

CWCWD WATER EFFICIENCY PLAN



INTRODUCTION

Central Weld County Water District (District) was formed as a Colorado Special District in 1965 and began serving domestic water to a 250 square-mile area in Weld County, Colorado in 1966. The District, a registered Colorado Public Water System, PWSID # CO0162122 provides potable water to rural users and communities who were, at the time, dependent on sub-surface water sources. The District's domestic water service area now extends south from Greeley to the Tri-Town area of Dacono, Frederick, and Firestone in south west Weld County, and east from Interstate 25, St. Vrain and South Platte rivers to Kersey and Hardin areas. Included in this service area are eight (8) communities, three (3) emergency connection, and several major agricultural industries, feed lots, and dairies, as well as approximately 250 square miles of rural population. The service area is generally bounded by the City of Greeley on the north, County Road 6 on the South, the South Platte River and the St. Vrain River on the West and follows the State Highway 85 corridor.

The water efficiency plan has been developed to (1) raise the awareness level of all water users within the District to conserve water at every level of use, (2) to encourage all District water users to use water more efficiently and (3) to satisfy the requirements of the "Water Conservation Act of 1991". No part of this plan is intended to reduce or abandon any existing water rights. The District provides information using available resources including Northern Colorado Water Conservancy District's website (www.NCWCD.org) for landscape water usage conservation and through repetitive notices on the District's monthly water service bills.



SERVICE

Currently, the District relies solely on Colorado-Big Thompson (C-BT) water and Windy Gap water. The District also owns approximately 5,000 acre-feet of storage in Dry Creek Reservoir located west of Berthoud, Colorado. Dry Creek Reservoir is currently used for drought and Windy Gap water storage and co-owned with Little Thompson Water District. However, actual delivery of water is based upon an annual quota established by Northern Colorado Water Conservancy District (NCWCD). The C-BT quota has historically averaged approximately 70% delivery. During drought conditions, the C-BT quota can be set at or near 30% delivery. Windy Gap water delivery is limited by several factors including weather (dry years), senior rights, limited storage and conveyance capacities, and system operations during wet years.

Central Weld County Water District's distribution system is made up of more than 350 miles of water mains ranging in size from one (1) inch in diameter to forty-two (42) inches in diameter, plus service lines, pump stations, master meters, and pressure reducing stations. The various types of main water line installed have included steel, cast iron, ductile iron, transite, and PVC. The larger diameter pipe is joint pipe with gaskets, other than the steel pipe, while most of the smaller water lines (2" and below) are glued joint pipe.

The District's distribution system has been maintained in good shape through on-going maintenance, prompt leak repair, and updated hydraulic information. Along with the preventive maintenance program, the District also replaces glued joint pipe and transite pipe with PVC and ductile iron pipe when possible, reducing leakage occurrences.

Individual service connections at each tap include a meter, check valve, pressure regulator, shut-off valve, and, in most cases, a remote readout. Meters are read on a monthly basis.

Master meters are used to meter water to each municipality which consists of a meter, by-pass meter, flow control valve, pressure reducing valves, and shut-off valves. All major master meters are equipped with SCADA and telemetry systems which allow direct monitoring and adjustment of flow. Over time, the District plans to install these systems on all master meters.

Telemetry systems are in place on all pump stations, major PRV stations, and tanks for monitoring purposes.



Carter Lake

Population

The District directly serves approximately 10,000 people and 2,264 residential taps as of 2018. The District also serves approximately 72 commercial/industrial taps and on average, 12 bulk hydrant water users. All water service is metered and read on a monthly basis. The District will implement a new rate structure in November 2019. The old rates were in effect since being established in 1991.

Amount of Taps added annually (District and municipal)

YEAR	2012	2013	2014	2015	2016	2017	2018
TAPS ADDED	268	321	325	545	531	456	437

Overall, the District has shown increases in water revenues as a result of new developments. Operating expenses have been consistent over the last few years.



Future Demand

The District continues to modify and evaluate a Master Plan for future growth and continued maintenance. The District has an existing policy regarding capital improvements in the District system. All line extensions are paid by the individual customers as determined by a study for new service. The municipalities served are required to pay additional fees for filter plant enhancement and infrastructure improvements for growth in the towns pursuant to existing contracts. The District is participating in NISP through NCWCD. This project will provide new yield of water rights deliverable through the NCWCD system. A new 7 MG storage tank will be added within the next two years at the filter plant.

