SOUTHEASTERN COLORADO
Water Conservancy District
"Your investment in water"

September 26, 2013

Kevin Reidy
Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203

Dear Kevin,

The Southeastern Colorado Water Conservancy District (District) is seeking funding from the Colorado Water Conservation Board (CWCB) Water Efficiency Grant Program to integrate the Master Contract Participants into the District's Regional Water Conservation (RWC) Plan, to develop local water conservation plans, and make enhancement to the Best Management Practices (BMPs) Tool Box.

The proposed project focuses building on the successes of the RWC Plan with three specific sets of tasks:

i) Expand the applicability of the RWC Plan to include other water providing entities that participate in District programs – and those that may participate in the Long-Term Excess Capacity Master Contract (Master Contract) for storage in Pueblo Reservoir. The Master Contract is a long-term contract between the District and Reclamation allowing for storage of non-Project water in Pueblo Reservoir when space is available.

ii) Support the development of six (6) local water conservation plans using the BMPs Tool Box contained in the RWC Plan and presented on the District web site. Two of the local water conservation plans will be developed for the Lower Arkansas Valley and the Upper Arkansas Water Conservancy Districts; whereas the other four will be developed for selected Arkansas Valley Conduit (AVC) participants.

iii) An important component of the RWC Plan was the development of a valuable resource titled the BMP Tool Box. The Tool Box is readily available to all of the RWC Plan participants. This scope of work was developed based on comments received from AVC project participants, Master Contract participants, and other members of the water conservation community in Colorado (e.g., CWCB's Water Conservation Technical Advisory Group and Colorado WaterWise). The comments typically requested that more "case study" data be posted on the District's BMP Tool Box to provide staff and Board members with information that will support informed local decision making. To this point, case studies that include costs and benefits, and data that can be used to support benchmarking are of greatest interest. Note that although this is a small project, it is important to develop a methodology that provides resources to support the proposed additions to the District's BMP Tool Box over time.

31717 UNITED AVENUE • PUEBLO, CO 81001 • PHONE (719) 948-2400 • FAX (719) 948-0036
web site: www.secwcd.org

The District is requesting $37,980 in CWCB grant funding. To support this project the District and participants will provide $29,150 in in-kind, and $40,000 the District has received from a U.S. Bureau of Reclamation Water Conservation Field Services grant. The total cost of the proposed project is $107,130.

The District would like to thank CWCB for this opportunity and please contact us with any questions.

Sincerely,

James W. Broderick
Executive Director

Cc: SECWCD District Files
Tracy Bouvette

CWCB Water Efficiency Grant Proposal

Southeastern Colorado Water Conservancy District
Jean Van Pelt, Project - Program Coordinator
jean@secwcd.com 719-948-2400

www.secwcd.org

TABLE OF CONTENTS

TABLES

ATTACHMENTS

Grant Application to the Colorado Water Conservation Board (CWCB) Water Efficiency Grant Program

Applicant: Southeastern Colorado Water Conservancy District

Project Name: Integration of Master Contract Participants into District's Regional Water Conservation Plan, Development of Local Water Conservation Plans and Enhancement to the Best Management Practices Tool Box

Project Overview

The Southeastern Colorado Water Conservancy District ("SECWCD" or "District") has prepared a Regional Water Conservation Plan ("RWC Plan") in accordance with the requirements of the US Bureau of Reclamation ("Reclamation"). The RWC Plan, which addresses water conservation planning for 38 entities that provide potable water supply for municipal and industrial (M&I) uses in communities between Pueblo and the state line along the Lower Arkansas River valley (see Table 1), was prepared with financial support from Reclamation and the CWCB, and was reviewed and approved by the CWCB.

The RWC Plan was conceived to organize and support local water conservation planning and implementation for those 38 entities that will be receiving Arkansas Valley Conduit ("AVC") deliveries from the District in accordance with the requirements of Reclamation. These 38 entities will each execute a Memorandum of Agreement (MOA) with the District dictating the terms of the relationship between the District and the organizations related to AVC deliveries including water production and sales data reporting and sharing protocols and requirements, as well as stipulations on the reporting of local water conservation planning and implementation efforts. It is through these MOAs that the goals and objectives of the RWC Plan, including annual data reporting, will be achieved and supported locally.

Reclamation and the District are currently evaluating another program to share resources within the District's service area – including the Long-Term Excess Capacity Master Contract (Master Contract) for storage in Pueblo Reservoir. The Master Contract is a long-term contract between the District and Reclamation allowing for storage of non-Project water in Pueblo Reservoir when space is available. A list of the Master Contract participants is included in Table 2.

It is the District's interest to expand the applicability of the RWC Plan to include all 13 of the entities that will take advantage of the Master Contract – which includes 11 additional entities that provide potable water supply for municipal and industrial uses in communities within the Arkansas River basin, including Fountain Creek, above Pueblo plus two water conservancy districts. The District seeks to include the two conservancy districts (i.e., the Upper Arkansas and the Lower Arkansas Valley Water Conservancy Districts) in the application of the RWC Plan to maintain consistency with all those entities within the District's service area.

Therefore, one of the goals of this proposed project is to expand the RWC Plan, through data collection and amendment to include these 13 additional entities that participate in District projects and programs.

Another set of tasks that the District proposes to do as part of this grant request is to support the development of six (6) local water conservation plans using the Best Management Practices (BMPs) Tool Box contained in the RWC Plan and presented on the District web site. Two (2) of the local water conservation plans will be developed for the Lower Arkansas Valley and the Upper Arkansas Water Conservancy Districts[1]; whereas the other four (4) will be developed for selected AVC participants. In this way, the District can leverage its assets, in connection with funding support from the State and Federal governments, to help develop local water conservation plans for organizations that have interest and need, yet lack resources.

Finally, the District is proposing to enhance portions of the BMP Tool Box through this project, in response to requests made by those entities that participate in the District's projects and programs. Specific enhancements that are proposed include the following:

[1] With regard to the two conservancy districts being party to the SECWCD Regional Water Conservation Plan, it is important to realize two things. First, these organizations are not M&I retail water providers, and as such, their involvement in and planning for water conservation is new territory for both the District and the CWCB. The conservancy districts will not necessarily focus their water conservation planning on some of the typical components of water conservation as detailed in Statute (CRS 37-60-126), for they do not have direct connection with end user demand management in the same way that "typical" M&I retail water providers do. However, the two conservancy districts may have the need and interest in conducting a broader range of water conservation efforts in line with the SECWCD BMP Tool Box and the CWCB's SWSI Levels Analysis. Specifically, they may include water loss management, focused data collection, and general end user educational programs as part of their local water conservation programs. There may also be some nexus between the water conservancy district water conservation planning and other BMP Tool Box components (e.g., production and treatment, customer delivery, system wide management).

- Collect information related to water loss control including meter replacement and automated meter reading (AMR) and advanced meter infrastructure (AMI) investments made from two local water providers and prepare case studies for inclusion in the BMP Tool Box.
- Develop two additional case studies for selected other relevant AMR and AMI projects that have occurred either within the State or in nearby jurisdictions based on available literature.
- Collect information on project participant water rates and publish summary information in the BMP Tool Box.
- Gather listing of frequently asked questions (FAQs) based on conversations with participants, both before and during execution of this project, and publish the FAQs, along with answers, in the BMP Tool Box.

This scope of work was developed based on comments received from AVC project participants, Master Contract participants, and other members of the water conservation community in Colorado (e.g., CWCB's Water Conservation Technical Advisory Group and Colorado WaterWise). The comments typically requested that more "case study" data be posted on the District's BMP Tool Box to provide staff and Board members with information that will support informed local decision making. To this point, case studies that include costs and benefits, and data that can be used to support benchmarking are of greatest interest. Note that although this is a small project, it is important to develop a methodology that provides resources to support the proposed additions to the District's BMP Tool Box over time.

In summary:

- **The first set of scope tasks**, which are linked to the execution of the Record of Decision related to the Long-Term Excess Capacity Master Contract (expected to be completed by mid-February 2014), include expanding the applicability of the RWC Plan and developing the two local water conservation plans for the Lower Arkansas Valley and the Upper Arkansas Water Conservancy Districts such that MOAs can be developed for the Master Contracting entities by fourth quarter 2014.
- **The second set of scope items**, which relate to supporting local water conservation planning conducted by selected (i.e., volunteer) AVC Participants, will be performed in partial fulfillment of the implementation plan defined in the RWC Plan.

- **The third set of tasks** will include enhancements to the BMP Tool Box. All of these tasks are described in detail in the attached scope of work, budget and project schedule.

