MT. CRESTED BUTTE
MCB W&SD WATER & SANITATION DISTRICT

May 1, 2014

Ms. Rebecca Mitchell
Section Chief – Water Supply Planning Section
Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, Colorado 80203

Ms. Mitchell,

The Board of Directors and staff of the Mt. Crested Butte Water & Sanitation District endorse and support the joint application with Skyland Metropolitan District for a Water Efficiency Grant from the Colorado Water Conservation Board and the Office of Water Conservation and Drought Planning. Water conservation planning and implementation in the upper East River valley has long been important to the management of local water resources and we believe that the development of a comprehensive water conservation plan will assist our District for assessing current water needs and the promotion of water conservation measures in the future. The Mt. Crested Butte Water & Sanitation District is committed to providing in-kind or financial resources required to develop a water conservation plan as described in the application.

Thank you for your consideration,

John Sale
Board Chairman
Mt. Crested Butte Water & Sanitation District

Skyland Metropolitan District
350 Country Club Drive, Suite 112A
Crested Butte, CO 81224
Phone (970) 349-7411 Fax (970) 349-5054

April 24, 2014

Mr. Kevin Reidy
Office of Water Conservation and Drought Planning
Colorado Water Conservation Board (CWCB)
1313 Sherman, Room 721
Denver, Colorado 80203

Dear Mr. Reidy:

Please find herein, Mount Crested Butte Water and Sanitation District and Skyland Metropolitan District's Water Conservation Planning Grant request, prepared in accordance with the CWCB's "Guidelines for Financial Assistance to Covered Entities to Develop Water Conservation Plans". Our organizations have worked together to support local potable water supply needs in locations in and around the Town of Crested Butte along the Slate River, East River, and their tributaries. We have implemented water conservation programs and practices in the past, however given the requirement for increasingly efficient water utilities and water resources management, our organizations have decided to pursue formal water conservation planning as a means to improve our data collection and management programs, improve our operational efficiencies, and support more consciences customer water use.

We are therefore requesting Water Efficiency Grant funding to support the development of two separate, yet coordinated, water conservation plans prepared following the guidelines set forth by the CWCB and the applicable state statutes. Our Boards' have both reviewed the grant application and support this request. As denoted by the signature provided below, our Board's will commit those resources from our two organizations that are needed to complete the proposed scope of work detailed in the attached grant application.

The contact information for this project is as follows:

Michael Billingsley
350 Country Club Drive, Suite 112
Crested Butte, Colorado 81224
(970) 349-7411
Email: mike@skylandco.com

We have attempted to prepare the attached grant application based on the CWCB guideline requirements. Please do not hesitate to contact myself or Mr. Tracy Bouvette of Sustainable Practices (720.641.6136) if the Office requires any additional information or needs clarification on any matter associated with this grant request.

Thank you for your consideration of this matter.

Sincerely,

Mike Billingsley
Skyland Metropolitan District Manager

Water Efficiency Grant Application
For Preparation of Two Water Conservation Plans
Mt. Crested Butte Water and Sanitation District and
Skyland Metropolitan District

Introduction

This water efficiency grant application has been prepared for the consideration of the Colorado Water Conservation Board and the Office of Water Conservation and Drought Planning by the combined organizations of Mt. Crested Butte Water and Sanitation District (Mt. Crested Butte or MCB) and Skyland Metropolitan District (Skyland). For the purposes of this grant application and in the advent of award, the execution of the proposed project, Mt. Crested Butte is the lead organization. However, both organizations will be using the proposed grant funding to support the development of a water conservation plan unique to the needs of each District.

Organizational Background

Mt. Crested Butte Water and Sanitation District was created in May of 1963 under the State of Colorado Special District provisions, 11 years before the Town of Mt Crested Butte was established in 1974. Mt. Crested Butte Water and Sanitation District is not part of the town; it is its own separate entity. In the beginning, written records did not exist, and actual recordkeeping for MCB began in 1982. In the early years, from approximately 1963 to about 1971, MCB had one part-time employee to look after both the water and sewer systems. Sometime during 1971 the operator's job became full-time. In February 1974, staff size was doubled to two operators. MCB now has a staff of 13 full-time employees. Three staff members in the office and five operators in water and four operators in wastewater.

