



*clear***WATER**solutions  
water rights • planning • engineering

## MEMORANDUM

CWS File #14-210

To: Ben Wade, CWCB

From: Nathan Alburn *NSA*, Michelle Hatcher *MH*

cc: Katie Spahr, Steve Witter – Arapahoe County Water and Wastewater Authority

Date: June 1, 2015

Subject: 50% Progress Report for Arapahoe County Water and Wastewater Authority Municipal Water Efficiency Plan

---

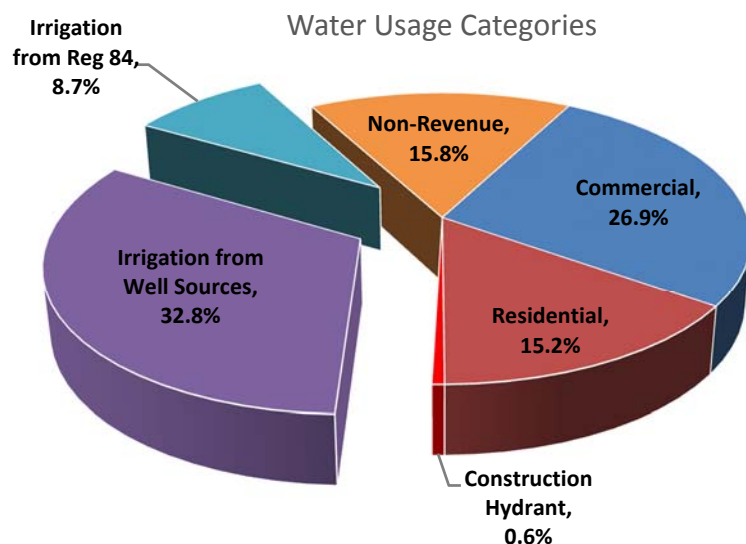
Clear Water Solutions (CWS) is assisting the Arapahoe County Water and Wastewater Authority (ACWWA) with updating their Municipal Water Efficiency Plan in accordance with State regulations following the Guidance Document (dated July 2012) produced by the Colorado Water Conservation Board. The Guidance Document outlines six steps in the water conservation planning process. To date, CWS and ACWWA have made strong progress towards the completion of Steps 1-3 which includes initial discussions with ACWWA Staff on water efficiency activities.

ACWWA delivered 3,040 acre-feet of potable water in 2014 to a population of approximately 6,000 permanent residents and over 25,000 employees that commute into ACWWA's service area. ACWWA receives its raw water for potable use from three main sources: alluvial well water pumped from Cherry Creek, deep well water pumped from the Denver Basin Aquifer, and ACWWA Flow. ACWWA Flow is an effort by ACWWA to reduce its dependency on the two other sources of potable water. ACWWA Flow pulls water through senior ditch rights along the South Platte River. ACWWA has taken delivery of over 1,500 acre-feet of raw water from this project. ACWWA also has two main sources of non-potable water: alluvial wells that do not meet quality standards for drinking water and reclaimed water (Reg 84). In 2014 ACWWA delivered 902 acre-feet of non-potable water to customers through a dual system for purposes such as irrigation, cooling, and other non-potable uses.

ACWWA's water tracking system separates water usage into five customer categories: Commercial, Residential, Irrigation from Well Sources, Irrigation from Reg 84, and Construction Hydrant Uses. The following figure breaks out the water usage per customer category as a percentage of the total use of a five-year average (2010 – 2014). The figure also includes Non-Revenue water. Irrigation (32.8% from Well Sources and 8.7% from Reg 84) made up the largest percentage of water usage (potable and/or non-potable). ACWWA is unique in its demographics in that Residential

*Arapahoe Water and Wastewater Authority Municipal Water Efficiency Plan Update  
50% Progress Report  
June 1, 2015*

(often the largest end user for other water providers) only used 15.2% of the water produced by ACWWA's sources.



Prior to and through their current Municipal Water Efficiency Plan, ACWWA has established the following water efficiency activities:

Historical and Current Water Efficiency Activities	
Foundational Activities	
<i>Submetering for Large Users (Indoor and Outdoor)</i>	
<i>Frequency of Meter Reading (monthly)</i>	
<i>Tracking Water Use by Customer Type</i>	
<i>Upgrade Billing System to Track Use by Sufficient Customer Types</i>	
<i>Tracking Water Use for Large Customers</i>	
<i>Water Rate Adjustments</i>	
<i>Frequency of Billing</i>	
<i>Inclining/Tiered Rates</i>	
<i>Water Line Replacement Program</i>	
<i>Master Plans/Water Supply Plans</i>	
<i>Capital Improvement Plans</i>	
<i>Water Conservation Coordinator</i>	
Targeted Technical Assistance and Incentives	
<i>Irrigation Scheduling/Timing</i>	
<i>Rain Sensors</i>	
<i>Residential Outdoor Meter Installations</i>	
<i>Water Efficient Washing Machine Rebates</i>	
<i>Efficient Irrigation Equipment Rebates</i>	
<i>Landscape Water Budgets Information and Customer Feedback</i>	
<i>Give-aways</i>	

*Arapahoe Water and Wastewater Authority Municipal Water Efficiency Plan Update  
50% Progress Report  
June 1, 2015*

<b>Historical and Current Water Efficiency Activities (cont.)</b>
<b>Ordinances and Regulations</b>
<i>Water Waste Ordinance (BP 5) (Voluntary unless triggered)</i>
<i>Time of Day Watering Restriction (Voluntary unless triggered)</i>
<i>Day of Week Watering Restriction (Voluntary unless triggered)</i>
<i>Turf Restrictions (BP 9) (Only in Elkhorn, not enforced)</i>
<b>Education Activities</b>
<i>Bill Stuffers</i>
<i>Web Pages</i>
<i>Message Development/Campaign</i>
<i>Xeriscape Demonstration Garden (Gardens within service area provide class, not directly run by ACWWA)</i>
<i>Water Conservation Expert Available (South Metro)</i>

CWS and ACWWA's staff are currently working to determine the water savings evident from implementation of these activities. ACWWA has an overall goal of a 10% water savings. ACWWA and CWS have done an initial screening and are also in the process of determining water efficiency activities for the plan update. The next step includes performing a feasibility and cost/benefit analysis of the selected activities for further evaluation by ACWWA.

To date our budget estimates for each step have been fairly accurate. Due to summer schedules and other delays, we are, however, a little over a month behind our original schedule. We have updated the schedule, and the new schedule is included in the following table.

<b>Task</b>	<b>Date</b>
Grant application submitted to CWCB	12/30/2014
Required CWCB details addressed	2/17/2015
CWCB approved grant and PO issued	3/3/2015
Kick-off meeting with staff	4/1/2015
Submit 50% progress report to CWCB	6/1/2015
Submit 75% progress report to CWCB	6/29/2015
Submit draft plan to staff for review and comment	7/20/2015
Staff provides comment from review	8/10/2015
Submit draft report to Board for review	8/24/2015
Present draft report at Board meeting and collect comments	9/9/2015
Notify public of draft plan in paper and website	9/10/2015
Public review period (60 days)	11/9/2015
ACWWA provides public input comments to CWS	11/12/2015
CWS incorporates public comments	11/30/2015
Board formally adopts final report	12/9/2015
CWS submits final report to CWCB	12/10/2015
CWCB approves final report	up to 90 days