Table 1 – Listing of AVC Regional Water Conservation Plan Participants

County	Entities	County	Entities
Bent	Hasty Water Company	Otero	Homestead Improvement Association
	Las Animas		La Junta, City of
	McClave Water Association		Manzanola, Town of
Crowley	Crowley County Commissioners		Newdale-Grand Valley Water Company
	96 Pipeline Company		North Holbrook Water
	Crowley County Water Association		Patterson Valley Water Company
	Crowley, Town of		Rocky Ford, City of
	Ordway, Town of		South Side Water Association
	Olney Springs, Town of		South Swink Water Company
	Sugar City, Town of		Swink, Town of
Kiowa	Eads, Town of		Valley Water Company
Otero	Beehive Water Association		Vroman
	Bents Fort Water Company		West Grand Valley Water Inc.
	East End Water Association		West Holbrook Water
	Eureka Water Company	Prowers	Lamar, City of
	Fayette Water Association		May Valley Water Association
	Fowler, Town of		Wiley, Town of
	Hancock Inc.	Pueblo	Boone, Town of
	Hilltop Water Company		St. Charles Mesa Water District
	Holbrook Center Soft Water		

Table 2 – Listing of Master Contract Participants

County	Entities	County	Entities
El Paso	Colorado Springs Utilities	Otero	Fayette Water Association
	Security Water and Sanitation District		Fowler, Town of
	Stratmoor Hills Water District		Hilltop Water Company
	Fountain, City of		Holbrook Center Soft Water
	Widefield Water and Sanitation District		Homestead Improvement Association
Bent	Hasty Water Company		La Junta, City of
Chaffee	Poncha Springs, Town of		Lower Arkansas Valley Water Conservancy District
	Salida, City of		Manzanola, Town of
	Upper Arkansas Water Conservancy District		Newdale-Grand Valley Water Company
Crowley	96 Pipeline Company		Patterson Valley Water Company
	Crowley County Water Association		Rocky Ford, City of
	Ordway, Town of		South Side Water Association
	Olney Springs, Town of		South Swink Water Company
Fremont	Canon City, City of		Valley Water Company
	Florence, City of		Vroman

	Penrose Water District		West Grand Valley Water Inc.
Kiowa	Eads, Town of	Prowers	May Valley Water Association
Otero	Beehive Water Association	Pueblo	St. Charles Mesa Water District
	Bents Fort Water Company		Pueblo West

Organizational Background

The District was formed under Colorado State Statutes on April 29, 1958 by the District Court in Pueblo, Colorado. The District's purpose is to develop and administer the Fryingpan-Arkansas Project (FAP). The District holds the water rights to the FAP. The District contracted with the United States Department of Interior Bureau of Reclamation (Reclamation) for construction of the FAP. Public Law 87-590, the authorizing legislation for the FAP and the District's Repayment Contract with the Bureau of Reclamation provides the principles that govern the FAP's design and operations. The FAP consists of diversions, conveyances, and storage facilities designed primarily to divert water from Colorado River tributaries on the west slope for use in the water-short areas in the Arkansas River Valley on the east slope. The District annually allocates approximately 54,700 acre feet of FAP water to municipal and agricultural entities within the District.

As the largest wholesale water distributor in southeastern Colorado, the District's allocations, to some degree, influence all water activities in its service area. Policies established by the Board of Directors consistently have been aimed at yielding maximum possible benefits to its water users through flexibility of operations and adaptability to changing needs. The District Board members and staff encourage policies of wise and efficient use of all available water supplies. The District supports efficient water management, optimizes water resource operations, and enhances water availability and water resources within the FAP and the Arkansas River Basin.

In keeping with the District's policies of promoting the wise use of FAP water, the District has developed and will oversee the implementation of the RWC Plan. The District will provide technical support and funding to implement the Plan. In addition, the District will be responsible for tracking the success of the RWC Plan and water savings derived from its implementation.

Contact Information

Southeastern Colorado Water Conservancy District
Jean Van Pelt, Project – Program Coordinator
719-948-2400, jean@secwcd.com
31717 United Avenue, Pueblo, CO 81001

Tracy Bouvette, Consultant
720-641-6136, tbouvette@tde.com
315 Vassar Ave., Swarthmore, PA 19081

Roles and Responsibilities

The District will take the lead in conducting the proposed scope of work with Ms. Jean Van Pelt acting as the Project - Program Coordinator. The District will contract with Mr. Tracy Bouvette, Former Executive Director of the Great Western Institute, to develop the local Plans, enhance the BMP Tool Box, and integrate the Master Contract participants into the RWC Plan. A written statement of their background is included in Attachment 1.

Water Demand and Use by Sector

AVC Participants

This section of the application presents an overview of the current water supply attributes and characteristics for the 38 AVC participants. Detailed information related to the subject matter contained in this section can be found in Reclamation's Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract Draft Environmental Impact Statement (EIS) (USBR, 2012) and Pre-NEPA State and Tribal Assistance Grant (STAG) Reports (Black and Veatch, 2010). It was also supplemented by the System Wide Water Audits conducted by the District, and actively supported by the Plan participants, in 2011 and 2012. The System Wide Water Audit report is available under separate cover (Great Western Institute, 2012).

The Plan participants' current water demand was obtained from the Draft EIS (USBR, 2012) Appendix A.1 are presented in Table 3. Table 3 also presents the per capita water

use on a system wide basis for each of the RWC Plan participants based on values reported by USBR (2012).

Water use by the RWC Plan participant customers varies depending on water provider location and local water demands. A listing of the various water uses supported by the individual RWC Plan participants is also provided in Table 3. Note that per capita water use for each of the RWC Plan participants varies according to the customer types being served by the individual water providers. For example, those RWC Plan participants that provide water for feedlots typically have higher per capita water use than those that do not. Overall, the RWC Plan participants maintain a system-wide per capita water use of about 181 gallons per person per day (gpcd).

Note that data collected during the System Wide Water Audits further characterized the water demand for each of the RWC Plan participants. In general, the RWC Plan participants do not have large outdoor irrigators, per se. Some of the individual water providers have schools and prisons as customers, and these entities may use potable water to irrigate outdoor spaces; however most large irrigation is performed using non-potable supplies such as private wells and/or ditch water.

Many of the largest water customers are feedlots that have peak use during various times of the year. To this point, peak demand is not necessarily concurrent with summertime irrigation except in the cities and towns. Monthly water use data which was used to characterize peak demand is contained in the System Wide Water Audit Report (Great Western Institute, 2012).

Future water demands associated with the increase in population for the 38 AVC participants can be predicted assuming that per capita water use rates will not change over the coming decades. Estimated demand using current per capita water use is about 13,888 AF in 2070 for the RWC Plan participants (see Table 4), which is an increase of about 3,635 AF from the 2010 demand of 10,253 AF for the same entities.

However, passive savings related to the natural replacement of toilets, clothes washers and dish washers in single family and multi-family residences with more water efficient fixtures and appliances is expected to reduce per capita water use over the next 60 years. Therefore, calculations were made to account for the expected impact of passive water savings on future demands. The calculations used to characterize future water

Table 3 - Summary of AVC Participant Current Water Demands and Water Uses

County	Participant	2010 Per Capita Water Use (gpcd)[1]	2010 demand[1] (Acre-Feet)	Water Customer Types[2]					
				Feedlot	Other Commercial	Other Industrial	Municipal	Residential	Other[3]
Bent	Hasty Water Company	100	32		✓			✓	✓
	Las Animas, City of	116	570		✓	✓	✓	✓	✓
	McClave Water Assoc.	114	56	✓	✓			✓	✓
Crowley	Crowley County Commissioners								
	96 Pipeline Co.	311	56	✓				✓	
	Crowley County Water Assoc.	165	580			✓		✓	
	Crowley, Town of	151	34		✓		✓	✓	✓
	Ordway, Town of	169	240	✓	✓		✓	✓	✓
	Olney Springs, Town of	92	40		✓	✓	✓	✓	
	Sugar City, Town of	261	82		✓		✓	✓	
Kiowa	Eads, Town of	357	250		✓	✓	✓	✓	✓
Otero	Beehive Water Assn	43	8	✓				✓	
	Bents Fort Water Co.	62	63	✓				✓	✓
	East End Water Assn.	131	11					✓	
	Eureka Water Co.	200	74					✓	
	Fayette Water Assn.	179	12	✓				✓	
	Fowler, Town of (potable only)	110	210	✓	✓	✓	✓	✓	✓
	Hancock Inc.	101	17					✓	
	Hilltop Water Co.	141	45	✓				✓	
	Holbrook Center Soft Water	321	18	✓				✓	
	Homestead Improvement Assn.	93	7					✓	
	La Junta, City of	256	2,040		✓	✓	✓	✓	✓
	Manzanola, Town of	73	39		✓		✓	✓	✓
	Newdale-Grand Valley Water Co.	110	57	✓	✓			✓	
	North Holbrook Water	156	7					✓	
	Patterson Valley Water Co.	139	15					✓	
	Rocky Ford, City of	199	890		✓	✓	✓	✓	✓
	South Side Water Assoc.	130	7					✓	
	South Swink Water Co.	126	86					✓	✓
	Swink, Town of	51	38		✓		✓	✓	✓
	Valley Water Co.	104	38	✓				✓	
	Vroman	190	32	✓				✓	
	West Grand Valley Water Inc.	266	25	✓				✓	
	West Holbrook Water	543	14					✓	
Prowers	Lamar, City of	262	2,400	✓	✓	✓	✓	✓	✓
	May Valley Water Assoc.	244	410	✓	✓	✓		✓	✓
	Wiley, Town of	49	24		✓		✓	✓	✓
Pueblo	Boone, Town of	182	66		✓		✓	✓	✓
	St. Charles Mesa Water District	135	1,660		✓			✓	✓
Total			**10,253**						

[1] From Appendix A.1 Draft EIS (USBR (2012)) (gpcd – gallons per capita per day)

[2] From the "Merrick Participant Surveys," (Black and Veatch, 2010) with water customer data augmented by System Wide Water Audits (Great Western Institute, 2012)

[3] Includes institutional (e.g., schools), cemeteries, State Park, etc

demands for the RWC Plan participants were made based on the following assumptions:

- Future water demands can be reasonably estimated using the product of current (i.e., 2010) per capita water use and predicted future population served, based on 2010 per capita water use reported by the AVC participants and summarized by Reclamation; and
- The impact of passive savings can be estimated by developing an adjusted per capita water use using the methodology presented in the CWCB Report "SWSI Conservation Levels Analysis Report", Great Western Institute (2010). The passive savings are related to the natural replacement of only toilets, clothes washers and dish washers in single family and multi-family residences. The replacement of other water saving devices is not accounted for in this analysis for those reasons detailed in the CWCB report.

