June 9, 2016

Colorado Water Conservation Board
Attention: Kevin Reidy and Ben Wade
1313 Sherman Street, Room 718
Denver, CO 80203

RE: Water Efficiency Plan Implementation Grant Application

Dear Mr. Reidy and Mr. Wade:

The City of Aspen (Aspen), Colorado is a home-rule municipality that owns and operates its water utilities, providing treated (potable) water to all customers in the service area and raw water for irrigation and snowmaking purposes to a small subset of customers. Aspen meets the statutory definition of a "covered entity" under §37-60-126 C.R.S. and recently updated its Municipal Water Efficiency Plan (WEP); the final plan approved by your office is dated October 21, 2015. Through The WEP update, Aspen identified the following water efficiency measures as providing a reasonable cost savings for the utility or customers by reducing water demands:

- Landscaping regulations for new development,
- Water Shortage ordinance,
- Slow the Flow landscape water audits,
- Garden-in-a-Box price buy-down,
- Xeriscape educational seminars,
- Conservation pricing, and
- On-going customer education and information.

The WEP established an average water efficiency goal of approximately 28 acre-feet (AF) reduction in treated demand per year compared with a continuation of the current demand. By 2035, it is estimated that implementation of the programs identified in the WEP will reduce annual treated demand by about 583 AF – an overall 14% reduction in demand. Aspen has already begun implementing a number of the programs identified and is requesting an implementation grant to further assist in advancing key programs targeted at reducing outdoor water consumption.

The following information has been compiled using the Colorado Water Conservation Board's Water Efficiency Grant Program Fund *Grant Guidelines for Water Conservation Implementation & Public Education and Outreach Projects*.

1. Name and Contact Information

City of Aspen
Water Department
500 Doolittle Drive
Aspen, CO 81611

Contact:
Lee Ledesma

Utilities Finance and Administrative Services Manager
970.429.1975
lee.ledesma@cityofaspen.com

2. Organizations Assisting with the Project

ELEMENT Water Consulting, Inc.
P.O. Box 140785
Denver, Colorado 80214
303-481-2365
Attention: Beorn Courtney

ELEMENT Water Consulting assisted the City of Aspen with its 2015 WEP update and, through contracting under the Ruedi Water and Power Authority, also assisted in preparing the Roaring Fork Watershed Regional Water Efficiency Plan. ELEMENT is further assisting Aspen in the areas of water demand management and water efficiency, providing comprehensive experience in local-level water demand planning and water resources management as well as in regional and state-wide applications. ELEMENT's expertise includes surface and ground water rights, water supply analyses, water efficiency and conservation planning, and the management of complex water issues. ELEMENT also has unique experience working with water providers and stakeholders to integrate water demand management, land use regulations, and policies to incentivize water efficiency. ELEMENT will assist the Aspen Utilities Department in preparing technical information under this grant.

3. Background

A significant data collection and evaluation effort was conducted recently as part of Aspen's WEP update, dated October 21, 2015. The majority of the information provided in this section is taken directly from the WEP, as it provides the most reliable data that is readily available at this time.

a. Recent Delivery and Water Use

Recently, Aspen's average annual treated water production has averaged 3,007 acre-feet per year (AF/yr), as shown in **Table 1** below.

Table 1. Annual Treated Water Production.

Year	Annual Production (AF/yr)
2009	2,618
2010	2,817
2011	2,832
2012	3,484
2013	3,203
Average	**3,007**

As described in Section 1.3 of Aspen's WEP, the primary supply intake for the treated water system is located on Castle Creek, with another intake on Maroon Creek generally being used as a supplemental supply. Both intakes utilize "run of the river" and are not currently backed up by a significant raw water storage reservoir. The treated water system is also supplemented by three municipal groundwater wells located in the downtown area that are treated at the source: Little Nell Well, Mill Street Well, and Rio Grande Well. The groundwater wells have a combined capacity of approximately 3.0 million gallons per day (MGD). The wells can be used during drought periods when the City wants to reduce diversions from its surface water sources for water quality reasons or to protect decreed instream flows when streamflows are approaching the instream flow thresholds. Well water can also be used for other municipal purposes. Aspen's raw water (i.e. non-potable) system, managed by the City of Aspen Raw Water Division, provides an irrigation supply to the City of Aspen golf course, selected parks, and limited private properties. The City uses raw water supplies for maintenance of "aesthetic features" such as fountains, the City malls, and many of the City's street trees located along the ditch system.

On the east end of downtown, the City operates the Wheeler, East Aspen, and Durant ditch system, which provides water for the downtown mall, fountains and aesthetic features, and stormwater cleaning at Rio Grande Park. At the west end of downtown, the City operates the Si Johnson Ditch which provides water for street trees as well as providing raw water service for irrigation of private properties, including Aspen Institute. Outside of the City's boundaries, water which originates from Aspen's Castle Creek and Maroon Creek rights and is delivered to the Leonard Thomas Reservoir is used as a supply for irrigation for the Meadowood common area, as well as the hospital and medium-density housing developments in the area. Raw water from Leonard Thomas Reservoir is also used as the source of supply for snowmaking operations at the Aspen Ski Resort. The Holden and Marolt ditch systems are also operated by the City from diversion points on Castle Creek. These ditch systems provide water for irrigation of the Municipal Golf Course, the Marolt Open Space, the Red Butte Cemetery, and numerous private properties comprising the Castle Creek Homeowner Association.

