Water Efficiency Grant Application to the Colorado Water Conservation Board For Water Audits and Water Efficient Fixtures

City of Brighton

Section 1 - Introduction and Background Information

The City of Brighton (hereafter the City) currently serves over 33,000 citizens as of the end of 2008 over a 27 square mile service area (See Figure 1). The City owns and operates 2 separate water systems (one potable and one non-potable), which utilize groundwater and surface water, respectively. The groundwater system is comprised of 11 production wells that feed 2 water treatment plants. The surface water system is compromised of 4 ditch systems. The details regarding these two different water systems (i.e., groundwater and surface water) are provided below.

Table 1 - Summary of Annual Water Supply in 2008

Annual Water Supply	Annual Volume (1,000 gallons)	Number of Sources	Percent Metered
Groundwater	2,022,667	11 wells	100%
Surface Water	23,829	4 ditches	100%
Non-potable Water Billed	90,979		100%
Treated Water Billed	1,638,198		100%
Total Annual Water Sold in 2008	1,753,006		

Groundwater is the primary water resource for the City and it is used exclusively for potable water supply. Groundwater produced from the 11 wells owned and operated by the City is pumped to one of two water treatment plants for filtration and disinfection prior to distribution. Groundwater production occurs from two separate tributary aquifer systems – the South Platte and the Beebe Draw. Although current aquifer pumping exceeded 6,500 acre-feet per year, recent studies by the City indicate that the sustainable annual yield of the current South Platte and Beebe Draw production wells is about 4,500 acre-feet per year and about 900 acre-feet per year, respectively.

Since the groundwater produced by the City is pumped from the South Platte and Beebe Draw alluvium, it is considered tributary groundwater and must therefore be augmented to offset depletions that occur out of priority. In general, the City is allowed return flow credits for 95% of wintertime use of the tributary groundwater, since most, if not all, of the treated water used by the community during this time is returned to the local wastewater treatment plant, treated and ultimately discharged back into the South Platte. Summertime treated water use on the other hand has a consumptive component related to outdoor irrigation water use which evaporates or is taken up by plant material. The City is

