June 19, 2018

Mr. Ben Wade
Water Conservation Coordinator
Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

Re: Town of Dillon Water Efficiency Plan

Dear Ben,

We are pleased to submit the Town of Dillon Water Efficiency Plan to the Colorado Water Conservation Board (CWCB) Office of Water Conservation and Drought Planning for final review and approval. This water efficiency plan was developed in accordance with the State of Colorado's Municipal Water Efficiency Plan Guidance Document and was funded in part through a CWCB Water Conservation Planning grant. The Town's plan was developed in coordination with the Blue River Watershed regional water efficiency plan through a partnership that included two non-profit organizations, five water providers, and more than 30 engaged stakeholders.

The Blue River watershed is one of the most critical water supply headwaters in Colorado, serving both West and East Slope users. However, these water resources are stressed by a number of factors including population growth, a changing climate, and increasing demands on the river. These water efficiency plans empower Summit County water providers, residents, and businesses to work together as good stewards of our natural resources. Through a combination of regional and provider-led water efficiency programs, we strive to save 377 acre-feet of water annually by 2025 in the Blue River watershed. That's enough water to serve more than 1,600 people per year, about 5% of the population in the Blue River watershed within Summit County.

The Town of Dillon aims to save 10 ac-ft/yr of water in our service area through new water efficiency programs and will contribute staff time and financial resources as available to achieve these important goals.

Please let me know if you have any further questions.

Sincerely yours,

Robert J. Buras

Robert J. Buras
Utilities Superintendent
Town of Dillon

DILLON
COLORADO

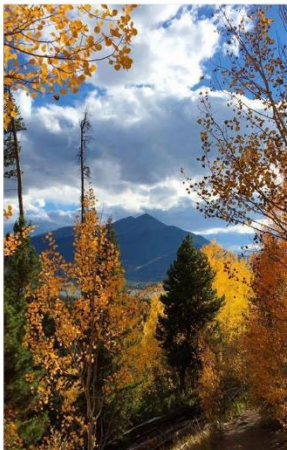
WATER EFFICIENCY PLAN

June 2018







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Developed in partnership with:

HIGH COUNTRY CONSERVATION CENTER

brendle GROUP

1 EXECUTIVE SUMMARY

In 2017, High Country Conservation Center and five water providers in Summit County (Copper Mountain Consolidated Metropolitan District, Town of Breckenridge, Town of Dillon, Town of Frisco, and Town of Silverthorne) partnered together for the development of water efficiency plans. A diverse stakeholder group developed a vision statement to guide efforts in the Blue River Watershed towards regional water efficiency:

Our vision is for water providers to continue supplying reliable, high quality water to the residents and visitors of Summit County while also:

- *Protecting the natural environment upon which our economy and prosperity are based.*
- *Ensuring the sustainability of our mountain lifestyle for current and future generations.*
- *Fostering a culture of environmental and social responsibility through education and actions.*
- *Inspiring collaboration and responsible stewardship of water resources across the State of Colorado.*

This water efficiency plan (the first that has been developed for the Town) serves to document the Town's existing and planned actions to ensure system reliability and the efficient use of available water supplies.

1.1 WHERE WE ARE NOW

The Town of Dillon is currently supplied solely by surface water, primarily from the Straight Creek Ditch.

Since 1998, the Town has experienced an average decline of almost 1% year-over-year in annual water sales, with 272 ac-ft in total sales in 2015. Normalizing for service population, the year-over-year decrease is even larger at 1.5%. In 2015, system-wide water use was 139 gallons per equivalent resident units (EQR).

The Town tracks water sales by three customer categories: single-family (representing 20% of average annual demands), multifamily (37%), and commercial (43%). The Town pays for its own water use, including indoor use at municipal facilities and outdoor irrigation associated with parks and other municipal facilities.

Non-revenue water uses include firefighting, hydrant flushing, and system leaks. Historically, the Town has done well managing system leaks. Annual non-revenue water estimates, expressed as a percentage of production volumes, have ranged from 4-15% over the period 2005-2015.

Outdoor water use represents 25% of annual demands on average, doubling system demands during the months of June-September. Small increases in water demands occur in December-March and are driven by the influx of transient residents and day visitors during ski season.

The Town has achieved past reductions in water use through implementation of various demand management activities, including:

- An advanced metering infrastructure system installed in 2011 that allows the Town to collect daily water use readings
- A monthly non-revenue water tracking system since 2004

- An inclining block rate structure, adopted in 2000, that provides some incentive for conservation
- Tap fees tied to building size to encourage water efficiency
- An outdoor water conservation ordinance, restricting outdoor water use during droughts, since 2002
- Improved indoor water efficiency through local plumbing codes and State fixture requirements
- Public outreach and education efforts

1.2 Where We Want to Go

This water efficiency plan was developed using a 2025 planning horizon, providing enough time to gain traction on new efficiency activities, and with an emphasis on successful implementation. Over the period 2018-2025, the Town aims to implement additional water efficiency activities to supplement existing activities to achieve the following goals:

- A 5% reduction in annual demands by 2025, compared to 2015 demands.
- A reduction in peak demands during the summer associated with outdoor water use.

1.3 How We Will Get There

New water efficiency activities were selected using multiple factors that included utility priorities, stakeholder input, opportunities for water savings, technical feasibility, and implementation capacity. When feasible, the efficiency activities were quantified in terms of their potential for water savings, customer sectors and end-uses impacted by the measure, and implementation costs.

Water Efficiency Activity	Sectors Impacted	Implementation Period	Projected Water Savings in 2025
Foundational Activities			
Billing Upgrades	All Customers	2020-Ongoing	Not Quantified
Advanced Metering Infrastructure and Enhanced Water Loss Control	All Customers	2020-Ongoing	5.5 ac-ft/yr
Conservation-Oriented Rates	All Customers	2019-Ongoing	Not Quantified
Institutional Collaboration	Utility	2017-Ongoing	Not Quantified
Targeted Technical Assistance and Incentives			
Indoor Water Efficiency	Residential	2018-Ongoing	1.2 ac-ft/yr
Outdoor Water Efficiency	Residential & HOA	2018-Ongoing	2.8 ac-ft/yr
Ordinances and Regulations			
Land Use Planning	All Customers	2017-Ongoing	Not Quantified
Education Activities			
Education and Outreach	All Customers	2018-Ongoing	Not Quantified
		Total Savings in 2025	**9.5 ac-ft/yr**

1.4 How We Will Stay on Track

This water efficiency plan includes implementation action plans for the planned water efficiency activities to help the Town achieve its goals. The action plans specify goals, strategies, action items, timelines, and resources for each activity.

2 ACKNOWLEDGEMENTS

The Town of Dillon would like to thank the following staff members and stakeholders who contributed to this water efficiency plan:

Town of Dillon
Robert Buras
Scott O'Brien

High Country Conservation
Jessica Burley
Jen Schenk
Troy Wineland

Middle Park Conservation District
Katlin Miller

Town of Breckenridge
Peter Grosshuesch
Laura Lynch

Copper Mountain Metro District
Allison Fulton
Rob Martin
Ed Pankevicius

Town of Frisco
Joyce Allgaier
Jeff Goble
Katie Kent
Dave Koop

Town of Silverthorne
Susan Lee
Zach Margolis
Chris Shelden
Julie Stennes

Brendle Group
Becky Fedak
Derek Hannon
Becca Stock
Amy Volckens

Other Stakeholder Groups
Alan Bacher – Summit Chamber of Commerce
Woody Bates – Summit County School District
Graeme Bilenduke - Copper Mountain Resort
Alan Blado – Liquid Descent Rafting
Abbey Browne – WoodWinds Property Management
Kevin Byrne – Vail Resorts
Mark Cassalia – Denver Water
Shellie Duplan – Buffalo Mountain Metro District
Brett Gracely – Colorado Springs Utility
Greg Hardy – Trout Unlimited
Dan Hendershott – Summit County
Stephen Hill – Snake River Water District
Bill Jackson – US Forest Service, Dillon District
Jeff Leigh – Mesa Cortina
John Longhill – Friends of Lower Blue River
Mike Nathan – Arapahoe Basin Ski Resort
Tom Oberheide – Waterworks West
Don Reimer – Summit County
Dave Schroeder – Colorado State University Extension
Elena Scott – Norris Design
Gary Shimanowitz – Vail Resorts
Karn Stiegelmeier – Summit County Board of County Commissioners
Ryan Taylor – Native Roots Dispensary
Ray Weller – Vail Resorts
Matt Wilits – Water Solutions Inc.
Scott Winter – Colorado Springs Utilities
Lane Wyatt – Northwest Colorado Council of Governments

3 INTRODUCTION

In 2017, the Town of Dillon (Town) completed a Comprehensive Plan that serves as the coordinated roadmap and policy plan for the Town (TOD 2017a). The Comprehensive Plan outlines the Town's values and goals, a few of which include preservation of the natural environment, protection of the community's water sources and water quality, and the provision of reliable public services to the existing and growing community. The Comprehensive Plan will be used by the Town as the basis for future decisions around capital improvements and for prioritizing implementation actions.

The Town's utilities department is responsible for providing water services, as well as collecting wastewater that is sent for treatment by the Joint Sewer Authority (JSA). The Town also works with the JSA for capacity planning purposes. The Comprehensive Plan specifies goals and policies for the water and sewer systems, among other community facilities and utilities (**Table 1**). The policies are very much concerned with ensuring system reliability and promoting conservation values.

Table 1. Goals and Policies for the Water and Sewer Systems (TOD, 2017a)

	Water System
Goal	To provide a water distribution and treatment system that meets the current and future needs of the community.
Policies	• Continue to look toward the future and provide adequate water rights and storage capacity to meet the future build-out of the community. • Require new developments to provide the water system improvements needed to meet the water needs of their projects. For single-family homes adjacent to existing water distribution lines, this may be as simple as tapping into the existing water lines and paying the appropriate plant investment fees / tap fees. While for annexation requests and rezoning for uses that utilize additional treated water, the applicant will be required to either provide the necessary facilities or financially guarantee their installation prior to them being needed. • Ensure that future water system improvements are undertaken in a manner that will be least disruptive to the environment and the community. • Continue to strive toward **conservation** of the community's water resources through policies in Town development ordinances. • Revise the current landscaping regulations and drought response program to reflect best management practices concerning **water conservation** and the use of drought-tolerant native plant species.

Sewer System	
Goal	To provide a sewer collection and treatment system that meets the current and future needs of the community.
Policies	• Continue to work cooperatively with the JSA to provide the future needed sewage facilities required for the build-out of the Dillon Comprehensive Plan Boundary. • Require new developments to provide sewage system improvements required to meet the needs of the project. For projects adjacent to existing sewer facilities, this may be as simple as tapping into the collection system and paying applicable plant investment fees / tap fees, while the development of projects away from any existing collection systems may need to provide a sewer line extension. Annexations and rezoning to high intensities should not be allowed unless the applicant is willing and able to provide and/or finance those improvements, including plant expansions necessary to meet the needs of the proposed project. • Seek to ensure that sewage system improvements are undertaken in a manner that will be least disruptive to the environment and the community. • Work cooperatively with the JSA to update the equivalent residence (EQR) schedule and inventory all commercial and residential buildings within the Town to accurately assess the taps needed.

The Town also has a 10-year capital improvement plan (CIP), which addresses maintenance of the water distribution system and upgrades to meet evolving water quality standards. For example, the CIP includes plans to upgrade distribution piping and to replace membranes in the water treatment plant. The CIP was last updated in 2016.