Recently, Aspen's treated water demands to its customers have averaged 2,661 AF/yr and total demands, including raw water, have averaged 3,186 AF/yr (**Table 2**). The population data shown in Table 2 represent full-time residents. Due to tourism and seasonal population fluctuations, the 2013 peak month population was estimated to be approximately 36,540 people, over 3.5 times the full-time

Table 2. Annual Treated Water Deliveries from 2009 through 2013 and Baseline for Forecasting (AF/yr unless noted otherwise).

Year	City of Aspen Water Customers							Additional Water Sales				Total
	Full-Time Population (#)	Single-Family Res.	Multi-Family Res.	Comm.	City Facilities	Other - Irrig. Only	**Total**	Unmetered Sales (Est.)	Snow Making (Aspen Ski Co.)	West Buttermilk	Bulk Water Sales	
2009	9,897	1,210	446	760	132	68	**2,616**	295	126	-	6	**-**
2010	10,016	1,289	497	785	115	66	**2,752**	273	142	-	6	**-**
2011	10,136	1,245	458	668	125	72	**2,568**	218	146	45	6	**2,983**
2012	10,258	1,390	485	647	129	85	**2,736**	246	151	81	6	**3,220**
2013	10,381	1,265	483	626	124	75	**2,573**	110	192	73	6	**2,955**
BASELINE	10,318	1,280	484	697	125	75	**2,661**	246	192	81	6	**3,186**

service area resident population. Considering the population fluctuation throughout the year, Aspen's water usage cannot be accurately represented by a single average annual gallons per capita per day (gpcd) number. Using the full-time population, the residential water usage has averaged around 149 gpcd over the past five years. However, considering the peak population, residential usage could be closer to 42 gpcd.

b. Water System Characteristics and Potential Growth

The WEP plan update included a focused review of the City's water supply system, customer characteristics, historical water use, and population projections to forecast future water demands and identify potential water savings. That review verified that Aspen has a history of achieving significant water savings through demand management efforts, as shown in **Figure 1**.

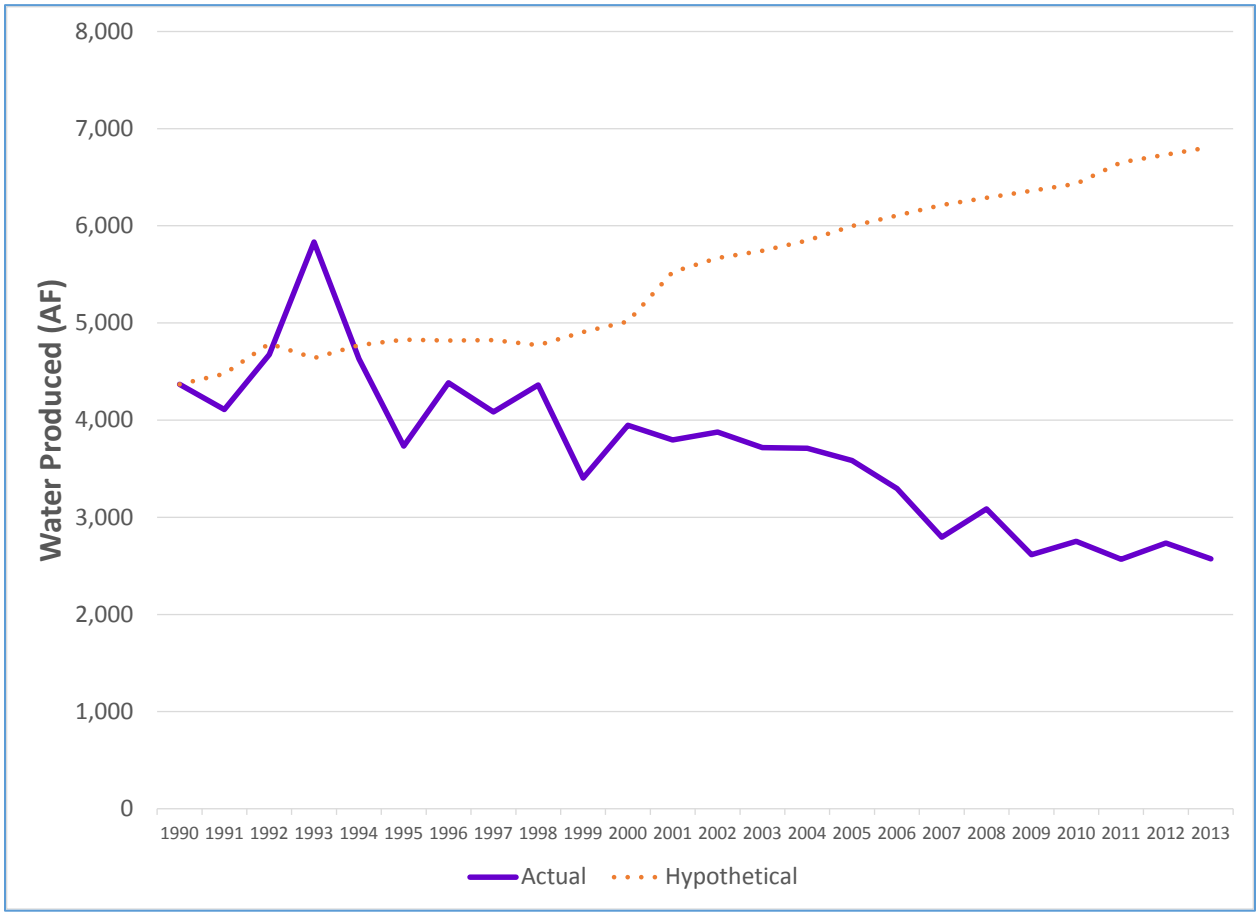

Figure 1. Actual (Historical) Water Consumption in Aspen and Hypothetical Consumption had 1990-level GPCD Consumption Rates Continued with 2013 Population Characteristics.

