

June 29, 2018



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

Re: Copper Mountain Consolidated Metropolitan District Water Efficiency Plan

Dear Ben,

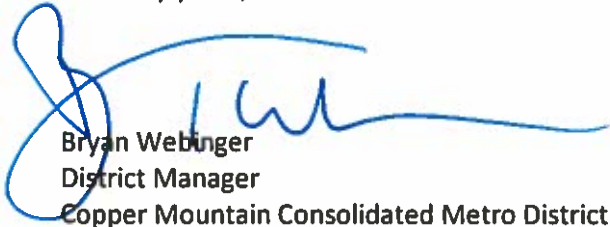
We are pleased to submit the Copper Mountain Consolidated Metropolitan District (District) Water Efficiency Plan to the Colorado Water Conservation Board (CWCBC) Office of Water Conservation and Drought Planning for final review and approval. The District's plan was developed in coordination with the 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, the 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 District aims to save 28 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,



Bryan Webinger  
District Manager  
Copper Mountain Consolidated Metro District



# Copper Mountain Consolidated Metropolitan District WATER EFFICIENCY PLAN

June 2018





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Developed in partnership with:







# 1 EXECUTIVE SUMMARY

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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 is the first that has been developed for the District, and documents existing and planned actions to ensure system reliability and the efficient use of available water.

## 1.1 WHERE WE ARE NOW

The District receives its water supplies from three groundwater wells that pump from the West Ten Mile Aquifer. The District anticipates that buildout water demands will exceed current water rights. Water conservation efforts are one mechanism to help the District manage demands and minimize expenditures associated with additional water rights and infrastructure.

The District provides retail water to residential and commercial customers, and wholesale water to contractors that serve the Copper Mountain ski resort. Non-revenue water uses include hydrant flushing, system leaks, and water used for firefighting. Annual non-revenue water estimates, expressed as a percentage of production volumes, have varied widely from 6-28% since 2013. The District suspects that variability in non-revenue water estimates may be partially explained by gaps in historical water usage data records. The District is currently developing better methods for data management and analysis, including consolidating historical data.

The District experiences two periods of high water demands throughout the year: in winter (due to ski-related tourism) and in summer (due to tourism and outdoor water use). Outdoor water use represents a relatively small percentage (14%) of total annual demands.

Since 2011, the District has seen an average increase of 3.4% year-over-year in annual water production volumes, with 332 ac-ft in potable water production in 2016. When normalizing for fluctuations in population, including both the resident and visiting population, the District has seen variable, but slightly declining, system-wide per capita demands. In 2016, system-wide water use was 51 gallons per capita per day.



The District has implemented various demand management activities, including:

- Starting to implement advanced metering infrastructure in 2016
- Conducting annual system-wide leak inspections, starting in 2014
- Inclining block rates, adopted in 2015
- Structuring tap fees based on tap size and hydraulic capacity

## 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 District aims to implement additional efficiency activities to supplement existing activities to achieve the following goals:

- Annual water savings of 28 ac-ft/yr by the year 2025, compared to the business-as-usual forecast.
- Cumulative water savings of 162 ac-ft over the period 2018-2025 compared to the business-as-usual forecast.
- Reductions in peak demands during the summer associated with outdoor water use.
- Increased awareness by residents and visitors about the importance of water resources and water conservation.
- Reductions in water use to avoid drilling new water supply wells.

## 1.3 HOW WE WILL GET THERE

New 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 and implementation costs.

Water Efficiency Activity	Sectors Impacted	Implementation Period	Projected Water Savings in 2025
<b>Foundational Activities</b>			
Advanced Metering Infrastructure and Enhanced Water Loss Control	All Customers	2018-Ongoing	23 ac-ft/yr
Conservation-Oriented Rates	All Customers	2020-Ongoing	2 ac-ft/yr
Billing Upgrades	All Customers	2019-Ongoing	Not Quantified
Institutional Collaboration	Utility	2017-Ongoing	Not Quantified
<b>Targeted Technical Assistance and Incentives</b>			
Indoor Water Efficiency	Residential	2018-Ongoing	1 ac-ft/yr
Outdoor Water Efficiency	All Customers	2020-Ongoing	2 ac-ft/yr
<b>Ordinances and Regulations</b>			
Land Use Planning	All Customers	2017-Ongoing	Not Quantified
<b>Education Activities</b>			
Education and Outreach	All Customers	2018-Ongoing	Not Quantified
<b>Total Annual Savings in 2025</b>			<b>28 ac-ft/year</b>



The District will be responsible for the implementation of the foundational activities (billing upgrades, advanced metering infrastructure and enhanced water loss control, and conservation-oriented rates). The following table summarizes annual costs based on the implementation schedule presented in this plan. Implementation costs will be funded primarily through the District's operating budget, although external funding sources will also be evaluated.

Year	Advanced Metering Infrastructure and Enhanced Water Loss Control	Conservation-Oriented Rates	Billing Upgrades	Total
2018	\$70,000	-	-	\$70,000
2019	\$70,000	-	\$2,500	\$72,500
2020	\$70,000	\$20,000	\$2,500	\$92,500
2021	\$70,000	-	\$2,500	\$72,500
2022	\$70,000	-	\$2,500	\$72,500
2023	-	-	\$2,500	\$2,500
2024	-	-	\$2,500	\$2,500
2025	-	-	\$2,500	\$2,500

#### 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 District achieve its goals. The action plans specify goals, strategies, action items, timelines, and resources for each activity.











## 3 INTRODUCTION

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The Copper Mountain Consolidated Metropolitan District (District) is a special district under Title 32 of the Colorado Revised Statutes and operates under the direction of a five-member Board of Directors. Formed in 1972, the District provides water, wastewater, and television services to Copper Mountain ski resort and associated areas. The District is also a member of Summit Fire and Emergency Services.

This water efficiency plan is the first that has been developed for the District. A related planning effort includes the District's long-range master plan, which was updated in 2013 and projects infrastructure needs out to system buildout.

### 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 District is well below this threshold, the District, 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 District's history of water saving activities and future plans. As a special district water provider with relatively limited staffing and financial resources, the District seeks to leverage regional partnerships to effect change and encourage all residents and visitors to reduce water use.

Additionally, in developing and adopting this water efficiency plan, the District will qualify for grant funding from the State of Colorado to support implementation of water efficiency programs. Regional partnerships developed through this process are already leading to increased opportunities for technical guidance through professional associations and training and education programs.

### 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) convened a project 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, and provides opportunities for partnership and collaboration amongst the participating utilities. 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.

