CITY OF Grand Junction COLORADO

PUBLIC WORKS, UTILITIES & PLANNING

October 21, 2013

Mr. Ben Wade

Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, Colorado 80203

Re: Water-Efficiency Grant Application for the Grand Valley Water Entities

Dear Ben:

In 2012 the Colorado Water Conservation Board (CWCB) approved the Grand Valley Regional Water Conservation Plan (WCP). The WCP was a cooperative effort between the City of Grand Junction (City), Clifton Water District (Clifton), and the Ute Water Conservation District (Ute).

On behalf of Clifton and Ute, the City of Grand Junction is applying for a water-efficiency implementation grant. The grant will be used to fund two programs identified in our WCP. The first program will be an audit of six large industrial/commercial water users, two from each water district. The audits will be completed by the Brendle Group. The other program will be one hundred residential outdoor irrigation audits. These audits will be conducted by the Center for ReSource Conservation, on high residential domestic outdoor water users throughout the three water districts.

The total project cost is $62,700. The water districts will meet their portion of the grant with in-kind services in the amount of $17,250. We request a CWCB water-efficiency grant of $45,450.

Thank you for your consideration of our grant proposal. We look forward to working with the CWCB to advance water conservation efforts in the Grand Valley.

Sincerely,

Rick Brinkman

Water Services Manager
City of Grand Junction

Cc: Joe Burtard, Ute Water Conservancy District
Dave Reinertsen, Clifton water District
Kathy Portner, Economic and Sustainability

Water Efficiency Grant Program Application

**Project:** Grand Valley Regional Water Conservation Plan Implementation—Water Use Audits and Strategies for Reduction

**Executive Summary:** This project will implement two regional water and conservation measures and programs identified in the Grand Valley Regional Water Conservation Plan. The Low Water Use Landscape program will provide 100 landscape audits to residential customers that utilize domestic water for outdoor irrigation, resulting in an estimated water saving of 10%-15% with implemented measures. In addition, water audits will be provided for six of the top C-I water users, resulting in a potential 3%-5% water savings with implemented measures. The total project cost is $62,700 and we are requesting $45,450 from the Water Efficiency Grant Program Fund.

1. **Contact Information:**

   Rick Brinkman, Water Services Manager
   City of Grand Junction
   333 West Avenue
   Grand Junction, CO 81501
   T: (970)244-1429
   F: (970)
   Email: rickbr@gjcity.org

   The City of Grand Junction will partner with the other water providers in the Valley, the Ute Water Conservancy District and the Clifton Water District, to implement the program. Rick Brinkman will manage the grant.

2. **A list of the organizations and/or individuals, including those hired or otherwise retained by the entity that will assist in performing the project, and a written statement of their role and contributions.**

**Staff:** The project will be managed by Rick Brinkman, with assistance from Joseph Burtard (Ute) and David Reinertsen (Clifton).

City of Grand Junction—Rick Brinkman is the Water Services Manager for the City of Grand Junction. He is responsible for the management of all water related activities including source water, water rights, water treatment, water distribution, utility billing, water conservation, drought response and water fund finances. He has been a member of Grand Valley DRIP since 2008 and serves on the Gunnison Basin Roundtable, in an Interbasin Compact Committee alternate, Colorado Water Utility Council board member, and Water Conservation Technical Advisory Group for the Colorado Water Conservation Board.

Ute Water Conservancy District—Joseph R. Burtard is the External Affairs Manager for the Ute Water Conservancy District. Burtard has been with the District for eight years with responsibilities primarily focused on public outreach, education, governmental affairs, media relations and administration to the General Manager along with the 14 member Board of Directors.

Clifton Water District—David Reinertsen is the Assistant Manager of the Clifton Water District and has been with the District for 15 years. His responsibilities include managing the District's capital construction program, coordination of customer service support across all departments, and water conservation and drought response coordination. He has served as the District representative for the Grand Valley DRIP since its inception in 2004.

**Selected firms to complete the audits:**

Residential Audits:
Center for ReSource Conservation
Attn: Daniel Stellar
2639 Spruce Street
Boulder, CO 80302
P: (303)999-3820 x214
F: (303)440-0703
Email: dstellar@conservationcenter.org

The Center for ReSource Conservation Water Division contracts with municipalities to develop and implement water conservation programs within their communities. Grand Junction will be utilizing the "Slow the Flow Colorado Irrigation Inspection Program". The irrigation inspection program provides a free check of residential irrigation systems, consisting of a series of tests that determine the efficiency of the irrigation system. An inspector checks the application rate, uniformity, and pressure of the system, as well as the soil type and root depth in the landscape to determine how the efficiency of the system can be improved upon and to develop an appropriate watering schedule for the landscape. The Center will deploy a team of trained auditors for the project.