Estimating passive savings using the methodology contained in the SWSI Conservation Levels Report hinges on determining the population served by each RWC Plan participant, in three key years – 1994, 2005 and 2015. These times relate to when key federal or state legislation impacted (or will impact) the availability of water conserving fixtures and/or appliances.

To estimate the populations served by each of the RWC Plan participates in 1994, 2005 and 2015, the flowing methodology was used:

1. The ratio of current (i.e., 2010) population served by each RCW participant to the current county population within which each resides was calculated.
2. The relevant County populations for 1994 and 2005 were obtained from the SWSI Conservation Levels Report (which utilized the SWSI Phase I Report (CDM, 2004) and the State Demographers Office as sources for past population data).
3. The ratio developed in Step 1 was multiplied by the 1994 and 2005 relevant County population to estimate the AVC participant population served in 1994 and 2005.
4. The Reclamation estimate of AVC participant population was obtained for 2070.
5. A straight-line interpolation of the AVC participant population from 2010 to 2070 was developed to estimate the 2015 population for all AVC participants.

Table 4 - Summary of Forecasts Water Demands with and without Passive Savings

County	Participant	2010 per capita water use (gpcd)[1]	Forecasted 2070 Demands (Acre Feet)			
			Without Passive[2]	With Minimum Passive Savings	With Maximum Passive Savings	EIS Demand[1]
Bent	Hasty Water Company	100	40	34	33	33
	Las Animas, City of	116	713	628	604	602
	McClave Water Assoc.	114	70	62	59	70
Crowley	Crowley County Commissioners					
	96 Pipeline Co.	311	88	87	86	85
	Crowley County Water Assoc.	165	918	894	879	883
	Crowley, Town of	151	54	52	51	51
	Ordway, Town of	169	381	370	364	366
	Olney Springs, Town of	92	64	61	59	59
	Sugar City, Town of	261	130	128	126	127
Kiowa	Eads, Town of	357	250	236	232	232
Otero	Beehive Water Assn	43	10	7	6	10
	Bents Fort Water Co.	62	81	61	55	81
	East End Water Assn.	131	15	13	13	13
	Eureka Water Co.	200	95	88	86	86
	Fayette Water Assn.	179	16	15	14	14
	Fowler, Town of (potable only)	110	269	232	222	223
	Hancock Inc.	101	22	19	18	18
	Hilltop Water Co.	141	58	51	50	50
	Holbrook Center Soft Water	321	23	22	22	22
	Homestead Improvement Assn.	93	9	7	7	9
	La Junta, City of	256	2,615	2,459	2,417	2,421
	Manzanola, Town of	73	50	39	37	50
	Newdale-Grand Valley Water Co.	110	73	63	60	60
	North Holbrook Water	156	9	8	8	8
	Patterson Valley Water Co.	139	19	17	17	17
	Rocky Ford, City of	199	1,144	1,056	1,032	1,031
	South Side Water Assoc.	130	9	8	7	7
	South Swink Water Co.	126	110	97	93	92
	Swink, Town of	51	49	34	30	49
	Valley Water Co.	104	48	41	39	39
	Vroman	190	42	38	37	37
	West Grand Valley Water Inc.	266	33	31	30	30
	West Holbrook Water	543	18	18	18	17
Prowers	Lamar, City of	262	2,788	2,614	2,567	2,157
	May Valley Water Assoc.	244	476	444	435	435
	Wiley, Town of	49	28	18	16	28
Pueblo	Boone, Town of	182	118	112	111	111
	St. Charles Mesa Water District	135	2,955	2,760	2,698	2,651
	Total		13,888	12,923	12,637	12,274

[1] from Draft EIS (USBR, 2012) (Appendix A.1 and Table 1-7) (gpcd – gallons per capita per day)
[2] calculated as the product of 2070 population (from Table 2) and 2010 per capita water use

Once the key year service populations were estimated, the estimates of annual demand adjustments were developed. The demand adjustments were obtained by multiplying the subject population for each AVC participant by the reduced gallons per capita per day (gpcd) associated with each of three different passive water conservation actions:

- After 1994, only low flow toilets (1.6 gallons per flush (gpf)) could be purchased by residential water users.
- After 2005, only Energy Star clothes washers and dish washers could be purchased by residential water users.
- After 2015, only 1.28 gpf toilets will be available on the market in response to California's "point-of-sales" laws that will require these types of toilets be installed prior to any property sale that takes place.

Given the size of the California market, changes in California State laws that affect the supply chain in that state are expected to affect the supply chain in all western states, including Colorado.

A high and low passive saving estimate of the adjustment to future water demand was calculated based on the following:

- Passive savings change over time depending on the rate at which the fixtures and appliances are replaced. For toilets, the replacement rate was estimated to be between 25 and 83 years (Great Western Institute, 2010). For clothes washers and dishwashers, the replacement rate was estimated to be between 12 and 15 years (Great Western Institute, 2010).
- The change to the gpcd associated with the gradual replacement of the subject fixtures and appliances was obtained from the SWSI Conservation Levels Report.
- The gradual decrease in future water demand for each RWC participant was estimated by multiplying the reduced gpcd associated with each type of passive retrofit (i.e., toilet, clothes washer, dish washer) by the target population.
- The decreased water demand for all three fixtures and appliances were summed and the difference between the water demands for each water provider was determined for the period from 2010 to 2070.

Note that in accordance with the SWSI Conservation Levels Report, both a high and low passive savings estimate was calculated for 2070. The difference between the two scenarios chiefly address expected differences in replacement rates for the fixtures and

appliances in question and the variability of water use between different models of the new fixtures and appliances.

The results of the passive savings estimates are presented in Table 4 which contains the 2070 forecasted demand without passive savings and the 2070 forecasted demand with both high and low estimates of passive savings. Overall the passive savings were estimated to range from about 7 to 9 percent of total forecasted 2070 water demand; however, on a per participant basis the variability was found to be substantially larger – varying from about 2.5% to over 40% depending on the age of the housing stock, the predicted growth rate of the service population, and the current per capita water use.

Overall, the reduction in forecasted 2070 water demand associated with passive savings is estimated to be between 965 and 1,251 AF for all the AVC participants combined. It should be noted that the actual passive savings that may be realized by the RWC Plan participants may exceed the estimated "high" demand reductions as other, more efficient residential and/or commercial fixtures and appliances which were not accounted for are replaced (e.g., showerheads, pre-rinse spray nozzles, etc.). Therefore, the calculated 2070 demands with "high passive savings are considered more likely to occur than the 2070 demands associated with "low" passive savings.

Note that the 2070 water demands predicted in support of the EIS (USBR, 2012) are based in part on predicted passive savings estimates presented herein; however the EIS analyses did not include passive savings estimates for community with lower than state average per capita water use (e.g., McClave, Beehive, Bents Fort, etc.). In addition, the analyses presented in the EIS included demand reductions for active conservation efforts that will be conducted by Lamar, La Junta and St. Charles Mesa Water District over the coming decades without including passive savings in these three communities. The high and low passive savings calculations presented in Table 4 do not account for any demand reductions related to active water conservation programs that are implemented locally.

The major difference between the maximum passive savings predicted 2070 water demands (i.e., 12,637 acre-feet) and the EIS predicted 2070 water demands (i.e., 12,274 acre-feet) relates to demand reductions predicted by Lamar in association with its active water conservation program. Lamar predicts over 600 AF of demand reduction associated with its active water conservation programs for this community which is about 400 acre-feet more than is expected from passive savings alone. Future

monitoring and verification of the impact of its active water conservation programs on water demand will be an important component of the City's efforts.

Master Contract Participants

Water demands for the Master Contract participants were obtained from the Draft EIS (USBR, 2012) Appendix A.1. These demands were developed based on various methods detailed in the Draft EIS Appendix. Table 5 presents the populations and water demands as reported in the Draft EIS.