Population projections (**Figure 2**) and a variety of water demand management programs selected by Aspen were used to prepare the forecasts shown in **Figure 3** below. The "active" forecast includes anticipated impact from the City's planned water efficiency program measures described in the WEP. Under this forecast, treated water demand increases to just 3,597 AF in 2035. Compared with the original baseline forecast, if the elements of the WEP are fully realized, then it is estimated that annual

water demand at 2035 will be reduced by 583 AF as a result of passive and active water conservation measures in Aspen.

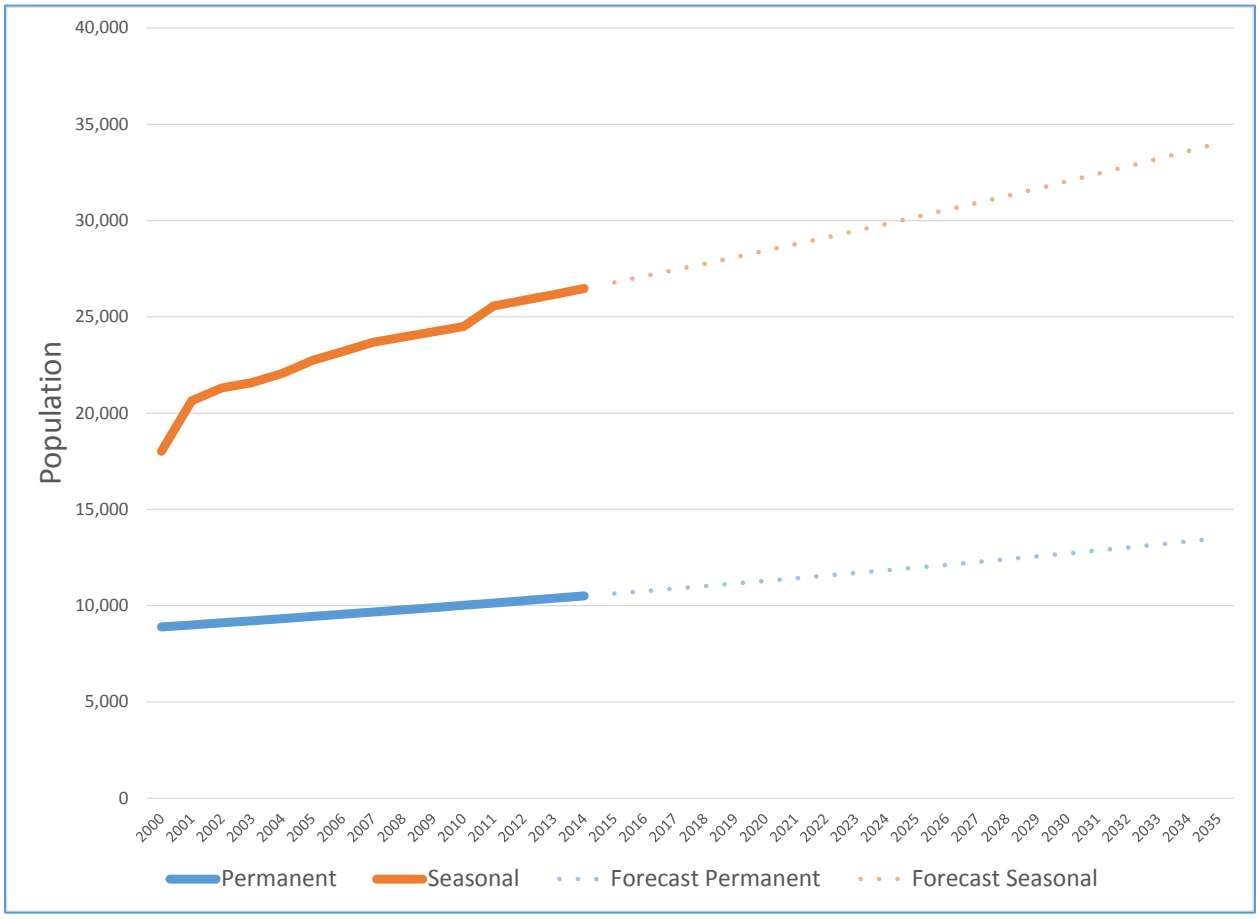

Figure 2. Actual (Historical) and Forecast Permanent and Seasonal Population.

