



RUEDI WATER & POWER AUTHORITY

0238 Fawn Drive
Carbondale, Co 81623
970.963.4959
www.rwapa.org

October 25, 2013

Mr. Kevin Reidy
Colorado Water Conservation Board
1212 Sherman St.
Denver Co 80202

RE: Regional Conservation Plan Grant

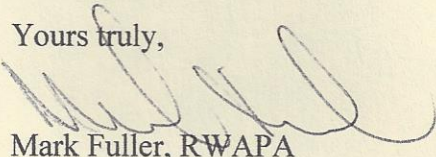
Dear Kevin,

Attached please find the application for a Water Efficiency Grant. This application is the product of many months of collaborative work by interested parties in the Roaring Fork Valley including the Ruedi Water and Power Authority, the Community Office for Resource Efficiency, the Roaring Fork Conservancy, and local water utilities. These parties have committed to work jointly on water efficiency planning in the Roaring Fork watershed and this Grant and plan will give them the in-depth knowledge and resource base needed to accomplish water savings, to investigate the appropriate re-allocation of water to support improved streamflow, to reduce the cost of water delivery and treatment and to assure that local utilities are providing the best possible service without waste.

This plan is not intended to challenge Colorado water law or any water right assigned under that law although it may recommend legislative or regulatory adjustments aimed at achieving common goals. The plan is intended to identify commonalities and contradictions among existing local water conservation plans and to recommend ways in which those plans can be modified to be mutually supportive, consistent and defensible without any blurring of jurisdictional lines. Local governments and water suppliers have pledged their support in the form of matching funds and the Ruedi Water and Power Authority has committed its resources to assuring that the plan is well managed, comprehensive, inclusive and cost-effective.

Thanks for your assistance and consideration. Please contact me immediately if you have any questions or need any further information. We look forward to discussing our application with the Colorado Water Conservation Board at their next meeting.

Yours truly,



Mark Fuller, RWAPA

MEMBER JURISDICTIONS

Aspen, Colorado
Basalt, Colorado

Carbondale, Colorado
Eagle County, Colorado

Garfield County, Colorado
Glenwood Springs, Colorado

Pitkin County, Colorado
Snowmass Village, Colorado

ROARING FORK WATERSHED – REGIONAL WATER EFFICIENCY PLAN

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

October 1, 2013

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:

City of Aspen – Water Department
David Hornbacher, Director of Utilities and Environmental Initiatives
500 Doolittle Dr.
Aspen, CO 81611
(970) 429-1983

Snowmass Water & Sanitation District
Kit Hamby, District Manager
P.O. Box 5700
Snowmass Village, CO 81615
(970) 923-2056

Town of Basalt - Water Department
Bentley Henderson, Public Works Director
200 Fiou Lane
Basalt, CO 81621
(970) 927-4723

Town of Carbondale – Water and Sewer Department
Mark O'Meara, Utilities Director
0171 Highway 133
Carbondale, 81623
(970) 963-3140

City of Glenwood Springs – Water and Wastewater Department
Robin Millyard, Public Works Director
401 West 7th Street
Glenwood Springs, CO 81601
(970) 384-6409

2. Organizations / individuals assisting in preparation of the Plan

Project Staff

Mark Fuller, Executive Director, Ruedi Water and Power Authority. Mark will provide all project management, 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.

Sharon Clarke, Watershed Action Director, Roaring Fork Conservancy. Sharon took on responsibilities for Land & Water Conservation programming at Roaring Fork Conservancy in 2008. Sharon is the principal author of the *State of the Roaring Fork Watershed Report* and the *Roaring Fork Watershed Plan*. Currently she is overseeing a major restoration project in Coal Basin, spearheading implementation of the *Roaring Fork Watershed Plan*, and working to implement water conservation recommendations from Roaring Fork Conservancy's recently published *Opportunities for Water Conservation* report.

Heather Tattersall, Watershed Action Coordinator, Roaring Fork Conservancy. Heather has worked with Roaring Fork Conservancy in the areas of land conservation and policy since 2010. She has a B.S. in biology from Providence College and a Master's in Environmental Science and Policy from Johns Hopkins University. She has also completed a residency in environmental education at Teton Science School. With Roaring Fork Conservancy, Heather is working on Colorado 303d water quality listings, land conservation efforts, and policy issues.

Jason Haber, Programs Manager, Community Office for Resource Efficiency. Jason works with residents, businesses, utility providers and local governments throughout the Roaring Fork Valley to promote energy efficiency, renewable energy and environmental sustainability. Prior to joining CORE in 2009, Jason gained a broad range of local government and environmental work experience with the Town of Snowmass Village, CO and the City of Santa Barbara, CA. His professional responsibilities have centered on project management, policy development and program implementation in the areas of energy and the environment, community and economic development, infill and redevelopment, capital improvements and public infrastructure, public finance and asset management.

Participating Water Providers. Each of the individuals listed in the *Project Partners* section above will represent their respective agencies within this project. Each has spent considerable time gathering the information which was necessary to prepare this grant application. These individuals, along with their staffs, are uniquely familiar with all aspects of their water systems, including treatment, distribution, management, metering, billing and public education.

Project Consultant

On August 27, 2013, RWAPA released the attached Request for Proposals for preparation of the *Roaring Fork Watershed Regional Water Efficiency Plan*. Three (3) consultant proposals were received on September 17th, and finalist interviews were held on October 8th.

Headwaters Corporation (Beorn Courtney), in partnership with Water Demand Management (Peter Mayer), was selected as the lead Project Consultant. The grant funding requested in this application is directly informed by the Headwaters Corp. fee proposal.

3. The identification of retail water delivery by the entity for each of the past five years (in acre-feet) and additional information characterizing past water use by sector and source.

