

GRAND JUNCTION REGIONAL

Water EFFICIENCY PLAN

City of Grand Junction Colorado

Clifton Water District

Ute Water Conservancy District

Table of Contents

..... iii
Acknowledgements iii
List of Tables iv
List of Figures v
Acronyms vi
Mission Statement vii
Section One 1
1.0 INTRODUCTION 2
2. 0 PROFILE OF EXISTING WATER SUPPLY SYSTEM -THE CITY OF GRAND JUNCTION 6
2.1.1 History and Overview of Water Supply System 6
2.1.2 Water Supply Reliability 7
2.1.3 Future Needs and Supply-side Limitations 8
2.2.0 Profile of Water Demands and Historical Demand Management 12
2.2.1 Service Area Characteristics 12
2.2.2 Historical Water Demands 13
3.0 PROFILE OF EXISTING WATER SUPPLY SYSTEM -THE CLIFTON WATER DISTRICT 21
4.0 PROFILE OF EXISTING WATER SUPPLY SYSTEM: THE UTE WATER CONSERVANCY DISTRICT 34
5.0 FUTURE WATER DEMANDS IN THE GRAND JUNCTION REGION 47
Section Two: The Grand Junction Regional Water Efficiency Plan 56
6.0 CURRENT AND ON-GOING WATER CONSERVATION 57
6.1 Evaluation of Effectiveness of Activities to Date 65
7.0 GRAND JUNCTION REGIONAL WATER CONSERVATION PLAN 66
7.1 Goals and Objectives 66
7.2 Plan Elements 66
Regional Water Conservation Measures and Programs 67
7.3 Estimated Water Savings and Impact to Demand Forecast: 73
7.4 Monitoring and Evaluation of the Water Conservation Program Components 76
7.5 Public Comment, Council, Board Resolutions and Adoption of the Water Conservation Plan 76
7.6 Plan Updates and Revisions 77
References 78
Appendix A – Grand Junction Region Water Providers Map 79
Appendix B – Drought Response Plan 80
Appendix C - Resolutions 94

Acknowledgements

This project was funded, performed, and completed through a collaborative effort between the City of Grand Junction, the Clifton Water District, and Ute Water Conservancy District.

Staff and water professionals from each entity provided insight to the content of this plan. Especially important to this project was the contribution that Mark Ritterbush and Amy Brown, representatives from the City of Grand Junction; Guy Walker from the Clifton Water District; and Andrea Lopez, from the Ute Water Conservancy District made with their time and knowledge. Also important are the contributions that the respective managers made to the project.

List of Tables

City of Grand Junction

Table 2-1 Water Rights 10-11
Table 2-2 Five Largest C-I Customers 12
Table 2-3 Monthly Water Demand 2005-2022 14
Table 2-4 Metered Use By Customer Category, 2015-2022.....16
Table 2-5 Sector Water Use 18
Table 2-6 Tap Fees 20

Clifton Water District

Table 3-1 Water Rights 24
Table 3-2 Five Largest C-I Customers 28
Table 3-3 Projected Build-out 30
Table 3-4 Residential Rates.....31
Table 3-5 Commercial Rates 32
Table 3-6 Irrigation Rates 32
Table 3-7 Tap Fees 32

Ute Water Conservancy District

Table 4-1 Water Rights 37-39
Table 4-2 Monthly Water Demand 41
Table 4-3 Sector Water Use.....43
Table 4-4 Five Largest C-I Customers 44
Table 4-5 Tap Fees 45-56

Future Water Demand

Table 5-1 City of Grand Junction 15-Year Estimated Water Demand 48
Table 5-2 Clifton Water District 15-Year Estimated Water Demand 50
Table 5-3 Ute Water Conservancy District 15-Year Estimated Water Demand 54
Table 5-4 Grand Junction Region 15-Year Estimated Water Demand 55

Grand Junction Regional Water Conservation Plan

Table 7-1 Ten Largest C-I Customers 69
Table 7-2 Grand Junction Regional Water Efficiency Plan Measures 74
Table 7-3 Grand Junction Regional 15-year Estimated Water Demand with Savings 75

List of Figures

Figure 1-1 Map of Grand Valley Domestic Water Providers ……3
Figure 2-1 Firm Yield of Kannah Creek watershed ……...8
Figure 2-2 Firm Yield vs Projected Water Demands ……9
Figure 2-3 City of Grand Junction Monthly Water Demand ……...15
Figure 2-4 City of Grand Junction Peak Day Demand ……15
Figure 2-5 Metered Use by Customer Category ……..……16
Figure 2-6 Total Water Usage by Type ……17
Figure 2-7 Indoor vs Outdoor Watering Totals ……17
Figure 2-8 Per Capita Water Demand 2000-2022 ……19
Figure 3-1 2020 Housing Tenure ……..23
Figure 3-2 Water Usage ……..……..……...……25
Figure 3-3 DPCS Compared to Population ……...26
Figure 3-4 2022 Monthly Demand ……..……...26
Figure 3-5 Water Usage by Class ……..……27
Figure 3-6 Non-Revenue Water ……29
Figure 3-7 Build-out Based on Available Land ……30
Figure 3-8 GPCS Consumption 2015-2022 ……...31
Figure 3-9 Taps Sold per Year 2015-2022 ……33
Figure 3-10 Total Taps ……..33
Figure 4-1 Monthly Water Demand 2016-2022 ……44
Figure 5-1 GPCS vs Population ……52
Figure 5-2 Precipitation vs Consumption ……53
Figure 6-1 Passive Water Savings Estimate ……65

Acronyms

Name	Acronym
Acre feet	af
Cubic feet per second	cfs
City of Grand Junction	The City
Clifton Water District	Clifton
Colorado Water Conservation Board	CWCB
Commercial & Industrial	C-I
Gallons per day	gpd
Gallons per Capita per Day	GPCD
Million gallons per day	mgd
Million gallons per year	mgy
Municipal and Industrial	M&I
The City, Clifton, and Ute	The Entities
United States Bureau of Reclamation	BOR
Ute Water Conservancy District	Ute, The District
Water Treatment Plant	WTP
Water Conservation Plan	WCP

MISSION STATEMENT

TO PROMOTE WATER CONSERVATION BY EXAMPLE, EDUCATION, AND INNOVATION FOR THE PURPOSE OF SECURING THE FUTURE WATER NEEDS OF THE GRAND VALLEY



SECTION ONE

The Regional Water Efficiency Plan Entities:
The City of Grand Junction, Clifton Water District,
and Ute Water Conservancy District