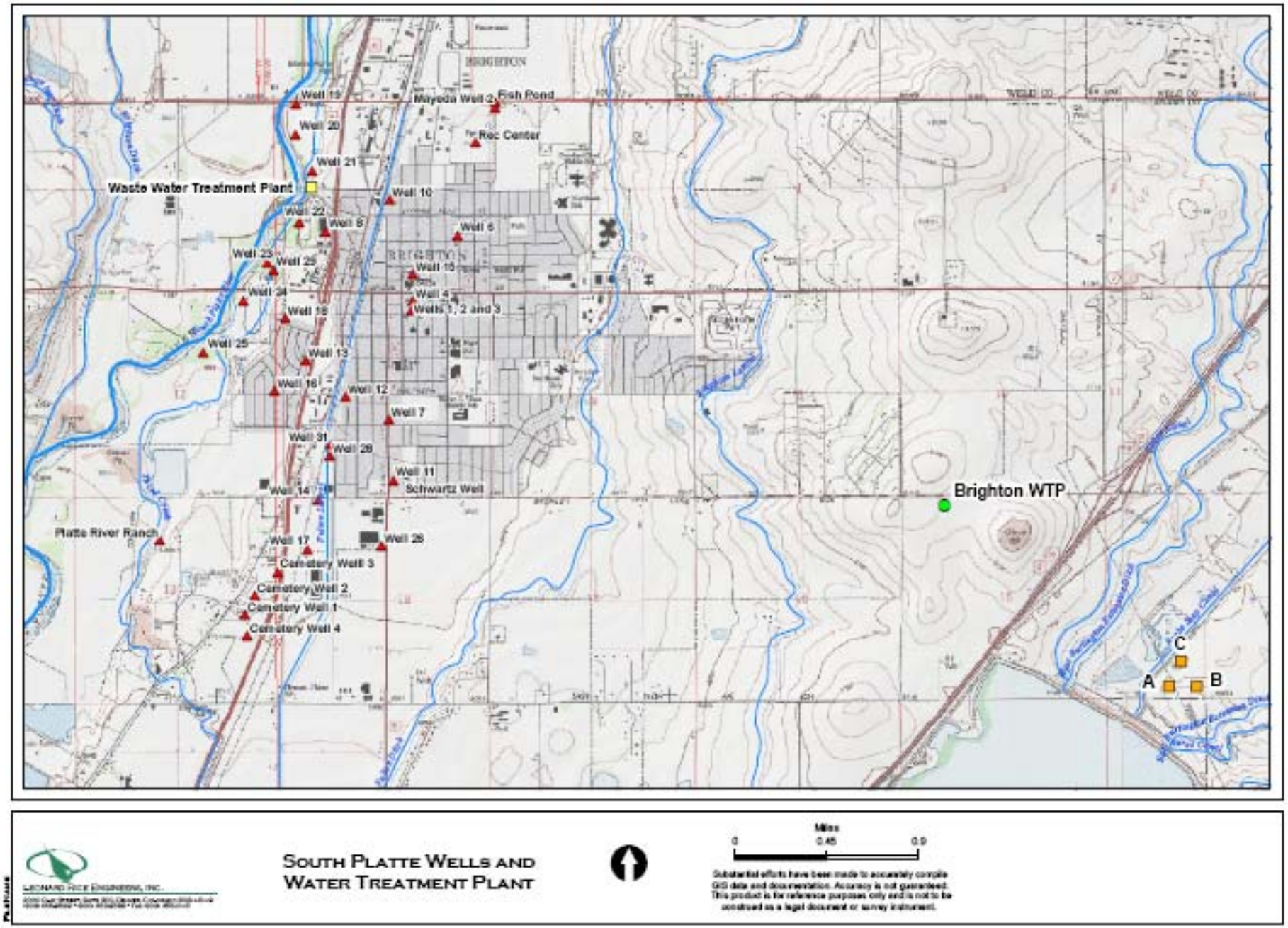


Figure 1 – Brighton Service Area and Well Fields

therefore required to augment tributary groundwater that is consumed during the year by using ditch water that the City has acquired.

Since the City's total annual water use in 2008 was 5,379 acre-feet; it is therefore a "covered entity" as defined in CRS 37-60-126.

Water Efficiency Grant Request Summary

Water conservation is an important component of overall water supply planning for the City. Actions to reduce water demand, decrease system losses, and increase operating efficiencies will benefit the City and its customers. To this point, the City updated its Water Conservation Plan in 2008 in accordance with the Colorado state statute, expanding its supported measures and programs to include:

Residential Water Conservation Programs – (which include:)

- Continuing indoor appliance residential rebate programs for high efficiency toilets and washing machines
- Establishing whole house and outdoor irrigation audits
- Developing residential customer water efficiency workshops

Commercial Water Conservation Programs – (which include:)

- Establishing a commercial facility audit program
- Establishing an outdoor irrigation audit program for parks and HOA facilities
- Developing indoor appliance and outdoor irrigation equipment rebate programs
- Completing its raw water conversion project
- Developing commercial and irrigation-only customer water efficiency workshops

Other Education and Outreach Efforts – (which include:)

- Developing public relations and messaging campaign
- Developing and/or expanding current K-12 education program
- Conducting surveys and/or focus groups

Other Measures and Programs - (which include:)

- Water rate increases
- Meter testing and replacement
- Leak detection and repair

Monitoring and Verification

The details of these various programs can be found in the City's 2008 Water Conservation Plan that was reviewed and approved by the CWCB Office of Water Conservation and Drought Planning (hereafter "the Office"), and is on file with the Office.

This Water Efficiency Grant request relates to the implementation of a specific portion of the City's approved Water Conservation Plan. The City is requesting that the Office consider its request to fund a portion of the City's water audit program and assist the City in implementing selected recommendations from recently completed water audits conducted at City facilities. The costs and recommendations contained in this grant application are, therefore, based in part on the City's recently concluded demonstration audit project which included auditing local commercial businesses and residences, as well as selected City facilities.

Note that the City initiated a demonstration audit program in the spring of 2009 to better define the needs of this grant request. The demonstration program involved conducting two commercial, two residential, one institutional, and five HOA audits. The results of these audits were used to identify specific retrofit costs and water savings that are included in this grant request. The demonstration audits also allowed the City to determine the processes needed to conduct additional audits for its high water use customers, which are also included in this grant. The Demonstration Audit Report is attached to this grant application.

The proposed scope of work, presented as an attachment to this application, involves four key tasks:

- Developing and implementing a new public outreach program to engage and educate the public regarding the City's audit program and create interest in the program in the local community;
- Conducting water audits at local businesses and residences to support wise water use and water use efficiency;
- Purchasing and installing water efficient fixtures and hardware in the City's high water use facilities including the Police Station, Recreation Center, City Hall and Senior Center, and at one of the local senior living facilities based on the expected water savings outlines in the Demonstration Audit Report (attached) in the demonstration audits; and
- Reporting on the program successes and challenges.

An overview of the proposed program is provided below.

The public outreach program will focus on providing information to the City's water customers through online tools, mailings and press releases. The outreach program will be used to promote the new water conservation plan and the components of the

plan that have been and will be implemented. One key component of the public outreach program will be to promote the following:

- Water audits
- Water efficiency rebates
- Observed water savings (e.g., meter improvements, leak repair, audit findings, completed retrofits, etc.)

The water audits will be crafted to address the specific needs of the customer. For commercial customers, the audit program will include collecting information for the entire facility – indoor and outdoor. Audits for this group of customers will be prioritized by total water use and customer willingness to provide access. It is anticipated that the vast majority of the audits will be performed at local restaurants, senior care facilities and large retail facilities. It is estimated that 7 to 15 percent of the current water use will be reduced as a result of the audits[1].

These audits will include visiting and characterizing water use in individual rooms, laundry and housekeeping facilities, cooling and heating systems, ice machines, swimming pools, and kitchens. During the audit, shower, toilet and faucet flow rates will be measured (as appropriate). Outdoor irrigation practices will be reviewed, including estimates of outdoor water use and demand, to determine if irrigation practices are consistent with the needs of the landscape. Educational materials will be provided and discussed with the property owners and/or managers regarding water conservation practices.

The grant will also be used to purchase and install water efficient fixtures and hardware for high water-use facilities identified during the Demonstration Audit Project. For example, showerheads and selected shower timers will be purchased and installed at the City's 11th Street Recreation Center potentially saving over 2.5 acre-feet of water. Sink faucet aerators and showerheads will be replaced at City Hall, the Police Station and at the City's Senior Center reducing water use by another acre-foot or more. High water use toilet tanks and urinals will also be replaced at selected City facilities.

The demonstration audits identified that showerhead and sink faucet aerators could also be replaced to substantial benefit in one of the privately owned local senior living facilities. A percentage of the toilets in this facility will also be replaced to support current efforts by the owners to upgrade and replace older high water-use equipment.

The City will track individual customer water use before and after the audits and the retrofit installations to help characterize the value and effectiveness of these specific

[1] Water use reductions due to audits are based on expected behavioral changes and leak identification and repair. Retrofits implemented as a result of the audits will create additional water savings.

water conservation measures and programs. Any water savings measured will be identified and discussed in the grant summary report.

It is anticipated that the CWCB Grant funds will be used to pay for labor to develop and implement the project messaging; plan for and conduct the water audits; prepare for, procure and install the high-efficiency water-use fixtures and hardware; and prepare the grant summary report. The City and its partners, on the other hand, will pay for all printing and production costs, for some of the other project expenses, and for the plumber costs to install all toilets and urinals.

Section 2 - Application

1. **Name and contract information of the entity seeking the grant.**

1. **Contact Information:**

Mr. Jim Landeck
Assistant Public Works Director
City of Brighton, Public Works Department
1901 Bridge Street
Brighton, Colorado 80601
Telephone: 303.655.2127
Fax: 303.655.2065
Email: jlandeck@brightonco.gov

2. **Project Team and Organization:**

The City's project team consists of the following individuals.

Jim Landeck, **a**ssistant Public Works Director, serving as Administrator over the Utilities Divisions of the Public Works Department of the City of Brighton will serve as Project Manager. Mr. Landeck has over 35 years experience in public sector administration having served previously as City Manager, Public Works Director, and City Engineer for several Denver metropolitan communities. He is well acquainted with water resource issues, organizational and customer interaction and project management. He will interact with the local governing council and other agencies to promote implementation of the project, be responsible for duties of the Project Manager, and supervise all efforts of the Project Team.

Dawn Hessheimer is the Water Resource Specialist for the City of Brighton and will serve as the Project Coordinator. Ms. Hessheimer has been an employee for the Utilities/Public Works division of the City for over thirty years. She has been involved with all aspects of the utility from water and wastewater production, water resource acquisition and development, utility permit fee administration, water conservation plan development and utility billing monitoring. She will be responsible for gathering information for monitoring the success of program and coordinate communications between staff and citizens groups. Ms. Hessheimer is responsible for

the City's water conservation program and she plans and staffs the booth in the annual Culturefest providing products and information to citizens regarding the City's water conservation efforts.

Tracy Bouvette of Great Western Institute will provide the coordination and technical assistance needed to plan for and conduct the audits, including, but not limited to, coordinating messaging and outreach, conducting onsite audits, installing showerheads and faucet aerators (as appropriate), performing data analyses and cost estimating, and reporting on verified water savings and project outcomes.

Rutter Plumbing of Brighton will provide the plumbing services (they were the lowest bidder of four solicited bids). They will be responsible for installing all toilets and urinals. *Beautyware Plumbing* of Henderson, CO will order, receive and deliver all of the replacement fixtures including showerheads, faucet aerators, waterless urinals and dual-flush toilets.

2. **Retail Water Deliveries for the Years 2004 through 2008**

Past water delivery to the City's different customer types is provided in the table below.

Table 2 - Summary of Water Delivery by Customer Type 2002-2008 (in 1,000 gallons)

Year	Residential	Commercial	Irrigation	Municipal	Other*	Total Treated Water Deliveries	Non-Potable Municipal	Other Non-Potable	Total Non-Potable Water Deliveries
2002	811,707	286,573	45,816	257,954	300	1,402,350	9,200	455	9,655
2003	698,380	314,891	31,945	181,222	296	1,226,734	11,937	1,193	13,130
2004	775,811	376,252	57,413	189,002	540	1,399,018	119,516	1,206	120,722
2005	842,382	422,103	73,843	95,202	740	1,434,270	106,021	1,607	107,628
2006	963,456	470,666	104,001	115,669	384	1,654,176	105,647	2,304	107,951
2007	958,199	498,516	147,465	188,596	1,214	1,793,990	95,886	567	96,453
2008	951,168	450,787	132,689	126,963	420	1,662,027	90,979	0	90,979

* other water use includes small business development delivered outside of City limits

The two water treatment plants that the City of Brighton operates (the reverse osmosis (RO) plant and the green sand filter plant) both have a component of water use related to the treatment process. At the reverse osmosis plant, the RO filters produce brine water that contains the concentrated salts and minerals that are removed from the raw source water. This brine water is accumulated and disposed via pipeline to the South Platte River. The green sand filter plant requires frequent filter backwashes that produce a wastewater that is discharged to the local wastewater treatment plant for discharge back to the South Platte. These two water volumes combine to be about 10% of total groundwater production. In other words, the water treatment plants must be operated at 95% of capacity to meet 85% of total peak demand. Using non-potable water for outdoor irrigation purposes will help reduce the demand on treated

water, and therefore reduce the amount of treated water brine and backwash water pumped to waste.

Another loss of water exists related to water that is not sold but is processed through the two water treatment plants, but is lost due to transmission and/or distribution leaks and inefficiencies, flushing flow water pumped to waste, etc. Area water providers in the Front Range have lost water that ranges from about 7 to 15 percent of treated water supply. The City has been able to keep its lost water at about 7.45% of annual treated water billings, or at about 123,800 thousand gallons in 2008. Ongoing leak detection and meter replacement programs help to minimize non-revenue water losses.

3. Does the City Qualify as a covered entity?

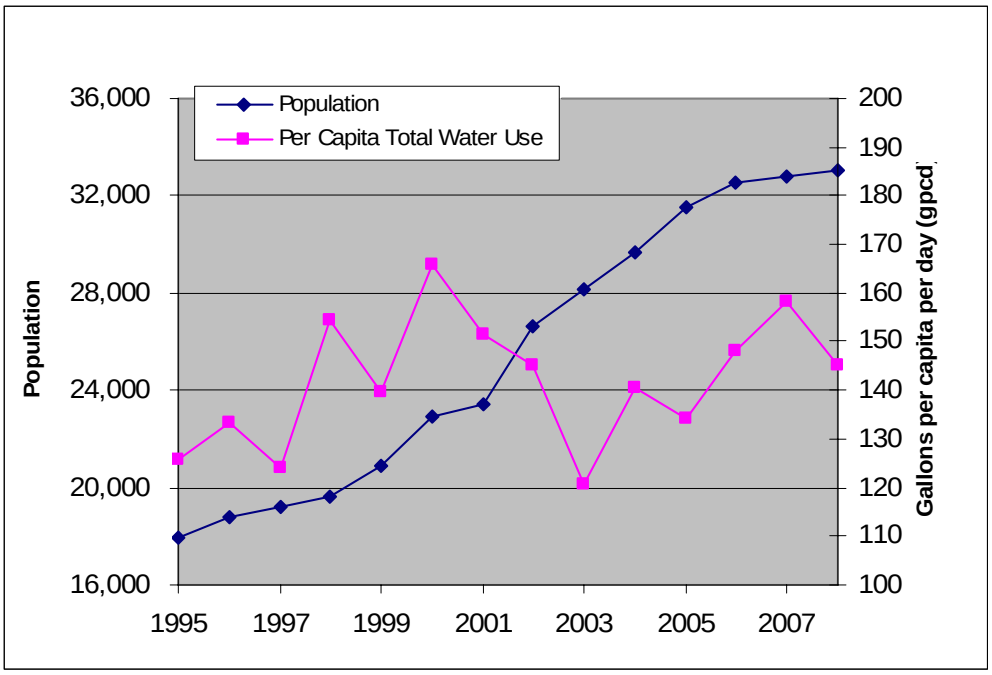
The City is a covered entity.

4. Background Characterization of Water Sources and Potential Growth

(a) Current and Past years per capita water use

Figure 2 shows that per capita water use climbed steadily through the late 1990s, with variations in gpcd occurring chiefly as a result of precipitation (1997, 1999 and 2001 were "wet years", whereas 1995, 1996, 1998 and 2000 were "average to below average years"). The impact of the drought can be seen starting in 2002 and extending into 2003 as mandatory watering restrictions were put into place. Mandatory watering restrictions have continued since 2002 through 2008.

Figure 2 - Population and Total Per Capita Water Use



Based on these data, it appears that the City's customers responded to the drought by cutting back on water use by about 25%. This reduction is likely due to a combination of mandatory watering restrictions, regional messaging (i.e., television and newspaper articles on the drought) and local messaging.

Since the drought in 2002/2003 when water use was at its lowest, **total per capita water use** (including both treated water and raw water as shown in Table 2) has climbed about 30%. However, the 2006 total per capita use is about 10% below that measured in 2000, and total per capita water use in 2008 is about 12% less than that measured in 2000.

The observed increase in total per capita water use since the drought is strongly correlated to increased commercial and irrigation water use including municipal parks water use (related to new parks being constructed), since these combined accounts have increased by 85% over the period from 2003 to 2007.

On the other hand, **per capita "residential only" water use** for the City has ranged from about 68 gpcd in 2003 to 81 gpcd in 2006, representing a 19% increase over this time period; however per capita residential demand did not grow from 2006 to 2008: it remained at about 80 gpcd.

Overall, it is estimated that the past water use, represented by those years prior to mandatory watering restrictions (i.e., 1998 to 2001) has been reduced by about 5% based on total per capita water use in comparison to the water use in the past five years (i.e., 2004 to 2008). The observed reduction in total per capita water use is assumed to be a result of the City's past water conservation efforts including customer education, residential indoor appliance rebates, outdoor watering restrictions, inclining block rate water rates and the City's leak detection program. Future water conservation measures and programs will continue to address all the different water uses by the City's customers to reduce overall water use.

(b) Past, current and predicted population served by the City

Through the 1990s and into the 2000s, the City's development rapidly expanded along with much of the Front Range. Residential population serviced by the City was estimated to grow at about 1.0% per year through 2013 and 2.5% thereafter through 2020, based on estimates developed by the Department of Public Works which were used to forecast future water demands and infrastructure needs.

Table 3 presents past and predicted future population estimates for the City based on work conducted by the Department of Public Works.

Table 3 – City Service Population Estimates

	Estimated Annual Population
1995	17,942
2000	22,905
2005	31,490
2010	33,753
2015	39,079

Based on these estimates, the 2015 annual population served by the City is estimated to be over 39,000.

(c) Estimated water savings goals to be achieved through implementation of the proposed project

Water savings related to the implementation of the proposed water audit program and the proposed fixture replacement presented herein will stem from a combination of important and meaningful activities, including customer education, individual customer water use changes, and high water-use fixture replacements.

Water savings related to the proposed audits (15 residential, 10 HOA (outdoor only) and 10 commercial audits) is estimated to be 1.7 acre-feet, based on the analyses presented in the City's Water Conservation Plan. The grant request for the audits is estimated to be about $16,000 which would provide water savings at about $9,400 per acre-foot, including promotional and reporting efforts.

Water savings related to the fixture replacement is estimated to save approximately 7.8 acre-feet of water, based in part on the analyses presented in the demonstration audit report. The grant request for the fixture replacement effort (including the cost for the fixtures and limited labor for showerhead and faucet aerator installation) is about $33,000 which would provide water savings at about $4,250 per acre-foot, including promotional and reporting efforts.

The grant request from CWCB is $49,613, which reflects an average cost per acre-foot of saved water to be about $5,200 per acre-foot. Overall, the project will cost about $73,640, which reflects an average cost of about $7,750 per acre-foot of water saved, including the costs for outreach and education. The value of the replacement water to the City for 9.5 acre-feet is estimated to be over $285,000.

The City will be providing about 33% of the project in in-kind services and cash.

(d) Adequacy, Stability and Reliability of the City's Water Supply

The City's water supply is under stress from a number of sources. First, the City has a build-out population project of 96,000. Sometime within the next 8 to 12 years, the current RO and green sand filter water treatment plants will come to capacity, requiring the construction of new and/or expanded facilities. Second, RO generates a brine waste that is costly to dispose. Although the City currently operates effective and efficient water supply facilities, future community needs will overwhelm the existing facilities output.

Water conservation will play an important role in reducing demand, and thereby saving augmentation, groundwater production, and water treatment costs in the future. Noteworthy is that the City is a member of both the Metro and South Platte River Round Tables, since the City is situated in both geographies in Adams County. The City shares in the water supply gap that is identified for the South Platte River in SWSI. It is cooperating in the Chatfield Reallocation Project with numerous other Front Range communities, and is developing additional water supplies related to alluvial groundwater production using local gravel pits. As indicated by various SWSI studies, currently identified projects and processes do not fulfill all of the City's future water supply needs.

5. **Project scope and tasks** (see Attachment A)

6. **Project schedule** (see Attachment A)

7. **Project budget and funding sources** (see Attachment B)

Attachment A - Description of the Project Plan and Schedule

The City's recently approved Water Conservation Plan includes multiple measures and programs to support meaningful water savings. One key component of the selected water conservation measures and programs are the water audit programs for residential and commercial customers. The City believes that the audits will:

- Identify problems with customer meters
- Identify customer-side leaks
- Support customer wise water use
- Identify high water use fixtures that would benefit from replacement

Another key component of the proposed project will be the installation of highly efficient fixtures to replace high water use fixtures identified during the Demonstration Audit Project. This part of the project will involve replacing high water use toilets, urinals, showerheads and faucet aerators is selected City-owned facilities and one senior living facility (which have been previously audited).

For this reason, the City has proposed conducting a project that combines audits with limited fixture replacement efforts. The project also includes an outreach task to help promote and explain the audits and the fixture retrograde efforts to the local community.

The City will oversee and manage the development of the project with the assistance of Great Western Institute (GWI).

The following is a list of specific tasks to be completed with project responsibilities, deliverables and project milestones.

Task 1 – Community Outreach

Purpose
The activities described under this task will provide messaging and information to the community as a whole and to commercial businesses regarding the residential, HOA and commercial audit program, as well as the progress the City has been making with respect to implementing its water conservation plan.

Subtasks

1.1 Kick-off Meeting and develop messaging strategies – plan for and conduct project kick-off meeting and plan for outreach activities to support commercial water audits and retrofit program.

1.2 Update Website – this task involves developing the new website content which will be housed on the City's water conservation website. The website will contain educational and outreach information regarding the audit program, as well as the City's rebate program and other educational activities, and various relevant links.

1.3 Develop outreach and promotional materials – this task includes printing and production costs to develop educational and informational brochures and other educational materials to be provided to each customer that receives an audit, and various window decals and stickers to promote local customer compliance with the new water efficiency programs of the City.

1.4 Conduct community outreach activities – this task includes developing and circulating public service announcements (PSA) to the newspaper and local radio stations; and attending local water and other community fairs.

Task Responsibilities

City
The City will provide resources to the project team related to the messaging program. The City will provide support with the community outreach efforts including distribution of messaging to various media channels. The City will pay for the printing and provide their time to revise the website and develop selected website content as an in-kind to match the CWCB funds.

GWI
Create selected original website content and promotional materials; support the messaging outreach campaign; and support all community outreach efforts.

Task Deliverables
Update of the web site; production of educational materials, stickers, and other promotional materials and newspaper and radio PSAs.

Task 2 – Conduct Audits

Purpose

The activities described under this task will include selecting and visiting water customers, conducting audits, and conducting post-audit follow-up site visits.

Subtasks

2.1 Obtain and review water use data – review past and current water use data for commercial, HOA and residential water customers including monthly and annual water use. Select candidate customers for the water audits.

2.2 Contact water customers and schedule site visits – contact candidate commercial, HOA and residential water users and schedule audits. Site visits for audits will not include fixture replacements.

2.3 Conduct site visits – conduct site visits to inventory types of water use and equipment, and identify areas of potential water savings including those data and information described in the grant application narrative. Water use at the fifteen residential and ten commercial facilities will include both indoor and outdoor water use. Audits at the ten HOA facilities will only include outdoor water use. Outdoor

watering will be evaluated based on irrigated turf and shrub areas, and estimated ET for the one to two years prior to the audit occur. Total irrigation volume applied will be compared to the estimated water demand for the area in question based on 85% of the estimated ET. ET will be estimated using the Northern Colorado Water Conservancy District's Turf Irrigation Management (TIM) Program, which utilizes the 1985 Hargreaves equation to calculate evapotranspiration (ET) for a given location and weather condition (i.e., based on daily temperature and precipitation data).

2.4 Follow-up to site visits – once the site visits have occurred, each business owner will be presented with a brief report detailing the work performed and makes recommendations for future water savings activities. The report will provide the owner with an inventory of the water use and the water and related energy savings that are either proposed or will be realized with those fixtures installed as a result of this program. The business owner will also be provided with a cost-benefit analysis of other fixtures replacements and changes in water use behavior that they may choose to implement. Educational information will also be provided at this time.

Task Responsibilities

City
Provide GWI with customer water use and contact data. Work with GWI to conduct the audits.

GWI
Analyze data and develop applicable worksheets. Schedule and conduct site visits. Conduct customer follow-up.

Task Deliverables
Prepare data analyses, conduct audits and follow-up.

Task 3 – Replace High-Water Use Fixtures

Purpose

The activities described under this task will include procuring and installing high efficiency fixtures at those locations and in those facilities that have been evaluated during the Demonstration Audit Project.

Subtasks

3.1 Order high efficiency water fixtures – prior to the site visits, showerheads, shower timers, and faucet aerators will be ordered, as will high efficiency toilets and urinals. These fixtures will be shipped to the Brighton area and stored safely until the site visits occur. The number of fixtures to be ordered is provided in the table below.

3.2 Contact water customers and schedule site visits – contact water customers and schedule fixture replacements.

3.3 Conduct site visits – the site visit will be used to install showerheads and faucet aerators and to schedule the plumbing work required to remove old fixtures and install new HE toilets and urinals. The plumber will then be scheduled to install HE toilets and urinals. The plumber will remove old fixtures and disposed of them in an appropriate manner to ensure that they will not be used for wastewater disposal in the future. New fixtures and related plumbing appurtenances will be installed in a manner consistent with the exist décor and finished work.

Task Responsibilities

City
Work with GWI to allow for the installation of high-efficiency fixtures. The City will pay for the plumber and provide their time as in-kind to match the CWCB funds. City will also pay for selected other project expenses.

GWI/Rutter Plumbing and Beautyware
Schedule and conduct site visits and install and/or coordinate installation of high-efficiency fixtures. Coordinate purchase and shipping of the fixtures, and coordinate plumber to install shower timers, toilets and urinals. Conduct customer follow-up. Costs currently have been included based on the number of fixtures and hardware listed in the table provided below.

Fixture type	Number of Fixture Replacements Included in Budget
Senior Living Facility	
HE Toilets	30 (all handicap compliant)
Showerheads	112
Faucet Aerators	118
City Facilities	
Showerheads	17 (with 4 timers)
Bath Faucet Aerators	42
Toilets	21 (6 are handicap compliant)
Urinals	15

Task Deliverables
Install HE fixtures and appurtenances.

Task 4 – Reporting

Purpose
The activities described under this task will be used to develop and complete all project reporting.

Subtasks

4.1 Collect water use data – obtain water use data for the period of two years prior and 8 months after the audits are conducted and/or the high efficiency fixtures were installed.

4.2 Conduct data review and analysis – evaluate data regarding pre- and post-audit water use (as well as pre- and post- HE fixture installation) and develop analysis on water use reduction, cost of water savings and cost-benefit for additional water savings (and related energy savings) for each individual customer.

4.3 Prepare the draft report - compile information, data and other content into Draft Report for review and comment. Produce two (2) hardcopies and one electronic copy for City review.

4.4 Prepare Final Report – finalize the report based on comments received from the City and City Board and produce.

4.5 City Meetings and City Council Presentations – meet with City staff to review project findings and prepare for and provide the City Council with an update during project execution and an overview of the findings after the Draft Report has been prepared and reviewed by the City.

4.6 Prepare and complete progress reports – prepare progress reports as per CWCB requirements including discussion of project status, project successes and obstacles, and potential budget and schedule impacts. Prepare monthly project status reports for City including costs incurred, tasks completed and project needs, as appropriate.

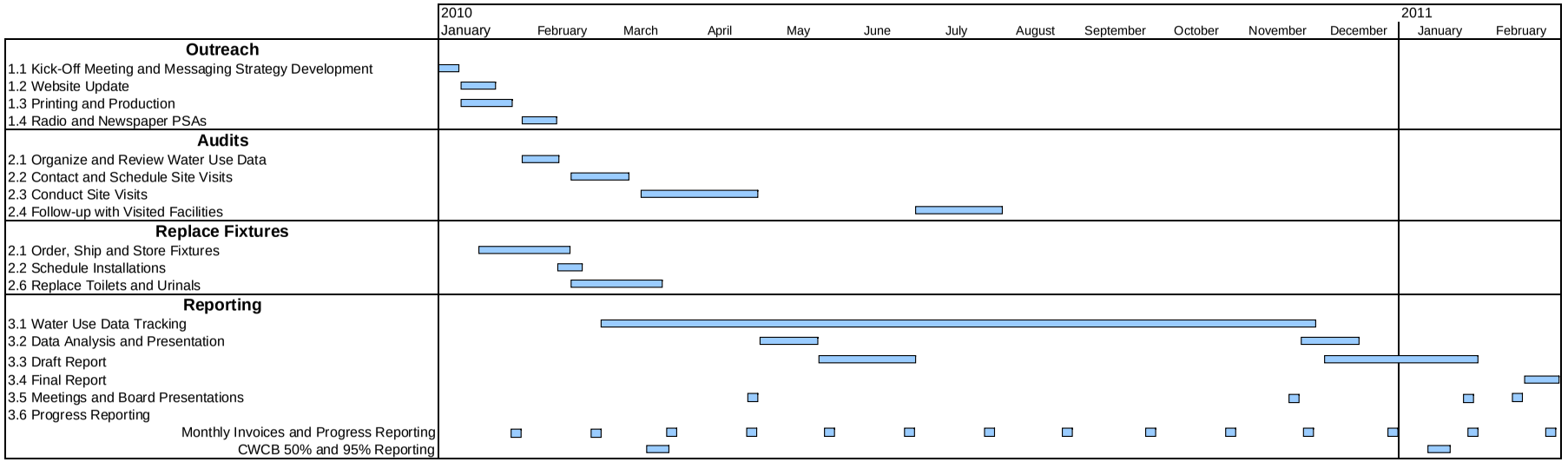
Task Responsibilities

City
Assemble data and other information needed for subtask completion. Review draft work products and provide feedback to GWI. Prepare and submit progress reports to CWCB.

GWI
Make data requests to the City and locate additional data as needed. Review and provide feedback to the City on the quality and accuracy of data. Analyze data and develop text tables, figures, and applicable worksheets. Prepare and submit monthly progress reports and invoices to the City. Prepare and finalize Project Reports.

Task Deliverables
- Monthly invoices and progress reports for the City.
- 50% and 95% project progress reports for the CWCB.
- Draft and Final Project Reports.

Proposed Project Schedule
City of Brighton Audit and Fixture Replacement Project



Project Budget Estimate
Water Audits and Retrofits
City of Brighton

	Labor Budget												Expenses		
	GWI - TCB			Plumbing Support			City - DH			City - Finance/Website					
	rate ($/hr)	$	95.00	Lump Sum	$	120.00	rate ($/hr)	$	65.00	rate ($/hr)	$	45.00			
	hrs		$	no.		$	hrs		$	hrs		$	number		$
Outreach															
1.1 Kick-Off Meeting and Messaging Strategy Development	8	$	760.00	-	$	-	8	$	520.00	2	$	90.00	-	$	-
1.2 Webpage Update															
Web page programing	-	$	-	-	$	-	4	$	260.00	12	$	540.00	-	$	-
Web page content	8	$	760.00	-	$	-	4	$	260.00	-	$	-	-	$	-
1.3 Printing and Production															
brochures	6	$	570.00	-	$	-	2	$	130.00	-	$	-	100	$	500
presentation folders	6	$	570.00	-	$	-	2	$	130.00	-	$	-	100	$	350
window decals	2	$	190.00	-	$	-	2	$	130.00	-	$	-	250	$	250
1.4 Radio and Newpaper PSAs	4	$	380.00	-	$	-	6	$	390.00	6	$	270.00	-	$	-
	34	$	3,230.00	-	$	-	28	$	1,820.00	20	$	900.00		$	1,100
Audits and Replacement Fixtures															
2.1 Organize and review water use data	12	$	1,140.00	-	$	-	4	$	260.00	10	$	450.00	-	$	-
2.2 Contact and schedule site visits	20	$	1,900.00	-	$	-	8	$	520.00	-	$	-	-	$	-
2.3 Conduct site visits	45	$	4,275.00	-	$	-	30	$	1,950.00	-	$	-	15	$	75
2.4 Follow-up with visited sites	13	$	1,235.00	-	$	-	13	$	845.00	-	$	-	-	$	-
	90	$	8,550.00	-	$	-	55	$	3,575.00	10	$	450.00		$	75
Replacement of High-Water Use Fixtures															
3.1 Order, Ship and Store Fixtures and Appliances	6	$	570.00	-	$	-	-	$	-	-	$	-	-	$	-
3.2 Contact Customers and Schedule Installations	6	$	570.00	-	$	-	-	$	-	-	$	-	-	$	-
3.3 Replace fixtures															
toilets	2	$	190.00	51	$	6,120.00	-	$	-	-	$	-	51	$	14,886
urinals*	2	$	190.00	15	$	2,775.00	-	$	-	-	$	-	15	$	4,665
showerheads	11	$	1,045.00	-	$	-	-	$	-	-	$	-	129	$	4,257
showerhead timers	2	$	190.00	-	$	-	-	$	-	-	$	-	4	$	720
bathroom faucet aerators	9	$	855.00	-	$	-	-	$	-	-	$	-	160	$	258
	38	$	3,610.00		$	8,895.00		$	-		$	-		$	24,786
Reporting															
3.1 Water Use Data Tracking	20	$	1,900.00	-	$	-	12	$	780.00	32	$	1,440.00	-	$	-
3.2 Data Analysis and Presentation	35	$	3,277.50	-	$	-	12	$	780.00	6	$	270.00	-	$	-
3.3 Draft Report	24	$	2,280.00	-	$	-	6	$	390.00	4	$	180.00	5	$	125
3.4 Final Report	6	$	570.00	-	$	-	2	$	130.00	-	$	-	5	$	125
3.5 City Meetings/City Council Presentations	8	$	760.00	-	$	-	16	$	1,040.00	-	$	-	1	$	400
3.6 Progress Reporting	15	$	1,425.00	-	$	-	12	$	780.00	-	$	-	-	$	-
	108	$	10,212.50	-	$	-	60	$	3,900.00	42	$	1,890.00		$	650.00
					$	-									
Sub-Totals		**$**	**25,602.50**		**$**	**8,895.00**					**$**	**12,535.00**		**$**	**26,610.60**

* Urinal installation costs are $185

Match	**$ 24,030.00**
labor	$ 12,535.00
printing	$ 1,100.00
plumber	$ 8,895.00
supplies	$ 1,500.00

Grant Request	**$ 49,613.10**
labor	$ 25,602.50
expenses	$ 24,010.60

Total Project	**$ 73,643.10**
% of match	32.6%