Commercial/Industrial Audits:
The Brendle Group
212 Mulberry St.
Fort Collins, CO 80521
T: (970)207-0058
F: (970)207-0059
Email: www.brendlegroup.com

The Brendle Group was formed in 1996 and has been working for over a decade with local governments and utilities that are water providers on assessments/audits and resource conservation plans, as well as sustainability planning initiatives. The Brendle team has extensive knowledge of the C-I sector, completing water audits in hundreds of commercial, industrial, and institutional settings, including schools, restaurants, commercial laundry and kitchen facilities, and administration buildings, among others. As a result, the team brings an in-depth, working knowledge of water use and the wide range of opportunities available to help customers increase their water use efficiency and reduce costs. The team will include: Julie Sieving, P.E., LEED-AP, Senior Engineer as technical oversight and review; Becky Fedak, P.E., Water Resources and Energy Engineer as project manager and technical lead; Patrick Flynn, Sustainability Analyst on assessment team and Cali Campbell, Engineer Intern on assessment team.

3. **a. Identification of retail water delivery by the covered entity for each of the past five years (in acre-feet) and additional information characterizing past water use by sector (residential, commercial, industrial, irrigation) and source (surface water, groundwater, etc.)**

   **b. Background characterizing the local water system, potential growth and any other pertinent issues. Information must include:**

   **i. Current and past per capita water use for the last five years and the basis for this calculation.**

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

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

   **iv. Estimates of water savings realized in the past 5 years through water conservation efforts implemented by the applicant.**

   **v. Adequacy, stability and reliability of the entity's water system.**

**BACKGROUND**

<u>Local Water System Source, Delivery and Use</u>

The City of Grand Junction has both storage and direct flow water rights in the North Fork of Kannah Creek, Kannah Creek, Whitewater Creek, as well as the Gunnison and Colorado Rivers. Clifton Water District has water right in the Colorado River. Ute Water Conservancy District has both storage and direct flow water rights in Big Creek, Leon and Park Creeks, Bull Creek, Buzzard Creek, Coon Creek Cottonwood Creek, Plateau Creek, Mesa Creek, Owens Creek, Bull Creek, Rapid Creek, Salt Creek and the Colorado River.

**City of Grand Junction**
**Sector Water Use**

| Year | Customer Class | Total Taps | Metered Water (1000 Gallons) | Average per Tap (1000 Gallons) | Per Capita | Water Use % of Total |
|---|---|---|---|---|---|---|
| **2012** | Residential | 8,042 | 1,057,180 | 131 | 107 | 62.5% |
| | Commercial | 1,358 | 633,962 | 467 | | 37.5% |
| | Total | 9,400 | 1,691,142 | | | |
| **2011** | Residential | 7,897 | 962,291 | 122 | 98 | 62.4% |
| | Commercial | 1,288 | 580,838 | 451 | | 37.6% |
| | Total | 9,185 | 1,543,129 | | | |
| **2010** | Residential | 7,897 | 1,014,260 | 128 | 104 | 61.7% |
| | Commercial | 1,288 | 629,929 | 489 | | 38.3% |
| | Total | 9,185 | 1,644,189 | | | |
| **2009** | Residential | 7,977 | 1,059,819 | 133 | 109 | 62.2% |
| | Commercial | 1,316 | 642,728 | 488 | | 37.8% |
| | Total | 9,293 | 1,702,547 | | | |
| **2008** | Residential | 8,139 | 1,072,170 | 132 | 110 | 61.3% |
| | Commercial | 1,280 | 676,077 | 528 | | 38.7% |
| | Total | 9,419 | 1,748,247 | | | |
| **2007** | Residential | 8,259 | 1,136,014 | 138 | 117 | 64.0% |
| | Commercial | 1,421 | 638,582 | 449 | | 36.0% |
| | Total | 9,680 | 1,774,596 | | | |
| **2006** | Residential | 8,124 | 1,126,770 | 139 | 118 | 63.9% |
| | Commercial | 1,420 | 636,025 | 448 | | 36.1% |
| | Total | 9,544 | 1,762,795 | | | |
| **2005** | Residential | 8,087 | 1,064,358 | 132 | 113 | 64.2% |
| | Commercial | 1,220 | 594,409 | 487 | | 35.8% |
| | Total | 9,307 | 1,658,767 | | | |

Note: Residential uses were combined for both single family and multi-family taps.
Commercial: includes City, Governmenal & Commercial accounts

Per Capita: Calculated residential and mult-family population, 2.34 persons per unit;
annual residential billing divided by 365 (days per year) equals gallons per day;
gallons per day divided by population equals daily individual use.

