2020 WATER EFFICIENCY PLAN

for

Central Weld County Water District
2235 2nd Avenue
Greeley, CO 80631

CENTRAL WELD COUNTY WATER DISTRICT

NOCO Engineering Company
5963 Esther Circle
Frederick, CO 80530
Project No. 18-110.05
July 2020

EXECUTIVE SUMMARY

Central Weld County Water District (District or CWCWD) was created in 1965 to serve the largely rural area of Weld County. The 250-square mile service area generally covers the area south of Greeley, along the South Platte River to east of Kersey and south to the area along I-25 south of Dacono. In addition to the rural areas, it also serves the communities of Dacono, Firestone, Frederick, Gilcrest, Kersey, LaSalle, Milliken, Platteville, and Aristocrat Ranchettes (the Towns). The area is primarily agricultural with extensive cattle feeding, poultry, and dairy operations. However, the recent trends in much of the service area indicate a shift in water usage patterns toward oil and gas, residential, and municipal. The District currently serves a population of approximately 9,900 people through 2,597 retail taps and an additional 50,000 people through the ten wholesale customers (the Towns and Left Hand Water District (LHWD)) served through master meters.

Central Weld County Water District has developed a Water Efficiency Plan (WEP) update in accordance with the Water Conservation Act of 2004 (Appendix A) and to meet the provisions of Colorado Revised Statute section 37-60-126 (Appendix B). As part of CRS 37-60-126, a State-approved Plan will qualify the District for continued funding from the Colorado Water Conservation Board (CWCB) and the Colorado Water Resources and Power Development Authority for water supply and delivery projects. Since the last Water Conservation Plan (2005), the District has made efforts to improve their water use efficiency by implementing a number of steps and programs. The District looks forward to its continued partnership with CWCB and the State to continuously improve its efficiency and conservation efforts.

This report documents CWCWD's existing water system, past and future water use, and the water conservation planning process used in accordance with CWCB's Municipal Water Efficiency Plan Guidance Document (AMEC 2012).

The District relies on their shares of capital stock in the Colorado-Big Thompson (C-BT) Project and Windy Gap for their raw water supply. The District produces treated water at the Carter Lake Filter Plant (CLFP) west of Berthoud. The District's distribution system also includes nine treated water storage tanks, six primary pressure zones, eleven pump/booster stations, and over 480 miles of pipelines.

In 2019, District's rural customers utilized ~4,970 acre-feet (AF) of treated water, while the total District use was ~10,895 AF. The District is expected to increase its annual water demand through new growth to ~15,726 AF of treated water over the planning period, which extends to 2027. Through implementation of this WEP, the District's water savings goals during the planning period include a 5% decrease in residential single-family per capita water use, a 10% decrease in commercial treated water use, and a 10% decrease in annual water distribution system water loss (non-revenue water).

Based on the current 152 gpcd average single-family residential water use and the estimated District population of 10,749 by 2027, a 5% net savings per capita over the next seven years will result in a net water savings of 403 AF.

After reviewing the CLFP and District billings for the past five years, it was calculated that the District has a five-year average of 8.04% for unaccounted for water. By decreasing the system loss to 7.5% by 2027, the District will save an additional 364 AF.

In total, through the implementation of this WEP, the District's total water savings is estimated to be 767 AF over the next seven years, which will help contribute toward the water supplies needed to serve the 2027 demand and beyond.

Table of Contents

Figures

Tables

Appendices

Acronyms and Abbreviations

Ag	agricultural
AF	acre-feet
AFY	acre-feet per year
AWWA	American Water Works Association
Basin	South Platte River Basin
BLM	Bureau of Land Management
C-BT	Colorado-Big Thompson
CLFP	Carter Lake Filter Plant
CWCB	Colorado Water Conservation Board
CWCWD or District	Central Weld County Water District
DOLA	Colorado Department of Local Affairs
EPA	Environmental Protection Agency
GIS	geographic information system
LHWD	Left Hand Water District
M&I	municipal and industrial
MGD	million gallons per day
NEPA	National Environmental Policy Act
NISP	Northern Integrated Supply Project
Northern Water	Northern Colorado Water Conservancy District
Plan	Water Efficiency Plan
PRV	pressure reducing valve
psi	pounds per square inch
SP-BIP	South Platte Basin Implementation Plan
SSI	self-supplied industrial
SWSI	Statewide Water Supply Initiative
TE	tap equivalent
WEP	Water Efficiency Plan
WTP	water treatment plant

Terminology

For the purposes of this Plan, the following definitions shall apply:

Aesthetic water use: water use for ornamental or decorative purposes such as fountains, reflecting pools, and water gardens.

Beneficial use: water uses that are essential or required for the protection of public, health, safety, and welfare, including domestic water uses.

Conservation: those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water or increase the recycling and reuse of water so that a supply is conserved and made available for future or alternative uses.

Demand-side: the distribution and consumption of treated water supplies for domestic purposes or the delivery and use of reclaimed water or untreated raw water for non-potable purposes.

Domestic water use: water use for personal needs or for household or sanitary purposes such as drinking, bathing, heating, cooking, sanitation, or for cleaning a residence, business, industry, or institution.

Landscape irrigation use: water used for the irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, golf courses, parks, and rights-of-way and medians.

Master meters: tap holders who purchase water wholesale from the District and re-sell the water to others.

Non-essential water use: water uses that are not essential nor required for the protection of public, health, safety, and welfare, including:

- irrigation of landscape areas, including parks, athletic fields, and golf courses, except otherwise provided under this Plan;
- use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other equipment or vehicle;
- use of water to wash down any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;
- use of water to wash down buildings or structures for purposes other than immediate fire protection or hazardous substance remediation;
- flushing gutters or permitting water to run or accumulate in any gutter or street;
- use of water to fill, refill, or add to any indoor or outdoor swimming pools or jacuzzi-type pools;

- use of water in a fountain or pond for aesthetic or scenic purposes except where necessary to support aquatic life;
- failure to repair a controllable leak(s) within a reasonable period after having been given notice directing the repair of such leak(s); and
- use of water from hydrants for construction purposes or any other purposes other than firefighting.

Non-revenue water: unbilled authorized water (e.g. hydrant flushing), apparent system losses (e.g. unauthorized consumption, metering reading inaccuracies, and data handling errors), and real losses (e.g. system leaks).

Northern Colorado Water Conservancy District (Northern Water): Northern Water is a public agency created in 1937 to contract with the federal government to build the Colorado-Big Thompson Project. The C-BT Project provides supplemental water to more than 640,000 acres of irrigated farm and ranch land and about 925,000 people in Northeastern Colorado.

Supply-side: water supply operations and facilities that include the diversion, extraction, storage, and transmission of untreated water.

Tap holder: individuals, corporations, partnerships, associations, municipalities, special districts, and all other legal entities using water supplied by the District.

The Towns: Dacono, Firestone, Frederick, Gilcrest, Kersey, LaSalle, Milliken, Platteville, and Aristocrat Ranchettes.

Water shortage rates: water rates that are fair to the largest number of tap holders possible, and that are based on a percentage of average monthly winter usage are the most equitable way to encourage tap holders to conserve water and to recover lost revenue. Tap holders who use approximately the same amount of water year-round will be minimally affected by the water shortage rates.

Water year: November 1 through October 31

Winter usage: quarterly consumption for the previous months of January, February, and March. The winter consumption is divided by three to determine average monthly winter usage. If a tap does not have a record of winter use, then the average monthly winter usage for all taps in the tap size category shall be used as the basis.

INTRODUCTION

Central Weld County Water District (CWCWD or District) employed NOCO Engineering Co. (NEC) to perform professional engineering services, to serve as the District's professional engineering representative, and to provide professional engineering consultation and advice in connection with the preparation of a Water Efficiency Plan (WEP). This WEP will be an update to the District's approved Water Conservation Plan (CWCWD 2005). All references used during the development of this plan are listed on page 38.

General Approach to WEP Development

Per Colorado Water Control Board's (CWCB's) Municipal Water Efficiency Plan Guidance Document (AMEC 2012), the following six steps were taken to prepare this WEP.

Step 1: Profile of Existing Water Supply System (Section 1) – This step involved the collection and development of supply-side information and historical supply-side water efficiency activities. NEC consulted with the District to clarify and define the WEP requirements and review all available data.

Step 2: Profile of Water Demands and Historical Demand Management (Section 2) – This step involved the collection and development of demand data and historical demand management activities.

Step 3: Integrated Planning and Water Efficiency Benefits and Goals (Section 3) – This step involved the identification of how water efficiency will be incorporated into future water supply planning efforts and development of water efficiency benefits and goals.

Step 4: Selection of Water Efficiency Activities (Section 4) – This step involved the assessment, identification, screening, and evaluation process to select and fully evaluate a portfolio of water efficiency activities for implementation.

Step 5: Implementation and Monitoring Plans (Section 5) – This step involved the development of an implementation and monitoring plan for the methods selected during step 4.

Step 6: Adoption of New Policy, Public Review, and Formal Approval (Section 6) – This step included obtaining draft WEP approval from the CWCWD Board. With Board approval, the draft WEP was submitted to CWCB staff to ensure the plan meets all of the State's criteria for acceptance. With CWCB approval, the draft WEP began the public review process. Following the public review process, NEC incorporated comments into the document and final approval was solicited from the District Board and CWCB.

This final project report includes an overview of completed tasks, an estimate of actual water savings realized by CWCWD, relevant CWCB record information, and an outline of the future use of the WEP outcomes.

Public Stakeholder Process

Stakeholder members involved with the development and approval of this WEP were integral to ensuring this plan is representative of the District's community values. These members included the following:

1. CWCB
2. Water Board Members
3. District Manager
4. District Billing Manager
5. District Field Operations Staff
6. CLFP Manager
7. Residential and Commercial Water Consumers
8. District Engineer

The District engaged CWCB with a grant application and submitted two WEP progress reports to them detailing the success of previously identified goals and objectives, project challenges, preliminary report findings, and potential need for scope of work and timeline revisions at 50% and 75% report completion.

The Water Board members were engaged in the preparation of this report beginning in step 3 identified above.

The District Manager and Billing Manager furnished all existing studies, reports, and other available data pertinent to the WEP. Once a draft WEP was prepared, the District Manager presented the report to the Water Board Members for approval and submittal to CWCB. Once the draft WEP was approved by CWCB, the District solicited and accepted public comments on the plan for 60 days.

District field operations staff and the CLFP Manager provided valuable data during steps 1 and 2 identified above.

The residential and commercial water consumers provided valuable feedback from public opinion surveys on the District's values and perceptions regarding water efficiency measures. They also provided comments on the draft WEP during the public comment period.

With the assistance of the other stakeholders, the District Engineer used his extensive knowledge of the water distribution system background to prepare this report.

1 PROFILE OF EXISTING WATER SYSTEM

1.1 Overview of Existing Water Supply System

Service Area

Central Weld County Water District (District or CWCWD) is a special district formed in 1965.

Figure 1-1 illustrates the 250-square mile service area for the District. The service area generally covers the area south of Greeley, along the South Platte River to east of Kersey and south to the area along I-25 south of Dacono. In addition to the rural areas, the District also provides water to LHWD and the communities of Dacono, Firestone, Frederick, Gilcrest, Kersey, LaSalle, Milliken, Platteville, and Aristocrat Ranchettes (the Towns). The area is primarily agricultural with extensive cattle feeding, poultry, and dairy operations. However, recent trends in much of the service area indicate a shift in water usage patterns toward oil and gas, residential, and municipal. The District currently serves a population of approximately 9,900 people through 2,597 retail taps and an additional 50,000 people through the ten wholesale customers served through master meters.

Water Supply

The District relies solely on shares of the Colorado-Big Thompson (C-BT) Project and Windy Gap for their raw water supply. The C-BT Project is jointly operated and maintained by Northern Colorado Water Conservancy District (Northern Water) and the U.S. Bureau of Reclamation (Figure 1-2). The raw water originates in the Colorado River Basin within the West Slope collection system and is pumped from Grand Lake through the Alva B. Adams Tunnel to the East Slope distribution system near Estes Park. This is considered a trans basin diversion and the diversion began in 1957. The C-BT water is delivered to Carter Lake and the Carter Lake Filter Plant (CLFP) via a series of tunnels and reservoirs. Carter Lake has an allowable storage capacity of 112,200 acre-feet (AF).

C-BT water may only be used within the boundaries of Northern Water. Each town served by the District is required to own their own water rights. The Towns' annual C-BT allotment of raw water is then transferred to the District for treatment and delivery.

The District owns one share of the Windy Gap Project, which consists of a diversion dam on the Colorado River and a 445 AF reservoir, a pumping plant, and six miles of pipeline to Lake Granby. The Windy Gap Reservoir was constructed and put into service in 1985 and uses the C-BT Project's east slope distribution system to deliver water to its users.