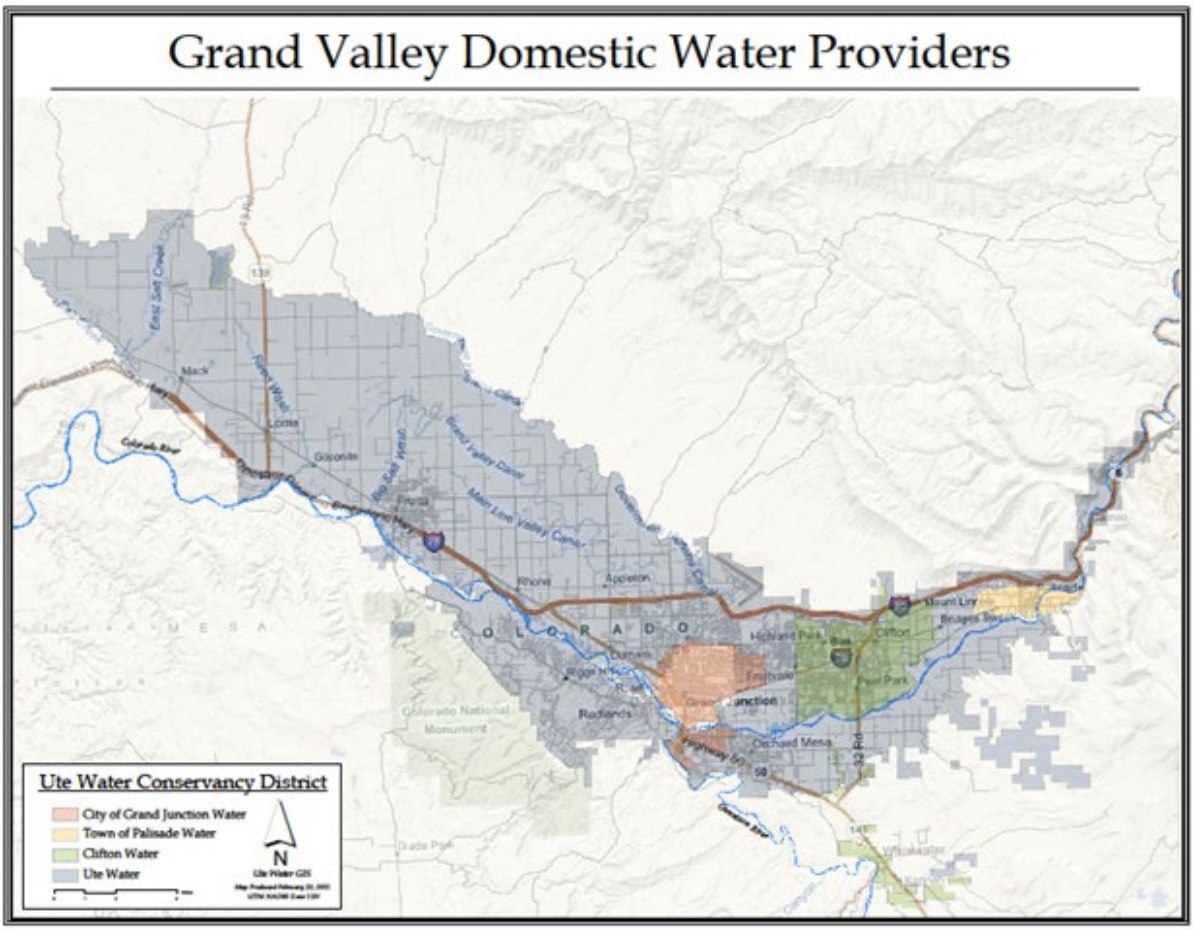
1.0 Introduction

Overview of the Grand Junction Region

The Grand Junction Region is located in Western Colorado and encompasses a large portion of Mesa County. Within the Grand Junction Region are the City of Grand Junction, City of Fruita, Town of Palisade, and the unincorporated areas of Clifton, Loma, and Mack. The Grand Junction Region was settled in the late 1800s and by the early 1900s, six major ditch companies and irrigation districts that divert water from the Colorado and Gunnison Rivers, including a Bureau of Reclamation Project, were established. These ditch and canal systems provide irrigation water to most of the Grand Junction Region today. Located in Appendix A is a map of the major irrigation systems in the Grand Junction Region. Drinking water is provided to residents of the Grand Junction Region by 4 different providers: City of Grand Junction, Clifton Water District, Town of Palisade, Ute Water Conservancy District – all of which have an interconnect with at least 1 of the other providers. A map of the service areas is listed below in Figure 1-1.

The Grand Junction Region was established as a farming community and is still known for its fruit orchards. Today a thriving wine industry is adding to the agricultural mix, however, recent growth has replaced much of the irrigated farmland with residential development. The climate in the Grand Junction Region is one of hot summers, temperate falls and springs with mild winters. The average precipitation is 9-10 inches with the irrigation season starting as early as late March and continuing through October.

Figure 1- 1



A Water Efficiency Plan

A Water Efficiency Plan (WEP) is a plan for the development and utilization of a set of strategies. The purpose of a Water Efficiency Plan is to help water purveyors improve their overall water use efficiency by addressing issues of supply and demand problem areas and providing a defined method of solving problems and dealing with system inefficiencies. A WEP can also provide both water suppliers and the local communities a means of using their water resources in a wise and prudent manner thus managing this precious exhaustible resource to its maximal responsible use.

This WEP is an update to the initial Water Conservation Plan adopted in 2012 and is intended to be broad and flexible so that it can be adapted to changing water conservation efforts over time. Through effort and cooperation of the City of Grand Junction, Clifton Water District, and the Ute Water Conservancy District (the Entities), this Regional Water Efficiency Plan has been developed

for the Grand Junction Region. The ultimate goal of creating a regional water conservation effort is to provide unified water education and community outreach programs that will aid the public in developing meaningful water conservation practices.

The Water Conservation Planning Process

Section 1: Profiling the Water Systems

For each of the Entities, information was gathered and documented in this plan to assist with identifying and analyzing water conservation progress and opportunities. Included in each of the water providers' profile are descriptions of the water systems including the water rights and the delivery systems as well as the general population served. Each of the Entities profile also characterizes current water use and forecasts future demand. Historical data was obtained from Water Conservation Plans produced by each of the Entities in 1996 as well as the initial version of the Grand Junction Regional Water Conservation Plan adopted in 2012.

Section 2: Current Water Conservation Measures and Programs

Section 2 discusses current programs and measures in the Grand Junction Region that have been developed to either conserve water or educate the public about water conservation and drought management. These programs and measures include all programs developed by both the domestic water purveyors and the irrigation water providers, as well as institutional interests that include the Mesa County Government and the Colorado State University research center.

The development of the Regional Water Conservation Plan includes the formation of Water Conservation Goals, the identification and selection of Water Efficiency Activities, and the development of metrics to track these activities. This all discussed at the end of Section 2.

Water Conservation Goals

Water Conservation goals were set based on the criteria of:

- The Water Conservation Plan Mission
- The cost effectiveness of the Goals
- The Benefits of the Goals

Defining a Plan of Action

The Water Conservation measures or plans of action were determined by evaluating proposed alternatives. The Water Conservation Measures that best met the criteria were selected for implementation.

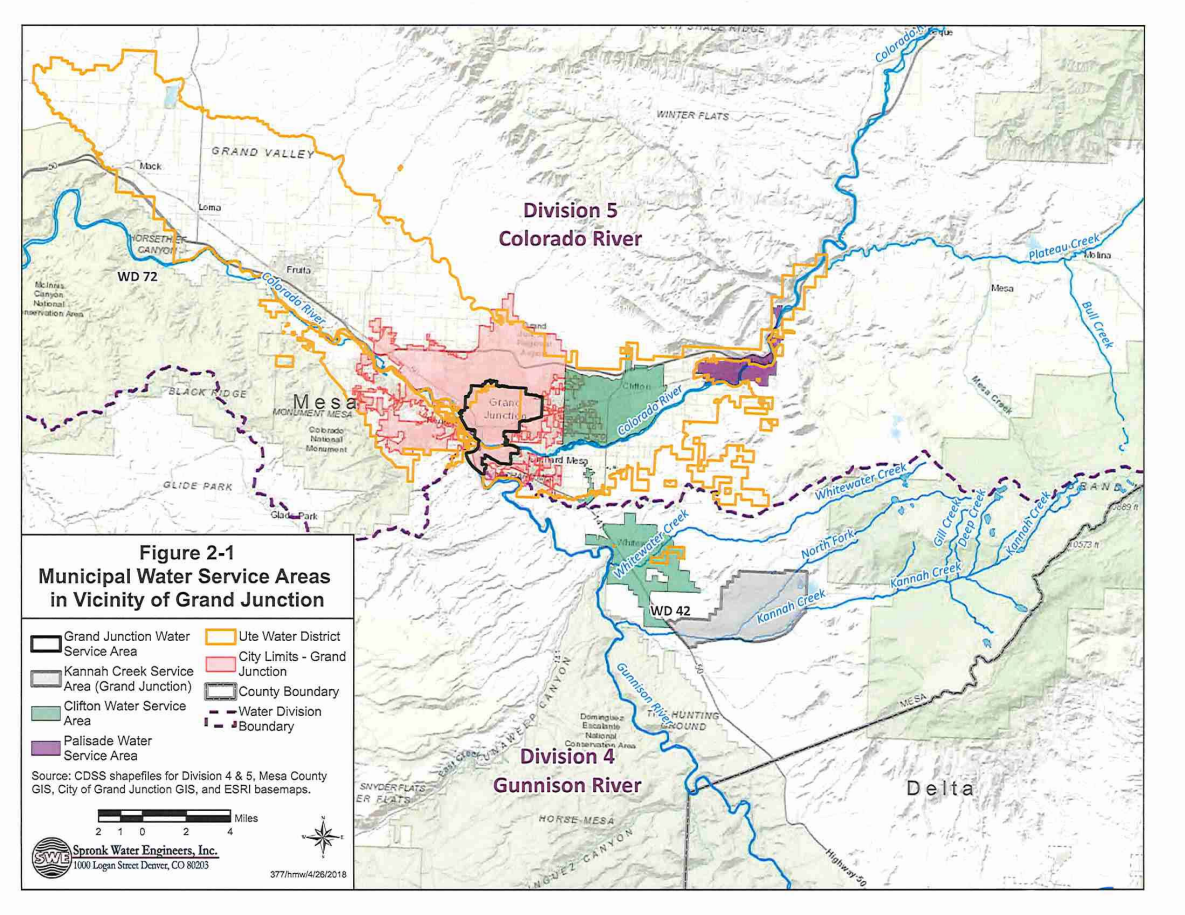
Implementation of the Plan of Action

Each Water Conservation Measure was prioritized for implementation based on its relative importance as determined by The Steering Committee (Mark Ritterbush-City, Andrea Lopez-Ute, and Guy Walker-Clifton) and the Governing Boards of Directors, of the City, Clifton, and Ute. A planning-level budget and schedule was developed as well as prospective funding sources for each measure.