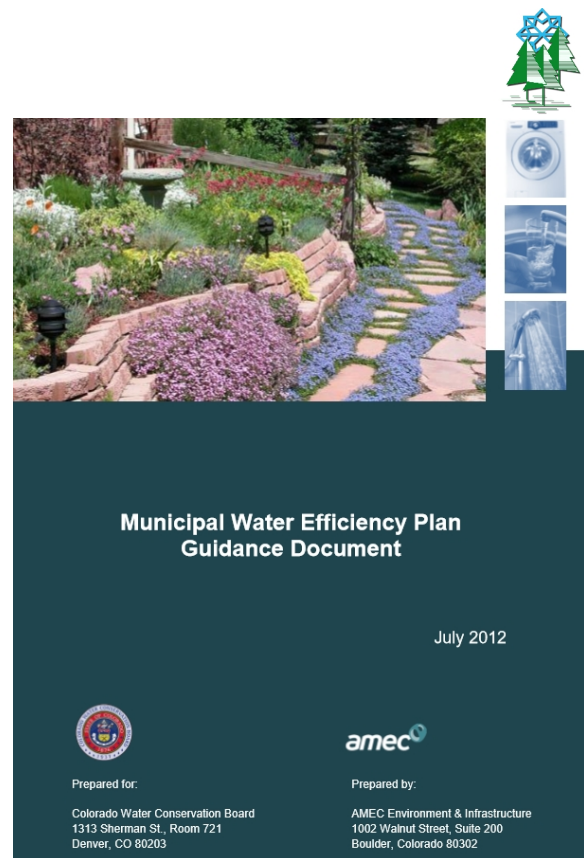


Figure 1. State of Colorado Municipal Water Efficiency Plan Guidance Document

### 3.3 OUR WATER VISION

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

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#### VISION STATEMENT

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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 District provides water and wastewater services to an area that encompasses 1.8 sq mi at the base of Copper Mountain (**Figure 2**). Copper Mountain is a resort community in Summit County located 75 miles west of Denver, near the intersection of Interstate 70 and Colorado Highway 91. The area was once known as Wheeler Junction, a settlement founded in the 1880's as a home for miners. As with other areas in Summit County, when the mining claims dried up most of the settlements associated with them did as well. In 1971, Chuck Lewis decided to build a ski area. In 1972, the District was formed to address the needs of the citizens.

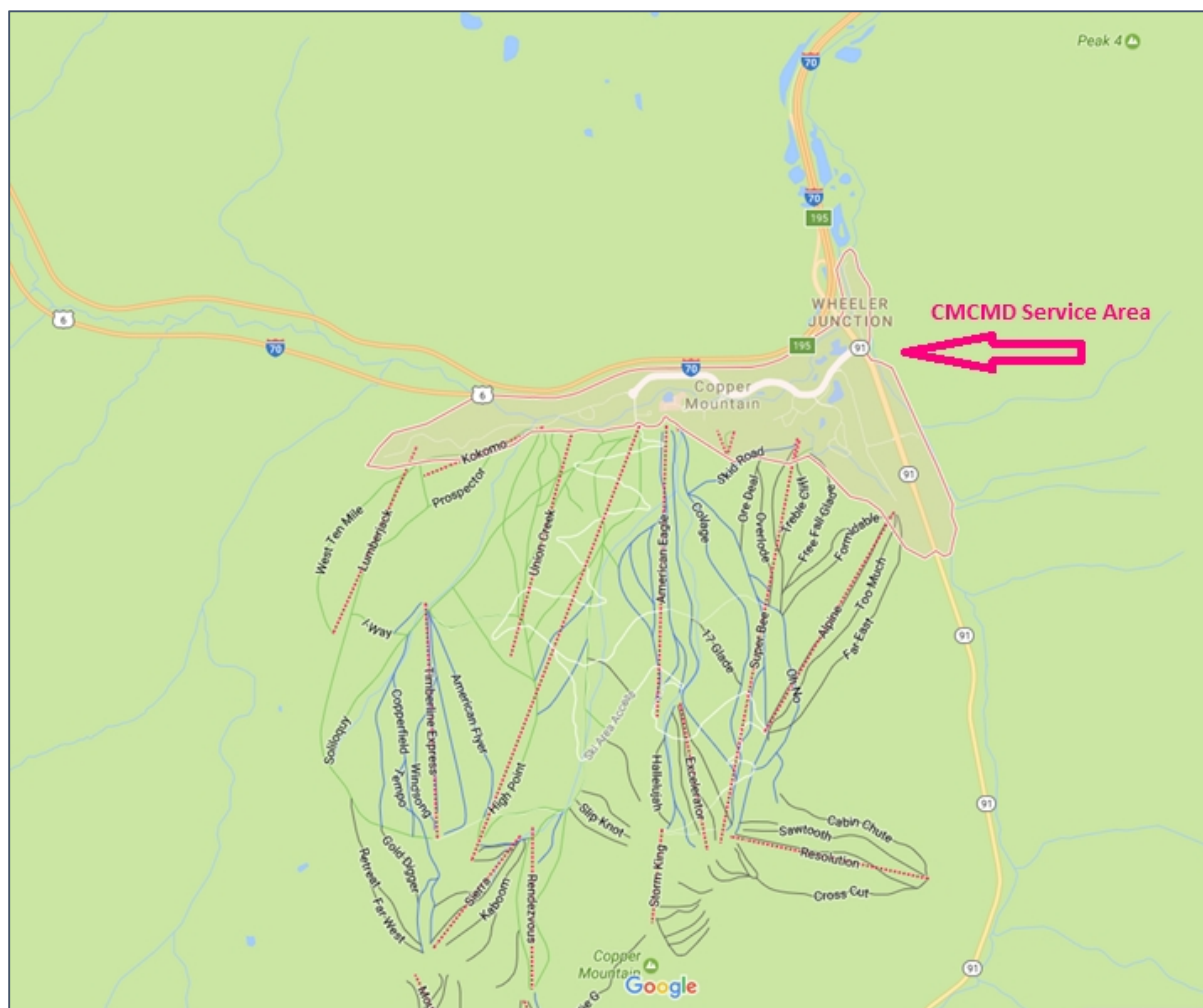


Figure 2: District Service Area (Map data © 2017 Google)

### 4.2 POPULATION

Copper Mountain is comprised almost entirely of the ski resort and associated amenities. Tourism introduces a high degree of seasonality and variability into the service population. In 2015, Copper Mountain had a population of 268 permanent residents (ACS 2015). However, the



District estimates that the annual average service population was 5,785, and that the daily peak service population was more than 14,000.

From 2011 to 2015, Copper Mountain experienced an 8% decline on average year-over-year in permanent resident population (from 385 to 268 residents; ACS 2015), but an increase of 5% year-over-year in average annual population served. Moving forward, based on the State of Colorado's projections for Summit County, the District is planning for a 2% growth rate in the permanent population (CSDO 2015) as well as the annual average service population.

### 4.3 RESIDENTIAL SECTOR

Housing in Copper Mountain reflects the characteristics of a ski town. Approximately 93% of the available housing units are designated as multifamily housing (ACS 2015). The remaining housing units are single-family detached and single-family attached homes. The average building age dates to the mid-1980s (ACS 2015). Older buildings often represent opportunities for indoor water savings through the replacement of fixtures and appliances. However, the District does not have jurisdiction over plumbing and building codes in the service area; development is subject to the codes adopted by Summit County. The high proportion of multifamily units and transient population represents a challenge for water education and outreach efforts.