The analysis completed for the WEP indicates that the likely yield of the City's direct flow water rights is around 26,850 AF in a dry year. The maximum annual treated water produced by Aspen over the past five years was 3,220 AF in 2012 and the range of forecast future demands in the year 2035 are from 3,597 AF to a maximum of 4,180 AF. On an annual basis, the dry year yield of the City's water rights appears to be more than sufficient to meet current and forecast future demands.[1] However, the City does not have storage to regulate the timing of supply to match demands, and therefore is vulnerable to peak demand shortfalls in dry years when physical streamflow conditions are limited, or in emergencies such as a fire or landslides when one or more particular water supply sources may become unavailable. Accordingly, the City has elected to focus on water efficiency measures that could reduce peak

[1] The City uses the historical dry year of 1977 for planning purposes, and in its planning, accounts for changing its diversion patterns as needed to protect decreed instream flows.

demands, primarily related to outdoor water use, which are financially viable and could potentially eliminate or delay infrastructure projects.

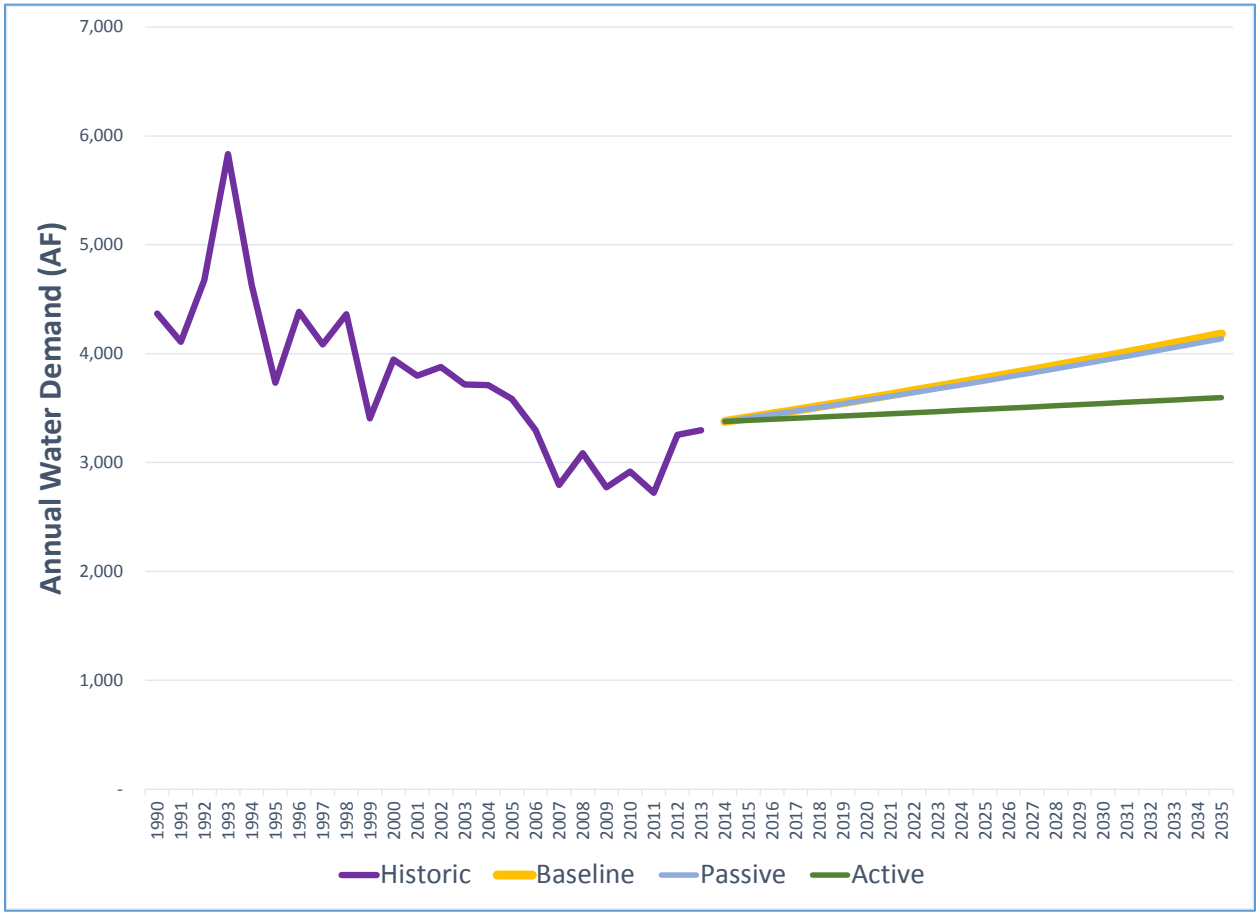

Figure 3. Treated Water Demand Forecasts.

Table 3 below shows water efficiency activities and water savings estimates projected in Aspen's WEP. As described further in the following section, Aspen has set a goal of accelerating the update to landscape development regulations for new construction to start in 2017.

Table 3. New and Updated Water Efficiency Activities and Water Savings Estimates.