Evaluating and Monitoring the Progress and Updating the Water Conservation Plan

Progress reviews will be conducted annually by the Steering Committee to evaluate the effectiveness of water efficiency measures and conservation plan goals. The Water Conservation Plan will be evaluated, updated to meet additional State requirements, and modified as necessary by the Steering Committee.

2. 0 Profile of Existing Water Supply System -The City of Grand Junction



(City of Grand Junction's Water Service Area is outlined in black)

2.1.1 History and Overview of Water Supply System

The City of Grand Junction was founded in 1881 and by 1911 had obtained the Paramount water right of 7.81 c.f.s. from Kannah Creek. In 1911 the City constructed a pipeline from Kannah Creek that delivered up to 5 mgd to the City's residents. In the late 1930s, the City constructed a treatment plant on "Reservoir Hill" that would treat up to 5 million gallons per day (mgd). The plant was expanded in 1946 to treat an additional 2.13 mgd.n 1947 the City constructed Carson Reservoir in the Kannah Creek area to hold 650 acre-feet of water. In 1955, the City acquired Hallenbeck #1 Reservoir, aka Purdy Mesa Reservoir, Juniata Reservoir, and Reeder Reservoir, all located on the lower slopes of the Grand Mesa, along with direct flow rights to fill the reservoirs. At the same time, the City began plans to construct a second delivery pipeline. The second pipeline increased the delivery capacity to the City of 12.5 mgd. In 1957, the City also acquired water rights from the Gunnison River in the amount of 120 cubic feet per second (cfs) and acquired additional storage in Raber Click and Juniata Reservoirs.

In 1959, the City acquired water rights from the Colorado River in the amount of 120 cfs. During the 1960s, a new water treatment plant was constructed to treat up to 16 mgd with direct filtration This plant is currently in use and provides the City's residents high quality water. with 8 mg of potable storage. During the late 1970s and early 1980s, the City helped the Clifton Water District build a new water treatment plant that would treat up to 8 mgd. The benefit to the City was that Clifton would provide up to 4.5 mgd to the City if needed. The City also enlarged Juniata Reservoir and the pumping capacity at the pump station on the Gunnison River. In addition, the City purchased several reservoirs on Grand Mesa and other priority direct flow rights on Kannah Creek. In 1989, the City purchased the Somerville Ranch along with the ranch's water rights to ensure that the City could provide water to its residents even during the most severe drought. With 17 high-elevation reservoirs located on top of the Grand Mesa providing 5,600 af of storage and two off-channel terminal reservoir providing an additional 8,200 af of storage, the City has almost a 2-year supply of water in storage when all are at capacity. Table 2-1 is a list of the City of Grand Junction's water rights.

The City of Grand Junction's incorporated area covers 39 square miles with a population of over 65 thousand. The City water service area is "landlocked" and covers 9 square miles and serves a population of just over 29 thousand people. Most of the service area is in the center of the City, and west Orchard Mesa. The rest of the incorporated portions of the City is served primarily by the Ute Water Conservancy District and to a smaller extent by the Clifton Water District. The distribution system is all gravity-fed with 1 pressure zone and 307 miles of pipe.

2.1.2 Water Supply Reliability

Kannah Creek serves as the City's watershed, so even though our service area lies in the Colorado River basin, we obtain our water supply from the Lower Gunnison Watershed. According to findings from the Statewide Water Supply Initiative (SWSI), the Gunnison River Basin anticipate a water supply gap of 19,000 afy for M&I uses in 2050. Applying a conservative success rate of proposed IPPs will reduce this gap to 6,500 afy.

Beginning in 2018, the City of Grand Junction commenced a phased study to determine their water supply reliability. This study included a Firm Yield Study, a 50-year population and water demand study, and evaluating options to meet these projected demands. Findings from the Firm Yield Study are listed in Figure 2-1, and generated using storage objectives of having at least 140% of demand in storage at the end spring runoff and at least 1-year's demand in storage on November 1 of each year.

Figure 2- 1

Firm Yield of Kannah Creek Watershed

Climate Change Scenario	Firm Yield (AFY)	Firm Yield (avg. mgd)
Baseline	6,400	5.7
5% decrease in Kannah Creek	6,375	5.7
10% decrease in Kannah Creek	6,325	5.6
15% decrease in Kannah Creek	6,275	5.6
5% decrease in Kannah Creek AND shifted demand	6,375	5.7
10% decrease in Kannah Creek AND shifted demand	6,325	5.6
15% decrease in Kannah Creek AND shifted demand	6,275	5.6
Early spring runoff AND shifted demand	6,400	5.7
Repeated severe drought years	6,000	5.4

The firm yield of the Kannah Creek Watershed is higher than our current demands of approximately 5,300 afy. It is also obviously much lower than typically observed flows. The City has historically leased out excess water supplies for agricultural uses in the Kannah Creek basin once municipal demands and storage objectives have been met.

2.1.3 Future Needs and Supply-side Limitations

Applying projected demands to our firm yield suggests that the City may need to have additional water supplies secured by the year 2039 as depicted in Figure 2-2. Water conservation efforts and passive water savings has shown to play a role in reducing demands by almost 1/3 of the peak years from the late 1990's and will continue to be relied upon. The City also conducted a Water Supply Options Study to evaluate the best course forward to provide this additional water supply to meet our projected demands. Findings from this study point towards either investing in WTP upgrades or partnering with neighboring utilities to utilize some of our conditional water rights to meet our future demands.