The municipal communities of the Roaring Fork Valley are served by several water providers that have come together in this grant application. They include the City of Aspen, Snowmass Water & Sanitation District, Town of Basalt, Town of Carbondale, and City of Glenwood Springs. Their annual (2012) combined water use is approximately 7,675 AF per year. Residential uses (multi-family and single family) account for approximately 64% of total usage, followed by commercial properties using 28% and irrigation using 8%.

RETAIL WATER DELIVERY & WATER USE BY SECTOR

		TOTAL Annual Water Sales		Annual RESIDENTIAL Water Sales		Annual COMMERCIAL Water Sales		Annual IRRIGATION Water Sales	
		Acre Feet	Gallons	Acre Feet	Gallons	Acre Feet	Gallons	Acre Feet	Gallons
Aspen									
	2008	2,651	863,845,297	1,707	556,193,997	871	283,816,221	73	23,631,000
	2009	2,492	812,214,597	1,634	532,561,597	790	257,422,290	68	22,118,000
	2010	2,578	840,302,200	1,718	560,042,200	794	258,725,694	66	21,494,000
	2011	2,572	838,224,072	1,708	556,531,010	792	258,073,992	72	23,621,000
	2012	2,813	916,913,090	1,953	636,509,090	776	252,860,376	85	27,570,000
Snowmass									
	2008	1,326	432,172,824	606	197,465,706	498	162,229,900	14	4,561,914
	2009	1,304	424,855,297	560	182,476,560	445	145,140,920	73	23,787,123
	2010	1,258	410,058,473	589	191,926,239	397	129,433,060	55	17,921,805
	2011	1,304	425,001,710	564	183,779,964	417	135,990,430	53	17,270,103
	2012	1,504	490,180,611	720	234,612,720	398	129,752,040	65	21,180,315
Basalt									
	2008	450	146,633,142	396	129,036,996	36	11,730,636	1	325,851
	2009	414	134,902,491	364	118,609,764	33	10,753,083	1	325,851
	2010	432	140,767,816	380	123,823,380	34	11,078,934	1	325,851
	2011	405	131,969,828	357	116,328,807	32	10,427,232	1	325,851
	2012	432	140,767,816	380	123,823,380	34	11,078,934	1	325,851
Carbondale									
	2008	979	319,008,547	Unknown		Unknown		Unknown	
	2009	977	318,356,844						
	2010	942	306,952,044						
	2011	894	291,311,176						
	2012	914	297,828,204						
Glenwood Springs									
	2008	2,239	729,581,345	1,187	386,678,113	694	226,170,217	358	116,733,015
	2009	1,954	636,713,688	1,055	343,825,392	586	191,014,107	313	101,874,190
	2010	2,049	667,669,574	1,106	360,541,570	574	186,947,481	369	120,180,523
	2011	1,788	582,622,351	966	314,616,070	554	180,612,929	268	87,393,353
	2012	2,192	714,266,328	1,162	378,561,154	658	214,279,898	373	121,425,276

WATER USE BY SOURCE

	Groundwater	Surface Water
Aspen	Rio Grande, Post Office & Little Nell Wells	Castle Creek & Maroon Creek
2008	106	2545
2009	100	2392
2010	103	2475
2011	103	2469
2012	113	2700
Snowmass		East Snowmass Creek & Snowmass Creek
2008	0	1,326
2009	0	1,304
2010	0	1,258
2011	0	1,304
2012	0	1,504
Basalt	School, Wiley & PW Shop Wells	Basalt & Luchsinger Springs (Both GUDI)
2008	142	400
2009	143	390
2010	153	433
2011	132	398
2012	189	358
Carbondale	Roaring Fork & Crystal River Wells	Nettle Creek
2008	432	812
2009	749	370
2010	424	841
2011	413	820
2012	585	633
Glenwood Springs		Grizzly Creek & No Name Creek
2008	0	2,239
2009	0	1,954
2010	0	2,049
2011	0	1,788
2012	0	2,192

4. A reasonable estimate must be submitted with detailed projections of future annual retail demand for the next five years based on predicted population (provide source of data), building permits, expected new taps, and/or some other credible information.

5 YEAR PROJECTIONS OF ANNUAL WATER DEMAND IN ACRE FEET	
ASPEN	Projections assume a 1.8% annual growth rate, based on historical demand and Pitkin County Growth Projections from the Colorado State Demography Office.
2013	2,814
2014	2,864
2015	2,916
2016	2,968
2017	3,022
SNOWMASS	Projections assume a 1.6% annual growth rate, based on Snowmass Village Comprehensive Plan Buildout Capacity, historical demand and information from the Colorado State Demography Office.
2013	2,104
2014	2,130
2015	2,157
2016	2,185
2017	2,212
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.
2013	435
2014	444
2015	453
2016	462
2017	471
CARBONDALE	Projections assume a 2.5% annual growth rate, based on growth projected in the Carbondale Comprehensive Plan, and considering historic US Census Data and information from the Colorado Department of Local Affairs.
2013	937
2014	960
2015	984
2016	1,009
2017	1,034
GLENWOOD SPRINGS	Projections assume a 1.6% annual growth rate, based on historical demand and information from the Colorado State Demography Office.
2013	2,227
2014	2,263
2015	2,299
2016	2,336
2017	2,373

5. Background characterizing the water system, potential growth and any other pertinent issues provided in 4. Information must include:

- 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.**

ASPEN

	<u>System-Wide Average Gallons per Capita per Day</u>	<u>Single-Family Residential Gallons per Capita per Day</u>
2008	82	82
2009	76	76
2010	79	79
2011	76	76
2012	82	82

*System-wide estimates based on annual water sales in gallons, divided by 365 days per year, divided by the number of Equivalent Capacity Units (ECU's), divided by an average of 1.8 people per ECU.