Water Efficiency Activities	Sectors Impacted	Ongoing Activity?	Implementation Period of New Activities	Projected Water Savings 2015 - 2035 (AF/yr)
FOUNDATIONAL ACTIVITIES				
Automatic Meter Reading Installation and Operation	All	YES	2014-2018 for existing & ongoing for new customers	50
Enhanced Water Loss Control	All		annual	38
Conservation-Oriented Rates	All	YES	2015 – rate structure update	145
TARGETED TECHNICAL ASSISTANCE AND INCENTIVES, AND NATURAL REPLACEMENT OF FIXTURES AND APPLIANCES				
Fixtures, Appliances, and Incentives	All, indoor	YES	Ongoing	100
Outdoor Water Efficiency	All, outdoor	YES	Ongoing	20
Slow the Flow	All	YES	Ongoing	30
Info and education, Farmer's Market, xeriscape seminars, Efficient Parks, etc.	All	YES	Ongoing	40
Commercial, Institutional, and Industrial Water Efficiency	CII	YES	2015	70
ORDINANCES AND REGULATIONS				
Regulatory Measures	All	YES	Ongoing	
Water Reclaim and Recycling, Raw Water Irrigation	Irrigation	YES	Ongoing	
Waste of Water Ordinance Update	All	YES	2015	
Update landscape development regulations for new construction to place emphasis on water efficiency in residential development	SF & MF residential		2018*	50
EDUCATIONAL ACTIVITIES				
Public information, customer outreach and education	All	YES	1992 - present	40
Community outreach event participation	All	YES	Before 2006 - present	
Utility billing inserts	All	YES	2008 - present	
TOTAL SAVINGS THROUGH 2035 (AF/YEAR)				**583**

Note: *Project is being accelerated to start in 2017.

If approved, funding from this Water Efficiency Grant will be used to support efforts focused on outdoor water efficiency, including landscape regulations for new construction, as further described below. These programs collectively are estimated to save up to 70 AF/yr by 2035.

c. Description of How the Grant Funds will be Utilized

Aspen experiences high summer and late summer peak water demands due in part to the tourism industry, but more significantly due to irrigation demands from customers. Aspens' WEP describes continuing implementing and enhancing a variety of existing programs and pricing mechanisms to

improve irrigation efficiency and reduce outdoor demands and also identifies new programs to help reduce late summer peaking effects. The following measures are intended to complement and integrate with the City's existing water efficiency program.

Water Efficient Landscape Regulation

As identified in Section 4.2.3.2 and 4.2.4 of the WEP, Aspen is interested in developing a Water Efficient Landscape Regulation (Landscape Regulation) that will promote water conservation, prevent water waste, and protect water quality. Managing outdoor landscaping demands through land use regulations for new development is being considered throughout Colorado and provides an opportunity to reduce the impact from future demands.

Aspen's municipal code currently contains the following fundamental landscaping and irrigation requirements:

> ***Sec. 8.40.030. Landscaping criteria; grass species, irrigation.***
>
> *(a) To the extent practicable and consistent with the proposed design and use of the property, landscaping shall utilize, for grassy areas, grasses which have the effect of minimizing the consumptive use of water applied to such grass for irrigation. The Director of Parks shall promulgate an advisory list of drought tolerant grass species and acceptable mixtures of such species. This list shall be updated as research and experience dictate.*
>
> *(b) For all outside irrigation, the development proposal shall include, to the extent practicable, an irrigation system which would incorporate only equipment of the most water-conserving type commercially available at the time the proposal is submitted for approval. Additionally, all irrigation shall be undertaken with raw water if possible. At a minimum, irrigation systems shall:*
>
> *(1) Be equipped with time-activated automatic control clocks and shutoff valves.*
>
> *(2) Be equipped with sprinkler heads of a type which provide the most uniform coverage feasible and maximum feasible droplets sized to reduce evaporation and wind disturbance of the coverage (pulsating type).*
>
> *(3) Where the slope gradient of the proposed development so requires, be designed to control flow for the purpose of reducing runoff. (Code 1971, § 7-233; Ord. No. 43-1981, § 1; Ord. No. 37-1991, § 2)*
>
> ***Sec. 8.40.050. Soil preparation.***
>
> *No building permit shall be granted for the construction of a new residential, commercial or industrial structure unless the design of all landscaping areas primarily devoted to the cultivation of any species of grass for aesthetic purposes and not for agricultural food production, includes proper soil preparation as hereinafter defined.*
>
> *Soil preparation shall be defined as the addition to existing soils of a minimum of three (3) cubic yards per one thousand (1,000) square feet of organic matter introduced by tilling, discing or other suitable method to a minimum depth of four (4) inches. Acceptable organic matter shall include compost, peat moss, aged manures, aged sawdust or any combination of the above. (Code 1971, § 7-235; Ord. No. 37-1991, § 3)*

Aspen is interested in updating this municipal code to include a more robust set of landscaping and irrigation system requirements and associated enforcement mechanisms. This concept was also

included in the Roaring Fork Watershed Regional Water Efficiency Plan (Regional WEP), and based on Aspen's ongoing communication with the Regional Plan participants, several of the other Regional WEP participants remain interested in this topic. Aspen is committed to working with the regional partners, and sharing information gained through the process of designing regulations that work at the local level for Aspen. These concepts may be scalable to a regional program and/or for adopting similar regulations within other local jurisdictions.

Landscape Water Budgets and Demonstration

In addition to the existing outdoor water efficiency programs described in Section 4.2.3.2 of the WEP, which are associated with Irrigation Information and Education, Farmers Market, Xeriscape Gardening, and Slow the Flow, Aspen is seeking to increase water use efficiency in its parks and City facilities and to utilize these public spaces to exhibit opportunities that can translate to a residential scale. This also provides an opportunity to demonstrate and communicate aspects of the Landscape Regulation. Furthermore, Aspen is considering creating separate tiers for indoor versus outdoor water use, and developing water budgets for irrigation that are based on irrigated area, planting materials, and local evapotranspiration rates, as described in Section 4.2.2.4 of the WEP. Establishing water budgets, demonstrating water smart landscaping and irrigation practices, and monitoring water usage will help further advance the City's outdoor water management goals and support implementation of the Landscape Regulation.