District Water Usage per Acre Feet

YEAR	2012	2013	2014	2015	2016	2017	2018
ACRE FEET	3881	4670	4297	4239	4924	4853	5462

Most of the demand for the District is used from the commercial/industrial customers. The District usage does not include usage from municipalities.

Efficiency Goals

The District continues to find ways to reduce system losses. Field personnel respond the same day to reports of leaks or outages and the District relies heavily on reports from it's customer base to report unusual appearances of water. The District calibrates larger sized meters on an annual basis to provide accuracy in meter readings. The District issues public notifications through their annual water quality report or on their website www.cwcwd.com.

The District currently does not require customers to use water efficient fixtures and appliances within the District. The use of water efficient fixtures and appliances are effectively required for all new construction due to the adoption of uniform plumbing codes and building requirements by the various building permit authorities within the District's boundaries. Since only low flow toilets are now manufactured in the United States, the issue of low flow toilets for new construction has been addressed. Currently, all of the municipalities served require replacement items to be water efficient.(International Plumbing Code adoption by county and municipality)

The Central Weld County Water District will continue to use the newsletter format to promote voluntary upgrades to water efficient fixtures and appliances. At this time, the District is not considering any type of low-flow retrofit fixture program; however, this option may be considered in the future. The District also recommends the use of low flow heads in lawn sprinkler systems. (reference www.NCWCD.org under Irrigation Management)



Efficiency Programs

The District offers two different types of residential taps, a standard tap and a budget tap. A third tap size option is being considered. The raw water fee is less for a budget tap, but the surcharge rate is significantly higher for amounts that exceed an annual allotment. The budget tap allows for usage for a small family with little outdoor watering consistent with normal household usage during the months of October through May. The District is a rural district with only a few commercial and industrial customers. One influence of the rural setting is that the District provides water to dairies, poultry farms, and feedlots. These agricultural industries require large amounts of water, with the average dairy unit utilizing 25 gallons of water per day and the average feedlot head requiring 15 gallons of water per day. The Central Weld County Water District has not restricted the use of potable water in these rural industries. The larger dairies have been very efficient in using the water that is delivered through the District's taps. A typical dairy may reuse the water three or four times before it is released from the operation. Tap water is first used for cooling the milk in heat exchangers, then used for cleaning equipment, and then used for cleaning the parlor and holding pens. Tap water is also consumed by the dairy herd and converted to milk for resale throughout the region. The District encourages dairy and other agricultural business owners to utilize non-treated water in their operations when possible. The Central Weld County Water District does not plan on restricting or limiting the use of the District's water by the few commercial users, including dairies, poultry farms, and feedlots. CWCWD does not plan to require any specific process changes at our customer's sites.

The Central Weld County Water District currently does the following:

- ❖ The District meters all water entering the distribution system as well as all water leaving the system. CWCWD utilizes rotating disk, positive displacement meters and an individual pressure regulator at each service connection to regulate pressure and accurately measure the water delivered to the customer. The meters are read and billed on a monthly basis.
- ❖ All known leaks in distribution lines are repaired immediately and any leaks found on customer service lines are promptly reported to the tap holder. Water lines which show a history of leaks or require frequent repair are targeted for replacement as soon as budget funds are available.
- ❖ All new water lines are pressure tested after installation and are only accepted by the District when they are able to meet established guidelines for allowable water loss.
- ❖ Older distribution lines are being replaced or upgraded on an "as needed" basis to provide improved service to the District's customers. All replacement lines must also pass a pressure test prior to being accepted by the District and placed in service.
- ❖ Along with the individual pressure regulators on all customer service connections, the District maintains eleven (11) pressure reducing zones throughout the distribution system. This reduces the main line pressure which consequently reduces leaks in the distribution main lines.
- ❖ Maintain an up-to-date hydraulic model of the entire system to control pressure zones.
- ❖ Provide a SCADA and telemetry system on most PRV's, master meters, and pump stations for pressure and flow control and for immediate response to system failures.
- ❖ Provide adequate vehicles and equipment for quick response in case of leaks.

Efficiency Planning Process

The Central Weld County Water District plans to continue the above measures and will continue to monitor the distribution system on the District's telemetry system which provides the means of detecting unusually high flows, which can possibly indicate a line break. The Board has also expressed interest in a reduction of evaporation for Dry Creek Reservoir in the form of solar panels.



This plan represents, in the Central Weld County Water District's best judgement, the appropriate role of water use efficiency planning in the overall water supply planning of the District.