Table 5. Master Contract participants populations and water demands

Participant		2010		2060	
County	Entity	Population	Water Demand (AF)	Population	Water Demand (AF)
Chaffee	Poncha Springs, Town of	701	147	1,883	360
	Salida, Town of	5,600	1,406	15,043	3,418
	Upper Arkansas Water Conservancy District	39,125	602	90,331	960
El Paso	Colorado Springs Utilities(1)	417,500(1)	79,790(1)	524,100(1)	102,230(1)
	Fountain, City of	26,000	4,369	87,000	13,156
	Security Water and Sanitation District	18,200	3,653	27,000	4,930
	Strathmoor Hills Water District	5,500	640	6,000	750
	Widefield Water and Sanitation District	16,000	2,491	35,123	5,195
Fremont	Canon City, City of	25,300	5,600	54,838	11,070
	Florence, City of	8,090	1,450	18,202	2,975
	Penrose Water District	3,300	510	7,385	1,679
Otero	Lower Arkansas Valley Water Conservancy District	(2)	(2)	(2)	(2)
Pueblo	Pueblo West	31,036	6,877	50,000	10,000
	Total (w/o Colorado Springs Utilities)	178,852	27,745	392,805	54,493

(1) Colorado Springs Utility population and water demand data were obtained from the Utility's 2007 Water Conservation Plan. Population and water demand are for 2006 and 2016, respectively.

(2) The Lower Arkansas Valley Water Conservancy District (LAVWCD) is a wholesale water provider that would use Master Contract storage capacity to support a rotational fallowing and leasing program for its customers. Customers of the LAVWCD may include the Upper Arkansas Water Conservancy District, Widefield, Security, Fountain, and various AVC participants up to 7,800 AF per year.

Direct comparison of future water demands developed for the AVC participants (Table 4) and the Master Contract participants (Table 5) cannot be performed without an understanding of the difference between the methods upon which the forecasts are based. For the AVC participants, the forecasted future demands have been adjusted for passive conservation savings using the technique described in the previous subsection, whereas passive savings are not consistently included in the Draft EIS forecasts for the Master Contract participants. For example, the methodology described by Great Western Institute (2010) was used to adjust per capita water use, and therefore future demands projected for Canon City, Poncha Springs, Florence, and the Upper Arkansas River Water Conservancy District. Passive savings were also included in the calculations used by Salida, as reported in their local water conservation plan; however the details of these calculations were not explicitly presented in the Draft EIS.

Some of the remaining future demand forecasts (i.e., Colorado Springs Utilities, Security, Pueblo West, and Widefield) were reported based on the results of local water conservation planning, which may or may not have included the effects of passive water conservation. Finally, future water demands for Penrose and Strathmoor Hills do not appear to include the effects of passive water conservation savings.

Noteworthy is that even with passive water conservation savings explicitly included in all the Master Contract participant future demand projections, a reduction of 7 to 9% would only offset a portion of the nearly 100% increase in future water demands projected for 2060.

Water Contracting and Water Conservation Goals

The water conservation goals developed for the RWC Plan and approved by the District Board are based on an understanding that the District does not provide Project water for retail sale; instead the District has an administrative role that includes being the local contracting agency who is responsible for repayment to Reclamation of locally funded construction costs of the AVC and the management of the long-term excess capacity Master Contract. The Master Contract is a long-term contract between the District and Reclamation allowing for storage of non-Project water in Pueblo Reservoir when space is available. The water providers that could benefit from the existence of the Master Contract are all located within the District's service boundaries. The AVC participants that are also participating in the Master Contract may store non-Project water for delivery through the AVC. Non-AVC water providers that are participating

in the Master Contract would use existing water systems or the Arkansas River to receive water deliveries.

To this point, the water conservation goals specified in the RWC Plan related to expected water use efficiencies that will be realized collectively by the 38 AVC participants over the planning horizon, which is to say by 2030 and 2050. These goals are solely the District's and are non-binding for the project participants. However, each participant must enter into an MOA with the District to allow for requisite stipulations and conditions regarding data sharing and reporting, project costs and fees, etc. Through these MOAs, the District will require annual reporting of water deliveries, water sales, and water loss, at a minimum for each individual organization. This information will allow the District to track progress related to improved water use efficiencies on a local scale.

In addition, the District will offer technical assistance to those project participants that are currently integrated into the RWC Plan (i.e., are AVC participants) or will be integrated as a result of executing this proposed scope of work (i.e., are Master Contract participants only) and wish to plan for and implement local water conservation programs. Given that the water lost from distribution after it is purchased from the District and/or paid for through the Master Contract cannot be recovered, leaking water lines and/or inaccurate meters will detrimentally impact participant organizational cash flow. It is therefore anticipated that all project participants will benefit from at least water loss management programs. In that a much broader set of water conservation programs are supported by the District and the State, and are documented within the BMP Tool Box, organizations that choose to develop local water conservation plans will be able to evaluate and potentially select measures and practices that extend into areas of system wide water management, integrated planning, water production and treatment, customer delivery and customer demand management – whatever suits the needs of the local entity and its customers.

For this reason, the District does not, and will not, directly control how local water providers and their customers will leverage the benefits of local water conservation programs to reduce water demand. However, the District is committed to provide financial and technical resources to support local water conservation efforts being planned and implemented by the RWC Plan participants.

Given that the efforts of the District and the RWC Plan participants will over time will improve local water use efficiency though improvements to water loss control and overall system water management, as well as other water conservation measures and programs, the District has developed the following broad goals for improved water use efficiency by the combined group of RWC Plan participants:

- By 2030, reduce water loss from 20% to 15% of total water production (reducing demand by about 540 acre-feet from estimated 2030 demands (10,811 acre-feet)); and
- By 2050, reduce water loss from 15% to 10% of total water production (reducing demand by another 600 acre-foot for a total of about 1,140 acre-feet from expected 2050 demands (11,423 acre-feet)).

These goals were developed to align with the expected gaps in future water supply discussed in the RWC Plan.

Additionally, the District is requesting that the RWC Plan participants:

- Develop local water conservation RWC plans that document water demand reduction goals (including water loss management improvements);
- Select water conservation measures from the District's BMP Toolbox to support local water conservation efforts; and
- Implement the selected activities (or an appropriate portion thereof) by 2022 (which is when the AVC is predicted to be constructed and operational, and each RWC Plan participant would have to execute a contract with the District to receive AVC deliveries).

Finally, the District suggests that the RWC Plan participant water use efficiency goals identify potential water demand reductions that may be expected in 2030 and 2050 as a result of implementing the individual water conservation plans. It is anticipated that the same range of water conservation goals will be maintained with the integration of the Master Contract participants.

One other District goal involves striving to facilitate and support the development of 28 local water conservation plans by 2022 (which is 80% of the RWC Plan participants that are not covered entities). That number will change with the inclusion of the Master Contract participants into the RWC Plan.

Monitoring Activities to Estimate Water Savings during Implementation

It will be incumbent on the District to maintain contact with all the RWC Plan participants to track individual water provider water use, water loss, and water use efficiency prior to and once the AVC is operational. The terms of data sharing and reporting will be by necessity contained in the contract terms and conditions that will be created between the District and each of the RWC Plan participants prior to the AVC becoming operational; however, the District currently has Memorandum of Agreement (MOAs) with the AVC participants that commits the participants to provide information to track the effectiveness of implemented RWC Plan or participates in a RWC Plan (Section V.A.9.). This language is as follows:

> *Participant will provide information to SECWCD, as requested, in order to track the effectiveness of implemented water conservation plans, whether the Participant has its own water conservation plan or participates in a regional water conservation plan.*

The District intends to include the same language in the MOAs that will be developed with the Master Contract participants in the fourth quarter of 2014.

The District has considered the data collection and reporting requirements of both Reclamation and the State with regards to the District's repayment contract, as well as the District's RWC Plan in developing its requirements for RWC Plan participant reporting. Reclamation requires an update of the RWC Plan every 5 years, whereas the State requires updates no longer than every 7 years. In addition, the District became aware of the current data collection activities that all the RWC Plan participants undertake as a result of the System Wide Audits that were performed in 2011 and 2012. As a result, the District has developed the following annual reporting requirements for all RWC Plan participants, beginning in 2014, to include, at a minimum:

- Monthly data production data
- Monthly water sales data (by customer category if possible)
- Number of active connections by customer category
- Non-revenue water (as a percent of annual water production)
- Status of local water conservation planning efforts
- Listing of implemented water conservation programs (in the last year)
- Current water rates (base fee and fee structure)

CWCB Grant Monies

The District is requesting $37,976.26 in CWCB grant funds to fund the proposed project. CWCB and $40,000 in Reclamation grant funds with $29,150 from in-kind from the District and the participants will be used to focus on building the successes of the RWC Plan with three specific sets of tasks. The total cost to complete the proposed project is $107,126.26.