4. Regional and Statewide Implications

The programs identified in Section 3 above are consistent with programs identified in the Regional WEP, and will assist other local water providers who are interested in further enhancing outdoor water demand management. The City is interested in regional partnership to improve water efficiency and remains committed to assisting with the implementation of the Regional WEP.

The programs identified for assistance under this grant request are also represented in the low, medium, and high conservation strategies described in Colorado's Water Plan under the topics of landscape water-use reductions, landscape transformation, and irrigation efficiency improvements. SWSI 2010 and subsequently the Water Plan identified the need for local and state regulations and ordinances in order to achieve the high conservation strategy. The Colorado River Basin Implementation Plan recommended model-basin and statewide land-use planning guidelines that focus on water conservation and water-efficient land-use development.

The programs recommended for assistance under this grant are important measures in accomplishing Aspen's local WEP goals and will provide valuable contributions at a watershed, basin, and state-level.

5. Project Scope

Aspen is seeking grant funds to assist with implementing two key programs from its WEP, as further detailed below.

a. Purpose and Primary Features

Water Efficient Landscape Regulation

Aspects of proper system design, correct installation and consistent maintenance of efficient irrigation systems combined with the selection of climate-appropriate, water-efficient plants and user education regarding the amount of water actually needed will all be considered in developing a water efficient landscape regulation for Aspen. The Landscape Regulation will include information on landscape water budgeting, soil amendments, plant selection, efficient irrigation practices, and more. It is anticipated that landscape water budgets will be developed for a variety of landscaping materials and irrigation systems, and incorporated into the Landscape Regulation. Information on appropriate drought-tolerant plantings for the local climate, and associated water demands, will be incorporated and reasonable limitations on landscaping materials and the amount of irrigated area allowed under future water service agreements (new development) may also be established.

A number of existing landscape ordinances will be utilized to develop a combination of landscaping and irrigation system aspects that are most likely to result in water savings for Aspen, as well as be practical to implement and enforce. Involving staff across the departments of the City, including the departments of utilities, engineering, buildings, parks, stormwater, and community development, will be critical to the success of developing, implementing, and enforcing the Landscape Regulation. A Work Group will be established, with key personnel from these departments and others as appropriate. The Work Group will consider if and how the Landscape Regulation could be integrated into land use regulations, such as through limiting landscape water budgets for new development. Integration with land use regulations requires engaging the planning and building departments as well as outreach and education to those involved in planning and installing landscapes.

A stakeholder meeting will be held to engage public input. Local landscape architects, nurseries and landscape installation and maintenance professionals will be encouraged to participate, so that any ordinances, regulations or other tools are developed in a way that is practical, cost-effective, and to the extent possible, supported by local providers of landscape services.

The objective will be for the proposed Landscape Regulation be incorporated into Aspen's Municipal Code. City staff will provide recommendations for Council approval. The City may need to involve its external legal counsel in drafting appropriate ordinance resolutions and Code revisions. The permitting process for new development may need to be modified and enforcement mechanisms will need to be implemented. The scope of work under this grant is focused on developing the Landscape Regulation and implementation plan. Additional efforts to codify and enforce the Regulation will be conducted by the City staff as needed.

Landscape Water Budgets and Demonstration

All City parks, medians, and other irrigated areas that use pressurized water are metered and billed based on actual consumption. To help evaluate the effectiveness of landscaping and irrigation management practices, the City will profile the landscaping and irrigation system characteristics of its parks and City facility irrigated spaces, establish water budgets for several areas with different characteristics, review the associated metered water usage over the past five years, and identify areas that may need further auditing or evaluation. At this time, it is envisioned that water budgets will be

developed for irrigated areas at City Hall and three parks. Developing water budgets and utilizing them to evaluate how actual water use compares to the theoretical budget will assist the City in future considerations of how water budgets may further guide the Landscape Regulation, rate structures, and other aspects of the WEP.

To continue leading by example, Aspen will identify a public space where advanced irrigation system technologies such as rain shutoff devices, efficient sprinkler heads, and weather-based controllers will be featured and used to convey opportunities for residential-scale irrigation system management. The Parks Department has a weather station that is utilized to manage irrigation in large spaces with a commercial-grade computerized control system. While this system is not transferrable to a residential-level, the Utilities Department will work with the Parks Department to install a residential-grade smart controller system that can be used to demonstrate advanced technology in a location that is publically accessible. Aspen will demonstrate how residential-grade weather-based irrigation controllers can be used to schedule and manage irrigation, and then evaluate the actual water use to verify and communicate water savings to its customers.

