supply system and service area was used to identify areas where water efficiency could be improved.

The identification phase used information originated by the assessment phase to identify a list of activities that were compatible with the District's system and needs. This included activities implemented in the past & additional activities that may be beneficial. Existing programs were

included in the list of measures and were screened for implementation. The existing Targeted Technical Assistance and Incentives efficiency programs were not successful due to a lack of customer interest and staffing resources to implement the programs. These programs will not continue as part of the District's ongoing water efficiency program.

The qualitative screening criteria phase identified four qualitative goals prioritized by the District's needs and abilities. The first three phases were performed by the District Manager and Consultant. The final phase, phase four the evaluation and selection of the final water efficiency activities for the plan were performed by the District Manager, consultant, and District staff provided valuable input and data.

#### 4.2 Demand Management Activities

St. Charles Mesa Water District has chosen to focus on new efficiency activities pertaining to foundational activities. Table 3 indicates that 252 AF will be saved over a ten-year period by implementing the efficiency activities.

**Table 2 - SCMWD New and Updated Water Efficiency Activities**

Water Efficiency Activities	Sectors Impacted	Implementation Period of New Activities	Total Projected Savings	Projected Average Annual Savings
<b>Foundational Activities</b>				
Meter Replacement Program	Residential	2018 – 2022 (5 yrs)	92 AF	18 AF
Submetering for Large Users (Indoor and Outdoor)	Institutional	2020 – 2027 (8 yrs)	40 AF	5 AF
Identify & Rectify Unmetered/Unbilled Treated Water Uses	Commercial	2020 – 2027 (8 yrs)	120 AF	15 AF

**Table 3 – 2018 – 2028 Average Annual and Cumulative Water Savings in Acre-Feet**

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Average Annual Savings</b>	18	18	38	38	38	20	20	20	20	20
<b>Cumulative Savings</b>		37	75	114	152	172	192	212	232	252

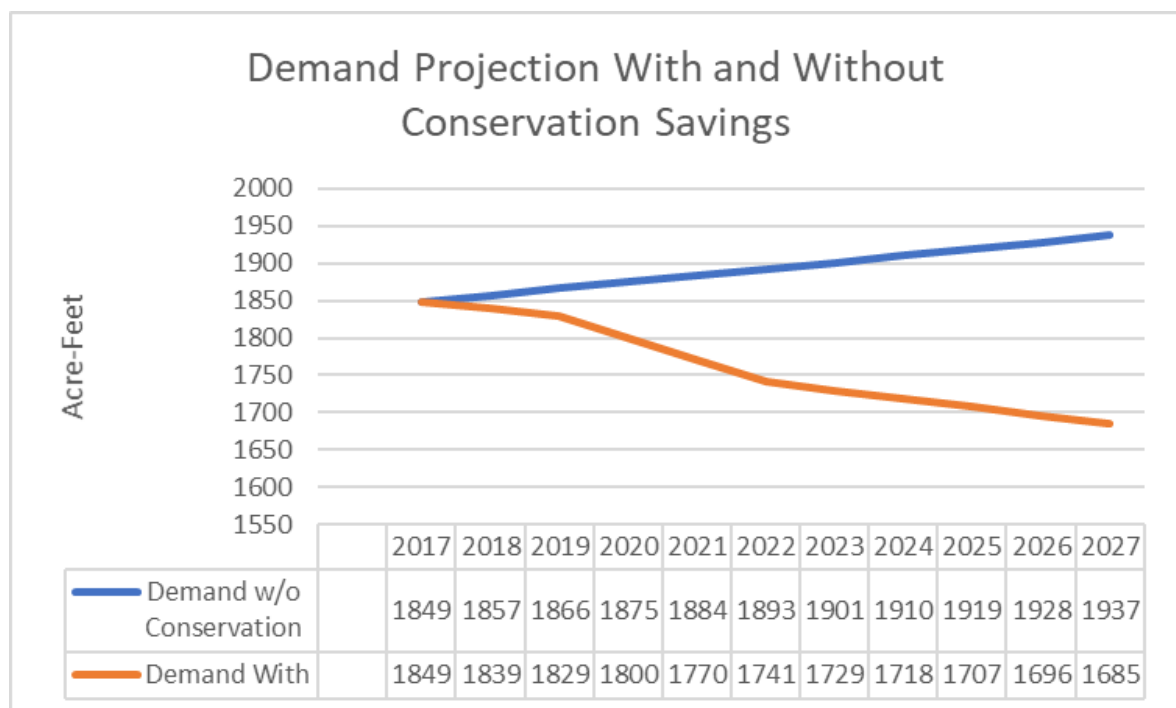
Upon full implementation non-revenue water shall be better accounted for. This will be tracked by comparing monthly meter readings at the treatment plant, versus the sum of all individual

meters. SCMWD expects unaccounted and non-revenue water to drop by approximately 252 AF from 2018 – 2027.

SCMWD estimates the cost to install 1,323 additional AMR meters will be \$246,383. The cost of submetering of two District 70 schools will be approximately \$5,800. The projected cost to construct the new bulk water plant and to install 250 Vanguard security devices on all fire hydrants may be \$135,000. The costs for the AMR meters, submetering the schools, constructing the bulk water station, and installing the hydrant security devices will be included in the 2019, 2020 and 2021 capital improvement plans. The total cost of implementing the 2019 Water conservation Plan is estimated to be \$387,183.

The District estimates the implementation of proposed projects in the 2019 Water Conservation Plan will reduce future demands by approximately 152 AF from 2018 – 2022 and 100 AF from 2023 – 2028. With full implementation of the plan the District will experience a savings of 252 AF over the ten-year period. This savings is illustrated in Figure 10.

**Figure 10 – Future Demand With and Without Conservation Savings**



#### 4.2.1 Foundational Activities

##### Meter Replacement Program

The replacement of existing inaccurate meters was a key component of the 2010 Water Conservation Plan. Meter replacement is also in the current and future Long-Range Capital Improvement Plan and the 2019 Updated Water Conservation Plan.



The reason this item is given top priority is to increase overall water efficiency by reducing the quantity of treated water which is put into the distribution system, but not registered by the individual customer meters. This program also encourages water conservation by requiring the customers to pay for the water they are actually utilizing.

The 2010 program entailed replacement of all existing meters over a 10-year span. This was intended to benefit the District, and the individual customer(s) in the following manner:

1. The new meters provide a more accurate accounting of the individual customer usage. This allows the District to better determine the amount of water which is being lost through leaks.
2. The new meters are radio-read, which saves the District time and money, related to the actual reading of the meters.
3. The new meters provide the District more accurate accounting of the effects of the various conservation measures and programs, that the District has and will continue to implement.

The goal for this program is the replacement of all individual meters, commencing in 2009, and finishing in 2022 (Approximately 330 meters annually). In 2010, 19% of the District's treated finished water was unaccounted for. The vast majority of the loss was due to the inaccuracies in the older existing water meters. From 2009 to 2017, the District has implemented its meter replacement program by replacing 2,977 old meters with Automated Meter Reading (AMR) units, which is 69% of all meters.

The District provided \$404,654 towards this effort from 2009 - 2017. The District also received support through CWCB Water Efficiency Grants to implement this program in 2011, 2012, and 2013 for a total of \$149,754. The Total cost of the replacement program was \$554,409.

In 2017, the difference between the amount of water produced and the amount registered by meters indicated the District's water loss was 12%. This is a reduction of 7% in water loss when compared with the 19% losses in 2010.

The District has included in its capital improvement plan for 2018 – 2022 the replacement of an additional 1,323 (31%) meters with AMR meters. All older meters will have been replaced by the new AMR meters in 2022 when the program is completed. Table 3 illustrates the water savings and cost over the five-year period.

**Table 4 – 2018- 2022 Meter Replacement Program Water Savings and Costs**

	METERS REPLACED	AF ANNUAL SAVINGS	ANNUAL COST
2018	100	7	\$18,623
2019	330	23	\$61,456
2020	330	23	\$61,456
2021	330	23	\$61,456
2022	233	16	\$43,392
TOTALS	1,323	92	\$246,383

This will meet the 2020 goal of replacing 100% of all of the old meters with AMR meters throughout the entire District. SCMWD goal is to reduce water loss by 5% through the meter replacement program over the next five-year period. This will result in an average of 18 AF per year water savings or 92 AF for the five-year period. The anticipated implementation cost is \$246,383.

From 2022 – 2027 the District will continue the meter replacement program by monitoring, testing, and replacing older AMR meters if they malfunction or reach their life expectancy. This expense will continue to be a part of the District's annual budget.

### **Submetering for Large Users (Indoor and Outdoor)**

SCMWD's largest water user is School District 70. From 2013 – 2017 District 70 schools annual average water use was 45,768,000 gallons or 140 AF per year. County High School and South Mesa Elementary School have the highest water use out of the eight District 70 water taps. On average the two schools annual water consumption is 38% of the total, with County High School's average being 23% (10,048,600 gals.) and South Mesa Elementary School's average is 15% (6,709,200 gals).

SCMWD has recognized this fact and intends to continue to work with the School District to submeter the two schools. In 2013 and 2014 SCMWD paid \$7,000 to have two seasonal irrigation audits performed at County High School. The auditing company provided written recommendations to the school on efficient irrigation management methods that would have reduced the amount of outside irrigation water use. These recommendations were ignored and not followed by the School District's Grounds Keeper. SCMWD is hopeful that the new submetering program would allow the School District management personnel to recognize the amount of water used inside the buildings and the amount of water being used for outdoor irrigation. The intent is for management personnel to differentiate the quantity of water and the associated costs that is the result of outdoor irrigation. By recognizing this fact, it is anticipated that management will encourage or even demand a reduction in outdoor water consumption. If the School District's managerial personnel (not the Grounds Keeper) recognizes this and asks the District for assistance in reducing their outside water consumption the District will consider their request and assist in finding a workable solution to the problem. The School District and SCMWD will have solid data collected from the submetering program that could assist in determining more efficient irrigation methods, reducing irrigated areas, and/or utilizing more water efficient plants and grasses.

The District intends to sub-meter both schools to track the indoor and outdoor water uses of each. Compound meters will be installed at both County High School and South Mesa Elementary. The savings goal is to reduce the individual school's water use by approximately 10%. By installing the compound meters SCMWD estimates the annual water saving at County High to be approximately 1,004,866 gals or 3 AF and at South Mesa Elementary to be 670,920

gals or 2 AF. This is an annual water saving for School District 70 of 1,675,786 gals or 5 AF. Over the eight-year implementation period the savings is estimated to be 13,406,2884 gals or approximately 40 AF of water. SCMWD goal is to reduce all of the overall Institutional water loss by 2% through the submetering program over an eight-year period. This will result in an average of 5 AF per year water savings or 40 AF during the implementation period. The cost to install 2 compound meters at the two schools will be \$5,800.

### **Identify & Rectify Unmetered/Unbilled Treated Water Uses**

Another source of non-revenue water loss is unauthorized use of fire hydrants. This type of unmetered water use contributes to the District's overall non-revenue water loss. As a new efficiency activity, the District intends to construct a new bulk water station to monitor the commercial and residential water use. The District estimates that the bulk water station will provide approximately 4 million gallons or 12.7 AF per year. The District water station will have an automated card reader that will track water use by the various contractors / customers. The card reader will provide valuable data to the District as to who is using the water, the amount of water each customer is using, and what the charges are for the water.

The District's goal is to track water sales at the bulk water station and bill customers for this water. This goal will reduce the amount of not accounted for water and non-revenue water. The District will be able to account for and sell approximately 4,000,000 gals each year to contractors / customers. Implementation of this goal will result in accounting for 36,000,000 gals or 110 AF over the nine-year implementation period. The cost of this program is estimated to be \$3,500 for the master meter, \$26,700 for the card reader, and construction of the bulk water station is estimated at \$74,800. Total project cost is estimated to be \$105,00.

The District has experienced frequent theft of water by others illegally tapping into fire hydrants within the District boundaries. This type of water use is not tracked and also contributes to the non-revenue water loss. The District estimates that approximately 850,000 gals or 2.3 AF of water is being stolen on an annual basis. The District's goal is to install Vanguard safety devices on the hydrants that will prevent unauthorized persons from opening the valves. The District will provide the Pueblo County Fire Department a specialized tool that will allow them access to open and use the hydrants.

The District's goal is to prevent illegal theft from fire hydrants, thus saving approximately 850,000 gals or 2.6 AF of water annually. This will result in an estimated savings of 8,354,700 gals or 26 AF over a nine-year period. The cost to implement this program will be \$30,000 to purchase 250 Vanguard safety devices for each fire hydrant within SCMWD's service boundaries.

SCMWD goal is to reduce commercial water loss by 6% through the Identify & Rectify Unmetered/Unbilled Treated Water Uses program over an eight-year period. This will result in an estimated savings of 15 AF per year water savings or 120 AF for the eight-year period.

### **Demand Data Collection and Billing Systems**

SCMWD has not encountered many limitations associated with collecting demand data. The billing system is able to distinguish between customer categories and satisfactorily displays monthly water use data. The District invoices all customers on a monthly basis. SCMWD has not experienced a loss of data during an update process and has rarely experienced errors in billing data. At this point, the District does not have a need for improvements or upgrades to the existing billing system to improve data collection.

### **Water Efficiency Oriented Rates and Tap Fees**

From its inception, the District has made every effort to minimize cost to the user, while maintaining a viable system. To promote responsible water use, the District has always utilized an inclining block rate. The District uses a tiered rate structure and various tap fees based on location. The purpose of the tiered rate structure is to encourage high-end users to use water efficiently. The District also performs a volumetric billing on a monthly basis.

SCMWD tap fees are divided into three main categories Zone 1, Zone 2 and Zone 3. Zone 1 tap fee is for users located west of the St. Charles River, where the customer density is high. Zone 2 tap fees are for users located east of the St. Charles River where the density is very low. Zone 3 is the recently annexed Zinno Subdivision. This rate is based on repayment of loans necessary for the replacement of a distribution system.

A listing of the current Tap Fees and Water Rates can be found in Appendix D.

District staff continually attends educational opportunities and trainings on rates and tap fees offered through Colorado Rural Water Association and American Water Works Association. SCMWD does not anticipate any new or changes to the tap fees. The District implements an annual rate increase of 3% to 5%. This increase provides funding for CIP projects and covers any annual cost of living increases incurred by the District.