Figure 2- 2

Firm Yield vs Projected Water Demands

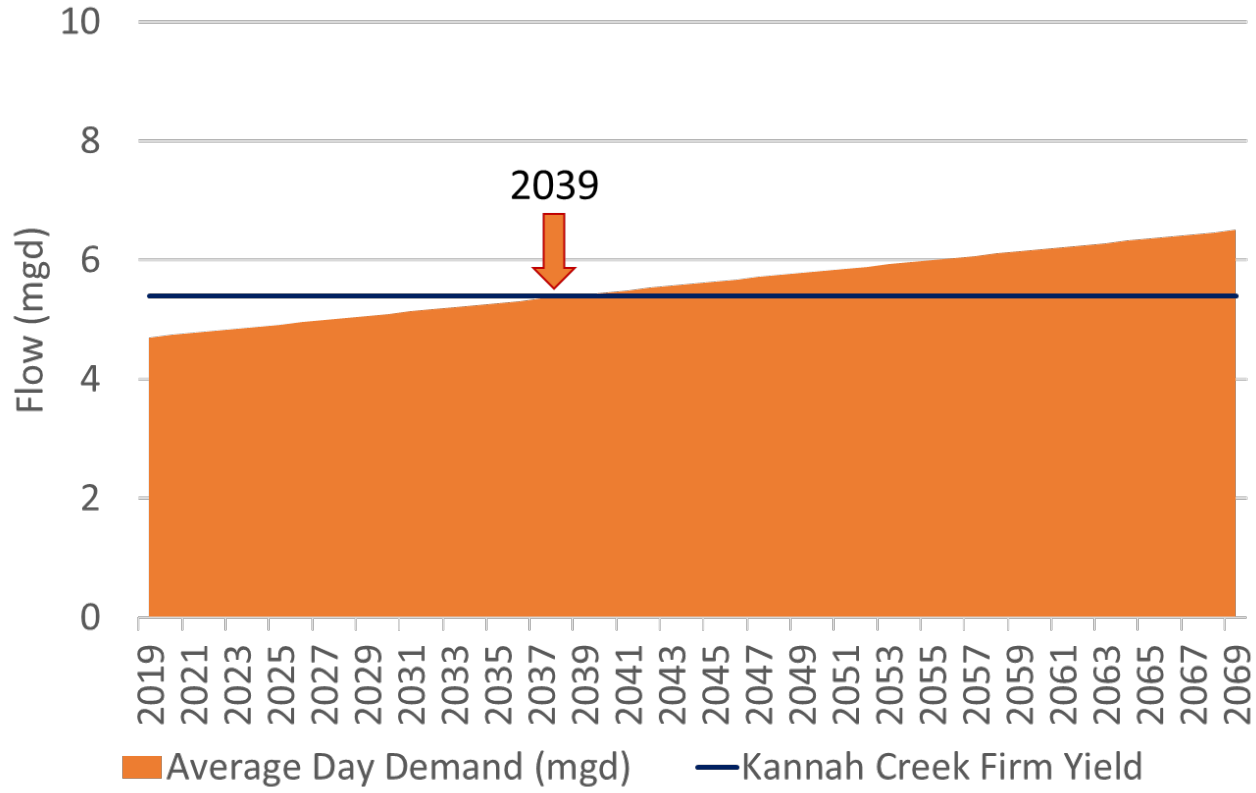


Table 2- 1

City of Grand Junction
Summary of Storage Water Rights

Water Right Name	Stream Name	Acre Feet	Use	Comments
Anderson Reservoir No. 1	North Fork of Kannah Creek	506.0	IM	
Anderson Reservoir No. 2	North Fork of Kannah Creek	595.0	IM	
Anderson Reservoir No. 6	North Fork of Kannah Creek	118.0	IM	
Bolen A&J Reservoir No. 2	North Fork of Kannah Creek	293.0	IM	
Bolen Reservoir	North Fork of Kannah Creek	535.7	IM	
Carson Lake	Kannah Creek	637.0	M	
Deep Creek Reservoir #2	Kannah Creek	66.5	I	
Dry Creek Reservoir & Supply	Kannah Creek	66.0	I	Aka Chambers Reservoir
Flowing Park Reservoir	Kannah Creek	782.0	IM	
Grand Mesa Reservoir No. 1	Kannah Creek	559.0	I	
Hallenbeck #1 Reservoir	Kannah Creek	659.0	IM	Aka Purdy Mesa Reservoir
Hallenbeck #2 Reservoir	Kannah Creek	459.0	IM	Aka Raber Click Reservoir
Juniata Reservoir	Kannah Creek	7,204.0	IM	
Purdy Mesa Reservoir No. 2	Kannah Creek	2.5	M	
Reeder Reservoir	North Fork of Kannah Creek	179.7	I	
Somerville Reservoir #1	Whitewater Creek	973.0	IM	

I – Irrigation, M - Municipal

Table 2-1
(continued)

City of Grand Junction
Summary of Direct Flow Water Rights

Water Right Name	Stream Name	Cubic Feet per Second	Use	Comments
Bauer Ditch	North Fork of Kannah Creek	13.18	IS	
Brandon Ditch	Whitewater Creek	33.40	IM	
City Ditch	North Fork of Kannah Creek	22.80	M	
Grand Jct Flowline	Kannah Creek	11.72	M	
Juniata Ditch 1st Enlarged	Kannah Creek	129.00	M	
Kannah Crk Highline Ditch	Whitewater Creek	49.11	IM	
Laurent Ditch	North Fork of Kannah Creek	33.72	IS	
Gunnison River Pipeline	Gunnison River	120.00	M	
Colorado River Pipeline	Colorado River	80.00	DM	
Somerville Ranch Irrigation System	Whitewater Creek	3.00	IS	
Somerville Wells No. 1	Whitewater Creek	0.22	DS	
Somerville Wells No. 2	Whitewater Creek	0.44	DS	

D – Domestic, I – Irrigation, M – Municipal, S - Stock

2.2.0 Profile of Water Demands and Historical Demand Management

2.2.1 Service Area Characteristics

The City of Grand Junction's Water Service Area supplies just under 30,000 residents who occupy the central area of the city. A majority of the houses were built prior to 1980, and aside from some infill projects, the area sees minimal growth year-to-year. Although the billing rate is the same, customer categories are delineated into: single-family residential, multi-family residential, commercial, and governmental. The City also sells raw water for either livestock or irrigation, which has a different rate structure and billing code. Although the service area is not heavily industrialized, almost 40% of water sales is billed to commercial accounts. Most of this is used for lawn irrigation as 4 of our top 5 Commercial Customers, listed in Table 2-2, use our water for irrigation of greenspace, parks, and sports fields.

Table 2-2

City of Grand Junction
Five Largest Commercial-Industrial Customers 2022

Customer	Sector	Percentage	Water Use (million gallons)
Municipality	Government	10.1%	170.2
University	Education	2.6%	75.2
County	Government	2.3%	30.9
Hospital	Medical	1.8%	33.1
School	Education	1.7%	25.9
Total water used by the five largest C-I customers in 2022			335
Total water billed in 2022			1,679
Percentage of 2022 billed water			20.0%

2.2.2 Historical Water Demands

For 2021, there were 9,772 taps in use with an average water demand of 1,584 million gallons per year for the years of 2014-2021. During that same time period, commercial water taps were approximately 15% of total taps. For the years of 2014-2022, commercial water use ranged between 36% and 41% of total water demand with almost one third of the commercial water use allocated to the top five largest commercial water users. The unbilled water was calculated to be 7.8% of treated water (the percent difference between treatment plant effluent and metered water sales). "Unbilled Water" is unaccounted water used in emergency firefighting, main-line breaks, unfound leaks, unauthorized water use, and metering inaccuracies.

The average daily demand for January for the study period was 2.3 million gallons per day (mgd) and the average daily demand in July was 6.9 mgd. The ratio of the January daily demand to the July daily demand was 2.9 or water demand for July is 2.9 times that of an average day in January. This difference is mainly due to lawn irrigation and home cooler demand during the hot summer months. Table 2-3 shows the City's monthly and annual billed water for the years 2005-2021, as well as detailed water use for those years. Figure 2-1 illustrates the annual water demand for the years of 2014-2021. Table 2-5 shows the residential and commercial water use, number of taps, and percentage of water use in the City.

Table 2-3

City of Grand Junction Monthly Billed Water
(values in million gallons per month)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2005	76	72	72	99	133	212	214	222	220	159	103	77	1,659
2006	89	79	96	101	152	240	242	214	227	144	88	92	1,763
2007	77	75	89	93	120	222	242	272	225	151	126	83	1,775
2008	72	80	76	165	172	279	236	199	195	99	80	96	1,748
2009	90	79	78	95	137	169	224	236	216	204	102	74	1,703
2010	95	60	77	85	120	164	245	222	176	205	111	82	1,644
2011	87	54	79	75	134	154	207	185	233	181	76	78	1,543
2012	78	67	68	109	190	194	221	208	242	156	104	83	1,720
2013	73	79	70	71	128	164	214	224	187	147	89	73	1,518
2014	73	66	72	141	172	258	210	163	172	99	65	75	1,566
2015	64	68	106	131	118	234	195	193	185	103	78	70	1,544
2016	82	75	87	115	159	262	223	223	162	98	91	64	1,643
2017	74	91	83	118	196	219	230	216	158	108	74	66	1,634
2018	64	65	82	75	153	188	201	256	193	149	100	69	1,596
2019	86	63	66	122	145	172	242	207	184	97	76	74	1,534
2020	71	68	87	122	168	239	217	213	191	87	64	74	1,602
2021	66	63	92	118	163	243	197	217	165	84	72	68	1,549
2022	68	62	87	122	205	168	190	214	138	87	73	58	1,472
2005-13 Avg	82	72	78	99	143	200	227	220	213	161	98	82	1,675
2014-22 Avg	72	69	85	118	164	221	212	211	172	102	77	69	1571

Detailed Water Use (2014-2021)

