

**CWCB Water Efficiency Grant Program
Water Conservation Planning Grant Application**

1. Contact information of entity seeking grant

Lead Applicant/Fiscal Agent:

Ruedi Water and Power Authority
Mark Fuller, Executive Director
P.O. Box 1700
Aspen, CO 81612
(970) 963-4959
fulcon@comcast.net

Project Partners:

Town of Basalt - Water Department
Jacque Whitsitt, Mayor
Robi Darcy, Water Quality Specialist
101 Midland Ave.
Basalt, CO 81621
(970) 927-4723

2. Organizations / individuals assisting in preparation of the Plan

Project Staff

Mark Fuller, Executive Director, Ruedi Water and Power Authority. Mark will provide coordination and oversight for this project, and will represent the Ruedi Water and Power Authority within this project. Since 1981, RWAPA has provided a voice that speaks on behalf of the entire watershed on a broad range of water issues. RWAPA is recognized regionally, statewide and nationally as representing the water-related interests of the Roaring Fork, Crystal and Fryingpan valleys. Mr. Fuller has been the Director of the Authority since its inception, and has been a private consultant employed by various local governments and agencies as a project planner and manager since 1995. Mark is responsible for day to day operations of the Authority and for carrying out projects and programs as approved and directed by the Board.

Robi Darcy, Water Quality Specialist, Town of Basalt. Robi will provide day to day project design, supervision and quality control. Robi Darcy is the Operator-In-Responsible-Charge for the Town of Basalt water system that serves over 2000 customers. She has been involved in the water system since 1995. Robi trains and oversees treatment operations personnel, manages the Water Department Budget and selects, schedules and supervises sub-contractors. She collaborated with five surrounding municipalities in development of the Colorado Water Conservation Board approved Regional Water Efficiency Plan and had substantial participation in development and implementation of Municipal Water Efficiency Plan for the Town of Basalt. She was recently appointed to serve on the State of Colorado Water Quality Control Commission Water and Wastewater Facility Operators Certification Board.

3. Identification of Retail Water Delivery (and additional information characterizing past water use by sector and source)

The municipal community of Basalt is served by the Town of Basalt water department. The project to be supported by this grant addresses only residential customers. Residential water deliveries going back to 2008 are presented below. The project also addresses end-use only rather than conservation at the source. The Town of Basalt supplies residential water from wells and springs and the main source of water at any specific time varies due to hydrologic and weather conditions.

RETAIL WATER DELIVERY & WATER USE BY SECTOR

		Annual RESIDENTIAL Water Sales				
	# of Accounts	Acre Feet	Gallons	Gal/user	Af/user	
Basalt						
2008	842	450	146,609,841	174,069	.53	
2009	850	414	134,966,895	158,831	.48	
2010	850	432	140,742,759	164,036	.51	
2011	866	405	132,007,881	152,522	.47	
2012	866	432	140,634,086	161,231	.50	
2013	872	421	137,221,393	157,184	.48	
2014	866	486	158,541,026	183,179	.56	
2015	866	363	118,300,533	136,685	.42	
AVERAGE	860	425	138,628,051	160,967	.49	

4. Estimate of Future Water Demand (for the next five years based on predicted population)

BASALT		Projections assume a 2% annual growth rate, based on historical demand, Basalt Planning Department growth estimates, and information from the Colorado State Demography Office.			
Year	# Served	Gallons/Year	Acre-Feet Year	% Growth	
2016	883	142,133,861	433	2%	
2017	900	144,870,300	441	2%	
2018	918	147,767,706	450	2%	
2019	936	150,665,112	459	2%	
2020	954	153,562,518	467	2%	

5. Background Characterizing the Water System

- a. **Current and past system wide and single family residential per capita water use for the last five years, and the basis for those calculations.**

BASALT

This is system-wide only. We used the number of residential accounts multiplied by 2.5 (average household size) divided into quarterly consumption in gallons. Divided by 90 (days in a quarter) to get per day estimates.

In Gallons per day

	1st Q	2 nd Q	3rd Q	4th Q
2008	110	170	354	138
2009	108	178	309	110
2010	94	167	327	140
2011	93	157	311	117
2012	93	234	272	118

NOTE: This is the most current data available at this time. We recognize that more accurate and standardized estimates will require further research and analysis; therefore we have included defining consumption and demand projections in our proposed scope of work.