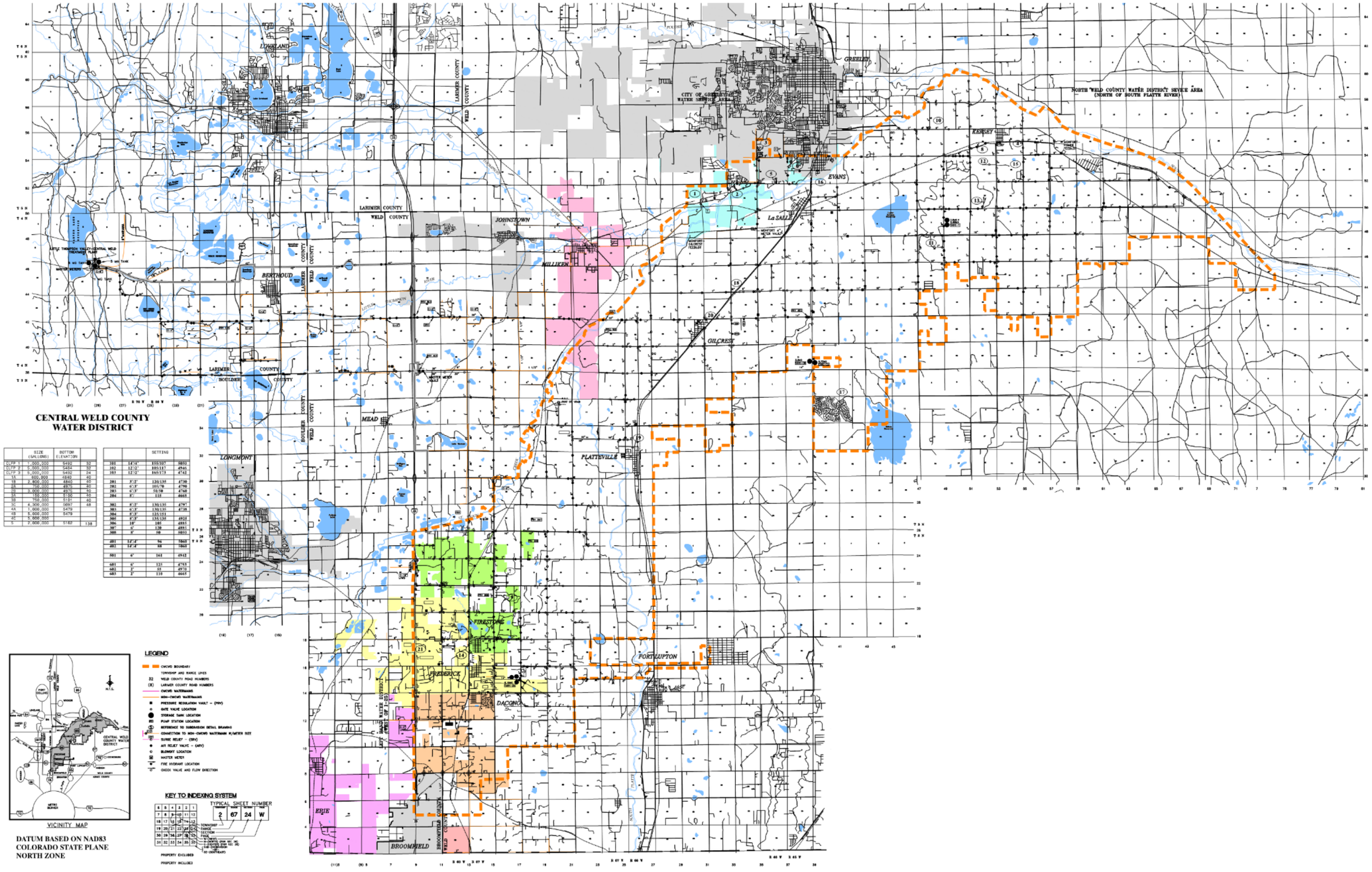

Figure 1-1: CWCWD Service Area

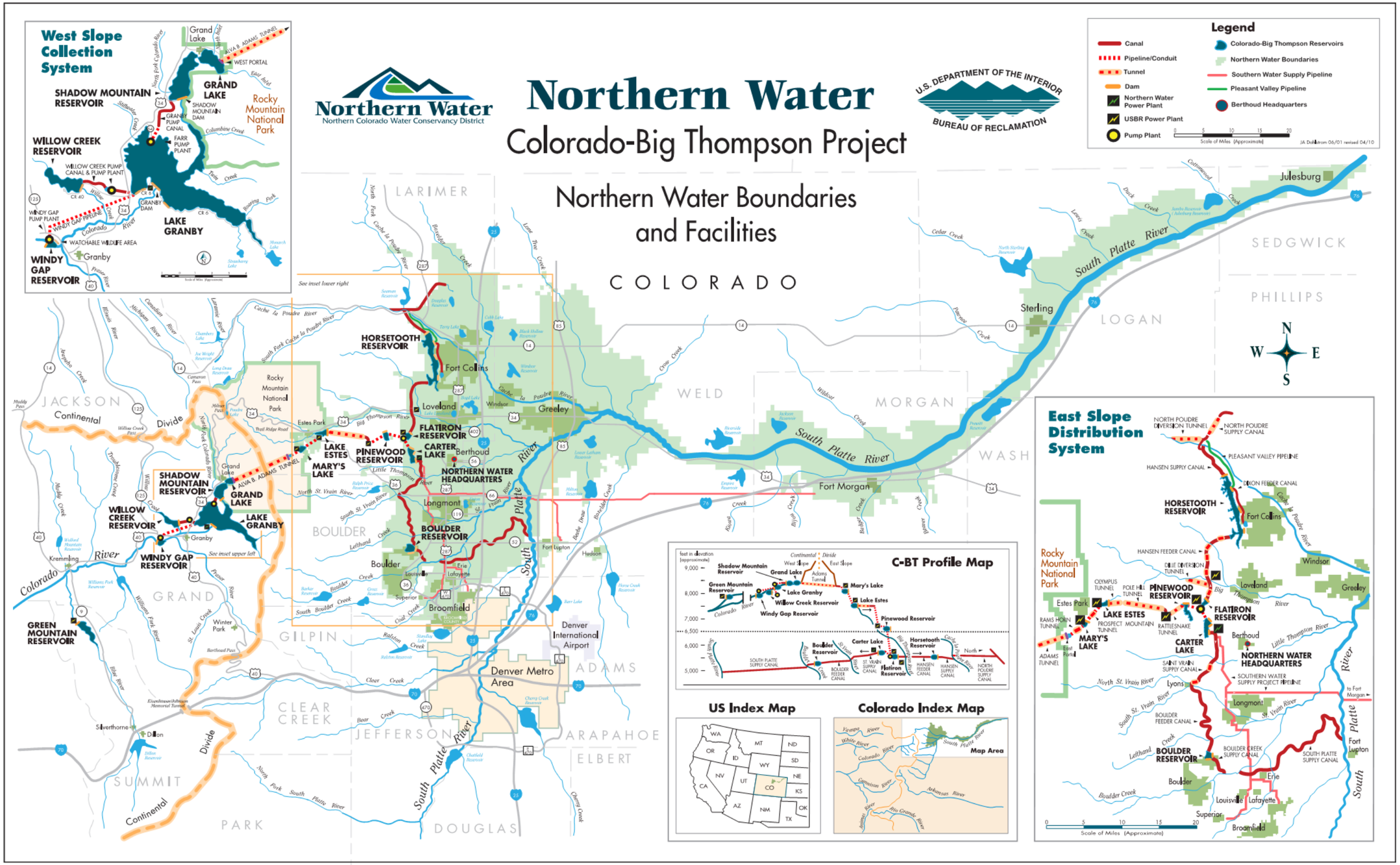

Figure 1-2: Northern Water Boundaries and Facilities (Northern Water 2018a)

The current water rights owned by the District are summarized in the following table (Table 1-1). Unlike most Colorado trans basin diversions, C-BT water can only be used once before being allowed to flow downstream. The Windy Gap water may be reused to extinction, however.

Table 1-1: CWCWD 2019 Water Rights

Water Right Name	No. of Shares or Units Owned	Average Annual Yield (AF/share)	Annual Yield (AF)
C-BT Project	5,918	0.74	4,379
Windy Gap Project	1	100	100
Water Transferred by Towns	18,816	0.74	13,923
Mutual Irrigation Company Ownership with Greeley and Loveland	0.33	0	0
Total without Transfers			4,479
Total			18,402

The District obtains shares in the C-BT system through purchases from other shareholders and through transfer of shares to the District by developers and new tap holders. Raw water for the Towns is owned by the Towns and their annual C-BT allotment is transferred to the District for treatment and delivery from CLFP.

Key Existing Facilities

The original CWCWD distribution system was built in the early 1960's to serve a generally rural residential population spread throughout the District. Smaller diameter pipes were used to serve the low density and the system was looped as much as possible. As the density and consumption of the District's customers grew, major pipeline expansions were constructed. The most recent major expansion was 5.5 miles of 16-inch waterline along Weld County Road 49.

The District produces water at the CLFP, which is jointly owned between CWCWD and Little Thompson Water District (LTWD). The treatment facility site is located at 7100 Larimer County Road 8E, approximately seven miles west of Berthoud, CO, and just below Carter Lake Dam No. 1 (Figure 1-3). The site contains two treatment plants; the North Plant and the South Plant. The North Plant site is located on land leased from the U.S. Bureau of Land Management (BLM) and the South Plant site is owned by the two districts.

As summarized in Table 1-2, the plants have been upgraded and expanded several times through the years. As of 2019, the total capacity of the North and South Plants is expected to be 50 MGD, which is divided equally between the two districts.

Table 1-2: Chronology of Carter Lake Filter Treatment Plant Improvements

Date	Project
1961	Original 1.5 MGD plant completed with a 1.0 MG steel storage tank. Consisted of a contact basin, two rapid sand filters, a clearwell, and chemical feed systems for aluminum, soda ash, and chlorine.
1971	Plant improvements to increase capacity to 6.0 MGD, including new chemical feed facilities, contact basin, and two filters.
1977	St. Vrain Supply Canal outlet and 24" raw water line to North Plant.
1978	5.0 MG concrete storage tank constructed.
1980	Plant improvements, including four filter piping modifications, backwash and decant return pump station, and a backwash pond, increased the plant's capacity to 13.7 MGD direct filtration.
1993	South Plant constructed as a direct filtration plant with an initial capacity of 10 MGD, expandable to 30 MGD. Plant included five filters with adsorption clarifiers, backwash pumps, backwash recycle ponds and pumps, chemical feed facilities for aluminum, soda ash, polymers, and chlorine, and a new 30" influent line from St. Vrain supply canal.
2000	South Plant expansion to 20 MGD, including five filters and adsorption clarifiers, new backwash recycle pond, four sludge drying beds, new filter influent piping to supply higher flows, bulk storage for coagulants, new polymer feed system, and a new backup generator.
2002	5.0 MG steel storage tank constructed.
2007	New 30 MGD membrane plant to replace old north plant. Project included 6 primary membrane cells and two secondary membrane cells, secondary pretreatment system, chemical feed and storage facilities for polymers, soda ash, fluoride, chlorine, and chlorine dioxide.
2008	Reconstruction of north membrane plant after explosion. Project included replacement of chemical feed facilities, plus a new chemical feed and storage room for sodium chlorite and the chlorine dioxide feeder. Other work included replacement of all electrical control and wiring systems.
2016	North Plant membranes were replaced and the gross filtration rate is anticipated to increase to 32 MGD; however, the production rate is limited by the existing effluent waterline.
2017	Approximately 800 linear feet of new 42" DIP effluent waterline and the associated fittings and appurtenances were installed between the North WTP clarifier and the tank yard, increasing the North WTP's capacity to 30 MGD.
2020	7.0 MG steel storage tank constructed; 1.0 MG steel tank removed.

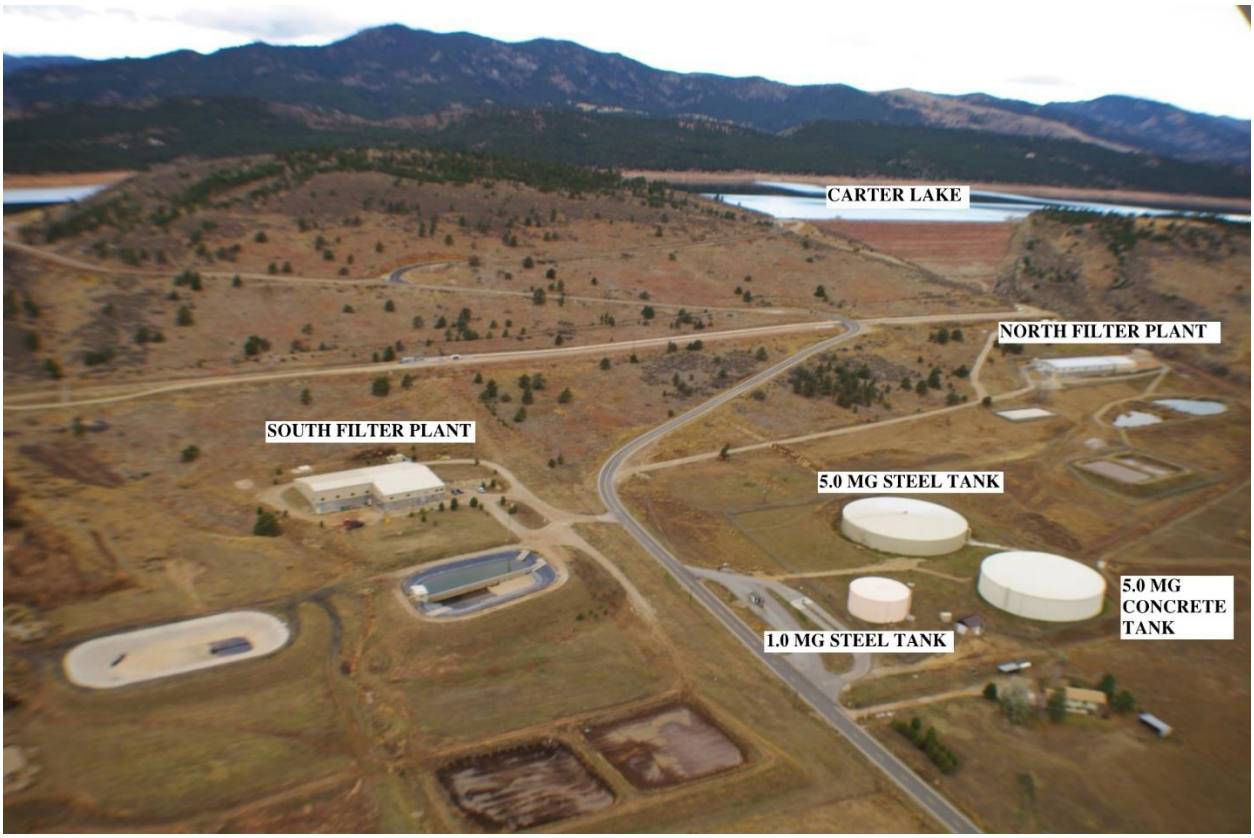

Figure 1-3: Carter Lake Filter Plant Facilities

The CWCWD distribution system has five storage tank locations, which contain nine treated water storage tanks with a total capacity of 20.05 MG. In addition, eight out of the nine towns served by the District provide their own separate storage. The District's storage tanks are located in five of the six primary pressure zones within the system. The system also includes 19 pressure reducing stations to lower pressure between zones. Six pump/booster stations are used, in addition to gravity, to move the water through nearly 500 miles of pipelines that range from one-inch to 42-inches in diameter.

Pressure Zones

The District has eleven pressure zones, providing water service to customers varying in service elevation from approximately 5,200 feet to 4,500 feet. This 700-foot difference translates to a pressure range of over 300 psi, which requires the District to utilize pump stations and pressure reducing valves (PRV's) to maintain a desirable working pressure throughout the system.

Water pressure zones are typically configured to supply customers with operating pressures between 35 and 100 psi. To protect the customers' plumbing systems, each tap is typically fitted with pressure reducing valves. With this type of system, the purpose of pressure reducing valves is to protect the pipelines from excessive pressures. The CWCWD system includes pipelines with

pressure ratings of 150 and 350 psi. Therefore, the pressure zone configuration must consider the pressure rating of the pipelines.

1.2 Water Supply Reliability

Water supply reliability is the ability of the District's water supplies to meet the needs of its customers during times of stress. The C-BT project imports an average of 227,926 AF of water each year to many public and private water users along the northern Front Range and northeastern Colorado for agricultural, municipal and industrial uses. The system has approximately 740,000 AF of gross storage and consists of 310,000 units. There is approximately 2.3 times the storage than would be needed to deliver a 100% quota. This gives the C-BT system some drought reliability.

In over fifty years of C-BT project operation, the average yield has been 0.74 AF per unit and the commonly used average quota is 70%. The yield has never been less than 0.50 AF per unit (50% quota) or more than 1.0 AF per unit (100% quota). The historical annual quota established by Northern Water is shown on the following Figure 1-4. Even without the Towns' water transfers, CWCWD has a firm C-BT annual yield of 4,479 AF (Table 1-1).

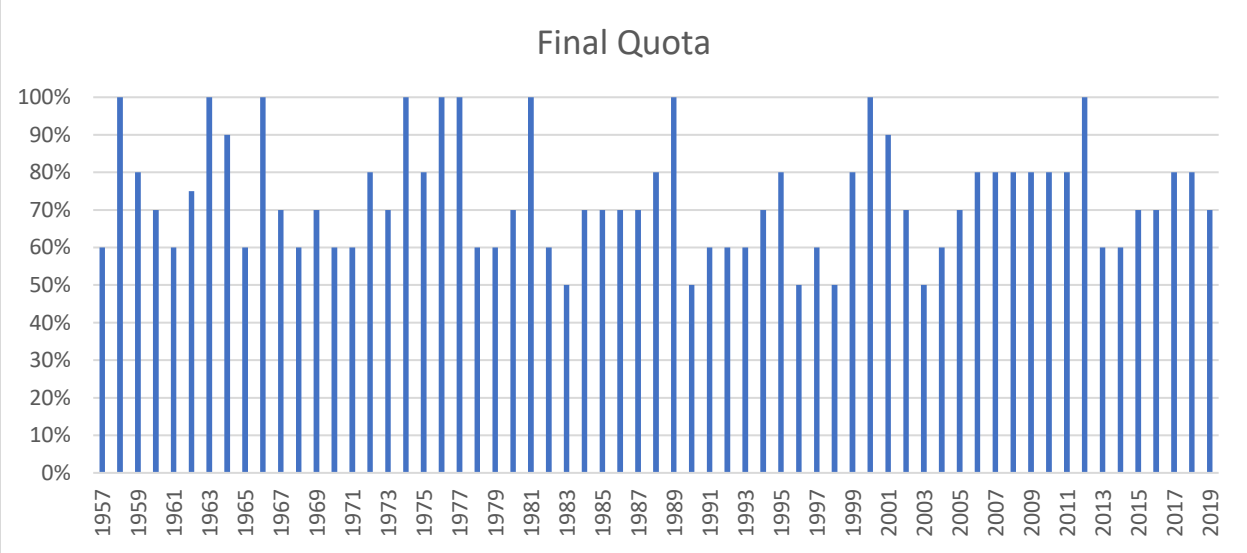

Figure 1-4: Historical C-BT Quotas

Floods bring particular challenges to water suppliers like CWCWD. In September 2013, the Front Range experienced some the largest rainfall amounts recorded for this area in the last 100 years. The District sustained damage at 15 discrete sights throughout their service area, including over 3,000 feet of treated water pipeline as well as raw water delivery channels. Damages were originally estimated at over $2 million. Throughout the ordeal, the District personnel coordinated efforts with multiple parties to establish temporary structures for water supply during the winter months. By mid-March of 2014, more permanent structures were in place for the higher demand water deliveries than would be necessary for the summer months.

Based on the District's response during this unprecedented event, the District has proven its ability to meet the needs of its customers during times of stress.

Statewide Water Supply Initiative

The Statewide Water Supply Initiative (SWSI) is a comprehensive evaluation of water supply and use within the state of Colorado. More specifically, the SWSI achieves the following:

1. Determines the estimated 2050 water demand for each major river basin.
2. Describes what measures are being taken to address water needs within the State.
3. Identifies areas where water supply will be inadequate, and by how much.
4. Evaluates how water supply gaps are currently addressed, and if further measures could be implemented to mitigate shortages.

The District is located within the South Platte River Basin, which supports the highest population percentage and agricultural output amongst the basins across the State (CDM 2011B). Water supply in the basin is supplemented by trans basin diversions from the Colorado, Arkansas, and North Platte River Basins. The South Platte River Compact of 1923 established rights of Colorado and Nebraska to use the water in Lodgepole Creek and South Platte River.

More specifically, the District is located within the Northern South Platte Basin. According to the June 22, 2011 Basin M&I Gap Analysis memo (CDM 2011A; Figure 1-5), this region will have a shortfall of 110,000 acre-ft (ac-ft) by 2050, if everything proceeds at status quo. The 2015 South Platte Basin Implementation Plan (HDR Engineering and West Sage Water Consultants 2015) updated this prediction to a 184,000 ac-ft per year Municipal and Industrial (M&I) and Self-Supplied Industrial (SSI) gap in the basin under medium demand projections.

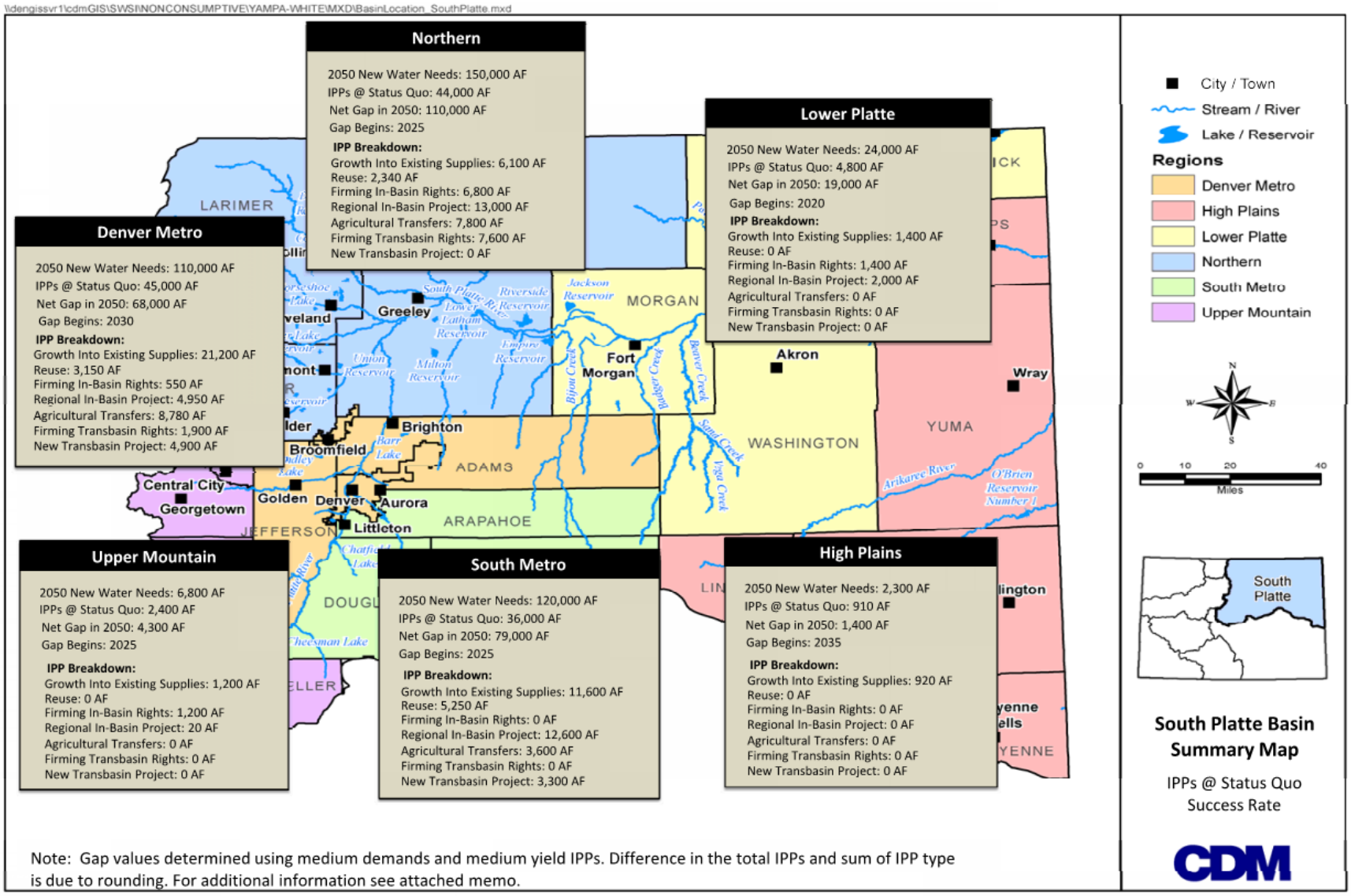

Figure 1-5: South Platte Basin Summary Map (CDM 2011A)

Future Water Supply

Increasing pressure on water from recent population growth in the Front Range has driven the price for raw water up significantly in the last ten years. Water providers are constantly struggling to maintain a balance between revenue generated from their customers and the expenses of system operation, maintenance, and water acquisitions. Acquiring new C-BT shares as they become available and NISP are possible future water sources that may be available to the District.

NISP is currently in the National Environmental Policy Act (NEPA) permitting process. Construction of these projects will occur only if a permit is obtained from the federal government and all NEPA requirements are satisfied. CWCWD is currently participating in NISP, and if the project makes it through the permitting process, the District will be obligated to pay for its share of the design and construction costs; these are currently estimated at approximately $35,000 per AF. Participation for the 15 NISP participants equates to 40,000 AF of permitted yield and CWCWD owns 3,500 AF of this amount.

In 1963, C-BT water could be purchased for $35 per unit. By the end of April 2020, the market price was approximately $63,500 per unit. Figure 1-6 shows how the price of C-BT units has varied from 1957 to April 2020.

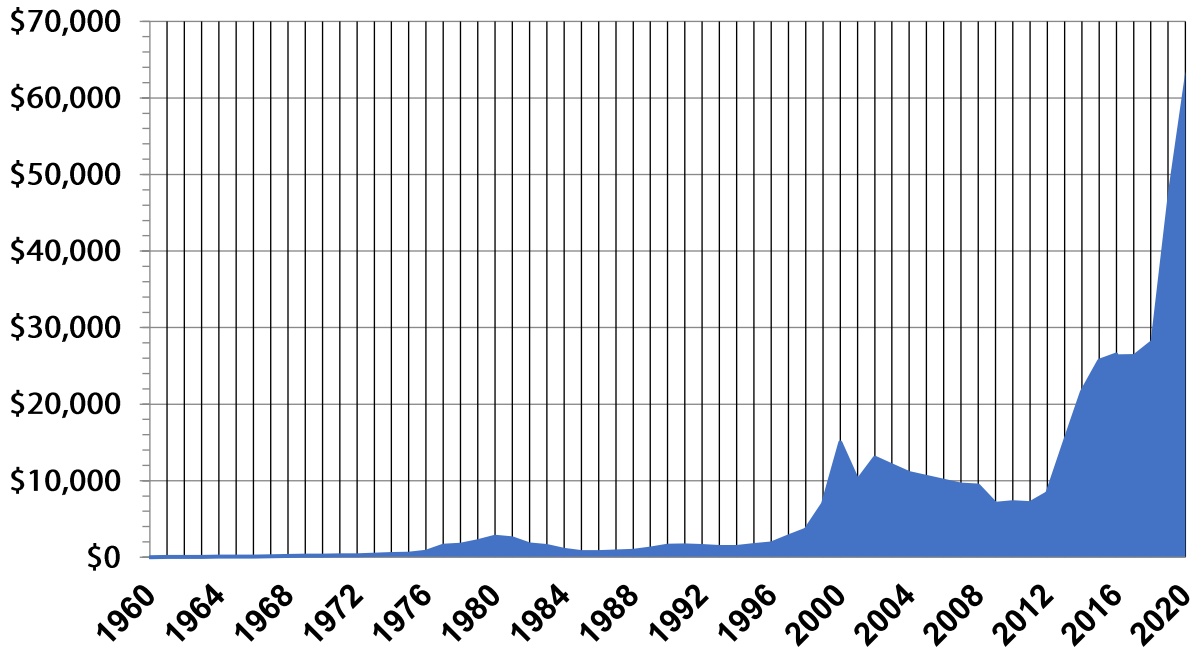

Figure 1-6: Price of C-BT Units

C-BT water can still be purchased from farmers, ditch companies, and other water districts. It is usually sold to settle an estate, finance continued agricultural operations, or source the development of farmland. In 1957, 85% of the C-BT units were owned by individual farmers

and mutual ditch companies. As of 2016, this percentage has decreased to 30%. Figure 1-7 shows the transfer of C-BT units from agricultural (Ag) ownership to municipal and industrial (M&I) ownership over the life of the C-BT Project.

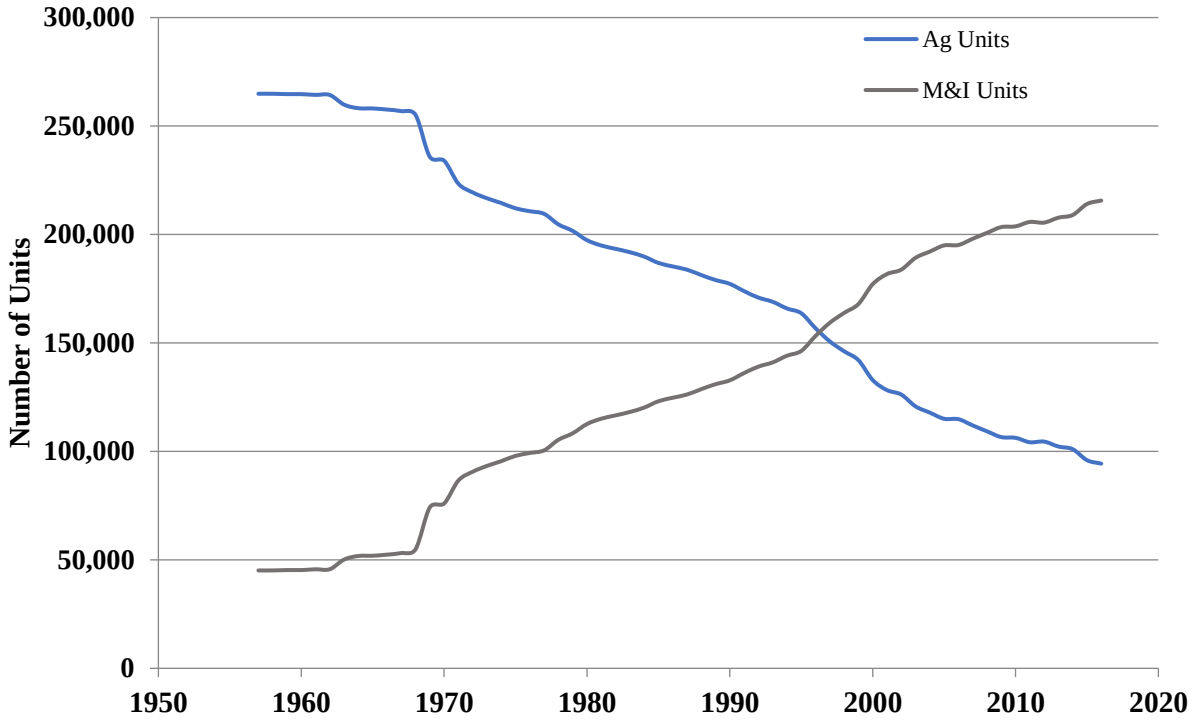

Figure 1-7: C-BT Ownership Transfer (Northern Water 2018b)

System Reliability

During the 2002-2006 drought, Carter Lake water levels experienced temporary lowering. The water level in the reservoir returned to historical conditions a few years after the drought.

In 2007, LTWD and CWCWD finished construction of a 10,000 AF reservoir east of Carter Lake for emergency reserves. Of the total storage at Dry Creek Reservoir, CWCWD is entitled to one-half (up to 5,000 AF) of the water storage for drought protection and operational flexibility. The reservoir is filled from Carter Lake through a 20-inch pipeline.

1.3 Supply-Side Limitations and Future Needs

CWCWD completed a master plan in June 2012 (Farnsworth). This plan focused on infrastructure and system capacity needs to meet future growth. It identified capital improvement projects (Table 1-3) within the District using an EPANet hydraulic model calibrated with existing distribution system documentation and projected water demand described in Section 2.4. The original distribution system that delivered water to rural residents starting in 1967 has been gradually replaced either with parallel pipelines or new larger ones. In

more recent years, a replacement funding program of $300,000 per year has been budgeted for modernizing the system.

Table 1-3: CWCWD Capital Improvement Plan (Farnsworth 2012)

Project	Dia. (in)	Dist. (ft)
Carter Lake Filter Plant Improvements		
NISP		
12" Hideaway Loop	12	26,400
4" WCR 61, WCR 46 - WCR 50	4	10,560
4" WCR 50, WCR 61 - WCR 63	4	5,280
6" Connection WCR 56 & WCR 51	6	500
8" WCR 48, WCR 53 - WCR 55	8	5,280
14" WCR 49, Tank 1 - WCR 50	14	2,640
12" WCR 50, WCR 49 to WCR 51	12	5,280
8" WCR 51, WCR 50 to WCR 54	8	10,560
12" WCR 46, WCR 35 to 39	12	10,560
6" WCR 6, WCR 9.5 - WCR 11	6	2,640
Membrane Replacement & Filter Rehabilitation		
6" WCR 48, WCR 55 to WCR 61	6	15,840
8" WCR 35, WCR 50 to WCR 52	8	5,280
6" WCR 51, WCR 54.25 to WCR 58	6	9,240
24" LCR 23, 42" to 20" Connection	24	8,700
10 MGD South Plant Expansion		
Zone 3 - 5.0 MG Storage		
8" WCR 50, WCR 51 - WCR 53	8	5,280
16" WCR 42, WCR 25 to WCR 29	16	10,560
30" WCR 14.5, WCR 13 - WCR 17	30	10,560
4" WCR 55, WCR 48.5 to WCR 50	4	2,640
12" WCR 49, WCR 48 to WCR 48.5	12	2,640
6" WCR 20, WCR 19 - WCR 21	6	5,280
4" WCR 21, WCR 16 to WCR 20	4	10,560
Dry Creek WTP Phase 1, 16 MGD		
24" WCR 34, WCR 13 to WCR 15	24	5,280
6" WCR 52, WCR 51 to WCR 53	6	5,280
12" WCR 42, WCR 39 to WCR 47 & 44	12	26,400
12" WCR 44, WCR 47 to WCR 48 & 49	12	15,840

While the District has adequate supply water for the foreseeable future, the transmission system will eventually lack the capacity to meet demand. The District has a number of options available to address its water supply requirements. As identified in Table 1-4, these range from increased supply and storage, to better management of available resources. The District should continue its acquisition of new water sources and should also evaluate alternatives and system improvements for better management of its existing resources. Water conservation will be a major component in the District's future water supply management.

Table 1-4: Needs and Limitations

Limitation and/or Future Need	Yes	No	Comments on Limitation or Future Need	How is Limitation or Future Need Being Addressed
System is in a designated critical water supply shortage area	X		The system is in a critical water supply area.	The District will continue to purchase water rights as they become available and contribute towards NISP.
System experiences frequent water supply shortages and/or emergencies		X	The system does not experience supply shortages.	
System has substantial non-revenue water		X	With a newly installed metering system, unaccounted for water is limited to between 0 – 10%.	
Experiencing high rates of population and demand growth	X		Population in the service area is projected to grow 53% by the year 2050 (DOLA 2017).	The District is purchasing or trading water rights as they become available.
Planning substantial improvements or additions	X		System improvements are primarily intended to increase the capacity of existing pipelines and supply of surface water sources.	Per the 2012 Master Plan (Farnsworth 2012), there are several capital improvement projects in the planning stages.
Increases to wastewater system capacity anticipated		X	District does not own a wastewater system.	
Need additional drought reserves	X			The District has used agricultural transfers to develop additional water supplies.
Drinking water quality issues		X	The water delivered by the District meets all State and Federal Safe Drinking Water Act parameters.	Recent changes to the water treatment process has decreased the lead and copper detections and decreased the need to flush the water system.
Aging infrastructure in need of repair		X		The District is actively engaged in maintaining and improving existing infrastructure.
Issues with water pressure in portions of distribution system	X		The District has adopted the goal of maintaining a minimum pressure of 35 psi throughout the system during the peak hour demand with a maximum pressure of 250 psi.	Additional water booster station is planned at WCR 50

2 PROFILE OF WATER DEMANDS AND HISTORICAL WATER EFFICIENCY ACTIVITIES

This section provides an overview of the historical water demand trends as well as the influence of historical water demand management on water use and forecasted future water demands.

2.1 Demographics and Key Characteristics of the Service Area

CWCWD provides potable water to a service area that encompasses approximately 250 square miles. The District provides service to approximately 2,597 taps for various end users. Over the past 20 years, the District has seen a steady tap growth rate between one and two percent per year. There continues to be the steady shift within the District from a rural setting to a more urban-style development.

The District breaks its billing system into the following categories: residential, commercial, town master meters, and bulk water sales.

Population Growth

The State of Colorado experienced tremendous population growth during the period of 1990 through 2019. The South Platte River Basin was the fastest growing basin in the State and Weld County is predicted to be one of the top fastest growing counties in the State (DOLA 2017). The Colorado Department of Local Affairs (DOLA) projects Weld County's population will increase at a rate varying from 1.9% and 3.5% through 2050 (Figure 2-1).

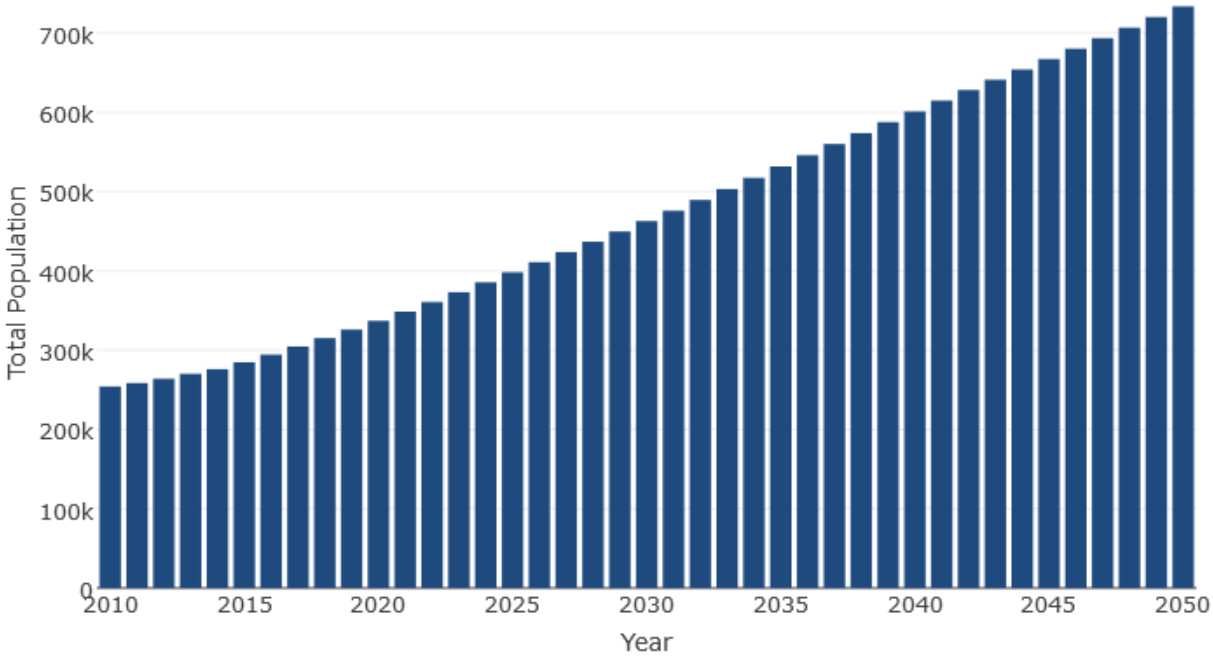

Figure 2-1: Weld County Population Projections (DOLA 2017)

Based on the District's population data, the 2010 United States Census data of 2.77 people per home (tap), and DOLA growth projections, the following table provides the historical and 10-year population projections (Table 2-1).

Table 2-1: CWCWD Historical and 8-year Population Projections

Year	District Population
2013	7,076
2014	7,177
2015	7,322
2016	7,460
2017	8,516
2018	8,641
2019	8,766
2020	8,890
2021	9,015
2022	9,140
2023	9,264
2024	9,389
2025	9,514
2026	9,638
2027	9,763

2.2 Historical Water Demands

The water consumption discussed in this WEP is based on the CWCWD water year (November to October).

Annual Distributed Treated Water

Distributed treated water is provided exclusively by CLFP and is delivered to District customers via shared water transmission mains with LTWD and District distribution mains. While the equivalent taps being serviced by the District increased by 35% since 2012, the average annual water production for the District through 2019 was virtually unchanged. There was a consistent rise in annual treated water from 2014 through 2018, however a surcharge was added in 2018 for customers that used more than their allotted amount. The effects of this surcharge were noticeable in 2019 as several large users found other sources of non-potable water.

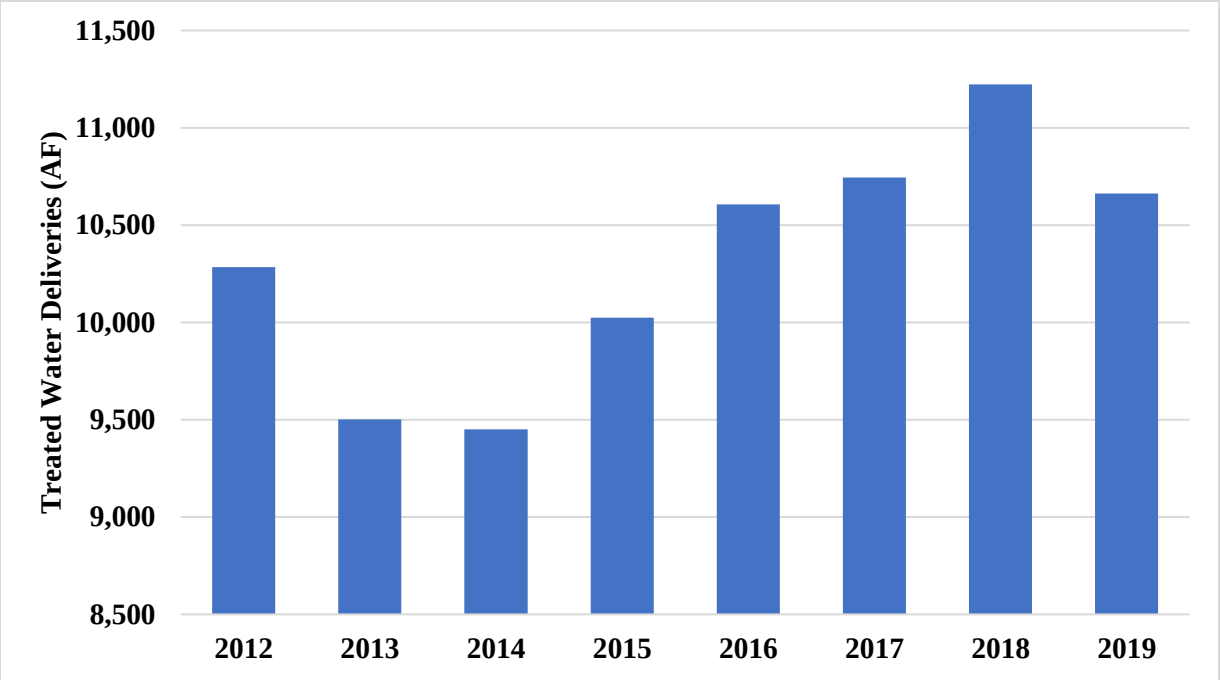

Figure 2-2: Annual Treated Water Deliveries

Water Demand by Customer Category

Based on District tap and master meter readings, Figure 2-3 provides the annual distribution of water use by sector over the past eight years. There are no known limitations associated with the availability of the District's demand data reported herein.

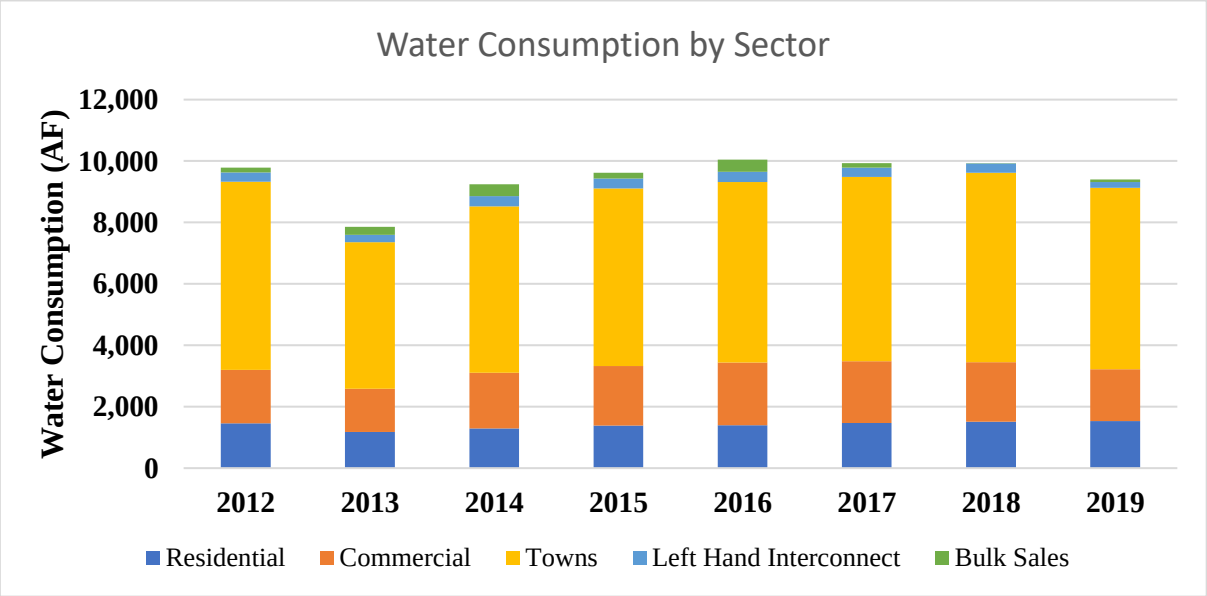

Figure 2-3: Annual Water Consumption by Sector

Since the District has limited control over the water consumption within the Towns or LHWD, the following graph provides a more detailed breakdown of water consumption by customer category for District customers.

The total water demand for the District in 2019 was ~10,895 AF. Within the District, the largest demands have historically been from Public Service, oil and gas, dairy, and feedlot operations.

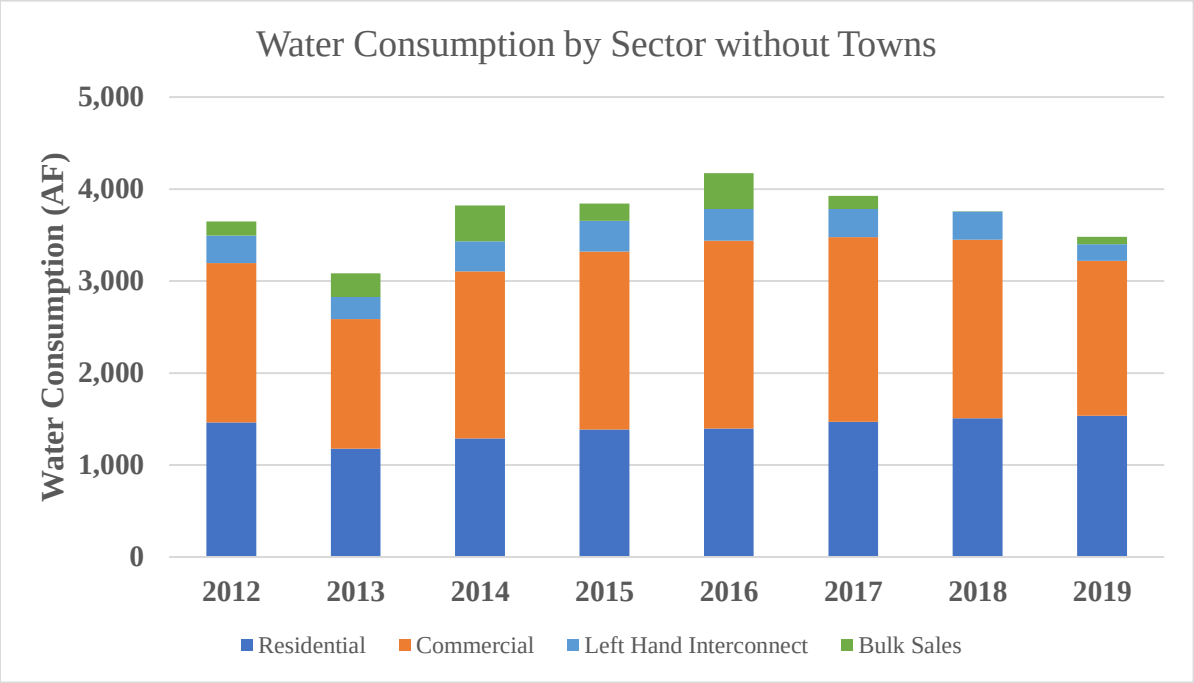

Figure 2-4: Annual Water Consumption by Customer Category without Towns and LHWD

Monthly Treated Water Deliveries

The District, like other utilities in arid climates, experiences an increase in water usage in the summer months for irrigation. However, since most of the District's population is rural, the summer demands only experience a 1.57 peaking factor. Meanwhile, the Towns the District serve have an average peaking factor of 1.84. Each town has implemented their own water conservation program, which is not influenced by the District.

Based on the following District demand patterns (excluding the Towns and LHWD), it was important to focus the water efficiency efforts on summer demands.

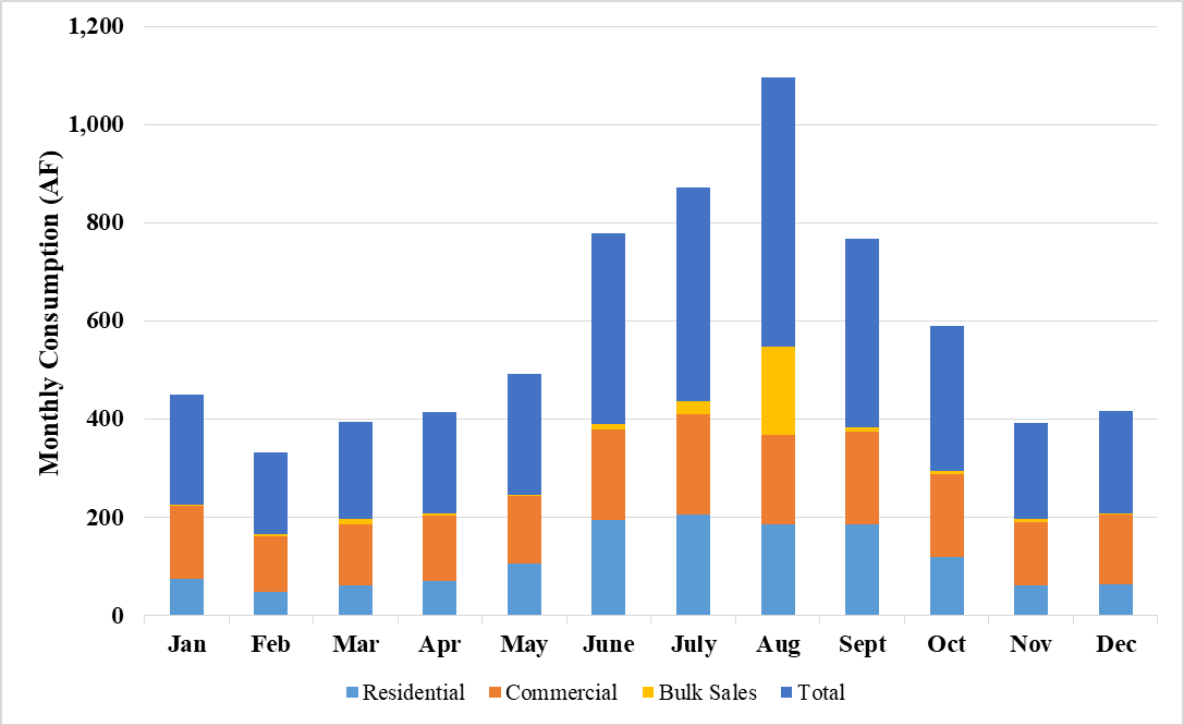

Figure 2-5: Monthly Water Consumption by Customer Category, 2017 Calendar Year

The comparison between the system-wide per capita water use and the single-family residential per capita water use helps highlight the significant impact of water use by the commercial customer category identified in Section 2.1.

Table 2-2: System-Wide and Single-Family Residential Per Capita Water Use

Water Year	System-Wide Per Capita Water Use Per Capita (gpcd)	Single Family-Residential Water Use Per Capita (gpcd)
2013	326	139
2014	386	148
2015	405	157
2016	412	156
2017	402	158
2018	393	158
2019	361	152

Annual Non-Revenue Water

District annual non-revenue water consists of documented system losses and unaccounted for losses. Documented system losses were high in 2013 due to the considerable damage sustained during the historic September 2013 flood. Based on a comparison between what CLFP billed the District from master meters and what the District billed its customers, the estimated annual non-revenue water is reported in the following table.

Table 2-3: Annual Non-Revenue Water

Water Year	CLFP Billing (ac-ft)	CW District Billing (ac-ft)	Non-revenue Water (ac-ft)*	Non-Revenue Water (%)
2015	10,025	9,623	402	4.0%
2016	10,607	10,046	561	5.3%
2017	10,745	9,934	811	7.5%
2018	11,223	9,921	1,302	11.6%
2019	10,662	9,395	1267	11.8%
			5-year average	***8.04%***

*****Non-revenue water is system losses which also accounts for infiltration and evaporation losses for the emergency water storage in Dry Creek which is on average 330 ac-ft per year.

Non-Potable Water Use

The District does not have raw distributed non-potable water or reclaimed water systems at this time. The towns of Frederick and Firestone have installed and implemented a non-potable water system. Data is not yet available due to recent activities.

2.3 Past and Current Demand Management Activities and Impact to Demands

This section summarizes the past and current demand management activities, goals and project savings. The demand management activities will be outlined, along with other factors which have impacted historical water use.

The District's existing demand management activities include a number of utility maintenance programs, incentives, and education activities. For example, the District utilizes an advanced leak detection system to reduce inefficiencies in the distributions of its supplies. All water entering and leaving the distribution system is monitored and flow levels are reported every 2.5 minutes. Such a system allows the District to immediately detect and repair leaks. In addition, the District regularly upgrades its distribution lines to improve system efficiency and reliability. CWCWD also uses newsletters to promote voluntary upgrades to water efficient fixtures and appliances. As outlined by the District, Table 2-4 lists historical water conservation measures.

Table 2-4: Historical Demand Management

Historical and Current Water Efficiency Activities	Historical Period of Implementation
Foundational Activities	
Universal metering	
Leak Detection / Repair/Replacement/Pressure Zones	1988 – present
Surcharge over the set allotment per tap size	Prior to 1991 – present
Voluntary water reuse in dairies and agricultural operations	1963 – present
Encourage use of non-treated water for commercial and industrial processes, including agriculture	1988 – present
Promote use of non-potable systems in Towns served through the billing structure	2005 – present
Loop system to reduce flushing for dead end lines	
Targeted Technical Assistance and Incentives	
Customer water use audits, as requested	2005 – present
Tap fee reduction for reduced tap size and surcharges	2005 – present
Peak demand for tap fee reduction for non-potable irrigation water	2003 – present
Ordinances and Regulations	
Plumbing Code Adoption by County and Municipality	1997 – present
Water Shortage Contingency Plan	2002 – present
Education Activities	
Water Bill Inserts	2005 – present
Annual Newsletters / Water Quality Report	2005 – present
Website Link to NCWCD Water Conservation Page	2003 – present

No quantifiable water savings goals were developed during previous efforts. Goals were only established for varying levels of water shortage conditions (i.e. mild, moderate, severe, critical, and emergency conditions).

2.4 Demand Forecasts

This section provides demand forecasts assuming no modifications to the currently implemented demand management activities. Based on the steady growth rate recently experienced and projected in Weld County, the planning horizon for this WEP is seven years and includes annual monitoring reviews-. This planning horizon was based on the duration of forecasted future demands that can be estimated to a reasonable level of certainty.

District Tap Sales

The period of 1990 to 2005 experienced unprecedented growth rates with annual sales as high as 135 equivalent taps. The following graph shows a significant drop in the annual tap sales between 2005 and 2011 and a large spike in 2017, but sales leveled off in 2018 and 2019.

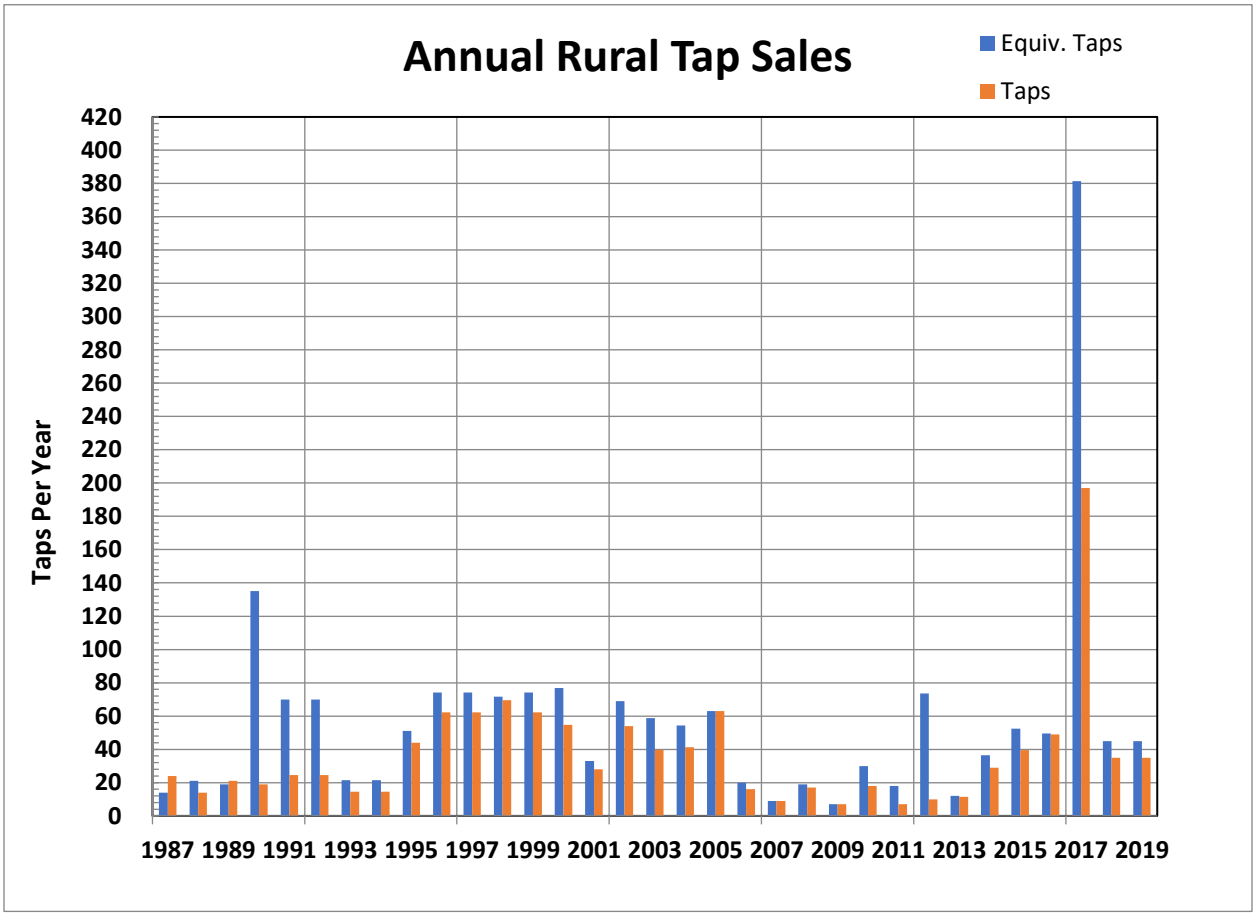

Figure 2-6: Annual Tap Sales

Using historical tap sales as a basis of the District's demand forecast, Figure 2-7 shows four projections for the number of taps that will be served by the District. The blue line shows the actual taps served by the District while the green line shows the number of equivalent taps served. The projected taps assume the annual tap sales will remain constant at 35 taps per year or 45 equivalent taps per year until 2050. The green line shows the total number of equivalent taps. The red line shows the projected number of taps using the annual growth rates projected by the State DOLA office.

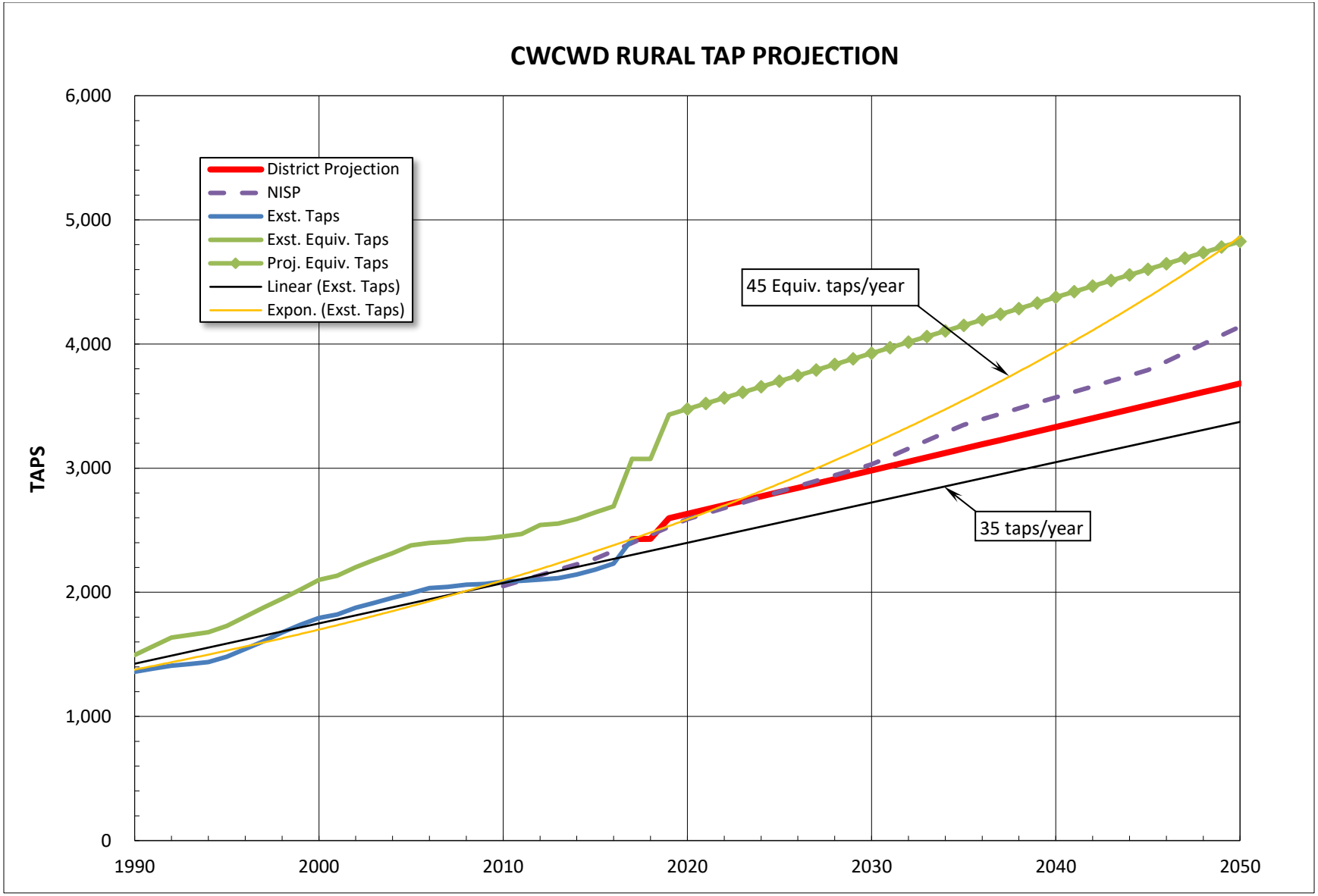

Figure 2-7: Projected Taps

The following figure estimates the unmodified forecasted water demands based on the District's existing water efficiency program. The annual demand is projected to be 4,708 AF in 2027.

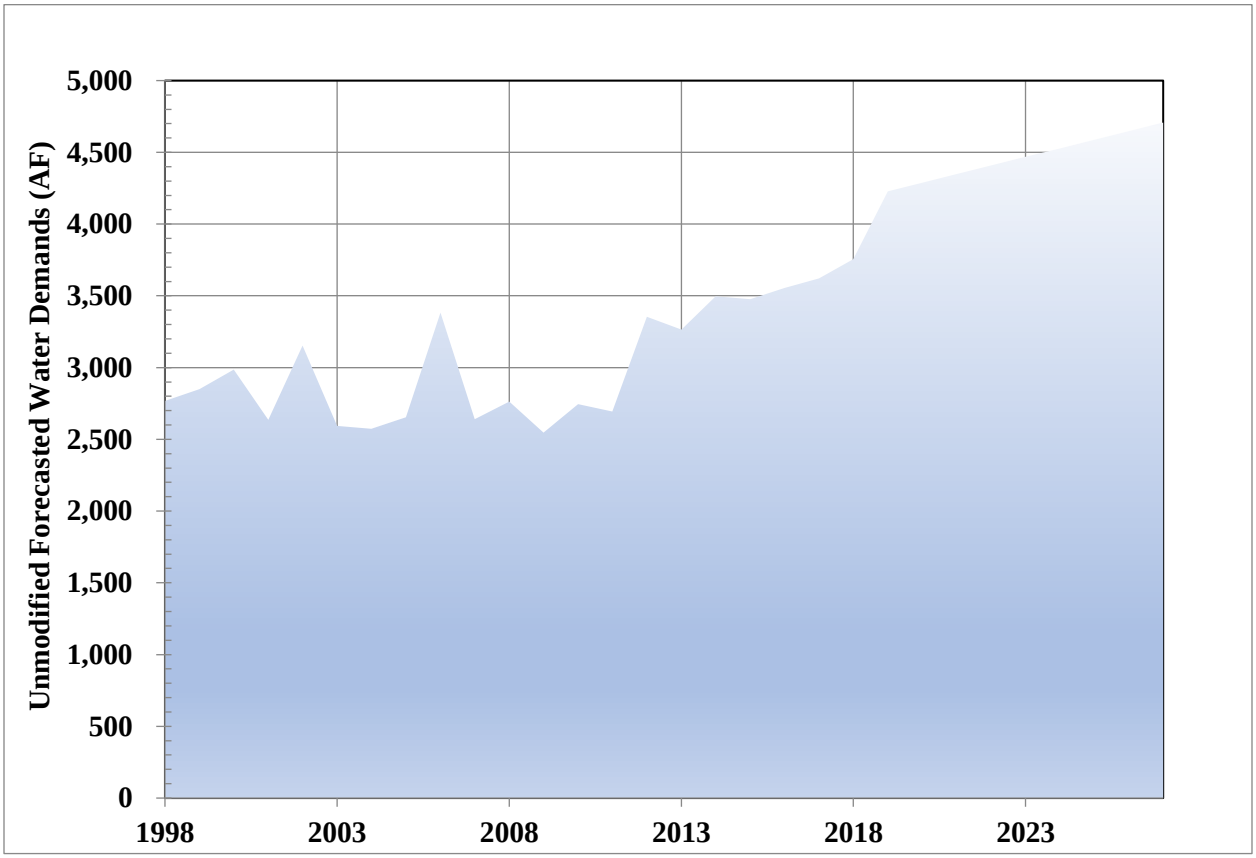

Figure 2-8: Unmodified Forecasted Water Demands

3 INTEGRATED PLANNING AND WATER CONSERVATION BENEFITS AND GOALS

This section focuses on the role of water efficiency in the District water supply planning efforts. The water supply needs for the District are identified and the estimated costs for developing, operating, and maintaining the water supply and infrastructure is projected over the planning period. Based on the anticipated long-term water savings achieved through the District's water efficiency efforts, the District will adjust its water supply planning and decision making.

3.1 Water Efficiency and Water Supply Planning

Review of the projected demands and the available water supply indicates the District should have adequate supplies from C-BT and NISP to meet projected demands through 2045. Considering the length of time it takes to develop new supplies, the District should continue its current program of purchasing additional C-BT shares when they become available, and should also explore alternative supplies, including groundwater supplies in the area. The local areas within the District boundaries experience high groundwater levels and frequent flooding (e.g. LaSalle). Increased groundwater pumping would help eliminate these issues and increase the District's raw water supplies but would require costly capital improvements.

3.2 Water Efficiency Goals

A collaborative effort between District staff, officials, and consulting engineers was used in the goal development process. Data on the District's water system and current conservation measures were studied to characterize water supply, water demand, and customer use. The goals were then established based on those that would have the highest probability of success and public acceptance.

Another factor considered in the goal development process was whether or not the goals can be implemented under an effective monitoring plan. Specific, attainable goals need to be tied to a timeline for implementation with regular review and potential modifications along the way. Thus, the District has set forth the following water efficiency goals through the development of this plan.

1. Reduce total annual treated water deliveries 5% per capita by 2027.
2. Targeted water savings goals for customer categories are as follows:
    a. Single-family residential per capita: 5%
    b. Commercial: 10%
    c. Annual non-revenue water: 10%

These goals are based on the existing system's conditions, current and future water demand projections, and anticipated needs for infrastructure improvements. In order to measure the goals' success, current District billing and CLFP production data will need to be compared to

historic data to identify trends and changes. During the preparation of this plan, all data has been readily accessible for evaluation.

4 SELECTION OF WATER EFFICIENCY ACTIVITIES

Within this chapter, CWCWD develops reasonable and measurable goals based on anticipated benefits for the water system and its customers. Water conservation measures remain the cheapest water supply alternative for predicted District growth.

4.1 Summary of Selection Process

The District used a four-phase process for selecting and fully evaluating water efficiency activities. The four phases include: 1) assessment; 2) identification; 3) qualitative screening; and 4) evaluation and selection.

Conservation measures are specific technologies or practices that directly reduce water use. The customer, rather than the water provider, must implement the demand-side measures. For example, it is the customer who replaces an old toilet with a water-efficient model. The water provider, on the other hand, implements the supply side measures such as leak repair to transmission lines.

Conservation programs are the activities that a water provider undertakes to encourage or require conservation measures. For instance, the water provider can offer rebates to customers who replace old toilets. A program by itself does not save water; however, in this example, it is a key precursor to leak repair, a measure that does save water.

CWCWD developed a universal list of topics regarding conservation measures or programs that could potentially be implemented. Those considered during the development of this Plan include the measures and programs identified in CWCB's Water Conservation Plan Development Guidance Document and as specified in CRS 37-60-126 (4) (a). Eleven topics of conservation measures or programs were considered as part of this step.

Conservation Measures, Demand-Side

1. Water-efficient fixtures and appliances, including toilets, urinals, showerheads, faucets, and washing machines.
2. Landscape efficiency, including low water use landscapes, drought-resistant vegetation, and efficient irrigation equipment and scheduling.
3. Industrial and commercial efficiency, including water-efficient processes.

Conservation Measures, Supply-Side

1. Asset management development and implementation.
2. Distribution system efficiency, including leak repair and removal of phreatophytes.

Conservation Programs, Demand-Side

1. Rate structure and billing systems designed to encourage efficiency, including volume billing and conservation (tiered) rate structure.
2. Regulations and/or Ordinances, addressing fixtures and appliances, landscapes, and water waste prohibition.
3. Increasing of surcharge rates for customers who over use their allotted resources.

Conservation Programs, Supply Side

1. Updating the District's web site to promote water conservation measures.
2. Asset management development and implementation.
3. Distribution system efficiency, including leak identification, meter testing and replacement, and analysis of non-account water.
4. Use of orthophosphate with state approval for maintaining cleaning infrastructure which greatly reduces the need for flushing of water mains.
5. Education and information dissemination, including public education, water-saving demonstrations, school programs, and water bill inserts.
6. Technical assistance, including water use audits targeted at large users and large landscapes.

Screening Criteria

Screening criteria were developed to eliminate certain conservation measures and programs from further consideration. These criteria were used to evaluate the effectiveness of each measure or program with respect to the District's system. The eleven topics of conservation measures and programs listed above were evaluated against the following criteria:

1. Lack of public acceptance.
2. Insufficient water savings.
3. Low benefit to cost ratio of implementation.
4. Already met by existing conservation measure or program.
5. Not applicable or relevant to CWCWD's water system.

Screening of Conservation Measures and Programs

The conservation measures and programs considered for implementation to the District's water conservation plan were screened to determine which ones would be further evaluated in the planning process. Each of the eleven measure or program topics is repeated below, followed by a brief explanation as to why they were or were not selected for further consideration.

Demand Side Measures and Programs

1. Water-efficient fixtures and appliances, including toilets, urinals, showerheads, faucets, and washing machines:

Water efficient fixtures are currently mandated within the District's supply area. *Further consideration is deemed unnecessary by Criteria 4*.

2. Landscape efficiency, including low water use landscapes, drought-resistant vegetation, and efficient irrigation equipment and scheduling:

   The District is not interested in examining and implementing efficient water sprinkler systems and scheduling for irrigation within public areas as this is not a major source of water usage. *Measures or programs related to this topic are deemed unnecessary for further consideration, by Criteria 2.*

3. Industrial and commercial efficiency, including water-efficient processes:

   Large industrial and commercial customers all acknowledge the benefit of water conservation. Water reuse systems are already extensively used by the large dairies in the area. *Measures or programs related to this topic are deemed unnecessary for further consideration, by Criteria 4.*

4. Water reuse systems and non-potable use:

   The District does not provide wastewater service; therefore, a reuse system is not relevant. In addition, the C-BT water is only allowed as a single use. *No further evaluation of non-potable water use is deemed appropriate for consideration.*

5. Distribution system efficiency and leak repair:

   The District performs ongoing maintenance and upgrades to the system to improve efficiency and reduce water loss. Every year, the entire system is driven and every meter is inspected. Any detected issues are given a "work order" and subsequently repaired. As line leakage is estimated at less than 5%, the District will likely consider utilizing leak detection on a regional basis. *Measures or programs related to leak repair are deemed appropriate for further consideration.*

6. Education and information dissemination, including public education, water-saving demonstrations, school programs, and water bill inserts:

   The District provides water saving pamphlets and presentations to schools and community organizations upon request. Additional conservation literature is in the process of being provided on the Districts website. *Measures or programs related to this topic are eliminated by Criteria 4.*

7. Technical assistance, including water use audits targeted at all users:

   The District monitors through a computer program through their metering system on a daily basis the water use for all customers and compares the current use to previous use and will notify the District staff of potential leaks or other issues. *Measures or programs related to this topic are deemed unnecessary for further consideration, by Criteria 4.*

8. Rate structure and billing systems designed to encourage efficiency, including volume billing and conservation (tiered) rate structure:

The District uses a monthly rate system with a minimum charge dependent upon the tap equivalent (TE), and a uniform block rate structure that increases with increased water usage (also dependent on TE). The existing water usage rates implemented by the District are provided in Table 5-1. For taps larger than 1TE, the base rate and gallon allotment are multiplied by the number of TE's (available TE's include 1TE, 2TE, 4TE, 9TE, and 25TE).The District periodically reviews its rate structure based on the cost of maintaining and operating its system. *Measures or programs related to this topic are deemed unnecessary for further consideration, by Criteria 4.*

Table 4-1: Existing Water Usage Rates

MONTHLY DETAILED RATE SCHEDULE EFFECTIVE NOVEMBER 1, 2019 through OCTOBER 31, 2020

USAGE 1000 Gals.	RATE Per TH Gallons	COST Amount 1991-2019	New Cost Per Mo.	USAGE 1000 Gals.	RATE Per TH Gallons	COST Amount 1991-2019	New Cost Per Mo.	USAGE 1000 Gals.	RATE Per TH Gallons	COST Amount 1991-2019	New Cost Per Mo.
2	5/8" Min.	$ 16.50	$17.82	44		$ 72.60	$ 78.42	86		$ 109.08	$115.44
3		$ 18.15	$19.60	45		$ 73.70	$ 79.61	87		$ 109.91	$116.27
4		$ 19.80	$21.38	46	$1.19	$ 74.80	$ 80.80	88		$ 110.74	$117.10
5		$ 21.45	$23.16	47		$ 75.90	$ 81.99	89		$ 111.57	$117.93
6		$ 23.10	$24.94	48		$ 77.00	$ 83.18	90		$ 112.40	$118.76
7		$ 24.75	$26.72	49		$ 78.10	$ 84.37	91		$ 113.23	$119.59
8	$1.78	$ 26.40	$28.50	50		$ 79.20	$ 85.56	92		$ 114.06	$120.42
9		$ 28.05	$30.28	51		$ 80.03	$ 86.39	93		$ 114.89	$121.25
10		$ 29.70	$32.06	52		$ 80.86	$ 87.22	94	$0.83	$ 115.72	$122.08
11		$ 31.35	$33.84	53		$ 81.69	$ 88.05	95		$ 116.55	$122.91
12		$ 33.00	$35.62	54		$ 82.52	$ 88.88	96		$ 117.38	$123.74
13		$ 34.65	$37.40	55		$ 83.35	$ 89.71	97		$ 118.21	$124.57
14		$ 36.30	$39.18	56		$ 84.18	$ 90.54	98		$ 119.04	$125.40
15	3/4" Min.	$ 37.95	$40.96	57		$ 85.01	$ 91.37	99		$ 119.87	$126.23
16		$ 39.60	$42.74	58		$ 85.84	$ 92.20	100		$ 120.70	$127.06
17		$ 41.25	$44.52	59		$ 86.67	$ 93.03	110		$ 129.00	$135.36
18		$ 42.90	$46.30	60	1" Min.	$ 87.50	$ 93.86	120		$ 137.30	$143.66
19		$ 44.55	$48.08	61		$ 88.33	$ 94.69	130		$ 145.60	$151.96
20		$ 46.20	$49.86	62		$ 89.16	$ 95.52	140		$ 153.90	$160.26
21		$ 47.30	$51.05	63	$0.83	$ 89.99	$ 96.35	150		$ 162.20	$168.56
22		$ 48.40	$52.24	64		$ 90.82	$ 97.18	200	1½" Min.	$ 203.70	$210.06
23		$ 49.50	$53.43	65		$ 91.65	$ 98.01	250		$ 245.20	$251.56
24		$ 50.60	$54.62	66		$ 92.48	$ 98.84	300		$ 278.20	$293.06
25		$ 51.70	$55.81	67		$ 93.31	$ 99.67	400	2" Min.	$ 344.20	$376.06
26		$ 52.80	$57.00	68		$ 94.14	$100.50	500		$ 410.20	$459.06
27		$ 53.90	$58.19	69		$ 94.97	$101.33	600	$0.83	$ 476.20	$542.06
28		$ 55.00	$59.38	70		$ 95.80	$102.16	700		$ 542.20	$625.06
29		$ 56.10	$60.57	71		$ 96.63	$102.99	800		$ 608.20	$708.06
30	$1.19	$ 57.20	$61.76	72		$ 97.46	$103.82	900	3" Min.	$ 674.20	$791.06
31		$ 58.30	$62.95	73		$ 98.29	$104.65	1000		$ 740.20	$874.06
32		$ 59.40	$64.14	74		$ 99.12	$105.48	1500	4" Min.	$ 1,070.20	$1,289.06
33		$ 60.50	$65.33	75		$ 99.95	$106.31	2000	$0.83	$ 1,400.20	$1,704.06
34		$ 61.60	$66.52	76		$100.78	$107.14	2500		$ 1,730.20	$2,119.06
35		$ 62.70	$67.71	77		$101.61	$107.97	3120	6" Min	$ 2,139.73	$2,633.66
36		$ 63.80	$68.90	78		$102.44	$108.80	5000		$ 3,380.20	$4,708.66
37		$ 64.90	$70.09	79		$103.27	$109.63		$0.83		
38		$ 66.00	$71.28	80		$104.10	$110.46				
39		$ 67.10	$72.47	81		$104.93	$111.29				
40		$ 68.20	$73.66	82		$105.76	$112.12				
41		$ 69.30	$74.85	83		$106.59	$112.95				
42		$ 70.40	$76.04	84		$107.42	$113.78				
43		$ 71.50	$77.23	85		$108.25	$114.61				

9. Regulations and/or Ordinances, addressing fixtures and appliances, landscapes, and water waste prohibition:

   The District operates under all applicable American Water Works Association (AWWA) standards, federal, and state laws and regulations and 2006 International Building Code (IBC). Therefore, no additional regulations or ordinances will be implemented. *Stricter enforcement and issuance of ordinances are deemed inappropriate for further consideration due to Criteria 4.*

10. Incentives, including rebates:

    The District does not currently offer lower tap fees for reduced tap size, nor is it willing to provide funds for a rebate program. The expense of such a program would probably not prove beneficial given the relatively small residential demand. The District primarily relies on the tiered rate structure as an incentive to reduce use. *Measures or programs related to this topic are deemed unnecessary for further consideration, by Criteria 2 and 3.*

11. Distribution system efficiency, including meter testing and replacement, and analysis of non-account water.

    As previously mentioned, the District strives to maintain a well-functioning system. Since installation of a metering system, non-account water has decreased to roughly 10%. The system is 100% metered, and the District practices regular maintenance and provides for main replacement. Additionally, large changes in meter readings between billing periods are investigated for potential leaks. *Measures or programs related to this topic are deemed unnecessary for further consideration, by Criteria 4.*

4.2 Demand Management Activities

In order to accomplish the goals of the water efficiency plan the District has undertaken specific activities aimed at ensuring that the water savings anticipated by the plan actually occur.

4.2.1 Foundational Activities

These activities focus on system operations and water efficiencies that are under the District's direct control and can improve the effectiveness of the planning efforts by ensuring sufficient metering and data tracking.

Metering

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 District calibrates larger sized meters on an annual basis to provide accuracy in meter readings.

Demand Data Collection and Billing Systems

The District utilizes SCADA and telemetry system on most PRV's, master meters, and pump stations to monitor demand, pressure, and flow control.

Water Efficiency-Oriented Rates and Tap Fees

In addition to the tiered rate structure, the District offers two different types of residential taps, a standard tap and a budget tap. 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.

System Water Loss Management and Control

Perform leak detection and repair on 10 miles of the distribution system per year.

Improve granularity and usefulness of data from asset condition assessment to enable CWCWD to shift from reactive to planned maintenance, and to improve asset performance and efficacy of capital investment programs. Software platforms are available to improve connectivity of operational data with capital investment planning modules.

4.2.2 Targeted Technical Assistance and Incentives

These measures cover activities that District and its customers can do to improve existing water efficiency.

Level 1 Utility Facility Water Efficiency

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.

Level 2 Management of Largest Customer Demands

There was a consistent rise in annual treated water from 2014 through 2018, however a surcharge rate was increased in 2016, 2017 and in 2018 for customers that used more than their allotted amount. The effects of this surcharge were noticeable in 2019 as several large users found other sources of non-potable water as the surcharge fees made it more cost effective to find other water.

Level 3 Management of Remaining Customer Demands

A majority of master meters in the District have been changed out for more accurate readings and to reduce real loss within the system. These master meters serve other water entities. The District has no water conservation authority over these entities.

4.2.3 Ordinances and Regulations

The District currently has no water efficiency ordinances or regulations as it has no land use authority. The responsibility to regulate and enforce water efficiency programs would fall primarily onto the towns and counties within the District. The District's most effective contribution to water efficiency is to encourage developers to limit outdoor use by offering taps that require less raw water to be dedicated such as an urban or indoor tap.

4.2.4 Education Activities

The Central Weld County Water District will continue to use the newsletter format to promote water conservation and voluntary upgrades to water efficient fixtures and appliances.

5 IMPLEMENTATION AND MONITORING PLAN

Within this section, CWCWD provides a synopsis of conservation measures and programs considered for potential implementation. A preliminary screening process is then applied to eliminate particular conservation measures and programs that do not meet the District's conservation goals. Those conservation measures and programs that remain are further evaluated in Section 6.

5.1 Implementation Plan

The implementation plan defines the process necessary to carry out the selected water efficiency activities. All activities are currently in place and will remain ongoing.

5.2 Monitoring Plan

Monitoring types of demand data can be beneficial in tracking the savings generated from implementing a water efficiency plan. CWCWD monitors total treated water produced on a daily basis. Other categories of raw and treated water and customer accounts are monitored on a monthly and annual basis.

As shown previously in this plan, one way to monitor water use is per customer category. District population can be tracked according to tap equivalents and published people per household values. The GPCD can then be tracked from year to year to monitor progress. Per tap or tap equivalent usage can be calculated for each of the categories.

6 ADOPTION OF NEW POLICY, PUBLIC REVIEW, AND FORMAL APPROVAL

This section addresses the public review and formal adoption process.

6.1 Adoption of New Policy

On August 20, 2020 the Board was presented the 2020 Water Efficiency Plan for Public Review. Public comments ended October 19, 2020.

6.2 Public Review Process

For this water planning process, the public was notified of the 60-day comment period from August 20, 2020 to October 19, 2020 and how to submit comments. Notifications were made in public places and in customer water bills. The plan was made available on the District's website and in its office for review.

6.3 Local Adoption and State Approval Processes

After the public comment period, the comments will be incorporated into the planning document as well as any additional revisions. The District Board will adopt the Plan and Staff will submit it to the CWCB. The CWCB will provide written notification of approval, conditional approval or disapproval within 90 days of submittal. Conditions for conditional approval or disapproval will be addressed if necessary.

6.4 Periodic Review and Update

The required schedule for updating the Water Efficiency Management Plan is seven years. The progress towards achieving the water savings goals will be monitored on an annual basis. The District will update this plan prior to seven years if implementation and actual water savings deviate too much. This deviation may be caused by several factors including higher than expected growth, less than anticipated participation or the inability to implement the plan due to lack of funding.

REFERENCES

AMEC Environment & Infrastructure. 2012. *Municipal Water Efficiency Plan Guidance Document*. Prepared for: Colorado Water Conservation Board.

American Water Works Association. 2006. *Water Conservation Programs – A Planning Manual. Manual of Water Supply Practices M52. First Edition*.

Aquacraft, Inc. 2009. *Utility Water Loss*. A Review of Current Practices in Colorado, Requirement in Other States, and New Procedures and Tools. Submitted to: Colorado Water Conservation Board.

Aquacraft, Inc. 2010. *Colorado Water Wise Guidebook of Best Practices for Municipal Water Conservation in Colorado*.

Billings, R. B and Jones, C.V. 2008. *Forecasting Urban Water Demand*. American Water Works Association.

CDM. 2011A. *Basin M&I Gap Analysis*. June 22, 2011. Memorandum to Colorado Water Conservation Board.

CDM. 2011B. *Colorado's Water Supply Future. Colorado Water Conservation Board. Statewide Water Supply Initiative 2010*. Prepared for: Colorado Water Conservation Board.

CWCWD. 2005. *Water Conservation Plan*. April 2005. Prepared for: Colorado Water Conservation Board.

Colorado Legislation. House Bill 04-1365.

Colorado Legislation. House Bill 10-1051.

Colorado Legislation. House Bill 91-1154.

Colorado's Water Plan. 2015.

DOLA. 2017. Population Data. *https://demography.dola.colorado.gov/population/*

Environmental Protection Agency. 1998. *Water Conservation Plan Guidelines*.

Farnsworth Group. 2012. *Water System Master Plan for Central Weld County Water District.* Prepared for Central Weld County Water District.

Flory, J.E., and T. Panella, 1994. *Long-term water conservation and shortage management practices: Planning that includes demand hardening*. Prepared for: California Urban Water Agencies.

Great Western Institute. 2005. *Water Conservation Plan Development Guidance Document*. Prepared for: Office of Water Conservation and Drought Planning Colorado Water Conservation Board.

Great Western Institute. 2010. *SWSI Conservation Levels Analysis Final Report*. Prepared for: Colorado Water Conservation Board.

Great Western Institute. 2011. *Draft Expanded SWSI Conservation Levels Analysis Draft Report*. Prepared for: Colorado Water Conservation Board.

HDR Engineering and West Sage Water Consultants. 2015. *South Platte Basin Implementation Plan.* Prepared for: South Platte Basin Roundtable/Metro Basin Roundtable.

Mayor, Peter and Little, David. 2006. *System Reliability and Demand Hardening Memo*. Prepared for: SWSI Conservation & Efficiency TRT M&I Question 1 Sub-group.

Northern Water. 2018a. Colorado-Big Thompson Project Map. http://www.northernwater.org/docs/Water_Projects/PDFmapsWaterProjs/CBTMap2.pdf (accessed May 3, 2018).

Northern Water. 2018b. Email communication with Carl Brouwer. May 7, 2018.

Appendix A

HOUSE BILL 04-1365

BY REPRESENTATIVE(S) Harvey, Frangas, May M., McFadyen, Plant, Rippy, Weissmann, and Wiens;
also SENATOR(S) Kester, Groff, Grossman, Hillman, and Tapia.

CONCERNING WATER PLANNING BY RETAIL WATER PROVIDERS.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. Legislative declaration. (1) The general assembly hereby finds and declares that:

(a) Colorado was the first western state to enact statewide water conservation legislation;

(b) Water conservation and drought mitigation planning will benefit all citizens of the state of Colorado;

(c) The "Water Conservation Act of 1991", which fostered a statewide policy of improved urban water use efficiency and conservation, provides the foundation that can now be enhanced to provide new technical and financial opportunities for Colorado's communities regarding water conservation and drought mitigation planning.

Capital letters indicate new material added to existing statutes; dashes through words indicate deletions from existing statutes and such material not part of act.

(2) It is therefore the purpose and intent of this act and the policy of this state to:

(a) Encourage wise water use and conservation and drought planning by those privately and publicly owned water agencies, utilities, and others with the legal obligation to supply, distribute, or otherwise provide water through technical assistance, information dissemination, and where appropriate, financial support;

(b) Encourage the state, the Colorado water conservation board, and water providers with knowledge of water conservation and drought mitigation planning to work with other water providers in developing and implementing water conservation and water use efficiencies and managing water supplies during periods of drought;

(c) Encourage smaller water providers to take advantage of state-provided resources to support local planning efforts; and

(d) Encourage and support implementation of this act, in particular those components of this act that relate to the development and implementation of a statewide water supply initiative.

SECTION 2. 37-60-124, Colorado Revised Statutes, is amended to read:

37-60-124. Office of water conservation and drought planning - creation - powers and duties. (1) There is hereby created as an office under the Colorado water conservation board the office of water conservation AND DROUGHT PLANNING. The office shall have such staff as are necessary and appropriate to carry out the duties established for the office.

(2) The office of water conservation AND DROUGHT PLANNING shall promote water ~~use efficiency~~ CONSERVATION AND DROUGHT MITIGATION PLANNING by performing, to the degree feasible, duties including, but not limited to, the following:

(a) PARTICIPATING AS A MEMBER OR CHAIRPERSON OF ANY STATE WATER AVAILABILITY TASK FORCES ESTABLISHED TO MONITOR, FORECAST, MITIGATE, OR PREPARE FOR DROUGHT;

~~(a)~~ (b) Acting as a repository for water ~~use efficiency~~ CONSERVATION AND DROUGHT MITIGATION PLANNING information;

(c) DISSEMINATING WATER CONSERVATION, DROUGHT MITIGATION PLANNING, AND RELATED INFORMATION TO WATER PROVIDERS AND THE GENERAL PUBLIC;

~~(b)~~ (d) ~~Provision of~~ PROVIDING technical assistance to and working with municipal, ~~and other urban~~ INDUSTRIAL, AGRICULTURAL, AND OTHER water providers and state agencies as they plan for, evaluate, and implement water ~~use efficiency measures to provide necessary water services~~ CONSERVATION PLANS AND PROGRAMS, DROUGHT MITIGATION PLANS, OR BOTH;

~~(c)~~ (e) Coordination of the planning for and assistance in the implementation of water ~~use efficiency~~ CONSERVATION plans by state agencies pursuant to section 37-96-103 (4);

~~(d)~~ (f) Administration of financial assistance for water ~~use efficiency~~ CONSERVATION AND DROUGHT MITIGATION PLANNING AND IMPLEMENTATION measures and ~~water use efficiency~~ programs; ~~as authorized in section 37-60-125;~~ and

~~(e)~~ (g) ~~Preparation for review and approval by the board for transmittal to the general assembly such information and recommendations concerning water use efficiency projects and proposed water use efficiency measures by state and local governments, including the analysis of water use efficiency programs already in place.~~ EVALUATING WATER CONSERVATION AND DROUGHT MITIGATION PLANS RELATED TO THE USE OF SUCH PLANS BY WATER PROVIDERS TO ADDRESS WATER NEEDS AND TO PREPARE FOR WATER-RELATED EMERGENCIES BASED UPON POLICIES AND GUIDELINES ADOPTED BY THE BOARD PURSUANT TO SECTION 37-60-126.

(3) The personal services, operating, travel and subsistence, capital, and legal services expenses of administering the office of water conservation AND DROUGHT PLANNING and the programs and activities authorized by subsection (2) of this section may be paid from such moneys as are appropriated, allocated, or otherwise credited to the Colorado water conservation board construction fund.

(4) Repealed.

SECTION 3. 37-60-126, Colorado Revised Statutes, is amended to read:

37-60-126. Water conservation and drought mitigation planning - programs - relationship to state assistance for water facilities - guidelines. (1) As used in this section AND IN SECTION 37-60-126.5, unless the context otherwise requires:

(a) "Covered entity" means each municipality, agency, utility, including any privately owned utility, or other publicly owned entity with a legal obligation to supply, distribute, or otherwise provide water at retail to domestic, commercial, industrial, or public facility customers, and ~~which~~ THAT has a total demand for such customers of two thousand acre-feet or more. ~~in calendar years 1989 or thereafter.~~

(b) "OFFICE" MEANS THE OFFICE OF WATER CONSERVATION AND DROUGHT PLANNING CREATED IN SECTION 37-60-124.

(c) "PLAN ELEMENTS" MEANS THOSE COMPONENTS OF WATER CONSERVATION PLANS THAT ADDRESS WATER-SAVING MEASURES AND PROGRAMS, IMPLEMENTATION REVIEW, WATER-SAVING GOALS, AND THE ACTIONS A COVERED ENTITY SHALL TAKE TO DEVELOP, IMPLEMENT, MONITOR, REVIEW, AND REVISE ITS WATER CONSERVATION PLAN.

~~(b)~~ (d) "Public facility" means any facility operated by an instrument of government for the benefit of the public, including, but not limited to, a government building, park or other recreational facility, school, college, university, or other educational institution, highway, hospital, or stadium.

(e) "WATER CONSERVATION" MEANS WATER USE EFFICIENCY, WISE WATER USE, WATER TRANSMISSION AND DISTRIBUTION SYSTEM EFFICIENCY, AND SUPPLY SUBSTITUTION. THE OBJECTIVE OF WATER CONSERVATION IS A LONG-TERM INCREASE IN THE PRODUCTIVE USE OF WATER SUPPLY IN ORDER TO SATISFY WATER SUPPLY NEEDS WITHOUT COMPROMISING DESIRED WATER SERVICES.

(f) "WATER-SAVING MEASURES AND PROGRAMS" INCLUDES A DEVICE, PRACTICE, HARDWARE, OR EQUIPMENT THAT REDUCES WATER DEMANDS AND A PROGRAM THAT USES A COMBINATION OF MEASURES AND INCENTIVES THAT

ALLOW FOR AN INCREASE IN THE PRODUCTIVE USE OF A LOCAL WATER SUPPLY.

(2) (a) Within five years after June 4, 1991, each covered entity ~~which~~ THAT does not have a water use efficiency plan satisfying the provisions of ~~subsections~~ SUBSECTION (4) ~~and (5)~~ of this section shall, subject to section 37-60-127, develop, adopt, make publicly available, and implement a plan pursuant to which such covered entity shall encourage its domestic, commercial, industrial, and public facility customers to use water more efficiently. Any covered entity that makes an initial determination that it has satisfied ~~subsections~~ SUBSECTION (4) ~~and (5)~~ of this section shall, within five years ~~of~~ AFTER June 4, 1991, give public notice of such determination at an official meeting of the appropriate governing body of the covered entity.

(b) THE OFFICE SHALL REVIEW PREVIOUSLY SUBMITTED CONSERVATION PLANS TO EVALUATE THEIR CONSISTENCY WITH THE PROVISIONS OF THIS SECTION AND THE GUIDELINES ESTABLISHED PURSUANT TO SUBSECTION (7) OF THIS SECTION.

(c) ON AND AFTER JULY 1, 2006, A COVERED ENTITY THAT SEEKS FINANCIAL ASSISTANCE FROM EITHER THE BOARD OR THE COLORADO WATER RESOURCES AND POWER DEVELOPMENT AUTHORITY SHALL SUBMIT TO THE BOARD A NEW OR REVISED PLAN TO MEET WATER CONSERVATION GOALS ADOPTED BY THE COVERED ENTITY, IN ACCORDANCE WITH THIS SECTION, FOR THE BOARD'S APPROVAL PRIOR TO THE RELEASE OF NEW LOAN PROCEEDS.

(3) The manner in which the covered entity develops, adopts, makes publicly available, and implements a plan established pursuant to subsection (2) of this section shall be determined by the covered entity IN ACCORDANCE WITH THIS SECTION. The plan shall be accompanied by a ~~program~~ SCHEDULE for its implementation. THE PLANS AND SCHEDULES SHALL BE PROVIDED TO THE OFFICE WITHIN NINETY DAYS AFTER THEIR ADOPTION. FOR THOSE ENTITIES SEEKING FINANCIAL ASSISTANCE, THE OFFICE SHALL THEN NOTIFY THE COVERED ENTITY AND THE APPROPRIATE FINANCING AUTHORITY THAT THE PLAN HAS BEEN REVIEWED AND WHETHER THE PLAN HAS BEEN APPROVED IN ACCORDANCE WITH THIS SECTION.

(4) ~~In developing~~ A plan DEVELOPED BY A COVERED ENTITY pursuant to subsection (2) of this section ~~each covered entity~~ shall, ~~consider at least the following water-saving measures~~ AT A MINIMUM, CONSIDER THE

FOLLOWING PLAN ELEMENTS:

(a) THE WATER-SAVING MEASURES AND PROGRAMS TO BE USED BY THE COVERED ENTITY FOR WATER CONSERVATION. IN DEVELOPING THESE MEASURES AND PROGRAMS, EACH COVERED ENTITY SHALL, AT A MINIMUM, CONSIDER THE FOLLOWING:

(I) Water-efficient fixtures and appliances, including toilets, urinals, showerheads, and faucets;

~~(b)~~ (II) Low water use landscapes, DROUGHT-RESISTANT VEGETATION, REMOVAL OF PHREATOPHYTES, and efficient irrigation;

~~(c)~~ (III) Water-efficient industrial and commercial water-using processes;

~~(d)~~ (IV) Water reuse systems; ~~both potable and nonpotable;~~

~~(e)~~ (V) Distribution system leak IDENTIFICATION AND repair;

~~(f)~~ (VI) Dissemination of information regarding water use efficiency measures, including by public education, customer water use audits, and water-saving demonstrations;

~~(g)~~ ~~(I)~~ (VII) Water rate structures and billing systems designed to encourage water use efficiency in a fiscally responsible manner;

~~(H)~~ (VIII) The department of local affairs may provide technical assistance to covered entities that are local governments to implement water billing systems that show customer water usage and that implement tiered billing systems;

~~(h)~~ (IX) Regulatory measures ~~including standards for the use of water use efficiency fixtures and landscapes, and ordinances, codes, or other law~~ designed to encourage water ~~use efficiency~~ CONSERVATION;

~~(i)~~ (X) Incentives to implement water ~~use efficiency~~ CONSERVATION techniques, including rebates to customers ~~or others~~ to encourage the installation of water ~~use efficiency~~ CONSERVATION measures;

~~(5)~~ (b) ~~The plan to be adopted under subsection (2) of this section~~

~~shall contain~~ A section stating the covered entity's best judgment of the role of water ~~use efficiency~~ CONSERVATION plans in the covered entity's water supply planning;

(c) THE STEPS THE COVERED ENTITY USED TO DEVELOP, AND WILL USE TO IMPLEMENT, MONITOR, REVIEW, AND REVISE, ITS WATER CONSERVATION PLAN;

(d) THE TIME PERIOD, NOT TO EXCEED SEVEN YEARS, AFTER WHICH THE COVERED ENTITY WILL REVIEW AND UPDATE ITS ADOPTED PLAN; AND

(e) EITHER AS A PERCENTAGE OR IN ACRE-FOOT INCREMENTS, AN ESTIMATE OF THE AMOUNT OF WATER THAT HAS BEEN SAVED THROUGH A PREVIOUSLY IMPLEMENTED CONSERVATION PLAN AND AN ESTIMATE OF THE AMOUNT OF WATER THAT WILL BE SAVED THROUGH CONSERVATION WHEN THE PLAN IS IMPLEMENTED.

~~(6) Except for the elements of a water use efficiency plan which a covered entity has already implemented prior to June 4, 1991, the plan required under subsection (2) of this section shall set forth results of the consideration of the water-efficient measures and techniques set forth in subsection (4) of this section and adopted by the covered entity after June 4, 1991.~~

~~(7)~~ (5) ~~Except for the elements of a water use efficiency plan which a covered entity has already implemented prior to June 4, 1991, before adopting any other major elements of a plan under subsections (2) and (4) of this section,~~ EACH COVERED ENTITY SHALL FOLLOW THE COVERED ENTITY'S RULES, CODES, OR ORDINANCES TO MAKE THE DRAFT PLAN AVAILABLE FOR PUBLIC REVIEW AND COMMENT. IF THERE ARE NO RULES, CODES, OR ORDINANCES GOVERNING THE COVERED ENTITY'S PUBLIC PLANNING PROCESS, THEN each covered entity shall publish a draft plan, give public notice of the plan, make such plan publicly available, and solicit comments from the public for a period of not less than sixty days after the date on which the draft plan is made publicly available. Reference shall be made in the public notice to the elements of a plan that has already been implemented.

(6) THE BOARD IS HEREBY AUTHORIZED TO RECOMMEND THE APPROPRIATION AND EXPENDITURE OF SUCH REVENUES AS ARE NECESSARY FROM THE UNOBLIGATED BALANCE OF THE FIVE PERCENT SHARE OF THE

OPERATIONAL ACCOUNT OF THE SEVERANCE TAX TRUST FUND DESIGNATED FOR USE BY THE BOARD FOR THE PURPOSE OF THE OFFICE PROVIDING ASSISTANCE TO COVERED ENTITIES TO DEVELOP WATER CONSERVATION PLANS THAT MEET THE PROVISIONS OF THIS SECTION.

(7) BY JULY 1, 2005, THE BOARD SHALL ADOPT GUIDELINES FOR THE OFFICE TO REVIEW WATER CONSERVATION PLANS SUBMITTED BY COVERED ENTITIES. THE GUIDELINES SHALL DEFINE THE METHOD FOR SUBMITTING PLANS TO THE OFFICE, HOW THE OFFICE WILL PRIORITIZE THE DISTRIBUTION OF MONEYS, AND THE INTEREST RATE SURCHARGE PROVIDED FOR IN PARAGRAPH (d) OF SUBSECTION (9) OF THIS SECTION.

(8) A covered entity may at any time adopt changes to ~~the~~ AN APPROVED plan IN ACCORDANCE WITH THIS SECTION AFTER NOTIFYING AND RECEIVING CONCURRENCE FROM THE OFFICE. If the proposed changes are major, the covered entity shall give public notice of the changes, make the changes available in draft form, and provide the public an opportunity to comment on such changes before adopting them IN ACCORDANCE WITH SUBSECTION (5) OF THIS SECTION.

(9) (a) ~~After five years following June 4, 1991,~~ Neither the board nor the Colorado water resources and power development authority shall ~~accept an application from~~ RELEASE LOAN PROCEEDS TO a covered entity ~~for financial assistance in the construction of any water diversion, storage, conveyance, water treatment, or wastewater treatment facility~~ unless such covered entity ~~includes~~ PROVIDES a copy of the water ~~use efficiency~~ CONSERVATION plan adopted pursuant to this section; ~~and a copy of other such plans, if any, otherwise adopted by the covered entity.~~ EXCEPT THAT THE BOARD OR THE AUTHORITY MAY RELEASE SUCH LOAN PROCEEDS IF THE BOARD OR THE AUTHORITY, AS APPLICABLE, DETERMINES THAT AN UNFORSEEN EMERGENCY EXISTS IN RELATION TO THE COVERED ENTITY'S LOAN APPLICATION, IN WHICH CASE THE BOARD OR THE AUTHORITY, AS APPLICABLE, MAY IMPOSE A LOAN SURCHARGE UPON THE COVERED ENTITY THAT MAY BE REBATED OR REDUCED IF THE COVERED ENTITY SUBMITS AND ADOPTS A PLAN IN COMPLIANCE WITH THIS SECTION IN A TIMELY MANNER AS DETERMINED BY THE BOARD OR THE AUTHORITY, AS APPLICABLE.

(b) ~~After five years from June 4, 1991,~~ The board and the Colorado water resources and power development authority, to which any covered entity has applied for financial assistance for the construction of a water diversion, storage, conveyance, water treatment, or wastewater treatment

facility, shall consider any water ~~use efficiency~~ CONSERVATION plan filed pursuant to ~~paragraph (a) of~~ this ~~subsection (9)~~ SECTION in determining whether to render financial assistance to such entity. Such consideration shall be carried out within the discretion accorded the board and the Colorado water resources and power development authority pursuant to which such board and authority render such financial assistance to such covered entity.

(c) The board and the Colorado water resources and power development authority may enter into a memorandum of understanding with each other for the purposes of avoiding delay in the processing of applications for financial assistance covered by this section and avoiding duplication in the consideration required by ~~paragraph (b) of~~ this subsection (9).

(10) Repealed.

(11) (a) ~~On and after April 25, 2003,~~ Any new restrictive covenant that prohibits or limits the installation or use of drought-tolerant vegetative landscapes is prohibited.

(b) As used in this subsection (11), "restrictive covenant" means any covenant, restriction, or condition applicable to real property for the purpose of controlling land use, but does not include any covenant, restriction, or condition imposed on such real property by any governmental entity.

SECTION 4. Article 60 of title 37, Colorado Revised Statutes, is amended BY THE ADDITION OF A NEW SECTION to read:

37-60-126.5. Drought mitigation planning - programs - relationship to state assistance. (1) AS USED IN THIS SECTION, UNLESS THE CONTEXT OTHERWISE REQUIRES, "DROUGHT MITIGATION" MEANS THE PLANNING AND IMPLEMENTATION OF ACTIONS AND PROGRAMS USED IN PERIODS OF UNUSUAL WATER SCARCITY, WITH A COMBINATION OF ACTIONS AND PROGRAMS TAKEN BEFORE A DROUGHT TO REDUCE THE OCCURRENCE AND SEVERITY OF WATER SUPPLY SHORTAGES, AND ACTIONS AND PROGRAMS TAKEN DURING A DROUGHT TO MANAGE WATER SUPPLIES AND WATER DEMAND APPROPRIATELY.

(2) THE OFFICE SHALL DEVELOP PROGRAMS TO PROVIDE TECHNICAL ASSISTANCE TO COVERED ENTITIES AND OTHER STATE OR LOCAL GOVERNMENTAL ENTITIES IN THE DEVELOPMENT OF DROUGHT MITIGATION PLANS.

(3) THE BOARD IS HEREBY AUTHORIZED TO RECOMMEND THE APPROPRIATION AND EXPENDITURE OF SUCH REVENUES AS IS NECESSARY FROM THE UNOBLIGATED BALANCE OF THE FIVE PERCENT SHARE OF THE OPERATIONAL ACCOUNT OF THE SEVERANCE TAX TRUST FUND DESIGNATED FOR USE BY THE BOARD FOR THE PURPOSE OF ASSISTING COVERED ENTITIES AND OTHER STATE AND LOCAL GOVERNMENTAL ENTITIES TO DEVELOP DROUGHT MITIGATION PLANS IDENTIFIED AS SUFFICIENT BY THE OFFICE.

(4) BY JULY 1, 2005, THE BOARD SHALL ADOPT GUIDELINES FOR THE OFFICE TO USE IN REVIEWING AND EVALUATING DROUGHT MITIGATION PLANS SUBMITTED BY COVERED ENTITIES IN ACCORDANCE WITH THIS SECTION. THE GUIDELINES SHALL DEFINE THE METHOD FOR SUBMITTING PLANS TO THE OFFICE AND SHALL SPECIFY HOW THE OFFICE WILL PRIORITIZE THE DISTRIBUTION OF MONEYS.

SECTION 5. Effective date. This act shall take effect at 12:01 a.m. on the day following the expiration of the ninety-day period after final adjournment of the general assembly that is allowed for submitting a referendum petition pursuant to article V, section 1 (3) of the state constitution (August 4, 2004, if adjournment sine die is on May 5, 2004); except that, if a referendum petition is filed against this act or an item, section, or part of this act within such period, then the act, item, section, or

part, if approved by the people, shall take effect on the date of the official declaration of the vote thereon by proclamation of the governor.

Lola Spradley
SPEAKER OF THE HOUSE
OF REPRESENTATIVES

John Andrews
PRESIDENT OF
THE SENATE

Judith Rodrigue
CHIEF CLERK OF THE HOUSE
OF REPRESENTATIVES

Mona Heustis
SECRETARY OF
THE SENATE

APPROVED 6/4/2004 at 11:05 A.

Bill Owens
GOVERNOR OF THE STATE OF COLORADO

Appendix B

37-60-126. Water conservation and drought mitigation planning - programs - relationship to state assistance for water facilities - guidelines - water efficiency grant program - repeal.

(1) As used in this section and section 37-60-126.5, unless the context otherwise requires:

(a) "Agency" means a public or private entity whose primary purpose includes the promotion of water resource conservation.

(b) "Covered entity" means each municipality, agency, utility, including any privately owned utility, or other publicly owned entity with a legal obligation to supply, distribute, or otherwise provide water at retail to domestic, commercial, industrial, or public facility customers, and that has a total demand for such customers of two thousand acre-feet or more.

(c) "Grant program" means the water efficiency grant program established pursuant to subsection (12) of this section.

(d) "Office" means the office of water conservation and drought planning created in section 37-60-124.

(e) "Plan elements" means those components of water conservation plans that address water-saving measures and programs, implementation review, water-saving goals, and the actions a covered entity shall take to develop, implement, monitor, review, and revise its water conservation plan.

(f) "Public facility" means any facility operated by an instrument of government for the benefit of the public, including, but not limited to, a government building; park or other recreational facility; school, college, university, or other educational institution; highway; hospital; or stadium.

(g) "Water conservation" means water use efficiency, wise water use, water transmission and distribution system efficiency, and supply substitution. The objective of water conservation is a long-term increase in the productive use of water supply in order to satisfy water supply needs without compromising desired water services.

(h) "Water conservation plan", "water use efficiency plan", or "plan" means a plan adopted in accordance with this section.

(i) "Water-saving measures and programs" includes a device, a practice, hardware, or equipment that reduces water demands and a program that uses a combination of measures and incentives that allow for an increase in the productive use of a local water supply.

(2) (a) Each covered entity shall, subject to section 37-60-127, develop, adopt, make publicly available, and implement a plan pursuant to which such covered entity shall encourage its domestic, commercial, industrial, and public facility customers to use water more efficiently. Any state or local governmental entity that is not a covered entity may develop, adopt, make publicly available, and implement such a plan.

(b) The office shall review previously submitted conservation plans to evaluate their consistency with the provisions of this section and the guidelines established pursuant to paragraph (a) of

subsection (7) of this section.

(c) On and after July 1, 2006, a covered entity that seeks financial assistance from either the board or the Colorado water resources and power development authority shall submit to the board a new or revised plan to meet water conservation goals adopted by the covered entity, in accordance with this section, for the board's approval prior to the release of new loan proceeds.

(3) The manner in which the covered entity develops, adopts, makes publicly available, and implements a plan established pursuant to subsection (2) of this section shall be determined by the covered entity in accordance with this section. The plan shall be accompanied by a schedule for its implementation. The plans and schedules shall be provided to the office within ninety days after their adoption. For those entities seeking financial assistance, the office shall then notify the covered entity and the appropriate financing authority that the plan has been reviewed and whether the plan has been approved in accordance with this section.

(4) A plan developed by a covered entity pursuant to subsection (2) of this section shall, at a minimum, include a full evaluation of the following plan elements:

(a) The water-saving measures and programs to be used by the covered entity for water conservation. In developing these measures and programs, each covered entity shall, at a minimum, consider the following:

(I) Water-efficient fixtures and appliances, including toilets, urinals, showerheads, and faucets;

(II) Low water use landscapes, drought-resistant vegetation, removal of phreatophytes, and efficient irrigation;

(III) Water-efficient industrial and commercial water-using processes;

(IV) Water reuse systems;

(V) Distribution system leak identification and repair;

(VI) Dissemination of information regarding water use efficiency measures, including by public education, customer water use audits, and water-saving demonstrations;

(VII) Water rate structures and billing systems designed to encourage water use efficiency in a fiscally responsible manner;

(VIII) The department of local affairs may provide technical assistance to covered entities that are local governments to implement water billing systems that show customer water usage and that implement tiered billing systems;

(IX) Regulatory measures designed to encourage water conservation;

(X) Incentives to implement water conservation techniques, including rebates to customers to encourage the installation of water conservation measures;

(b) A section stating the covered entity's best judgment of the role of water conservation plans in the covered entity's water supply planning;

(c) The steps the covered entity used to develop, and will use to implement, monitor, review, and revise, its water conservation plan;

(d) The time period, not to exceed seven years, after which the covered entity will review and update its adopted plan; and

(e) Either as a percentage or in acre-foot increments, an estimate of the amount of water that has been saved through a previously implemented conservation plan and an estimate of the amount of water that will be saved through conservation when the plan is implemented.

(5) Each covered entity and other state or local governmental entity that adopts a plan shall follow the entity's rules, codes, or ordinances to make the draft plan available for public review and comment. If there are no rules, codes, or ordinances governing the entity's public planning process, then each entity shall publish a draft plan, give public notice of the plan, make such plan publicly available, and solicit comments from the public for a period of not less than sixty days after the date on which the draft plan is made publicly available. Reference shall be made in the public notice to the elements of a plan that have already been implemented.

(6) The board is hereby authorized to recommend the appropriation and expenditure of such revenues as are necessary from the unobligated balance of the five percent share of the operational account of the severance tax trust fund designated for use by the board for the purpose of the office providing assistance to covered entities to develop water conservation plans that meet the provisions of this section.

(7) (a) The board shall adopt guidelines for the office to review water conservation plans submitted by covered entities and other state or local governmental entities. The guidelines shall define the method for submitting plans to the office, the methods for office review and approval of the plans, and the interest rate surcharge provided for in paragraph (a) of subsection (9) of this section.

(b) If no other applicable guidelines exist as of June 1, 2007, the board shall adopt guidelines by July 31, 2007, for the office to use in reviewing applications submitted by covered entities, other state or local governmental entities, and agencies for grants from the grant program and from the grant program established in section 37-60-126.5 (3). The guidelines shall establish deadlines and procedures for covered entities, other state or local governmental entities, and agencies to follow in applying for grants and the criteria to be used by the office and the board in prioritizing and awarding grants.

(8) A covered entity may at any time adopt changes to an approved plan in accordance with this section after notifying and receiving concurrence from the office. If the proposed changes are major, the covered entity shall give public notice of the changes, make the changes available in draft form, and provide the public an opportunity to comment on such changes before adopting them in accordance with subsection (5) of this section.

(9) (a) Neither the board nor the Colorado water resources and power development authority shall release loan proceeds to a covered entity unless such covered entity provides a copy of the water conservation plan adopted pursuant to this section; except that the board or the authority may release such loan proceeds if the board or the authority, as applicable, determines that an unforseen emergency exists in relation to the covered entity's loan application, in which case the

board or the authority, as applicable, may impose a loan surcharge upon the covered entity that may be rebated or reduced if the covered entity submits and adopts a plan in compliance with this section in a timely manner as determined by the board or the authority, as applicable.

(b) The board and the Colorado water resources and power development authority, to which any covered entity has applied for financial assistance for the construction of a water diversion, storage, conveyance, water treatment, or wastewater treatment facility, shall consider any water conservation plan filed pursuant to this section in determining whether to render financial assistance to such entity. Such consideration shall be carried out within the discretion accorded the board and the Colorado water resources and power development authority pursuant to which such board and authority render such financial assistance to such covered entity.

(c) The board and the Colorado water resources and power development authority may enter into a memorandum of understanding with each other for the purposes of avoiding delay in the processing of applications for financial assistance covered by this section and avoiding duplication in the consideration required by this subsection (9).

(10) Repealed.

(11) (a) Any section of a restrictive covenant that prohibits or limits xeriscape, prohibits or limits the installation or use of drought-tolerant vegetative landscapes, or requires cultivated vegetation to consist exclusively or primarily of turf grass is hereby declared contrary to public policy and, on that basis, that section of the covenant shall be unenforceable.

(b) As used in this subsection (11):

(I) "Executive board policy or practice" includes any additional procedural step or burden, financial or otherwise, placed on a unit owner who seeks approval for a landscaping change by the executive board of a unit owners' association, as defined in section 38-33.3-103, C.R.S., and not included in the existing declaration or bylaws of the association. An "executive board policy or practice" includes, without limitation, the requirement of:

(A) An architect's stamp;

(B) Preapproval by an architect or landscape architect retained by the executive board;

(C) An analysis of water usage under the proposed new landscape plan or a history of water usage under the unit owner's existing landscape plan; and

(D) The adoption of a landscaping change fee.

(II) "Restrictive covenant" means any covenant, restriction, bylaw, executive board policy or practice, or condition applicable to real property for the purpose of controlling land use, but does not include any covenant, restriction, or condition imposed on such real property by any governmental entity.

(III) "Turf grass" means continuous plant coverage consisting of hybridized grasses that, when regularly mowed, form a dense growth of leaf blades and roots.

(IV) "Xeriscape" means the application of the principles of landscape planning and design, soil

analysis and improvement, appropriate plant selection, limitation of turf area, use of mulches, irrigation efficiency, and appropriate maintenance that results in water use efficiency and water-saving practices.

(c) Nothing in this subsection (11) shall preclude the executive board of a common interest community from taking enforcement action against a unit owner who allows his or her existing landscaping to die; except that:

(I) Such enforcement action shall be suspended during a period of water use restrictions declared by the jurisdiction in which the common interest community is located, in which case the unit owner shall comply with any watering restrictions imposed by the water provider for the common interest community;

(II) Enforcement shall be consistent within the community and not arbitrary or capricious; and

(III) Once the drought emergency is lifted, the unit owner shall be allowed a reasonable and practical opportunity, as defined by the association's executive board, with consideration of applicable local growing seasons or practical limitations, to reseed and revive turf grass before being required to replace it with new sod.

(12) (a) There is hereby created the water efficiency grant program for purposes of providing state funding to aid in the planning and implementation of water conservation plans developed in accordance with the requirements of this section and to promote the benefits of water efficiency. The board is authorized to distribute grants to covered entities, other state or local governmental entities, and agencies in accordance with its guidelines from the moneys transferred to and appropriated from the water efficiency grant program cash fund, which is hereby created in the state treasury. For the 2005-06 through 2010-11 fiscal years, the general assembly shall appropriate from the fund to the board up to five hundred thousand dollars annually for the purpose of providing grants to covered entities, other state and local governmental entities, and agencies in accordance with this subsection (12). Commencing July 1, 2008, the general assembly shall also appropriate from the fund to the board fifty thousand dollars each fiscal year through 2011-12 to cover the costs associated with the administration of the grant program and the requirements of section 37-60-124. However, if less than five hundred thousand dollars is appropriated or expended in any such fiscal year, an amount equal to the difference between five hundred thousand dollars and the amount actually appropriated or expended in that fiscal year shall be available for appropriation and expenditure to the grant program in the next fiscal year in addition to the five hundred thousand dollars available for appropriation in that fiscal year. Any moneys remaining in the fund on June 30, 2012, shall be transferred to the reserve in the operational account of the severance tax trust fund described in section 39-29-109.3 (3), C.R.S.

(b) Any covered entity or state or local governmental entity that has adopted a water conservation plan and that supplies, distributes, or otherwise provides water at retail to customers may apply for a grant to aid in the implementation of the water efficiency goals of the plan. Any agency may apply for a grant to fund outreach or education programs aimed at demonstrating the benefits of water efficiency. The office shall review the applications and make recommendations to the board regarding the awarding and distribution of grants to applicants who satisfy the criteria outlined in this subsection (12) and the guidelines developed pursuant to subsection (7) of this section.

(c) This subsection (12) is repealed, effective July 1, 2012.

Source: L. 91: Entire section added, p. 2023, § 4, effective June 4. **L. 99:** (10) repealed, p. 25, § 3, effective March 5. **L. 2003:** (4)(g) amended and (11) added, p. 1368, § 4, effective April 25. **L. 2004:** Entire section amended, p. 1779, § 3, effective August 4. **L. 2005:** (1), (2)(b), and (7) amended and (12) added, p. 1481, § 1, effective June 7; (11) amended, p. 1372, § 1, effective June 6. **L. 2007:** (1)(a), (2)(a), (5), (7), and (12) amended, p. 1890, § 1, effective June 1. **L. 2008:** IP(4) amended, p. 1575, § 30, effective May 29; (12)(a) amended, p. 1873, § 14, effective June 2.

Editor's note: Subsection (12) was originally enacted as (13) in House Bill 05-1254 but has been renumbered on revision for ease of location.

Cross references: (1) In 1991, this entire section was added by the "Water Conservation Act of 1991". For the short title and the legislative declaration, see sections 1 and 2 of chapter 328, Session Laws of Colorado 1991.

(2) For the legislative declaration contained in the 2004 act amending this section, see section 1 of chapter 373, Session Laws of Colorado 2004.