The grant monies will be used as follows (see attached scope of work (Attachment B) and budget (Attachment C) for additional detail):

- The first set of scope tasks, which are linked to the execution of the Record of Decision related to the Long-Term Excess Capacity Master Contract (expected to be completed by mid-February 2014), include expanding the applicability of the RWC Plan and developing the two local water conservation plans for the Lower Arkansas Valley and the Upper Arkansas Water Conservancy Districts such that MOAs can be developed for the Master Contracting entities by fourth quarter 2014.
- The second set of scope items, which relate to the AVC Participants (the AVC is expected to be completed, if approved, in 2022) include developing local water conservation plans for four AVC participants in partial fulfillment of the implementation plan defined in the RWC Plan.
- The third set of scope items is based on comments received from AVC project participants, Master Contract participants, and other members of the water conservation community in Colorado (e.g., CWCB's Water Conservation Technical Advisory Group and Colorado WaterWise). The comments typically requested that more "case study" data be posted on the District's BMP Tool Box to provide staff and Board members with information that will support informed local decision making. To this point, case studies that include costs and benefits, and data will be developed to support benchmarking are of greatest interest.

Attachment A – Project Team Summary

Jean Van Pelt, Southeastern Colorado Water Conservancy District. Ms. Van Pelt is the Water Conservation Specialist and Program Manager for the District and will serve as the Project Coordinator. Ms. Van Pelt has been an employee with the District for over a decade. She has been involved with all aspects of the District's water conservation, public engagement and outreach programs, and is currently serving as the Project Manager for the AVC and Master Contract EIS. Ms. Van Pelt oversees the District's Xeriscape Garden, and manages the District's technical and over site roles related to its support of local water education and water conservation programs.

Tracy Bouvette, Sustainable Practices. Mr. Bouvette is the past Executive Director of Great Western Institute, a Colorado non-profit focused on promoting the benefits of water conservation and water use efficiency. Mr. Bouvette has over 25 years of experience in water resources engineering and policy development. He was the primary author of the State's original Water Conservation Plan Development Guidance Document, and the Statewide Water Supply Initiative (SWSI) Water Conservation Levels Analyses looking at passive savings and water conservation policy for the State of Colorado. He has been involved with over two dozen local water conservation planning efforts in Colorado and he has traveled the state conducting workshops on water conservation planning and implementation.

Attachment B - Detailed Project Scope of Work

Overview

There are three tasks included in the proposed scope of work, plus a project administration task related to progress reporting and invoicing. The three tasks are:

- Master Contract Participant Integration and Water Conservation Planning for Water Conservancy Districts
- Preparation of Four Local Water Conservation Plans
- Expansion of the BMP Tool Box

Each of these tasks is discussed in the overview presented below. A detailed listing of the proposed scope of work and relevant project deliverables follows.

Master Contract Participant Integration and Water Conservation Planning for Water Conservancy Districts

With respect to the first set of tasks, the proposed project will expand the applicability of the RWC Plan to include the 13 entities that are being evaluated for the Master Contract (MC), but are not party to the AVC deliveries (see Table B-1). Currently, 6 of the 13 MC entities have state approved water conservation plans. The current plans do not provide key baseline data regarding water loss characteristics, especially in a format consistent with AWWA M-36. For this reason, AWWA M-36 audits are included in the scope to develop the amended RWC Plan. The audits will be performed as specified by the AWWA M-36 manual for all the entities involved to help establish a consistent baseline of water use, water delivery and water loss data. This is missing from all the plans currently on file with the State. In addition, these data will be helpful to the 6 MC participants currently with approved plans when they submit their updated plan to CWCB.

Table B-1 – Listing of Master Contract Participants Not Party to AVC

County	Entities	County	Entities
El Paso	Colorado Springs Utilities	Chaffee	Poncha Springs, Town of
	Security Water and Sanitation District		Salida, City of
	Stratmoor Hills Water District		Upper Arkansas Water Conservancy District
	Fountain, City of	Fremont	Canon City, City of
	Widefield Water and Sanitation District		Florence, City of
Otero	Lower Arkansas Valley Water Conservancy District		Penrose Water District
		Pueblo	Pueblo West

The audits are conceived to be in keeping with the CWCB's policy focus on utility business practices and efficiencies first as per the SWSI Levels analyses.

In addition, the Tool Box presents a broad range of conservation related measures and programs that the six MC entities with water conservation plans will be able to consider and incorporate into their local efforts. To this point, the RWC Plan is fundamentally an expansion of the District's role as a technical resource promoting even more integration of conservation and efficiency into the community served by District Project water. As with the current Regional WC Plan, it does not require new planning steps or even water conservation programs to be adopted by the project participants. It basically sets goals for the entire community and links the communities with data reporting and technical resources, both of which are a part of the project and are stipulations in the MOAs.

The first set of tasks will enhance and add to the approved RWC Plan in the following ways:

- Collecting baseline data characterizing infrastructure and water loss in a manner consistent with those data collected from the AVC participants;
- Incorporating that data into the development of goals relevant to the MC participants;
- Developing an implementation plan that addresses the needs of the MC participants, the requirements of the Reclamation, and the State of Colorado; and
- Identifying opportunities for the District to support the efforts of the 11 of the 13 MC participants to develop and implement local water conservation plans.

To achieve these objectives, a scope of work is proposed that includes the following tasks:

- Conducting meetings with each of the 13 MC participants to collect data consistent with the data obtained and summarized for the AVC participants in the RWC Plan;
- Create an Addendum to the RWC plan which includes:
    - A summary of the data received from each of the MC participants;
    - An overview of current water conservation planning and implementation efforts that are in place for selected MC participants
    - Goals for the MC participants to engage in the District's RWC Plan; and

  - Implementation steps for the MC participants to engage in local water conservation planning and implementation efforts and to support the development of MOAs related to the use of the long-term excess capacity in Pueblo Reservoir.
- Collect MC participant comments on the addendum and include responses to those comments in a Final addendum published and provided to the CWCB and Reclamation.

In addition, two local water conservation plans will be developed for the two water conservancy districts that are MC participants (Lower Arkansas Valley and Upper Arkansas Water Conservancy Districts) as part of this set of scope tasks. It is the District's intent to work with the conservancy districts and the CWCB to develop a structure for conservancy district water conservation plans that follows the State guidelines (to the extent practical), and supports data collection and reporting in a manner consistent with the District's data reporting needs to Reclamation and the MOAs executed with the conservancy districts[5]. Clearly, the conservancy districts have water production (as diversions or deliveries), storage (or some form thereof), and metering that they conduct (or should conduct). In addition, they have both agricultural and M&I customers (including local HOAs that need augmentation water). It is the goal of the CWCB, and the District by extension, to promote and support meaningful water conservation in Colorado, including the District's service area. It is the intent of the District to use the RWC Planning effort to achieve this goal through the planning process, first, and then continue supporting local conservation, as requested by local entities, during implementation and updating.

As per the current RWC Plan, local water conservation planning is encouraged but not required. If an entity chooses to develop a plan, then the District will provide resources to the extent possible to support the local planning effort. Using this model, the entities that choose to develop a plan will decide for themselves the benefits for creating the plan. It can be any myriad of reasons – to improve customer communications, support infrastructure assessments including those related to water loss management, evaluate water rates, integrate planning for drought with water conservation, etc. So the planning effort will have an intrinsic benefit to the entity that chooses to do it. The District's expectation is that the Tool Box and the resources contained in the Tool Box and the technical support available at the District will help to promote more local planning by showing the roadmap and providing examples of money and water

[5] See footnote 1 in the main body of the Grant Application

savings by entities within the District and beyond. The benchmarking use of the Tool Box is vital as part of this integration and support effort.

The Conservancy Districts can realize efficiencies related to distribution and customer use practices, varying, of course, by the customers and the infrastructure within each district. One example may be that the Conservancy Districts could encourage or require conservation plans from M&I entities looking to exchange/lease/purchase water from the Upper and Lower Arkansas Districts as a term of an agreement. Another example might be that new M&I development that requests augmentation water meet certain efficiency measures as part of the permitting process. Having resources available from the CWCB and the District will help to support these discussions and support more progressive evaluations.

The Conservancy Districts, working with the SECWCD, could also use the RWC Planning effort to identify data collection and reporting needs and create a baseline of current water use, customer types, and water loss. The need for this effort is a requirement of Reclamation. The support of the State in this effort ensures that the State is party to the data collected and the local decisions regarding water conservation planning and implementation. This effort of data collection and reporting to the State helps the CWCB to identify a new use for State resources related to assisting Conservancy Districts with data collection, project administration and efficiencies to the extent that these entities find value in that kind of relationship. This links to the basin wide planning being conducted through the IBCC and basin roundtables, and supports the mission of the CWCB. It is an important first step to take and SECWCD is willing and eager to facilitate that effort.

Develop Local Water Conservation Plans

For the second part of the proposed project, four local water conservation plans would be developed – including one each for four selected AVC participants[6]. The scope of work for the development of these water conservation plans will be essentially the same, even though the final plan for each entity will be crafted for the unique circumstances that each organization faces. The proposed scope includes:

- Developing a messaging campaign and engaging the four AVC participants that will participate in developing a local water conservation plan;

[6] The four AVC participants will be chosen according to those with future water supply limitations and/or large observed current water loss (measured as non-revenue water).

- Conducting outreach to the four AVC participants such that data exchange can occur and matters related to the planning effort can be explained and discussed;
- Meeting with the six individual organizations to initiate development of the local water conservation plans;
- Performing the data analyses and plan preparation requisite to define the needs of the individual organizations with respect to local water conservation planning and implementation, identifying goals and selecting relevant content from the District BMP Tool Box;
- Preparing the Draft Plan and making the Plan available for public review and comment; and
- Finalizing the Plan after public comment has been received.