MCB provides water and sewer service to approximately 6,500 residential and commercial customers which can balloon to service 10,000 people during the winter ski season. MCB serves approximately 3.055 square miles (or slightly less than 2,000 acres). MCB provide water and sewer service to all of the town of Mt. Crested Butte and Meridian Lake Park subdivision.

Skyland provides various services to its residents including water, sanitation, recreation, and fire protection services. Skyland is a political subdivision and quasi-municipal corporation of the State of Colorado, created pursuant to Title 32, Colorado Revised Statutes, as amended (the "Act"). The Order and Decree of the District Court of Gunnison County, Colorado, forming Skyland was entered on October 26, 1981.

Skyland was organized for the purpose of providing residents of within the limits of Skyland with domestic water services, sanitation services, street improvement services, electrical power services,

telephone services, cable television and park and recreation services, including an eighteen-hole golf course (which is no longer operated by Skyland). Skyland is an assemblage of contiguous parcels of land, which currently contains approximately 586 acres, located in the County, approximately 1.5 miles south of Crested Butte, Colorado and approximately 26 miles north of Gunnison, Colorado, the commercial hub and county seat of the County. Skyland is located along Colorado Highway 135, and is accessed by Gunnison County Road No. 738.

The services currently provided by Skyland to its customers include the operation of a complete water system, including production, treatment and distribution facilities; provision of untreated water by contract to a golf course located in Skyland's service area; a wastewater collection system with treatment provided by East River Sanitation District; a storm drainage system; a system of roads and public parking; and open space land. The operation of the water system is Skyland's principal activity.

As of 2013, approximately 49% of the development has been built out. Water and sanitation service and roads are available to 90% of the district, and recreational facilities are substantially complete. Skyland continues to improve its potable water system.

Approach

Water conservation planning and implementation in the upper East River valley has long been important to the management of local water resources. In fact, both MCB and Skyland have in place the following water conservation programs:

- Water waste ordinance
- Limitations on outdoor water use (e.g., car washing) and lawn irrigation
- Inclining water rate structure based on use

Skyland also has an ordinance designating plumbing fixture requirements for new construction.

However, as water resource management becomes increasingly important to local and regional planning and coordination efforts, it has become a priority of MCB and Skyland to formalize current and future water conservation programs, integrating water conservation with drought response planning, District budgeting, and overall water resources planning.

For this reason, these two organizations are seeking Water Efficiency Grant funding to support the development of two local water conservation plans created in conjunction with one another to maximize the use of shared resources and coordinate selected water conservation programs to the extent practical, where synergies in messaging, coordinated programs, and consulting support will be leveraged to help reduce planning costs.

The two water conservation plans will be prepared using the State's Water Efficiency Plan Guidance Document and the related Water Conservation Plan Template, to the extent that these references are relevant for MCB and Skyland given their size, nature of their service population (i.e., significant

part-time/tourist populations), and geography (i.e., high country and headwaters locale). Efficiencies in plan preparation will be identified and integrated into plan development to the extent possible without sacrificing quality or shortcutting state statute. For both planning organizations, the water conservation plan is anticipated to be living document that is used to guide and direct the real time allocation of resources related to the improvements of local water use efficiency both for the management of District infrastructure and customer demands.

The specific components of the proposed scope of work for both organizations will include the following:

- Profiling the existing water supply systems
- Profiling of current and future water demands and water demand management
- Integrated Planning and Water Efficiency Benefits and Goals
- Identification, Evaluation and Selection of Water Conservation Programs
- Development of Implementation and Monitoring Plan

A detailed scope of work, described task by task, as well as the proposed project budget and schedule are provided in Attachment A.