The median household income in Copper Mountain is \$26,595, well below the State median income of \$60,629 (ACS 2015). While lower incomes can indicate that financial savings from reductions in water use can be motivational, that income profile does not apply to the visiting population. The District needs to engage and influence the larger transient population to effect long-lasting water savings.

In terms of residential expansion, there are several projects being considered, including an approximately 80-unit workforce housing development and a hotel and neighborhood development on the east side of the ski area that has a residential component. Copper Mountain Resort is currently working with the Summit County Building Department on both of these projects. It is also important to note that while much of the residential property in the area has been developed, there are still a number of properties available for single-family and multifamily structures.

### 4.4 COMMERCIAL AND INDUSTRIAL SECTOR

Copper Mountain ski resort employs approximately 1,600 people in the winter and 700 people in the summer. It is also important to note that Copper Mountain ski resort owns water rights for snowmaking and golf course irrigation that are independent of the District's operations.

Since Copper Mountain is surrounded by national forest, the opportunity for boundary expansion is limited. Growth potential is driven by infill projects, including the hotel and neighborhood development previously described, and a standalone hotel that is also in the planning phase. If these projects are developed, along with the residential development projects, they will represent a substantial increase in water demands that may require additional water rights and supply infrastructure.



## 5 EXISTING WATER AND WASTEWATER SYSTEM

### 5.1 RAW WATER SUPPLIES

The District has historically been supplied by three groundwater wells (Wells 1A, 2, and 3) that pump from the West Ten Mile Aquifer. The District owns a portfolio of water rights to pump up to a combined 1 cfs (715 ac-ft/yr) from these wells.

In 2017, Well 3 was reclassified as groundwater under direct influence (GWUDI) of surface water. The District was required to shut down the well and lost approximately 500 gpm in production capacity. Under the same action by the Colorado Department of Public Health and Environment, Well 1A was reclassified as a conditional groundwater source resulting in its production capacity being reduced from 500 gpm to 250 gpm. The combined reduction in production capacity of 750 gpm required the District to evaluate whether to develop new groundwater sources or to provide more advanced water treatment for the existing wells. The District chose to develop new groundwater sources.

To replace production from Wells 1A and 3, the District constructed a new groundwater well (Well 4), that has a production capacity of approximately 750 gpm. The District is currently in the process of transferring water rights from Well 3 to Well 4.

Looking into the future, the District has estimated water demands at buildout to be 1,840 ac-ft/yr (1,140 gpm), which exceeds the District's current water rights. In addition to transferring existing water rights from Well 3 to Well 4, the District is attempting to secure additional water rights to meet future demands. The current demand estimates at buildout do not account for all additional demands from the residential and commercial projects being developed or conceptualized, in which case the District is considering whether an additional well (Well 5) and water rights are needed.

**Table 1** presents a summary of the District's historical, current, and future anticipated water supplies.

*Table 1: Summary of Raw Groundwater Supplies*

Time Period	Groundwater Sources	Water Rights		Fixed Capacity		Firm Capacity	
		gpm	cfs	gpm	cfs	gpm	cfs
<b>Before August 1, 2017</b>	Wells 1A – 2 – 3	443	1	1,725	3.8	1,000	2.2
<b>After August 1, 2017</b>	Wells 1A – 2 – 4	443	1	1,725	3.8	975	2.2
<b>Buildout in 2040 (incl. 2 new hotels)</b>	Wells 1A – 2 – 4 – 5	642	1.43	2,225	5.0	1,475	3.3





## 5.2 TREATMENT AND DISTRIBUTION

The District does not have a water treatment plant. The raw groundwater is good quality and requires only disinfection using sodium hypochlorite to meet drinking water standards. All water is treated to drinking water quality standards – the District does not distribute raw, non-potable, or reclaimed water supplies.

The distribution system includes about four miles of ductile iron piping, one pumping station, and two storage tanks with a combined capacity of 1 MG. The pumping station houses four pumps which operate in a lead/lag/standby control sequence to provide adequate supply and system redundancy. The system also includes a 2,500 gpm fire pump that provides emergency fire flows.

The District struggles with high pressures created by the steep terrain and the fact that the distribution system includes only one pressure zone. At the lowest point in the system, the water pressure can be around 150 psi. The District requires all customers to have pressure-reducing valves installed, but customers still occasionally report water hammer problems.

## 5.3 WATER DISTRIBUTION AND NON-REVENUE WATER USES

The District provides retail water to residential and commercial customers, and wholesale water to contractors that serve the Copper Mountain ski resort. Non-revenue water uses include hydrant flushing, system leaks, and water used for firefighting. More information on non-revenue water is included in **Section 6.1.3** as part of the discussion of historical system demands.

## 5.4 WASTEWATER COLLECTION AND TREATMENT

The District provides wastewater collection and treatment services in addition to water services. The 1.1 MGD wastewater treatment plant (WWTP) includes trash and grit removal, activated sludge, filtration, and ultraviolet disinfection treatment. The treated effluent is discharged to Ten Mile Creek. Biosolids from the plant's aerated digesters are recycled at the CLIMAX mine.

## 5.5 WATER AND SANITATION RATES

In 2015, the District adopted an inclining block rate structure to discourage excessive water use and to establish a fair and equitable assessment of water consumption (**Table 2**). The rates are revised annually based on budget projections. The pricing structure is based on Copper Equivalent Units (CEUs), which are calculated as actual water consumption (in gallons) divided by 10,000 gallons. Because most of the buildings in the service area contain a mix of residential and commercial customers, the rates do not differentiate between these two sectors. All irrigation use is separately metered and subject to an irrigation pricing rate that is slightly lower than the Tier 2 water consumption rate. This lower pricing reflects the fact that irrigation return flows are not treated by the wastewater treatment plant. The irrigation pricing rate is also applied to wholesale water provided to contractors and for special events.



*Table 2: 2017-2018 Combined Water and Sanitation Rates (District 2017)*

Pricing Tier	Pricing Rate (per CEU per quarter)
Water Base (Flat) Rate	\$37.95
Sanitation Base (Flat) Rate	\$139.43
Tier 1: Use within CEU	\$7.70/1,000 gallons consumed
Tier 2: Use over CEU	\$11.55/1,000 gallons consumed
Irrigation Rate	\$10.51/1,000 gallons consumed

The District revises the CEU calculations and corresponding base allotments for customers every two years. The rate structure is designed to impose a higher base rate on customers that use more water while allowing them a higher Tier 1 volume based on historical consumption. Similarly, consumers that use less water will have a smaller base rate and smaller Tier 1 allotment. This pricing structure inherently allows customers with higher CEU allotments to use more water before triggering Tier 2 rates than customers with lower CEU allotments, but the corresponding increase in base rates provides a strong incentive for conservation.

Because the tax base in Copper Mountain is relatively small, the District relies heavily on water and sanitation fees for operating revenues. The District operates as an enterprise fund, and as such does not rely on taxes or other forms of revenue to subsidize water and sewer expenses. Customers are billed quarterly.