*Single Family Residential estimates based on annual water sales in gallons, divided by 365 days per year, divided by the number of Single Family Accounts, divided by an average of 2.2 people per Single Family Household.

SNOWMASS

	<u>System-Wide Average Gallons per Capita per Day</u>	<u>Single-Family Residential Gallons per Capita per Day</u>
2008	67	83
2009	62	75
2010	58	82
2011	57	75
2012	67	100

*Based on metered annual water consumption totals in gallons, divided by 365 days per year, divided by the number of Equivalent Residential Units (EQR's), divided by an average of 3 people per EQR.

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

CARBONDALE

Calculated from total annual water production, divided by estimated population, divided by 365 days.
This information is for system-wide domestic use only. Irrigation water was not included.

Gallons per Capita per Day

2008	76	population. 6100
2009	103	population. 6100
2010	96	*Colorado Census data
2011	86	Colorado Census data 2010
2012	89	*Colorado Census data 2012

GLENWOOD SPRINGS

Calculated from total annual water deliveries, divided by estimated population, divided by 365 days.

	<u>System-Wide Average</u>	<u>Single-Family Residential</u>
	<u>Gallons per Capita per Day</u>	<u>Gallons per Capita per Day</u>

2008	224	118
2009	192	104
2010	198	107
2011	170	92
2012	205	109

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 treated 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

ASPEN Permanent Population

2008	8,954
2009	9,031
2010	9,038
2011	9,304
2012	9,474
2013	9,645
2023	11,528

Projections assume a 1.8% annual growth rate, based on Pitkin County Growth Projections from the Colorado State Demography Office.

SNOWMASS Permanent Population

2008	2,414
2009	2,453
2010	2,492
2011	2,532
2012	2,573
2013	2,614
2023	3,064

Projections assume a 1.6% annual growth rate, based on Snowmass Village Comprehensive Plan Buildout Capacity and information from the Colorado State Demography Office.

BASALT **Permanent Population**

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.

CARBONDALE **Permanent Population**

2008	6,084
2009	6,240
2010	6,400
2011	6,560
2012	6,724
2013	6,892
2023	8,822

Projections assume a 2.5% annual growth rate, based on growth projected in the Carbondale Comprehensive Plan, and considering historic US Census Data and information from the Colorado Department of Local Affairs.

GLENWOOD SPRINGS **Permanent Population**

2008	8,942
2009	9,085
2010	9,614
2011	9,571
2012	9,707
2013	9,843
2023	11,313

Projections assume a 1.4% annual growth rate, based on historical demand, and considering historic US Census Data and information from the Colorado State Demography Office.

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

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

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.

ASPEN

The City of Aspen's water system contains a high level of adequacy, stability, and reliability. Specifically, our water treatment system and infrastructure is more than adequate to handle population/customer growth through the next 20 plus years. Our water distribution system contains looped systems and water storage for emergency situations to maintain water service reliability during power outages and mainline breaks and repairs. Our raw water infrastructure has redundancy and reliability built-in and rates have gone through a recent cost-of-service analysis and the City utility is transitioning to new rates, new customers and mandatory metering for pressurized raw water accounts. The City's water rights are adequate to handle projected growth.

Additional water infrastructure and programs planned to accommodate water demands in the next ten years are:

- a. Reclaimed/Reuse Water System
- b. Water Business Plan/Rate Study analysis in 2017
- c. Annual Leak Survey and Repair
- d. Annual Efficiency and Rebate Programs
- e. Public Education
- f. Conversion of City Parks to Raw Water
- g. Tier Redesign

SNOWMASS

The Snowmass Water & Sanitation District maintains a significant portfolio of water rights on East Snowmass Creek, Snowmass Creek and the West Fork of Brush Creek. The appropriation dates of the primary senior water rights that the District relies upon range from 1882 to 1891. The District owns several junior water rights that were developed in the 1950's and 1960's and has also acquired a snowmaking water right with a 1992 priority.

The District's raw water supply is from surface water originating primarily in the form of melting snow high in the mountains in the East Snowmass Creek, Snowmass Creek and Brush Creek basins. Because the District's raw water supply capacity currently exceeds average water demands there is no immediate need to expand supplies. The District possesses adequate water supplies to meet demand over a 20-year planning horizon.

However, the District's primary and most senior water right for winter supply is the Christensen Ditch,

with an appropriation date of 1950. The Christensen Ditch No. 1 is a water right that diverts out of Snowmass Creek. Existing active and conditional downstream water rights have the potential to reduce future diversions under the District's water rights with future water calls. The potential for a "Cameo" call (lower Colorado River calls) and future development of conditional and currently inactive energy development water rights (oil shale rights) poses a risk to the District's water supplies when the District is dependent on the Christensen Ditch water right as the primary supply.

The District has recently entered into a purchase contract with the United States Bureau of Reclamation for 500 af of water from Ruedi Reservoir to be used as an "insurance" augmentation plan for usage in critical dry periods when the District's water rights could be called out. The newly constructed Ziegler Reservoir will act as an alternative supply when Snowmass Creek water isn't legally available and the augmentation exchange cannot be operated.

The Snowmass Water and Sanitation District owns, and operates Ziegler Reservoir, the primary raw water storage component for the District. Ziegler Reservoir is an off-channel, high hazard, jurisdictional reservoir and dam capable of storing 248.5 AF (81 MG) of raw water at the normal high water line of 8,885 feet. In 2010, the District obtained a water right to fill and refill Ziegler Reservoir from Snowmass Creek that operates in priority as a junior water right subject to the senior administration of the CWCB minimum stream flow water right.