The population in our watershed is different than that of traditional rural communities, in that the resorts served by several of the water providers include a transient population of part-time residents with second homes and an even larger population of destination resort visitors and seasonal tourists. Water usage triples from winter high season to summer high season. Irrigation for landscaping frequently strains the ability to provide filtered water for all users. Demand on peak days can exceed average daily demand by more than 100%.

- b. **Population for the past five years, current year and 10 year population projection served by the entity and the source of this information**

<u>BASALT</u>	<u>Permanent Population</u>
2008	2,016
2009	2,124
2010	2,145
2011	2,164
2012	2,181
2013	2,198
2023	2,674

Projections assume a 2% annual growth rate, based on, Basalt Planning Department growth estimates, and information from the Colorado State Demography Office. Considering new population anticipated with two major development applications currently under review could potentially bring the 10-year projected population to 3,046 people.

c. Estimated water savings goals to be achieved through implementation of the Plan in acre-feet and as a percentage.

1. Savings realized through implementation of the Regional Water Efficiency Plan: Recognizing that several of the participating water providers have already achieved significant savings by implementing water conservation measures, such as leak detection and conservation programs, as well as changing customer water use habits, our scope of work includes identifying additional measures and potential savings pertaining to the participating communities.

In concept, the following expectations are held with respect to potential savings in each of the partner communities, and collectively:

	% Annual Savings Potential	Annual Savings Potential in Acre-Feet
Aspen	1.5%	42
Snowmass	9.1%	98
Basalt	7.0%	31
Carbondale	5.0%	46
GWS	4.3%	130
Total		347

2. Savings realized through this Project: Basalt's Water Efficiency Plan data shows that 37% of average annual household water use goes to irrigation. Given that Basalt will serve an average of 918 accounts over the next five years and projects average annual water usage at 147,800,000 gallons over the same time period, approximately 54,700,000 gallons will be used annually for irrigation. (147,800,000 x 37%). A 2012 University of Florida study indicated that irrigation shut-off devices typically reduce irrigation water demand by 25%, so the potential maximum annual savings of the program can reasonably be estimated at 13,675,000 gallons or nearly 42 acre-feet (13,675,000/325,829). It is unlikely that this degree of savings will be the actual result of the program but even 50% of this total would be a significant outcome.

d. Adequacy, stability, and reliability of the entity's water system and provide the entities location with respect to areas of current and future water needs as identified by the Statewide Water Supply Initiative (SWSI).

The Roaring Fork Watershed is located within the Colorado River Basin - in central Colorado on the west side of the Continental Divide. The watershed includes the Sawatch, Collegiate and Elk Ranges and eight 14,000 foot peaks. Melting snow in these headwaters collects and joins one of three main rivers (Roaring Fork, Fryingpan, and Crystal) and drains to the Colorado River in Glenwood Springs at an elevation of 5,916 feet. Encompassing an area of 1,451 square miles, the Roaring Fork Watershed is approximately the size of Rhode Island.

According to the State Water Supply Initiative (SWSI), the Colorado River Basin (supplying water to over 30 million people in the arid southwest, with the Roaring Fork Watershed contributing about 940,000 acre feet or 306 billion gallons of water each year to the Colorado River) has a projected 2050 M&I water supply gap of 40% with respect to projected new water demand.

The Town of Basalt water system currently has four water sources, one spring system and three wells, with the combined ability to produce 2.05 million gallons per day. The Town has five (5) storage tanks with combined storage of 2.27 million gallons. System maintenance is performed diligently, and the system is checked for leaks annually. A 1,000,000 gallon storage tank was constructed in 2011 in anticipation of growth over the next 10 years. There are no additional large scale projects planned at this time.

Colorado and the Roaring Fork Watershed experience a wide range of climatic conditions from year-to-year as well as from season to season. Climatological records and research conducted by the National Center for Atmospheric Research indicated a pattern of major droughts in Colorado occurring every 20 to 22 years. Water suppliers in the West accommodate this uncertainty through reservoir storage, consideration of "firm yields" in estimates of water availability, raw water supply development, and "demand side" strategies such as voluntary or mandatory restrictions on outdoor water usage. Plans to reduce usage are necessary to stretch the available water supply through periods of drought.