### **System Water Loss Management and Control**

A result of the 2010 Water Conservation Plan, SCMWD implemented a Water Main Leak Detection Program. The program is performed annually, in the month of April. Each year the District identifies older portions of the distribution system, or any suspect areas. The District contracts with the Leak Detection Company, who performs a limited evaluation of that particular portion of the system identified by the District. Upon detection of a major leak, the District revises the Long-Range Capital Improvement Plan (CIP), to repair the leak. The Long-Range CIP may be modified to expedite repairs and replacement of water main problems which are identified through the leak detection program. Approximately 1% of the District's 185 miles of water distribution main (1.85 miles) is evaluated annually. In the past, this had only been performed on a complaint basis only.

SCMWD also has an active Distribution System Leak Detection Program, which targets areas for replacement in the CIP. This program is also performed annually, in the month of April. The target areas are comprised of the oldest, most undersized portion of the distribution system. The

improvements outlined in the CIP are also intended to increase the efficiency of the distribution system and help eliminate potential leaks. This process had previously been performed on an as-needed basis, based on customer complaints, pressure losses and visual inspection.

The District intends to continue both of these programs in the future. The District has considered pursuing training to conduct a system-wide water audit program through the Colorado Water Loss Initiative (CWLI). The CWLI is structured and funded for the largest 165 water systems in the state, not necessarily smaller systems like SCMWD. At this point in time, the District is not considered a “covered entity” by the state and has a water loss of only 8%. When the District qualifies as a “covered entity” or the District’s water loss percentage increases, the District will consider training and performing system-wide audits in the future.

#### **4.2.2 Targeted Technical Assistance and Incentives**

SCMWD has tried to implement these types of programs in the past. The District has evaluated these types of programs and found that targeted technical assistance and incentives have not been successful programs for implementation. The District’s 2010 Water Conservation Plan focused on these types of programs. The District offered several rebates for water-efficient appliances. Notice of the rebates was made available on billing inserts and on the District’s website. They did not receive any requests for these products from the customers. In addition, the District did not and currently does not have the staff necessary to promote, educate, implement, monitor, and track customers’ use of these types of programs. The District has instead decided to focus their attention on the foundational curricula of non-accounted for and non-revenue water programs. These programs will increase the District’s water supply through better efficiency and will increase revenues to support improvements to the system through the CIP.

#### **4.2.3 Ordinances and Regulations**

SCMWD currently has general regulations regarding the use of the District's water system. SCMWD Rules and Regulations are included in Appendix E. Every customer using water from the District's water system must agree to the terms and provisions of the Rules and Regulations and acknowledge the right of the District to discontinue water service in the event of the failure of a customer to comply with the terms and provisions of the Rules and Regulations, including failure to make timely payments of all rates and charges.

SCMWD has evaluated New Construction Regulations and Point of Sales Ordinances on existing building stock regulations and has determined they are not applicable at this time.

#### **4.2.4 Education Activities**

SCMWD offers their customers water conserving tips on their website, Lawn Watering Guide brochures in their lobby and upon request and performs phone consultations and occasionally a site visit when a customer has a problem or asks for advice on how to reduce their water

consumption. The District also provides financial support for the annual Pueblo Children's Water Festival.

SCMWD has evaluated and determined that other customer education and technical assistance programs are cost prohibitive at this point. The District does not have the resources or the staff to implement these types of programs at this time.

## **5.0 Implementation and Monitoring Plan**

### **5.1 Implementation Plan**

SCMWD has established an implementation Plan that is included in Appendix C, Worksheet J. The plan includes the selected activities, period of implementation and timeline, actions to implement each activity & milestones, and estimated costs by individual activity. The District anticipates that the implementation of the plan will reduce the amount of non-accounted for and non-revenue water. The installation of the residential AMR meters should increase revenues by having customers pay for the amount of water they are actually using. The installation of the bulk water station master meter and card reader gives the District the ability to bill contractors for the water they are currently using for free. It is anticipated that by installing the compound meters at the two schools, school managers will be aware of their outdoor irrigation use and will reduce the amount of water they are currently using. The change in irrigation habits will assist with reducing the peak summer water use. The District does not anticipate any negative reactions to the implementation of these activities.

### **5.2 Monitoring Plan**

SCMWD has developed a plan to monitor the implementation of the 2019 Water Conservation Plan. The District utilized Appendix C, Worksheet K and L to develop the monitoring plan. The monitoring plan includes the following:

- Total water use tracking
  - Total treated water distributed
  - System per capita water use
  - Total indoor/outdoor water use for schools with compound meters
  - System peak day water use
- Water use by customer category
  - Treated metered water use
  - Per capita water use
  - Indoor/outdoor metered use for schools with compound meters
  - Annual costs

The District will utilize the demand data for annual reporting to the state which is specified in worksheet K. Appendix C, Worksheet L provides the timing that each monitoring activity will



occur. This data has been incorporated into the monitoring plan. A summary of the monitoring & evaluation results will be presented to the SCWCD Board of Directors every 2 years.

## **6.0 Adoption of New Policy, Public Review, and Formal Approval**

### **6.1 Public Review Process**

The 60-day public comment period began on September 11, 2018 and ended on November 13, 2018.

On September 11, 2018 the SCWCD Water Efficiency Plan was posted on the District's website [www.stcharlesmesawaterdistrict.org](http://www.stcharlesmesawaterdistrict.org) and hard copies were available to any interested community member at the District's office, 1397 Aspen Road.

The District did not receive any public comments during the 60-day comment period. A copy of the public notice announcement is provided in Appendix F.

### **6.2 Local Approval and State Approval Processes**

The SCMWD Board of Directors formally adopted the 2019 Water Conservation Plan on February 13, 2019. The official water conservation plan adoption by the Board of Directors is included in Appendix F.

The SCMWD Water Conservation Plan was submitted to the Colorado Water Conservation Board Office of Water Conservation and Drought Planning on November 16, 2018. On DATE SCMWD received official notification that the plan was approved by the CWCB.

### **6.3 Periodic Review and Update**

SCMWD plans to review and update this conservation plan every seven years. The District will incorporate the data collected on an annual basis from monitoring the plan into the next Water Conservation Plan update. The next update is scheduled to be completed in 2025.

## Appendix A

### St. Charles Mesa Water District Water Rights Portfolio

# ST. CHARLES MESA WATER DISTRICT WATER RIGHTS AVAILABLE FOR DISTRICT USE

## SCMWD WELLS

WELL #	PERMIT #	STATE ID #	CWPDA #	GPM	AF/YEAR
1	9711-FR	1406208	613	200	207.7
6	RF-1189	1406207	610	200	207.7
8	4557-F	1406206	612	100	103.9
10	RF-185	1406210	609	100	103.9
TOTAL				<u>600</u>	<u>623.2</u> ACRE FEET

The District wells are augmented thru CWPDA

Acre Feet per year is based on 235 Days of pumping

<b>BESSEMER DITCH SHARES<sup>1</sup></b>	<b>NORMAL YEAR</b>	<b>2.92</b>	ACRE FEET PER SHARE <sup>2</sup>	
797.0150 04CW08 MUNICIPAL USE			2327.2838 ACRE FEET	<u>2001.4641</u> DELIVERED <sup>3</sup> 486.895 ACRE FEET
166.7450 Case W-373 & W- 374			402.2592 ACRE FEET	<u>345.9429</u> DELIVERED <sup>3</sup> 175.492 ACRE FEET
137.7600 09CW91 Municipal Use				
60.1000 SHARES LEASED IN SCMWD LATERAL(04CW08)			3391.9304 ACRE FEET	<u>2917.0601</u> DELIVERED
1161.6200 04CW08-09CW01 MUNICIPAL USE				
899.4420 SHARES USED ON FARMS - 04CW08 & 09CW91				
53.9800 New BD Shares Aquired (Leased to Farms)				
			<u>2054.9420</u> TOTAL OWNED	<u>5834.1203</u>

<b>BESSEMER DITCH SHARES</b>	<b>DRY YEAR</b>	<b>0.99</b>	<b>ACRE FEET PER SHARE<sup>4</sup></b>	
1161.6200 SHARES AVAILABLE FOR SCMWD LATERAL 1150.0038 ACRE FEET			<u>989.0033</u> DELIVERED	SHARES USED ON FARMS - 04CW08 &
899.4420 09CW91 890.44758 ACRE FEET			<u>765.7849</u> DELIVERED	
<u>2007.0820</u>				<u>1754.7882</u>

	AF/Share	Total Shares CU/Storage in AF
04CW08	1.47	857.115 1259.9591
09CW91	1.29	137.760 177.7104
TOTAL STORAGE		1437.6695

<b>ZOELLER DITCH - ST CHARLES</b>	620 ACRE FEET	<u>620.0000</u> DELIVERED	
<b>80CW163 &amp; 164</b>		<u>86.8000</u> 14% Loss	BD
<b>COTTONWOOD DITCH -BUENA VISTA</b>	Loss/YEAR		
	1040 ACRE FEET	<u>949.0000</u> DELIVERED <sup>5</sup>	
<b>W-4411</b>	Loss/YEAR	<u>132.8600</u> 14% Loss	BD
		<u>238</u> ACRE FEET	

<b>VELASQUEZ RIGHTS W-4791 &amp; 228</b>			
	<b>NORMAL YEAR</b>	<b>5347.2601</b>	TOTAL OF ALL SCMWD

WATER RIGHTS/YEAR LESS TRANSIT LOSS	<u>5196.3370</u> TOTAL/less Leased Shares
<b>DRY YEAR</b>	<u>3419.2033</u> TOTAL OF ALL SCMWD

## FRY-ARK PROJECT WATER

THE SCMWD MAINTAINS APPROXIMATELY 2000 ACRE FEET OF PROJECT WATER FOR A RESERVE SUPPLY

WATER RIGHTS/YEAR LESS TRANSIT LOSS	<u>3419.2033</u> TOTAL/less Leased Shares
<u>1.048</u> ACRE FEET <sup>6</sup> 2.0964% of Allocation	
<u>6.534</u> ACRE FEET STORAGE 17.47% OF 37.400	

<b>NORMAL YEAR</b>	<u>6395.2601</u> TOTAL OF ALL SCMWD	WATER RIGHTS AND FRY-ARK ALLOCATION LESS TRANSIT LOSS
<b>DRY YEAR</b>	<u>4467.2033</u> TOTAL OF ALL SCMWD	WATER RIGHTS AND FRY-ARK ALLOCATION LESS TRANSIT LOSS

- 2015.1140 shares of the Bessemer Irrigation Ditch Co. have been changed to municipal use in Case No. 04CW08 and 09CW91
- 2.92 af/share = historical average diversions 1911-2002
- Deliveries = headgate diversions less 14.1% ditch loss
- 1.81 af/share = average of 1940, 1954, 1963, 1974, 1977, and 2002 diversions (record dry years)
- Cottonwood Ditch deliveries = headgate diversions less 8% transit loss and 14% ditch loss
- District's annual allocation of Fry-Ark Project water

## Appendix B

### St. Charles Mesa Water District 20-Year Projection



## Appendix C

### St. Charles Mesa Water District CWCB Worksheets D – L

WORKSHEET D - IDENTIFICATION AND SCREENING OF FOUNDATIONAL ACTIVITIES

Water Efficiency Activities for Screening [1]	State Statute Requirement [2]	Identification		Qualitative Screening [5]						Carry to Evaluation [6]	Reason for Elimination [7]
		Existing/ Potential Activity [3]	Targeted Customer Category [4]	Feasible to Implement	Cost is Prohibitive	Significant Water Savings Expected	Not applicable at this time	Notes on Additional Pros/Cons to Consider			
<b>Metering (BP1)</b>	V, VII		2019-2021								
Automatic Meter Reading Installation and Operations		Existing & Potential	2019	X						X	
Submetering for Large Users (Indoor and Outdoor)		Potential	2019-2020	X		X				X	
Meter Testing and Replacement		Existing									
Meter Upgrades		Existing									
Identify Unmetered/Unbilled Treated Water Uses		Potential	Commercial	X		X				X	
Add additional activities											
<b>Data Collection - Monitoring and Verification (BP2)</b>											
Frequency of Meter Reading		Existing									
Tracking Water Use by Customer Type		Existing									
Upgrade Billing System to Track Use by Sufficient Customer Types		Existing									
Tracking Water Use for Large Customers		Existing									
Area of Irrigated Lands in Service Area (e.g. acres)		Potential	Residential		X		X				Cost prohibitive
Add additional activities											
<b>Water Use Efficiency Oriented Rates and Tap Fees (BP1)</b>	VII, VIII										
Volumetric Billing		Existing									
Water Rate Adjustments		Existing									
Frequency of Billing		Existing									
Inclining/Tiered Rates		Existing									
Water Budgets		Potential	Residential				X				NA
Tap Fees with Water Use Efficiency Incentives		Potential	Residential/Commercial		X		X				Cost prohibitive
Add additional activities											
<b>System Water Loss Management and Control (BP3)</b>	V										
System Wide Water Audits		Potential		X			X				NA
Control of Apparent Losses (with Metering)		Existing									
Leak Detection and Repair		Existing									
Water Line Replacement Program		Existing									
Add additional activities											
<b>Planning (BP2)</b>											
Integrated Water Resources Plans		Existing									
Master Plans/Water Supply Plans		Existing									
Capital Improvement Plans		Existing									
Feasibility Studies		Potential					X				NA
Add additional activities											
<b>Staff (BP4)</b>											
Water Conservation Coordinator		Potential			X						Cost prohibitive
Add additional activities											

Instructions:

[1] This column provides a list of possible activities & identifies the Best Practice activity as defined in the Colorado WaterWise Guidebook of Best Practices (BP) for Municipal Water Conservation in Colorado. List additional activities identified through the planning process.

[2] This column identifies, by roman numeral, the elements that correspond with the best practices and that shall be fully considered in the planning process per Colorado State Statute 37-60-126.

[3] Specify whether the activity is "Existing" or a "Potential" activity to carry through screening by entering an "E" or "P", respectively.

[4] As applicable, specify which customer category (residential, commercial, etc.) is/would be impacted by the activity.

[5] Enter screening criteria based on qualitative goals developed in Step 3 and insert an "X" for activities that meet the listed screening criteria.

[6] Based on the screening process, indicate which activities will be carried onto the the evaluation phase with an "X".

[7] If eliminated via screening, comment on why.