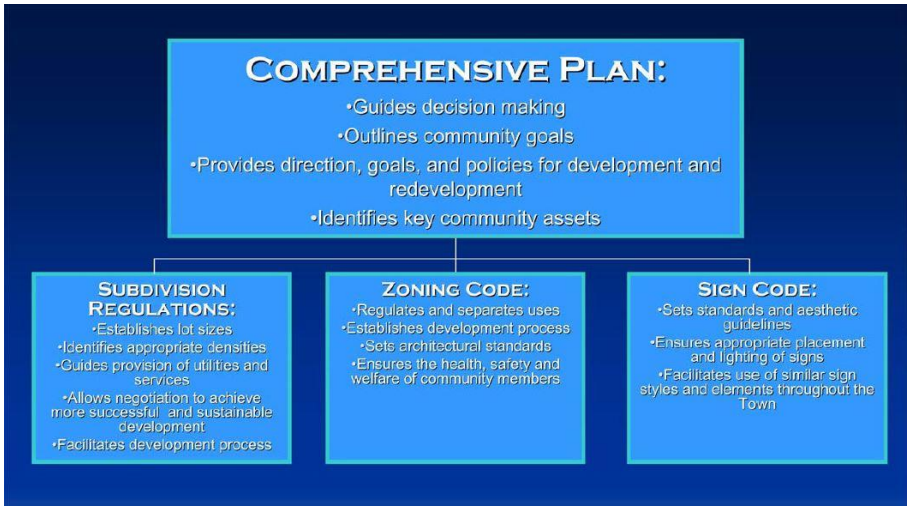

Figure 1. Capture from Dillon's 2017 Comprehensive Plan

3.1 WHY A WATER EFFICIENCY PLAN?

The Water Conservation Act of 2004 (HB04-1365) requires all covered entities, defined as retail water providers that sell more than 2,000 ac-ft/yr, to have a State-approved water efficiency plan. Although the Town is well below this threshold, the Town, along with neighboring water providers, looks to set an example for other mountain communities in preserving the natural environment and promoting conservation values. This water efficiency plan serves to describe the Town's history of water saving activities and future plans. The Town also seeks to leverage regional partnerships to effect change and encourage all residents and visitors to reduce water use.

3.2 The Planning Process

In 2017, High Country Conservation Center, Middle Park Conservation District, and five water providers in Summit County (Copper Mountain Consolidated Metropolitan District, Town of Breckenridge, Town of Dillon, Town of Frisco, and Town of Silverthorne) partnered together for the development of a regional water efficiency plan. Water efficiency plans were also developed for four of the individual water providers (excluding Town of Silverthorne) to represent the unique needs and opportunities for each service area. The regional water efficiency plan developed for the Blue River Watershed within Summit County elevates common themes and water saving opportunities outside of the participating service areas. Plan development was supported through a combination of grant funding from the Colorado Water Conservation Board (CWCB) under the Water Conservation Planning grant program, and cash and in-kind contributions from the participating providers.

The water efficiency plans were developed in accordance with the State of Colorado's *Municipal Water Efficiency Plan Guidance Document* (CWCB 2012). The plans were drafted using information and guidance provided by utility and planning staff in each community. Additionally, a diverse stakeholder group was formed to provide input on water savings goals, water efficiency activities, and implementation actions. In 2017, more than 30 stakeholders participated in a series of four planning workshops (baseline review, draft goals and efficiency activities, revised goals and efficiency activities, and implementation). Upon completion, the plans underwent a series of reviews by utility staff, the stakeholder group, the public, and CWCB staff. Finally, plans were submitted to the appropriate governing entity (town council or District board, as appropriate) for adoption.

3.3 Our Water Vision

The stakeholder group developed a vision statement to guide efforts in the Blue River Watershed towards regional water efficiency.

VISION STATEMENT

Our vision is for water providers to continue supplying reliable, high quality water to the residents and visitors of Summit County while also:

- Protecting the natural environment upon which our economy and prosperity are based.
- Ensuring the sustainability of our mountain lifestyle for current and future generations.
- Fostering a culture of environmental and social responsibility through education and actions.
- Inspiring collaboration and responsible stewardship of water resources across the State of Colorado.

4 SERVICE AREA CHARACTERISTICS

4.1 BOUNDARIES

The Town of Dillon is located in Summit County, a county whose economy is dominated by winter sports and water activities. The Town encompasses 2.3 sq mi on the north shore of Dillon Reservoir (**Figure 2**). The Town was incorporated in 1883 at the site of a trading post and stage stop. The Town has been moved three times: once to be closer to the railroad; once to be located between Blue River, Ten Mile Creek, and the Snake River; and most recently when the Denver Water Board purchased property for Dillon Reservoir and required residents to move out by 1961.

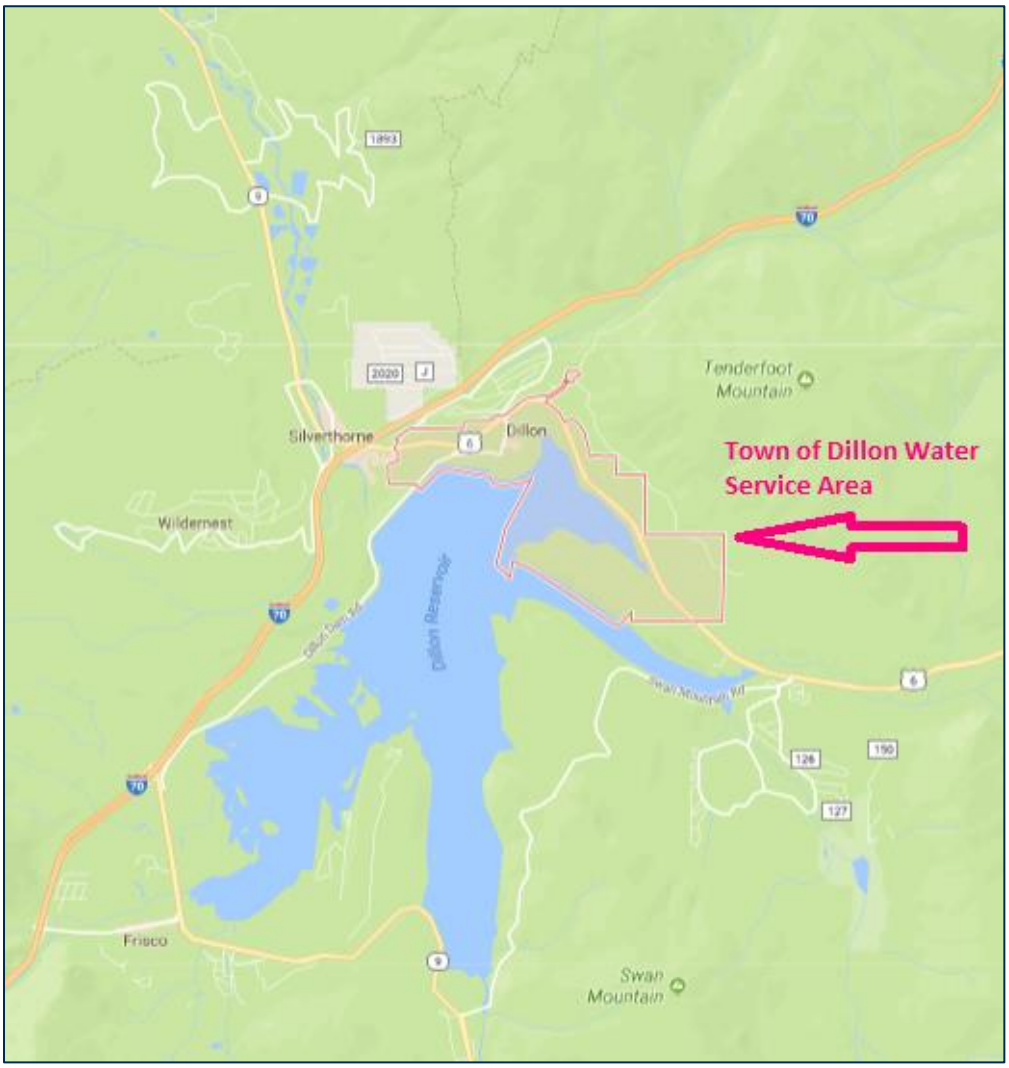

Figure 2: Town of Dillon Water Service Area (Map data © 2017 Google)

The Town provides water services for properties located within the incorporated boundaries. The Town offers to provide service outside of Town limits by special arrangement. Customers outside of the Town boundaries include the U.S. Forest Service and Solarado condominiums in Silverthorne.

4.2 POPULATION

The Town of Dillon is close to world-class ski resorts, including Breckenridge, Copper Mountain, Keystone, and Arapahoe Basin. As such, tourism in the area introduces a high degree of seasonality and variability into the service population. Since 2011, the permanent population of the Town has been approximately 910 residents (**Table 2**). The Town estimates that the annual average service population, including both the resident and visiting population, is 3,254 people. Moving forward, the Town assumes that Summit County will continue to experience the 2% annual growth rate that has been seen in the recent past, and that occupancy will continue to shift towards more year-round residents (CSDO 2015).

Table 2. Town of Dillon Population History

Year	Resident Population[1]	Average Annual Service Population	Equivalent Resident Units (EQR)
2011	904	3,254	1,731
2012	n/a[2]	3,254	1,735
2013	n/a	3,254	1,737
2014	n/a	3,254	1,738
2015	865	3,254	1,743
2016	961	3,254	1,745

[1] (USCB, 2017)

[2]n/a = not available

The Town uses Equivalent Resident Units (EQR) as the basis for utility capacity planning efforts. For the residential sector, one EQR is defined as a residence with up to three bedrooms and three bathrooms. Each additional bedroom or bathroom in the residence adds 0.1 EQR. In the commercial sector, buildings are assigned an EQR value based on occupancy and use patterns. Since 2011, EQR in the Town have increased by 0.2% on average year-over-year (**Table 2**).

4.3 RESIDENTIAL SECTOR

Housing in the Town reflects the characteristics of a recreational destination. Approximately 77% of the available housing units are designated as multifamily housing (ACS 2015). The remaining housing units are single-family detached (13%) and single-family attached (10%) homes. Due to the Town's relocation in the 1960s, very few of the buildings predate 1960. The average building age dates to the late 1970s and early 1980s (ACS 2015). Approximately 80% of the housing units in the Town are owned as second homes.

Older buildings represent an opportunity for indoor water savings through the replacement of indoor fixtures and appliances. The high proportion of multifamily units and the transient population represent challenges for water education and outreach efforts. The Town needs to engage and influence the larger visiting population to effect long-lasting water savings.

4.4 Commercial and Industrial Sector

The Town of Dillon provides 536 jobs, about 2/3 of which are in the private sector (ACS 2015). The largest employment sectors are entertainment, accommodation, food service, and retail associated with the tourism industry, followed by finance, insurance, and real estate. The remaining jobs represent government employment and self-employment.

5 Existing Water and Wastewater System

5.1 Raw Water Supplies[1]

The Town is currently supplied solely by surface water. The Town's primary water right is the Straight Creek Ditch, a very senior water right that can divert up to 3.5 cfs year-round for municipal purposes. The Town also has absolute surface water and storage rights that can be used for supplemental water supplies and augmentation/exchange. The last component of the Town's water rights portfolio includes decreed conditional points of diversion for alluvial wells along Straight Creek and the Blue River and for a future intake from Dillon Reservoir. A summary of the Town's water rights portfolio is included in **Table 3**.

Table 3. Water Rights Portfolio (NWCCOG 2004)

Water Right Name	Diversion Amount	Units	Uses	Appropriation Date	Adjudication Date	Absolute/ Conditional
Straight Creek Ditch	3.5	cfs	municipal	4/18/1899	3/2/1910	A
Dillon Ditch	2	cfs	municipal	1/9/1939	3/10/1952	A
Old Dillon Reservoir	46.14	af	municipal	1/9/1939	3/10/1952	A
Summit County Agreement	84	af	augmentation/ exchange			
Clinton Reservoir	20	af	augmentation/ exchange			
Dillon-Blue River Intake	5	cfs	municipal	12/16/1986		C
Town of Dillon Well No. 1	0.33	cfs	Municipal	9/29/1987	12/31/1987	C
Town of Dillon Well No. 2	0.44	cfs	Municipal	9/29/1987	12/31/1987	C
Town of Dillon Well No. 3	0.56	cfs	Municipal	9/29/1987	12/31/1987	C
Town of Dillon Well No. 4	0.44	cfs	Municipal	9/29/1987	12/31/1987	C
Town of Dillon Well No. 5	0.44	cfs	Municipal	9/29/1987	12/31/1987	C

For planning purposes, the Utilities Department projects system requirements at buildout in terms of EQR served and demand volumes. Based on current needs, currently projected needs at buildout, and current system capacities, the Town's existing water rights portfolio is adequate to ensure reliable water services into the future (**Table 4**).

[1] Much of the information in this section was taken from the Upper Colorado Basin Project report (NWCCOG 2017).

*Table 4. Buildout Projections**

Time Period	EQR	Demand/Capacity Volume (ac-ft/yr)
Current Services	1,743	272
Future Needs @ Buildout	2,403	701
Current Water System Capacity	3,000	1,681
Current Sewer System Allotment	2,403	n/a

**Note: buildout projections are subject to change.*

5.2 Treatment and Distribution

The Town owns and operates one water treatment plant (WTP) with a design capacity of 1.5 MGD, though the actual capacity is closer to 1.3 MGD. The Town currently treats on average 0.3 MGD with a peak daily use of 0.7 MGD. The treatment process includes membrane filtration, chlorine disinfection, corrosion control, and fluoridation. All water is treated to drinking water standards – the Town does not distribute raw, non-potable, or reclaimed water supplies.

The WTP feeds 13.5 miles of distribution piping in a looped distribution system. The system is gravity fed, with no pump stations. The system is broken into two pressure zones separated by two pressure reducing valves. The Town has emergency water interconnects with the Town of Silverthorne and the Dillon Valley Metropolitan District.

The Town has a total treated water storage capacity of 2 MG in two storage tanks: a 1.5 MG tank located along County Road 51 and a 0.5 MG tank at Corinthian Hill.

5.3 Water Sales and Non-Revenue Water Uses

The Town of Dillon sells water to residential and commercial customers. There are no industrial users or wholesale customers. Non-revenue water uses include firefighting, hydrant flushing, and system leaks. The Town of Dillon pays for its water use, including indoor use at municipal facilities and outdoor irrigation associated with parks and other municipal facilities. More information on non-revenue water is included in **Section 6.1.5** as part of the discussion of historical system demands.

5.4 Water Rates and Billing

In 2000, the Town adopted an inclining block rate structure to discourage excessive water use (**Table 5**). The rates are revised every five years based on budget projections. The rates were last evaluated in 2014, resulting in a modest (1-2%) increase being implemented in 2015 (HDR 2014). The pricing structure is based on EQR and does not differentiate between commercial and residential customers. Customers are billed monthly for their water use.

Table 5. 2017 Water Rates

Pricing Tier	Pricing Rate (per EQR per month)
Water Capital Fee	$23.30
0-6,000 gallons	$5.72/ 1,000 gallons
6,000 – 10,000 gallons	$6.81/ 1,000 gallons
>10,000 gallons	$8.37/ 1,000 gallons

5.5 Wastewater Collection and Treatment

The Town operates and maintains an internal sewer collection system that feeds into the JSA system. The JSA manages and operates three major sewer interceptor lines (the east bank, west bank, and joint interceptors) that transmit sewage to the Blue River Wastewater Treatment Plant (WWTP) located in the Town of Silverthorne. The JSA serves the Town of Dillon, the Town of Silverthorne, Buffalo Mountain Metropolitan District (Wildernest), the Mesa Cortina Subdivision, the Dillon Valley Metropolitan District, and the Union Corporation (Eagles Nest Planned Unit Development). The west bank interceptor line serves most of Silverthorne. The east bank interceptor serves some areas of Silverthorne, Dillon, and Dillon Valley.

The Blue River WWTP was originally constructed in 1972 as an aerated lagoon. It has since been upgraded to provide secondary and advanced sewage treatment. The plant has been expanded on three occasions and currently has a capacity of 4 MGD. Effluent from the Blue River WWTP is discharged into the Blue River below Dillon Reservoir north of Silverthorne.

In 2017, Town residents pay $41.20 per EQR per month for wastewater services.

5.6 System Reliability, Limitations, and Future Needs

5.6.1 Reliability

The Town's water system is highly reliable. The Town has never suffered from a loss of water supply or a failure to meet system demands, even during the significant droughts that occurred in 2002 and 2012.

To further ensure system reliability, the Town has implemented the following:

- **Reliability and Drought Planning.** The Town has conducted firm yield and raw water supply studies to evaluate system reliabilities and risks. The Town also has multiple drought augmentation plans.
- **Alternate water sources.** The Town's water rights portfolio includes alternate water supplies, some of which represent groundwater and some of which represent alternate points of diversion. In the future, the Town may construct supply wells or a new intake from Dillon Reservoir to address shortages or quality issues associated with Straight Creek (NWCCOG 2004).
- **Emergency interconnects.** The Town's distribution system includes emergency interconnects with the Town of Silverthorne and the Dillon Valley Metropolitan District. These interconnects may be used only pursuant to agreements with each entity (NWCCOG 2004), which are currently being updated.

5.6.2 Vulnerabilities

5.6.2.1 Source Water Protection and Quality

The Town's Comprehensive Plan identifies the protection of Straight Creek and Dillon Reservoir as crucial for recreation, the economy, and the Town's water supplies. Water quality concerns include:

- **Nonpoint source pollution.** Runoff, erosion, and phosphorous loading all contribute to water quality degradation in Straight Creek and Dillon Reservoir. In March 2002, the Town enacted water quality and erosion control regulations to mitigate these concerns. The Town has also partnered with the Colorado Department of Transportation (CDOT) to maintain the Straight Creek floodplain.

  Future areas of interest include: (1) working with Denver Water to preserve the areas near the lake to reduce erosion, and (2) monitoring areas of high tree mortality due to pine beetle infestation, and erosion mitigation following tree removal.

- **Spills.** The potential for non-hazardous or hazardous spills into Straight Creek from I-70 continues to be a concern.

5.6.2.2 Drinking Water Quality

In 2012-2014, three water samples from the Town's distribution system exceeded EPA's lead action level. A corrosion control system was installed in January 2015 that raises the pH of the water to prevent solubilizing lead. Since the corrosion control system was installed, lead concentrations in all samples taken from the distribution system have been below the action level.

However, there are continuing concerns in houses with piping susceptible to corrosion, especially homes built between 1983 and 1988 with copper pipes and lead solder. The Town has implemented a program to encourage residents of vulnerable houses to test their water. Twenty houses were tested in October 2016; four were found to have lead levels in the tap water that exceeded the EPA action level. Based on these test results, the Town further increased the pH of the water (from 8.15 to 8.5) to reduce the possibility of corrosion from residential lead solder. In 2017, the system was in compliance for lead and copper.

5.6.2.3 Wildfire

The Town's surface water supplies are vulnerable to the effects of wildfires. The Straight Creek watershed includes a significant amount of dead pine trees from the pine beetle infestation, increasing the potential for a significant fire event. When they do occur, wildfires create a triple threat to surface water quality:

- They increase the amount of rainfall during a storm event that is available for runoff. Wildfires burn vegetation whose canopy would normally intercept rainfall and whose roots would uptake water.
- They increase pollutant loads during subsequent storm events. Wildfires leave large amounts of debris and surface disturbances in their wake. In addition to the debris and sediment loads clogging intake infrastructure, source waters often experience spikes in turbidity, coliforms, total organic carbon, iron, manganese, and ammonia.

- They increase the surface runoff that occurs from subsequent storm events. Wildfires affect topsoil properties, making ground surfaces hydrophobic, so that water runs off rather than being infiltrated.

Wildfires can also affect the available quantity of water, if debris constricts water flow or alters the river channel.

The Town's strategies for mitigating the potential risk from wildfires include developing alternative water sources and establishing emergency interconnects with neighboring water systems.

5.6.2.4 Drought

Summit County has experienced significant periods of drought six times in the past 35 years, with the most recent occurring in 2002 and 2012 (AMEC 2013). While the Town has been able in the past to provide sufficient water supplies to meet demands, the droughts have highlighted the need for utility planning to avoid shortages in the future, particularly if a severe, multi-year drought were to occur.

In 2002, the Town passed an ordinance that allows the mayor or Town Council to impose emergency outdoor water use restrictions in the case of a drought. This ordinance is described in more detail in Section 6.2.4.

5.6.3 Future Needs

The water distribution system dates to the 1960s, when the Town was moved, so it is relatively new and in good shape. The Town has several system upgrades included in the 10-year capital improvement plan, including emergency generators and replacement membranes for the WTP, as well as upsizing and looping the distribution system.

6 Historical Water Demands and Demand Management

6.1 Historical Water Demands

The Town tracks several measures of system production, system efficiency, and water use patterns. The following sections present information that describes historical systemwide demands. All readily available information is presented; it should be noted that the period of available data varies among metrics. **Appendix A** contains tabular summaries of all data presented in this plan.

6.1.1 Annual Treated Water

Annual treated water production and sales volumes are shown in **Figure 3**. These data have not been normalized for weather or other factors that affect water demands from year to year. The Town has seen a 17% decrease in annual treated water sales over this period, which translates to average water savings of almost 1% year-over-year. Similarly, water production has decreased on average 1% year-over-year.

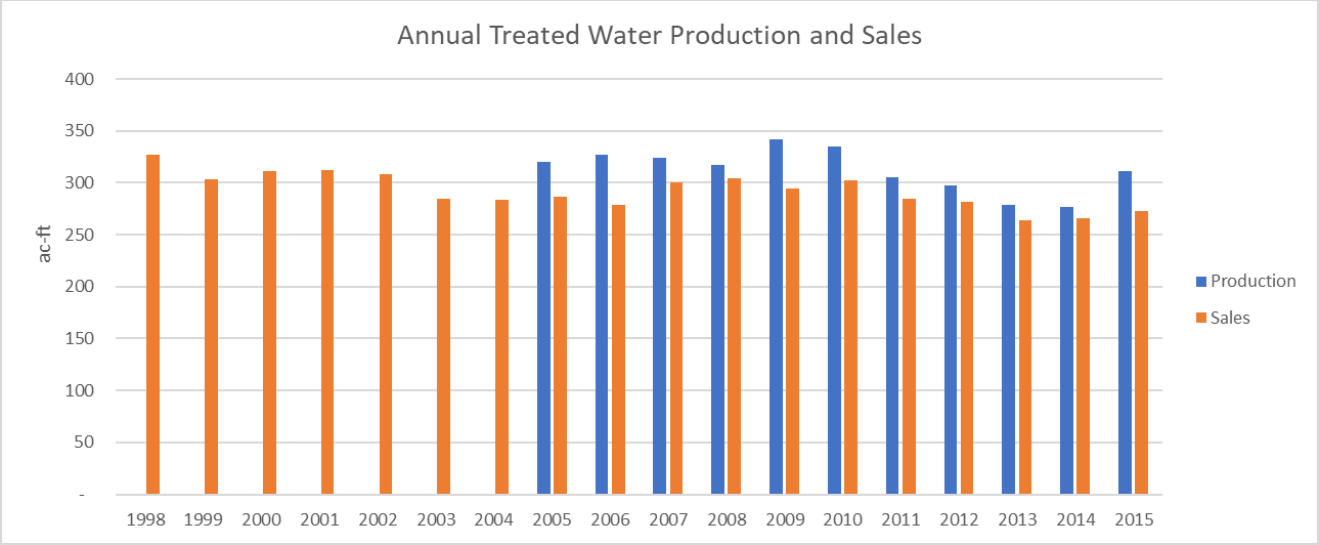

Figure 3: Annual Treated Water Production and Sales (1998-2015)

Each month, staff in the Utilities Department compare monthly water sales to the same month from the previous year, making note of factors that contributed to increases and decreases. Some notable factors that contributed to the variability in annual water sales shown in **Figure 3** include:

- In 2007, the Town's water use began being metered and recorded, resulting in an increase.
- In 2008, water used for lodgepole flushing contributed to an increase.
- In 2011, the Town's irrigation system was turned on late. Additionally, the Town began upgrading the water metering system, contributing to a decrease in demands.

The Town tracks water sales by three customer categories: single-family, multifamily, and commercial. **Figure 4** presents a breakdown of treated water sales by customer category for 2015. The largest water users in the residential sector are typically multifamily properties. There are no industrial users and no

large commercial water users in the Town's service area. The largest water users in the commercial sector are typically restaurants.

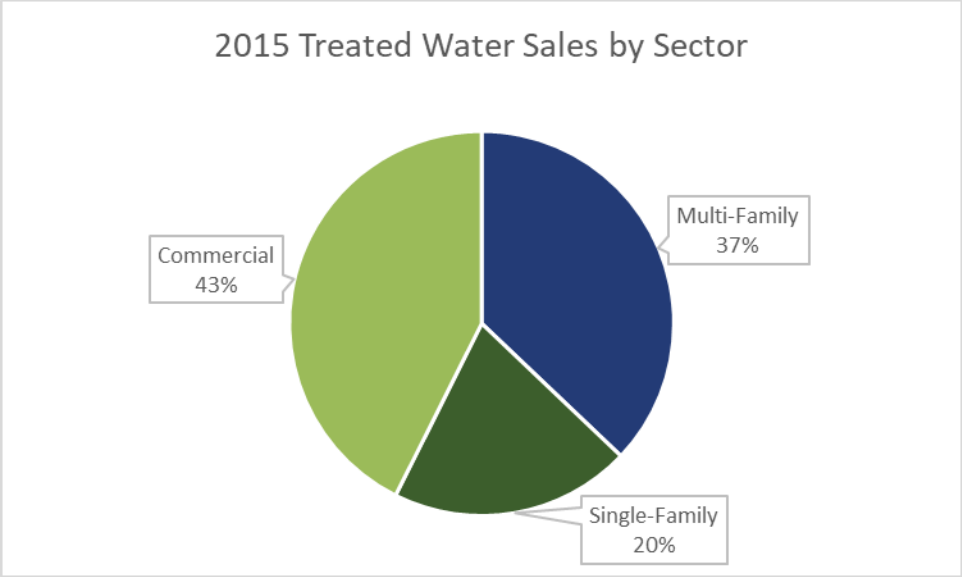

Figure 4: 2015 Treated Water Sales by Sector

Annual production volumes, water sales, and sales by sector for the period 2011-2015 are summarized in **Table 6**. Additional data are included in **Appendix A: Plan Data**.

Table 6. Summary of Production, Total Sales, and Sales by Sector (2011-2015)

Year	Total Production (ac-ft)	Total Water Sales (ac-ft)	Single-Family Residential Sales (ac-ft)	Multi-Family Residential Sales (ac-ft)	Commercial Sales (ac-ft)
2011	305	285	58	106	121
2012	297	282	57	105	120
2013	278	264	54	98	112
2014	277	265	54	98	113
2015	312	272	55	101	116

6.1.2 Monthly Treated Water

In the Comprehensive Plan, the Town has identified clear priorities around reducing outdoor water use and encouraging drought-resistant xeriscape plant species for landscaping. Over the period 1998-2015, outdoor water use has represented on average 25% of annual demands, based on an analysis of monthly water sales data (**Figure 5**). Outdoor use doubles the system's water demands during the months of June-September. Small increases in water use that occur in December-March are driven by the influx of transient residents and day visitors during ski season.

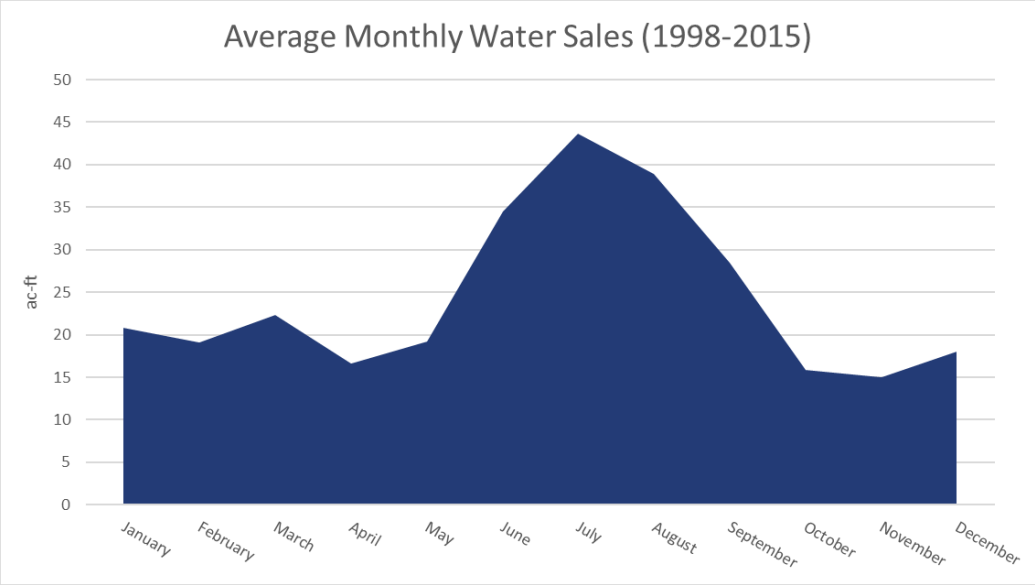

Figure 5: Average Monthly Treated Water Sales (1998-2015)

6.1.3 System Consumptive Uses and Return Flows

Consumptive use represents the portion of the water demands that are removed from available supplies without returning to the watershed. Examples of consumptive use include evapotranspiration from irrigated lands and evaporation from indoor appliances. **Table 7** presents a summary of monthly consumptive use estimates for the Town of Dillon's water supply (NWCCOG 2004). There are currently about 25 acres of irrigated lands within the Town boundaries.

Table 7. Monthly Consumptive Use (%) Estimates (NWCCOG 2004)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5%	5%	5%	5%	14%	34%	22%	24%	22%	5%	5%	5%

Consumptive uses and relative impacts to the watershed were considered during the planning process when selecting future efficiency activities.

6.1.4 Irrigated Area

As part of operating the augmentation plan, the Town tracks irrigated lawn acreage located within the municipal boundaries. From 2001 to 2014, the irrigated area in Town increased from 38.7 ac to 49.4 ac, an increase of almost 30% (Deere and Ault, 2014).

6.1.5 Non-Revenue Water

The volumetric difference between water production and water sales is referred to as non-revenue water. Non-revenue water uses in the Town's system include hydrant flushing, system leaks, and water used for firefighting. Annual non-revenue water estimates, expressed as a percentage of production volumes, are shown in **Figure 6** for the period 2005-2015. High values are due to system leaks or main breaks that have since been repaired.

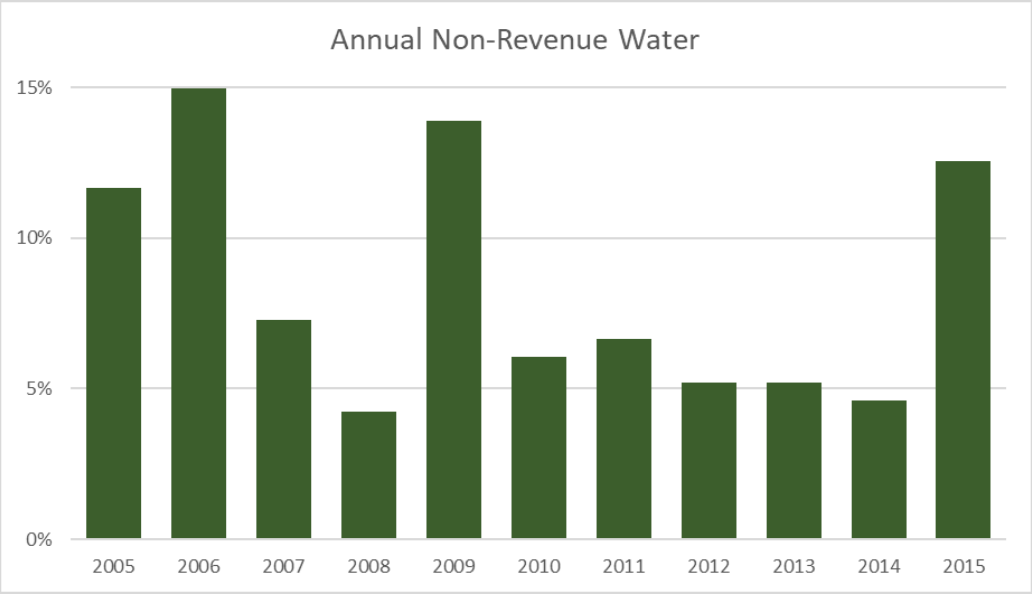

Figure 6: Annual Non-Revenue Water (2005-2015)

6.1.6 System-Wide Water Use Metrics

The Town uses system-wide water use metrics to inform water savings estimates and demand forecasts. The Town's primary metric for assessing system-wide water use is water use billed per EQR per day. This metric excludes non-revenue water, so is useful for assessing water use patterns and water conservation outcomes for the service population. By normalizing the water use by EQR, the Town is able to look at water use patterns as a function of the Town's size. Two population factors that are not accounted for in this approach are occupancy rates and the number of day visitors served.

Figure 7 presents the system-wide per EQR water use values for the period 1999-2015. Over this period, the Town has experienced a 22% decline (-1.5% on average year-over-year) in these values.

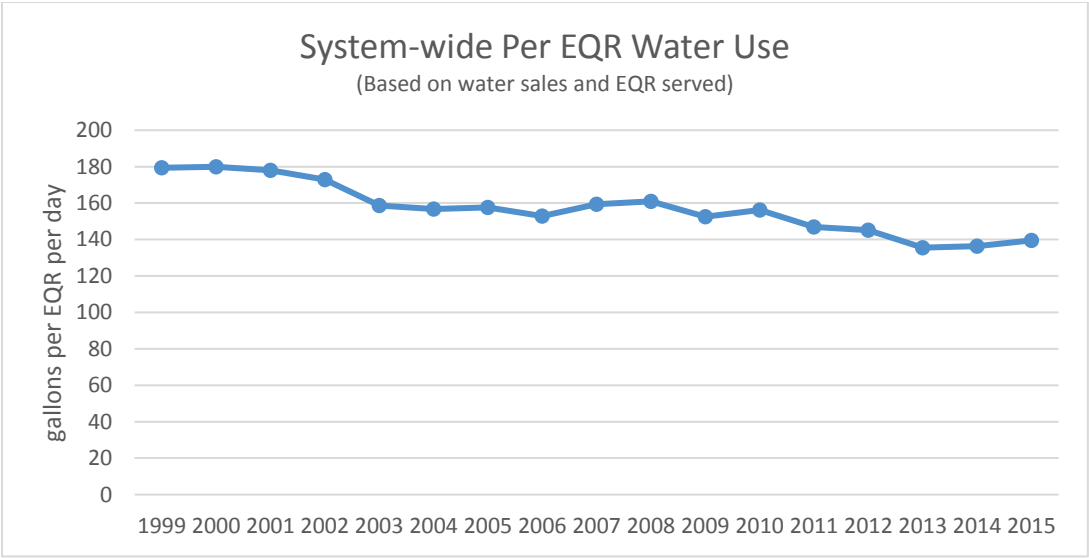

Figure 7. System-wide Per EQR Water Use (1999-2015)

It's worth noting that normalized water use metrics are most useful for assessing trends internal to a system rather than comparing across water providers. As noted in the Municipal Water Efficiency Plan Guidance document (CWCB 2012):

[Normalized water use metrics] should not be used as a means to compare water usage between other providers. This is partially attributed to […] the fact that there are many other factors that can skew the data, negating an "apples-to-apples" comparison. Such factors include large commercial and industrial sectors that can significantly influence system-wide per capita water demands. Additionally, resort communities can experience difficulties in developing representative annual per capita water demands. The numbers of visitors often vary seasonally (e.g. ski season) and are also impacted by economic conditions and weather.

6.1.7 Residential Water Use Metrics

The Town's primary metric for assessing residential water use is water use billed per capita per day. This metric includes water used by the single-family and multifamily customer categories. The population value used is a constant of 2,580 people based on the number of households and the number of residents per household from the 2010 Census results (USCB 2017). As with the system-wide per EQR water use metric, the values as calculated do not account for occupancy rates and the number of day visitors served.

Figure 8 presents the residential per capita water use values for the period 2011-2015. Over this period, the Town has experienced a 4% decline (-1.5% on average year-over-year) in these values.

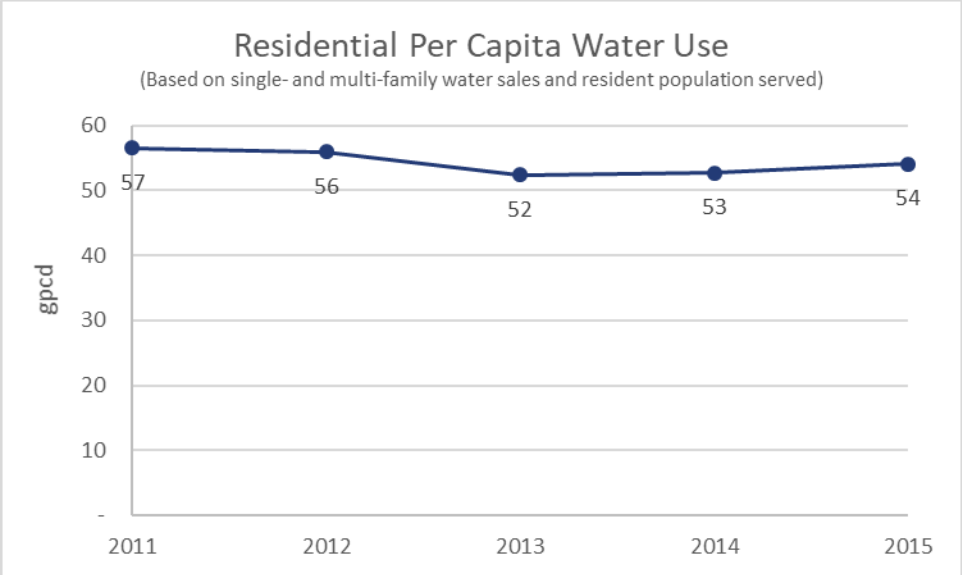

Figure 8. Residential Per Capita Water Use (2011-2015)

6.2 Past and Current Demand Management Activities

The Town began demand management activities as early as 2000 and has continued to improve efforts over time.

6.2.1 Metering and Data Collection

Starting in 2011, the Town of Dillon installed an advanced metering infrastructure (AMI) system that allows the Town to collect daily water use readings. The daily meter readings allow utility staff to identify water leaks by reviewing the meter readings every few days. When leaks are suspected, utility staff reach out to customers to troubleshoot the issue. Because the Town has many short-term rental units and homes that are occupied for only a portion of the year, this process has been very effective in detecting and resolving leaks on customer premises.

Most of the Town's meters are 10-15 years old. The Town has an active meter replacement program. When an existing meter needs to be replaced, the Town uses the opportunity to change out the meter to obtain higher resolution readings (from 1 kgal to 1 gal).

6.2.2 System Water Loss Management and Control

Since 2004, the Town has tracked non-revenue water volumes on a monthly basis. When the water system is running efficiently, the non-revenue water volumes typically represent 4-4.5% of the monthly production volumes. If the non-revenue water volumes are tracking higher than this range for multiple months, staff in the Utilities Department will initiate a system-wide audit for leak detection and will replace or fix infrastructure as needed.

6.2.3 Efficiency-Oriented Rates and Tap Fees

As described previously in Section 5.4, the Town adopted an inclining block rate structure in 2000 to encourage water efficiency. The water rates are updated every five years based on budget projections.

The Town's tap fees are also structured to encourage water efficiency by using building size to determine the total tap fee. For 2017, the water tap fee is $8,438 per EQR and the sewer tap fee is $6,528 per EQR.

6.2.4 Water Use Regulations

6.2.4.1 Outdoor Water Use

Since 2002, the Town has had the ability to impose emergency outdoor water use restrictions in the case of a drought (TOD 2017c). These restrictions include the ability to ban all outdoor water use if the flow in Straight Creek falls below 2 cfs, and to ban water use for pools and hot tubs if the flow falls below 1 cfs. The Town may additionally choose to impose a conservation surcharge on water use over 6,000 gallons per EQR per month.

6.2.4.2 Indoor Water Use

The Town encourages indoor water use efficiency through local and State regulations:

- The Town adopted the 2012 Edition of the International Plumbing Code, International Building Code, and International Residential Code (TOD 2017b). The International Plumbing Code specifies maximum flow rate requirements for water fixtures installed during new construction or major redevelopment. The Town has adopted the plumbing codes to apply to any alternation, repair, or replacement of existing systems.

- Additionally, in 2016, the State of Colorado passed SB14-103, also known as Colorado's Indoor WaterSense Fixture Requirement, requiring that only certified WaterSense fixtures be sold in the State of Colorado.

6.2.5 Public Outreach and Education Activities

The Town's website provides water conservation tips including resource links to help customers understand and reduce their water footprint and to check for water leaks.

6.2.6 Historical Water Savings

The Town has experienced a 17% decline in water sales since 1998 (**Figure 3**) despite the Town's development and increase in visiting population over that period.

Figure 9 presents a hypothetical demand forecast for the period 1999-2015 using the system-wide per EQR water use value from 1999 of 179 gallons per EQR per day and applying that value to the actual EQR in later years. The hypothetical system demands are compared to actual demands over that period to further demonstrate the water savings that have been achieved, in part due to the efficiency activities described above.

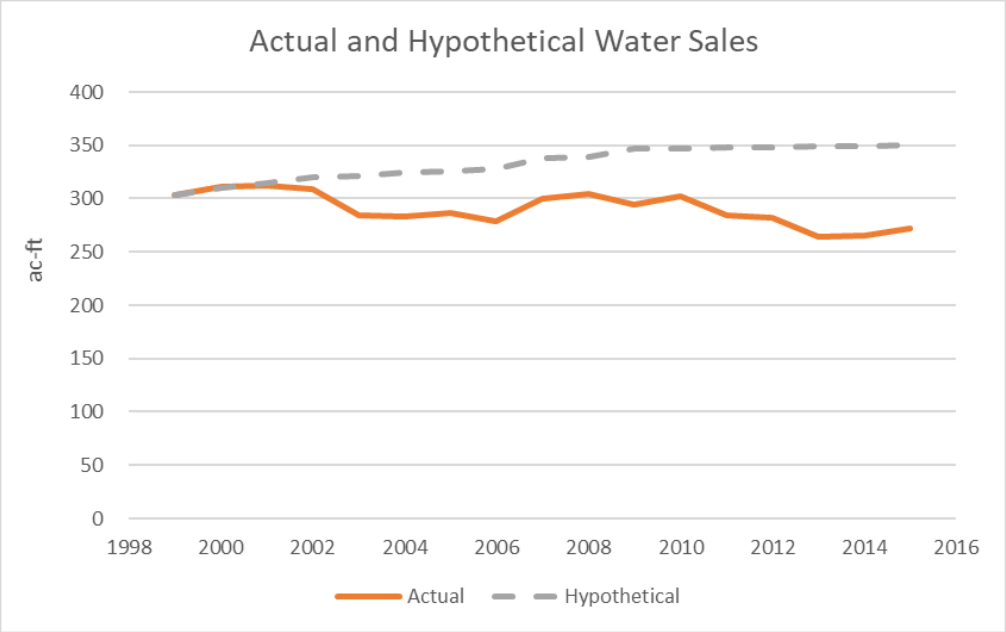

Figure 9. Actual and hypothetical water sales (1999-2015)

7 WATER EFFICIENCY GOALS AND DEMAND FORECASTS

The Town is currently using two planning horizons: through 2025 (for the purposes of this water efficiency plan), and through the period 2027-2037, when buildout is expected to occur.

As part of the preparation of the water efficiency plan, three demand forecasts were prepared (**Figure 10)**:

- ***High growth*.** This is a high growth forecast that takes into account development growth at an average growth rate of 2 EQR/year, and an increase in water demands of 2% year-over-year.
- ***Business-as-usual.*** This forecast accounts for population growth as well as the trend of historically declining water demands.
- ***Active efficiency measures*.** With additional efficiency activities implemented in the future, the Town anticipates that a reduction in demands could be achieved, on the order of -1% on average year-over-year.

Appendix A: Plan Data includes tabular summaries of the demand forecasts.

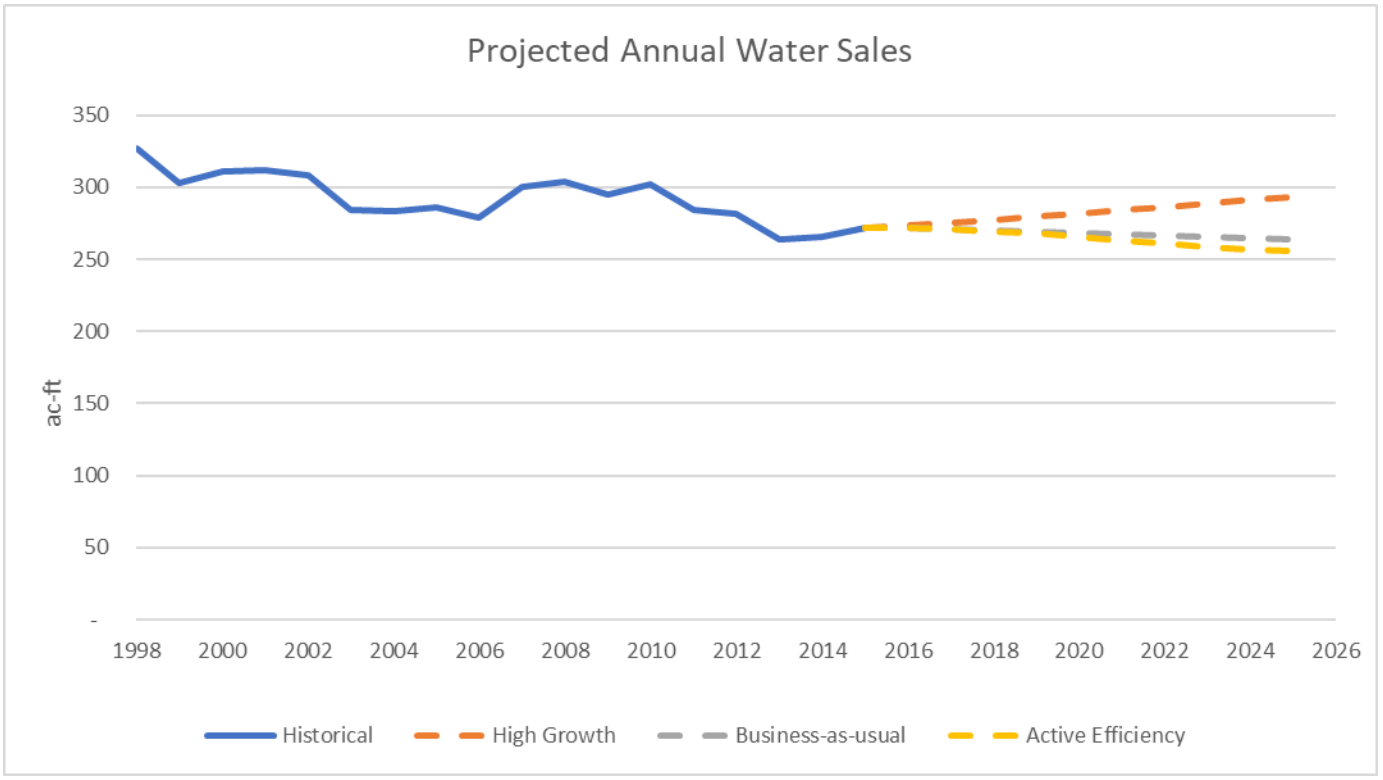

Figure 10: Projected Annual Water Sales Volumes (through 2025)

TOWN OF DILLON WATER EFFICIENCY GOALS

Over the period 2018-2025, the Town aims to implement additional efficiency activities that will build on the downward trend in water use to achieve:

- A 5% reduction in annual demands by 2025, compared to 2015 demands.
- A reduction in peak demands during the summer associated with outdoor water use.

8 SELECTION OF WATER EFFICIENCY ACTIVITIES

The Town plans to implement additional water conservation measures to supplement current activities and achieve the water efficiency goals presented in **Section 7**. Future activities were identified using multiple factors that included utility priorities, stakeholder input, opportunities for water savings, technical feasibility, and implementation capacity. When feasible, the efficiency activities were quantified in terms of their potential for water savings, customer sectors and end-uses impacted by the measure, and implementation costs. A summary of activities that the Town aims to implement over the next seven years is shown in **Table 8**.

Table 8. Summary of Planned Water Efficiency Activities

Water Efficiency Activity	Sectors Impacted	Implementation Period	Projected Water Savings in 2025
Foundational Activities			
Billing Upgrades	All Customers	2020-Ongoing	Not Quantified
Advanced Metering Infrastructure and Enhanced Water Loss Control	All Customers	2020-Ongoing	5.5 ac-ft/yr
Conservation-Oriented Rates	All Customers	2019-Ongoing	Not Quantified
Institutional Collaboration	Utility	2017-Ongoing	Not Quantified
Targeted Technical Assistance and Incentives			
Indoor Water Efficiency	Residential	2018-Ongoing	1.2 ac-ft/yr
Outdoor Water Efficiency	Residential & HOA	2018-Ongoing	2.8 ac-ft/yr
Ordinances and Regulations			
Land Use Planning	All Customers	2017-Ongoing	Not Quantified
Education Activities			
Education and Outreach	All Customers	2018-Ongoing	Not Quantified
		Total Savings in 2025	**9.5 ac-ft/yr**

8.1 FOUNDATIONAL ACTIVITIES

8.1.1 Billing Upgrades

The Town intends to partner with a contractor to provide customers with the WaterSmart Report Card. The report card will give customers more detailed information about their water usage, how their usage compares to similar customers, and suggestions for improving their efficiency. The program is expected to be fully implemented in 2020. Costs associated with this program are expected to be encapsulated in an estimated contracted amount of $2,000 per year. Water savings from this activity were not quantified and are not relied upon to meet the Town's water conservation goals. In addition to potential water savings, the public engagement associated with the report card will be extremely valuable.

8.1.2 Advanced Metering Infrastructure and Enhanced Water Loss Control

The Town currently has AMI meters that are capable of daily reads which they have been upgrading from 1-kgal to 1-gal read accuracy. Meters are read once daily, allowing the Town to more quickly identify system leaks. While the Town has access to these daily data, additional savings could be realized by giving customers direct access to their own daily use data. If the Town were to implement this additional functionality of their AMI system, it could conserve approximately 6 ac-ft/yr of water. This program is expected to cost the Town an average of $38,000 per year from the beginning of its implementation in 2020 through 2025. These costs include capital expenditures and the additional staff costs associated with data management and increased customer engagement.

8.1.3 Conservation-Oriented Rates

As part of the next rate study in 2019, the Town intends to evaluate changes to the pricing structure to better incentivize water conservation. The rate adjustments are estimated to cost $20,000 as an upfront cost with no ongoing costs. While the Town will continue to evaluate its pricing structure and conservation incentives, much has already been done in this area and it is not expected that significant additional water savings will result from this activity.

8.1.4 Institutional Collaboration

The water efficiency planning process offered an opportunity for Town staff to align around water supply and water conservation planning. In the future, the Town seeks to continue interdepartmental communications and will continue to participate in a regional water conservation committee convened by High Country Conservation Center.

8.2 Targeted Technical Assistance and Incentives

8.2.1 Indoor Water Efficiency

The Town intends to promote a regional indoor water efficiency program being developed by a working group and led by High Country Conservation Center. The program is envisioned to include two components:

- Residential indoor water audits that include direct installation of some water-saving fixtures, specifically showerheads and faucet aerators, as well as customized recommendations for additional water savings.
- Commercial outreach through High Country Conservation Center's Resource Wise sustainable business program (**Figure 11**). In addition to providing recommendations on opportunities to save water, High Country Conservation Center can provide direct installs of toilet bricks and pre-rinse spray valves and rebates covering 50% of the cost of water-saving projects up to $400/business.

The Town will evaluate further incentivizing customers to switch to more efficient indoor fixtures by offering rebates financed through a combination of grant and Town funds. Additional information about the indoor water efficiency program is included in **Appendix C**. Once implemented, the indoor water efficiency programs are expected to save the Town 1.2 ac-ft/yr of water.

Figure 11. Resource Wise Advertisement

8.2.2 Outdoor Water Efficiency

For at least the first two years of implementation, the Town anticipates working with Resource Central's "Slow the Flow" program to conduct outdoor irrigation assessments. An irrigation assessment consists of a 90-minute consultation that includes:

- A customized watering schedule
- Efficiency tests that measure water usage and coverage
- A visual inspection to check for problem areas that waste water
- Minor adjustments to sprinkler heads

For year 1 of implementation, Resource Central is providing 120 free outdoor irrigation assessments for Summit County residents. The costs of these assessments are covered by a grant that Resource Central received from the Gates Family Foundation. In year 2 of implementation, the cost of the assessments will be cost-shared between the grant (50%) and the Town (50%).

In year 3 of implementation and beyond, the Town will evaluate whether to continue participation in the Slow the Flow program or to develop a new regional program based on estimated program costs and staff resources. To achieve the estimated water savings of 2.8 ac-ft/yr, the outdoor water efficiency

program will need to be expanded to offer audits to more customers or to include additional services such as irrigation optimization and/or a landscaper certification program.

Additional information about the outdoor water efficiency program is included in **Appendix C**.

8.3 Ordinances and Regulations

In 2017, as part of the planning process, the Town began participating in a regional land use planning group convened with the intent of reviewing design guidelines and landscaping codes for existing incentives and barriers to water savings. Working group members include representatives from Summit County, municipalities, and the Northwest Colorado Council of Governments (NWCCOG). As such, the code reviews are intended to be conducted at multiple (county, local, regional) levels of government.

The working group will benefit from collaboration with NWCCOG, which was awarded a State Water Plan grant from the CWCB to develop model codes that incentivize water quality and water conservation objectives as well as funding to help five communities in the NWCCOG regional jurisdiction to amend their existing codes.

As the working group is only now being convened, the opportunities for water savings have not yet been identified or quantified. Additional information is included in **Appendix C**.

8.4 Educational Activities

Educational efforts are being led regionally by High Country Conservation Center. The top priorities for this group in 2018 include:

- Developing or assembling water conservation materials that are targeted to priority sectors in support of implementation efforts under this plan.
- Developing strategies for engaging the visiting and second homeowner population in Summit County.
- Promoting awareness around joint energy-water savings opportunities.
- Identifying key events and outreach channels for education and awareness efforts.

Additional information is included in **Appendix C**. Water savings from the planned educational programs have not been quantified and are not relied upon to meet the Town's water conservation goals.

9 Implementation and Monitoring Plans

9.1 Implementation

The Town's approach to implementing the new water efficiency activities described in **Section 8** includes the following steps:

- Determine the organization responsible for leading the activity.
    - The Town is responsible for the implementation of the foundational activities (billing upgrades, AMI and enhanced water loss control, and conservation-oriented rates) and participation in Resource Central's Slow the Flow program.
    - Land use planners at the local, County, and regional scale are responsible for initiating changes to ordinances and regulations.
    - High Country Conservation Center is responsible for leading institutional collaboration, the indoor water efficiency program, and education and outreach efforts.
- Work with other organizations and partners to develop implementation action plans, define funding needs, and exchange information about best practices and lessons learned. The Town has already begun this collaboration in working with the High Country Conservation Center's executive committee during this water efficiency planning process and by participating on several implementation working groups that formed near the end of the planning process.
- Determine funding needs and sources for the activity.
    - For activities to be funded entirely or in part by the Town's operating budget, work within the annual budgeting cycle. This approach will require identifying budget priorities and estimates a year before the activity is to be implemented.
    - For activities to be funded by external sources, look for grant and other funding opportunities. **Appendix B** includes a summary of the implementation resources that were identified during the planning process.

At the end of the water efficiency planning process, three working groups were formed to guide implementation of the regional activities:

- Education and outreach
- Technical water efficiency programs (indoor and outdoor)
- Integrated water and land use planning

Appendix C includes implementation action plans that were developed for each working group to help transition from planning to implementation. The action plans will evolve as the working groups meet and take action.

9.2 Plan Review, Monitoring, and Updates

The Water Conservation Act of 2004 (HB04-1365) requires that water efficiency plans be made publicly available for review and comment for a period of 60 days, and that the plan be locally adopted by the appropriate governing entity. The Town complied with these requirements by posting the water efficiency plan on-line and providing public notice of the plans through a Town news update and High

Country Conservation's newsletter (**Figure 12**, **Figure 14**). The public comment period lasted from January 29, 2018 through April 4, 2018.

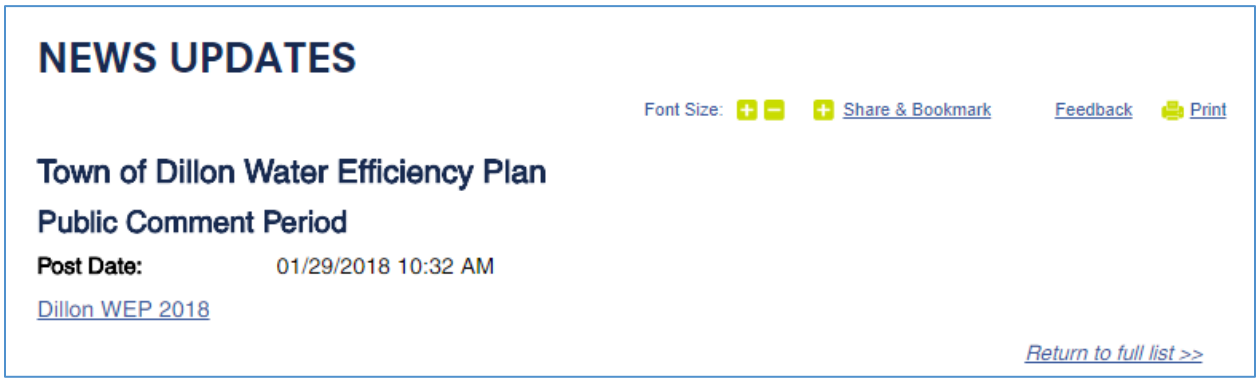

Figure 12. Screen Captures from the Town of Dillon's Website (TOD, 2018a)

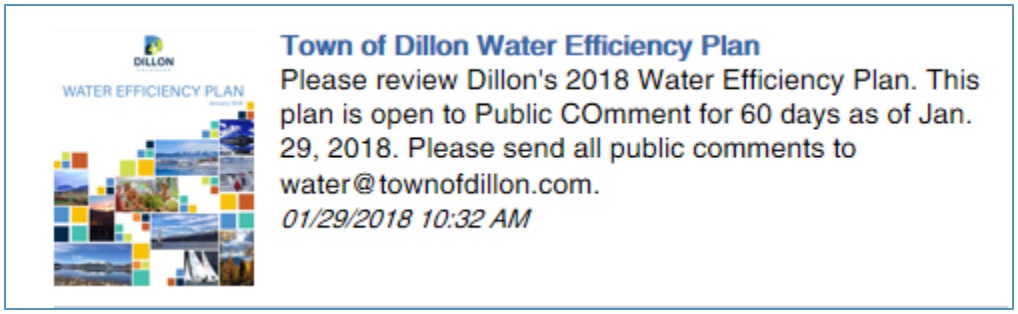

Figure 13. Town of Dillon's Twitter Feed (TOD, 2018b)

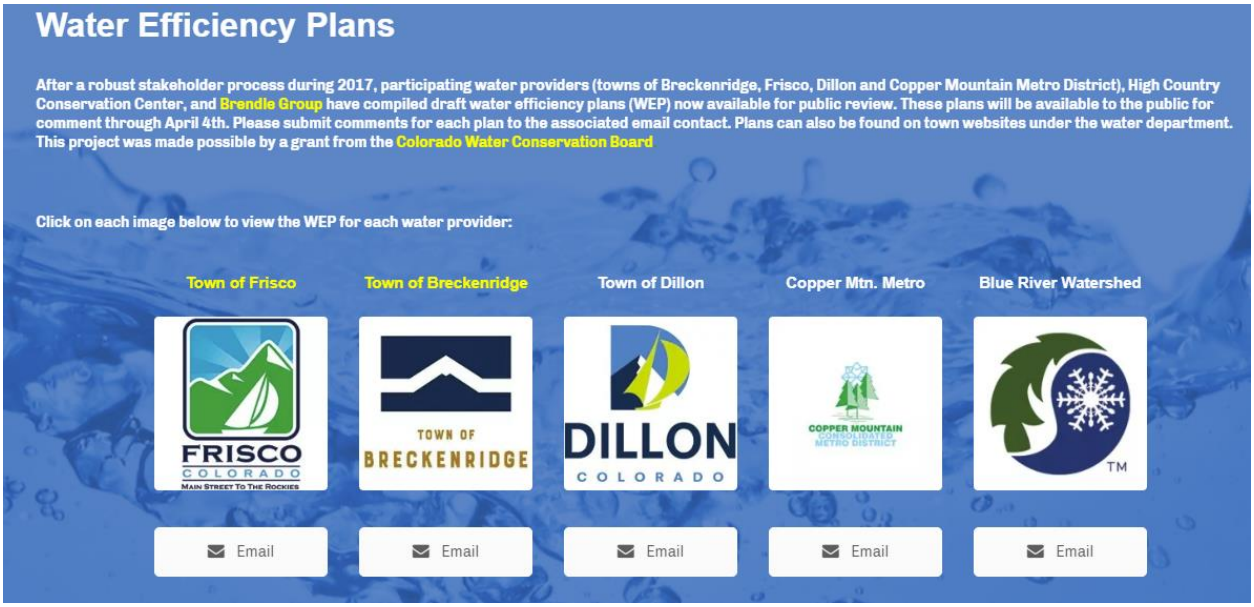

Figure 14. Screen Capture from the High Country Conservation Center Website (HC3, 2018)

Concurrently with the public review and comment period, the water efficiency plan was submitted to the Colorado Water Conservation Board for review. Review comments and responses to comments are included in **Appendix D**.

After the plan has been adopted by the Town Council, **Appendix E** will contain a copy of the resolution.

The Town intends to monitor the success of the water efficiency programs using the metrics presented in **Section 6.1 (Historical Water Demands)**. The Town will use **Appendix A** to track the metrics annually. If the Town finds that any of the water efficiency programs are not effective in achieving water savings, or are not cost effective, the programs may be discontinued.

The Town will update this plan every seven years, as required by The Water Conservation Act of 2004. Plan updates will incorporate the new data accumulated from the annual monitoring process and may include revisions to the Town's water efficiency goals and planned activities, as appropriate.

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APPENDIX A: PLAN DATA

Provided in a separate document.

APPENDIX B: IMPLEMENTATION RESOURCES

Organization / Individual	Implementation Resource	Resource Type	Additional Information
Aaron Clay	Water Law in a Nutshell Workshop	Education and Training	Contact High Country Conservation Center or Middle Park Conservation District
American Water Works Association	Topics area: water conservation programs, water loss control	Technical guidance	Website
American Water Works Association Rocky Mountain Section	Topics: water conservation, tap fees	Training	Website
Colorado Water Conservation Board	Water Conservation Implementation Grants	Grant Funding Source	Website
Colorado Water Conservation Board	Water Resource Conservation Public Education and Outreach Grants	Grant Funding Source	Website
Colorado Water Conservation Board	Water Plan Grants	Grant Funding Source	Website
Colorado WaterWise	Live Like You Love It	Education and outreach materials	Website
Irrigation Association	Topics: landscape water management	Training	Contact Northern Water (2018 training host)
Rural Communities Assistance Program	Topic areas: Water loss control, managerial, financial	Training and technical assistance	Website Contact Jeff Oxenford (720-353-4242)
Sonoran Institute	Land Use and Water Planning Workshop	Education and Training	Website
WaterNow	Project Accelerator Program	Technical and program assistance	Website

APPENDIX C: IMPLEMENTATION ACTION PLANS

EDUCATION AND OUTREACH WORKING GROUP

Last Updated: May 25, 2018

Working Group Role	Name and Organization
Group coordinators *(responsible for scheduling meetings and communications)*	Jessie Burley, High Country Conservation Center Hallie Jaeger, High Country Conservation Center
Team members *(responsible for helping with action items)*	Robert Buras, Town of Dillon Jed Callen, Resident Greg Hardy, Trout Unlimited Katlin Miller, Middle Park Conservation District Barry Rubenstein, High Country Conservation Center Dan Schroder, CSU Extension Julia Stennes, Town of Silverthorne

GOALS

- Initiate a coordinated education and outreach program for water conservation, including promoting all implementation activities

STRATEGIES TO ACHIEVE GOALS

Strategy 1: Develop targeted materials by sector

- Identify top priorities for education and outreach
    - Landscaper
    - Indoor
    - Outdoor
    - Commercial
    - Residential
- Inventory existing materials and resources
    - Water utility websites (Denver Water, Town of Breckenridge, etc.)
    - Colorado WaterWise (Live Like You Love It)
    - EPA Water Sense
    - Water audit and related service providers
- Adapt existing materials and develop new materials
- Identify outreach channels
    - Bill enclosures
    - Social media
    - Websites
    - Events
    - Summit Daily
    - Water Warriors program
    - HC3 Resource Wise sustainable business program
- Disseminate materials

Strategy 2: Engage the visiting population and second homeowners

- Come up with a message and then keep delivering the message because it's a changing population
- Compile a list of HOAs and contact information
- Prioritize 10 HOAs where working group members have personal connections

Strategy 3: Leverage High Country Conservation Center's Energy Programs

- Anytime talk about water, talk about energy, and vice versa

Strategy 4: Aggregate and push out related information and events from other organizations

- For example: EPA's Fix-a-leak week

SUMMARY OF ACTION ITEMS

Action Item	Responsible Team Member	Status
Compile contact list for HOAs	Dan	Complete
Prioritize 10 HOAs	All	In progress
Promote EPA's Fix-a-Leak Week	Hallie/HC3	Complete
Promote HC3's Resource Wise Sustainable Business Program	All	In progress
Promote participation in Resource Central's Slow the Flow program for outdoor audits for customers served by participating providers	HC3 and participating towns	In progress
Promote participation in Resource Central's Slow the Flow program for outdoor audits for customers NOT served by participating providers	Katlin/Dan	In progress
Work on marketing piece on water efficiency and leaks to supply during residential energy audits	All	In progress
Find a list of contractors/plumbers as a resource guide	Jed	In progress
Promote Blue River Explorer Hike	Greg	In progress

TECHNICAL WATER EFFICIENCY PROGRAMS WORKING GROUP

Last Updated: May 25, 2018

Working Group Role	Name and Organization
Group coordinator *(responsible for scheduling meetings and communications)*	Laura Lynch, Town of Breckenridge
Team members *(responsible for helping with action items)*	Robert Buras, Town of Dillon Jeff Goble, Town of Frisco Jess Hoover, HC3 Hallie Jaeger, HC3 Cody Jensen, HC3 Zach Margolis, Town of Silverthorne Mike Nathan, A-Basin Ed Pankevicius, Copper Mountain Metro Karn Stiegelmeier, Board of County Commissioners Lane Wyatt, NWCCOG

GOALS

- Pilot a residential indoor audit program
- Expand the HC3 Resource Wise sustainable business program to include more emphasis on water efficiency, including allowing water projects to qualify for rebates
- Promote Xcel Energy's multi-family buildings program
- Reduce outdoor water use while maintaining aesthetics for visitor and resident appeal
- Focus on low-cost/no-cost water savings opportunities and customer education and outreach
- Design, pilot, and implement regional programs aimed at outdoor water efficiency, including outdoor water audits, irrigation system optimization, and landscaper certification

STRATEGIES TO ACHIEVE GOALS

Goal: Pilot a residential program that includes educational materials, audits, direct installs, and/or rebates/incentives.

- Leverage HC3's Energy Smart Colorado program for indoor energy efficiency.
    - At a minimum, assess energy program for best practices and lessons learned to inform water efficiency program design.
    - Consider leveraging energy program as an education and outreach channel (e.g., leave materials on water efficiency with residents when conducting an energy assessment).
- Research existing residential information and audit programs
    - Evaluate existing residential programs, with an emphasis on comparable mountain communities. For example, Resource Central has a "Slow the Flow" program that includes a residential indoor audit program.
    - Evaluate rebate structures/incentives. Find biggest water savings potential for each potential rebate measure.
    - Evaluate types of direct installs needed. At a minimum, include direct installs of showerheads and faucet aerators.
    - Compile effective educational materials.

- Design a pilot program
    - Identify water providers interested in participating in the pilot program.
    - Determine funding needs and sources for pilot program.
- Execute the pilot program.
- Assess performance of the pilot program to inform larger-scale implementation.

Goal: Develop a commercial outreach channel

- Leverage HC3's Resource Wise green business program to connect with businesses and find water savings opportunities.
    - Use the program as an education and outreach channel
        - Leave sector-specific materials on water efficiency with businesses as part of engagement.
        - Hold a Business Lunch n' Learn workshop on water in 2018.
    - Expand the program in offering and implementing recommendations for improving water efficiency based on the results from the sustainability assessment.
        - Add information about the energy-water nexus on summary reports
        - Provide water efficiency recommendations to businesses with low water scores
        - Use available funding ($400/business) towards water-saving upgrades and projects
        - Direct installs of toilet bricks and pre-spray rinse valves

Goal: Focus on low-cost/no-cost water savings opportunities and customer education and outreach

- Identify largest users (for example, HOAs) and work with customers to better schedule their water use
- Work with landscape companies
    - Create a list of water-efficiency minded landscapers
    - Educate additional landscape companies
- Identify educational events, for example one county-wide meeting
    - Annual State of the River
    - NWCCOG QQ meetings
- Educate about joint energy-water savings opportunities
- Develop water budgets using GIS and irrigated lands analysis for customer outreach about the amount of water customers should be using
- Work with City Parks staff on water savings opportunities
- Send out a mailer to contract holders about metering and plantings

Goal: Design, pilot, and implement regional programs aimed at outdoor water efficiency, including outdoor water audits, irrigation system optimization, and landscaper certification

- Years 1-2 of implementation: Take advantage of grant funding available from Resource Central to make Slow the Flow outdoor irrigation assessments available to 120 customers
- Years 3 and beyond: Determine continued participation in the Slow the Flow program versus developing a separate regional program. Expand services beyond audits to system optimization and landscaper certification.
    - Evaluate existing programs for best practices and lessons learned (for example, Denver Water)
    - Identify potential service providers (for example, Resource Central Slow the Flow program)
    - Design and implement a pilot program

- Implement a regional program

Goal: Reduce outdoor water use while maintaining aesthetics for visitor and resident appeal

- Coordinate efforts with the land use planning working group to evaluate municipal code for updates regarding vegetation requirements

SUMMARY OF ACTION ITEMS

Action Item	Responsible Team Member	Status
Identify fixtures/appliances to target for incentives based on water savings potential	Mike	In progress
Research existing residential water efficiency programs	Laura	In progress
Flesh out potential to leverage existing HC3 programs, resource needs, etc.	Jen	In progress
Evaluate opportunities for leveraging Resource Wise	Jess and Jessie	In progress

INTEGRATED WATER AND LAND USE PLANNING

Last Updated: May 17, 2018

Working Group Role	Name and Organization
Group coordinator *(responsible for scheduling meetings and communications)*	Joyce Allgaier, Town of Frisco
Invited team members	Joyce Allgaier, Town of Frisco Graeme Bilenduke, Copper Mountain ski resort Robert Buras, Town of Dillon Jed Callen, Resident Allison Fulton, Copper Mountain Metro Jeff Goble, Town of Frisco Peter Grosshuesch, Town of Breckenridge Torie Jarvis, NWCCOG Katie Kent, Town of Frisco Susan Lee, Town of Frisco Zach Margolis, Town of Silverthorne Mike Nathan, A-Basin Pete Oltman, North Line GIS Ed Pankevicius, Copper Mountain Metro Don Reimer, Summit County Elena Scott, Norris Design Ned West, Town of Dillon Lane Wyatt, NWCCOG

GOALS

- Conserve water through collaboration and actions that support all agencies in our region

STRATEGIES TO ACHIEVE GOALS

Strategy 1: Code Amendments

- Engage and/or stay informed about NWCCOG efforts under their Colorado State Water Plan grant.
- Audit codes and additional regulations to identify existing barriers and incentives to water conservation (Joyce and regional planners)
- Amend water standards, codes (require certain irrigation materials and systems) - Jeff
- Look at tap fees and tying to/paying more for landscaping (Mark)
    - See Castle Rock and Aurora programs, to be presented at June 14 RMSAWWA conservation committee meeting
    - Schedule an educational workshop
    - Share literature
- Look at stormwater management regulations (bioswales, tree gardens)
- Land use typology

- Apply budgets to different types of land uses (e.g. – ballfields vs. aesthetic landscape areas) – for example, Denver Water

Strategy 2: Collaboration and Engagement

- Evaluate learning opportunity through Sonoran Institute.
- Engage all special and metro districts to implement plan
- Set common goals among towns, districts, others to coalesce efforts (even if done at different times)
- Tap informational and regulation resources to raise the bar, give guidance, help share information and information about grants and capacity building (NWCCOG)
- Engage large water users

Strategy 3: Advance water reuse programs, especially for golf courses and snowmaking parks (Lane Wyatt and Torie Jarvis from NWCCOG QQ)

SUMMARY OF ACTION ITEMS

Action Item	Responsible Team Member	Date	Status
Evaluate learning opportunity through Sonoran Institute.	All	June 1, 2018	In progress
Convene planners to initiate code audits	Joyce	Summer 2018	Not started
Schedule an educational session on tap fees	Mark	June 14, 2018	Complete (Scheduled through AWWA RMS conservation committee)

APPENDIX D: PLAN REVIEWS AND COMMENTS

COLORADO WATER CONSERVATION BOARD

Conservation Plan Submittal Required Plan Elements Checklist
Name of Entity: Dillon WEP (Blue River Regional WEP)
Date Submitted: 3/23/18

Required Conservation Plan Elements	Completed?	Response to Comments
1. Name and contact information	Yes_____ No__x___ Comment: Put final cover letter	Cover letter added
2. Organizations and individuals assisting with plan development	Yes___x__ No_____ Comment: pg. 4	No action required
3. Quantified annual retail water delivery?	Yes___ No ____ Comment: There is a treated distribution bar chart on pg. 17 and break down of customer class by % but I would like to see a table with distributed and metered consumption for the years listed in Figure 4 or at least the last 5 years	Added a sentence to section 6.1 emphasizing that all data are presented in tabular format in Appendix A
4. Identified population served by retail water delivery?	Yes__x___ No_____ Comment: Population 2016- 961 permanent population; avg. annual service population 3254; EQR = 1745	No action required
5. Public comment period completed? (60 days or local regulation)	Yes_____ No_x____ Comment: after review	Section 9.2 (Plan Review, Monitoring, and Updates) and Appendix D (Plan Reviews and Comments) were updated after public comment period was completed
6. Signature with authority to commit resources of the submitting entity?	Yes_____ No__x Comment: Put in final cover letter	Cover letter added
7. All required water saving measures and programs considered?	Yes__x_ No_____ Comment:	No action required
I. Fixtures and appliances – toilets, urinals, showerheads, faucets, etc.?	Yes__x__ No ___ Comment: HCC will lead indoor residential audits with install of fixtures	No action required

Required Conservation Plan Elements		Completed?	Response to Comments
II.	**Waterwise landscapes, drought resistant vegetation, removal of phreatophytes, efficient irrigation, etc.?**	Yes_x__ No_____ Comment: Outdoor water audit program to evaluate system efficiencies and implement fixes through rebates	No action required
III.	**Water efficient industrial and commercial processes?**	Yes__x__ No_____ Comment: Commercial outreach through HCC sustainable business program and will put financial resources towards upgrades	No action required
IV.	**Water reuse systems?**	Yes_____ No_____ Comment: N/A	No action required
V.	**Distribution system leak ID and repair?**	Yes__x___ No_____ Comment: system-wide leak detection based on how non-revenue water is tracking; use AMI to alert customers of leaks	No action required
VI.	**Information, public education, audits, demos?**	Yes__x___ No_____ Comment: The Town's website provides water conservation tips including resource links to help customers understand and reduce their water footprint and to check for water leaks; WaterSmart report card along with AMI will engage customers in water usage reduction; The top priorities for 2018 that have been identified include: • Developing or assembling water conservation materials that are targeted to priority sectors in support of implementation efforts under this plan. • Developing strategies for engaging the visiting and second homeowner population in Summit County. • Promoting awareness around joint energy-water savings opportunities. • Identifying key events and outreach channels for education and awareness efforts.	No action required
VII.	**Conservation oriented rate structure and billing system?**	Yes__x___ No____ Comment: Inclining block rate with monthly read/bill; rates are revised every 5 years with 2019 being next one;	No action required

Required Conservation Plan Elements	Completed?	Response to Comments
VIII. Regulatory measures designed to encourage water conservation?	Yes_x___ No_____ Comment: Ordinance for water restrictions and no irrigation between 9 am-6pm; will use regional land use group to bring back ideas to assess town's landscape regs	No action required
IX. Incentives, rebates to encourage conservation implementation?	Yes__x__ No_____ Comment: See below	No action required
8. Role of water conservation plan in overall water supply planning?	Yes___x__ No_____ Comment: Section 3.3 Vision statement; Section 5 discusses relationship between supply reliability and demand activities as well as vulnerabilities	No action required
9. Steps to implement, monitor, review, and revise conservation plan including time period not to exceed 7 years?	Yes_x__ No_____ Comment: pg. 28-29 Great idea for the working groups!	No action required
10. Estimates of water saved through previous conservation efforts AND water saved through plan implementation?	Yes___x__ No_____ Comment: 8.3 af feet demand or 5% reduction by 2025; a few activities are not quantified due to nature of programs and initiatives; **See Below for comments**	No action required
11. Best management practices for water demand management, water efficiency, and water conservation that may be implemented through land use planning efforts	Yes__x____ No_____ Comment: Part of regional land use planning group in 2017 to review design guidelines and landscaping codes for existing incentives and barriers to water savings; one of four working groups formed for the plan is an "Integrated water and land use planning" group; 2017 completed Comp Plan that outlines a water element for preserving and protecting water sources and quality and will be used to help make water decisions in future	No action required

Plan Review Findings

_____ Approved

____x_____ Conditional Approval

_____ Disapproval with Modifications

Plan review comments:

This plan review was completed by Kevin Reidy of the Colorado Water Conservation Board. Questions about the review, comments provided, the plan review process and the statutory requirements can be directed to Kevin.

More detail on retail water delivery: Is the bar chart on pg. 16 metered consumption or distributed water? If its metered consumption can you provide the produced/distributed water by year as well? I would like to see demand broken down by year, distributed water, metered usage and customer class in a table.

> **Response to Comment:** Edited section 6.1.1 to include annual production volumes. Added a new table to section 6.1.1 to show production, total sales, and sales by sector for the available overlapping period of 2011-2015. Added a reference to Appendix A for additional data.

Future demands and demand reductions: It would be good to have the data in the line graph (figure 10) on pg. 23 laid out in a table over time. This helps assess how much demand reduction there will be in each scenario.

> **Response to Comment:** Added a reference to Appendix A for the demand forecast data.

Details on programs: In the body of the plan, refer to the Appendix C where the working group plans are. I didn't see it until Section 9 and when I read through the plan the first time, I was wanting more details on each program but didn't find it until I got to the Appendix C with the working group plans. I really like the working group plans though. Not sure if you want to have a blanket statement at the beginning of Section 8 directing readers to Appendix C or in each activity where it is relevant.

> **Response to Comment:** Added references to Appendix C in Section 8 when discussing regional efficiency programs.

Indoor/Outdoor Water Efficiency: Would like to see more detail on the rebates, incentives and fixtures that will be implemented in the Indoor and Outdoor water efficiency sections.

> **Response to Comment:** Edited section 8.2.1 to clarify that the residential indoor audit program will include direct installs of showerheads and faucet aerators. The initial program incarnation will not include rebates or incentives. Edited section 8.2.1 to clarify that the commercial audit program includes direct installs of toilet bricks and pre-rinse spray values and rebates covering 50% of the cost of water-saving projects up to $400/business.

Why isn't the indoor water efficiency programs quantified? That would seem to be the easiest to do so. If not sure of the total scope of this, put in a placeholder savings amount that would act as a baseline estimate. Estimates are OK to have in the plan.

> **Response to Comment:** Agreed. Quantified the estimated water savings based on the direct installs and assumed program participation. Edited the executive summary and Table 8 to reflect updated water savings estimates.

PUBLIC REVIEW COMMENTS

No comments were received.

APPENDIX E: RESOLUTION TO ADOPT PLAN

RESOLUTION NO. 36-18
Series of 2018

A RESOLUTION AUTHORIZING THE TOWN OF DILLON, COLORADO, TO ADDOPT THE TOWN OF DILLON WATER EFFICIENCY PLAN; AUTHORIZING AND DIRECTING STAFF TO IMPLEMENT AND MONITOR THE GOALS OF THE EFFICIENCY PLAN BEGINNING IN 2018; AND, SETTING FORTH DETAILS IN RELATION THERETO.

WHEREAS, The Water Department has developed a water conservation and efficiency plan in conjunction with other local water districts; and

WHEREAS, Efficiency plans are being developed throughout the State of Colorado at the request of the Governor; and

WHEREAS, The Town of Dillon wishes to preserve State water resources; and

WHEREAS, the Town Council of the Town of Dillon believes it is in the best interest of the Town to adopt the Town of Dillon Water Efficiency Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF DILLON, COLORADO, AS FOLLOWS:

Section 1. That the Town of Dillon Water Efficiency Plan is found to be in the best interest of the Town of Dillon, and necessary for the preservation of the public water resources.

Section 2. That the Town of Dillon adopts the Town of Dillon Water Efficiency Plan.

Section 3. That Town Staff are hereby authorized and directed to implement and monitor the goals of the efficiency plan beginning in 2018.

ADOPTED AND APPROVED THIS 5th DAY OF JUNE 2018, BY THE TOWN COUNCIL OF THE TOWN OF DILLON, COLORADO.

TOWN OF DILLON,
a Colorado municipal corporation

By: _____
Carolyn Skowyra, Mayor

ATTEST:

By: _____
Jo-Anne Tyson, MMC, Town Clerk