A few of the many water-related projects included in the District's Asset Management Plan and Capital Replacement Program are:

- the replacement of 15,831' of District water line at a cost of \$8.045M, and
- the purchase of 500 acre-feet of Ruedi augmentation water for \$645,000, and
- the \$525,000 replacement of the East Snowmass Creek diversion and upgrade to the telemetry and SCADA system that will allow a more efficient diversion operation, and
- upgrades to the Snowmass Creek weir and diversion (\$315,000) and the West Fork of Brush Creek diversion/controls (\$120,000), and
- the \$130,000 replacement of a Snowmass Creek pump station pump, and
- the \$360,000 replacement of customer meters.

BASALT

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 have 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.

CARBONDALE

The Town of Carbondale has three water production facilities along with an extensive ditch system delivering raw water to town parks, golf course, residential and commercial users. The water plants provide well water, filtered well water and filtered surface water. Presently, production capacity is 2.5 to 3.0 MGD depending on the season. Supplemental water is available through Ruedi Reservoir contract water which is deliverable through releases from the reservoir to a well system along the Roaring Fork River, and processed through membrane filtration. There is additional capacity which can be utilized through the Crystal well field and plant. Expansion of these sources will be determined at the time of need and the pending ground water ruling by the EPA and the State of Colorado Public Health and Environment. The Roaring Fork Well field has a foundation for an additional 1.0 MGD within the treatment facility and the well field.

Future conservation plans are anticipated to include programming designed to help identify conservation opportunities and educate the public. The Town is interested in achieving better management and inventory of raw water for irrigation ditches through town. Telemetry is being considered to operate the ditch head gates (as funds and resources are available).

GLENWOOD SPRINGS

The City of Glenwood Water Department provides safe drinking water of the highest quality possible. Crews maintain raw water flows to the Red Mountain Water Treatment Facility in sufficient quantities to meet system demands. We perform operations and maintenance functions for the treatment facility, booster stations, pump stations, vaults and storage tanks. Crews perform routine laboratory testing and reporting per the Colorado Department of Public Health and Environment (CDPH&E) guidelines and requirements. We strive to provide for the uninterrupted water service to all of our customers, including fire protection. Crews perform maintenance and repair of system piping and appurtenances on approximately 60 miles of pipe, provide system control, leak detection, line locations, pressure checks, meter calibrations, meter repairs and replacements. We regularly perform cross connection control inspections, and install taps for new services and oversee new installations and extensions. Currently, the City holds adequate water rights for additional growth well into the future. The system is well maintained and is extremely reliable.

We have a reasonable amount of treatment capacity in the existing water treatment plant. Additional treated water storage will be considered as the need arises. Continued replacement and upgrading of water transmission and water distribution will be implemented as funding allows.

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

A detailed scope of work for this project is included in the attached Request for Proposals.

In creating a regional water conservation plan, RWAPA recognizes that it will be a benefit to understand the processes by which other regional water conservation plans have been developed, what successes and complications they have encountered, and, moreover, the specific objectives and strategies embodied in these plans. We also recognize the benefit in understanding what conservation education programs have been used elsewhere to effectively influence behavior towards water conservation.

To that end, a group of students from the University of Michigan's School of Natural Resources and Environment (SNRE) were engaged this summer (2013) to assist in several tasks that will inform our planning efforts. As part of their graduate studies, this group is conducting research activities that:

1. Assess the Roaring Fork Watershed, its resources and community characteristics, identifying key planning partners, and documenting historic and existing water conservation policies and processes. An analysis of the political landscape and legal context concerning water conservation planning in Colorado and the Roaring Fork Watershed will also be presented.
2. Analyze the current and future ecological and hydrologic conditions of the Crystal River near Carbondale. This will consider causes and ecological implications of stream dewatering, as well as flow changes that could result from implementation of a water conservation plan.
3. Review existing Colorado regional water conservation plan models. This will cover aspects of plan development, adoption, and implementation, plan effectiveness, and cost/benefit considerations. Energy savings derived from water conservation will also be examined.
4. Analyze public outreach and education strategies concerning water conservation, including successful and unsuccessful efforts implemented in the Roaring Fork Watershed, those associated with other regional conservation planning efforts, and in Colorado generally.

Project partners are already implementing a variety of water conservation measures, and some have undertaken significant efforts in pursuing compliance with state planning requirements. The City of Glenwood Springs Water Conservation Plan was approved by the state in 2009. The City is taking this opportunity to work collaboratively among all major water providers in the Roaring Fork Watershed as an opportune time to conduct their required plan update.

Assuming grant approval at the CWCB's November 2013 meeting, we anticipate that work will begin in January 2014 and be complete in January 2015. A 50% completion progress report would be filed at the end of June and a 75% completion progress report would be filed at the end of September. The draft Plan would be submitted to CWCB in October. A 60 day public comment period would inform the final draft of the plan along with any needed revisions based upon CWCB comment. Our goal is to schedule formal adoption of the Plan for January 2015. Our preliminary project timeline (showing a breakdown of tasks spread over the course of 12 months) is as follows:



7. Detailed Budget

A detailed budget for this project is attached. RWAPA and our Project Partners respectfully request \$93,538.13 in Water Conservation Planning Grant funds, which will be matched by \$31,179.38 in cash commitments plus an estimated \$30,000.00 in in-kind contributions, for a total project budget of \$154,717.50 to carry out the scope of work needed to develop the plan in accordance with the Colorado Water Conservation Board's approval guidelines. The Project Partners are prepared to work with the Project Consultant to guarantee that the project does not exceed this budget and that all tasks and deliverables are completed within the budget and timeframe presented.