Aspen will also identify a public space where landscaping materials will be modified and used to demonstrate xeriscaping principles. For the past several years, Aspen has partnered with the Center for Resource Conservation to offer its customers high-elevation xeric landscaping materials at a discounted price, through the Garden In A Box program. Installing a high altitude perennial garden in a public space will help expand Aspen's outreach and messaging program, as well as provide an opportunity to monitor and evaluate water savings from associated landscape transformations. Monitoring water use from demonstrations will also inform the City about topics that affect the Landscape Regulation and will assist Aspen in communicating with its customers regarding water budgets and management under varying conditions (e.g. hydrozones, climate patterns, etc.). Aspen plans to monitor and evaluate water usage from these locations for at least 3 years after installation.

b. TASKS

TASK 1 – WATER EFFICIENT LANDSCAPE REGULATION

1.1 Water Efficient Landscape Regulation Approach and Content

- 1.1.1 Review existing landscape regulations and implementation procedures (e.g. EPA WaterSense, Irrigation Association, DOLA, other Colorado water providers, and other states). (*ELEMENT Lead*)
- 1.1.2 Develop informational sheet for Kickoff Meeting with description of project objectives and information request for staff input. (*ELEMENT Lead*)
- 1.1.3 Review Aspen's current landscaping-related regulations and processes. (*ELEMENT Lead, City Staff Support*)
- 1.1.4 Identify potential regulation topics, potential for water savings, and issues for consideration. (*ELEMENT Lead, City Staff Support*)
- 1.1.5 Determine implementation and enforcement mechanisms. (*City Staff Lead, ELEMENT Support*)
- 1.1.6 Develop a 1st Draft Regulation following the Kickoff Meeting, including requirements and implementation process. (*ELEMENT Lead, City Staff Support*)

1.1.7 Develop a 2nd Draft Regulation following the Staff Work Session, including requirements and implementation process. (*ELEMENT Lead, City Staff Support*)

1.1.8 Develop a 3rd Draft Regulation following the Stakeholder Meeting, including requirements and implementation process. (*ELEMENT Lead, City Staff Support*)

1.1.9 Prepare a draft implementation and enforcement plan, including staff resources necessary to support. (*City Staff Lead, ELEMENT support*)

1.2 City Staff Input

1.2.1 Identify and contact potential City staff to encourage Work Group participation. (*City Staff Lead*)

1.2.2 Coordinate Kickoff Meeting and Staff Work Session logistics and distribute information in advance of meetings. (*City Staff Lead*)

1.2.3 Kickoff Meeting and Work Session presentations and facilitation (*ELEMENT Lead, City Staff Support*)

1.2.4 Staff input solicitation and follow-up information. (*City Staff Lead*)

1.3 Stakeholder Input

1.3.1 Identify and contact potential stakeholders to encourage participation. (*City Staff Lead*)

1.3.2 Distribute 2nd Draft Landscape Regulation to stakeholders and City Attorney for review. (*City Staff Lead)*

1.3.3 Convene a stakeholders meeting to solicit feedback. (*City Staff Lead, ELEMENT Support*)

1.3.4 Review stakeholder recommendations and determine which to incorporate into the draft regulation. (*City Staff Lead, ELEMENT Support)*

1.4 Council Work Session and Adoption

1.4.1 Prepare and revise a regulation and implementation process based on the final draft. (*City Staff Lead, ELEMENT Support*)

1.4.2 Provide the draft regulation and implementation process and present to City Council. (*City Staff Lead, ELEMENT Support*)

1.4.3 Produce the final regulation and implementation process, addressing stakeholder and Council input. (*City Staff Lead)*

Task 2 – LANDSCAPE WATER BUDGETS AND DEMONSTRATION

2.1 Develop Water Budgets

2.1.1 Profile the landscaping and irrigation system characteristics of the City's parks and municipal facilities. (*City Staff Lead, ELEMENT Support*)

2.1.2 Develop water budgets appropriate under local climate conditions and typical irrigation system components versus those required under the Landscape Regulation. (*ELEMENT Lead, City Staff Support*)

2.2 Landscape Regulation Demonstration

2.2.1 Review historical metered water usage from up to four public/municipal spaces, identify areas for further evaluation, and provide recommendations for applying water budgets in WEP efforts. (*ELEMENT Lead, City Staff Support*)

2.2.2 Install landscape materials (e.g. plantings included in the Garden In A Box program) and irrigation system (e.g. residential-scale irrigation system controller, rain shutoff devices, efficient sprinkler heads, etc.) transformations at one to two public/municipal spaces, including signage and other measures to communicate with water savings concepts with the public. (*City Staff Lead*)

2.2.3 Develop a monitoring and evaluation program to determine water usage at transformed sites, and compare to the water budgets and other untransformed sites. (*ELEMENT Lead*)

Task 3 – PROJECT MANAGEMENT AND REPORTING

3.1 Scheduling and Coordination

3.2 Grant Payment Requests and Written Progress Reports.

3.2.1 Progress reports submitted at 50% and 75% of project completion will include an update on the status of the project, success of meeting previously identified goals and objectives, obstacles encountered, preliminary findings/accomplishments, and potential need for revisions to scope of work and timelines. A final report will include a review of the activities completed, an estimate of actual water savings realized, and other relevant information.

2. Deliverables

The following list describes the primary deliverables for the proposed projects:

- Landscape Regulation for new development.
- Landscape Regulation implementation and enforcement plan, associate budget and staff resources.
- Water budgets, estimates of water savings that can be achieved with low water use landscaping materials (e.g. turf alternatives) and efficient irrigation systems, and recommendations for future applications of water budgets within the Landscape Regulation, rate structure, and other aspects of Aspen's WEP initiatives.
- Baseline water use data for up to four public spaces and comparison to water budgets.
- Demonstration of water efficient landscape and irrigation systems.
- Monitoring and evaluation program.

3. Timeline:

The proposed project timeline, including estimated dates of key meetings and progress reporting, is provided in **Table 4** below.

Table 4. Proposed Project Timeline.