**Clifton Water District**
**Sector Water Use**

| Year | Customer Class | Total Taps | Metered Water (1000 gallons) | Average per Tap (1000 gallons) | Per Capita | Water Use % of Total |
|---|---|---|---|---|---|---|
| **2012** | Residential | 11,053 | 1,062,656 | 96 | 80 | 92.0% |
| | Commercial | 273 | 92,414 | 339 | | 8.0% |
| | Total | 11,326 | 1,155,070 | 102 | | |
| **2011** | Residential | 10,787 | 1,003,737 | 93 | 76 | 92.0% |
| | Commercial | 255 | 87,281 | 342 | | 8.0% |
| | Total | 11,042 | 1,091,018 | | | |
| **2010** | Residential | 10,590 | 1,060,601 | 100 | 79 | 92.7% |
| | Commercial | 247 | 88,479 | 358 | | 7.3% |
| | Total | 10,837 | 1,149,080 | | | |
| **2009** | Residential | 10,619 | 1,036,822 | 98 | 80 | 92.7% |
| | Commercial | 241 | 81,648 | 339 | | 7.3% |
| | Total | 10,860 | 1,118,470 | | | |
| **2008** | Residential | 10,499 | 1,068,544 | 102 | 83 | 92.1% |
| | Commercial | 238 | 91,656 | 385 | | 7.9% |
| | Total | 10,737 | 1,160,200 | | | |
| **2007** | Residential | 10,127 | 1,081,429 | 107 | 88 | 92.7% |
| | Commercial | 227 | 85,161 | 375 | | 7.3% |
| | Total | 10,354 | 1,166,590 | | | |
| **2006** | Residential | 10,155 | 1,045,642 | 103 | 86 | 94.5% |
| | Commercial | 223 | 60,858 | 273 | | 5.5% |
| | Total | 10,378 | 1,106,500 | | | |
| **2005** | Residential | 9,925 | 1,033,670 | 104 | 87 | 94.9% |
| | Commercial | 244 | 55,550 | 228 | | 5.1% |
| | Total | 10,169 | 1,089,220 | | | |

Note: Residential includes: Single Family Residential, Multi Family Residential and Trailer Parks
Commercial includes: Commercial, Restaurants, Schools, Churches, Firelines

Per Capita: Per capita calculations (2010) = Unit connections times 2.73 (calculated people per unit) equals Clifton population. Calculated people per unit was 2.65 for the years of 2000-2009. annual residential billing divided by 365 (days per year) equals gallons per day; gallons per day divided by Clifton population equals daily individual use.

**Ute Water District**
**Sector Water Use**

| Year | Customer Class | Total Taps | Metered Water (1000 Gallons) | Average per Tap (1000 Gallons) | Per Capita | Water Use % of Total |
|---|---|---|---|---|---|---|
| **2012** | Residential | 33,299 | 2,204,282 | 66 | 78 | 74.8% |
| | Commercial | 1,258 | 744,055 | 592 | | 25.2% |
| | Total | 34,557 | 2,948,337 | | | |
| **2011** | Residential | 33,057 | 2,107,328 | 64 | 75 | 75.4% |
| | Commercial | 1,249 | 687,649 | 551 | | 24.6% |
| | Total | 34,306 | 2,794,977 | | | |
| **2010** | Residential | 32,643 | 2,139,267 | 66 | 77 | 76.0% |
| | Commercial | 1,238 | 675,771 | 546 | | 24.0% |
| | Total | 33,881 | 2,815,038 | | | |
| **2009** | Residential | 31,937 | 2,186,567 | 68 | 72 | 75.5% |
| | Commercial | 1,223 | 707,831 | 579 | | 24.5% |
| | Total | 33,160 | 2,894,398 | | | |
| **2008** | Residential | 32,253 | 2,232,344 | 69 | 72 | 74.4% |
| | Commercial | 1,156 | 767,198 | 664 | | 25.6% |
| | Total | 33,409 | 2,999,542 | | | |
| **2007** | Residential | 31,387 | 2,416,643 | 77 | 80 | 76.2% |
| | Commercial | 1,139 | 752,784 | 661 | | 23.8% |
| | Total | 32,526 | 3,169,427 | | | |
| **2006** | Residential | 30,452 | 2,307,791 | 76 | 79 | 73.5% |
| | Commercial | 1,098 | 833,636 | 759 | | 26.5% |
| | Total | 31,550 | 3,141,427 | | | |
| **2005** | Residential | 29,495 | 2,165,112 | 73 | 77 | 74.3% |
| | Commercial | 1,037 | 747,361 | 721 | | 25.7% |
| | Total | 30,532 | 2,912,473 | | | |

Note: Residential includes single family and multi-family units as well as mobile home parks.
Commercial includes: Commercial, Restaurants, Schools, Churches, Firelines

Per Capita: Per capita calculations (2010) = Unit connections times 2.34 (calculated people per unit) equals Ute population; annual residential billing divided by 365 (days per year) equals gallons per day; gallons per day divided by Ute population equals daily individual use.

