SCOPE OF WORK

Energy/Water Nexus

Colorado Water Conservation Board

Project Overview

Energy and water are inextricably linked: water providers use energy to pump, treat, and distribute potable water; customers use energy to heat, cool, or pressurize water; and wastewater treatment plants use energy to treat and discharge wastewater. Water conservation can provide important energy savings and, accordingly, greenhouse gas emissions reductions. Equally important, water conservation can reduce cities' need to develop *new* water supplies, many of which will have more substantial energy demands because water must be conveyed over greater distances, pumped from deeper aquifers, or undergo more extensive (and energy intensive) treatment.

In this project, Western Resource Advocates (WRA) will lay out the connection between energy and water in Colorado, and provide specific examples of how – and how much – energy is embedded in municipal water use. WRA will provide data on energy used in three main categories: water supply (i.e. conveying, treating, and distributing water), in-home water use (i.e. heating water), and wastewater processing (treating and discharging). This will rely on data from a combination of sources, including published reports, NEPA documents, and data collected from water utilities. Secondly, WRA will profile several residential water conservation measures, providing estimates of the water and energy savings they could provide.

The American Recovery and Reinvestment Act (ARRA) provides funding to the Colorado Governor's Energy Office to advance energy efficiency and home weatherization, among other measures. WRA's third goal is to assess whether water conservation projects fall within the purview of ARRA funding sources and goals.

The main product of this research will be a guidance document, which can be used as a basis for discussions between the CWCB, GEO, and other government agencies as to the role of water conservation in meeting Colorado's energy and climate goals, and in ARRA funding opportunities.

Project Team

Bart Miller and Stacy Tellinghuisen from Western Resource Advocates – will manage the project and receive funds from the CWCB.

Project Tasks

The following tasks are proposed for this project:

Task 1 – Compile data on the energy embedded in Colorado's water supplies

Western Resource Advocates will collect data on the energy embedded in water, using existing reports, NEPA documents, and information collected from water utilities.

Task 2 – Analyze water conservation measures
The team will research several existing water conservation measures, analyzing the water, energy, and greenhouse gas savings associated with several measures. This analysis will focus primarily on the residential sector, and will not provide a comprehensive assessment of all water conservation measures, but rather a series of examples.

Task 3 – Identify opportunities within the ARRA
WRA will analyze the priorities and goals of the ARRA funding categories, namely DOE's energy efficiency and weatherization programs, to assess whether water conservation measures would qualify for funding.

Task 4 – Prepare summary report
Present all research findings in a white paper.

Project Schedule

Draft report, completed by June 1, 2009. All billing must be submitted by June 30, 2009.

Project Budget

TASK	DESCRIPTION	Labor	Expenses	Total
1	Task 1 – Compile data	$ 1,050		$ 1,050
2	Task 2 – Analyze water conservation measures	$ 1,300		$ 1,300
3	Task 3 – Identify opportunities within ARRA	$ 1,150		$ 1,150
4	Task 4 – Prepare report	$ 1,150		$1,150
	TOTAL FOR PROJECT	$ 4,650		$ 4,650

TASK	DESCRIPTION	RATE	RATE
	Hourly Rate	$100	$75
		Project Manager (Hrs)	Analyst (Hrs)
1	Task 1 – Compile data	0	14
2	Task 2 – Analyze water conservation measures	4	12
3	Task 3 – Identify opportunities within ARRA	4	10
4	Task 4 – Prepare report	4	10
	Total Hours Estimated	12	46

WRA Project Budget - $4,650