WORKSHEET E - IDENTIFICATION AND SCREENING OF TARGETED TECHNICAL ASSISTANCE INCENTIVES

Water Efficiency Activities for Screening (1)	State Statute Requirement (2)	Existing/ Potential Activity (3)	Identification 2019-2021					Qualitative Screening (8)					Carry to Evaluation (7)	Reason for Elimination (9)	
			2019	Level 2 Customers with this Target Water Use	Level 3 Customer Type(s) in Service Area	Targeted Customer Category (6)	Feasible to Implement	Costs Prohibitive	Significant Water Savings Expected	Not applicable at this time	Notes on Additional PresCons to Consider				
Installation of Water Efficient Fixtures and Appliances															
Indoor Audits	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Toilet Retrofits	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Urinal Retrofits	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Showerhead Retrofits	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Faucet Retrofits (e.g. aerator installation)	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Water Efficient Washing Machines	P	X	X	X	X	Res.		X		X				CP / NA	
Water Efficient Dishwashers	P	X	X	X	X	Res.		X		X				CP / NA	
Efficient Swamp Cooler and Air Conditioning Use	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Add additional activities															
Low Water Use Landscapes															
Drought Resistant Vegetation	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Removal of Phreatophytes	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Irrigation Efficiency Evaluations/Outdoor Water Audits	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Outdoor Irrigation Controllers	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Irrigation Scheduling/Tuning	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Rain Sensors	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Residential Outdoor Meter Installations	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Landscape	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Other Low Water Use Landscapes	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Irrigation Equipment Retrofits	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Water Efficient Industrial and Commercial Water-Using Processes															
Specialized Nonresidential Surveys, Audits and Equipment Efficiency Improvements	P		X			Comm. Installs		X		X				CP / NA	
Commercial Indoor Fixture and Appliance Rebates/Retrofits	P		X			Comm. Installs		X		X				CP / NA	
Cooling Equipment Efficiency	P		X			Comm. Installs		X		X				CP / NA	
Restaurant equipment	P		X			Comm. Installs		X		X				CP / NA	
Add additional activities															
Incentives															
Toilet Rebates	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Urinal Rebates	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Showerhead Rebates	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Water Efficient Faucet or Aerator Rebates	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Water Efficient Washing Machine Rebates	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Water Efficient Dishwasher Rebates	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Efficient Irrigation Equipment Rebates	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Landscape Water Budgets Information and Customer Feedback	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Turf Replacement Programs/Landscape Incentives	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
One-a-days	P	X	X	X	X	Res. Com. Installs		X		X				CP / NA	
Add additional activities															

Instructions:

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[2] This column identifies, by roman numeral, the elements that correspond with the best practices and that shall be fully considered in the planning process per Colorado State Statute 37-60-126.

[3] Specify whether the activity is an "Existing" or "Potential" activity to carry through screening by entering an "E" or "P", respectively.

[4] Specify which level the historical/potential activities fall under by entering an "X" in the appropriate column.

[5] As applicable, specify which customer category (residential, commercial, etc.) should be impacted by the activity.

[6] Enter screening criteria based on qualitative goals developed in Step 3 and insert an "X" for activities that meet the listed screening criteria.

[7] Based on the screening process, indicate which activities will be carried on the evaluation phase with an "X".

[8] If eliminated via screening, comment on why.

WORKSHEET F - IDENTIFICATION AND SCREENING OF ORDINANCES AND REGULATIONS

Water Efficiency Activities for Screening (1)	State Statute Requirement (2)	Existing/ Potential Activity (3)	Identification 2019-2021				Targeted Customer Category (5)	Qualitative Screening (8)						Carry to Evaluation (7)	Reason for Elimination (9)
			2019	Level 2 New Development	Level 3 Point of Sales Building Stock	Feasible to Implement		Costs Prohibitive	Significant Water Savings Potential	Not Applicable at this time	Notes on Additional Pres-cons to Consider				
General Water Use Regulations (1)			2019-2021												
Water Waste Ordinance (BP 5)		P	X	X		Res. Comm. Institu					X			NA	
Time of Day Watering Restriction		Existing	X	X		Res. Comm. Institu								Existing	
Day of Week Watering Restriction		Existing	X	X		Res. Comm. Institu								Existing	
Water Overspray Limitations <i>add additional activities</i>		P	X	X		Res. Comm. Institu					X			NA	
Landscape Design/Installation Rules and Regulations (1)											X				
Rules and Regulations for Landscape Design/Installation (BP 9)		P	X	X	X	Res. Comm. Institu								NA	
Landscape Training and Certification (BP 8)		P	X	X	X	Res. Comm. Institu					X			NA	
Irrigation System Installer Training and Certification (BP 8)		P	X	X	X	Res. Comm. Institu					X			NA	
Soil Amendment Requirements (BP 9)		P	X	X	X	Res. Comm. Institu					X			NA	
Turf Restrictions (BP 9)		P	X	X	X	Res. Comm. Institu					X			NA	
Irrigation Equipment Requirements		P	X	X	X	Res. Comm. Institu					X			NA	
Outdoor Water Audit/Irrigation Efficiency Regulations (BP 10)		P	X	X	X	Res. Comm. Institu					X			NA	
Outdoor Green Building Construction (BP 8,9) <i>add additional activities</i>		P	X	X	X	Res. Comm. Institu					X			NA	
Indoor and Commercial Regulations (1)															
High Efficiency Fixture and Appliance Replacement (BP 12)		P	X	X	X	Res. Comm. Institu					X			NA	
Commercial Cooling and Process Water Requirements (BP 14)		P	X	X	X	Comm. Institu					X			NA	
Green Building Construction (BP 12)		P	X	X	X	Comm. Institu					X			NA	
Indoor Plumbing Requirements (BP 12)		P	X	X	X	Res. Comm. Institu					X			NA	
City Facility Requirements (BP 12)		P	X	X	X	Comm. Institu					X			NA	
Required Indoor Residential Audits (BP 13)		P	X	X	X	Residential					X			NA	
Required Indoor Commercial Audits (BP 14)		P	X	X	X	Commercial					X			NA	
Commercial Water Wise Use Regulations (Car Washes, Restaurants, etc.) <i>add additional activities</i>		P	X	X	X	Commercial					X			NA	

Instructions:  
 (1) This column provides a list of possible activities & if applicable identifies the Best Practice activity as defined under Colorado WaterWise Outbook of Best Practices (BP) for Municipal Water Conservation in Colorado. List additional activities identified through the planning process.  
 (2) This column identifies, by roman numeral, the elements that correspond with the best practices and that shall be fully considered in the planning process per Colorado State Statute 37-60-126.  
 (3) Specify whether the activity is an "Existing" or "Potential" activity to carry through screening by entering an "E" or "P", respectively.  
 (4) For current/historic activities, specify which level the activities fall under by entering an "X" in the appropriate column.  
 (5) As applicable, specify which customer category (residential, commercial, etc.) it would be impacted by the activity.  
 (6) Enter screening criteria based on qualitative goals developed in Step 3 and insert an "X" for activities that meet the listed screening criteria.  
 (7) Based on the screening process, indicate which activities will be carried on to the evaluation phase with an "X".  
 (8) If eliminated via screening, comment on why.

WORKSHEET G - IDENTIFICATION AND SCREENING OF EDUCATION ACTIVITIES

Water Efficiency Activities for Screening [1]	State Statute Requirement [2]	Existing/ Potential Activity [3]	Identification 2019-2021				Targeted Customer Category [5]	Qualitative Screening [6]						Carry to Evaluation [7]	Reason for Elimination [8]
			2019	Level 2 One-Way with Feedback	Level 3 Two-Way communication	Feasible to implement		Cost is Prohibitive	Significant Savings Expected	Not-applicable at this time	Notes on Additional Pros/Cons to Consider				
Customer Education (BP6)			2019-2020												
Bill Stuffers		P	X			Res,Comm,Institu								Cost Prohibitive	
Newsletter		P	X			Res,Comm,Institu		X						Cost Prohibitive	
Newspaper Articles		P	X			Res,Comm,Institu		X						Cost Prohibitive	
Mass Mailings		P	X			Res,Comm,Institu		X						Cost Prohibitive	
Web Pages		E	X			Res,Comm,Institu					EXISTING				
Water Fairs		E		X	X	Res,Comm,Institu					EXISTING				
K-12 Teacher and Classroom Education Programs		P		X	X	Res,Comm,Institu		X						Cost Prohibitive	
Message Development/Campaign		P	X	X		Res,Comm,Institu		X						Cost Prohibitive	
Interactive Websites		P	X	X		Res,Comm,Institu		X						Cost Prohibitive	
Social Networking (e.g Facebook)		P	X	X		Res,Comm,Institu		X						Cost Prohibitive	
Customer Surveys		P		X	X	Res,Comm,Institu		X						Cost Prohibitive	
Focus Groups		P		X	X	Res,Comm,Institu		X						Cost Prohibitive	
Citizen Advisory Boards		P		X	X	Res,Comm,Institu		X						Cost Prohibitive	
Add additional activities														Cost Prohibitive	
Technical Assistance			VI												
Customer Water Use Workshops		P		X	X	Res,Comm,Institu		X						Cost Prohibitive	
Landscape Design and Maintenance Workshops		P		X	X	Res,Comm,Institu		X						Cost Prohibitive	
Xeriscape Demonstration Garden		P	X			Res,Comm,Institu		X						Cost Prohibitive	
Water Conservation Expert Available		P		X	X	Res,Comm,Institu		X						Cost Prohibitive	
Add additional activities															

Instructions:

[1] This column provides a list of possible activities & if applicable identifies the Best Practice activity as defined under Colorado WaterWise Guidebook of Best Practices (BP) for Municipal Water Conservation in Colorado. List additional activities identified through the planning process.

[2] This column identifies, by roman numeral, the elements that correspond with the best practices and that shall be fully considered in the planning process per Colorado State Statute 37-60-126.

[3] Specify whether the activity is an "Existing" or "Potential" activity to carry through screening by entering an "E" or "P", respectively.

[4] For current/historical activities, specify which level the activities fall under by entering an "X" in the appropriate column.

[5] As applicable, specify which customer category (residential, commercial, etc.) is/would be impacted by the activity.

[6] Enter screening criteria based on qualitative goals developed in Step 3 and insert an "X" for activities that meet the listed screening criteria.

[7] Based on the screening process, indicate which activities will be carried on to the evaluation phase with an "X".

[8] If eliminated via screening, comment on why.

WORKSHEET H - EVALUATION AND SELECTION OF WATER EFFICIENCY ACTIVITIES

Water Efficiency Activities for Evaluation [1]	Existing/ Potential Activity [2]	Targeted Customer Category [3]	Review of Qualitative Screening				Projected Water Savings [5]		Evaluation					Final Selection [8]	
			2019-2021				Total Water Savings	Average Annual Water Savings	Projected Implementation Costs [6]	Quantitative Goals [7]					
			2019	Cost is Prohibitive	Significant Water Savings Expected	Not applicable at this time				Reduction of Summer Peak Demands	Economic Viability/ Cost Effectiveness	Reflects WCP Goals			
													Notes on Additional Programs to Consider		
														Selected for Implementa- tion	If Eliminated, Reason Why Eliminated
Foundational Activities			2019-2020												
Automatic Meter Reading Installation and Operations	Potential	Res. Comm., & Instit.	X		X				\$ 70,560	X	X	X		X	
Submetering for Large Users (Indoor and Outdoor)	Potential	Institutional	X		X		50 AF	5 AF	\$ 5,800	X	X	X		X	
Identify Unmetered/Unbilled Treated Water Uses	Potential	Commercial	X		X		150 AF	15 AF	\$ 135,000	X	X	X		X	
Targeted Technical Assistance and Incentives															
List Targeted Technical Assistance and Incentives selected post screening															
List Targeted Technical Assistance and Incentives selected post screening															
List Targeted Technical Assistance and Incentives selected post screening															
Ordinances and Regulations															
List Ordinances and Regulations selected post screening															
List Ordinances and Regulations selected post screening															
List Ordinances and Regulations selected post screening															
Education Activities															
List Education Activities selected post screening															
List Education Activities selected post screening															
List Education Activities selected post screening															

Instructions:  
 [1] List of water efficiency activities that were carried to the evaluation process (based upon Worksheets D through G).  
 [2] Specify whether the activity is "Existing" or "Potential" activity by entering an "E" or "P", respectively.  
 [3] As applicable, specify which customer category (residential, commercial, etc.) would be impacted by the activity.  
 [4] Enter the screening results from Worksheets D through G by entering the screening criteria and appropriate "X" designations.  
 [5] As applicable, enter the estimated water savings to implement the activities within the planning horizon and the average annual water savings. Enter N/A if the water savings can not be estimated with reasonable accuracy.  
 [6] As applicable, enter the estimated annual costs.  
 [7] Enter evaluation criteria based on quantitative goals developed in Step 3 and insert an "X" for activities that meet the listed criteria.  
 [8] Enter an "X" for activities selected for implementation and provide an explanation if an activity was not selected for implementation.

WORKSHEET I - SELECTED WATER EFFICIENCY ACTIVITIES AND ESTIMATED WATER SAVINGS

Selected Water Efficiency Activities (1)	Implementation Period of Historical Activities (2)	Historical Total Water Savings (3)	Implementation Period of New Activities (4)	Projected Water Savings for Planning Period (5)
<b>Foundational Activities</b>				
Automatic Meter Reading Installation and Operations	2010 - 2019	212 AF annual	2019-2021	250 AF annual
Submetering for Large Users (Indoor and Outdoor)	NA	NA	2019-2020	6 annual
Identify Unmetered/Unbilled Treated Water Uses	NA	NA	2019 - 2028	15 annual
<b>Targeted Technical Assistance and Incentives</b>				
List selected Technical Assistance and Incentives Activities				
List selected Technical Assistance and Incentives Activities				
List selected Technical Assistance and Incentives Activities				
<b>Ordinances and Regulations</b>				
List selected Ordinances and Regulations				
List selected Ordinances and Regulations				
List selected Ordinances and Regulations				
<b>Education Activities</b>				
List selected Education Activities				
List selected Education Activities				
List selected Education Activities				

Instructions:

[1] Provide the list of water efficiency activities selected for implementation based on Worksheet H.

[2] Include the period of time when historical activities were implemented. For potential activities, include "N/A".

[3] Provide total water savings for historical activities (average annual or total cumulative savings). For potential activities, include "N/A".

[4] Indicate when new activities will be implemented. For existing activities, include "N/A".

[5] Specify potential future water savings for both historical/ current and new activities (average annual or total cumulative savings).