Enhancements for the BMP Tool Box Overview

- **Prepare Case Studies –** This task involves collecting data and conducting interviews with officials and/or key staff in the Towns of Swink and Rocky Ford to document the costs and related water savings associated with the installation and subsequent operation of automated meter reading (AMR) and advance meter infrastructure (AMI) systems. Data will be collected to characterize those infrastructure replaced and/or enhanced, the changes in operations, and the benefits received including savings in water losses and operational costs. Up to two additional case studies from the available literature related to other regionally relevant projects will also be added to the BMP Tool Box under this task.
- **Prepare Summary of Water Rates –** This task will involve collecting current water rates from the 38 AVC project participants and posting them in a tabular format that will list information related to base water fees, service fees and per gallon rates for different customer types (as applicable). The water rates are a part of the tool box that the District's partners have requested so they can benchmark their rates and (hopefully) justify either different rate structures and/or higher rates to support developing cash reserves, and infrastructure improvement projects. This is particularly important for many of the smaller water providers. Aside from everyone doing their own comparisons related to what works and what doesn't, the specific goal of this effort is to create a formal depository of water rates for entities in the District that will promote more inspection and assessment of water rates for the smaller organizations in the future. This is very much a "small water provider" benefit for those hesitant to raise water costs on their neighbors.

- **Create frequently asked questions (FAQs)** - A new section will be developed on the BMP Tool Box landing page that will contain FAQs that come up and/or are established during the review and roll-out of the website. The Tool Box website has been rolled out and presented in a number of forums including to the AVC project participants and some of the MC participants. The development of FAQs included in the Tool Box currently relate to those questions that arose repeatedly during the initial roll out of the Tool Box website. The FAQs which are not currently included in the Tool Box have come about as a result of participants using the Tool Box and assessing the contents.

Administrative Scope Components

For all portions of the proposed scope, the District will conduct linked but separate administrative tasks to track project budgets and perform requisite progress reporting associated with State and Federal requirements.

Project Budget and Schedule

The estimated budget is included in Attachment C and the schedule for the proposed project is Attachment D. Attachment E confirms a federal grant match from the Bureau of Reclamation in the amount of $40,000.

Detailed Scope of Work

Task 1 Master Contract Participant Integration and Planning for Water Conservancy Districts

1.0 Project Communications

Purpose

The activities described under this task will be used to engage and communicate with the 13 MC participants during the development and completion of the RWC Plan addendum, as well as the preparation of two local water conservation plans for the two water conservancy districts. These activities will be chiefly comprised of meetings with the District and the water providers, in groups or individually, to support discussions related to this portion of the proposed project. The specific activities that will be performed include the following.

Tasks

1.1 Kickoff meeting with SECWCD – a project kickoff meeting will be conducted with the District to coordinate project logistics and exchange updates related to relevant project issues.

1.2 Pre-meeting communications – Develop messaging and communications for outreach and scheduling efforts associated with the proposed data collection (i.e., system-wide water

audits) with each of the 11 MC participants that deliver retail water. Messaging will also be developed to engage the two (2) water conservancy districts that will participate in the Master Contract.

1.3 Conduct meetings with individual providers (2) – This task involves conducting meetings with the two water conservancy districts to discuss the objectives and processes that will follow to support development of local water conservation plans. The meetings will also allow for an opportunity to perform data collection and discuss local water conservation needs to inform plan development.

1.4 Presentations (3) – The project team will prepare for and conduct three (3) presentations for the 13 MC participants – one prior to and two after data collection and the plan addendum has been drafted. The presentations will serve to engage and inform the MC participants regarding the activities that will be conducted, the schedule for project execution and the recommendations of the amended RWC Plan. The presentations will also provide a forum for collecting MC participant feedback.

1.5 Board presentations (6) – The project team will prepare for and make four presentations to the District Board and Board committees regarding the proposed project – two near the beginning of the project, to inform the Board about the project scope and schedule, and two at the end of the project, to inform the Board and Board committees about the project outcomes and seek Board feedback and approval. In addition, two presentations will be prepared for and made for the two water conservancy Districts (the Lower Arkansas Valley Water Conservancy District and the Upper Arkansas Water Conservancy District) to present the Draft Water Conservation Plans and initiate the public review process.

Deliverables
The project team will develop the project messaging that will be provided to the MC participants, will conduct meetings with the two water conservancy district, and will conduct three (3) project presentations. Six Board presentations will also be developed.

2.0 System Wide Water Audits/Baseline Data Collection

Purpose
This task focuses on collecting those data that characterize water infrastructure and water loss management associated with each of the 13 MC participant organizations. The data collection and organization efforts will be conducted in a manner that is consistent with the tasks performed previously by the District when developing the RWC Plan for the AVC Participants.

Tasks
2.1 Data collection – This task involves collecting the following data from each of the MC participants during and in conjunction with the initial meeting with each entity described in Task 1.3. The baseline data includes:

- List of all the meters serviced by size (preferably in table format).
- When each meter, by size category, was last tested/replaced (including master meters).

- For small systems: A map showing locations of well head(s) and other source water, master meter and service area.
- For larger systems: A map showing locations of water treatment plant(s), master meter(s) and service area.
- Estimates of master meter accuracy (and what regular adjustments are used).
- Monthly master meter data for two years, with date read.
- For smaller systems: Monthly water delivery data for all customers for two years (including unbilled, billed, and date billed).
- For larger systems: Monthly water delivery data for all customers, by customer category, for two years (including unbilled and billed, and date billed).
- Listing of metered, unbilled accounts, if they exist (for example City Parks, water treatment use, and so on).
- List of unmetered water use for past two years (examples include flushing flows, firefighting, filter backwash, leaks and line breaks).
- Any other useful data related to the following:
    - Current water demand (in 2010)
    - Future water demand (in 2020, 2030 and 2070, if available)
    - Identify potential limitations in current and future ability of the entity to meet expected water demands, and reason for the limitation
    - Water billing procedures and water rate structures
    - Current water conservation activities
    - Identify potential facility needs related to future treatment and/or distribution system needs to support future customers

2.2 Summarize the data and conduct analyses – the project team will organize the data collected from each of the MC participants into an Excel database associated with each of the key attributes of the data collected including:

- Meter sizes and age (including whether or not automated meter reading devices (AMR) have been installed);
- Distribution system pipe diameter, length, and materials;
- Water treatment plant/system characteristics; and
- Comparison of produced/diverted water to water sold (including accounting for unbilled, unmetered and unbilled, metered water uses).

The calculations for non-revenue water will be developed based on these data using methodologies discussed in the AWWA M-36 Manual including:

- Total water supplied per period
- Total billed authorized consumption per period
- Calculated non-revenue water per period
- Estimated unbilled consumption per period
- Estimated total water losses per period

Additional data analyses will also be developed to frame issues related to current and future water supply demands, expected future water supply limitations, and need for and role of water conservation in managing local water resources, in accordance with State guidelines.

Deliverables
The project team will conduct the system-wide audits and produce summary tables and figures that characterize the infrastructure, water supply demand, and non-revenue water associated with each of the MC participants.

3.0 Develop Draft Addendum

Purpose
The activities described under this task will be used to develop the Draft Addendum that can be circulated to the project stakeholders for review and comment. The Draft Addendum will contain water conservation goals and implementation tasks specific to the MC participants; and will present data summaries related to the current and future expected water demands, water supply limitations, infrastructure, and water loss/non-revenue water.

Tasks
3.1 Develop data summaries and narrative – include content that presents data characterizing current and future water supply needs of the MC participants in a manner consistent with the AVC participants that are discussed in the RWC Plan. Included summaries of those data collected during the site visits and the system-wide water audits.

3.2 Identify areas of potential water demand reductions – identify water demand reduction opportunities by water use type for the MC participants, based on past uses, ongoing water conservation efforts, and expected impacts of future measures and programs.

3.3 Develop water conservation goals - working with the District and selected members of the MC participants, develop water conservation goals for the District and for local water conservation efforts. A specific water savings target, including percentage of water savings, timeframe during which water savings will occur, as well as how the savings will be measured and verified will be identified for District and MC participant consideration.

3.4 Develop implementation schedule - identify significant implementation actions, and the timing of the actions related to the specified water conservation goals in a manner consistent with the RWC Plan and the needs of the District, the MC participants, Reclamation and the State. Describe what the MC participants will conduct to achieve the stated water conservation goals and how the District will provide appropriate support during RWC Plan implementation.

3.5 Develop plan for monitoring and evaluation processes - describe how water conservation will be measured and verified for effectiveness, and what the role of each of the MC participants, as well as the District will be during monitoring and reporting efforts.

3.6 Prepare Draft Addendum – a Draft Addendum will be prepared and circulated to the MC participants, Reclamation, the State and the public for review and comment.

Deliverables
The project team will develop the Draft Addendum after District review.

4.0 Finalize and Approve the Addendum

Purpose
Revise the Draft Addendum based on comments and finalize for District approval.