Future Demand

Table 5-5 is a summary of anticipated water demand in the Grand Valley from 2010 through 2025. It should be noted that the values used for the projected water demand are planning values only and are based on current research by both HDR and the State Demographer. The Entities, however, are experiencing a reduction in water demand and active taps due to the temporary downturn in the local economy and the general nation-wide recession.

**Grand Valley**
**15-Year Estimated Water Demand**
(values in million gallons)

| **Year** | **2010** | **2015** | **2020** | **2025** |
|---|---|---|---|---|
| Projected: | | | | |
| City of Grand Junction | 1,808 | 1,970 | 2,014 | 2,060 |
| Clifton Water District | 1,347 | 1,434 | 1,572 | 1,703 |
| Ute Water Conservancy District | 2,956 | 3,529 | 3,967 | 4,474 |
| **Projected Total Water Demand** | **6,111** | **6,933** | **7,553** | **8,237** |

**Table 5-5**

**Population Estimates by District**

| | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|
| City | 27,161 | 28,125 | 29,123 | 30,157 |
| Clifton | 33,000 | 36,363 | 40,384 | 44,282 |
| Ute | 79,600 | 92,278 | 106,976 | 124,014 |

Water Conservation Goals Identified in the Grand Valley Regional Water Conservation Plan

Modification of Water Demand Forecast

Modification of the demand forecast was calculated using the estimated water savings from the outlined programs above. Table 7-3, below, is a summary of estimated water savings in the Grand Valley from Water Conservation Programs.

**Table 7-3**

**Grand Valley**
**15-Year Estimated Water Demand**
**With Water Savings**
(values in million gallons)

| | | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|---|
| 1 | **Total Water Demand** | **6,111** | **6,933** | **7,553** | **8,237** |
| | **Estimated Water Savings:** | | | | |
| 2 | Landscape Audits | | 1.00 | 2.25 | 3.50 |
| 3 | Fixture Retro-fits | | 1.68 | 4.48 | 7.28 |
| 4 | C-I Audits | | 8.95 | 17.90 | 17.90 |
| 5 | Total Estimated Water Savings | | 11.63 | 24.63 | 28.68 |
| 6 | **Projected Water Demand with Savings** | | **6,921** | **7,528** | **8,208** |

1 Water demand from the City, Clifton, and Ute.

2 Estimated annual water savings for ten homes May -Sept.: 250,000 gallons.
Irrigation audits to begin in the Spring, 2014.

3 Toilet retro-fit savings is 560,000 gallons per year for 50 homes. Program to begin 2015.

4 Estimated C-I water savings at 5%, audits will begin in Spring, 2014.

5 Total of all program savings.

6 Estimated water demand with program water savings.

Estimate of Water Savings Through Past Measures

The water entities have implemented a number of water conservation activities, including the Drought Response Information Project (DRIP), the Annual Children's Water Festival, low water use landscape projects, leak detection programs, and increasing block rate structures. The most measurable water savings are found with the installation of the Maxi-Com Irrigation Program for the City Parks facilities. Through the use of the Maxi-Com and other improvements to the irrigation systems, the water use in parks, schools, trails, open space, and street medians was reduced by 27.07 mg from 2008-2010.

**c. Indicate how the Grant Program monies will be used to address the entity's stated water savings goals.**

**PROJECT PROPOSAL**

The Grand Valley Regional Water Conservation Plan identifies the following goals and objectives:

Goals 1: Continue to educate the community, landscape contractors, and customers regarding codes and ordinances that promote xeric landscapes and water conservation.
Goal 2: Continue to create public awareness of wise water use and conservation.
Goal 3: Reduce residential sector water demand in the Grand Valley by 10% over the next seven years.
Goals 4: Promote water saving awareness in the commercial/industrial sectors.

The grant funds will be used to implement the following identified Regional Water Conservation Measures and Programs:

Low water use landscapes—Residential Audits:

Landscape audits will be offered to 100 residential customers that utilize domestic water for outdoor irrigation. The Residential Audits will be done by the trained staff of the Center for ReSource Conservation through the Slow the Flow Colorado outdoor irrigation audit program at a cost of approximately $150.00 per audit. The estimated water saving for landscape audits is considered to be a 10%-15% reduction in water use (Vickers). Since a greater share of the irrigation in the City is from treated water, the City's water use values were used as a base for calculating potential water savings from landscape audits. In 2010, there were 7,897 active residential water taps in the City service area with an average base demand of 10,000 gallons per month per home. Peak season, July and August, demand per home has been calculated to be 28,800 gallons per month. The difference between winter and summer water use was 18,800 gallons that was attributable to lawn irrigation and evaporative cooling in homes. A conservative estimated savings of 10% is 1,880 gallons per home per month and may be as high as 2,500 gallons per month per home depending upon the seasonal rainfall. The annual water savings from audits for the months of May through September may be as high as 25,000 gallons for each home with a total of 250,000 gallons for 10 homes per year. It is estimated that most of the irrigation audits demand will be from homes in the City of Grand Junction water service area.