## **5.6 SYSTEM RELIABILITY, LIMITATIONS, AND FUTURE NEEDS**

### **5.6.1 Reliability**

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

### **5.6.2 Vulnerabilities**

#### **5.6.2.1 Natural Hazards**

Because the District's water supply originates from groundwater sources, it is less susceptible to natural hazards than other systems. For example, in the case of wildfire, the District's risk would come from infrastructure exposure rather than water source contamination. The District has constructed fire breaks around most of its facilities, including the water storage tanks. The District has not historically experienced any issues with flooding, as there are large flood channels and good drainage characteristics in the watershed.

#### **5.6.2.2 Infrastructure**

Distribution system leaks can be significant, but the implementation of an annual leak detection program has minimized the number and severity of leaks that occur. Although the distribution system does have multiple looped segments, leaks and main breaks can be difficult to isolate due to aging infrastructure. The number of valves in the system is not adequate and some of the valves do not fully close, while others are completely inoperable. Beginning in 2017, the District



has begun to identify system deficiencies and to replace valves and other aging system components.

### **5.6.3 Future Needs**

As stated previously, the District is working to procure additional water rights (at an estimated cost of \$30,000-\$50,000) and is considering developing a new well to support growth in commercial sector demands (at an estimated cost of \$600,000-\$800,000). Water conservation efforts are one mechanism to help the District manage demands and minimize expenditures associated with additional water rights and infrastructure.





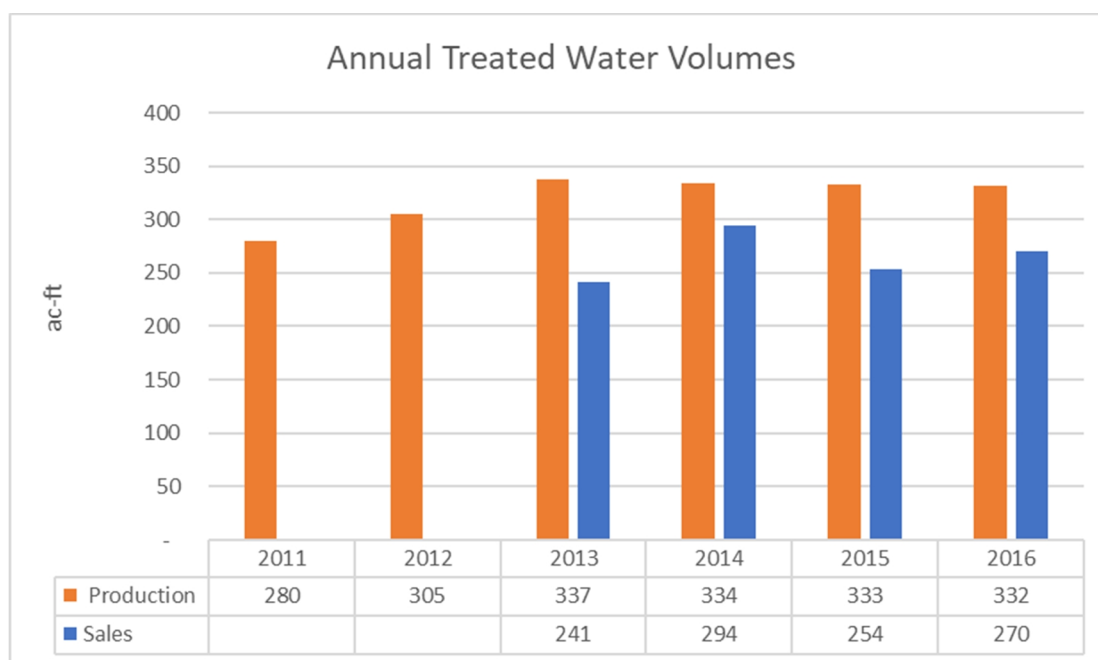
## 6 HISTORICAL WATER DEMANDS AND DEMAND MANAGEMENT

### 6.1 HISTORICAL WATER DEMANDS

The District 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 a summary of all data presented in this plan.

#### 6.1.1 Annual Treated Water

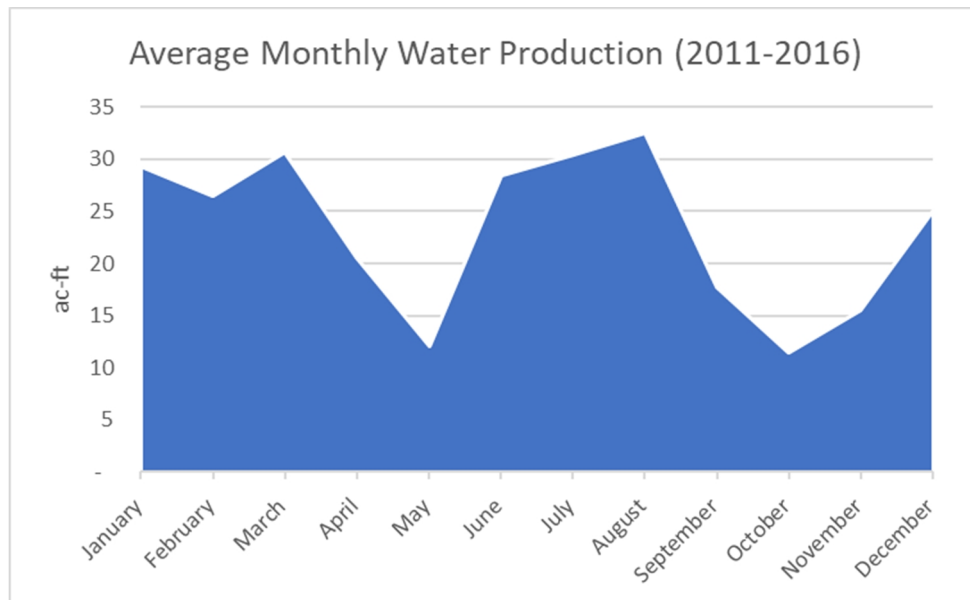
Annual treated water volumes for the period 2011-2016 are shown in **Figure 3**. These data have not been normalized for weather or other factors that affect water demands from year to year. Production volumes increased through 2013 but have remained relatively consistent since then. Additional data are included in **Appendix A: Plan Data**.



*Figure 3. Annual Treated Water Volumes (2011-2016)*

#### 6.1.2 Monthly Treated Water

The District experiences two periods of high water demands throughout the year: in winter (due to ski-related tourism) and in summer (due to tourism and outdoor water use). **Figure 4** presents average monthly water production volumes for the period 2011-2016 that demonstrate the fluctuation in demands throughout the year.