Water supply systems are also at risk from possible forest fire, floods, failure of dams, mains, wells, and contamination of all or part of the raw water supply. In order to respond to emergency or drought situations, contingency plans are typically designed for implementation of mandatory measures in stages that minimize impacts to the economy, life-styles, and environment of the community.

6. Scope of Work

The Project's purpose and goal is to reduce water consumption in the Basalt Municipal Water System and in the systems and wells that provide water to users in areas outside the Municipal System's service area. Reductions in water consumption will be realized by reducing the amount of treated water used for irrigation purposes by providing automatic irrigation shut-off devices (aka 'rain sensors) at greatly reduced costs to water users within the Town boundaries. Automatic irrigation shut-off devices are designed to shut off irrigation systems when rain is falling, thus reducing treated water use while avoiding overwatering. This grant would provide funding to staff and manage the program and to purchase irrigation shut-off devices.

This Project will provide water-saving devices to customers of the Basalt Municipal Water System and to water users in surrounding areas that are served by other providers or individual wells. The water savings devices that are being targeted for distribution are the Hunter "Mini-Click" model (or equivalent from another manufacturer), which cost approximately \$20.00 each including shipping and handling. See the attached document for a description, pictures and specifications of the "Mini-Click" device. The following information is from the Hunter Industries website describing the Mini Click device:

"Irrigating a landscape during a rainstorm not only results in oversaturated plants and turf, it also wastes water. Hunter's Mini Click rain sensor provides the simplest, most effective way to prevent sprinklers from running during or after any level of rainfall. It easily installs on any automatic irrigation system. The Mini-Click stops scheduled irrigation when it detects a pre-set level of rain has fallen. This automatic process ensures landscapes aren't watered during a storm. Once the storm passes, the Mini-Click allows the controller to resume normal irrigation. Mini-Click is compatible with all Hunter controllers, and once plugged in, it ensures that a system doesn't water during the rain. In most installations, the Mini-Click acts as a switch to break the circuit to the solenoid valves of the irrigation system when it has rained. This allows the timer to advance as scheduled, but keeps the valves from opening the water flow. Once the Mini-Click has dried sufficiently, the switch closes again to allow for normal operation."

FEATURES

- Easily installs on any automatic irrigation system
- Debris tolerant for reliable operation and no unnecessary shutdowns

- Can be set to shut system off from 1/8" to 1" of rainfall
- Includes 25' of 20 AWG sheathed, two-conductor, UL-approved wire.
- Warranty period: 5 years
- Optional user-installed metal gutter mount for Mini-Click®

The Town would like to purchase 300 units to be provided to their customers and other town residents at cost so that the grant funds can cover the cost of education and outreach and labor to consult with customers and to assist as necessary with installation. The purpose of charging a nominal amount for the units is to promote actual investment in the program on the part of customers and to create a 'point of sale' contact which will provide an opportunity to make personal contact with customers. This approach will also emphasize the partnership aspect of the program and will give the Town an opportunity to educate the public regarding the program and the purpose and use of the device. The Town will identify the largest water users and target them for individual outreach to make sure that major users are given the opportunity to present an example to others. Grant funds will also be used to support educational efforts and one or more public events aimed at advertising the program, distributing devices, and providing general water efficiency and conservation information. These events will be held at local public venues and will be advertised and staffed by the Town. The Town sponsors a number of public events each spring and summer that would be appropriate venues for this element of the project. Those events include weekly farmer's markets, concerts and movies in public parks, and various other public events. In addition, the adjacent Crown Mountain Park holds regular public events where a booth or tent with Water Conservation and Efficiency messaging would be appropriate. Finally, the Whole Foods Market in West Basalt sponsors community and commercial events in the spring and summer which are very well attended and centrally located. Although no specific plans have been made for which of these will be targeted for outreach efforts associated with this proposal, there are a large number of alternative venues and events such as those noted above, that will offer opportunities for contact with the public. These events, and the presence and availability of the water-saving devices will be advertised by conventional means (Newspaper, radio) and also through social media such as the Town website and Facebook page, inserts and/or notices in private water billings, notices to schools, churches, the Chamber of Commerce, etc., and announcements at government functions and meetings. Advertising and notices will also be disseminated by project partners and other interested organizations such as the Roaring Fork Conservancy. Educational efforts will also include newspaper and radio advertising as part of the larger water conservation outreach program not funded by this grant.