Water-efficient commercial & industrial water-using processes—C/I Audits:

Water audits will be offered to six of the Entities' C-I water users. Since it is unknown how much water savings will be realized by the commercial water use audits, it was estimated that the results of the audits may be a conservative water savings of 3%-5% per C-I audit. The estimated cost of a water use audit for a C-I customer will is $4,900 per audit with a total of $29,400 for the program. The C-I audits will be performed by trained staff of the Brendle Group. Below is Table 7-1, a listing of the top

ten C-I water users in the region showing the 2011 water use and the potential 3% and 5% water savings from the audits. At the 3% water savings from audits, the Grand Valley could see a savings of 16.4 mg from these top ten users. At the 5% water savings from audits, the Grand Valley could see a savings of 27.4 mg. It is estimated that most of the demand for the C-I audits will be in the City and in Ute's service area. The program for the C-I water audits will be reviewed annually by the DRIP Committee for documented water savings and program effectiveness.

**Table 7-1**

**Ten Largest Commercial-Industrial Customers in the Region**

| Customer | Sector | Water Use (mg) | 3% Savings | 5% Savings |
|---|---|---|---|---|
| City of GJ parks | Government | 150.5 | 4.5 | 7.5 |
| Colorado Mesa University | Education | 43.8 | 1.3 | 2.2 |
| St. Mary's Hospital | Hospital | 39.0 | 1.2 | 2.0 |
| School District 51 | Education | 30.0 | 0.9 | 1.5 |
| Mesa County | Government | 29.1 | 0.9 | 1.5 |
| LLG | Manufacturing | 26.0 | 0.8 | 1.3 |
| Colorado Egg Producer | Agricultural | 12.0 | 0.4 | 0.6 |
| Haliburton | Commercial | 9.9 | 0.3 | 0.5 |
| Wal-Mart Stores | Retail | 9.0 | 0.3 | 0.5 |
| Safeway Stores | Retail | 8.0 | 0.2 | 0.4 |
| Total | | 357.3 | 10.7 | 17.9 |

Businesses to be assessed:

Candidate businesses within each of the three districts were identified based on high water use within various sectors and willingness to participate. The project will include an assessment of the following six sites: Central High School, Dos Hombres Restaurant, ALSCO-American Linen Division, OMNI Hospital Services, Western Slope Auto, and Colorado Printing. The assessments will include an analysis of water utility bills and a walk-through of each facility to identify opportunities for water savings. Indoor end use fixtures, outdoor irrigation, and process water will all be considered in the identified opportunities.

**d. Indicate how the activities will be monitored to estimate actual water savings during Project implementation.**

Monitoring

The program elements will be audited annually for effectiveness and water savings. The results will be included in the DRIP annual report which will be posted on the DRIP webpage and be presented to each of the governing bodies of the three entities.

Scope of Work

Background: The Grand Valley Regional Water Conservation Plan, completed through a partnership between the Colorado Water Conservation Board and the three water providers: City of Grand Junction, Clifton Water District and Ute Water Conservancy District, states as its mission "to promote water conservation by example, education, and innovation for the purpose of securing the future water needs of the Grand Valley". The proposed project is to conduct 100 residential water audits and six Commercial/Industrial water audits

Commercial/Industrial Audits

1. Project Kickoff; Pre-audit Preparation

The first task includes a project kickoff via conference call with representatives from each of the three entities to discuss details on the approach for the project, any requirements or restrictions that should be considered when identifying water savings opportunities (e.g., specific flow standards and/or fixture requirements), and logistics for scheduling and conducting assessments with each of the customers (e.g., specific requirements for each customer). This task also includes a review of the water utility data for all six customers to identify usage patterns and help prepare for the on-site visits. Also, pre-audit interviews with each customer will be conducted to coordinate and schedule each audit and, if possible, begin to better understand the operations and related equipment at each facility.

2. On-Site Audits

Task 2 will include an onsite assessment of each facility by three Brendle Group's staff members, led by the water resources engineer, to ensure the site visits are conducted in the most efficient and effective manner possible. Pre- and post-visit support will be provided by senior Brendle Group staff for site visit preparation; quality assurance; and review of opportunities, cost savings, and overall report content. During the site visits, all sources of water use relevant to each facility will be evaluated including end use fixtures, irrigation, and process operations. Each site visit will consist of a preliminary interview with appropriate staff member(s) to gain a better understanding of facility operations, water use practices, etc., as well as a detailed walk-through to examine all water uses and identify savings opportunities. It is anticipated that one half day will be spent at each of the six customer sites conducting the assessments

and meeting with staff. Systems that will be assessed include, but are not limited to, the following as they apply to each facility:

- End use fixtures
    - Sinks
    - Showers
    - Toilets
    - Water spigots
- Outdoor irrigation
- Other water uses
    - Production equipment
    - Laundry
    - Kitchen
    - Car wash bays
    - Heating and/or cooling

Below is a list of C/I Audit locations:

- **School District 51**--Central High School (Clifton Water District): Central High School serves about 1,400 students with 135 staff members. It has four individual structures on the campus including four shower/locker rooms, 14 staff restrooms, 11 gang restrooms, nine custodial closets, and a full-service cafeteria serving about 1,000 meals per school day. Outdoor landscaping uses a combination of potable and ditch irrigation water.
- **Dos Hombres Restaurant** (Clifton Water District): Restaurant constructed in 2002 and has 264 seats with 69 employees that serves approximately 3,800 patrons per week. There are 56 different water use appliances/fixtures associated with this business. Owner has taken some measures to conserve water but wants to find other areas to reduce potable water consumption as the sewer charges are also based on the monthly water consumption.
- **ALSCO-American Linen Division** (City of Grand Junction): This is a commercial laundry facility that has the following equipment: five 900 lb Ellis washers; one 675 lb Ellis washer; one 135 lb Milnor washer; two Accuhem chemical injection machines; one 150 hp Cleaver Brooke boiler; one 5,000,000 grain water softener; seven 18,000 cfm evaporative coolers, one 15,000 cfm evaporative cooler; two 5,500 cfm evaporative coolers; and, several standard toilets, urinals, hand wash sinks, and drinking fountains.
- **OMNI Hospital Services** (City of Grand Junction): This is a commercial laundry facility that has the following equipment: one boiler, one soil sorting tank; water softener system; three Point washers; one chemical make-up system; one conveyor room sink; nine evaporative swamp coolers; three water coolers; one eye wash station; three urinals; eight toilets; and nine wash sinks.

- **Western Slope Auto** (Ute Water): Auto dealer that includes six drinking fountains, four urinals, 16 toilets, 20 sinks, one automatic car wash bay, four self-serve car wash bays, one refrigerator ice maker, and between 1.5 and 2 acres of irrigated lawn and landscape areas.
- **Colorado Printing** (Ute Water): Industrial printing and copy company with 6 drinking fountains, 9 urinals, 30 toilets, 23 sinks, 1 refrigerator ice maker, 1 ice maker, 6 acres of irrigated lawn, and, a RO system supplies water to the presses and plate room.

3. Reporting

Following completion of the onsite assessments, the Brendle Group will develop a preliminary list of efficiency opportunities and a draft assessment report for each customer that will include:

- A summary of water use and costs from utility data
- Evaluation of potential system leaks at each facility through the development of water use models
- Industry standards used in quantifying water savings
- A description of individual water saving opportunities identified during assessments
- Calculation of water savings and cost savings for select opportunities, as well as energy savings for any relevant opportunities
- An estimate of implementation costs (installed costs) and payback period for select opportunities
- A description of applicable utility rebates and other incentives for identified opportunities through coordination with the entities
- A summary of suggested implementation steps for opportunities (e.g. equipment recommendations)

The reports will be subject to an in-house quality assurance/quality control process. Completed reports and associated opportunities and calculations will be reviewed and approved by a senior in-house engineer before delivery to the customer. Documents are also subjected to a technical edit by a Brendle Group communications specialist to ensure they are concise, understandable, and grammatically correct.

4. Post-Audit Follow Up and Monitoring

The Brendle Group will conduct a follow-up phone call with each customer to review existing conditions and the recommended water savings measures, and answer questions about recommended measures, as well as offer guidance on next steps toward implementation. Monitoring of monthly and annual water use will be tracked and compared to prior month and year values to determine if the audits have resulted in lower water usage. This information will be provided to each audited customer annually or upon request. Monitoring will continue for three years.

5. Project Deliverables and Timelines

| Task | Schedule | Consultant | In-kind |
|---|---|---|---|
| Task 1: Kick Off Meeting; Pre-Audit Preparation (includes in-kind participation of 12 hours @ $75/hour) | Start March 1, 2014—2 weeks | $ 5,000 | $ 900 |
| Task 2: On-Site Audits (includes in-kind assistance with field work of 24 hours @ $75/ hour) | Start April 1, 2014—1 week | $10,800 | $ 1,800 |
| Task 3: Reporting (includes in-kind review of 12 hours @ $75/hour) | Start May 1, 2014—4 weeks | $11,700 | $ 900 |
| Task 4: Post-Audit Follow Up and Monitoring (includes in-kind monitoring of 8 hours/entity at $75/hour) | Start July 1, 2014—2 weeks* | $ 1,900 | $ 1,800 |
| Project Management and Grant Reporting (in-kind of 40 hours @ $75/hour) | On-going | | $ 3,000 |
| Total | 9-10 Weeks** | $29,400 | $ 8,400 |

*Allows for a 1-week customer review period

**Billable hours. Annual monitoring will continue for three years.

It is estimated that audits will begin in Spring of 2013 and will be completed by the end of December, 2014. The 50% completion report will be submitted to the CWCB by the end of September, 2014, the 75% completion report submitted to the CWCB by the end of January 2015 and the final report submitted to the CWCB no later than March 1, 2015. All reports will be developed by the Project Manager.