8. Authorization / Commitment of Resources

The Ruedi Water and Power Authority and our Project Partners understand and commit that upon approval of a Water Conservation Planning Grant of \$93,538.13 from the Colorado Water Conservation Board, we will provide an estimated \$30,000.00 in-kind contribution, and a cash match of up to \$6,235.88 from each participating water provider (in order to satisfy a total cash commitment of \$31,179.38), and will complete development of the Roaring Fork Watershed Regional Water Efficiency Plan to comply with all of the conservation measures identified in the Colorado Water Conservation Board model plan as required.



Mark Fuller
Executive Director
Ruedi Water and Power Authority

CONSULTANT FEES - HEADWATERS CORPORATION	PM & Deputy PM (\$165 / hr)	Mid-Level Staff (\$120 / hr)	Technical Assistance (\$90 / hr)	Total Cost	Local Cash Contribution (25%)	CWCB Grant Request (75%)
Task 1.0 Project Mgmt, Communications, & Meetings	\$19,923.75	\$2,208.00	\$5,175.00	\$27,306.75	\$6,826.69	\$20,480.06
1.1 Project Management & Administration	\$3,795.00	-	\$2,070.00	\$5,865.00	\$1,466.25	\$4,398.75
1.2 Communication Plan	\$948.75	-	\$621.00	\$1,569.75	\$392.44	\$1,177.31
1.3 Project Meetings	\$15,180.00	\$2,208.00	\$2,484.00	\$19,872.00	\$4,968.00	\$14,904.00
Task 2.0 Individual Provider Water Efficiency Plans	\$32,067.75	\$11,592.00	\$10,350.00	\$54,009.75	\$13,502.44	\$40,507.31
2.1 Needs Assessment	\$3,036.00	-	-	\$3,036.00	\$759.00	\$2,277.00
2.2 Profile System	\$759.00	\$1,380.00	\$2,070.00	\$4,209.00	\$1,052.25	\$3,156.75
2.3 Efficiency Goals and Measures to Achieve Goals	\$3,036.00	\$1,656.00	\$2,070.00	\$6,762.00	\$1,690.50	\$5,071.50
2.4 Integration of Efficiency & Water Supply Planning	\$4,743.75	\$2,760.00	\$1,035.00	\$8,538.75	\$2,134.69	\$6,404.06
2.5 Efficiency Implementation & Monitoring Plan	\$6,072.00	\$1,104.00	\$1,656.00	\$8,832.00	\$2,208.00	\$6,624.00
2.6 Regionalization Options	\$6,831.00	\$1,380.00	\$1,035.00	\$9,246.00	\$2,311.50	\$6,934.50
2.7 Prepare Five Individual Draft Plans	\$7,590.00	\$3,312.00	\$2,484.00	\$13,386.00	\$3,346.50	\$10,039.50
Task 3.0 Regional Water Efficiency Plan	\$5,313.00	\$5,244.00	\$2,691.00	\$13,248.00	\$3,312.00	\$9,936.00
3.1 Summarize and Consolidate Individual Plans	\$379.50	\$276.00	\$414.00	\$1,069.50	\$267.38	\$802.13
3.2 Identify Opportunities for Efficiency in the Watershed	\$2,277.00	\$1,104.00	\$414.00	\$3,795.00	\$948.75	\$2,846.25
3.3 Integrate Individual Plans	\$1,138.50	\$552.00	\$207.00	\$1,897.50	\$474.38	\$1,423.13
3.4 Prepare Draft Regional Efficiency Plan	\$1,518.00	\$3,312.00	\$1,656.00	\$6,486.00	\$1,621.50	\$4,864.50
Task 4.0 Review and Approval Process	\$13,662.00	\$1,104.00	\$3,312.00	\$18,078.00	\$4,519.50	\$13,558.50
4.1 Stakeholder Review	\$4,554.00	\$552.00	\$1,656.00	\$6,762.00	\$1,690.50	\$5,071.50
4.2 Public Review	\$1,518.00	\$552.00	\$828.00	\$2,898.00	\$724.50	\$2,173.50
4.3 Decision Making Review & Approval	\$6,072.00	-	\$414.00	\$6,486.00	\$1,621.50	\$4,864.50
4.4 CWCB Review	\$1,518.00	-	\$414.00	\$1,932.00	\$483.00	\$1,449.00
Headwaters Corporation Totals	\$70,966.50	\$20,148.00	\$21,528.00	\$112,642.50	\$28,160.63	\$84,481.88
PROJECT OVERSIGHT - RUEDI WATER & POWER AUTHORITY				RWAPA ED (\$69 / hr) Total Cost		
175 hours of project oversight (assistance in data gathering, attending public meetings, reviewing draft planning documents, processing consultant invoices, coordinating local government engagement, etc...)				\$12,075.00	\$3,018.75	\$9,056.25
PROJECT FUNDING TOTAL				\$124,717.50	\$31,179.38	\$93,538.13
25% LOCAL CASH MATCH FUNDING COMMITMENT (NOTE: does not include in-kind contributions associated with water provider staff time to be committed to this project)				\$31,179.38		
75% CWCB WATER CONSERVATION PLANNING GRANT FUNDING REQUEST				\$93,538.13		
ESTIMATED IN-KIND LOCAL STAFF TIME CONTRIBUTIONS	Estimated Hours	Total Estimated Hours	Hourly Rate	Estimated Total In- Kind		
Five (5) Participating Water Providers	100 each	500	\$50.00	\$25,000.00		
Roaring Fork Conservancy	50	50	\$50.00	\$2,500.00		
Community Office for Resource Efficiency	50	50	\$50.00	\$2,500.00		
				\$30,000.00		
ESTIMATED PROJECT CONTRIBUTION TOTALS (INCLUDING IN-KIND CONTRIBUTIONS)	Cash	In-Kind	Total	Project Contribution Percentage		
COMBINED LOCAL CASH AND IN-KIND CONTRIBUTIONS	\$31,179.38	\$30,000.00	\$61,179.38	40%		
CWCB GRANT REQUEST	\$93,538.13		\$93,538.13	60%		
			\$154,717.50	100%		

SECTION ONE ~ GENERAL INFORMATION:

A. Overview:

Through this Request for Proposal (RFP), the Ruedi Water and Power Authority (hereinafter referred to as RWAPA), respectfully requests proposals from responsible and qualified firms to develop a Regional Water Efficiency Plan for five (5) participating water providers operating in the Roaring Fork Watershed.