The Town will hire a part-time Program Coordinator to act as a consultant and installer and to carry out the day-to-day program, assist with education and installation, answer questions, distribute units and assess the effectiveness of the program. It is anticipated that this will be a part-time, temporary position which will be filled in the spring of 2017 concurrent with the initiation of the program to run through the end of the year.

The program will be supplemented with \$5,000 in matching funds from the Town of Basalt which has been budgeted for the sole purpose of implementing appropriate elements of the recently-completed Water Efficiency Plan. Additional matching money will be provided through in-kind services provided by the Town. Any revenue from sale of units will go towards expanding the scope or timeline of the program. This application makes no assumptions about the sales potential of the program or anticipated revenue. The Town of Basalt services over 800 accounts and the surrounding metropolitan area adds another several hundred potential customers, so it is assumed that 300 units will be readily sold given the general acknowledgement by local residents of the need to conserve water resources. The Town of Basalt has endorsed this Grant Application (See attached letter) and has assigned Water Quality Specialist Robi Darcy to carry out the project.

7. Task Detail

Task 1: Public Outreach Planning: - This task will consist of meetings between the Town of Basalt, RWAPA and various local public and private entities to plan for publicity and education of the public regarding the availability of the rain sensor devices and to identify opportunities to distribute them in quantity. Opportunities may include the weekly Farmer's Market, special events held in cooperation with local businesses, community group meetings (e.g. scouts, Kiwanis, HOAs) and school functions. Events and outreach efforts will be spread out over several weeks and will be designed to reach a broad cross-section of community residents.

Timing: March – April, 2017

Paid Staff: Robi Darcy, Basalt Water Manager/Staff Supervisor (\$60/hr)

Estimated Hours Required for this Task: Staff Supervisor, 30 hrs. = **\$1,800**

Task 2: Hire Program Coordinator: – The Town of Basalt has one full-time water system operator who does not have the time or the expertise to manage this program. It is anticipated that the Town will hire a part-time program coordinator to manage the program during its most active phase of public events, sales and installation. The Coordinator will represent the town in finalizing plans for, and supervising outreach events and activities, manage sales of the Mini- Klik devices and organize installation with the cooperation and support of Town maintenance staff. This Task will be pursued simultaneously with the Public Outreach Planning, Task 1.

Timing: March 2017 – April 2017

Paid Staff: Staff Supervisor (\$60/hr)

Estimated Hours and Cost: Staff Supervisor, 30 hrs = **\$1,800**

Task 3: Materials Bid: – The Hunter Mini-Klik rain sensor shut-off device has been identified as the most appropriate hardware choice for this program based on its simplicity, cost and availability. The device is available through a number of wholesale outlets in Colorado so this Task will consist of assembling a bid document to distribute to possible suppliers. This Task will be pursued simultaneously with Tasks 1 and 2.

Timing: March, 2017

Paid Staff: Staff Supervisor (\$60/hr)

Estimated Hours and Cost: Staff Supervisor, 20 hrs = **\$1,200**

Task 4: - Order and Receive Units: – The Materials Bid will be approved in early April (or three months after the Bid development process is begun) and we anticipate ordering and taking delivery on hardware by May, with units continuing to be delivered over the next two months as necessary. This will be the responsibility of the Program Coordinator.

Timing: May- June, 2017

Paid Staff: Staff Supervisor (\$60/hr), Program Coordinator (\$40/hr)

Estimated Hours and Cost: Staff Supervisor, 10 hrs = \$600, Project Coordinator, 15 hrs = \$600, Total **\$1,200**

Task 4a: Purchase of Units, 300 @ \$40/ea = **\$12,000**

Task 5: Public Outreach Kickoff and Public Events: - These events will begin when the hardware is in place. Events will be planned to take place at regular intervals during the irrigation season.

Timing: May – September, 2017

Paid Staff: Staff Supervisor (\$60/hr), Project Coordinator (\$40/hr)

Estimated Hours and Cost: Staff Supervisor, 40 hrs = \$2,400, Project Coordinator, 75 hrs. = \$3,000, **Total \$5,400.**

Task 5a: Publicity and Outreach, Radio, Newspaper, Social Media contacts = **\$1,400**

Task 6: Sales/Installation: - This task will also take place continuously over the course of several months as local residents respond to the public outreach efforts. The Program Coordinator will supervise sales and installation and will work with Town maintenance and public works staff to assure that installations are both

timely and informative so that buyers understand the function of the Mini-Click.

