CWCB APPLICATION SUBMITTAL REQUIREMENTS:

1) ***Contact information of entity seeking grant:***

Town of Frederick
Attn: Richard Leffler, Town Engineer
401 Locust Street
P O Box 435
Frederick CO 80530-0435
T 720-382-5500
F 720-382-5520

2) ***Selected firm to assist in development of the Water Conservation Plan:***

Civil Resources, LLC
Attn: Brad Hagen, P.E.
323 5th Street
Frederick, CO 80530
T 303-833-1416
F 303-833-2850

Background

The Town currently owns approximately 3,470 shares of Colorado Big Thompson Project water with additional shares of CBT water transferred to the Town by new development. CBT water is transferred to the Central Weld County Water District (*Central Weld*) water treatment plant at Carter Lake where it is treated and delivered to Frederick through the Central Weld's distribution network. Frederick has twelve points of connection to Central Weld's system each consisting of master meter vaults and appurtenances. Along with the master meter connections there are over three dozen Town water customers that are served directly off of Central Weld's water lines. The portion of the Town west of I-25 is served potable water by Left Hand Water District, who has an existing Water Conservation Plan approved through the CWCB.

The Town of Frederick's water system ownership begins downstream of each master meter and includes a water distribution network of over 50 miles of pipeline and associated facilities. Over 80% of this network was installed after 1995 and is in excellent operating condition. The remaining portion of the network is located in the historic old town area and was constructed in three main generations. The oldest portion of the system was built in around 1906 and a majority of this system has been replaced within the last decade. The second generation was placed in the 1950's and portions of this system are still active. The third generation consists mainly of replaced portions of the two earlier systems that is an ongoing process.

The Town of Frederick also owns local water shares including:

- 20.167 shares Lower Boulder Ditch Company – Preferred;
- 5.5 shares Lower Boulder Ditch Company – Common;
- 8.0 shares Coal Ridge Ditch;
- 100 percent ownership of Lower Boulder Extension Reservoir (Milavec Lake); and
- 0.67 shares Baseline Reservoir.

These collective local shares are used in the Town's non-potable system for irrigation of the Town's parks and open spaces.

Project Team

Civil Resources, LLC has been the civil and water resource engineering consultant for the Town of Frederick since 2003. Civil Resources has completed water resource engineering studies on behalf of the Town including:

- Raw Water Master Plan – October 2003
- Raw Water Model & Yield Analysis - November 2004
- Rate Study – January 2005
- Raw Water Infrastructure Master Plan - October 2008
- Rate Study – October 2009

Civil Resources has also provided engineering reports in support of water rights filings, review of expected yield for specific water rights, and day-to-day support of the Town's water planning. Brad Hagen is a professional engineer registered in the State of Colorado. He has over sixteen years of experience in the water rights and water resource engineering. He has helped numerous clients manage their water resources including water supply, water acquisition, water usage, and water conservation. Seeing that Brad has completed the Town of Frederick's Raw Water Master Plan and Water Rate Study he will be well suited to successfully complete the Town's Water Conservation Plan.

Town of Frederick staff will be very active in the development of the WCP. Following is a listing Town staff that will contribute to the WCP:

Richard Leffler (Dick) is the Town Engineer and will give Civil Resources advice and general direction on all aspects of the project. Dick will be pivotal in the modifications to existing and/or development of new conservation measures that Town Board and constituents within the Town can adopt and abide by. Dick will provide the Town Board perspective throughout the project during the development of the plan and serve as the liaison between staff and Town Board. This will provide efficiencies in Board input and approval at various aspects of the project

Brian Frank is the Staff Engineer and will assist Dick in all aspects of preparing the conservation plan. He will also be the contact person between the Town and Civil Resources.

Bryan Ostler is the Finance Director and will assist in the financial aspects of the Water Conservation Plan along with Civil Resources.

Yvonne Mincer is in charge of utility billing. She has a good understanding of and access to information such as water use per customer category and revenues generated from each category. Yvonne will assist Brian Frank and Civil Resources in developing past and current history of water sales and associated revenue, non-payment, and fines.

Town of Frederick Water Delivery

Table 1 contains actual usage data for 2005 through 2009 and projected data for 2010 through 2014.

