Water Efficiency Grant Program Fund Application:

Applicant: Center for ReSource Conservation (CRC)

Project Name: Slow the Flow Water Audits for Commercial Sector

Goal: In partnership with water utilities, develop and implement a commercial, indoor water-audit program in Colorado's Front Range, to target high water-use restaurants and hotels.

Funds Requested: $47,805

Matching Funds: $17,975

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Project Summary

Industrial, Commercial, and Institutional (ICI) facilities comprise 15% of consumptive water use in the United States. Across Colorado, ICI water use accounts for up to 44.2% of billed usage[1]. With the many financial pressures ICI customers face and the relatively low cost of water, identifying water savings is often not a top priority. The Center for ReSource Conservation (CRC) can help these customers easily and significantly improve their water conservation practices with a simple water audit. Research in Colorado suggests 15-30% water savings can be achieved at many facilities.[1]

In discussions with municipal partners and water service providers, it has become evident that a commercial, indoor water-audit service would be an important contribution to the regional water conservation community. This is an identified gap that the CRC is well-positioned to address.

With this proposal, CRC requests CWCB funding to develop and implement a **commercial, indoor water-audit program, providing 375 hours of water audits** for targeted high users such as restaurants and hotels.[2] The CRC brings its long-term dedication to water conservation to implement this project with partner water utilities in

[1] SWSI 2010 Municipal and Industrial Water Conservation Strategies. Prepared for CWCB, January 2011.

[2] We anticipate most audits taking between 2-3 hours. However, for large hotels, audits could take well over 4 hours. These will need to be approved on a case-by-case basis by the sponsoring municipality. This proposal is written in terms of hours in order to provide for the greatest amount of flexibility to meet the demand for commercial audits in participating communities.

the Front Range (see appendix.) We are very interested in expanding the nature and breadth of water conservation practices that can be implemented at local levels, and in supporting our partner water utilities in becoming water conservation leaders.

While the CRC has established itself as a leader in providing indoor and outdoor residential water audit services in the Front Range, at the moment there are no large-scale providers of commercial water audits in this area. This is a much needed and financially viable service. Commercial water audits have a relatively high dollar value – a three to four hour service offered by trained technicians, including fixtures, can cost $400. As is the case with its residential audit programs, CRC would be able to take advantage of economies of scale and charge local governments less than $200 for this service. However, even at full cost, studies have shown that water audits of restaurants have relatively quick payback times (1-2 years), principally due to the large volume of potential water savings.[3] For partner utilies, the audits will help achieve conservation goals, while also allowing water providers to build stronger relationship with ICI customers, typically amont the highest water users. Commercial water audits are an economically viable and essential service for ICI water customers.

In 2007, the "Benchmarking Task Force - A Collaboration for Industrial, Commercial & Institutional Water" report was released by Colorado WaterWise, with support from CWCB. This report provided useful baseline data about ICI water use in Colorado, and spurred the development by Colorado WaterWise of a web tool. CRC is excited to continue working with Colorado WaterWise, and intends for this project to be an active partnership. Through the proposed project, the CRC will provide the subcommittee with quarterly progress updates, vet the web tool (an audit form) to assess usability and identify possible improvements, and will aso provide aggregate data back to the ICI subcommittee to further identify water savings opportunities.

Project Background

The Center for ReSource Conservation (CRC) is a 501(c)(3) nonprofit organization that empowers our community to conserve natural resources. We have developed extensive expertise implementing practical solutions to conservation challenges, including indoor and outdoor water audits. While CRC performs outdoor audits for ICI customers at times, indoor audits are currently provided to residential customers only. The CRC can easily extend the educational value and hard savings of water audits it currently provides to residential customers, tailoring the water audit service to the unique needs of ICI customers.

CRC has extensive experience working in partnership with local municipal customers to implement water conservation programs (a full list of partners is provided as an Appendix). Through the CRC's flagship conservation program Slow the Flow Colorado, the CRC works with twenty-three Front Range water providers, offering indoor and outdoor water audits to their customers. CRC has conducted over 10,000 inspections since 2004. Starting in 2002, the CRC partnered with four water providers to sell low-

[3] http://www.crd.bc.ca/water/conservation/ici/documents/WaterAudit_Web.pdf

cost, pre-planned xeric gardens through the Garden-In-A-Box program, with a 50% water savings over conventional, watered turf; over 10,000 gardens have been sold to date. Since 2004, with the Water-Wise Landscape Seminar Program, CRC partnered with six water providers to teach over 5,000 people the ins-and-outs of water-wise landscaping.

CRC proposes to use CWCB funds to seed an ICI water audit program, with the goal of creating a long-term program. CRC has demonstrated success leveraging CWCB funding to establish long-running, self-supporting water conservation programs that have advanced conservation efforts in the state. With generous support from CWCB, CRC launched Slow the Flow (STF) and Slow the Flow Indoors (STFI), in 2005 and 2010, respectively. In both of these cases, CWCB funds helped seed the program, providing funds for program development and supporting initial staffing levels. In both cases, the programs continued and expanded significantly after the initial grant period ended; since 2005, STF has grown to include 23 partners, while in 1 year STFI has tripled from 2 to 6 partners. With the proposed commercial program, CRC proposes a similar structure, and intends to use support from CWCB to launch long-running commercial, indoor water-audit programs, in partnership with water providers, across the state. In light of CRC's past success at leveraging CWCB grants, and with a nearly100% partner retention rate, CRC is confident that this proposal can lead to long-term water conservation benefits well after the initial project period.

Project Goals

Based on feedback from partner water utilities and an analysis of organizational strengths, the CRC is prepared to make a significant impact on conserving Colorado's water resources by expanding our highly successful residential water audit program into the commercial sector, focusing on restaurants and hotels. The proposed project would be implemented by CRC in partnership with local water utilities and their commercial customers, and would consist of **375 hours of commercial water audits**, which include implementation of conservation measures, education, and subsequent evaluation. We estimate 3-4 hours, on average, for these audits.

Another important project goal is our collaboration with the Colorado WaterWise ICI subcommittee, which has developed a web tool/form for implementing commercial water audits. We plan to provide the subcommittee with quarterly updates on our progress, test the web tool/form in real-life scenarios, and benefit from ongoing opportunities for feedback and suggestions from our peers in Colorado's water conservation community. Specific tasks to be funded are detailed in table one, below.

Commercial Water Audits

As noted above, commercial, industrial and institutional (CII) water use accounts for 15% of consumptive water use in the United States, while areas across Colorado, ICI water use represents as much as 44.2% of billed usage[4]. Restaurants and hotels are known as particularly high commercial water users, and in the tourism-heavy Front

[4] SWSI 2010 Municipal and Industrial Water Conservation Strategies, Prepared for CWCB, January 2011.

Range, both are prevalent. Restaurants generally use more water per square foot, whereas hotel properties are much larger and so use more water on balance.[5]

Commercial water audit programs represent a valuable tool for water conservation. In restaurants, significant conservation gains can be achieved through well-known, relatively simple steps: retrofitting pre-rinse spray valves with low flow nozzles; fixing leaky sinks; installing aerators in hand washing sinks; and making simple repairs and retrofits in bathrooms. Water audits for ICI customers will include information about the benefits of water conservation, along with details of 1) the customer's overall water use, 2) fixtures and appliances that are using the largest amounts of water, and 3) the financial and conservation benefits of replacing these fixtures and appliances with more efficient options. Businesses will be informed about water rebate programs and other water conservation programs offered by their local municipality. Data collected from indoor audits with businesses will help inform utilities about current fixture types in their service area and the conservation potential of further fixture and appliance replacements.

Project Scope of Work

The goal of this project is to create and implement an indoor water audit program for commercial entities that can be brought up to a large scale, reaching out to the commercial sector, with a view to demonstrating the benefits of water conservation. CRC will develop and implement the commercial, indoor water-audit program, using the same model as Slow the Flow and Slow the Flow Indoors. The program will be offered to commercial customers through partner water providers, focusing on high-water use industries such as restaurants and hotels. Audits will be provided free of charge to commercial customers. This proposal requests that CWCB funds cover the start-up costs for the program and help support an initial round of audits. The CRC anticipates that partner utilities will sponsor the ongoing commercial indoor water-audit program, and commercial entities may be asked to contribute a portion of the funds in future years.

The CRC will provide an annual report to each utility containing data collected during the program. These reports will document water savings, and provide a conservation-based financial measure for utilities' ongoing financial support of the commercial, indoor water-audit program.

Audit Tasks

Each commercial audit will last for approximately 3-4 hours[6], and will contain the following steps:

- Meet with business owner
- Water bills assessment

[5] Benchmarking Task Force Collaboration for June 2007 Industrial, Commercial & Institutional (ICI) Water Conservation. Prepared by the Brendle Group for Colorado Waterwise. July 2007.

[6] For large hotels, audits could take well over 4 hours. These will need to be approved on a case-by-case basis by the sponsoring municipality.

- Business walk-through and fixture tests*
    - Kitchen
    - Appliances
    - Restrooms
- Retrofits of applicable fixtures (e.g. kitchen sink pre-rinse spray valve retrofit, faucet aerators, low-flow showerheads)
- Catalog and detail all water-using fixtures and appliances on the property
- Calculation of water use and potential savings
- Walk through results with business owner

**Fixture tests include both use and leak tests*

At the water audits, the CRC water auditor will replace high water use fixtures with low flow options, as appropriate for each business. CRC auditors will also make program participants aware of possible replacements for ither high-use fixtures, provide them with customized water- and money-savings information for each recommended fixture replacement, and provide them with all applicable rebate forms. The CRC Water Auditor will be available for ongoing technical assistance to commercial customers. The CRC will work in close collaboration with the partnering utilities, and will inform them of the potential for water savings found in each audit.

The program's effectiveness will be evaluated by pre- and post- water use readings, and by telephone follow-up surveys with recipients of commercial water audits, inquiring as to their water use behavior and the ongoing effectiveness of the low-flow fixtures.

Project Tasks and Timeline

The scope of work includes five tasks, described below, that will lead the CRC and its partners to that goal. The tasks, deliverables, and deadlines are summarized in Table 1 below. Throughout the project duration, the CRC will provide quarterly updates to the CWW ICI subcommittee.[7]

Task 1: Lay the Groundwork to Expand the Indoor Audit Program to the Commercial Sector

Task 1 includes everything required so the program is ready to be implemented in new areas, including hiring and training auditors. In Task 1, the program will build heavily off the Colorado WaterWise ICI work. These include:

- Survey existing audit programs focusing on indoor use by commercial entities to understand program details and best management practices.
- Design the program structure and program branding
- Make any changes or updates to the Colorado WaterWise auditing form and prepare the form for use.
- Develop a program proposal for partner utilities
- Solicit utilities for 2013 - 2014 participation and develop agreements with utilities
- Develop auditor training agenda and presentations
- Perform test audits to test procedures and systems

[7] This timeline is based on receiving notification of grant acceptance by December 15, 2012.

- Build a database for audit information
- Create scheduling systems for audits
- Purchase equipment and materials for the auditor

Task 1 includes the following deliverables:
- Utilities signed on for program participation in 2013 - 2014
- A training agenda
- Audit database
- Online scheduling tool

The CRC anticipates Task 1 will be completed by February 28, 2013.

Task 2: Market and Advertise the Program

In order for a commercial, indoor water-audit program to be successful, potential participants need to be aware of and excited by the program. In Task 2, the CRC will develop marketing materials for the program and will work with partner utilities to advertise the program to their commercial customers. Steps involved include:
- Design marketing materials
- Certificate of participation
- Design a commercial, indoor water-audit section of the CRC's website
- Coordination between the CRC and partner utilities to facilitate advertising
- Advertising of the program by partner utilities to their customers

Task 2 includes a deliverable of 375 audit-hours. The initial work of Task 2 (designing marketing material and partner coordination) will occur in March - April 2013, most program marketing will occur in the late summer and early fall of 2013.

Task 3: Hire and Train Program Staff

In this task, the CRC will hire and train staff for the program. Staff include a water conservation technician to perform the audits, and a conservation associate to schedule the audits. Technician training will be three days long. CRC staff will conduct most of the training, but the CRC may bring in outside experts to assist with certain topics. Task 3's deliverables include one trained technician who is capable of performing high-quality commercial audits,and one associate hired and trained to schedule audits. The CRC anticipates that Task 3 will be completed by October 31, 2013.

Task 4: Perform Commercial Audits

Task 4 involves several mini-tasks:
- Record requests for audits
- Contact customers to schedule audits
- Gather water use information from utilities for each customer
- Perform audits on-site with commercial customers
- Collect audit data
- Manage program staff

Task 4's deliverable includes 375 hours of completed indoor water audits. The CRC anticipates that this task will be complete by December 31st, 2013.

Task 5: Data Analysis and Reporting

The Commercial, Indoor Water-Audit program includes a significant data collection component to aid partner utilities in understanding commercial customers and targeting conservation programs. In Task 5, the CRC will compile and analyze data collected during audits of commercial facilities, perform a customer feedback survey, and write program reports based on this data. The CRC anticipates providing one report to each partner utility containing data from their targeted commercial customers for each year that the program is performed and one general report containing all data collected during the program. The CRC will make the general report available to the water conservation community and will make efforts to present its findings.

The CRC anticipates that the data collected and analyzed will include the following:

- Basic information about each business
- Number, type, and flow rate of fixtures found at each business
- Water savings potential from fixture replacements at each business
- Fixture replacements performed on-site at each audit
- In partnership with staff at some partner utilities, rebates applied for by commercial, indoor water-audit customers
- Leaks and other problems found at each business
- At the end of the first year of the program, results of a follow-up survey of audit customers

The follow-up survey will consist of a phone survey of commercial, indoor water-audit customers, conducted after audits are completed for the year. The survey will include questions concerning both customer satisfaction and the impact of the program.

Task 5's deliverables include a completed commercial customer survey, a program report provided to each partner utility, and a program report made available to the CWCB and the general public. The CRC anticipates that Task 5 will be complete by February 28, 2014.

The CRC anticipates providing the CWCB with the 50% progress report by June 1st, 2013, after Task 3 is underway, and the 75% progress report by November 30th, 2013 after Task 4 is complete. The CRC will provide the final report to the CWCB by February 28th, 2014.

Table 1: Summary of Tasks, Deliverables, and Deadlines, and Cost

Task	Deliverables	Deadline	Cost
Task 1: Develop the Program	3 utilities signed on for program participation in 2013 - 2014 Training agenda Audit database (web tool) Online scheduling tool	2/28/2013	$12,950

Task 2: Market and Advertise the Program	150 commercial audit requests	Most preliminary work completed by 4/30/13. Final requests by 11/30/13	$11,500
Task 3: Hire and Train Program Staff	Audit staff hired and trained	10/31/13	$6,760
Task 4: Perform Audits	150 indoor audits performed	12/31/13	$23,900
Task 5: Data Analysis and Reporting	Customer survey completed Program reports provided to partner utilities and the general public	2/28/2014	$10,670

Project Budget

Table 2 details the project's budget. The CRC is requesting $47,805 from the CWCB to fund the development of the program. The CRC anticipates a total of $17,975 in matching funds for the program, consisting of: $9,375 in audit fees from partner utilities, $6,600 in in-kind support (marketing, advertising, and water use data for participants) from partner utilities, and $2,000 of in-kind support from the CRC. The CRC will model this program after the successful indoor audit program launched in 2010, and CRC will be able to take advantage of many of the tools developed for the residential program. Therefore, we should be able to reduce some of the costs involved in implementation.

Under each task the CRC has detailed the time required for the task, the hourly rate for that time, and the cost of items associated, and in-kind support provided by partner utilities for the task. Hourly rates are detailed in the project team and partners section below; certain lump-sum tasks are listed with one total cost. Our estimated costs for fixtures consist of the following: 1,000 aerators @ $1; 100 low-flow aerators @$10; 40 pre-rinse spray valves @ $25. Fixtures will be purchased in batches, to allow for flexibility as CRC Commercial auditors assess customer needs. The CRC has a relationship with a wholesaler, and will purchase fixtures for the best possible price.

Table 2: Program Budget

Program Budget							
	Hours	Rate	Total	CWCB Request	Partner Utility Funds	Partner Utility In-Kind	CRC In-Kind
Task 1: Develop the Program							
CRC Water Staff	**200**	$50	$10,000	$8,000			$2,000
Online Scheduling System (lump sum)			$1,200	$1,200			
Database Design (lump sum)			$1,500	$1,500			
IT Setup (lump sum)			$250	$250			
Total for Task 1			$12,950	$10,950	$0	$0	$2,000
Task 2: Market and Advertise the Program							
CRC Water Staff	**50**	$50	$2,500	$2,500			
Graphic Design (lump sum)			$2,000	$2,000			
Web Design (lump sum)			$2,000	$2,000			
Partner Utility Marketing and Advertising (in-kind)			$5,000	$0		$5,000	
Total for Task 2			$11,500	$6,500	$0	$5,000	$0
Task 3: Hire and Train Program Staff							
CRC Water Staff	**80**	$50	$4,000	$4,000			
CRC Program Staff	**80**	$22	$1,760	$1,760			
Guest Trainers (lump sum)			$1,000	$1,000			
Total for Task 3			$6,760	$6,760			
Task 4: Perform Audits							
CRC Water Staff	**125**	$50	$6,250	$6,250			
CRC Program Staff	**500**	$22	$11,000	$1,625	$9,375		
Mileage (lump sum)			$1,250	$1,250			
Printing and Supplies(lump sum)			$800	$800			
Partner Utility Water Records (in-kind)			$1,600	$0		$1,600	
Low flow fixtures (1,000 aerators @ $1; 100 low-flow showerheads @$10; 40 pre-rinse spray valves @$25)			$3,000	$3,000			
Total for Task 4			$23,900	$12,925	$9,375	$1,600	$0
Task 5: Data Analysis and Reporting							
CRC Water Staff	**150**	$50	$7,500	$7,500			
CRC Program Staff	**135**	$22	$2,970	$2,970			
Printing (lump sum)			$200	$200			
Total for Task 5			$10,670	$10,670	$0	$0	$0

Summary			Total Cost	CWCB	Partner Utility Funds	Partner Utility In-Kind	CRC In-Kind
Project Cost			$65,780	$47,805	$9,375	$6,600	$2,000

Project Team and Partners

This program represents a partnership between the CRC and partner utilities. An initial letters of support is presented along with the grant application. TheCRC will have a full list of participating utilities for 2013 at the completion of Task 1 of the grant; we anticipate that three utilities will participate in 2013. CRC staff members who will work on the project are listed below.

Water Division Director
Dan Stellar
$50 per hour billing rate
Dan Stellar joined the CRC as Water Division Director in July of 2011. Dan has a strong background in environmental policy with an emphasis on water issues. For three and a half years Dan served as the Assistant Director of the Columbia Water Center, a program of the Earth Institute, Columbia University. In this capacity he managed water conservation, policy and development projects both domestically and internationally, with a special focus on work in India. In addition to project management, Dan guided the development and operations of the Water Center; he was the founding staff member of the Center, and helped it develop into a thriving program with expertise across a range of disciplines. Dan has written and spoken about water related issues to a range of audiences, including at World Water Week in Stockholm, Sweden, and as a regular contributor to the Asia Society's Global Sustainability Roundtable blog. Dan holds a Master of International Affairs degree, with a focus in environmental policy, from Columbia University's School of International and Public Affairs (SIPA), and his undergraduate degree is from the University of Massachusetts, Boston.

Dan is the primary contact and point person for the execution of this program.

Senior Water Programs Manager
Kate Gardner
$50 per hour billing rate
Kate joined the CRC in June of 2009. Kate comes from the Colorado Alliance for Environmental Education, where she coordinated the Colorado Environmental Film Festival and gained an understanding of the power of education to empower a community to make sustainable choices. Kate has a degree from the University of Colorado Boulder in Business Administration.

Water Conservation Technician
TBD
$22 per hour billing rate

The water conservation technician will be responsible for performing indoor water audits. He or she will be required to prove responsibility and proficiency in conducting a high-quality indoor water audit and working with customers.

Water Conservation Associate

TBD
$22 per hour billing rate
The water conservation associate will be responsible for coordinating with customers to schedule indoor water audits. He or she will be required to demonstrate exceptional customer service and organizational skills in order to schedule audits effectively.

Appendix A: 2012 Water Division Municipal Partners

2012 Partners
Aurora
Boulder
Broomfield
Castle Pines North
Castle Rock
Centennial
Erie
Denver Water
Fort Collins
Gillette, WY
Golden
Greeley
Lafayette
Left Hand Water District
Little Thompson Water District
Longmont
Louisville
Loveland
North Table Mountain
Northglenn
Parker
SACWSD (Commerce)
Superior
Thornton
Westminster
Willow Water