B. Introductory Information:

The Roaring Fork Watershed is located 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. Part of the larger Colorado River Basin, which supplies water to over 30 million people in the arid southwest, the Roaring Fork Watershed contributes about 940,000 acre feet or 306 billion gallons of water each year to the Colorado River!

Since 1981 RWAPA has provided a voice that speaks on behalf of the Roaring Fork 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. Members of RWAPA include Aspen, Carbondale, Basalt, Glenwood Springs, Snowmass Village, Pitkin County, Eagle County and Garfield County.

C. Scope of Work:

This section outlines the tasks that the Ruedi Water and Power Authority (RWAPA) and its consultant(s) will conduct in order to complete the Roaring Fork Watershed Regional Water Efficiency Plan (hereinafter referred to as ‘The Regional Plan’).

The Regional Plan will be comprised of five (5) Individual Water Efficiency Plans (‘The Individual Plans’), which will be prepared for the participating water providers listed in Figure 1. The Regional Plan will summarize, consolidate, and integrate the Individual Plans into a single document that identifies opportunities for participating water providers to address water efficiency throughout the Roaring Fork Watershed, both collectively and individually.

Figure 1.: Participating Water Providers

Number	Name	Covered / Non-Covered Status
1	City of Aspen	Covered Entity
2	Snowmass Water & Sanitation District	Non-Covered Entity
3	Town of Basalt	Non-Covered Entity
4	Town of Carbondale	Non-Covered Entity
5	City of Glenwood Springs	Covered Entity

The Regional Plan and each of the Individual Plans will be prepared by RWAPA and its consultant(s) in accordance with steps and procedures outlined in the Colorado Water Conservation Board’s (CWCB) July 2012 Municipal Water Efficiency Plan Guidance Document. Where possible, existing plans and studies conducted by RWAPA, our partnering organizations, and the participating water providers, will be used to support both Individual and Regional Plan development.

It should be noted that some of the participating water providers are already working toward efficiency planning in accordance with the 2012 Guidance Document and that this Scope of Work is not intended to duplicate or supercede any of that work, but rather to build on it and resolve conflicts that may be identified between it and the other Individual Plans being developed as part of this Scope of Work.

The following generally describes the scope of work to be led by the project consultant(s) with oversight by RWAPA:

I. Project Management & Communications

The following tasks will be used by the consultant to manage, engage and communicate with the participating water providers during the water efficiency planning effort. These tasks will be comprised of meetings with individual providers to support data collection and organization, Individual Plan development, and to secure organizational approvals.

- 1. Kickoff Meetings with Participating Water Providers** – RWAPA and consultant(s) will meet with each of the participating water providers to introduce the project, discover needs and issues, establish project communications protocols, and set data gathering and reporting timelines. RWAPA and consultant(s) will utilize the kickoff meetings to introduce data collection needs and methods, project goals, timelines, and processes.
- 2. Mid-Project Meetings** – RWAPA and consultant(s) will meet with each of the participating water providers to discuss project status, review data collection, and identify potential data gaps. RWAPA and consultant(s) will also present various water conservation measures and best management practices to help the individual water providers preliminarily identify those measures and programs that would best fit the needs of their customers and water community.
- 3. Present Draft Plans** –RWAPA and consultant(s) will meet with each of the participating water providers to present a draft of their Individual Plans. Each draft plan will contain all of the required plan elements, including a profile of the water provider’s existing water supply systems, an overview of historical water demand trends, the influence of water demand management activities, forecasted future water demands, potential benefits of water conservation efforts, identified water conservation goals, and measures that the water provider has selected for implementation. Each of the Individual Plans will also include an implementation and monitoring plan identifying how the water provider will work with RWAPA, our partnering organizations and other participating water providers to effectively implement the selected activities and monitor their overall effectiveness going forward.
- 4. Make Board Presentations** – To assist the participating water providers with their individual plans, RWAPA and their consultant(s) will make presentations to each of the participating water provider’s Boards, presenting the draft Individual Plans, the Regional Plan, an overview of the planning process and its intended outcomes.
- 5. Project Administration** – Preparation of project invoices and progress reports to the CWCB and RWAPA, as necessary.

II. Public Stakeholder Involvement

To ensure an open and transparent planning process, RWAPA and consultant(s) will conduct regular public stakeholder meetings throughout plan development. A plan will also be developed to ensure public involvement during plan implementation and monitoring. Participating water providers will help to identify and convene organization representatives and members of the public to serve on a public stakeholder committee.

III. Water Conservation Plan Development Activities – Water Efficiency Plans

The Individual and Regional Plans shall be prepared (or updated in the case of the City of Glenwood Springs) in accordance with the CWCB's July 2012 Municipal Water Efficiency Plan Guidance Document (MWEPGD). Pursuant to C.R.S. 37-60-126, the Plans shall undertake the following steps for plan development (additional details concerning these steps can be found in the MWEPGD – available online at www.cwcb.state.co.us):

Step 1: Profiling of Existing Water Supply Systems - Collection and development of supply-side information and historical supply-side water efficiency activities.