**WORKSHEET J - IMPLEMENTATION PLAN**

Selected Water Efficiency Activities (1)	Period of Implementation (2)	Implementation Actions (3)	Milestone Deadlines (4)	Annual Budget (\$1,000) (5)	Entity/Staff Responsible for Implementation (6)	Coordination and Public Involvement (7)	Additional Comments (8)
<b>Foundational Activities</b>							
Automatic Meter Reading Installation and Operations	2019 - 2020	Install 1,323 AMR meters	2019-2021	\$ 70,560	Operations Manager	Work with customers if access to the meter is needed and answer any questions they may have.	
Submetering for Large Users (Indoor and Outdoor)	2019 - 2028	Install compound meters at 2 schools	2019	\$ -	Operations Manager	Work with school managers to install the meters. Explain the value of knowing the amount of indoor and outdoor water that is being used.	
Identify Unmetered/Unbilled Treated Water Uses	2019 - 2028	Install new bulk water station with master meter and card reader & install Vanguard safety devices on 250 fire hydrants	2019-2020	\$ -	Operations Manager	Notify contractors that utilize the bulk water station that the station is being metered and moving forward they will be charged for the water they use.	
<b>Targeted Technical Assistance and Incentives</b>							
List selected Technical Assistance and Incentives Activities							
List selected Technical Assistance and Incentives Activities							
List selected Technical Assistance and Incentives Activities							
<b>Ordinances and Regulations</b>							
List selected Ordinances and Regulations							
List selected Ordinances and Regulations							
List selected Ordinances and Regulations							
<b>Education Activities</b>							
List selected Education Activities							
List selected Education Activities							
List selected Education Activities							

**Instructions:**

[1] Provide the list of water efficiency activities selected for implementation during Step 4.

[2] Provide period in which activity is going to be implemented.

[3] Include information on specific actions necessary to implement the activities (e.g. advertise rebates to public).

[4] Indicate timing of when the action are scheduled to be implemented (e.g. when leaks will be repaired, when rebate program will start, etc.).

[5] Insert anticipated annual costs.

[6] Specify which entity/staff responsible for implementing the activities.

[7] If applicable, comment on necessary coordination among staff/other entities and how the public will be involved. This includes educational campaigns, feedback, direct participation in certain actions, etc.

[8] Add any additional comments.

WORKSHEET K - SELECTION OF MONITORING DEMAND DATA FOR MONITORING PLAN

Monitoring Data (1)	HB 10-1051 Reporting Requirement (2)				Selection (3)				Entity/Staff Responsible for Data Collection and Evaluation (4)	Schedule/Timing of Monitoring (5)	Comments (6)
	Annual	Monthly	Bi-Monthly	Daily	Annual	Monthly	Bi-Monthly	Daily			
<b>Total Water Use</b>											
Total treated water produced (metered at WTP discharge)								X	WTP Operator	Daily	
Total treated water delivered (sum of customer meters)		X						X	WTP Operator	Daily	
Raw non-potable deliveries											
Reclaimed water produced (metered at WWTP discharge)											
Reclaimed water delivered (sum of customer meters)											
Per capita water use		X				X			Administrative Assistant & Bookkeeper	End of each month	e.g. method of calculation
Indoor and outdoor treated water deliveries						X			WTP Operator	Daily	e.g. estimation method
Treated water peak day produced				X				X	WTP Operator	Daily	
Reclaimed water peak day produced											
Raw water peak day produced/delivered											
Non-revenue water		X						X	WTP Operator	End of each month	
<i>Insert other demand data</i>											
<b>Water Use by Customer Type</b>											
Treated water delivered		X		X				X	WTP Operator	Daily	
Raw non-potable deliveries											
Reclaimed water delivered											
Residential per capita water use		X				X			Administrative Assistant & Bookkeeper	End of each month	e.g. method of calculation
Unit water use (e.g. AF/ac count or AF/irrigated acre)											e.g. method of calculation
Indoor and outdoor treated water deliveries						X			Administrative Assistant & Bookkeeper	End of each month	e.g. estimation method
Large users								X	Administrative Assistant & Bookkeeper	End of each month	note: could either specify use of individual customers or show aggregate total
<i>Insert other demand data</i>											
<b>Other Demand Related Data</b>											
Irrigated landscape (e.g. AF/acre or number of irrigated acres)											specify whether total irrigated lands in service area and/or per customer types (e.g. parks)
Precipitation											
Temperature											
Evapotranspiration											
Drought index information											
Economic conditions		X							District Manager	End of each year	
Population									Administrative Assistant & Bookkeeper	End of each month	
New taps		X						X			
<i>Insert other demand related data</i>											

Instructions:

[1] This worksheet provides a list of possible demand data. Add additional demand data provider would like to monitor.

[2] Specifies annual reporting requirements per HB 10-1051.

[3] Select demand data provider plans to use to monitor effectiveness of water efficiency activities by inserting an "X" in appropriate boxes.

[4] Specify staff/entity responsible for data collection and evaluation.

[5] Specify the timing and/or set schedule in which data will be collected and evaluated.

[6] Add any additional comments.



WORKSHEET L - MONITORING PLAN

[illegible]

[1] Provide the list of water efficiency activities selected for implementation during Step 4

[2] As applicable, specify which customer category (Residential, Commercial, etc.) is/should be impacted by the activity.

[3] Enter type of demand data selected in Worksheet K (e.g. total annual treated water delivered or monthly treated water delivered by customer type). Enter an "X" for each activity that will be monitored by the respective demand data type

[4] If applicable, enter description of parameters to record for each activity (e.g. number of workshops, fixture/furniture replacements, rebates and audits; acres of wetlands; and length of pipeline replaced)

[5] Select other data to be collected for monitoring of each activity by inserting an "X" in appropriate boxes.

[6] Specify staff/entity responsible for data collection and evaluation

[7] Specify the timing and/or schedule in which data will be collected and evaluated

(8) Add any additional comments.

## Appendix D

### St. Charles Mesa Water District 2017 Tap Fees and Water Rates

## ST. CHARLES MESA WATER DISTRICT

**2012 WATER TAP FEES / MAY 11, 2006 / REVISION OF ARTICLE XI, SECTION 19.01**

BASED ON INTEGRATED UTILITIES PLANT INVESTMENT FEE STUDY AND FINANCIAL PLAN PREPARED FOR ST. CHARLES MESA WATER DISTRICT AND ADOPTED BY THE BOARD OF DIRECTORS DECEMBER 13, 2006.

BESSEMER IRRIGATION DITCH COMPANY SHARES MUST BE PROVIDED BY APPLICANT AT NO CHARGE TO THE DISTRICT OR PURCHASED FROM THE WATER BANK PRIOR TO RECORDATION OF FINAL PLAT OF SUBDIVISION OR PRIOR TO REQUEST FOR CONNECTION TO DISTRICT'S WATER SYSTEM, WHICHEVER OCCURS FIRST. ARTICLE XI, SECTION - REVISED AND ADOPTED MAY 10, 2006

WEST OF ST. CHARLES RIVER

WATER TAP COSTS FOR PROPERTY THAT

HAVE NO BESSEMER DITCH SHARES

SIZE OF WATER SERVICE	WATER METER MAX. FLOW CAPABILITIES	BESSEMER DITCH SHARES REQUIRED PER TAP	METER EQUIVALENCY RATIO	REIMBURSEMENT FEE	IMPROVEMENT FEE	INSTALLATION COSTS	WATER TAP TOTAL COST	WATER BANK SHARE COST	WATER TAP COST WITH WATER BANK SHARE
5/8" X 3/4"	20	1	1	\$2,075.00	\$3,635.00	\$1,000.00	<b>\$6,710.00</b>	\$5,028.00	\$11,738.00
1"	50	2	1.7	\$3,527.50	\$6,179.50	\$1,500.00	<b>\$11,207.00</b>	\$10,056.00	\$21,263.00
1 1/2"	120	7	3.3	\$6,847.50	\$11,995.50	\$3,000.00	<b>\$21,843.00</b>	\$35,196.00	\$57,039.00

**NO WATER TAP LARGER THAN 1 1/2 INCH CAN BE INSTALLED WEST OF THE ST. CHARLES RIVER WITHOUT BEING EVALUATED BY THE DISTRICTS HYDRAULIC MODEL AND APPROVED BY THE BOARD OF DIRECTORS**

2"	160	10	5.3	\$10,997.50	\$19,265.50	\$5,000.00	<b>\$35,263.00</b>		
3"	320	25	10.7	\$22,202.50	\$38,894.50	\$10,000.00	<b>\$71,097.00</b>		
4"	500	40	16.7	\$34,652.50	\$60,704.50	\$25,000.00	<b>\$120,357.00</b>		

EAST OF ST. CHARLES RIVER

SIZE OF WATER SERVICE	WATER METER MAX. FLOW CAPABILITIES	BESSEMER DITCH SHARES REQUIRED PER TAP	METER EQUIVALENCY RATIO	REIMBURSEMENT FEE	IMPROVEMENT FEE	INSTALLATION COSTS	WATER TAP TOTAL COST	WATER BANK SHARE COST	WATER TAP COST WITH WATER BANK SHARE
5/8" X 3/4"	20	1	1	\$2,075.00	\$9,946.00	\$1,000.00	<b>\$13,021.00</b>	\$5,028.00	\$18,049.00
1"	50	2	1.7	\$3,527.50	\$16,908.20	\$1,500.00	<b>\$21,935.70</b>	\$10,056.00	\$31,991.70

**NO WATER TAP LARGER THAN 1 INCH CAN BE INSTALLED EAST OF THE ST. CHARLES RIVER WITHOUT BEING EVALUATED BY THE DISTRICTS HYDRAULIC MODEL AND APPROVED BY THE BOARD OF DIRECTORS**

1 1/2"	120	7	3.3	\$6,847.50	\$32,821.80	\$3,000.00	<b>\$42,669.30</b>		
2"	160	10	5.3	\$10,997.50	\$52,713.80	\$5,000.00	<b>\$68,711.30</b>		
3"	320	25	10.7	\$22,202.50	\$106,422.20	\$10,000.00	<b>\$138,624.70</b>		
4"	500	40	16.7	\$34,652.50	\$166,098.20	\$25,000.00	<b>\$225,750.70</b>		

**WATER TAP FEES FOR SUBDIVISIONS APPLICATIONS APPROVED BY THE BOARD OF DIRECTORS ON OR BEFORE MAY 10, 2006**

WATER SERVICE TO SUBDIVISIONS FOR COMMITMENT LETTERS ("WILL SERVE" LETTERS) PROVIDED BY THE DISTRICT ON OR BEFORE MAY 10, 2006

SIZE OF WATER SERVICE	WATER METER MAX. FLOW CAPABILITIES	BESSEMER DITCH SHARES REQUIRED PER TAP	WATER RIGHTS CURRENT MARKET COST PER SHARE
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REIMBURSEMENT FEE	IMPROVEMENT FEE	INSTALLATION COSTS	WATER ACQUISITION LEGAL AND TRANSFER COST	WATER TAP TOTAL COST
\$2,075.00	\$3,635.00	\$1,000.00	\$0.00	<b>\$9,710.00</b>
\$2,075.00	\$9,946.00	\$1,000.00		
			\$0.00	<b>\$16,021.00</b>

WHICH

WERE

(DATE OF

ADOPTION OF REVISED RULES

INCLUDING WATER BANK) WILL REMAIN SUBJECT TO THE CONDITIONS SET FORTH IN THE RESPECTIVE COMMITMENT LETTERS ISSUED BY THE DISTRICT FOLLOWING THE DISTRICT'S AGREEMENT TO PROVIDE THE REQUESTED WATER SERVICE

5/8" X 3/4"	20	1	<u>\$3,000.00</u>
5/8" X 3/4"	20	1	<u>\$3,000.00</u>

**ZONE II  
WATER TAP FEES  
NO TAPS AVAILABLE**

**Appendix A**  
**St. Charles Mesa Water District**  
**2014 WATER RATES**

Rate Code 1	Meter 5/8 X 3/4				Cumulative	Cost Per 1,000 Gal.
First	0	Gallons			<b>\$20.00</b> Minimum	20.00
Next	5,000	Gallons	\$1.17	5,000	\$25.85	5.1700
Next	30,000	Gallons	\$1.96	35,000	\$84.65	2.4186
next	0	Gallons	\$0.00	35,000	\$84.65	2.4186
All Over	35,000	Gallons	\$2.75	70,000	\$180.90	2.5843

Rate Code 2	ZONE 2 5/8X3/4" Meter				Cumulative	Cost Per 1,000 Gal.
First	0	Gallons			<b>\$20.00</b> Minimum	20.00
Next	5,000	Gallons	\$1.35	5,000	\$26.75	5.3500
Next	25,000	Gallons	\$2.30	30,000	\$84.25	2.8083
next	0	Gallons	\$0.00	30,000	\$84.25	2.8083
All Over	30,000	Gallons	\$3.30	60,000	\$183.25	3.0542

Rate Code 3	ZONE 2 5/8X3/4" Meter				Cumulative	Cost Per 1,000 Gal.
First	0	Gallons			<b>\$34.00</b> Minimum	34.00
Next	5,000	Gallons	\$1.35	5,000	\$40.75	8.1500
Next	25,000	Gallons	\$2.30	30,000	\$98.25	3.2750
next	0	Gallons	\$0.00	30,000	\$98.25	3.2750
All Over	30,000	Gallons	\$3.30	60,000	\$197.25	3.2875

Rate Code 4	5/8 X 3/4 COMMERCIAL				Cumulative	Cost Per 1,000 Gal.
First	0	Gallons			<b>\$20.00</b> Minimum	20.00
Next	12,000	Gallons	\$1.59	12,000	\$39.08	3.2567
Next	70,000	Gallons	\$2.31	82,000	\$200.78	2.4485
next	0	Gallons	\$0.00	82,000	\$200.78	2.4485
All Over	82,000	Gallons	\$2.39	164,000	\$396.76	2.4193

Rate Code 5	1" Meter				Cumulative	Cost Per 1,000 Gal.
First	0	Gallons			<b>\$34.00</b> Minimum	34.00
Next	5,000	Gallons	\$1.18	5,000	\$39.90	7.9800
Next	30,000	Gallons	\$1.98	35,000	\$99.30	2.8371
next	0	Gallons	\$0.00	35,000	\$99.30	2.8371
All Over	35,000	Gallons	\$2.77	70,000	\$196.25	2.8036

Rate Code 6	1" Meter COMMERCIAL				Cumulative	Cost Per 1,000 Gal.
First		Gallons			<b>\$34.00</b> Minimum	34.00
Next	20,000	Gallons	\$1.62	20,000	\$66.40	3.3200
Next	260,000	Gallons	\$2.33	280,000	\$672.20	2.4007
next	0	Gallons	\$0.00	280,000	\$672.20	2.4007
All Over	280,000	Gallons	\$4.24	560,000	\$1,859.40	3.3204