Average Annual Water Use	1,571.1 mg
Average Annual Water Loss	135.0 mg
Average Annual Water Loss	7.8%
Average Day Use (July)	6.8 mgd
Average Day Use (January)	2.3 mgd
Avg Jul Day to Avg Jan Day ratio	2.9

Figure 2-3

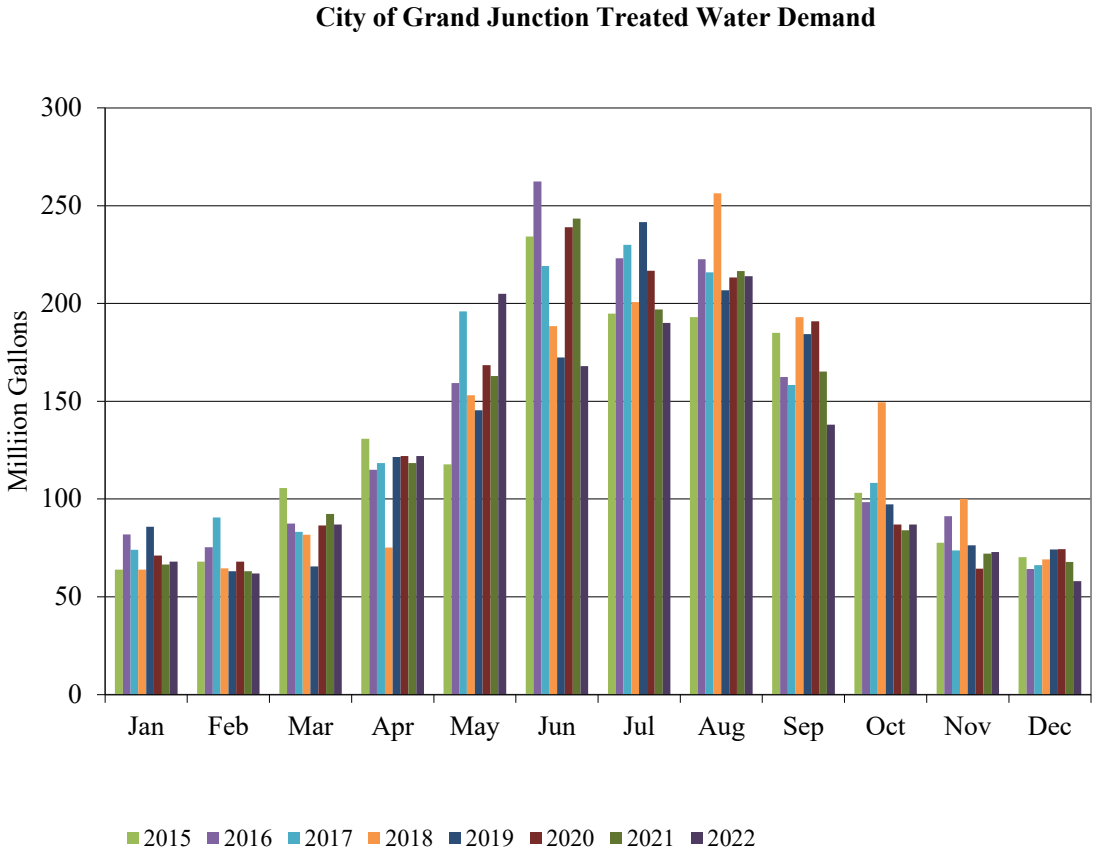


Figure 2-4, Peak Day Demand by Year

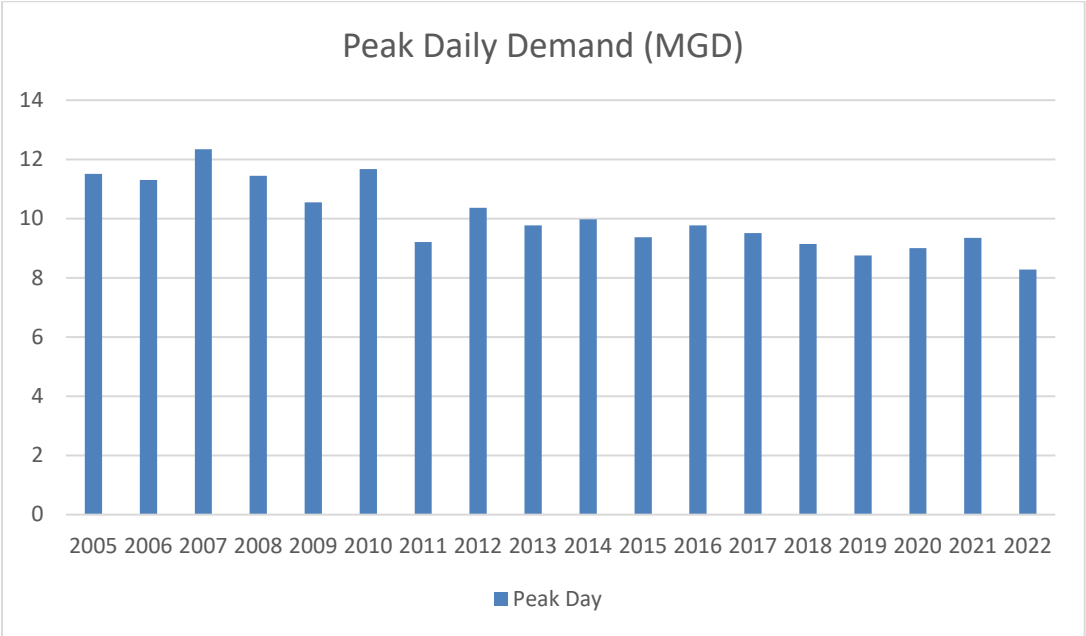


Figure 2-5 Average Metered Use By Customer Category (2015-2022)

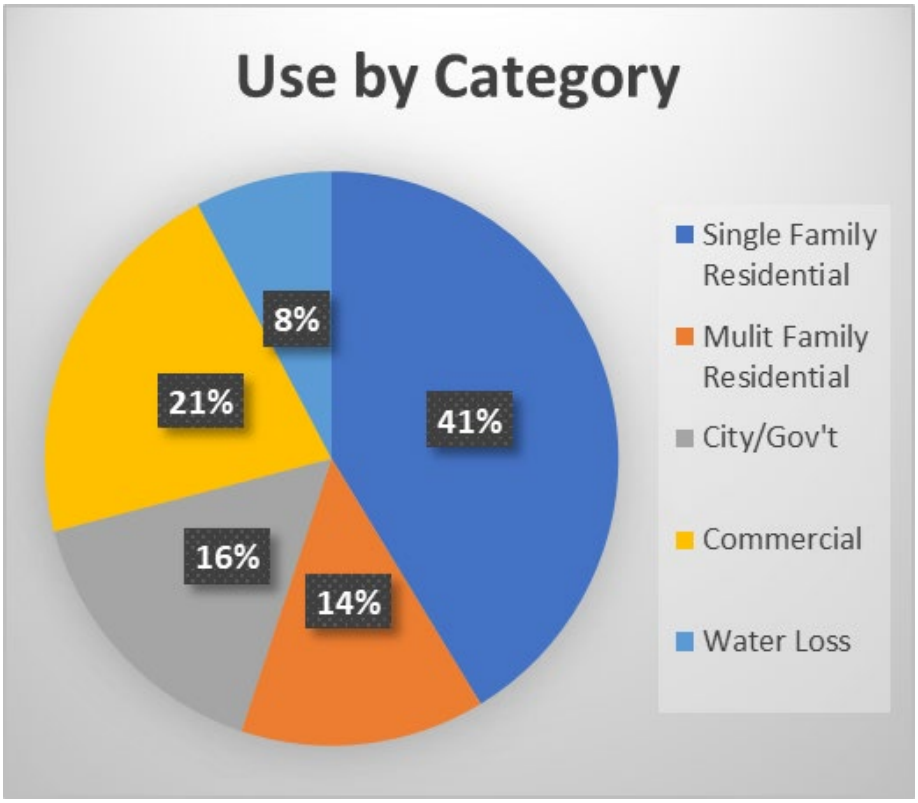


Table 2-4 Annual Metered Use (MG) by Customer Category (2015-2022)

Year	Single Family Residential	Mulit Family Residential	City/Gov't	Commercial	Water Loss
2015	632	211	221	358	117
2016	713	244	248	349	98
2017	729	252	262	371	139
2018	699	237	285	362	139
2019	661	212	278	369	121
2020	722	227	254	361	159
2021	680	232	304	331	132
2022	636	218	281	337	108
Use by Category	684	229	267	355	127

Figures 2-6 and 2-7 help to demonstrate the variability the City of Grand Junction's water system's production as a result of the climate. 2015 and 2022 were relatively wet years and show as much by having the lowest total water delivery and has total indoor water usage higher than what was used for outdoor watering. In 2019, a raw waterline was installed to serve a new riverfront development which added new greenspace to irrigate as well as took some existing greenspace off of treated water. Figure 2-6 demonstrates how the Parks Department has been able to offset this increased area needing irrigation with water conservation from other areas.