Tasks
4.1 Gather comments and prepare a comment response –Gather and organize comments and develop comment responses for each comment.

4.2 Develop Final Addendum – finalize the Addendum based on comments received and the prepared comment responses, and produce for Board approval.

Deliverables
The project team will develop the Final Addendum including a comment response document for District Board adoption.

5.0 Water Conservancy District Water Conservation Plans (2)

Purpose
Develop two local water conservation plans for each of the two MC participant organizations that are water conservancy districts – the Lower Arkansas Valley and the Upper Arkansas Water Conservancy Districts. In general the scope will focus on explaining the framework for the water conservation plan, defining the water conservation goals, and selecting water conservation measures and programs from the District's BMP Tool Box, to the extent that the BMPs are applicable to the water conservancy districts. The plan will also present the implementation tasks that each organization will conduct to move the water conservation programs forward, including listing data collection, monitoring, and verification efforts.

5.1 Data Collection and Assessment – collect information from each of the water conservancy districts to characterize, to the extent possible, their water supplies, water deliveries and the uses of the deliveries by their customers. Also characterize current areas of water use inefficiencies that may be addressed by the BMP Tool Box measures and programs. An assessment will be performed organizing and summarizing the data in conjunction with the information available in the RWC Plan.

5.2 Framework for Conservation – a narrative will be developed to describe the ongoing organizational needs and opportunities related to water supply reliability and sustainability; and to identify how water conservation and water use efficiencies could benefit each of the water conservancy districts.

5.3 Water Conservation Goals - identify water demand reductions that each of the water conservancy districts identify as valuable and worthy of future investments related to planning for and implementing water conservation measures and programs.

5.4 Tool Box Evaluations and Selection – based on the water conservation goals of each water conservancy district, BMPs will be selected and evaluated for applicability from the District's Tool Box. The evaluations will assess the costs and potential benefits of implementing any specific BMP to reduce system and/or customer water demands. BMPs will be selected based on cost and benefit, as well as the interests of the water conservancy district, to the extent reasonable.

5.5 Establish Implementation Plan

5.5.1 Develop implementation schedule - identify significant implementation actions, and challenges that may impact the implementation of the selected conservation measures.

5.5.2 Describe how to involve and engage the planning entity's customers in the implementation process, to the extent necessary.

5.5.3 Develop plan for monitoring and evaluation processes - describe how water conservation will be measured and verified for effectiveness, and what the role of each of the planning entities, as well as the District, will be during monitoring and reporting efforts.

5.5.4 Develop plan for updating and revising the Plan - describe when and how the Plan will be updated, in part, in accordance with any agreements in place with the District.

5.5.5 Develop funding strategy for the plan – identify potential funding needs and options related to the selected implementation efforts.

5.6 Draft Plan - compile and format information, data and other content into the Draft Plan for review and comment by the planning entity. Produce adequate copies for public, District, and other stakeholder review. Include review cycle for District staff prior to completion and circulation of the Draft Plan.

5.7 Final Plan

4.7.1 Gather public and stakeholder comments and prepare a comment response – Gather and organize comments and develop comment responses for each comment.

4.7.2 Develop Final Plan – finalize each of the two (2) plans based on comments received and the prepared comment responses, and produce for water conservancy district Board approval.

Deliverables

The project team will develop the Draft Plan for each of the two water conservancy districts after internal review and circulate the Draft Plan for public review and comment. Once public comments have been received, a Final Plan for each of the water conservancy districts will be prepared including a comment response document for adoption.

Task 2 - Preparation of Four Local Water Conservation Plans

1.0 Project Communications

Purpose

The activities described under this task will be used to engage and communicate with the four (4) organizations that will develop local water conservation plans in a manner consistent with the District's RWC Plan. These activities will be chiefly comprised of meetings with the District and specific individual water providers to support discussions related to the identification and engagement of the four (4) organizations. The specific activities that will be performed include the following.

Tasks

1.1 Kickoff meeting with SECWCD – a project kickoff meeting will be conducted with the District to coordinate project logistics and exchange updates related to relevant project issues.

1.2 Develop pre-meeting communications with the four (4) organizations – Develop messaging and communications with the four AVC participants that will develop local water conservation plans.

1.3 Conduct meetings with participating organizations (4) –The meetings will be used to discuss the project objectives and processes, as well as allow for an opportunity to perform data collection and discuss local water conservation needs to inform plan development.

1.4 Board presentations (8) – The project team will prepare for and make four presentations to the District Board regarding the proposed project – two near the beginning of the project, to inform the Board and Board committees about the project scope and schedule, and two at the end of the project, to inform the Board and Board committees about the project outcomes and seek Board feedback and approval. The project team will also prepare for and attend four (4) Board meetings near the end of the project at each of the four (4) organizations that will be developing local water conservation plans to discuss the planning process, the plan content and the plan implementation recommendations, as well as to receive feedback.

Deliverables

The project team will develop the project messaging that will be provided to the four (4) organizations, and will conduct various Board presentations.

2.0 Draft Local Water Conservation Plans

Purpose

This task relates to the drafting of the four (4) individual local water conservation plans for the selected organizations. Generally, the plans will follow the water conservation planning methodologies recommended by both the CWCB and Reclamation; however, due to the size and nature of the operations of the expected participating entities, and the content that the District has provided to support the planning process embodied by the BMP Tool Box, the local water conservation plans will contain a subset of the information that would typically be included in a plan developed for a larger organization.

Insomuch as the four (4) organizations that will be involved in this portion of the project do not require sophisticated water demand forecasting or substantial investment in new water development, treatment and delivery infrastructure (beyond that that is conceived in partnership with the District), those portions of a typical water conservation plan development will not be included as part of this project.

In general the scope will focus on explaining the framework for the water conservation plan, defining the water conservation goals, and selecting water conservation measures and programs from the District's BMP Tool Box. The plan will also present the implementation tasks that the organization will conduct to move the water conservation programs forward, including listing data collection, monitoring, and verification efforts.

2.1 Data Collection and Assessment – collect information from the planning entity to update and supplement the data that has already been provided to the District to support preparation of the RWC Plan, including information on water production, customer water use, meters, billing, non-revenue water, population served, and expected future water demand; infrastructure needs related to meter and water line replacement; water rates; and current water conservation activities. An assessment will be performed organizing and summarizing the data in conjunction with the information available in the RWC Plan.

2.2 Framework for Conservation – a narrative will be developed to describe the ongoing organizational needs and opportunities related to water supply reliability and sustainability; and to identify how water conservation and water use efficiencies could benefit the planning entity.

2.3 Water Conservation Goals - identify water demand reductions that the planning entity identifies as valuable and worthy of future investments related to planning for and implementing water conservation measures and programs.

2.4 Tool Box Evaluations and Selection – based on the water conservation goals of each planning entity, best management practices (BMP) will be selected and evaluated for applicability from the District's Tool Box. The evaluations will assess the costs and potential benefits of implementing any specific BMP to reduce system and/or customer water demands. BMPs will be selected based on cost and benefit, as well as the interests of the planning entity and the District, to the extent reasonable.

2.5 Establish Implementation Plan –

2.5.1. Develop implementation schedule - identify significant implementation actions, and challenges that may impact the implementation of the selected conservation measures.
2.5.2. Describe how to involve and engage the planning entity's customers in the implementation process, to the extent necessary.
2.5.3. Develop plan for monitoring and evaluation processes - describe how water conservation will be measured and verified for effectiveness, and what the role of

each of the planning entities, as well as the District, will be during monitoring and reporting efforts.

2.5.4. Develop plan for updating and revising the RWC Plan - describe when and how the Plan will be updated, in part, in accordance with any agreements in place with the District.

2.5.5. Develop funding strategy for the plan – identify potential funding needs and options related to the selected implementation efforts.

2.6 Draft Plan - compile and format information, data and other content into the Draft Plan for review and comment by the planning entity for each of the four (4) AVC participants. Produce adequate copies for public, District, and other stakeholder review. Include review cycle for District staff prior to completion and circulation of the Draft Plan.

Deliverables
The project team will develop the Draft Plan for each of the four (4) planning entities after District review.

3.0 Final Local Water Conservation Plan

Purpose
Revise the Draft Plan based on comments and finalize for planning entity approval.

Tasks
3.1 Gather public and stakeholder comments and prepare a comment response – Gather and organize comments and develop comment responses for each comment.

3.2 Develop Final Plan – finalize each of the four (4) plans based on comments received and the prepared comment responses, and produce for planning entity Board approval.

Deliverables
The project team will develop the Final Plan for each of the four (4) planning entities including a comment response document for planning entity Board adoption.

Task 3 - Enhancements for the BMP Tool Box

1.0 Prepare Case Studies

Purpose
The activities described under this task will involve collecting data and conducting interviews with officials and/or key staff in the Towns of Swink and Rocky Ford to document the costs and related water savings associated with the installation and subsequent operation of automated meter reading (AMR) and advance meter infrastructure (AMI) systems. Data will be collected to characterize those infrastructure replaced and/or enhanced, the changes in operations, and the benefits received including savings in water losses and operational costs.