<b>Rate Code 7</b>	<b>1 1/2" Meter COMMERCIAL</b>				<b>Cumulative</b>		<b>Cost Per</b>
First	0	Gallons			<b>\$66.00</b>	Minimum	1,000 Gal.
Next	40,000	Gallons	\$1.67	40,000	\$132.80		66.00
Next	560,000	Gallons	\$2.34	600,000	\$1,443.20		3.3200
next	0	Gallons	\$0.00	600,000	\$1,443.20		2.4053
All Over	600,000	Gallons	\$4.24	1,200,000	\$3,987.20		2.4053
							3.3227

<b>Rate Code 8</b>	<b>1 1/2" LANDFILL</b>				<b>Cumulative</b>		<b>Cost Per</b>
First	0	Gallons			<b>\$66.00</b>	Minimum	1,000 Gal.
Next	75,000	Gallons	\$2.53	75,000	\$255.75		66.000
Next	300,000	Gallons	\$4.03	375,000	\$1,464.75		3.4100
next	0	Gallons	\$0.00	375,000	\$1,464.75		3.9060
All Over	375,000	Gallons	\$5.84	750,000	\$3,654.75		3.9060
							4.8730

<b>Rate Code 9</b>	<b>2" Meter COMMERCIAL</b>				<b>Cumulative</b>		<b>Cost Per</b>
First	0	Gallons			<b>\$106.00</b>	Minimum	1,000 Gal.
Next	64,000	Gallons	\$1.65	64,000	\$211.60		106.00
Next	800,000	Gallons	\$2.37	864,000	\$2,107.60		3.3063
next	0	Gallons	\$0.00	864,000	\$2,107.60		2.4394
All Over	864,000	Gallons	\$4.29	1,728,000	\$5,814.16		2.4394
							3.3647

<b>Rate Code 10</b>	<b>3" METER COMMERCIAL</b>				<b>Cumulative</b>		<b>Cost Per</b>
First	0	Gallons			<b>\$214.00</b>	Minimum	1,000 Gal.
Next	128,000	Gallons	\$1.61	128,000	\$420.08		214.00
Next	1,200,000	Gallons	\$2.31	1,328,000	\$3,192.08		3.2819
next	0	Gallons	\$0.00	1,328,000	\$3,192.08		2.4037
All Over	1,328,000	Gallons	\$4.29	2,656,000	\$8,889.20		2.4037
							3.3468

<b>Rate Code 11</b>	<b>4" METER COMMERCIAL</b>				<b>Cumulative</b>		<b>Cost Per</b>
First	0	Gallons			<b>\$334.00</b>	Minimum	1,000 Gal.
Next	200,000	Gallons	\$1.61	200,000	\$656.00		334.00
Next	2,000,000	Gallons	\$2.31	2,200,000	\$5,276.00		3.2800
next	0	Gallons	\$0.00	2,200,000	\$5,276.00		2.3982
All Over	2,200,000	Gallons	\$4.29	4,400,000	\$14,714.00		2.3982
							3.3441

**St. Charles Mesa Water District**  
**2015 WATER RATES**

Rate Code 1	Meter 5/8 X 3/4				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$21.00</b>	Minimum	21.00
Next	5,000	Gallons	\$1.17	5,000	\$26.85		5.3700
Next	30,000	Gallons	\$1.96	35,000	\$85.65		2.4471
next	0	Gallons	\$0.00	35,000	\$85.65		2.4471
All Over	35,000	Gallons	\$2.75	70,000	\$181.90		2.5986

Rate Code 2	ZONE 2 5/8X3/4" Meter				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$21.00</b>	Minimum	21.00
Next	5,000	Gallons	\$1.35	5,000	\$27.75		5.5500
Next	25,000	Gallons	\$2.30	30,000	\$85.25		2.8417
next	0	Gallons	\$0.00	30,000	\$85.25		2.8417
All Over	30,000	Gallons	\$3.30	60,000	\$184.25		3.0708

Rate Code 3	ZONE 2 5/8X3/4" Meter				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$35.70</b>	Minimum	35.70
Next	5,000	Gallons	\$1.35	5,000	\$42.45		8.4900
Next	25,000	Gallons	\$2.30	30,000	\$99.95		3.3317
next	0	Gallons	\$0.00	30,000	\$99.95		3.3317
All Over	30,000	Gallons	\$3.30	60,000	\$198.95		3.3158

Rate Code 4	5/8 X 3/4 COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$21.00</b>	Minimum	21.00
Next	12,000	Gallons	\$1.59	12,000	\$40.08		3.3400
Next	70,000	Gallons	\$2.31	82,000	\$201.78		2.4607
next	0	Gallons	\$0.00	82,000	\$201.78		2.4607
All Over	82,000	Gallons	\$4.39	164,000	\$561.76		3.4254

Rate Code 5	1" Meter				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$35.70</b>	Minimum	35.70
Next	5,000	Gallons	\$1.18	5,000	\$41.60		8.3200
Next	30,000	Gallons	\$1.98	35,000	\$101.00		2.8857
next	0	Gallons	\$0.00	35,000	\$101.00		2.8857
All Over	35,000	Gallons	\$2.77	70,000	\$197.95		2.8279

Rate Code 6	1" Meter COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First		Gallons			<b>\$35.70</b>	Minimum	35.70
Next	20,000	Gallons	\$1.62	20,000	\$68.10		3.4050
Next	260,000	Gallons	\$2.33	280,000	\$673.90		2.4068
next	0	Gallons	\$0.00	280,000	\$673.90		2.4068
All Over	280,000	Gallons	\$4.24	560,000	\$1,861.10		3.3234



Rate Code 7		11/2" Meter COMMERCIAL		Cumulative		Cost Per
First	0	Gallons			<b>\$69.30</b>	Minimum 1,000 Gal. 69.30
Next	40,000	Gallons	\$1.67	40,000	\$136.10	3.4025
Next	560,000	Gallons	\$2.34	600,000	\$1,446.50	2.4108
next	0	Gallons	\$0.00	600,000	\$1,446.50	2.4108
All Over	600,000	Gallons	\$4.24	1,200,000	\$3,990.50	3.3254

Rate Code 8		1 1/2" LANDFILL		Cumulative		Cost Per
First	0	Gallons			<b>\$69.30</b>	Minimum 1,000 Gal. 69.300
Next	75,000	Gallons	\$2.53	75,000	\$259.05	3.4540
Next	300,000	Gallons	\$4.03	375,000	\$1,468.05	3.9148
next	0	Gallons	\$0.00	375,000	\$1,468.05	3.9148
All Over	375,000	Gallons	\$5.84	750,000	\$3,658.05	4.8774

Rate Code 9		2" Meter COMMERCIAL		Cumulative		Cost Per
First	0	Gallons			<b>\$111.30</b>	Minimum 1,000 Gal. 111.30
Next	64,000	Gallons	\$1.65	64,000	\$216.90	3.3891
Next	800,000	Gallons	\$2.37	864,000	\$2,112.90	2.4455
next	0	Gallons	\$0.00	864,000	\$2,112.90	2.4455
All Over	864,000	Gallons	\$4.29	1,728,000	\$5,819.46	3.3677

Rate Code 10		3" METER COMMERCIAL		Cumulative		Cost Per
First	0	Gallons			<b>\$224.70</b>	Minimum 1,000 Gal. 224.70
Next	128,000	Gallons	\$1.61	128,000	\$430.78	3.3655
Next	1,200,000	Gallons	\$2.31	1,328,000	\$3,202.78	2.4117
next	0	Gallons	\$0.00	1,328,000	\$3,202.78	2.4117
All Over	1,328,000	Gallons	\$4.29	2,656,000	\$8,899.90	3.3509

Rate Code 11		4" METER COMMERCIAL		Cumulative		Cost Per
First	0	Gallons			<b>\$350.70</b>	Minimum 1,000 Gal. 350.70
Next	200,000	Gallons	\$1.61	200,000	\$672.70	3.3635
Next	2,000,000	Gallons	\$2.31	2,200,000	\$5,292.70	2.4058
next	0	Gallons	\$0.00	2,200,000	\$5,292.70	2.4058
All Over	2,200,000	Gallons	\$4.29	4,400,000	\$14,730.70	3.3479

Rate Code 12		ZONE 2 5/8X3/4" COMMERCIAL		Cumulative		Cost Per
First	0	Gallons			<b>\$21.00</b>	Minimum 1,000 Gal. 21.00
Next	12,000	Gallons	\$1.90	12,000	\$43.80	3.6500
Next	70,000	Gallons	\$2.82	82,000	\$241.20	2.9415
next	0	Gallons	\$0.00	82,000	\$241.20	2.9415
All Over	82,000	Gallons	\$5.71	164,000	\$709.42	4.3257



**St. Charles Mesa Water District**  
**2016 WATER RATES**

<b>Rate Code 1</b>	Meter 5/8 X 3/4				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$21.50</b>	Minimum	21.50
Next	5,000	Gallons	\$1.17	5,000	\$27.35		5.4700
Next	30,000	Gallons	\$2.00	35,000	\$87.35		2.4957
next	0	Gallons	\$0.00	35,000	\$87.35		2.4957
All Over	35,000	Gallons	\$2.80	70,000	\$185.35		2.6479

<b>Rate Code 2</b>	ZONE II 5/8X3/4" Meter				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$21.50</b>	Minimum	21.50
Next	5,000	Gallons	\$1.35	5,000	\$28.25		5.6500
Next	25,000	Gallons	\$2.34	30,000	\$86.75		2.8917
next	0	Gallons	\$0.00	30,000	\$86.75		2.8917
All Over	30,000	Gallons	\$3.35	60,000	\$187.25		3.1208

<b>Rate Code 3</b>	ZONE II 5/8X3/4" Meter				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$36.55</b>	Minimum	36.55
Next	5,000	Gallons	\$1.35	5,000	\$43.30		8.6600
Next	25,000	Gallons	\$2.34	30,000	\$101.80		3.3933
next	0	Gallons	\$0.00	30,000	\$101.80		3.3933
All Over	30,000	Gallons	\$3.35	60,000	\$202.30		3.3717

<b>Rate Code 4</b>	5/8 X 3/4 COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$21.50</b>	Minimum	21.50
Next	12,000	Gallons	\$1.61	12,000	\$40.82		3.4017
Next	70,000	Gallons	\$2.36	82,000	\$206.02		2.5124
next	0	Gallons	\$0.00	82,000	\$206.02		2.5124
All Over	82,000	Gallons	\$4.42	164,000	\$568.46		3.4662

<b>Rate Code 5</b>	1" Meter				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$36.95</b>	Minimum	36.95
Next	5,000	Gallons	\$1.18	5,000	\$42.85		8.5700
Next	30,000	Gallons	\$2.02	35,000	\$103.45		2.9557
next	0	Gallons	\$0.00	35,000	\$103.45		2.9557
All Over	35,000	Gallons	\$2.82	70,000	\$202.15		2.8879

<b>Rate Code 6</b>	1" Meter COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First		Gallons			<b>\$36.55</b>	Minimum	36.55
Next	20,000	Gallons	\$1.64	20,000	\$69.35		3.4675
Next	260,000	Gallons	\$2.38	280,000	\$688.15		2.4577
next	0	Gallons	\$0.00	280,000	\$688.15		2.4577
All Over	280,000	Gallons	\$4.30	560,000	\$1,892.15		3.3788

<b>Rate Code 7</b>	11/2" Meter COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$70.95</b>	Minimum	70.95
Next	40,000	Gallons	\$1.69	40,000	\$138.55		3.4638
Next	560,000	Gallons	\$2.39	600,000	\$1,476.95		2.4616
next	0	Gallons	\$0.00	600,000	\$1,476.95		2.4616
All Over	600,000	Gallons	\$4.30	1,200,000	\$4,056.95		3.3808

<b>Rate Code 8</b>	1 1/2" LANDFILL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$70.95</b>	Minimum	70.950
Next	75,000	Gallons	\$2.55	75,000	\$262.20		3.4960
Next	300,000	Gallons	\$4.09	375,000	\$1,489.20		3.9712
next	0	Gallons	\$0.00	375,000	\$1,489.20		3.9712
All Over	375,000	Gallons	\$5.91	750,000	\$3,705.45		4.9406

<b>Rate Code 9</b>	2" Meter COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$113.95</b>	Minimum	113.95
Next	64,000	Gallons	\$1.67	64,000	\$220.83		3.4505
Next	800,000	Gallons	\$2.42	864,000	\$2,156.83		2.4963
next	0	Gallons	\$0.00	864,000	\$2,156.83		2.4963
All Over	864,000	Gallons	\$4.35	1,728,000	\$5,915.23		3.4232

<b>Rate Code 10</b>	3" METER COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$230.05</b>	Minimum	230.05
Next	128,000	Gallons	\$1.63	128,000	\$438.69		3.4273
Next	1,200,000	Gallons	\$2.36	1,328,000	\$3,270.69		2.4629
next	0	Gallons	\$0.00	1,328,000	\$3,270.69		2.4629
All Over	1,328,000	Gallons	\$4.35	2,656,000	\$9,047.49		3.4064

<b>Rate Code 11</b>	4" METER COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$359.05</b>	Minimum	359.05
Next	200,000	Gallons	\$1.63	200,000	\$685.05		3.4253
Next	2,000,000	Gallons	\$2.36	2,200,000	\$5,405.05		2.4568
next	0	Gallons	\$0.00	2,200,000	\$5,405.05		2.4568
All Over	2,200,000	Gallons	\$4.35	4,400,000	\$14,975.05		3.4034

<b>Rate Code 12</b>	ZONE II 5/8X3/4" COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$21.50</b>	Minimum	21.50
Next	12,000	Gallons	\$1.92	12,000	\$44.54		3.7117
Next	70,000	Gallons	\$2.88	82,000	\$246.14		3.0017
next	0	Gallons	\$0.00	82,000	\$246.14		3.0017
All Over	82,000	Gallons	\$5.78	164,000	\$720.10		4.3909

**St. Charles Mesa Water District**  
**2017 WATER RATES**

Rate Code 1	Meter 5/8 X 3/4				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$21.50</b>	Minimum	21.50
Next	5,000	Gallons	\$1.19	5,000	\$27.45		5.4900
Next	30,000	Gallons	\$2.03	35,000	\$88.35		2.5243
next	0	Gallons	\$0.00	35,000	\$88.35		2.5243
All Over	35,000	Gallons	\$2.85	70,000	\$188.10		2.6871

Rate Code 2	ZONE II 5/8X3/4" Meter				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$21.50</b>	Minimum	21.50
Next	5,000	Gallons	\$1.37	5,000	\$28.35		5.6700
Next	25,000	Gallons	\$2.37	30,000	\$87.60		2.9200
next	0	Gallons	\$0.00	30,000	\$87.60		2.9200
All Over	30,000	Gallons	\$3.40	60,000	\$189.60		3.1600