Table 1: Projected Water Use

Water Year	Town Population (Total)	Town Population (East of I-25)	Projected Growth Rate	Water Usage (ac-ft)		
				Potable	Non-potable	*Total*
2005	6342	5574	--	1633	--	*1633*
2006	7676	5893	--	1994	140	*2134*
2007	7997	7289	--	1893	132	*2025*
2008	8081	7318	--	1894	161	*2055*
2009	8247	7435	--	1829	126	*1955*
2010	8329	7509	1.0%	1932	141	*2073*
2011	8413	7584	1.0%	1951	143	*2094*
2012	8581	7736	2.0%	1990	145	*2135*
2013	8838	7968	3.0%	2050	150	*2200*
2014	9192	8287	4.0%	2132	156	*2288*

The rate of growth was assumed to be one percent through 2011 and then a gradual increase of one percent per year through 2014 peaking at four percent. The projections are based on a flattened population growth of 0.5 percent in 2009 and a gradual improvement in the economy over the next five years. Weld County projects growth at a projected rate of approximately three percent and Frederick is expected to lead the growth recovery due to its location immediately north of the Denver Metro along I-25 (the major north-south route of travel through Denver) prior to other parts of Weld County. The water usage values in Table 1 reflect the decreased usage corresponding to an abnormally wet, cool year of 2009. The raw water irrigation systems are used only on Town owned property including parks and a golf course, but are planned to be used across the Town in the near future including St Vrain Valley School District properties. The Town's raw water irrigation system will not be addressed in this water conservation plan.

The potable water consumption data equates to an approximate per capita water usage of 231 gpcd based on measured Town water use data and population information from the Town's records. The Town's potable water usage is broken down into four sectors since switching to our current accounting software (9 months of data) and has the following percentages of usages:

- Public 6.09%;
- Industrial 3.42%;
- Commercial 5.94%; and
- Residential 84.54%.

Town of Frederick
6/21/2010

Water Conservation Goals

System losses contribute significantly to the Town's water consumption. Leakage losses are most prevalent in the Old Town area of Frederick where the Town would propose to locate abandoned and/or leaking water lines (often asbestos concrete pipe) for proper abandonment or repair/replacement. The Town will also develop a plan to identify and correct currently unmetered usage which is an apparent loss to the Town's system.

Residential usage constitutes an estimated 84.5 percent of the total Town potable water use and thereby represents the greatest source of conservation. It is the Town's goal to reduce the residential usage to approximately 180 to 190 gpcd.

The Town has determined a reduction goal of twenty percent (20%) which equates to approximately 45 gpcd. This goal is to reduce the Town's actual water usage by 20%, which does not include apparent reductions such as correcting unmetered usage.

Town Commitments to Water Conservation Plan:

1) The Town of Frederick will update and modify its Water Conservation Plan. The Town will better quantify its current water usage, develop water conservation measures to implement, and determine the benefits/impacts of the implementation. The plan will describe new conservation measures and goals that the Town intends to achieve. See Attachment A for the anticipated Scope of Work.

2) The Town will complete the project in accordance with the estimated Project Schedule shown in Attachment B.

3) The Town intends to use the grant money for completion of the Water Conservation Plan. The Town will provide Civil Resources information including billing and financial information as well as staff time to successfully complete the Plan. The Town recognizes the importance of water conservation and will work diligently with Civil Resources to complete this effort. See Attachment C for the breakdown of Project Fees, grant money and in kind services

4) The Town Board of Frederick is committed to water resource sustainability and water conservation. The Town intends to do its part to preserve water for future generations. Both Staff and the Town Board understand the needs and benefits to implement long term water conservation measures. We are committed to complete a Water Conservation Plan in its entirety to be approved by CWCB for the grant money requested. See attachment D for the Town's Organizational Chart.

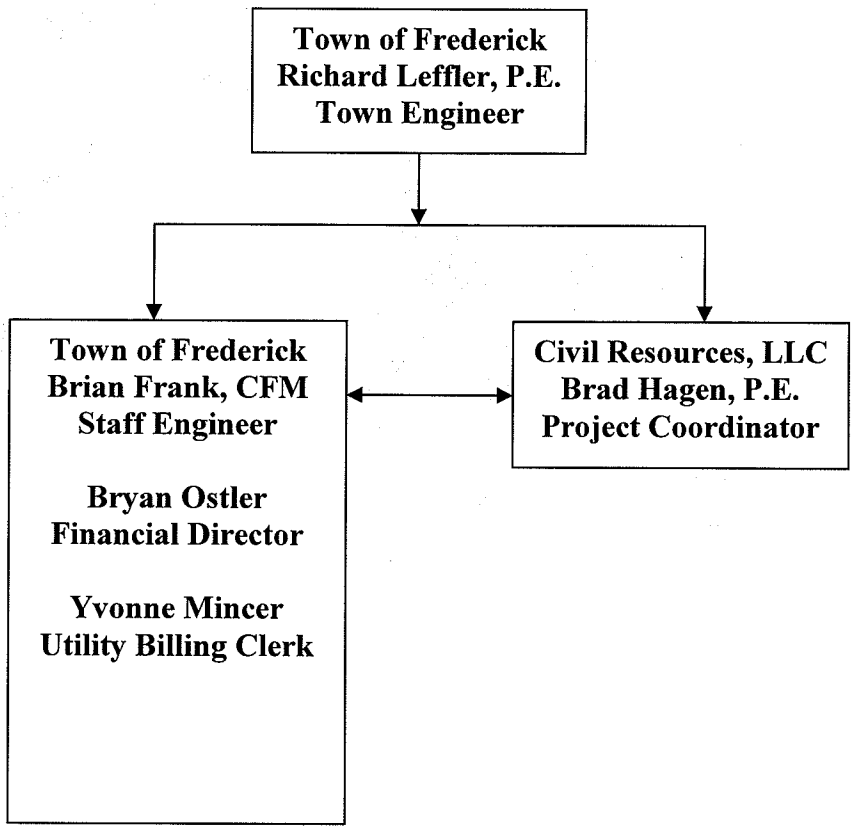
Richard Leffler, Town Engineer

ATTACHMENT A

SCOPE OF WORK
Town of Frederick Water Conservation Plan

This Scope of Work describes the work to be performed by Civil Resources, LLC for the Town of Frederick. The Scope outlines the tasks required to successfully complete a Water Conservation Plan and to develop the Plan in accordance with CWCB guidelines. This scope has been developed to reflect CWCB guidelines and policies for development of Water Conservation Plans.

The scope will be completed under the following structure:



(See Attachment D for Town Organizational Chart)

Task A: Develop Water Conservation Plan

The objective of this task is to develop a Plan to protect the available water resources by providing a plan that promotes conservation. The Water Conservation Plan will be developed following revised CWCB's June 2005 Water Conservation Plan Development Guidance Document which outlines the requirements needed for CWCB's approval. Civil Resources will submit a draft plan to the Town for comments prior to submitting a draft to the CWCB. Following the public review process Civil Resources will incorporate public comments and submit the Plan to CWCB for final approval.

The development of the plan is divided into subtasks similar to what is indicated in the CWCB Model Plan Template. These subtasks list the items that need to be included in the Water Conservation Plan for CWCB approval. Where appropriate, Civil Resources will use previous studies that they completed for the Town, Information generated from the 2009 Water Leak Detection Survey will be reported where applicable.

Task A-1: Profile the Existing Water System

The activities described under this task will provide information on the Town's existing water supply system.

1.1 Profile physical characteristics of the existing water supply system:
Civil Resources with assistance for Town staff will describe the physical characteristics of the Town's water system using Worksheet 1-1 as a guide. Included in the summary will be key system characteristics, geographic area served, population and connections served, types of key water users, key existing facilities, and water demand by Customer type.

1.2 Identify all water sources:
Civil Resources and the Town will identify and describe all of the system's water supply sources including attributes, age, seniority, and conditions of its use. Estimates and/or assumptions will be made on missing information

1.3 Identify system limitations:
Civil Resources with information from the Town will describe the system limitations on the Town's water supply using Worksheet 1-2 as a guide.

1.4 Characterize water costs and pricing structures:
In coordination with the Town's finance department and billings/water sales. Brian Frank and Civil Resources will document past and current history of water sales.

1.5 Review current policies and planning initiatives:
In coordination with Town staff, Civil Resources will discuss major policies that the Town has in place that affect water use under normal conditions. In addition, Civil Resources will coordinate with Town staff to summarize major planning efforts to date.

1.6 Summarize current water conservation activities:

In coordination with Town staff, Civil Resources will summarize current water conservation activities using Worksheet 1-3 as a guide.

Task A-2: Characterize Water Use and Demand Forecast

The activities described under this task will provide information on the Town's existing and projected water use.

2.1 Characterize current water use:
In coordination with Town's finance department and staff, Civil Resources will review sales records, diversion records, and billing records to summarize current water use by category. Included in the discussion will be quantifications of indoor vs outdoor use. Civil Resources will also develop historical trends in use by customer class, identify the top water purchasers, and quantify the amount of the water purchased. The Town recently implemented new software that is used to help identify these trends and water user groups.

2.2 Select forecasting method:
A demand forecasting method will be selected and described

2.3 Prepare demand forecast:
Civil Resources will work with the Town to estimate future water demand by customer class. Worksheet 2-1 will be used as a guide. The methodology used to forecast will be described.

Task A-3: Profile Proposed Facilities

The activities described under this task will identify and describe planned improvements based on the results from step two and estimate the associated costs.

3.1 Estimate supply costs based on the demand forecast:
Civil Resources will work with Town staff to prepare incremental and total costs for water supplies that are appropriate for the Town's system

3.2 Identify and describe anticipated capital facility improvements and additions:
With the help of Town staff and existing planning documents, Civil Resources will summarize the facilities/equipment needed over a similar time horizon used for demand forecasting using worksheet 3-1 as a guide.

3.3 Estimate total annual and unit cost of the improvements:
Civil Resources will work closely with the Town to develop reasonable cost estimates of improvements. Worksheet 3-2 will be used as a guide.

3.4 Develop a water supply capacity forecast:
Civil Resources will combine information gathered in this step to provide a summarized supply capacity forecast.

Task A-4: Identify Conservation Goals

The activities described under this task will identify conservation goals for the Town.

4.1 Develop water conservation goals:
Civil Resources, with assistance from Town staff, will develop water conservation goals. Areas for water conservation will be identified by staff based on results from Steps 2 and 3. A specific water savings target as well as how the savings will be measured will be identified.

4.2 Document the goal development process:
Civil Resources, with assistance from Town staff, will document the process used to develop water conservation goals.

Task A-5: Identify Conservation Measures and Programs

The activities described under this task will identify conservation measures and programs that the Town may implement.

5.1 Identify conservation measures and programs:
Town staff and Civil Resources will collectively develop water conservation measures using Worksheets 5-1 and 5-2 as a guide.

5.2 Develop and define screening criteria:
Town staff and Civil Resources will describe the screening criteria used to eliminate some water conservation measures and programs.

5.3 Screen conservation measures and programs:
The screening criteria will be applied to the full list of conservation measures and programs to determine which ones will be further evaluated.

Task A-6: Evaluate and Select Conservation Measures and Programs

The activities described under this task evaluate and select the optimal conservation measures and programs that the Town may implement

6.1 Create combinations of measures and programs:
Town staff and Civil Resources will collectively review all conservation measures and programs that passed the screening criteria and group them, so similar measures and associated water savings are not double counted. Measures and programs will be chosen to target water reduction methods based on specific water use sectors and categories.

6.2 Estimate costs and water saving of conservation options:
Using Worksheet 6-1 as a guide Town staff and Civil Resources will estimate the cost of each conservation measure/program and the associated water savings. A benefit/cost analysis will be included.

6.3 Compare benefits and costs:
Town staff and Civil Resources will summarize conservation measure costs and water savings including a net benefit from all suggested measures using Worksheets 6-1 and 6-2.

6.4 Define evaluation criteria:
Town staff with assistance from Civil Resources will develop criteria used to select the conservation measures/programs for implementation. Key will be cost for implementation and potential savings.

6.5 Select conservation measures and programs:
Civil Resources will summarize the evaluation of each measure/program based on the evaluation criteria and indicate with Town staff input which measures/programs will be implemented. The water savings from the implementation will be estimated using Worksheet 6-3 as a guide.

Task A-7: Integrate Resources and Modify Forecasts

The activities described under this task will modify the supply and demand forecasts to account for water savings from conservation measures and programs. The benefits of conservation as well as revenue effects will also be addressed.

7.1 Revise demand forecast:
Civil Resources will revise the demand forecast prepared in Step 2 to account for the water savings of the measures/programs from Step 6. Worksheet 7-1 will be used as a guide.

7.2 Identify project specific savings:
Town staff and Civil Resources will determine the effect of water savings from conservation on the timing and capacity of facility improvement projects and quantify savings. Worksheet 7-2 will be used as a guide.

7.3 Revise supply capacity forecast:
Civil Resources will revise the supply capacity forecast based on findings from 7.2. Worksheet 7-3 will be used as a guide.

7.4 Summarize forecast modifications and benefits of conservation:
Civil Resources will develop a graph showing demand and supply with and without conservation.

7.5 Consider revenue effects:
Civil Resources with Town staff will quantify impacts to revenues from implementation of water conservation. Savings in capital improvement projects will be presented against losses in sales revenue. Strategies to address this issue will be discussed.

Task A-8: Develop Implementation Plan

The activities described under this task will provide information on Town's existing water supply system.

8.1 Develop implementation schedule:
Town staff, with assistance from Civil Resources, will discuss significant implementation actions and obstacles that may prevent the implementation of the selected conservation measures from occurring. Worksheet 8-1 will be used as a guide.

8.2 Develop plan for public participation in implementation:
Town staff and Civil Resources will describe how to involve the public in the implementation process.

8.3 Develop plan for monitoring and evaluating processes:
Town staff and Civil Resources will describe how water conservation will be measured for effectiveness.

8.4 Develop plan for updating and revising the Plan:
Town staff will describe when it intends to update the water conservation plan.

8.5 Define plan adoption date/plan completed date/plan approved date:
A copy of the approval resolution adopting the final water conservation plan will be included. Civil Resources will develop a schedule for approval and adoption.

Task A-9: Monitor, Evaluate and Revise Conservation Activities and the Conservation Plan

Commit to monitor the performance of the plan including updating the plan as required.

9.1 The plan will be implemented based on the schedule developed from Step 8. Town staff will monitor and evaluate the performance of the plan after implementation and subsequently schedule revisions or updates to the plan as necessary.

Task B: Public Outreach

The Town will seek public input on the Plan through use of a public review program. Civil Resources will complete a presentation for one public meeting to be held on a date mutually agreeable to Civil Resources and the Town. This meeting will seek feedback on the draft Water Conservation Plan and conservation goals. Civil Resources will facilitate the public meeting.

The Town will coordinate the following:

- Advertising/notifying the public about the public meeting and for providing suitable public meeting facilities.
- Announcing the public review period, holding the public hearing on the plan, and making the plan publicly available.
- Collecting and organizing public comments. These comments will be provided to Civil Resources following the public review period.

1) CWCB will review final plan.

Deliverables

Civil Resources will submit the following:

- Monthly invoices with brief progress reports.
- 50% plan submitted to Town and CWCB.
- 95% draft plan submitted to the Town for comments prior to submission to CWCB.
- 95% draft plan submitted to CWCB.
- Public comments will be solicited and incorporated into the plan.
- Final plan submitted electronically to the CWCB with all comments, including public input.
- Ten hard copies of the final Water Conservation Plan submitted to the Town after CWCB's final approval.

ATTACHMENT B

PROJECT SCHEDULE
Town of Frederick Water Conservation Plan

It is anticipated that the scope of services described above will be completed within 120 days of receiving the signed Task Order. After the plans first submittal, CWCB comments will be addressed and public input will be incorporated prior to submittal of Final Plan. The following schedule summarizes the approximate schedule breakdown:

Task #	Work	Start Date	Finish Date
Task A:	*Water Conservation Plan*		
A-1	Profile Existing Water Systems	August 2010	November 2010
A-2	Water Use & Demand Forecast	September 2010	November 2010
A-3	Profile Proposed Facilities	September 2010	November 2010
A-4	Identify Conservation Goals	September 2010	November 2010
A-5	Identify Conserv. Measures & Programs	September 2010	November 2010
A-6	Eval & Select Cons. Measures & Progr.	October 2010	November 2010
A-7	Integrate Resources & Modify Forecasts	October 2010	November 2010
A-8	Develop Implementation Plan	October 2010	November 2010
A-9	Monitor, Evaluate and Revise Cons. Activities and the Conservation Plan	October 2010	November 2010
Task B:	*CWCB Submittals*	November 2010	December 2010
Task C:	*Public Outreach* (Includes 60 day comment period)	January 2010	March 2010
Task D:	*CWCB Approves Final Plan*	March 2010	June 2010

ATTACHMENT C

FEE SCHEDULE
Town of Frederick Water Conservation Plan

This cost estimate has been prepared according to the effort we believe will be required. The total cost of these services is as set forth in the following table:

Water Conservation Plan **Town of Frederick, CO**		
Scope of Services		****Total Cost Estimate***
Task A	*Water Conservation Plan*	
A-1.	Profile Existing Water System	$5,500
A-2.	Water Use and Demand Forecast	$4,000
A-3.	Profile Proposed Facilities	$5,000
A-4.	Identify Conservation Goals	$2,000
A-5.	Identify Conserv. Measures & Programs	$3,000
A-6.	Eval & Select Cons. Measures & Progr.	$3,000
A-7.	Integrate Resources & Modify Forecasts	$5,000
A-8.	Develop Implementation Plan	$1,400
A-9.	Monitor, Evaluate and Revise Conservation Activities & Plan	$NA
Task B	*Public Outreach*	$600
Expenses (equipment, printing, film, copies, etc.)		$500
TOTAL COST ESTIMATE		***$30,000***

*Note: The Town proposes to match $15,000 with in kind services which is 50% of the total project.