Contact Information

The official contact information for the team is as follows:

Mt. Crested Butte Water and Sanitation District
Mr. Frank Glick
District Manager
100 Gothic Road | PO Box 5470
Mt. Crested Butte, CO 81225
T: 970.349.7575

Skyland Metropolitan District
Michael Billingsley
District Manager
350 Country Club Drive, Suite 112A
Crested Butte, Colorado 81224
Telephone: (970) 349-7411

Roles and Responsibilities

Mr. Frank Glick, Mt. Crested Butte Water and Sanitation District. Mr. Glick is the District Manager and will serve as the Project Coordinator. Mr. Glick has been an employee with the District for over three decades and has been involved with all aspects of the District's water

conservation, public engagement and outreach programs, as well as all components of District operations and management.

Mr. Mike Billingsley, Skyland Metropolitan District. Mr. Billingsley is the District Manager and will serve as the point of contact for Skyland. Mr. Billingsley has been an employee with the District for over five years and has been involved with all aspects of the District's water conservation, public engagement and outreach programs, as well as all components of District operations and management. He will utilize his team which includes *Grant Bremer – Assistant Manager and Nola Oberosler – Billing and Finance.*

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 will serve as the project consultant developing and assessing data, evaluating water conservation activities and developing the two local water conservation plans. 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.

Current Water Demand and Population Served

MCB and Skyland are both direct diverters of surface water rights that they maintain on the streams and tributaries of the East and Slate Rivers above Gunnison. MCB diverts from Woods Creek and the East River using direct diversions, and Skyland diverts from a natural spring that is tributary to the Slate River. In addition, MCB also receives some direct surface supplies from the Malensek Irrigation Ditch. MCB treats and disinfects its potable water with a UV Filter system; whereas Skyland, which does not need to treat its source water, chlorinates prior to distribution for disinfection. Skyland also administers a non-potable water supply that is used for golf course irrigation, such that they maintain both potable and non-potable water systems.

Each entity tracks their raw water supplies with metered wells and a meter on the influent at the treatment plant. In addition, effluent treatment plant flow is metered by MCB. MCB and Skyland both utilize radio read (AMR) technologies to collect monthly customer use data from the individual customer water meters that they operate and maintain. At MCB, individual meters[1] are tracked as either commercial/commercial/condo mix or single meter dwellings. MCB could also track institutional uses for the District and the Town of Mt. Crested Butte. Skyland also tracks commercial and single meter/single family customers. Table 1 and 2 summarize the amount of diverted water and retail water sales associated with each organization.

[1] In 2013, Mt. Crested Butte had 796 customers, with 885 meters; Skyland had 137 customers with 206 meters.

Table 1 Summary of Water Production and Customer Demand for Mt. Crested Butte (AF)

	Water Treatment Plant Flows				
	Influent	Effluent	Customer Demand	Non-Revenue Water	% Non-Revenue Water[2]
2004	408.4	372.2			
2005	378.5	375.0			
2006	516.6	491.8			
2007	356.7	457.6			
2008	569.0	509.2			
2009	561.4	508.7			
2010	461.3	479.1	273.17	188.08	41%
2011	484.9	487.1	328.64	156.22	32%
2012	531.6	462.2	335.45	196.11	37%
2013	522.5	435.3	260.12	262.35	50%

Table 2 Summary of Water Production and Customer Demand for Skyland (AF)

	Diversion					
	Potable	Non-Pot	Total	Customer Potable Demand	Potable Non-Revenue Water	% Non-Revenue Water[2]
2009	98.83	179.22	278.06			
2010	94.91	199.44	294.35			
2011	107.76	179.43	287.20			
2012	103.48	203.98	307.45	60.17	43.31	42%
2013	88.87	168.70	257.56	48.45	40.42	45%

Based on the data presented in the above tables, it can be seen that both entities exhibit variable water demand over time for the period reported. These variations are due to a number of factors. To begin with, growth has not been much of a factor within each service area. The number of new connections per year has averaged about 5 per year for MCB (or about 0.6% per year), and about 1 per year for Skyland (or less than 0.1%). This trend may change from year to year; however the variations in past water demand appear to be related more to variable weather conditions and tourist visits than to increases in connections and increased infrastructure.