Rate Code 3	ZONE II 5/8X3/4" Meter				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$36.55</b>	Minimum	36.55
Next	5,000	Gallons	\$1.37	5,000	\$43.40		8.6800
Next	25,000	Gallons	\$2.37	30,000	\$102.65		3.4217
next	0	Gallons	\$0.00	30,000	\$102.65		3.4217
All Over	30,000	Gallons	\$3.40	60,000	\$204.65		3.4108

Rate Code 4	5/8 X 3/4 COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$21.50</b>	Minimum	21.50
Next	12,000	Gallons	\$1.63	12,000	\$41.06		3.4217
Next	70,000	Gallons	\$2.41	82,000	\$209.76		2.5580
next	0	Gallons	\$0.00	82,000	\$209.76		2.5580
All Over	82,000	Gallons	\$4.48	164,000	\$577.12		3.5190

Rate Code 5	1" Meter				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$36.95</b>	Minimum	36.95
Next	5,000	Gallons	\$1.20	5,000	\$42.95		8.5900
Next	30,000	Gallons	\$2.05	35,000	\$104.45		2.9843
next	0	Gallons	\$0.00	35,000	\$104.45		2.9843
All Over	35,000	Gallons	\$2.87	70,000	\$204.90		2.9271

Rate Code 6	1" Meter COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First		Gallons			<b>\$36.55</b>	Minimum	36.55
Next	20,000	Gallons	\$1.66	20,000	\$69.75		3.4875
Next	260,000	Gallons	\$2.43	280,000	\$701.55		2.5055
next	0	Gallons	\$0.00	280,000	\$701.55		2.5055
All Over	280,000	Gallons	\$4.63	560,000	\$1,997.95		3.5678

<b>Rate Code 7</b>	1 1/2" Meter COMMERCIAL				Cumulative	Cost Per
First	0 Gallons				<b>\$70.95</b> Minimum	1,000 Gal.
Next	40,000 Gallons	\$1.71	40,000	\$139.35		70.95
Next	560,000 Gallons	\$2.44	600,000	\$1,505.75		3.4838
next	0 Gallons	\$0.00	600,000	\$1,505.75		2.5096
All Over	600,000 Gallons	\$4.36	1,200,000	\$4,121.75		2.5096
						3.4348
<b>Rate Code 8</b>	1 1/2" LANDFILL				Cumulative	Cost Per
First	0 Gallons				<b>\$70.95</b> Minimum	1,000 Gal.
Next	75,000 Gallons	\$2.57	75,000	\$263.70		70.950
Next	300,000 Gallons	\$4.15	375,000	\$1,508.70		3.5160
next	0 Gallons	\$0.00	375,000	\$1,508.70		4.0232
All Over	375,000 Gallons	\$5.98	750,000	\$3,751.20		4.0232
						5.0016
<b>Rate Code 9</b>	2" Meter COMMERCIAL				Cumulative	Cost Per
First	0 Gallons				<b>\$113.95</b> Minimum	1,000 Gal.
Next	64,000 Gallons	\$1.69	64,000	\$222.11		113.95
Next	800,000 Gallons	\$2.47	864,000	\$2,198.11		3.4705
next	0 Gallons	\$0.00	864,000	\$2,198.11		2.5441
All Over	864,000 Gallons	\$4.41	1,728,000	\$6,008.35		2.5441
						3.4771
<b>Rate Code 10</b>	3" METER COMMERCIAL				Cumulative	Cost Per
First	0 Gallons				<b>\$230.05</b> Minimum	1,000 Gal.
Next	128,000 Gallons	\$1.65	128,000	\$441.25		230.05
Next	1,200,000 Gallons	\$2.41	1,328,000	\$3,333.25		3.4473
next	0 Gallons	\$0.00	1,328,000	\$3,333.25		2.5100
All Over	1,328,000 Gallons	\$4.41	2,656,000	\$9,189.73		2.5100
						3.4600
<b>Rate Code 11</b>	4" METER COMMERCIAL				Cumulative	Cost Per
First	0 Gallons				<b>\$359.05</b> Minimum	1,000 Gal.
Next	200,000 Gallons	\$1.65	200,000	\$689.05		359.05
Next	2,000,000 Gallons	\$2.41	2,200,000	\$5,509.05		3.4453
next	0 Gallons	\$0.00	2,200,000	\$5,509.05		2.5041
All Over	2,200,000 Gallons	\$4.41	4,400,000	\$15,211.05		2.5041
						3.4571
<b>Rate Code 12</b>	ZONE II 5/8X3/4" COMMERCIAL				Cumulative	Cost Per
First	0 Gallons				<b>\$21.50</b> Minimum	1,000 Gal.
Next	12,000 Gallons	\$1.94	12,000	\$44.78		21.50
Next	70,000 Gallons	\$2.94	82,000	\$250.58		3.7317
next	0 Gallons	\$0.00	82,000	\$250.58		3.0559
All Over	82,000 Gallons	\$5.84	164,000	\$729.46		3.0559
						4.4479

**St. Charles Mesa Water District**  
**2018 WATER RATES**

<b>Rate Code 1</b>	Meter 5/8 X 3/4				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$22.00</b>	Minimum	22.00
Next	5,000	Gallons	\$1.21	5,000	\$28.05		5.6100
Next	30,000	Gallons	\$2.06	35,000	\$89.85		2.5671
next	0	Gallons	\$0.00	35,000	\$89.85		2.5671
All Over	35,000	Gallons	\$2.90	70,000	\$191.35		2.7336

<b>Rate Code 2</b>	ZONE II 5/8X3/4" Meter				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$22.00</b>	Minimum	22.00
Next	5,000	Gallons	\$1.39	5,000	\$28.95		5.7900
Next	25,000	Gallons	\$2.40	30,000	\$88.95		2.9650
next	0	Gallons	\$0.00	30,000	\$88.95		2.9650
All Over	30,000	Gallons	\$3.45	60,000	\$192.45		3.2075

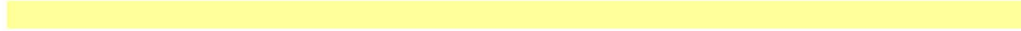
<b>Rate Code 3</b>	ZONE II 5/8X3/4" Meter				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$37.40</b>	Minimum	37.40
Next	5,000	Gallons	\$1.39	5,000	\$44.35		8.8700
Next	25,000	Gallons	\$2.40	30,000	\$104.35		3.4783
next	0	Gallons	\$0.00	30,000	\$104.35		3.4783
All Over	30,000	Gallons	\$3.45	60,000	\$207.85		3.4642

<b>Rate Code 4</b>	5/8 X 3/4 COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$22.00</b>	Minimum	22.00
Next	12,000	Gallons	\$1.65	12,000	\$41.80		3.4833
Next	70,000	Gallons	\$2.46	82,000	\$214.00		2.6098
next	0	Gallons	\$0.00	82,000	\$214.00		2.6098
All Over	82,000	Gallons	\$4.54	164,000	\$586.28		3.5749

<b>Rate Code 5</b>	1" Meter				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$37.40</b>	Minimum	37.40
Next	5,000	Gallons	\$1.22	5,000	\$43.50		8.7000
Next	30,000	Gallons	\$2.08	35,000	\$105.90		3.0257
next	0	Gallons	\$0.00	35,000	\$105.90		3.0257
All Over	35,000	Gallons	\$2.92	70,000	\$208.10		2.9729

<b>Rate Code 6</b>	1" Meter COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First		Gallons			<b>\$37.40</b>	Minimum	37.40
Next	20,000	Gallons	\$1.68	20,000	\$71.00		3.5500
Next	260,000	Gallons	\$2.48	280,000	\$715.80		2.5564

next	0	Gallons	\$0.00	280,000	\$715.80	2.5564
All Over	280,000	Gallons	\$4.69	560,000	\$2,029.00	3.6232



<b>Rate Code 7</b>	1 1/2" Meter COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$72.60</b>	Minimum	72.60
Next	40,000	Gallons	\$1.73	40,000	\$141.80		3.5450
Next	560,000	Gallons	\$2.49	600,000	\$1,536.20		2.5603
next	0	Gallons	\$0.00	600,000	\$1,536.20		2.5603
All Over	600,000	Gallons	\$4.42	1,200,000	\$4,188.20		3.4902

<b>Rate Code 8</b>	1 1/2" LANDFILL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$72.60</b>	Minimum	72.600
Next	75,000	Gallons	\$2.59	75,000	\$266.85		3.5580
Next	300,000	Gallons	\$4.21	375,000	\$1,529.85		4.0796
next	0	Gallons	\$0.00	375,000	\$1,529.85		4.0796
All Over	375,000	Gallons	\$6.05	750,000	\$3,798.60		5.0648

<b>Rate Code 9</b>	2" Meter COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$116.60</b>	Minimum	116.60
Next	64,000	Gallons	\$1.71	64,000	\$226.04		3.5319
Next	800,000	Gallons	\$2.52	864,000	\$2,242.04		2.5950
next	0	Gallons	\$0.00	864,000	\$2,242.04		2.5950
All Over	864,000	Gallons	\$4.47	1,728,000	\$6,104.12		3.5325

<b>Rate Code 10</b>	3" METER COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$235.40</b>	Minimum	235.40
Next	128,000	Gallons	\$1.67	128,000	\$449.16		3.5091
Next	1,200,000	Gallons	\$2.46	1,328,000	\$3,401.16		2.5611
next	0	Gallons	\$0.00	1,328,000	\$3,401.16		2.5611
All Over	1,328,000	Gallons	\$4.47	2,656,000	\$9,337.32		3.5156

<b>Rate Code 11</b>	4" METER COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$367.40</b>	Minimum	367.40
Next	200,000	Gallons	\$1.67	200,000	\$701.40		3.5070
Next	2,000,000	Gallons	\$2.46	2,200,000	\$5,621.40		2.5552
next	0	Gallons	\$0.00	2,200,000	\$5,621.40		2.5552
All Over	2,200,000	Gallons	\$4.47	4,400,000	\$15,455.40		3.5126

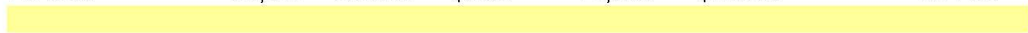
<b>Rate Code 12</b>	ZONE II 5/8X3/4" COMMERCIAL				Cumulative		Cost Per 1,000 Gal.
First	0	Gallons			<b>\$22.00</b>	Minimum	22.00
Next	12,000	Gallons	\$1.96	12,000	\$45.52		3.7933
Next	70,000	Gallons	\$3.00	82,000	\$255.52		3.1161



next	0	Gallons	\$0.00	82,000	\$255.52	3.1161
All Over	82,000	Gallons	\$5.91	164,000	\$740.14	4.5130



<b>Rate Code 13</b>	<b>ZWUA 5/8 X 3/4 METER</b>				<b>Cumulative</b>	<b>Cost Per</b>
<b>ZINNO SUBDIVISION</b>						<b>1,000 Gal.</b>
					<b>\$22.00</b>	SCMWD Minimum
					<b>\$22.00</b>	Joseph Corp
					<b>\$50.00</b>	Loan Payment
First	0	Gallons			<b>\$94.00</b>	Minimum 94.00
Next	5,000	Gallons	\$1.19	5,000	\$99.95	19.9900
Next	30,000	Gallons	\$2.03	35,000	\$160.85	4.5957
next	0	Gallons	\$0.00	35,000	\$160.85	4.5957
All Over	35,000	Gallons	\$2.85	70,000	\$260.60	3.7229



## Appendix E

### St. Charles Mesa Water District 2017 Rules and Regulations



## ARTICLE V

### *Water Regulations*

**5.00** General. This section is intended to provide general regulations regarding use of the District's water system.

Every customer using water from the District's water system shall thereby be deemed to have consented and agreed to the terms and provisions of these Rules and Regulations and to have acknowledged the right of the District to discontinue water service in the event of the failure of such customer to comply with the terms and provisions of these Rules and Regulations, including failure to make timely payments of all rates and charges. All applicants for and users of service and connections to the system shall be required to accept such conditions of pressure, supply and service as are provided by the distribution system at the location of the service connection and hold the District harmless for any damages arising out of low pressure, high pressure, inadequate supply or interruptions of service. The District specifically does not accept responsibility for the maintenance of pressure and it reserves the right to discontinue service while making repairs, replacement and connections or performing other work in the operation of the water system. Consumers dependent upon a continuous supply should provide emergency storage. Except as provided elsewhere or by special agreement, each house or structure for which the application for water service is hereafter made which fronts on a public street or private road shall have a separate service connection, including a separate meter.

**5.01** Use and/or Diversion of Water in Violation of District Rules and Regulations. Any use and/or diversion of water in violation of these rules and regulations shall be of such importance as to justify immediate discontinuance of water service, without notice, and the violator may be prosecuted before a court of competent jurisdiction. Any attempt to take water from the District's system without proper registration on a water meter shall constitute prima facie evidence of diversion of water by the customer in whose name service is being rendered, or by a person benefitting from the use of such diverted water. This use/diversion of water may include the installation of water consuming devices ahead of the meter; tampering or interfering with pipes, devices, or equipment connected to the District water distribution system; damage to, alterations of, or obstruction of, any meter (including the breaking of meter seals) which will permit the use of water without its proper registration on the District's meter; and turning water on after it has been shut off by the District. If service has been discontinued for use/diversion of water in violation of District Rules and Regulations, the

District will not render water service to the customer or to any other person for the customer's use at the same or any other location until:

- A. Customer has paid all applicable bills.
- B. Customer has reimbursed the District for all costs incurred in making corrections necessary to prevent further diversion of water.

**5.02** Access for District Employees. Customers will provide access to their property at all reasonable times for authorized employees of the District. This access may be necessary for determining violations of these Rules and Regulations or for conducting routine inspections. Refusal to permit any reasonable inspections or investigations shall be grounds for discontinuance of water service.

**5.03** Refusal to Deliver Water When Contamination of Supply May Result. The District may refuse to deliver water to any property where any condition exists which might lead to the contamination of the public water supply, and the District may continue to refuse delivery of water to any such property until such condition is remedied by the customer.

**5.04** Water Use During Emergency. In the event of scarcity of water or failure or partial failure of supply for any reason, the Board of Directors shall have power to restrict and limit use of water from said system to in house use and/or livestock use only. Notice of the imposition of such restriction may be by phone, or by written notice delivered or mailed and shall be effective until customers are notified otherwise.