<u>Residential Audits</u>

1. Pre-audit Preparation and Marketing

The pre-audit preparation will consist of conference calls with the Consultant and Project Manager to discuss the details of the audits and resource materials to be included in the marketing and outreach. The marketing campaign to solicit interest in the program will be developed by the Consultant with the Project Manager. The Consultant will work with the customers to schedule the audits.

2. On-site Audits

The on-site audits will be performed by the Center for ReSource Conservation staff. The audit includes gathering customer information, visual inspection, catch cup tests, pressure readings, soil and root depth tests, landscape measurements, determine watering schedule and sharing test results and

recommendations. It's anticipated that the 100 audits would be completed over a two week period in Summer, 2014. One month after the audits, customers will be asked to complete a satisfaction survey.

3. Reporting

Following the on-site audits, the Consultant will prepare an overall report summarizing the findings and trends of the audits. The report will be available by the end of the year 2013.

4. Monitoring

Monitoring of monthly and annual water use will be tracked and compared to prior month and year values to determine if the audits have resulted in lower water usage. The Consultant will complete an Impact Analysis of all audited properties one year after the audit comparing pre and post audit water use.

5. Project Deliverables and Timelines

| Task | Schedule | Consultant | In-kind |
|---|---|---|---|
| Task 1: Pre-audit Preparation and Marketing Marketing is ongoing starting in March. In-kind hours include compilation of water use history and marketing assistance with utility bill inserts, website and event promotions—40 hours @ $75/hour | Start March 1, 2014—16 weeks | $ 2,312.5 | $ 3,000 |
| Task 2: On-Site Audits (includes in-kind assistance with field work of 30 hours @ $75/ hour | Start July 1, 2014—2 weeks | $10,425 | $ 2,250 |
| Task 3: Reporting ((includes in-kind review of 8 hours @ $75/hour) | Start August 1, 2014—2 weeks | $ 2,312.5 | $ 600 |
| Task 4: Monitoring | Start September 1, 2014—1 week and into following year. | $ 1,000 | |
| Project Management and Grant Reporting (in-kind of 40 hours @ $75/hour | On-going | | $ 3,000 |
| Total | 31 Weeks* | $16,050 | $ 8,850 |

*Total Billable Hours. Consultant will compelte an Impact Analysis of audited properties one year after the audit.

It is estimated that audits will begin in March 1, 2014 and will be completed by the end of September 2014. The 50% completion report will be submitted to the CWCB by the end of September 2014, the 75% completion report submitted to the CWCB by the end of January 2015 and the final report submitted to the CWCB no later than March 1, 2015. All reports will be developed by the Project Manager.

Project Budget (see attached for detail)

| | Budget | Grant Request | Local Cash Match | Local In-kind Match |
|---|---|---|---|---|
| C-I Audits | $37,800 | $29,400 | | $ 8,400 |
| Residential Audits | $24,900 | $16,050 | | $ 8,850 |
| Total | $62,700 | $45,450 | | $17,250 |

In-kind match will be provided by the partners: The City of Grand Junction Water Services, Clifton Water District and Ute Water Conservancy District.