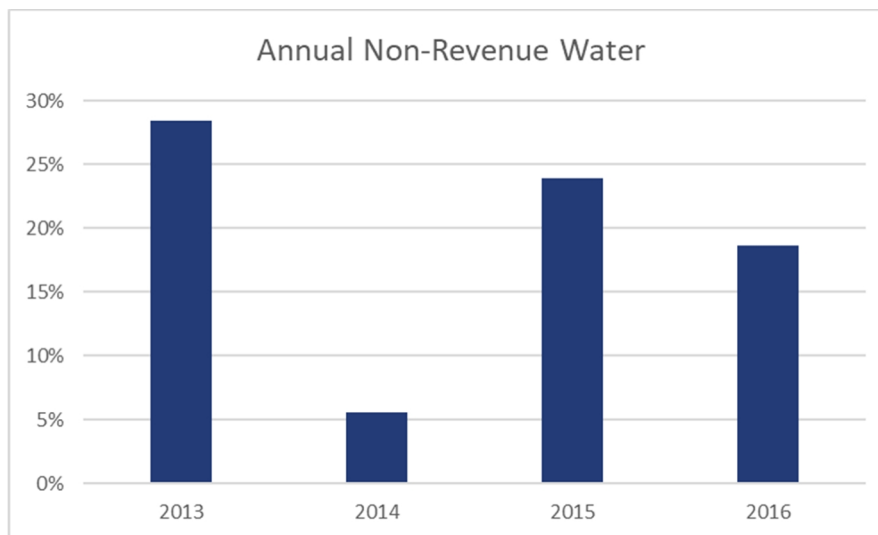


*Figure 4: Average Monthly Water Production (2011-2016)*

The volume of water used for irrigation and other outdoor uses within the District's service area is relatively low. In 2016, only 14% of annual sales represented outdoor water use.

### **6.1.3 Non-Revenue Water**

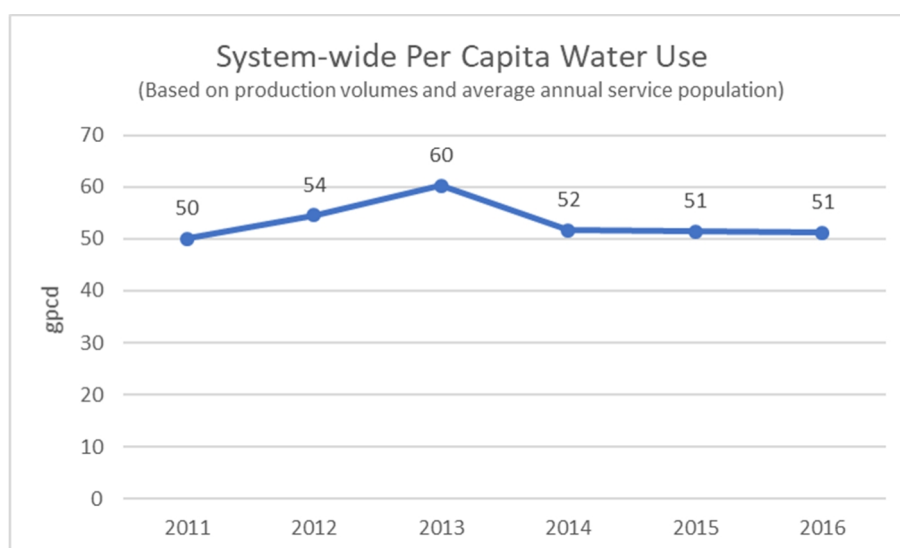
The volumetric difference between water production and metered water consumption is referred to as non-revenue water. Non-revenue water uses in the District's system include hydrant flushing, system leaks, and water used for firefighting. Annual non-revenue water estimates, expressed as a percentage of production volumes, are shown in **Figure 5** for the period 2013-2016. The District manages non-revenue water volumes primarily through a leak detection and repair program. The District suspects that variability in non-revenue water estimates may be partially explained by gaps in historical water usage data records. The District is currently developing better methods for data management and analysis, including consolidating historical data.



*Figure 5. Annual Non-Revenue Water (2013-2016)*

#### 6.1.4 System-wide Per Capita Water Demands

The District calculates system-wide per capita water demands using water production volumes and the average annual population served, which includes both the resident and visiting population. Over the past few years, the District has experienced variable, but slightly declining, system-wide per capita demands (**Figure 6**).



*Figure 6. System-wide Per Capita Water Demands (2011-2016)*

The District uses system-wide per capita values as one measure of water use that accounts for development and growth in the system. As the metric is currently calculated, the values include non-revenue water volumes. It's worth noting that per capita 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):





*[Per capita 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.*

## **6.2 PAST AND CURRENT DEMAND MANAGEMENT ACTIVITIES**

The District began taking foundational steps towards demand management beginning in 2015.

### **6.2.1 Metering and Data Collection**

In 2016, the District began implementing Advanced Metering Infrastructure (AMI) that allows customer meters to be read remotely every five minutes. The AMI system helps the District identify and repair customer leaks more quickly. This is very important for the Copper Mountain area because many residential units are unoccupied most of the year, which can result in leaks going undetected for long periods of time.

The District runs a program to replace failed meters with the new advanced meters. Approximately 40 of 260 meters have been replaced to date. The District estimates that it will take 15 years for all meters to be replaced under current budget projections, unless outside support can be procured from grant funding or through cost-sharing with property managers. The District has begun outreach efforts with homeowner’s associations (HOAs) about the meter replacement program.

The District has not estimated water savings associated with the AMI system, but has realized additional revenues by replacing antiquated meters that were not properly recording water use.

As mentioned previously, the District is also developing better processes for data management and analysis. These efforts have already highlighted system inefficiencies that the District has worked to improve through equipment repairs.

### **6.2.2 System Water Loss Management and Control**

Beginning in 2014, the District has contracted out an annual system-wide leak inspection and valve exercises. In the 2016 inspection, no leaks were found. Leaks identified in 2017 were immediately located and repaired.

### **6.2.3 Efficiency-Oriented Rates and Tap Fees**

As described previously in Section 5.5, the District adopted an inclining block rate structure in 2015 to encourage water efficiency and to establish a fair and equitable assessment of water consumption. The water rates are updated annually based on budget projections. Rates were last increased by 10% effective October 1, 2017.

The District’s tap fees are also structured to encourage water efficiency by using potential consumption based on tap size to determine the total tap fee. As of October 1, 2016, the water tap fee is set at \$4,100 per CEU and the sewer tap fee is set at \$5,600 per CEU. The District does



not have additional funding sources that can be used to subsidize tap fees, so new infrastructure and development must pay for actual costs to add the new services. At this time, the tap fees are established to recover infrastructure and other fixed costs, but do not include recovery of costs associated with acquiring additional water rights.

#### **6.2.4 Water Use Regulations**

Summit County has jurisdiction over building and plumbing codes in the service area. 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 Historical Water Savings**

Since 2013, the District has seen relatively stable production volumes and systemwide per capita water use values. Although the District has achieved some water savings through meter replacements and system-wide leak inspections, the water savings have not been quantified.



## 7 WATER EFFICIENCY GOALS AND DEMAND FORECASTS

The District is currently using two planning horizons: through 2025 (for the purposes of this water efficiency plan), and through the year 2040, when buildout is expected to occur.