- 1.1 – Overview of Existing Water Supply
- 1.2 – Water Supply Reliability
- 1.3 – Supply Side Limitations and Future Needs

Step 2: Profile of Water Demand and Historical Demand Management – Collection and development of demand data and historical demand management activities.

- 2.1 – Demographics and Key Characteristics of the Service Area
- 2.2 – Historical Water Demands
- 2.3 – Past and Current Demand Management Activities and Impact to Demands
- 2.4 – Demand Forecasts

Step 3: Integrated Planning and Water Efficiency Benefits and Goals – Identification of how water efficiency will be incorporated into future water supply planning efforts and development of water efficiency benefits and goals.

- 3.1 – Water Efficiency and Water Supply Planning
- 3.2 – Water Efficiency Benefits
- 3.3 – Water Efficiency Goals

Step 4: Selection of Water Efficiency Activities – Assessment, identification, screening, and evaluation process to select and fully evaluate a portfolio of water efficiency activities for implementation.

- 4.1 – Demand Management Activities

Step 5: Implementation and Monitoring Plans – Development of an implementation and monitoring plan.

- 5.1 – Implementation Plan
- 5.2 – Monitoring Plan

Step 6 – Adoption of New Policy, Public Review and Formal Approval

- 6.1 – Adoption of New Policy
- 6.2 – Public Review Process
- 6.3 – Local Adoption and State Approval Processes
- 6.4 – Periodic Review and Update
- 6.5 – Local Water Efficiency Plans and Informational Resources

The participating water providers will provide input and contributions to every step of the process, in order to assist RWAPA staff and consultant(s) in plan preparation, and to fulfill a portion of their in-kind contribution to the planning effort.

MEMORANDUM OF UNDERSTANDING
Concerning the Preparation of a
Roaring Fork Watershed Regional Water Conservation Plan

This MEMORANDUM OF UNDERSTANDING (“MOU”) is entered into effective the last date written below, by and among the City of Aspen (“Aspen”), Snowmass Water and Sanitation District (“Snowmass”), Town of Basalt (“Basalt”), Town of Carbondale (“Carbondale”), the City of Glenwood Springs (“Glenwood Springs”), together these entities are referred to below as “Providers,” and the Community Office for Resource Efficiency (“CORE”). All together these entities are referred to below as “Parties.”

RECITALS

WHEREAS, this MOU is based on all of the Parties’ common interest in the Roaring Fork watershed, water conservation, water planning, and the desire to cooperate to further their individual and common interests; and

WHEREAS, water conservation saves water through practices, techniques, and technologies that extend water supplies and other resources, such as energy; and

WHEREAS, water conservation can free up supplies for other uses, such as population growth, drought needs, recreational uses, and environmental uses, such as instream flows; and

WHEREAS, conserved water that is subject to a water conservation program established through formal written action or ordinance by a municipality is not subject to abandonment under Colorado law, Colorado Revised Statutes § 37-92-103(2); and

WHEREAS, water conservation established through formal written action or ordinance by a municipality does not reduce the “historical consumptive use” (quantity) of water, Colorado Revised Statutes § 37-92-305(3)(c)(I)(B); and

WHEREAS, conserved water can benefit instream flows, rafting, kayaking, recreational in channel diversions, gold medal fisheries, and aquatic life; and

WHEREAS, conserved water can be loaned or leased to the Colorado Water Conservation Board (“CWCB”) for instream flows to preserve or improve the natural environment to a reasonable degree, Colorado Revised Statutes “C.R.S.” §§37-83-105(2) and 37-92-102(3); and

WHEREAS, Aspen and Glenwood Springs are “covered entities” required to prepare and submit water conservation plans to the CWCB for approval pursuant to C.R.S. § 37-60-126; and

WHEREAS, the City of Glenwood Springs has a CWCB-approved water conservation plan; and

WHEREAS, Aspen, Snowmass, Basalt, and Carbondale are interested in water conservation planning to benefit their communities; and

WHEREAS, economics and tourism significantly impact each of the Providers' water demands in the Roaring Fork watershed; and

WHEREAS, the Parties recognize their individual interests in water conservation planning have regional significance within the Roaring Fork watershed; and

WHEREAS, there are community and regional benefits from implementing a Roaring Fork Watershed Regional Water Conservation Plan, such as additional water for drought protection, recreational uses and environmental purposes; and

WHEREAS, the Parties aspire to plan for, develop, and implement significant water conservation within their communities and the Roaring Fork watershed and wish to support the Providers' individual water conservation efforts and prevent the "Tragedy of the Commons" that might result if Providers compete for growth by requiring less water conservation than their neighbors; and

WHEREAS, water conservation may include demand management activities that share many common elements that are amenable to regional investigation, including:

1. Foundational activities, such as water efficiency pricing and tap fees;
2. Targeted technical assistance and incentives, such as water efficient fixtures and appliances, low water use landscapes, and water efficient commercial and industrial water using process through incentives;
3. Ordinances and regulations; such as water wasting policies, watering restrictions, new construction regulations, and time of sale regulations;
4. Educational activities, such as one-way, one-way with feedback, and two-way; and

WHEREAS, the selection of water conservation activities is a four-step process involving:

1. *Assessment* of community-specific water conservation activities, water supply and service area;
2. *Identification* of potential water conservation activities that are compatible with community systems and needs;
3. *Qualitative screening* of potential water conservation activities;
4. *Evaluation and selection* of final activities for implementation; and

WHEREAS, regional cooperative identification, screening and evaluation of water conservation and demand management activities may facilitate selection and implementation by individual Providers; and

WHEREAS, the Providers may be able to implement elements of their individual water conservation plans more easily and more successfully if they are common components of a Roaring Fork Watershed Regional Water Conservation Plan; and