| Commercial/Industrial Water Audits Budget | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Brendel Group | | | | | | | Local Water Providers In-Kind | | | | |
| | Senior Engineer | Engineer III | Program Manager I | Engineer Intern | ODCs | Brendel Total | Grant Request | Clifton | Ute | GJ | In-kind Total | Total |
| | $135/hr | $90/hr | $63/hr | $50/hr | | | | $75/hr | $75/hr | $75/hr | | |
| 1. Pre-Audit Preparation | | | | | | | | | | | | |
| Estimated Hours | 7 | 18 | 22 | 22 | 0 | | | 4 | 4 | 4 | | |
| **Total Pre-Audit** | **$945** | **$1,620** | **$1,386** | **$1,100** | | **$5,000** | **$5,000** | **$300** | **$300** | **$300** | **$900** | **$5,900** |
| | | | | | | | | | | | | |
| 2. On-Site Audit | 4 | | | | $1,600 | $1,600 | | | | | | |
| A. Central High School | | | | | | | | | | | | |
| Estimated Hours | | 7 | 7 | 7 | | | | 4 | | | | |
| Total | $540 | $630 | $441 | $350 | | | | $300 | | | | |
| B. Dos Hombres Restaurant | | | | | | | | | | | | |
| Estimated Hours | | 7 | 7 | 7 | | | | 4 | | | | |
| Total | | $630 | $441 | $350 | | | | $300 | | | | |
| C. ALSCO | | | | | | | | | | | | |
| Estimated Hours | | 7 | 7 | 7 | | | | | | 4 | | |
| Total | | $630 | $441 | $350 | | | | | | $300 | | |
| D. OMNI | | | | | | | | | | | | |
| Estimated Hours | | 7 | 7 | 7 | | | | | | 4 | | |
| Total | | $630 | $441 | $350 | | | | | | $300 | | |
| E. Western Slope Auto | | | | | | | | | | | | |
| Estimated Hours | | 7 | 7 | 7 | | | | | 4 | | | |
| Total | | $630 | $441 | $350 | | | | | $300 | | | |
| F. Colorado Printing | | | | | | | | | 4 | | | |
| Estimated Hours | | 7 | 7 | 7 | | | | | $300 | | | |
| Total | | $630 | $441 | $350 | | | | | | | | |
| **Audit Totals** | **$540** | **$3,780** | **$2,646** | **$2,100** | **$1,600** | **$10,800** | **$10,800** | **$600** | **$600** | **$600** | **$1,800** | **$12,600** |
| | | | | | | | | | | | | |
| 3. Report Development | | | | | | | | | | | | |
| Estimated Hours | 20 | 31 | 62 | 47 | 0 | | | 4 | 4 | 4 | | |
| **Total** | **$2,700** | **$2,790** | **$3,906** | **$2,350** | | **$11,700** | **$11,700** | **$300** | **$300** | **$300** | **$900** | **$12,600** |
| | | | | | | | | | | | | |
| 4. Post Audit Monitoring | | | | | | | | | | | | |
| Estimated Hours | 1 | 8 | 16 | 0 | 0 | | | 8 | 8 | 8 | | |
| **Total** | **$135** | **$720** | **$1,008** | | | **$1,900** | **$1,900** | **$600** | **$600** | **$600** | **$1,800** | **$3,700** |
| | | | | | | | | | | | | |
| 5. Project Management | | | | | | | | | | | | |
| Estimated Hours | | | | | | | | | | 40 | | |
| **Total** | | | | | | | **0** | | | **$3,000** | **$3,000** | **$3,000** |
| | | | | | | | | | | | | |
| **C/I Audit Total** | | | | | | **$29,400** | **$29,400** | | | | **$8,400** | **$37,800** |
| **Residendital Audit Total** | | | | | | | **$16,050** | | | | **$8,850** | **$24,900** |
| **Project Total** | | | | | | | **$45,450** | | | | **$17,250** | **$62,700** |

## Residential Water Audits Budget

| | Center for ReSource Conservation | | Local Water Providers In-Kind | | | | |
|---|---|---|---|---|---|---|---|
| | CRC Total * | Grant Request | Clifton | Ute | GJ | In-kind Total | Total |
| | $160.50/audit | | $75/hr | $75/hr | $75/hr | | |
| 1. Pre-Audit Preparation | | | | | | | |
| Estimated Hours | | | 10 | 10 | 20 | | |
| **Total Pre-Audit** | **$2,313** | **$2,313** | **$750** | **$750** | **$1,500** | **$3,000** | **$5,313** |
| | | | | | | | |
| 2. On-Site Audit | | | | | | | |
| Estimated Hours | | | 5 | 5 | 20 | | |
| **Audit Totals** | **$10,425** | **$10,425** | **$375** | **$375** | **$1,500** | **$2,250** | **$12,675** |
| | | | | | | | |
| 3. Report Development | | | | | | | |
| Estimated Hours | | | 2 | 2 | 4 | | |
| **Total** | **$2,312** | **$2,312** | **$150** | **$150** | **$300** | **$600** | **$2,912** |
| | | | | | | | |
| 4. Post Audit Monitoring | | | | | | | |
| Estimated Hours | | | | | | | |
| **Total** | **$1,000** | **$1,000** | | | | | **$1,000** |
| | | | | | | | |
| 5. Project Management | | | | | | | |
| Estimated Hours | | | | | 40 | | |
| **Total** | | | | | **$3,000** | **$3,000** | **$3,000** |
| | | | | | | | |
| **Residential Audit Total** | **$16,050** | **$16,050** | **$1,275** | **$1,275** | **$6,300** | **$8,850** | **$24,900** |
| **C/I Audit Total** | | **$29,400** | | | | **$8,400** | **$37,800** |
| **Project Total** | | **$45,450** | | | | **$17,250** | **$62,700** |

| ***Total CRC cost of $160.50 per audit includes:** | | |
|---|---|---|
| Labor | $11,250 | |
| Roundtrip Mileage | $1,200 | 4 auditors roundtrip from Front Range |
| Per diem | $960 | $40/auditor/day |
| Lodging | $2,640 | $110 per night/4 auditors @ 6 nights each |