Figure 2-6 Total Water Usage by Type (2015-2022)

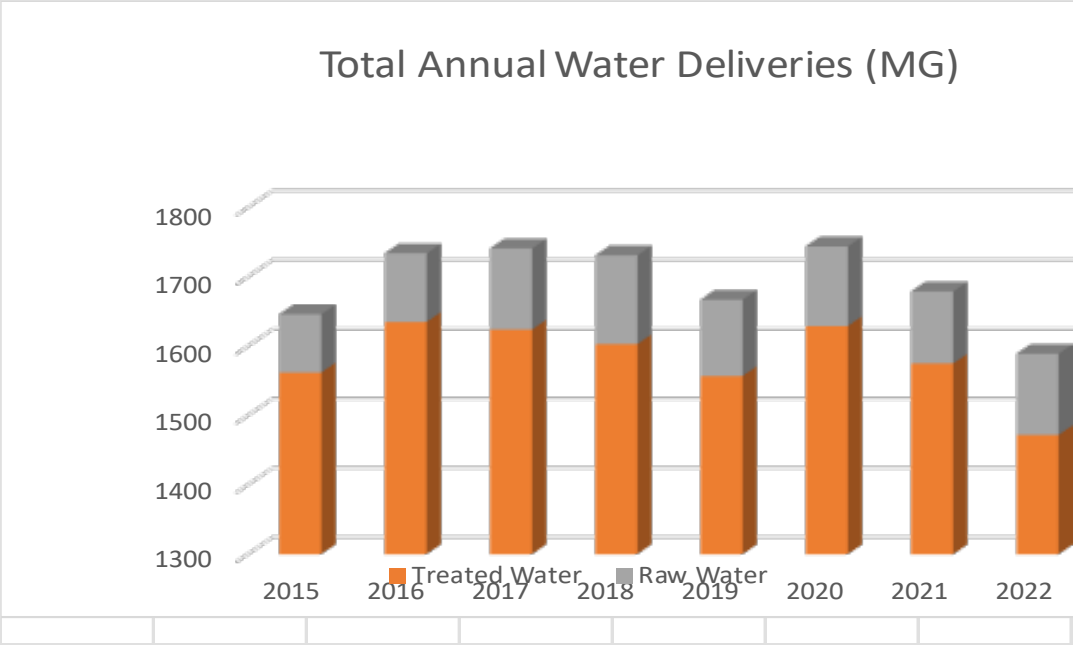


Figure 2-7, Indoor vs Outdoor Watering Totals

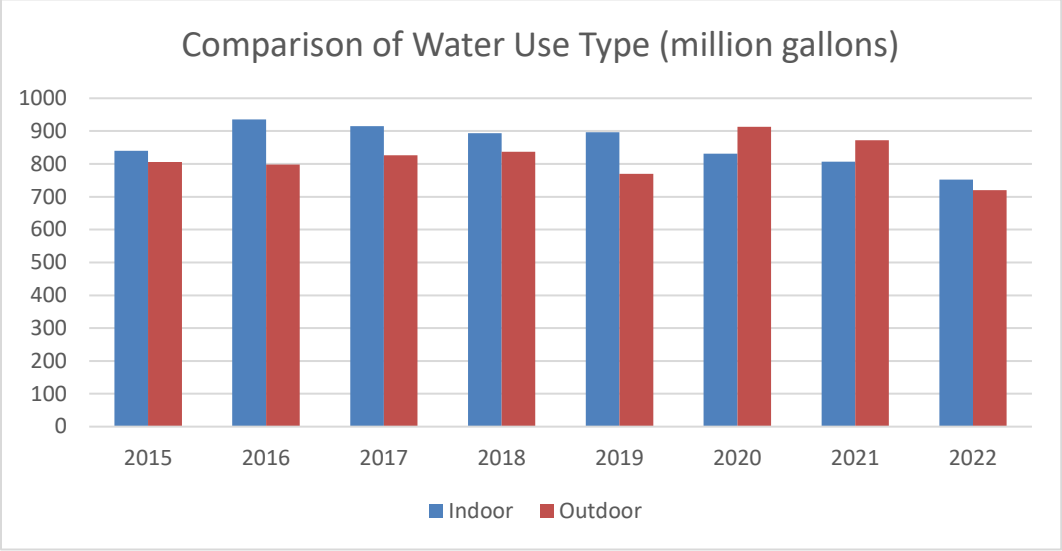
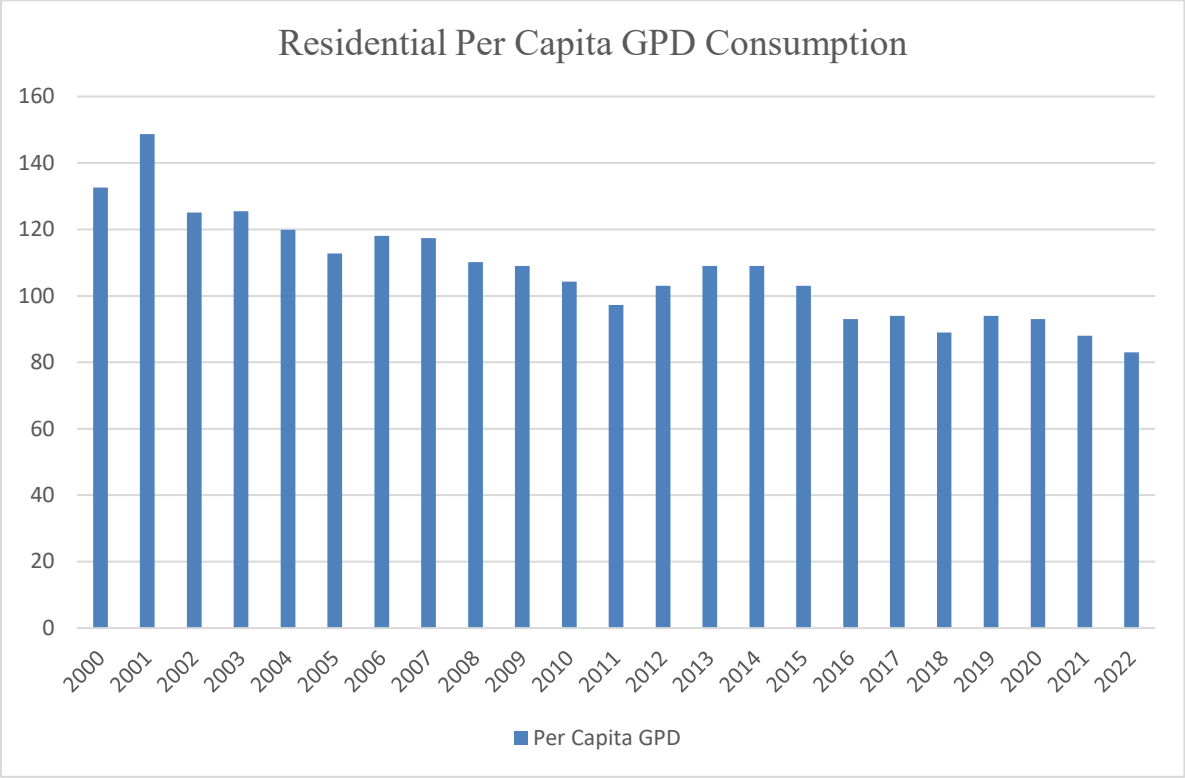