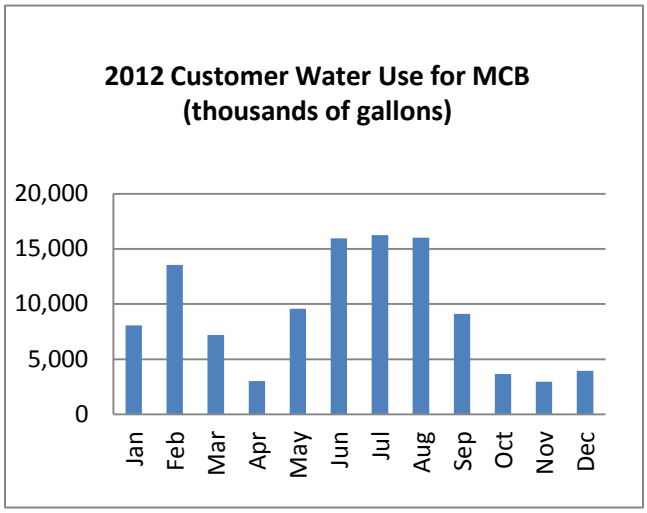
Variations in past water production and customer water demand may also relate to meter inaccuracies, due to aging infrastructure and weather impacts (e.g., snow pack, freeze thaw cycles, etc.). For this reason, one key area of future water conservation planning for both organizations will be to bolster existing metering and gauging instrumentation to assure that accurate measurements of water production and customer water use are obtained.

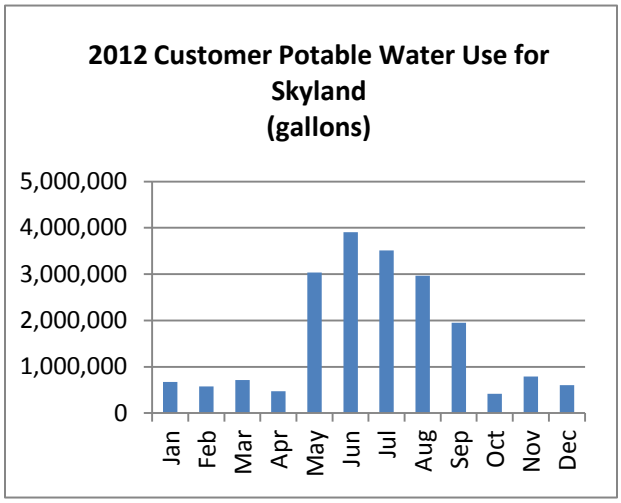
Also note worthy are the percentages of non-revenue water estimated for each organization. It is unlikely that these values, which range from about 30 to 50% of produced water, is represented

[2] % non-revenue water is non-revenue water as a percentage of water treatment plant influent for MCB and potable water diversion for Skyland

entirely by real losses. It is expected that non-revenue water is more likely comprised of a substantial amount of unmetered and metered, unbilled water uses (e.g., filter back wash water[3], system flushing flows, etc.) and apparent losses related to meter inaccuracies. It is anticipated that characterization of water loss for each organization will be an important component of future water conservation programs.

The pattern of water demand by the customers within each of these entities is presented in the figures below.





These figures indicate that customer water demand within the service area of each entity peaks during the summer, presumably in association with summertime irrigation. The seasonal increase is also likely associated with tourist visits during the warmer months of the year. A second peak is experienced in the wintertime by MCB presumably in association with condo use during ski season. This peak is not observed by Skyland since this organization serves fewer condominiums and is not in direct proximity to the ski slopes.

Given these customer water use patterns, there may be benefit for each entity to evaluate enhanced irrigation management programs, as well as tourist water use education programs.

Water Conservation Goals

Both organizations encourage the efficient use of water by their customers. To do this, both organizations maintain inclining block rate water structures, have outdoor water waste ordinances, and time of day watering restrictions. In addition, Skyland has plumbing fixture requirements for new construction. Given the challenge of obtaining water meter readings through a snow pack that is prevalent for four to six months a year, both entities employ automated meter reading instrumentation to facility monthly billing and therefore consistent cash flow.

[3] WTP water use related chiefly to filter backwash losses appears to average about 3% of total plant influent for MCB.