Timing: May 2017 – October 2017

Paid Staff: Staff Supervisor (\$60/hr) and Program Coordinator (\$30/hr)

Estimated Hours and Cost: Staff Supervisor, 30 hrs = \$1,800, Program Coordinator, 200 hrs = \$8,000,

Total \$9,800

Task 7: Evaluation and Reporting: - The program will be evaluated on an ongoing basis to assess the following factors, among others yet to be identified: Market penetration, price resistance, effectiveness of publicity and public events, interactions with customers, and, most important, effects of the program on water usage. The last of these factors may not be fully understood until the units have been in place for a full year so this aspect of evaluation may run into the following year. It is anticipated that regular briefings and reports from the Project Coordinator will speak to these evaluation elements and that the Program Coordinator will produce a detailed project report at the end of the active sales period (Approx. Nov.1, 2017) with further evaluation to be done by Town staff.

Timing: October – November, 2017

Paid Staff: Staff Supervisor (\$60/hr), Program Coordinator (\$30/hr)

Estimated Hours and Cost: Darcy, 10 hrs = \$600, Coordinator, 20 hrs = \$800, Total, **\$1,400**

8. Project Timeline

Task	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov
Grant Awarded		xxxxxx								
Task 1: Project Meetings		xxxxxxxxxxxxxxxx	xxxxx							
Task 2: Hire Coordinator		xxxxx								
Task 3: Materials Bid		xxxxxx								
Task 4: Order and Receive Units				xxxxxxxxxx	xxxxx					
Task 5: Public Events				xxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxx					
Task 6: Sales/Installation				xx						
Task 7: Evaluation and Reporting									xxxxxxxxxx	

We would anticipate that under the timeline above, a 50% Progress Report would be submitted on or around June 1, 2017, a 75% Report on or around September 1, 2017, and a Final Report by February 1, 2018.

9. Detailed Budget

A detailed budget for this project is enclosed as Attachment 1. The applicant respectfully requests \$27,000.00 in grant funds, which will be matched by \$9,000.00 consisting of \$5,000.00 from the Town of Basalt and in cash and \$4,000.00 of in-kind services for a total project budget of \$36,000.00. The Town and the applicant will work together to guarantee that the project does not exceed this budget and that all tasks and deliverables are completed within the budget and timeframe presented.

10. Authorization / Commitment of Resources

The Ruedi Water and Power Authority and the Town of Basalt understand and commit that upon approval of a grant of from the Colorado Water Conservation Board, the Town of Basalt will provide a cash match of up to \$5,000.00 and will supervise and carry out the program as described above in

partnership with RWAPA.

Mark Fuller
Executive Director
Ruedi Water and Power Authority

Judy Tippetts, Acting Manager
Town of Basalt

Date_____

Tasks	# of Units/Cost	Cost	Coordinator @ \$40/hr		In-Kind Match		Cash Match	CWCB Grant Request	Total
			Hours	Cost	Basalt Supervisor	Cost			
Task 1 - Public Outreach Planning					30	\$1,800		\$0	\$1,800.00
Task 2. Hire Program Coordinator					30	\$1,800		\$0	\$1,800.00
Task 3 - Material Bids					20	\$1,200		\$0	\$1,200.00
Task 4 - Order and Receive Hunter "Mini-Click"			15	\$600	10	\$600		\$600	\$1,200.00
Task 4a - Purchase of Units	300/\$40 per unit	\$12,000					\$5,000	\$7,000	\$12,000.00
Task 5 - Public Events			75	\$3,000	40	\$2,400		\$3,000	\$5,400.00
Task 5a - Publicity & Advertising			20	\$800	10	\$600		\$800	\$1,400.00
Task 6 - Sales and Installation			200	\$8,000	30	\$1,800		\$8,000	\$9,800.00
Task 7 - Evaluation and Reporting			20	\$800	10	\$600		\$800	\$1,400.00
Total		\$12,000	330	\$13,200	180	\$10,800	\$5,000	\$20,200	\$36,000.00

REVENUE

CWCB Grant

\$20,200

Town of Basalt

\$15,800.00 (\$5,000 cash, \$10,800 in-kind)

TOTAL

\$36,000.00