Table 2-5

City of Grand Junction
Sector Water Use

Year	Customer Class	Total Units	Metered Water (1000 Gallons)	Average per Unit (1000 Gallons)	Per Capita	Water Use % of
2022	Residential Units	12,072	853,212	71	83	58.0%
	Commercial	1,510	618,819	410		42.0%
	Total Taps	9,783	1,472,031			
2021	Residential Units	12,179	912,930	75	88	58.9%
	Commercial	1,564	636,258	407		41.1%
	Total Taps	9,772	1,549,188			
2020	Residential Units	12,107	966,485	80	93	60.3%
	Commercial	1,400	635,329	454		39.7%
	Total Taps	9,776	1,601,814			
2019	Residential Units	12,171	973,101	80	94	64.0%
	Commercial	1,399	547,276	391		36.0%
	Total Taps	9,776	1,520,377			
2018	Residential Units	12,281	935,717	76	89	59.1%
	Commercial	1,421	647,045	455		40.9%
	Total Taps	9,732	1,582,762			
2017	Residential Units	12,241	980,920	80	94	60.8%
	Commercial	1,415	633,084	447		39.2%
	Total Taps	9,686	1,614,004			
2016	Residential Units	12,072	957,215	79	93	61.6%
	Commercial	1,410	597,312	424		38.4%
	Total Taps	9,653	1,554,527			
2015	Residential Units	12,217	1,072,170	88	103	61.3%
	Commercial	1,411	676,077	479		38.7%
	Total Taps	9,667	1,748,247			

Figure 2-8
Per Capita Water Demand by Year (2000-2022)



Current Rate Structure and Tap Fees

Water Rates for the City were set to finance operation and maintenance of the water system, capital improvements of the water system, and legal expenses that insure the City's water rights. The City's water rates are based on an increasing block rate structure for all taps. A philosophy implemented over the past few years has been to have a minimal rate increase on our base rate while increasing rates at a higher percentage on usage over the base consumption in order to further incentivize water conservation. Tap fees and Plant Investment Fees provide monies for the operation and maintenance of the Water Treatment Plant. Table 2-6 shows the City's water rates and tap fees. Taps of ¾ inch and 1 inch are typically residential taps while all other taps are commercial and industrial taps.

Table 2-6

City of Grand Junction Water Rates
January 1, 2023

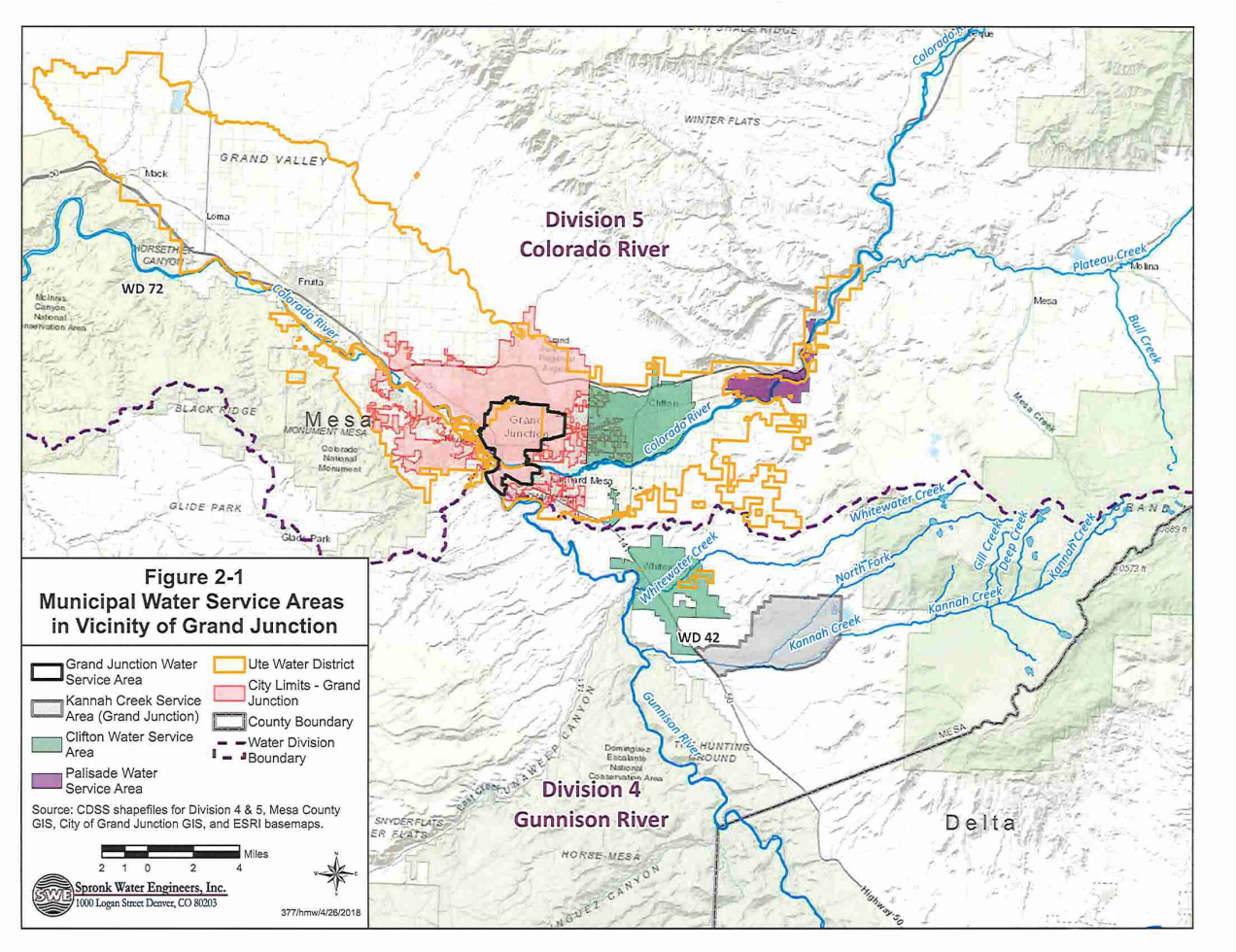
Rate	Gallons
$21.77 (includes 3,000 gal)	0-3,000
$3.71 (per 1,000 gal)	3,001 – 10,000
$4.40 (per 1,000 gal)	10,001 – 20,000
$5.13 (per 1,000 gal)	20,001+

City of Grand Junction Tap Fees

Tap Size	Tap	PIF*	Total Fees
3/4 "	$721	$4,614.40	$5,335.40
1"	$901.25	$6,154.25	$7,055.50
1 1/2 "	$2,111.50	$10,845.90	$12,957.40
2"	$2,987	$16,088.60	$19,075.60
3"	$7,081.25	$27,279.55	$34,360.80
4"	$13,235.50	$42,878.90	$56,114.40
6"	$20,445.50	$39,855.46	$160,300.96

* Plant Investment Fees

3.0 Profile of Existing Water Supply System -The Clifton Water District



Clifton Water District's Service Area is shaded in green.

History

The Clifton Water District was formed on March 5, 1951, in accordance with the then existing laws of the State of Colorado. A small water treatment facility was constructed at the east end of the top of Whitewater Hill, at what is now the northwest corner of the intersection of Colorado Highway 141 and U.S. Highway 50. The water plant, now referred to as Plant #1, began serving the small population of Clifton on April 19, 1958. In the first week of operation the plant produced approximately 95,000 gallons of water per day. Raw water for Plant #1 was obtained from the City of Grand Junction's raw water flow line from Kannah Creek and Purdy Mesa.

At the same time as the construction of the water treatment plant, approximately 49 miles of distribution line was also installed in the Clifton area. In addition to the treatment plant and distribution pipe, the District also owned a 420,000 gallon (0.42 MG) treated water storage tank north of

what is now Interstate 70. The capacity of the original treatment plant was 0.68 million gallons per day (0.68 MGD) which was increased to 1.27 MGD in 1973.

As the Clifton Water District continued to grow, the consumption of water within the District exceeded the capacity of the plant on Whitewater Hill. The Clifton Water District purchased potable water from the Ute Water Conservancy District to provide its users with water. The cost of purchasing bulk water from Ute was higher than the Clifton Water District rates. For short periods of time the District could afford to sell water for less than cost, but the District was growing so rapidly this practice could not continue. In 1979, an 8 MGD plant on the Colorado River (Plant #2) was put in service, thereby eliminating the need to purchase water from Ute, except in cases of emergency. The 8 MGD treatment plant was expanded to treat 12 MGD in 1981.