However, neither organization explicitly monitors and verifies the value and impact of these programs on customer water use behaviors or overall water demand. In addition, neither organization has conducted formal system-wide water audits or has proactive water loss management programs. Finally, there may be other best management practices related to water production and treatment, water distribution, customer water delivery, customer water use and overall water system management that may provide cost effective and meaningful water conservation from the District perspective. For this reason, both organizations will embrace formal water conservation planning with an eye toward improving local water use efficiency and reducing non-revenue water. In addition, both planning entities will evaluate the benefits of water conservation on enhancing instream flows in the East River and its tributaries.

The potential goal for future water conservation within both organizations therefore will be to reduce overall water demand per connection by between 5 to 8 percent over the next 10 years[4] including the reduction of non-revenue water by 20 to 25 percent over the planning period[5]. In addition, both organizations will integrate water conservation efforts into their ongoing water resources management efforts including drought response and capital budgeting.

Water Efficiency Grant Request

The two organizations are requesting $17,650 in CWCB Water Efficiency Grant funds to fund the proposed project. MCB and Skyland will contribute $ 6,380 in in-kind services, in the form of staff hours and expenses, to match the Grant funding to complete the scope of work. The total cost to complete the proposed project is $ 24,030. A detailed description of the scope of work, and proposed project budget and schedule is presented in Attachment A.

[4] This water conservation goal translates to net water demand reduction of about 21 AF for MCB and about 4 AF for Skyland over the next ten years; assuming 2.5% growth over the planning period.

[5] A 20 to 25 % reduction in non-revenue water may reduce current demands by between 36 and 45 AF for MCB and about 8 and 10 AF for Skyland; however, current levels of non-revenue water are likely dominated by apparent losses rather than real losses, such that actual water demand reductions will be lower than these estimates. Nonetheless, reductions in apparent losses will have a positive effect on the cash flow for each organization and therefore the benefit each District and the customers that they serve.

Attachment A

Detailed Scope of Work, and Proposed Project Budget and Schedule

Detailed Scope of Work

The scope of work presented below involves the development of two (2) water conservation plans concurrently – one for MCB and one for Skyland. The benefits of developing concurrent plans include the following:

i) Meetings that will occur to engage and educate organizational management regarding the nature of and process for developing water conservation plans can be conducted at the same time using the same resources. These meetings may include plan development discussions, identification and selection of water conservation programs, Board meetings, etc.;
ii) The close physical proximity of the two organizations allow for the cooperative development of shared goals and shared implementation tasks where applicable (e.g., developing consistent messaging for customers, developing shared goals for enhancing instream flows);
iii) The water conservation plans will be developed and established using consistent methodologies; and
iv) The shared planning process may be beneficial in stimulating other local water providers to initiate local water conservation planning.

For these reasons, the expected cost to develop the two plans concurrently is expected to be less than developing individual plans for the two organizations using separate, uncoordinated resources.

The detailed description of tasks proposed to be performed to develop the two water conservation plans are provided below.

1.0 Draft Local Water Conservation Plans

Purpose

This task relates to the drafting of the two (2) 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 state statute; however, due to the size and nature of the operations of the participating entities (i.e., MCB and Skyland), 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.

In general the scope will focus on explaining the framework for the water conservation plan (e.g., the plan will present current water production and demand data, identify future demands, characterize current and future infrastructure improvements, etc.), defining the water conservation goals, and selecting water conservation measures and programs that will attempt to achieve the goals stated for each planning entity. The plan will also present the implementation tasks that the planning entities will conduct to move the water conservation programs forward, including listing data collection, monitoring, and verification efforts.

Tasks

1.1 Data Collection and Assessment – collect information from each of the planning entities to update and supplement the data that has already been provided to the State as part of this application, 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 guidelines provided by the CWCB for this task.

1.2 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.

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

1.4 Water Conservation Program Evaluations and Selection – based on the water conservation goals of each planning entity, candidate water conservation programs will be evaluated for applicability and effectiveness. The evaluations will assess the costs and potential benefits of implementing any specific program and/or practice to reduce system and/or customer water demands. Candidate water conservation programs will be selected based on cost and benefit, as well as the interests of the planning entity Board and staff, to the extent reasonable.