As part of the preparation of this water efficiency plan, three demand forecasts were prepared (Figure 7):

- **High growth.** This is a high growth forecast that assumes demands will grow at a rate of 3.4% year-over-year based on historical trends over the past five years.
- **Business-as-usual.** This forecast accounts for growth in demands as well as water savings from recently implemented efficiency activities.
- **Active efficiency measures.** This forecast includes projected water savings from additional efficiency activities implemented in the future.

The demand forecasts diverge in 2018, when implementation of new efficiency activities is assumed to begin. **Appendix A: Plan Data** includes tabular summaries of the demand forecasts.

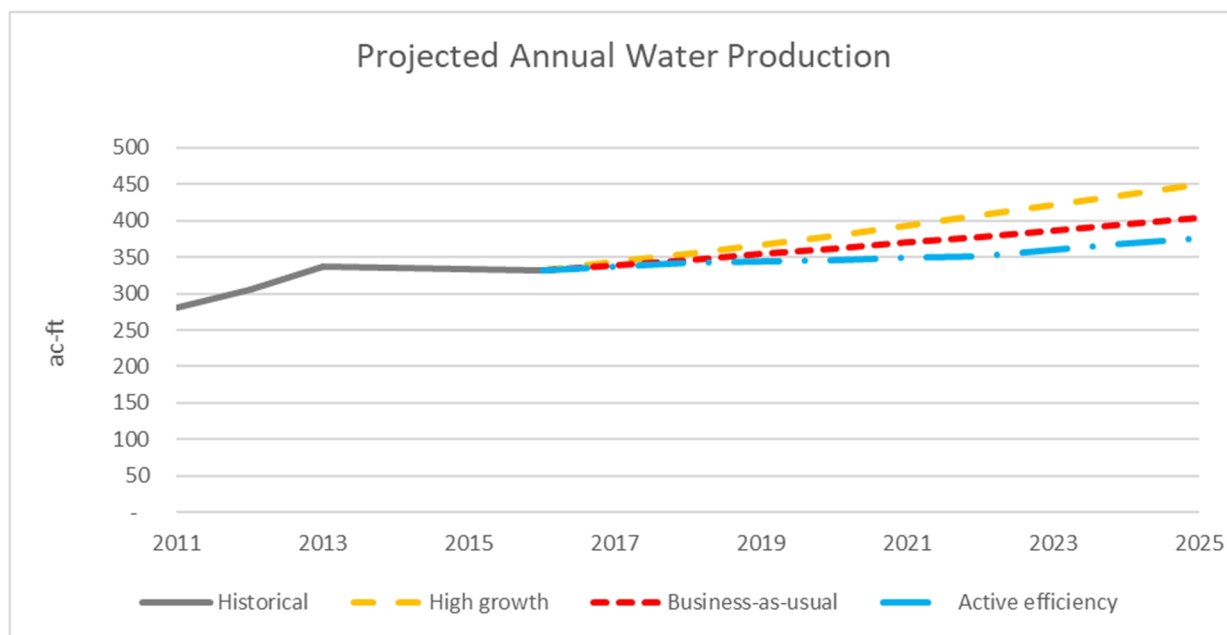


Figure 7: Projected Annual Water Production Volumes (through 2025)



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## COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT WATER EFFICIENCY GOALS

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Over the period 2018-2025, the District aims to implement additional efficiency activities to achieve:

- Annual water savings of 28 ac-ft/yr by the year 2025, compared to the business-as-usual forecast.
- Cumulative water savings of 162 ac-ft over the period 2018-2025 compared to the business-as-usual forecast.
- Reductions in peak demands during the summer associated with outdoor water use.
- Increased awareness by residents and visitors about the importance of water resources and water conservation.
- Reductions in water use to avoid drilling new water supply wells.





## 8 SELECTION OF WATER EFFICIENCY ACTIVITIES

The District 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 District aims to implement over the next seven years is shown in **Table 3**.

*Table 3. Summary of Planned Water Efficiency Activities*

Water Efficiency Activity	Sectors Impacted	Implementation Period	Projected Water Savings in 2025
<b>Foundational Activities</b>			
Advanced Metering Infrastructure and Enhanced Water Loss Control	All Customers	2018-Ongoing	23 ac-ft/yr
Conservation-Oriented Rates	All Customers	2020-Ongoing	2 ac-ft/yr
Billing Upgrades	All Customers	2019-Ongoing	Not Quantified
Institutional Collaboration	Utility	2017-Ongoing	Not Quantified
<b>Targeted Technical Assistance and Incentives</b>			
Indoor Water Efficiency	Residential	2018-Ongoing	1 ac-ft/yr
Outdoor Water Efficiency	All Customers	2020-Ongoing	2 ac-ft/yr
<b>Ordinances and Regulations</b>			
Land Use Planning	All Customers	2017-Ongoing	Not Quantified
<b>Education Activities</b>			
Education and Outreach	All Customers	2018-Ongoing	Not Quantified
<b>Total Annual Savings in 2025</b>			<b>28 ac-ft/year</b>

### 8.1 FOUNDATIONAL ACTIVITIES

#### 8.1.1 Advanced Metering Infrastructure and Enhanced Water Loss Control

As discussed previously, the District has upgraded approximately 15% of meters to AMI. Completing the remaining 85% will enable the District to realize additional income from improved meter functioning and to identify customer leaks more effectively. When the infrastructure is fully in place, the District expects to save 7% of total water use annually (23 ac-ft/yr). The costs to complete the meter upgrades are estimated to be \$350,000, including capital expenditures and staff costs associated with the new program. Given the high cost of this activity, implementation is expected to occur over five years.



### 8.1.2 Conservation-Oriented Water Rates

As part of the next rate study, the District intends to reevaluate the pricing structure, rates, and tier thresholds to determine whether changes to any of these items could better incentivize conservation while preserving the District's revenues. The next rate study is expected to occur in 2020 and cost \$20,000 as an upfront cost with no ongoing costs. Updates to the pricing structure are expected to help the District conserve approximately 1.5 ac-ft/yr of water. These water savings estimates assume that customers will reduce consumption by an average of 7.5% per year (Green and Maddaus, 2010). The estimate also takes into account that some water savings are already being realized through the District's current pricing structure.

### 8.1.3 Billing Upgrades

The District 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 implemented in 2019. 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 District's water conservation goals. In addition to potential water savings, the public engagement associated with the report card will be extremely valuable.

### 8.1.4 Institutional Collaboration

The water efficiency planning process offered an opportunity for District staff to align around water supply and water conservation planning. In the future, the District 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 District 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 8**). 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.

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 District 1.2 ac-ft/yr of water.



# BE RESOURCE WISE

Resource Wise is a **free** program designed to help Summit County businesses decrease their environmental impacts. Services provided include:

- Energy and sustainability assessments
- Coaching
- Rebates for business improvements
- Local recognition
- **NEW FOR 2018: Installation of LED tubes, occupancy sensors, water-saving devices, and air sealing work**

To enroll, call the High Country Conservation Center at (970) 668 - 5703 and ask to speak with Jess.



*Figure 8. Resource Wise Advertisement*

### 8.2.2 Outdoor Water Efficiency

For at least the first two years of implementation, the District 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 District (50%).