**5.05** Drought Response Guidelines:

A. Definitions:

- (1) Stage 1 Drought: A Stage 1 Drought exists when a call on the Arkansas River would reduce the flow in the Bessemer Irrigation Ditch Co. canal below 71 CFS.
- (2) Stage 2 Drought: A Stage 2 Drought exists when a call on the Arkansas River would reduce the normal flow of other water rights owned by the District.
- (3) Stage 3 Drought: A Stage 3 Drought exists when a call on the Arkansas River reduces the flow in the Bessemer Irrigation Ditch Co. canal below 40 CFS, and the District's other water rights are also reduced due to calls by senior decrees. A Stage 3 drought may also exist if the District's storage reservoirs are at or below a combined 80% of capacity.

**B. District responses in the event of a drought:**

**(1)**

**Stage 1 Drought:**

- a.** The District will set a tone for a dry irrigation season;
- b.** Inform customers of the conditions and try to reduce the usage to prevent a Stage 2 condition;
- c.** Contact high usage Commercial customers informing them of conditions; and,
- d.** Encourage voluntary reductions usage by District patrons.

**(2)**

**Stage 2 Drought:**

- a.** The District will increase the customers awareness of the drought conditions and possible voluntary water saving measures via:
  - i.** A website based information Informational postings; or
  - ii.** Special mailings on water saving tips.

**(3)**

**Stage 3 Drought:**

- a.** Residential Accounts: The District will inform the residential customers that the maximum usage per month will be limited to 30,000 gallons, or whatever lesser amount the Board may determine, depending on the severity of the drought.
  - i.** Any residential tap usage over the 30,000 gallon or other Board designated maximum will incur a surcharge of \$10.00 per thousand gallons used in excess of the designated maximum. The District will contact patrons who exceed the designated maximum and provide information to assist the patron in reducing water usage.
  - ii.** If a residential tap user exceeds the designated maximum a second time (i.e., after the District has provided information on water saving tips) the surcharge will be increased to \$20.00 per thousand gallons used.
  - iii.** If a residential tap user continues to exceed the designated maximum after the imposition of the \$20.00 per thousand gallon surcharge, a flow restriction device may be installed in the residential meter and the higher surcharge will continue.
- b.** Commercial Accounts: Commercial accounts will be limited to their historic average water usage (based on the average of their per month

water usage over the preceding two years). No increase of water usage will be allowed. Water saving information will be provided to help maintain or lower usage.

- i. Livestock feeding operations will not be allowed to increase their water consumption; however, water for legally mandated dust control may be continued upon written permission from the District Manager.
  - ii. No fire hydrant meters will be issued except for special human health needs.
- c. Institutional Accounts: Institutional accounts such as schools will be limited to in-building uses and watering only the main playing fields. No watering of practice fields and landscaped areas will be allowed. Information will be provided on other water saving measures. Violation of this limitation may result in installation of flow restriction devices on the institutional taps.
- d. Commercial and Institutional Accounts will be monitored monthly for actual usage.
- e. Commercial and Institutional Accounts may be charged a surcharge of \$10.00 per 1,000 gallons if they exceed the two year average in a two month period.
- f. Duration of Stage 3: Stage 3 Drought restrictions will remain in effect until the call on the Arkansas River has changed such that the Bessemer Irrigation Ditch Co. canal flow is above 70 CFS, the District's junior water rights are in priority and the District's storage reservoirs are collectively at 90% capacity and filling.

**5.06** Ground Wire Attachments. All persons are forbidden to attach any ground wire or wires to any plumbing which is or may be connected to a service connection or main belonging to the District unless such plumbing is adequately connected to an effective driven ground installation on the premises. The District will hold the customer liable for any damage to its property occasioned by such ground wire attachments.

**5.07** Cross-Connection Control Program.

This section is promulgated to implement the District's program for control of cross connections and requirements for containment devices which include, but are not limited to, double check and reduced pressure assemblies and Approved Backflow Prevention Assemblies, and to meet requirements of state regulations found in Article 12 of 5 C.C.R. 1003-1.

#### **A. REQUIREMENTS**

- (1) The District shall take steps to identify potentially uncontrolled hazardous service cross connections.
- (2) All customer water systems shall install, maintain, and replace District approved containment devices on any uncontrolled hazardous service connection consistent with the degree of hazard imposed by the uncontrolled cross connection in accordance with guidelines established by the Colorado Department of Public Health and Environment.
- (3) The installation of all containment devices shall be approved by the District prior to installation and prior to use.
- (4) Containment devices shall be properly inspected or tested and maintained by the customer, at the customer's expense at installation and at least annually be a certified cross connection control technician. Test results shall be submitted to the District.
- (5) Containment devices shall be properly inspected or tested and maintained by the customer, at the customer's expense at installation and at least annually be a certified cross connection control technician. Test results shall be submitted to the District. Containment devices shall be properly inspected or tested and maintained by the customer, at the customer's expense at installation and at least annually be a certified cross connection control technician. Test results shall be submitted to the District.
- (6) The District shall notify Colorado Department of Public Health and Environment of any cross connections discovered by the District, as defined by Section 1.22 (12) of the State Regulations, and require correction of the problem with due diligence.
- (7) District customers shall comply with District's Regulation, and Section 6 of the State Plumbing Code, to properly install and maintain containment devices, and to perform annual inspections and tests, provide the District with inspections and test reports, and maintain a copy of their inspections and test reports.

**B. COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT CROSS CONNECTION CONTROL MANUAL**

The District may utilize provisions of the Colorado Department of Public Health and Environment's Cross Connection Control Manual to identify hazardous service connections, determine required containment devices for various types of installation, and assist in administration and interpretation of the program and interpretation.

**C. METER YOKES**

Residential service lines are generally considered to be low-hazard connections, unless a hazardous activity is present. Meter yokes with a dual check valve assembly will be installed on new taps and service upgrades. Additional protection is required for irrigation systems or other hazardous situations.

**D. GENERAL REQUIREMENTS**

- (1) Plumbing plans must be submitted to the District and approved for all Commercial buildings, prior to the activation of water service. PLANS MUST SHOW:
  - a. Water service type, size and location
  - b. Meter size and location
  - c. Reduced pressure zone assembly size, type and location
  - d. Fire sprinkler system(s) service line if required, shall provide size and type of backflow prevention assembly.
- (2) Backflow prevention assemblies are to be installed in an accessible location to facilitate maintenance, testing and repair. Drawings must show various installations.
- (3) All backflow prevention assemblies shall be installed immediately downstream of the water meter.
- (4) Before installing a backflow prevention assembly, pipelines should be thoroughly flushed to remove foreign material.
- (5) In no case will it be permissible to have connections or tees between the meter and service line backflow prevention assembly.
- (6) Backflow prevention valves are not to be used as the inlet or outlet valve of the water meter. Test cocks are not to be used as supply connections. (Not applied to residential dual check installations.)
- (7) In order to insure that backflow prevention assemblies continue to operate satisfactorily, it will be necessary that they be tested at the time of installation and on an annual schedule thereafter. Such tests will be conducted in accordance with A.S.S.E. and/or U.S.C.-C.C.C. and H.R. performance standards and field test procedures as directed by the Colorado Department of Public Health and Environment. (Not applied to residential dual check installations. Dual checks will be tested at intervals set by the Board.)
- (8) The District will require inspection of all containment system installations.



- (9) All costs for design, installation, maintenance, repair, and testing are to be borne by the customer.
- (10) No grandfather clause exists. All laws and regulations apply regardless of the age of the facility.
- (11) All fire sprinkler lines shall have a minimum protection of an approved double check valve for containment of the system.
  - a. All glycol, ethylene, propylene, and other chemical antifreeze systems shall have an approved Reduced Pressure Zone assembly for containment.
  - b. Dry fire systems shall have an approved Double Check Valve installed upstream of the air pressure valve.
  - c. Single-family residence with a fire sprinkler system and domestic water combined shall have a double check valve when no chemicals are used.
- (12) All fire sprinkler systems shall conform to the following sections of the National Fire Protection Association Pamphlets Number Thirteen and Twenty-Four: Pamphlet Number Thirteen, Section 1-11.2 Hydrostatic Testing, and Section 1-1.2.2 Allowable Leakage and Pamphlet Number Twenty-Four, Private Fire Service Mains and Their Appurtenances.@Section 8.4.

**E. STANDARDS FOR BACKFLOW PREVENTION ASSEMBLIES**

- (1) Any backflow prevention assembly required for containment under this Chapter shall be of a model and size approved by the District. The term Approved Backflow Prevention Assembly shall mean an assembly that has been manufactured in full conformance with the standards established by the latest version of the Colorado Department of Public Health and Environment standards and A.S.S.E. and/or USC FCCC & HR specifications. Provided however, containment within a residential meter pit may be accomplished with an assembly not approved by the Foundation for Cross Connection Control and Hydraulic Research, but approved by the American Society of Sanitary and Mechanical Engineers as designated by the District. The following testing laboratory is qualified to test and certify backflow prevention assemblies. A backflow prevention assembly being listed on their periodic approved list shall be deemed to meet all of the above requirements:

A.S.S.E. American Society of Sanitary Engineering, 28901 Clemens Road, Suite 100, Westlake, Ohio 44145.

USC Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California,  
PHE 430-D University Park-MC Los Angeles, California

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- a. Only approved Backflow Prevention Assemblies shall be used.
- (2) Containment devices and backflow prevention assemblies currently installed, which are not approved, shall be replaced with an approved device at the time they are discovered.
- (3) Backflow prevention assemblies used on fire lines shall have O.S. & Y. (outside stem & yoke) valves and be listed by the National Fire Protection Association.

**F. INSTALLATION OF CONTAINMENT DEVICES**

- (1) All backflow prevention assemblies shall be installed in accordance with the District's requirement.
- (2) All backflow prevention assembly installations shall be inspected and approved for use by the District.
- (3) All backflow prevention assemblies shall be installed in the horizontal position. Vertical installation shall be acceptable when approved by A.S.S.E. and/or USC FCCC & HR specifications.
- (4) A pressure vacuum breaker shall be used on residential sprinkler systems where the backflow prevention assembly is never subject to back pressure if installed a minimum of twelve (12) inches above the highest piping or outlet downstream of the assembly in a manner to preclude back pressure.
- (5) Atmospheric vacuum breakers are allowed only for residential sprinkler systems. They must be installed six inches above the highest piping outlet downstream of the assembly.
- (6) A single check valve is not considered to be a backflow prevention assembly, and must be replaced with an approved containment device.
- (7) Double check valve assemblies may be installed in below grade vaults only if the vault is properly constructed and insulated to prevent freezing.
- (8) Reduced pressure backflow prevention assemblies must be installed above ground. The device should be placed at least twelve inches (12) above the finish grade but no higher than forty eight (48) inches to allow clearance for the repair work. A concrete slab at finish grade is recommended. Proper drainage should be provided for the relief valve and may be piped away from the location provided it is readily visible from above grade and provided the relief valve is separated from the drain line by a minimum of double the diameter of the supply line. A modified vault installation may be used if constructed with ample side clearances and adequate drainage.
- (9) All commercial customers will be required to install a reduced pressure zone valve for containment regardless of current conditions.

**G. TESTING AND MAINTENANCE**

- (1) At least once per year, it will be the duty of the customer where any containment device is installed to have a certified inspection or test made of those devices. In those specific instances where the District deems the hazard to be great enough, certified inspections or tests at more frequent intervals may be required. These inspections or tests shall be at the expense of the customer and shall be performed by a certified technician approved by the Colorado Department of Public Health and Environment.
- (2) As necessary, the containment devices shall be repaired or replaced at the expense of the customer whenever the containment devices are found to be defective. Records of all such inspections, tests, repairs or replacement shall be kept by customer and the District.
- (3) Existing containment devices shall be sealed by the technician performing the inspection or test at the completion of the inspection or test.
- (4) All testing equipment used in testing of containment devices shall be checked for accuracy at least annually, and proof of compliance shall be submitted to the District upon request.
- (5) The District retains the right to inspect or test the installation and operation of any containment device at any time to assure proper operation.

**H. ENFORCEMENT AND PENALTY**

- (1) This program shall be administered and enforced pursuant to applicable provisions of Colorado law, the District's Regulations, Pueblo County Building Code and the State Plumbing Code.
- (2) Under applicable law and regulations, the District has the power and authority to enter onto all properties which have non-single family connections for the purpose of inspecting and verifying compliance with this program [5 CCR 1002.1, § 11.39(3) (c)], as well as the duty to report any uncontrolled cross connections to the Colorado Department of Public Health and Environment, the authority to install a proper cross connection control device or remove the uncontrolled cross connection [5 CCR 1002.1, § 11.37(2)] impose financial penalties for non-compliance [32-1-1001(1)(j)(I),and 32-1-1006(1)(d), C.R.S.], and to terminate water service for non- compliance [32-1-1006(1)(d), C.R.S.].



## St. Charles Mesa Water District Cross-Connection Questionnaire

Name of Facility: \_\_\_\_\_ Date: \_\_ Address: \_\_\_\_\_ Owner: \_\_\_\_\_ Contact  
Person \_\_\_\_\_ Phone: \_\_\_\_\_ Business Activity (Retail, Office, Restaurant, etc.)  
\_\_\_\_\_

1. Domestic water is used for:

- |                          |                    |
|--------------------------|--------------------|
| A. Food Preparation      | Yes _____ No _____ |
| B. Lawn Irrigation       | Yes _____ No _____ |
| C. Cooler (Chiller)      | Yes _____ No _____ |
| D. Heater (Boiler)       | Yes _____ No _____ |
| E. Manufacturing         | Yes _____ No _____ |
| F. Chemical Mixing       | Yes _____ No _____ |
| G. Fire Sprinkler System | Yes _____ No _____ |

If yes, is there antifreeze in the system? Yes \_\_\_\_\_ No \_\_\_\_\_

2. Do you have irrigation water available at this property? Yes \_\_\_\_\_ No \_\_\_\_\_

3. Is there any water using devices/machinery at this site other than faucets and toilets? If yes, please describe: Yes \_\_\_\_\_ No \_\_\_\_\_  
\_\_\_\_\_

4. Do you have a backflow preventer on your main service line? Yes No

If yes, please provide: Manufacturer\_\_Model #\_\_\_\_\_Serial #\_\_\_\_\_

If you are not sure how to answer any of these questions or if you have concerns regarding this form, please contact Don Williams at 719-542-4380.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

Please return to:      St. Charles Mesa Water District  
Attn: Don Williams 1397 Aspen Road  
Pueblo, CO 81006

## Appendix F

### St. Charles Mesa Water District 2019 Water Conservation Plan Public Notice and Adoption Resolution



# TOMOTIVE

## Interest

**Classic Ford, 1952**  
Refurbished. Paint and covered. Paint in MG. Complete. Including a dashboard, steering, luggage rack. In good condition. \$500 and pictures, 719-2301.