1.5 Implementation Plan – the implementation plan contained in the entity's water conservation plan will include the following:

- 1.5.1 Implementation schedule - identify significant implementation actions, and challenges that may impact the implementation of the selected conservation measures.
- 1.5.2 Customer engagement - Describe how to involve and engage the planning entity's customers in the implementation process, to the extent necessary.
- 1.5.3 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.
- 1.5.4 Updating and revising the plan - describe when and how the Plan will be updated, in part, based on the state statute.
- 1.5.5 Funding strategy for the plan – identify potential funding needs and options related to the selected implementation efforts.

1.6 Draft Plan - compile and format information, data and other content into the Draft Plan for review and comment by the planning entity's staff. Once staff comments have been received, produce adequate copies for public, Board, state and other stakeholder review.

Deliverables

The project team will develop the Draft Plan for each of the two (2) planning entities.

2.0 Final Local Water Conservation Plan

Purpose

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

Tasks

2.1 Support public noticing and state review – Provide guidance and support to the two planning entities as they advertize for and receive public input during the required 60-day public comment period. Also coordinate the initial plan review by the CWCB.

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

2.3 Develop Final Plan – finalize each of the two (2) 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 two (2) planning entities including a comment response document for planning entity Board adoption.

3.0 Project Meetings and Administration

Purpose

These tasks involve meeting with the planning entities, developing progress reports for the CWCB and preparing project invoices.

Tasks

3.1 Coordination meetings – conduct two (2) project coordination meetings with the planning entities to kick off the planning effort; and to review the proposed plan recommendations and implementation program prior to the completion of the Draft Plan.

3.2 Progress Reporting – prepare CWCB project progress reports at 50% and 75% complete to update the CWCB on project progress, successes, challenges and potential changes to scope, schedule and/or budget, as appropriate.

3.3 Project Invoicing – prepare project invoices on a monthly basis and support the grant project administrator in reporting and invoicing the CWCB as the project progresses.

Deliverables

The project team will prepare for and attend meetings, prepare project progress reports and prepare project invoices.

Project Budget and Schedule

The proposed project budget and schedule are attached in Table A-1 and Figure A-1, respectively.

Figure A-1
Proposed Project Schedule
MCB and Skyland Water Conservation Planning Grant Application