Task	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	28-Oct
TASK 1 - WATER EFFICIENT LANDSCAPE REGULATION																			
1.1 Regulation Approach and Content																			
1.2 City Staff Input			Kickoff Mtg			Staff Work Session													
1.3 Stakeholder Input										Stake-holder Mtg									
1.4 Council Work Session and Adoption													Council Work Session			Adoption			
TASK 2 - LANDSCAPE WATER BUDGETS AND DEMONSTRATION																			
2.1 Develop Water Budgets																			
2.2 Landscape Regulation Demonstration																			
TASK 3 - PROJECT MANAGEMENT AND REPORTING																			
3.1 Scheduling and coordination																			
3.2 Grant payment requests, progress, and final reports										50% Progress Report				75% Progress Report					Final Report

6. Project Budget and Proposed Funding

Lee Ledesma, Aspen's Utilities Finance and Administrative Services Manager, will be the primary contact for this grant. Ms. Ledesma lead the City's recent WEP update and is responsible for implementing the WEP. Following is a list of key staff and representatives for the City of Aspen who will contribute to the project through participation in the Work Group and providing information to develop the landscape regulations, water budgets, and demonstration project.

- David Hornbacher, Utilities and Environmental Initiatives Director
- Tyler Christoff, Deputy Director of Utilities
- Tom Rubel, Parks Operations Superintendent
- Matt Kuhn, Parks Operations Manager
- Scott Chism, Parks Planner
- Julie Kellams, Parks Horticulturist
- Stephen Kanipe, Director of Building Department
- Jessica Garrow, Director of Community Development
- Rebecca Wallace, Community Development Operations Manager
- Karen Harrington, Quality Manager
- Debbie Quinn, Assistant City Attorney
- Tricia Aragon, Director of Engineering
- April Long, Stormwater Manager
- Ann Mullins, City Council

ELEMENT Water Consulting staff will assist the City with this project as follows:

- Beorn Courtney, P.E. will work directly with Lee Ledesma on overall coordination of the project, including allocation of resources to manage the project schedule and budget. In addition to project management, Ms. Courtney will work directly on the development of the landscape regulation and water budgets.
- Matt Welsh, P.H. will support the project through developing content for the landscape regulation and draft water budgets.

The proposed labor hours and project budget are provided in **Tables 5 and 6** below.

Table 5. Project Labor.

Task	City Staff @ $ 45/hr	ELEMENT PM @ $170/hr	ELEMENT Hydrologist @ $130/hr	Total Labor ($)
TASK 1 - WATER EFFICIENT LANDSCAPE REGULATION				
1.1 Regulation Approach & Content	60	40	40	$14,700.00
1.2 City Staff Input	80	30	20	$11,300.00
1.3 Stakeholder Input	16	16	8	$4,480.00
1.4 Council Adoption	12	16	6	$4,040.00
TASK 2 - LANDSCAPE WATER BUDGETS AND DEMONSTRATION				
2.1 Develop Water Budgets	12	15	30	$6,990.00
2.2 Landscape Regulation Demonstration	80	20	10	$8,300.00
TASK 3 – PROJECT MANAGEMENT AND REPORTING				
3.1 Scheduling & Coordination	10	10	2.5	$2,475.00
3.2 Grant Payment Requests & Reports	8	14	0	$2,740.00
TOTAL	**278**	**161**	**116.5**	**$55,025.00**

Table 6. Project Budget and Proposed Funding.

TASK	PROJECT BUDGET			PROPOSED FUNDING		
	Labor	Other Direct Costs	Total	City In-Kind Labor	City Cash Contri-bution	CWCB Grant Request
TASK 1 - WATER EFFICIENT LANDSCAPE REGULATION						
1.1 Regulation Approach & Content	$14,700.00	$0.00	$14,700.00	$2,700.00	$0.00	$12,000.00
1.2 City Staff Input	$11,300.00	$1,200.00	$12,500.00	$3,600.00	$1,200.00	$8,900.00
1.3 Stakeholder Input	$4,480.00	$800.00	$5,280.00	$720.00	$800.00	$4,560.00
1.4 Council Adoption	$4,040.00	$400.00	$4,440.00	$540.00	$400.00	$3,900.00
TASK 2 - LANDSCAPE WATER BUDGETS AND DEMONSTRATION						
2.1 Develop Water Budgets	$6,990.00	$0.00	$6,990.00	$540.00	$0.00	$6,450.00
2.2 Landscape Regulation Demo.	$8,300.00	$10,000.00	$23,300.00	$3,600.00	$10,000.00	$4,700.00
TASK 3 – PROJECT MANAGEMENT AND REPORTING						
3.1 Scheduling & Coordination	$2,475.00	$0.00	$2,475.00	$450.00	$0.00	$2,025.00
3.2 Grant Payment Requests & Reports	$2,740.00	$0.00	$2,740.00	$360.00	$0.00	$2,380.00
TOTAL LABOR $	**$55,025.00**	**$12,400.00**	**$67,425.00**	**$12,510.00**	**$12,400.00**	**$42,515.00**

7. Authorized Representative

The City of Aspen is committed to reducing consumption through implementing water efficiency measures and programs, including those outlined above which will provide a significant step toward reducing outdoor water use and consumption. Thank you for your consideration of this grant request.

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Lee Ledesma
Utilities Finance and Administrative Services Manager
City of Aspen
May 31, 2016