In year 3 of implementation and beyond, the District 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 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

Copper Mountain is part of unincorporated Summit County and is therefore subject to Summit County's building, plumbing, and land use and development codes (Summit County, 2018a; Summit County, 2018b). The Summit County Building Inspection Department currently follows the 2012 International Codes but will soon be adopting the 2018 International Building and Plumbing Codes. Additionally, new residential developments and residential additions are subject to the County's sustainable building code (Summit County, 2013).

In 2017, as part of the planning process, the District and Summit County representatives 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 District's water conservation goals.





## 9 IMPLEMENTATION AND MONITORING PLANS

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### 9.1 IMPLEMENTATION

The District'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 District 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 District 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 District'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.

**Table 4** summarizes the estimated annual costs for the District-led activities based on the implementation schedule presented in this plan. Implementation costs will be funded primarily through the District's operating budget, although external funding sources will also be evaluated.



Table 4. Annual Implementation Costs

Year	Advanced Metering Infrastructure and Enhanced Water Loss Control	Conservation-Oriented Rates	Billing Upgrades	Total
2018	\$70,000	-	-	\$70,000
2019	\$70,000	-	\$2,500	\$72,500
2020	\$70,000	\$20,000	\$2,500	\$92,500
2021	\$70,000	-	\$2,500	\$72,500
2022	\$70,000	-	\$2,500	\$72,500
2023	-	-	\$2,500	\$2,500
2024	-	-	\$2,500	\$2,500
2025	-	-	\$2,500	\$2,500

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 District complied with these requirements by posting the water efficiency plan on-line (**Figure 9, Figure 10**) and providing public notice of the plans through an e-mail sent to all property owners at Copper Mountain (**Figure 11**). The public comment period lasted from February 2, 2018 through April 2, 2018.

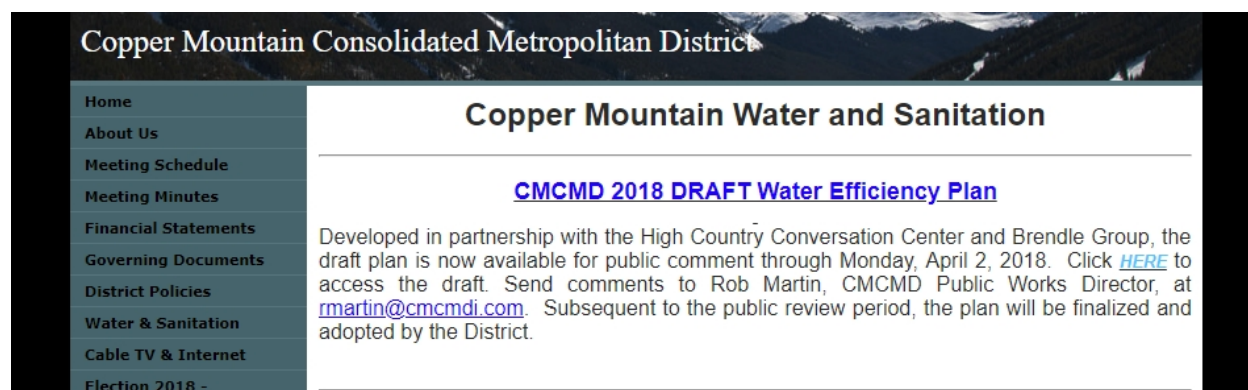


Figure 9. Screen Capture from the District's Website (District, 2018a)



## Water Efficiency Plans

After a robust stakeholder process during 2017, participating water providers (towns of Breckenridge, Frisco, Dillon and Copper Mountain Metro District), High Country Conservation Center, and **Brendle Group** have compiled draft water efficiency plans (WEP) now available for public review. These plans will be available to the public for comment through April 4th. Please submit comments for each plan to the associated email contact. Plans can also be found on town websites under the water department. This project was made possible by a grant from the **Colorado Water Conservation Board**

Click on each image below to view the WEP for each water provider:

Town of Frisco



Email

Town of Breckenridge



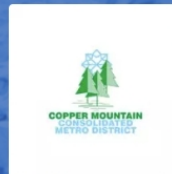
Email

Town of Dillon



Email

Copper Mtn. Metro



Email

Blue River Watershed



Email

Figure 10. Screen Capture from the High Country Conservation Center Website (HC3, 2018)

Copper Mountain Consolidated Metropolitan District, in association with High Country Conservation Center, Summit County, and other regional water providers, has developed a Water Efficiency Plan for the Copper Mountain area. The Water Efficiency Plan is subject to a 60-day public review period and will be posted on the District's website beginning February 1, 2018. Subsequent to the public review period, the plan will be finalized and adopted by the District.

You may view the Water Efficiency plan here:  
[www.coppermtnmetro.org](http://www.coppermtnmetro.org)

Please send all comments to Robert Martin at  
[martin@cmcmdi.com](mailto:martin@cmcmdi.com)

Thank You,  
Rob

Robert Martin, P.E.  
Copper Mountain Consolidated Metropolitan District  
P 970.968.2537 Ext 206  
C 970.389.6529

Figure 11. E-mail Notification of Public Comment Period (District, 2018b)



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 District's Board, **Appendix E** will contain a copy of the resolution.

The District intends to monitor the success of the water efficiency programs using the metrics presented in **Section 6.1 (Historical Water Demands)**. The District will use **Appendix A** to track the metrics annually. If the District 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.

At a minimum, the District will update this plan every seven years, in accordance with the Water Conservation Act of 2004. The District will aim to update the plan more frequently, perhaps every five years, when financially feasible. Plan updates will incorporate the new data accumulated from the annual monitoring process and may include revisions to the District's water efficiency goals and planned activities, as appropriate.





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## APPENDIX A: PLAN DATA

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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	<a href="#">Website</a>
American Water Works Association Rocky Mountain Section	Topics: water conservation, tap fees	Training	<a href="#">Website</a>
Colorado Water Conservation Board	Water Conservation Implementation Grants	Grant Funding Source	<a href="#">Website</a>
Colorado Water Conservation Board	Water Resource Conservation Public Education and Outreach Grants	Grant Funding Source	<a href="#">Website</a>
Colorado Water Conservation Board	Water Plan Grants	Grant Funding Source	<a href="#">Website</a>
Colorado WaterWise	Live Like You Love It	Education and outreach materials	<a href="#">Website</a>
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	<a href="#">Website</a> Contact Jeff Oxenford (720-353-4242)
Sonoran Institute	Land Use and Water Planning Workshop	Education and Training	<a href="#">Website</a>
WaterNow	Project Accelerator Program	Technical and program assistance	<a href="#">Website</a>