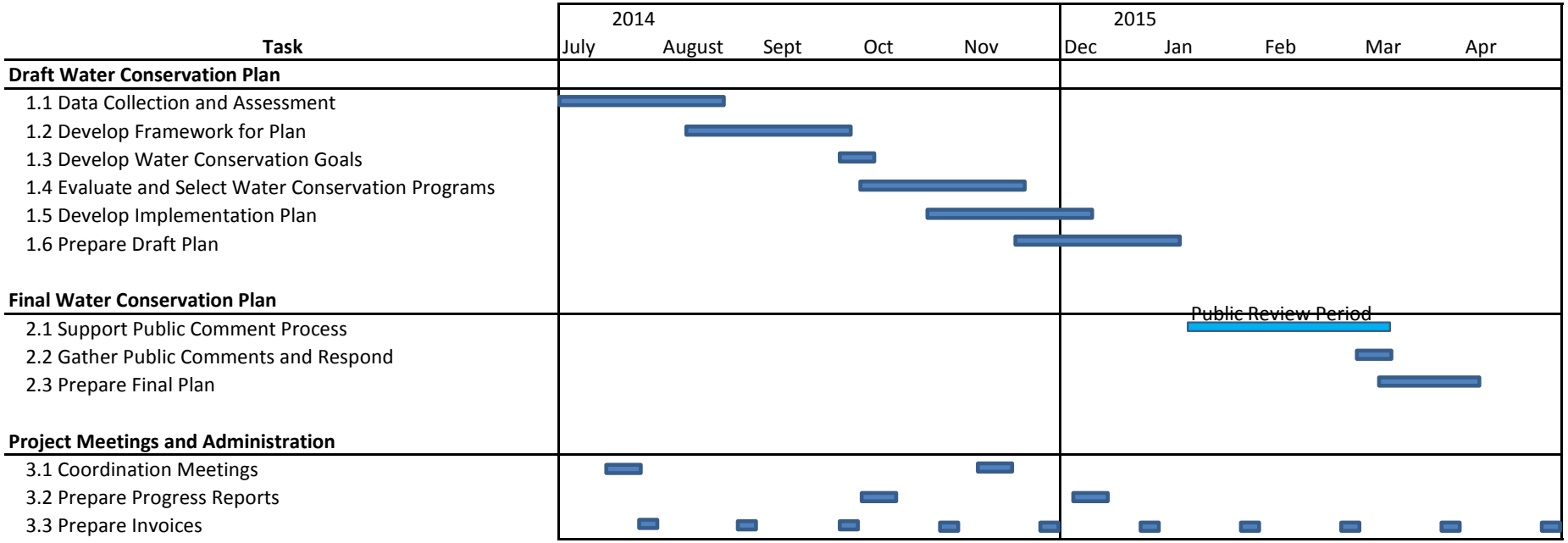


Table A-1
Proposed Project Budget
MCB and Skyland District's Water Conservation Planning Grant Application

				Planning Entities*					
	Bouvette			MCB		Skyland			CWCB
Task	**Hours**	**Cost**	**Expenses**	**Hours**	**Cost**	**Hours**	**Cost**	**Total Cost**	**Grant Request**
Draft Water Conservation Plan		$100			$55		$55		
1.1 Data Collection and Assessment	12	$ 1,200	$ 775	12	$ 660	$ 12	$ 660	$ 3,295	$ 1,975
1.2 Develop Framework for Plan	24	$ 2,400	$ -	2	$ 110	$ 2	$ 110	$ 2,620	$ 2,400
1.3 Develop Water Conservation Goals	8	$ 800	$ -	2	$ 110	$ 2	$ 110	$ 1,020	$ 800
1.4 Evaluate and Select Water Conservation Programs	24	$ 2,400	$ -	4	$ 220	$ 4	$ 220	$ 2,840	$ 2,400
1.5 Develop Implementation Plan	16	$ 1,600	$ -	3	$ 165	$ 3	$ 165	$ 1,930	$ 1,600
1.6 Prepare Draft Plan	40	$ 4,000	$ 50	6	$ 330	$ 6	$ 330	$ 4,710	$ 4,050
	124	$ 12,400	$ 825	29	$ 1,595	29	$ 1,595	$ 16,415	$ 13,225
Final Water Conservation Plan									
2.1 Support Public Comment Process	4	$ 400	$ -	4	$ 220	$ 4	$ 220	$ 840	$ 400
2.2 Gather Public Comments and Respond	4	$ 400	$ -	2	$ 110	$ 2	$ 110	$ 620	$ 400
2.3 Prepare Final Plan	8	$ 800	$ 50	4	$ 220	$ 4	$ 220	$ 1,290	$ 850
	16	$ 1,600	$ 50	10	$ 550	10	$ 550	$ 2,750	$ 1,650
Project Meetings and Administration									
3.1 Coordination Meetings	12	$ 1,200	$ 775	12	$ 660	$ 12	$ 660	$ 3,295	$ 1,975
3.2 Prepare Progress Reports	4	$ 400	$ -	4	$ 220	$ 2	$ 110	$ 730	$ 400
3.3 Prepare Invoices	4	$ 400	$ -	8	$ 440	$ -	$ -	$ 840	$ 400
	20	$ 2,000	$ 775	24	$ 1,320	14	$ 770	$ 4,865	$ 2,775
Project Totals	**160**	**$ 16,000**	**$ 1,650**	**63**	**$ 3,465**	**53**	**$ 2,915**		
			$ 17,650		**$ 3,465**		**$ 2,915**	**$ 24,030**	**$ 17,650**
							Match %	27%	
		* cost for MCB and Skyland are chiefly for Mr. Frank Glick and Mr. Mike Billingsley. Some hourly costs							
		will be incurred by other members of the organization that are responsible for billing and accounting							
		however, it is anticpated that the vast majority of the match will be achieved through Mr. Glick and							
		Mr. Billingsley contributing time to the project.							