Additional case studies will also be developed to characterize costs and benefits related to active leak detection and repair projects and other AMR/AMI projects conducted in other locations within the U.S. Examples include those developed for Kirkland AFB (leak detection cost benefit) and "A Cost-Benefit Analysis of Leak Detection and the Potential of Real Water Savings for New Mexico Water Systems," Hardeman (2007).

Tasks

1.1 Kickoff meeting with SECWCD – a project kickoff meeting will be conducted with the District to coordinate project logistics and exchange updates related to relevant project issues.

1.2 Develop pre-meeting communications with the Towns of Swink and Rocky Ford – Develop messaging and communications with the towns to define the necessary data to be collected.

1.3 Conduct meetings with the Towns of Swink and Rocky Ford –The meetings will be used to perform data collection, as well as allow for an opportunity to discuss the project objectives and processes and to receive feedback.

1.4 The project team will prepare the case studies regarding the proposed project – Data will be collected to characterize those infrastructure replaced and/or enhanced, the changes in operations, and the benefits received including savings in water losses and operational costs.

1.5 Additional case studies will be developed to characterize costs and benefits related to active leak detection and repair projects and other AMR/AMI projects conducted in other locations within the US.

Deliverables

The project team will develop the case studies for AMR/AMI projects and leak detection and repair projects. The case studies will be made available through the BMP Tool Box.

2.0 Prepare Summary of Water Rates

Purpose

This task will involve collecting current water rates from the AVC project participants and posting them in a tabular format that will list information related to base water fees, service fees and per gallon rates for different customer types (as applicable). The cost of this effort will be managed by publishing the data that the District currently has for 26 of the 38 project participants, and then contact each of the 38 to request updated information. As more current water rates become available the table contained in the BMP Tool Box will be updated – noting that starting in 2015, each of the 38 project participants will be reporting their water rates to the District on an annual basis. Until that time, a partial listing of water rates should suffice as a benchmarking tool for local planning.

Tasks

2.1 Kickoff meeting with SECWCD – a project kickoff meeting will be conducted with the District to coordinate project logistics and exchange updates related to relevant project issues.

2.2 Develop pre-meeting communications with the AVC participants – Develop messaging and communications to define the project and the necessary data to be collected.

2.3 Gather and publish the data that the District currently has for 26 of the 38 project participants, and then contact each of the 38 to request updated information.

Deliverables

The project team will develop the summary of water rates to be utilized by the participants as a benchmarking tool for local planning. The summary of water rates will be made available through the BMP Tool Box.

3.0 Create frequently asked questions (FAQs)

Purpose

A new section will be developed on the BMP Tool Box landing page that will contain FAQs that come up and/or are established during the review and roll-out of the website. A few examples include: what type of data will the District be requesting annually from the project participants; what are the proposed AVC delivery costs; what is the AVC schedule; etc.

Tasks

3.1 Kickoff meeting with SECWCD – a project kickoff meeting will be conducted with the District to coordinate project logistics and exchange updates related to relevant project issues.

3.2 FAQs will be developed on subjects pertaining to what type of data will the District be requesting annually from the project participants; what are the proposed AVC delivery costs; what is the AVC schedule; etc.

Deliverables

The project team will develop the FAQs to be utilized by the participants. The FAQs will be made available through the BMP Tool Box.

Project Administration Tasks

Purpose

Track project budgets, schedules and deliverables, prepare progress reports and invoices.

Tasks

A.1 Track project budgets, schedules and deliverables – to support preparation of monthly project invoices.

A.2 Prepare Progress reports – to support the District's State and Federal periodic reporting requirements.

Deliverables

Monthly invoices and 50% and 75% complete and final project status reports.

Project Budget and Schedule

The estimated budget is defined in Attachment C and the project schedule is described in Attachment D.

Attachment D
Proposed Project Schedule
Integration of Master Contract Participants and Development of Local Water Conservation Plans

Master Contract Participant Integration and Planning for Water Conservancy Districts			2014										
Task			Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Prepare Regional WC Plan Adendum and Conservancy District WC Plans													
Project Communications													
1.1	Kick off Meeting												
1.2	Pre-Meeting Communications with Participating Organizations												
1.3	Meetings with the Water Conservancy Districts (2)												
1.4	Conduct Presentations (3)												
1.5	Board Presentations (6)												
System Wide Audits/Baseline Data Collection													
2.1	Collect Data/Meetings												
2.2	Summarize Data and Conduct Analyses												
Draft Addendum													
3.1	Create Data Summaries												
3.2	Characterize Potential Demand Reductions												
3.3	Develop Goals												
3.4	Establish Implementation Plan												
3.5	Develop Monitoring and Verification Program												
3.6	Draft Addendum												
Final Addendum													
	Participant/Public Review of Draft Addendum												
4.1	Collect Comments												
4.2	Develop Comment/Repsonse												
4.3	Final Addendum												
Water Conservancy District Water Conservation Plans (2)													
5.1	Data Collection and Assessment												
5.2	Develop Framework for Conservation												
5.3	Develop Conservation Goals												
5.4	Evaluate Tool Box and Select BMPs												
5.5	Develop Implementation Plans												
5.6	Draft Plans												
	Participant/Public Review of Draft Plans												
5.7	Final Plans												
Preparation of Four Local Water Conservation Plans			Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Project Communications													
1.1	Kick off Meeting												
1.2	Pre-Meeting Communications with Participating Organizations												
1.3	Meetings with the Participating Organizations (4)												
1.4	Board Presentations (8)												
Draft Local Water Conservation Plans (4)													
2.1	Data Collection and Assessment												
2.2	Framework for Conservation												
2.3	Water Conservation Goals												
2.4	Tool Box Evaluationand Selection												
2.5	Establish Implementation Plan												
2.6	Draft Plan												
Final Local Water Conservation Plan													
3.1	Public Comment and Comment Collection												
3.2	Develop Comment/Repsonse												
3.3	Final Plan												
Enhancements for BMP Tool Box			Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Prepare Case Studies													
1.1	Kick off Meeting												
1.2	Pre-Meeting Communications with Participating Organizations												
1.3	Meetings with the Participating Organizations (2)												
1.4	Preparation of Case Studies (2)												
1.5	Preparation of Additional Case Studies												
Prepare Summary of Water Rates													
2.1	Kick off Meeting												
2.2	Pre-Meeting Communications with Participating Organizations												
2.3	Gather Data, Follow Up to Update Data, and Publish Data												
Create FAQs													
3.1	Kick off Meeting												
3.2	FAQs Developed												
Project Administration			Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
A.1	Progress Reports												
A.2	Invoicing												

Attachment 4

COPY

Received 9/24/13

7-2279 (01-2013)
Bureau of Reclamation

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
ASSISTANCE AGREEMENT

1A. AGREEMENT NUMBER	1B. MOD NUMBER	2. TYPE OF AGREEMENT	3. CLASS OF RECIPIENT
R13AP60076		☒ GRANT ☐ COOPERATIVE AGREEMENT	Water Conservation District

4. ISSUING OFFICE

Bureau of Reclamation
P.O. Box 36900
Billings, MT 59107-6900

5. RECIPIENT

Southeastern Colorado Water Conservancy District
31717 United Avenue
Pueblo, CO 81001

EIN #:	84-6012143	County:	Pueblo
DUNS #:	182809327	Congress. Dist:	3rd

6. GRANTS MANAGEMENT SPECIALIST

Lindsey Nafts
Bureau of Reclamation
Great Plains Regional Office
P.O. Box 36900
Billings, MT 59107-6900
Ph. (406) 247-7684
Email. lnafts@usbr.gov

7. RECIPIENT PROJECT MANAGER

Jean Van Pelt
Southeastern Colorado Water Conservancy District (SECWCD)
31717 United Avenue
Pueblo, CO 801001
Ph. (719) 948-0036
Email. jean@secwcd.com

8. GRANTS OFFICER TECHNICAL REPRESENTATIVE

Laura Harger
Bureau of Reclamation
Eastern Colorado Area Office
11056 W. Cty Rd 18E
Loveland, CO 80537
Ph. (970) 962-4337
Email. lharger@usbr.gov

9A. INITIAL AGREEMENT EFFECTIVE DATE:

See Block 17

9B. MODIFICATION EFFECTIVE DATE:

10. COMPLETION DATE

September 30, 2014

11A. PROGRAM STATUTORY AUTHORITY
Section 9504(a) of Public Law 111-11

11B. CFDA Number
15.530

12. FUNDING INFORMATION	RECIPIENT/OTHER	RECLAMATION
Total Estimated Amount of Agreement	$71,760.00	$40,000.00
This Obligation	$71,760.00	$40,000.00
Previous Obligation	$0.00	$0.00
Total Obligation	$71,760.00	$40,000.00
Cost-Share %	50%	50%

13. REQUISITION NUMBER
13652010038

14A. ACCOUNTING AND APPROPRIATION DATA
A10-0382-4998-013-00-0-0-411G-6C20100

14B. TREASURY ACCOUNT FUNDING SYMBOL
14X0680

15. PROJECT TITLE
Integration of Master Contract Participants into the District's Regional Water Conservation Plan and Development of Local Water Conservation Plans