## APPENDIX C: IMPLEMENTATION ACTION PLANS

### EDUCATION AND OUTREACH WORKING GROUP

Last Updated: May 25, 2018

Working Group Role	Name and Organization
<b>Group coordinators</b> <i>(responsible for scheduling meetings and communications)</i>	Jessie Burley, High Country Conservation Center Hallie Jaeger, High Country Conservation Center
<b>Team members</b> <i>(responsible for helping with action items)</i>	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
<b>Group coordinator</b> <i>(responsible for scheduling meetings and communications)</i>	Laura Lynch, Town of Breckenridge
<b>Team members</b> <i>(responsible for helping with action items)</i>	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
<b>Group coordinator</b> <i>(responsible for scheduling meetings and communications)</i>	Joyce Allgaier, Town of Frisco
<b>Invited team members</b>	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**

<b>Action Item</b>	<b>Responsible Team Member</b>	<b>Date</b>	<b>Status</b>
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: Copper Mountain 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 <u>x</u> _____ Comment: Put final cover letter	Cover letter added
2. Organizations and individuals assisting with plan development	Yes <u>x</u> _____ No _____ Comment: pg. 5	No action required
3. Quantified annual retail water delivery?	Yes _____ No _____ Comment: There is a treated distribution bar chart on pg. 14 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 3 or at least the last 5 years. Buildout demand estimate= 1840 af/yr	Modified Figure 3 to show water sales data if available (2011-12 data are not available) and to include a data table of values.
4. Identified population served by retail water delivery?	Yes <u>x</u> _____ No _____ Comment: Population 2016- 268 permanent population; avg. annual service population 5,785; daily peak service population = 14,000 ; assumed 2% annual pop growth; build out 2040	No action required
5. Public comment period completed? (60 days or local regulation)	Yes _____ No <u>x</u> _____ 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 <u>x</u> _____ Comment: Put in final cover letter	Cover letter added
7. All required water saving measures and programs considered?	Yes <u>x</u> _____ No _____ Comment:	No action required



Required Conservation Plan Elements		Completed?	Response to Comments
I.	Fixtures and appliances – toilets, urinals, showerheads, faucets, etc.?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Comment: HCC will lead indoor residential audits with install of fixtures	No action required
II.	Waterwise landscapes, drought resistant vegetation, removal of phreatophytes, efficient irrigation, etc.?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Comment: Commercial outreach through HCC sustainable business program and will put financial resources towards upgrades	No action required
IV.	Water reuse systems?	Yes <input type="checkbox"/> No <input type="checkbox"/> Comment: N/A	No action required
V.	Distribution system leak ID and repair?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Comment: Annual system-wide leak detection; use AMI to alert customers of leaks; 40 of 260 meters have been replaced with AMI with revenues increasing by replacing underreporting meters	No action required
VI.	Information, public education, audits, demos?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Comment: WaterSmart report card along with AMI will engage customers in water usage reduction; The top priorities for 2018 that have been identified include: <ul style="list-style-type: none"> <li>• Developing or assembling water conservation materials that are targeted to priority sectors in support of implementation efforts under this plan.</li> <li>• Developing strategies for engaging the visiting and second homeowner population in Summit County.</li> <li>• Promoting awareness around joint energy-water savings opportunities.</li> <li>• Identifying key events and outreach channels for education and awareness efforts.</li> </ul>	No action required



Required Conservation Plan Elements	Completed?	Response to Comments
VII. Conservation oriented rate structure and billing system?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Comment: 2 tier Inclining block rate with quarterly read/bill per equivalent unit; irrigation metered and billed separately; rates study will occur in 2020 with a reevaluation of the tier thresholds	No action required
VIII. Regulatory measures designed to encourage water conservation?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Comment: Under Summit County codes and ordinances; <b>See below</b>	No action required
IX. Incentives, rebates to encourage conservation implementation?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Comment: See below	No action required
8. Role of water conservation plan in overall water supply planning?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Comment: Section 3.3 Vision statement; Section 5 discusses relationship between supply reliability and demand activities as well as vulnerabilities; plan for water efficiency to help offset need for new rights and well development	No action required
9. Steps to implement, monitor, review, and revise conservation plan including time period not to exceed 7 years?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Comment: pg. 24-25 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Comment: 26.5 af feet demand or 5% reduction by 2025; a few activities are not quantified due to nature of programs and initiatives; <b>See Below for comments</b>	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 <input checked="" type="checkbox"/> No <input type="checkbox"/> 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**  
☒ **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:** There is a treated distribution bar chart on pg. 14 and I would like to see a table with distributed and metered consumption for the years listed in Figure 3 or at least the last 5 years. I would like to see demand broken down by year, distributed water, metered usage and customer class in a table.

**Response to Comment:** Modified Figure 3 in section 6.1.1 to show water sales data if available (2011-12 data are not available) and to include a data table of values. Added a reference to Appendix A for additional data. Please note that the District does not differentiate between residential and commercial customers for metering or billing, so customer class breakdowns are not available.

**Future demands and demand reductions:** It would be good to have the data in the line graph (figure 7) on pg. 19 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 valves 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, goals, and Table 3 to reflect updated water savings estimates.



**Codes and Ordinances:** Could you explain a little more about the Summit County codes and ordinance Copper has to adhere to?

**Response to Comment:** Yes. Edited Section 8.3 to add more information.

#### PUBLIC REVIEW COMMENTS

No comments were received.





## **APPENDIX E: RESOLUTION TO ADOPT PLAN**

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# **COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT**

## **RESOLUTION 2018-04**

### **A RESOLUTION ADOPTING THE COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT WATER EFFICIENCY PLAN AND THE BLUE RIVER WATERSHED WATER EFFICIENCY PLAN**

WHEREAS, the Board of Directors of the Copper Mountain Consolidated Metropolitan District ("District") is authorized to adopt the District Water Efficiency Plan and the regional Blue River Watershed Water Efficiency Plan; and

WHEREAS, the District and the Blue River Water Shed Water Efficiency Plans were presented to the public for a 60-day public comment period; and

WHEREAS, the District understands and supports the need for long-term water conservation measures and is committed to implementation of the District Water Efficiency Plan and endorsement of the Blue River Watershed Water Efficiency Plan; and

WHEREAS, pursuant to HB 04-1365, a State-approved Water Efficiency Plan will qualify the District for future funding opportunities offered by the Colorado Water Conservation Board, and the Colorado Water Resources and Power Development Authority for water and infrastructure projects.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT that:

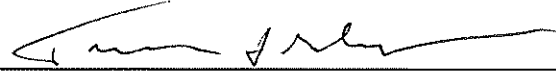
1. The District Water Efficiency Plan, dated June 2018 and included as Attachment A to this Resolution, be adopted as the District's primary guiding document for water efficiency and conservation; and
2. The regional Blue River Watershed Water Efficiency Plan, dated June 2018 and included as Attachment B to this Resolution, be adopted to support broader regional water efficiency and conservation efforts. The District understands that support and adoption of the regional Plan does not obligate or commit the District to financial or other material support for Plan implementation, and that involvement in implementation of the regional Plan will be contingent on District Board approval and will be evaluated on a case-by-case basis.

ADOPTED WITH AN EFFECTIVE DATE of June 29, 2018.

ATTEST:

By:

  
\_\_\_\_\_  
David Steele, Secretary of the District

  
\_\_\_\_\_  
Thomas J. Malmgren, President of the District