WHEREAS, public and stakeholder involvement can improve the quality, community support and implementation of water conservation plans, and regional planning can complement and enhance public and stakeholder involvement; and

WHEREAS, public opinion surveys are expensive and can be extremely valuable for plan development, while a regional survey with community-specific questions can minimize these costs and enhance public involvement; and

WHEREAS, the Providers desire to cooperate to prepare a Roaring Fork Watershed Regional Water Conservation Plan that compliments and supports their individual water conservation planning; and

WHEREAS, the CWCB provides financial assistance for water conservation planning; and

WHEREAS, the CWCB's Water Efficiency Grant Program has significant application submittal requirements, including a detailed scope of work utilizing the CWCB's Municipal Water Efficiency Plan Guidance Document (July 2012); and

WHEREAS, water conservation plans must be prepared in accordance with the statutory requirements of C.R.S. § 37-60-126 and the technical requirements of the CWCB's Water Efficiency Grant Program Fund Grant Guidelines for Water Conservation Planning Projects (Nov. 20, 2008) and the CWCB's Municipal Water Efficiency Plan Guidance Document; and

WHEREAS, the CWCB's Water Efficiency Grant Program requires a 25 percent match.

UNDERSTANDINGS

NOW, THEREFORE, in consideration of the foregoing recitals and the mutual promises and covenants contained herein and other good and valuable consideration, the Parties agree as follows:

1. To cooperate in the preparation and submittal of an application to the CWCB for a Water Efficiency Planning Grant to prepare a Roaring Fork Watershed Regional Water Conservation Plan; and
2. To cooperate in the preparation and submittal of applications for other potential sources of funding that may be available to support the preparation of a Roaring Fork Watershed Regional Water Conservation Plan "Regional Plan"); and
3. To cooperate in identifying a single fiscal agent to act as the lead applicant and grant administrator for all; and

4. To cooperate in establishing a common planning horizon for the Regional Plan; and
5. To cooperate in the preparation of a request for proposals for a consultant(s) to work with the Parties to prepare the Regional Plan; and
6. To agree on the selection of a consultant(s) to work with the Parties to prepare the Regional Plan; and
7. In the event the Parties are awarded a Water Efficiency Planning Grant, to share the 25 percent local funding match required by the CWCB, in an amount not to exceed \$7,500 each; and
8. To cooperate in the preparation of the Regional Plan; and
9. To review and comment on the draft version(s) of the Regional Plan; and
10. To cooperate in an attempt to identify mutually acceptable implementation measures for inclusion in the Regional Plan.
11. In the event the Parties are awarded a Water Efficiency Planning Grant, preparation of a Roaring Fork Watershed Regional Water Conservation Plan will include the completion, or review and updating of plans for each of the Providers in accordance with the requirements of C.R.S. § 37-60-126.

The Parties further agree that this MOU:

1. Shall not be construed as evidence of any intent to abandon, in whole or in part, any of the Providers' respective water rights, which the undersigned Providers hereby state they have no intent to abandon; and
2. Is intended to describe the rights and responsibilities of and between the Parties and is not intended to, and shall not be deemed to confer any rights upon any persons or entities not named as Parties, nor to limit in any way the powers and responsibilities of the Parties or any other entity who is not a Party; and
3. Shall be governed under and controlled by the laws of the State of Colorado; and
4. Constitutes the entire agreement of the Parties concerning the subject matter and supersedes all prior representations, negotiations or other communications related thereto; and
5. May be amended only in writing, which writing must be signed by all Parties in order to be effective; and
6. Shall be binding upon and inure to the benefit of the Parties hereto.

Dispute Settlement

In the event of any difference(s) or dispute(s) arising out of the interpretation or application of the provisions of this MOU, CORE shall immediately facilitate a meeting of the Parties to consult in good faith to expeditiously resolve such differences or disputes in a spirit of mutual understanding and cooperation.

Termination

This MOU shall remain in effect until the first to occur of the following events:

- a) Twenty four (24) months following the Effective Date, or
- b) The execution by the parties of a subsequent agreement, or
- c) Agreement of all the Parties to terminate or otherwise withdraw from this MOU; or
- d) Upon 60 days written notice to the Parties, any Party may elect to withdraw from this MOU, which shall have the effect of termination of this MOU relative to the withdrawing Party's duties and obligations. This MOU shall remain in effect and survive any Party's individual withdrawal with respect to the duties and obligations of the remaining Parties.

Counterparts

This MOU may be executed in multiple counterparts, each of which shall be deemed to be an original, but all of which shall constitute one and the same MOU.

Each Party hereto represents that its representative signing below is authorized to execute this MOU on its behalf.

IN WITNESS WHEREOF, the Parties have executed this MOU as of the year and latest date written below.

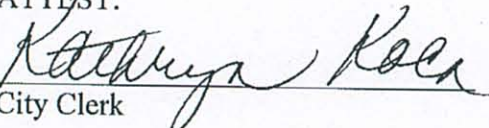
CITY OF ASPEN,
a Municipal Corporation

By 


Its Director of Utilities & Environmental Initiatives

Date 6/28/13

ATTEST:


City Clerk

Approved as to form:


City Attorney
Assistant

CITY OF GLENWOOD SPRINGS,
a Municipal Corporation

By

Its

Date

ATTEST:

City Clerk

Approved as to form:

City Attorney

TOWN OF BASALT,
a Municipal Corporation

By

Its

Date

ATTEST:

City Clerk

Approved as to form:

City Attorney

TOWN OF CARBONDALE,
a Municipal Corporation

By

Its

Date

City Clerk

City Attorney



Its_

Date _____

District Clerk

District Counsel

By

Its

Date _____

ATTEST: