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January 26, 2009

Veva Deheza
Section Chief
Office of Water Conservation and Drought Planning
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

Dear Ms. Deheza,

Please accept the following report as the '95% Progress Report' for the City of Rifle's CWCB Water Conservation Plan Development project.

**Water Conservation Plan Development Project Scope**

The City of Rifle Water Conservation Plan was developed following CWCB's recommended *9-Step* approach. The core of this process was cost-benefit analysis, performed iteratively, to identify conservation measures and programs that provide adequate payback based on their ability to delay or take the place of future increments of water supply and/or water (and wastewater) system capacity as well as to reduce future operations and maintenance costs of the City's Utility Department.

**Task 01: Profile Existing Water System, Develop a Water Use Profile & Forecast Future Water Demand, Profile Proposed Facilities (Planning Steps #1 through #3)**

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| Scheduled completion: | Oct. 1, 2007 |
| Actual completion date: | January 2008 |

A 5-year (approximate) water use profile has been completed with significant effort. As noted in the grant application, the 2006 Water Master Plan documented much of Steps #1 through #3. Manipulation of a spreadsheet to predict conservation effects on potable infrastructure expansion timing and capacity was completed as part of this task.

**Task 02: Identify Water Conservation Goals (Planning Step #4)**

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| Scheduled completion: | Oct. 15, 2007 |
| Actual completion date: | February 2008 |

Work included researching and presenting potential reasons for water conservation for the City of Rifle. This included a workshop with City Council and discussions with key stakeholders, including high-use customers and landscape professionals. A challenge encountered when identifying reasons to justify water conservation was the relatively low cost of water supplies and electrical energy in Western Colorado.

Research in savings from other municipalities, potential savings from high-use customers, and identification of water demand reduction targets that could result in significant, meaningful delays in infrastructure costs was also completed. Unfortunately all case studies included much larger metropolitan areas, which was not as useful as we had hoped. A key goal for the City, based on reduction/deferment of future water system infrastructure costs, is reducing peak irrigation demand. Approximately 75% of the potable system's treatment and pumping capacity is to produce and deliver water for outdoor use. A quantitative goal was developed for peak day use reduction which is included in this plan.

**Task 03: Identify Conservation Measures and Programs (Planning Step #5)**

Scheduled completion: Nov. 9, 2007
Actual completion date: February 2008

A comprehensive list of applicable programs & measures was created through researching other plans, AWWA documents and several other resources. This list was then refined to fit the unique circumstances for the City of Rifle through brainstorming with City staff and stakeholders.

The measures that were prioritized in the final plan include increasing the existing tiered-rate structure; improving system wide accounting and leak management; implementing design standards for new landscapes; creation of an informational water conservation website; and retrofitting existing plumbing fixtures, landscapes and irrigation systems for city-owned facilities.

**Task 04: Evaluate Conservation Measures and Programs (Planning Step #6)**

Scheduled completion: Dec. 7, 2007
Actual completion date: March 2008

From the refined list created for Task 3, a spreadsheet was developed to score each measure based on established priorities including water savings potential and a cost/benefit analysis for infrastructure and O & M costs. It was clear that the most promising measures involve the City's water treatment system and its rate structure, and the prioritized measures and programs set in the final plan reflect this.

**Task 05: Integrate Resources, Modify Forecasts, and Select Measures and Programs (Planning Step #7)**

Scheduled completion: Dec. 21, 2007
Actual completion date: March 2008

Spreadsheets were created to list the projected demand and the projected capital costs under the modified 20-year forecast for the "with conservation" condition. The water conservation goals listed in this plan is anticipated to result in limited infrastructure, water supply, and other savings. These savings are considered in the cost benefit analysis presented later in this report.

**Task 06: Develop Conservation Program Implementation Plan (Plan Step #8)**

Scheduled completion: Jan. 25, 2008
Actual completion date: April 2008

The Implementation Plan completed includes an outline and schedule of how and when each measure / program will be implemented. Each one requires staff time to plan and implement, therefore the schedule provides some flexibility. The final Implementation Plan lists the specific actions necessary to implement the measure / program, projected start and completion dates, and any pertinent notes.

**Task 07: Produce Conservation Plan Document and Solicit Public Input**

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| Scheduled completion: | Apr. 18, 2008 |
| Actual completion date: | May 2008 |

A draft plan was completed and submitted to the City of Rifle in early May of 2008. The release of the draft for public review was announced at a public meeting and posted in the local paper the following week. An electronic copy was placed on the City's website and a hard copy made available at City Hall for review. A 60-day comment period was provided with no comments received from the public. The plan was finalized, formally adopted by City Council resolution, and the plan was submitted to CWCB in July.

**Task 08: Project Management**

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|---|---|
| Scheduled completion: | Apr. 18, 2008 |
| Actual completion date: | July 2008 |

Work included coordination between City staff, Schmueser Gordon Meyer, and CWCB.

**Summary**

General Progress

The project is complete and the CWCB approved the plan on September 9th, 2008. The City is currently working on an application for a CWCB Water Efficiency grant in order to fund the implementation of portion of its approved plan.

Challenges Encountered

- Significant additional effort than originally envisioned and budgeted was required to document (essentially estimate) historical water use in Rifle. A key conservation goal to come out of this project is to improve system-wide water tracking.
- Information on other water conservation plans has been relatively easy to find, in large part due to previous efforts of the CWCB and the AWWA. Although good information on costs and success rates is available for large municipalities, very little information is available for small, non-metropolitan areas.
- It was sobering to realize the very limited cost savings from water conservation in Western Colorado. The current low cost for acquiring a firm water supply on the Western Slope as compared to the Front Range is a significant challenge to economic justification of water conservation here. While an acre-foot on the Front Range might

cost upwards of $15K, in western Colorado, this same volume in the Rifle area commands only about $1K to $2K. Furthermore, since the consumptive portion of indoor use is so small (5-10%) per the City's augmentation plan, reducing indoor use has almost no net water supply benefit. Furthermore, the cost of electrical energy use is extremely low. The City pays only about 1 cent per kW-hr. Power demand charges are more significant, but these may not be significantly reduced if the City achieves 10 to 15% water conservation (since the same combination of large pumps may still need to run for a short time, thus triggering equivalent demand charges).

- The only economic driver for water conservation in Rifle at this point in time is deferment/reduction of capital costs associated with infrastructure. To this extent, reducing peak demand is key; therefore, much of Rifle's plan focused on ways to reduce peak outdoor water use.
- Still, there is a desire by the City of Rifle to conserve water for other reasons, and the final plan includes a list of measures that are likely to succeed in reducing water use system-wide.
- The City likely will need outside funding assistance to get a successful water conservation program off the ground. It recognizes the economic value of implementing a successful program, but in order to develop one that achieves meaningful demand reductions in a period of time that matters from an infrastructure planning standpoint, significant upfront funding is required.

Thanks you for your time and support. If you have any questions, please feel free to contact me at 970.945.1004.

Sincerely,

Dan Richardson
*Senior Energy Consultant*

*Cc Charlie Stevens, City of Rifle Water & Wastewater Utility Director*