## Boats and ATV

**Boy, 2008**  
Excellent condition, make offer. 7-2242

**400, 2004**  
Best offer. 59-0905

**di, 2009**  
Always garaged, condition, best offer. 719-415-5297

## Motorcycles and ATV

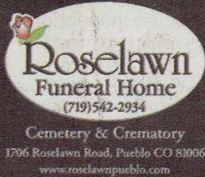
**Yamaha TTR 90cc, 2004**  
Kids Dirt bike, electric star, good condition, 3 gears clutchless \$850, 719-251-9705

## Boats and Jet Skis

Beautiful Tracker Nitro 189 Sport fish and ski boat. Seating for 5 with convertible fishing seats fore and aft. Fish finder, rod holders, aerated live well. Ski tow pylon plus rope. Bimini top. Merc 150hp Optimax with only 26 hours. Electric trolling motor AND Tohatsu 10hp kicker motor. Recent maintenance at Bass Pro- tip top shape! Mike, 303-349-0611, Trinidad



## Parts and Service



**Donate Your Old Truck or Car to Roselawn Cemetery & Get a Tax Deduction! Call David, 542-2934**

Tires, Complete brand new set for 2015/2016 Shelby GT350 Pirelli PZero 3 Front 295/35ZR19 (104Y) XL and 2 Rear 305/35ZR19 (102Y) Asking \$550 firm. Serious inquiries only. 719-242-4743

## Wanted Autos

Buying Cars.....Cash Paid  
Top Prices.....Free Tow  
No Title OK.....719-553-8028

# ANNOUNCEMENTS

## Lost and Found

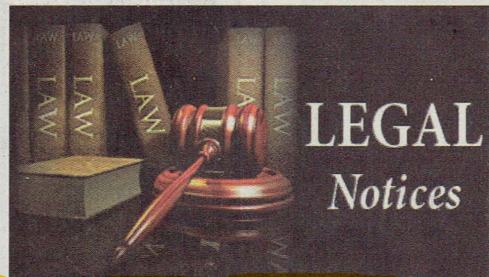
**FOUND:** Cat, adult, short haired gray tiger. Found 9/4 on Veta and Thatcher. 546-0584, leave message.

**Found:** Pit/ Husky mix, male, 1 year old, brown, black and white. Found 9/13 on Utica. Owner identify, PAWS FOR LIFE, 719-543-6464

## Lost and Found

Found: Shepherd mix, 2-years old, brindle/ white, on West 19th St. Owner identify, 719-543-6464

**The Pueblo Chieftain Classifieds**  
**719-542-0000**



## LEGAL Notices

### PUBLIC NOTICE ANNOUNCEMENT

#### PUBLIC NOTICE OF WATER CONSERVATION PLAN

##### ST. CHARLES MES WATER DISTRICT

**PUBLIC COMMENT PERIOD: SEPTEMBER 11 – NOVEMBER 13, 2018**

Notice is hereby given that the St. Charles Mesa Water District is updating its Water Conservation Plan, pursuant to State Law. The City is seeking public comment over the next 60-days.

The SCMWD Water Efficiency Plan is designed to promote the efficient consumption of all water uses by residents, businesses, and institutions to more beneficially use our water resources, and to insure a future adequate water supply. The Water Conservation Plan is available for review by the public at SCMWD office, 1397 Aspen Road during regular business hours or a copy of the plan can be downloaded from the SCMWD website: [www.stcharlesmesawaterdistrict.org](http://www.stcharlesmesawaterdistrict.org).

All people wishing to comment on the Plan may submit their comments in writing to the SCMWD office no later than 5:00 p.m. on Tuesday, November 13, 2018. The point of contact for the Water Conservation Plan is David Simpson, District Manager.

### LEGAL NOTICE NOTICE OF FINAL SETTLEMENT

The City of Pueblo, Colorado will make final settlement with Colorado Front Range Exteriors on September 25, 2018 for work performed on Project known as 723 Van Buren, City of Pueblo.  
Proj# CM1716/TDTS 3126

Verified statement of claims for labor, materials or supplies furnished on the project may be filed with the Director of Finance on or before the time of final settlement.

Dated: Sept 7, 2018  
First Publication Sept 14, 2018  
Second Publication Sept 21, 2018  
PO 18002083

By Roni Kimbrel  
Roni Kimbrel, CPA  
Director of Finance  
#1 City Hall Place  
Pueblo, CO 81003  
Attn: Finance Department

### NOTICE FOR BIDS

Notice is hereby given that the Board of Water Works of Pueblo, Colorado will until the hours and dates listed below, receive bids at its Purchasing office, 319 W. 4th St. Pueblo, Colorado for procurement of the following:

SIX MONTH CONTRACT FOR PVC WATER DISTRIBUTION PIPE TUE, 10/02/2018 2:00 PM  
ANNUAL CONTRACT FOR CONSTRUCTION AGGREGATES TUE, 10/02/2018 2:30 PM

Specifications for any or all the above may be obtained by registering online at <http://www.bidnetdirect.com/colorado> or by contacting the Purchasing Office, 319 W. 4th St. Pueblo, Colorado, 719/584-0201. Any bid received after the time and date specified will not be considered.

The Board of Water Works reserves the right to reject all bids, to waive informalities, and to reject nonconforming, nonresponsive or conditional bids.

# PUBLIC NOTICES

the following case is a filed and/or ordered in No. 2. The Water in Pueblo County,

in of water rights or as reflected by said

**ist Dr., Buena Vista, RVANCY DISTRICT, Enterprise, P. O. Box**  
ndence and inquiries  
Young Life: Kevin J. Street, Boulder, CO  
s Water Conservancy  
525 N. Main Street,

appropriate Rights of

## DUNTIES

the Trail West Lodge vista in the SW ¼ of Colorado, Young Life nection with the Trail epletions pursuant to 28. Due to issues aste water treatment sta Sanitation District do, and abandon its ange in waste water placed by the Upper decreed in Case No. Life and the Upper h the Upper Arkansas elations are associated Well Permit No. 4700, ter Division No. 2, in

administratively approved plans that may be authorized by statute in the future) to replace out-of-priority depletions from structures located within UAWCD's boundaries. In this case, Applicants seek to change the Changed Rights to allow their use as a source of augmentation or replacement water in all such plans (the "UAWCD Plans"). Applicants will store the Changed Rights in the Trail West Recharge Pit(s) and the other facilities in which UAWCD may store water either by virtue of its ownership interest in such facilities or its contract rights to store such water, which are described below. UAWCD's use of the Changed Rights in the UAWCD Plans may occur by applying stream depletion credits from the Changed Rights as they accrue to the stream, or through storage in and subsequent release from any structure where UAWCD has the right to store water, including Pueblo Reservoir, O'Haver Reservoir, North Fork Reservoir, Boss Lake Reservoir, Cottonwood Lake, Rainbow Lake, DeVeesee Reservoir, Twin Lakes Reservoir, Conquistador Reservoir, and Trail West Recharge Pit(s), which structures are located as follows: i. Pueblo Reservoir (WDID: 1403526): The Pueblo Reservoir Dam axis and the center line of the Arkansas River intersect at a point in Section 36, Township 20 South, Range 66 West of the 6th P.M., from which the Northeast corner of said Section bears North 61° 21'20" East, a distance of 2,511.05 feet, in Pueblo County (Division Engineer's reported location: 524076E, 4235362N); ii. O'Haver Reservoir (WDID: 1103921): Near the center of Section 12, Township 48 North, Range 7 East, NMPM, in Chaffee County (Division Engineer's reported location: 399983E, 4253720N); iii. North Fork Reservoir (WDID: 1103300): In Section 5, Township 50 North, Range 6 East, NMPM, more particularly described as: The northeasterly point of contact of the dam axis with the existing ground is at a point whence the Northwest corner of Section 21, T.50N., R.7E, NMPM, in Chaffee, County, Colorado bears South 88°50' East a distance of 31,920 feet; said point being further described by bearing on the Peak of Granite Mountain of North 23°28' West and by bearing on the Peak of Calico Mountain of North 37°03' East, in Chaffee County (Division Engineer's reported location: 384999E, 4274370N); iv. Boss Lake Reservoir (WDID: 1103920): E½ of Sec. 25 and NE¼ Sec. 29, T. 50 N., R. 6 E. NMPM, in Chaffee County (Division Engineer's reported location: 385004E, 4268662N); v. Cottonwood Lake (WDID: 1104005): Section 36, Township 14 South, Range 80 West, 6th P.M., in Chaffee County (Division Engineer's reported location: 389666E, 4293209N); vi. Rainbow Lake (WDID: 1103535): S¼ Section 19 and N¼ Section 30, T.14S., R.79W., 6th P.M. in Chaffee County (Division Engineer's reported location: 390150E, 4296557N); vii. DeVeesee Reservoir (WDID: 1303613): The southeasterly corner of the dam of said reservoir is North 41°37' East, and is distant 758.7 feet from the Northeast Corner of Section 20, T. 21 S., R. 72 W., 6th P.M. in Custer County (Division Engineer's reported location:



## THE PUEBLO CHIEFTAIN

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## **RECORD OF PROCEEDINGS**

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### **Regular Meeting of the Board of Directors ST. CHARLES MESA WATER DISTRICT February 13, 2019**

The regular monthly meeting of the Board of Directors of the St. Charles Mesa Water District was held February 13, 2019 at the business office. The meeting was called to order at 7:00 p.m. by the President, John Dorsch.

Roll Call: Directors present were: John Dorsch, President; Clay Fitzsimmons, Secretary; Fred Bregar, Treasurer; Warren Chambers and Joe Mauro. Mr. Bregar made a motion "TO EXCUSE MR. BRAZIL." Seconded by Mr. Fitzsimmons and passed by unanimous vote.

Staff members: David Simpson, District Manager; Dub Martin, Operations Manager; Susann Long, Administrative Assistant and Bookkeeper and John Keilbach, Legal Counsel

Mr. Chambers made a motion "TO WAIVE THE READING OF THE MINUTES OF THE JANUARY 9, 2019 REGULAR BOARD MEETING AND THEY BE APPROVED AS MAILED." Seconded by Mr. Bregar and passed by unanimous vote.

Mr. Fitzsimmons made a motion "THAT THE TREASURER'S REPORT BE PLACED FOR AUDIT." Seconded by Mr. Mauro and passed by unanimous vote.

A copy of the Manager's Report was placed on file.

For the month of January there were 153 credit card charges for a total of \$11,157.30 and fees charged to the District were \$354.17.

Mr. Simpson attended the open house for Pueblo County's Academy of Manufacturing, Agriculture and Construction. Mr. Simpson would like the Water District to participate as far as tours at the treatment plant. Mr. Simpson will check into the liability for the District.

Case 2018CW3076 - Upper Arkansas Water Conservancy District - has exchanges on Cottonwood Creek and in Pueblo from Moffat St to the Pueblo Reservoir. Mr. Chambers made a motion "TO FILE A STATEMENT OF OPPOSITION." Seconded by Mr. Bregar and passed by unanimous vote.

Mr. Simpson participated in a conference call with Chris Thorne, Meghan Winokur and Lindsay Griffith to discuss the Pueblo Board of Water Works Exchange case.

**Record of Proceedings**  
**February 13, 2019**  
**Page 2**

The District is now using Positive Pay through Sunflower Bank. It is a check verification service to prevent fraud on our checking account. The cost is estimated to be between \$80 and \$100 per month.

Mr. Steve Miles with Miles Construction called to discuss the repair to the 30" gate valve on Cottonwood Creek.

Water Filling Station - the estimated cost for the filling station is \$109,000. Mr. Simpson budgeted \$90,000.

Farm Leases 2019 - The current verbiage in the farm leases does not allow the District to raise the lease for a five year period. Mr. Keilbach will work with Mr. Simpson to change the farm leases so that the District can raise the lease at the Board of Director's discretion.

**OLD BUSINESS:**

Zinno Subdivision Water Main Replacement - The Water main replacement loan balance is \$341,354.48. The District made a payment to CWR & PDA in the amount of \$55,000 and a \$62,770.41 principal forgiveness was given to the Zinno Users Group, therefore the final loan balance is \$226,299.00. The Zone 3 Minimum will be \$65.40 starting March 1, 2019.

TR - 840 Filter Unit - 2 Million Gallons per day - The catwalk is 90% completed, the electrical panel for blowers is installed along with all new lighting. Preparation has begun to install the clarifier piping and concrete in the filter to support the filter underdrain.

**NEW BUSINESS:**

2019 Water Conservation Plan - Mr. Bregar made a motion "TO ADOPT THE 2019 WATER CONSERVATION PLAN." Seconded by Mr. Chambers and passed by unanimous vote.

Zupan Subdivision - 33<sup>rd</sup> Ln and Jersey Rd. Mr. Zupan is creating two new lots for a total of three. Legal Description: The S ½ of the SE ¼ of the NE ¼ Section 7, Township 21 South, Range 63 West of the 6<sup>th</sup> P.M., Pueblo County, Colorado. Mr. Bregar made a motion "TO APPROVE ZUPAN SUBDIVISION BASED ON THE FOLLOWING CONDITIONS." Seconded by Mr. Andenuncio and passed by unanimous vote.

**Record of Proceedings**  
**February 13, 2019**  
**Page 3**

- (1) The subdivider will be required to turn in two (2) shares of Bessemer Ditch Co. Stock Lots 1 and 3.
- (2) Lot 3 is currently served by the St. Charles Mesa Water District under Acct #3026.
- (3) The subdivider will provide an AutoCad file of the approved subdivision.
- (4) All service is subject to the District's Regulations.

Funding for Fire Hydrant Maintenance and Replacement. Mr. Simpson met with Bret Marscola and Conrad Orndoff with the Pueblo Rural Fire District. The Fire District would like to add \$0.50 on the District's minimum to cover costs for fire hydrant maintenance and replacement. This would bring in \$25,638.00 per year. Mr. Simpson would like the Fire District to promote this cost to our customers. It was the consensus of the board to work with the Fire District.

**OTHER BUSINESS:**

Mr. Simpson asked for authorization to utilize a record feature on the District's phone system to be able to record irate customers. It was the consensus of the board to allow District personnel to use the record feature.

Mr. Mauro made a motion "TO ADJOURN AT 8:19 P.M." Seconded by Mr. Bregar and passed by unanimous vote.

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Clay S. Fitzsimmons, Secretary

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John A. Dorsch, President