In the mid-nineties, the treatment facility underwent further enhancements with the addition of a nanofiltration/reverse osmosis plant. This improvement enabled the facility to separate a portion of the filtered water, purifying it even further before reintroducing it into the discharge stream. As a result, the District was able to maintain consistent effluent quality throughout the year. In 2016, Clifton Water renovated the District's existing 1970's circa conventional water treatment facility replacing traditional sand filtration with Ultrafiltration Membrane technology.

Service Boundary and Demographics

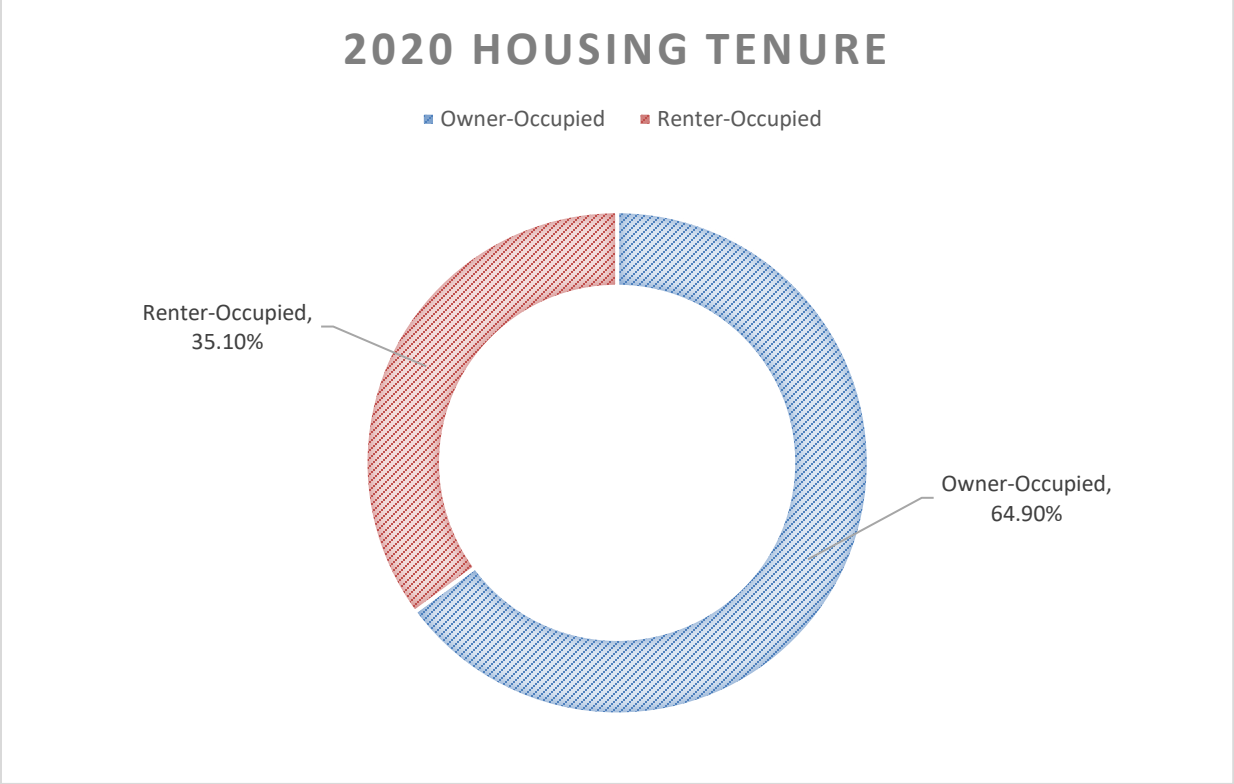
Clifton is an unincorporated area between the City of Grand Junction and the Town of Palisade on the Western Slope of Colorado. The Clifton area is described as that area laying east of 30 Road, west of 34 ½ Road, bounded on the south by the Colorado River and the Highline Canal on the north. The District serves the populations of Clifton, Fruitvale, portions of Grand Junction east of 30 Road, and Whitewater.

Historical population data for the District service area was analyzed to assess recent growth rate trends and people per household information. United States Census data from 2020 was used to identify the annual growth rate from 2000 to 2020, the population of Clifton Census Designated Place (CDP) grew 0.9% per year, increasing from 17,345 to 20,413 people. From 2000 to 2020, the population of Fruitvale CDP grew 1.0% per year, increasing from 6,936 to 8,271 people. From 2000 to 2020, the population of Whitewater Census County Division grew 2.0% per year, increasing from 2,063 to 2,891 people. Combined, these three populations had an average annual growth rate of 1.0%.

Based on the 2020 US Census data, Clifton CDP had an average of 2.72 people per household. To estimate the 2022 equivalent population, this average of 2.72 people per household was multiplied by the total number of "taps" or unique meter connections (12,160 taps) from 2022 billing data. This resulted in an estimate of 33,075 equivalent people in 2022. Figure 3-7 presents the District's

historical reported populations from 2000 and 2010, estimated 2020 population, and future 2030 and 2040 populations calculated with average annual growth rates of 1.0%, 1.5%, and 2.0% for comparison. The population of Clifton CDP is younger (median age 33.6) than Mesa County (median age 41.1). Most of the housing units are owner-occupied, with around 35.1% renter occupied.

Figure 3-1



Raw Water Supplies

Clifton owns 1,953 shares (equivalent to 20.31 cfs) of Grand Valley Canal water which is owned and operated by the Grand Valley Irrigation Company (GVIC). The Grand Valley Canal water right is the calling water right on the Colorado River below the Shoshone power plant near Glenwood Springs. Clifton also owns Colorado River water, 4.0 cfs at the L.H. Hurt Pump, and 16.42 cfs absolute and 3.58 cfs conditional in the Grand Junction Colorado River Pipeline. Table 3-1 is a summary of Clifton's water rights.

Table 3-1

Clifton Water District Summary of Direct Flow Water Rights				
Water Right Name	**Stream Name**	**Cubic Feet per Second**	**Use**	**Comments**
Colorado River Pipe-line	Colorado River	20.00	DM	
L.H. Hurt Pump	Colorado River	4.00	D	Alt. Point at Grand Valley Canal
Grand Valley Canal	Colorado River	20.31	DI	1,301 shares domestic, 652 shares irrigation

D – Domestic, I – Irrigation, M - Municipal

Historical Demand

Clifton provides retail water to residents and businesses that are located within Clifton's 10,720-acre service area (In-District) as well as 1600 acres located in the Whitewater area (a mix of both In-District and Out-of-District customers). There are currently 12,160 taps with an average water demand of 1,066 million gallons per year (mgy) for the years of 2015 to 2022. Historical water use is predominately residential with commercial water sales ranging between 7.0% to 8.0% of total sales which is equivalent to 7,028 mgy, between 2015 and 2022.

Approximately 70% of homes in the Clifton Water District enjoy the use of direct flow irrigation water from the Palisade Irrigation District (PID), the Mesa County Irrigation District (MCID), and the GVIC. These self-governing entities control and regulate the supply delivery of the available irrigation water with the Clifton Water District having no jurisdictional control over their operations. Water shares in the PID and MCID are attached to the land by law, with the GVIC providing water shares through a market-based ownership system.

The average daily demand for January, for the study period was 2.0 million gallons per day (mgd) and the average daily demand in July was 4.4 mgd. The ratio of the January daily demand to the July daily demand was 2.2 or water demand for July is 2.2 times that of an average day in January. This difference was due to lawn irrigation, evaporative cooler water demand and other seasonal activities. Table 3-2 shows Clifton's monthly and annual demand for the years 2015-2022, as well as detailed water use for those years. Figure 3-1 illustrates the annual water demand for the same period. Table 3-3 shows the residential and commercial water use, number of taps, and percentage of water use in the Clifton Water District. It should be noted that while residential taps increased

steadily over the seven-year period, commercial taps remained relatively constant and constituted only 2.2% of the total water taps and averaged 6.4% of water sales for the study period. Table 3-4 shows the top five C-I sector water users for 2022.

The existing annual average demand (AAD) was calculated using 2022 customer billing data. Average demand by month for 2022 are shown in Figure 2-8. The AAD is calculated as the total volume of water used during the year, divided by the number of days in the year. The AAD for 2022 is approximately 2.91 million gallons per day (MGD).

Figure 3-2

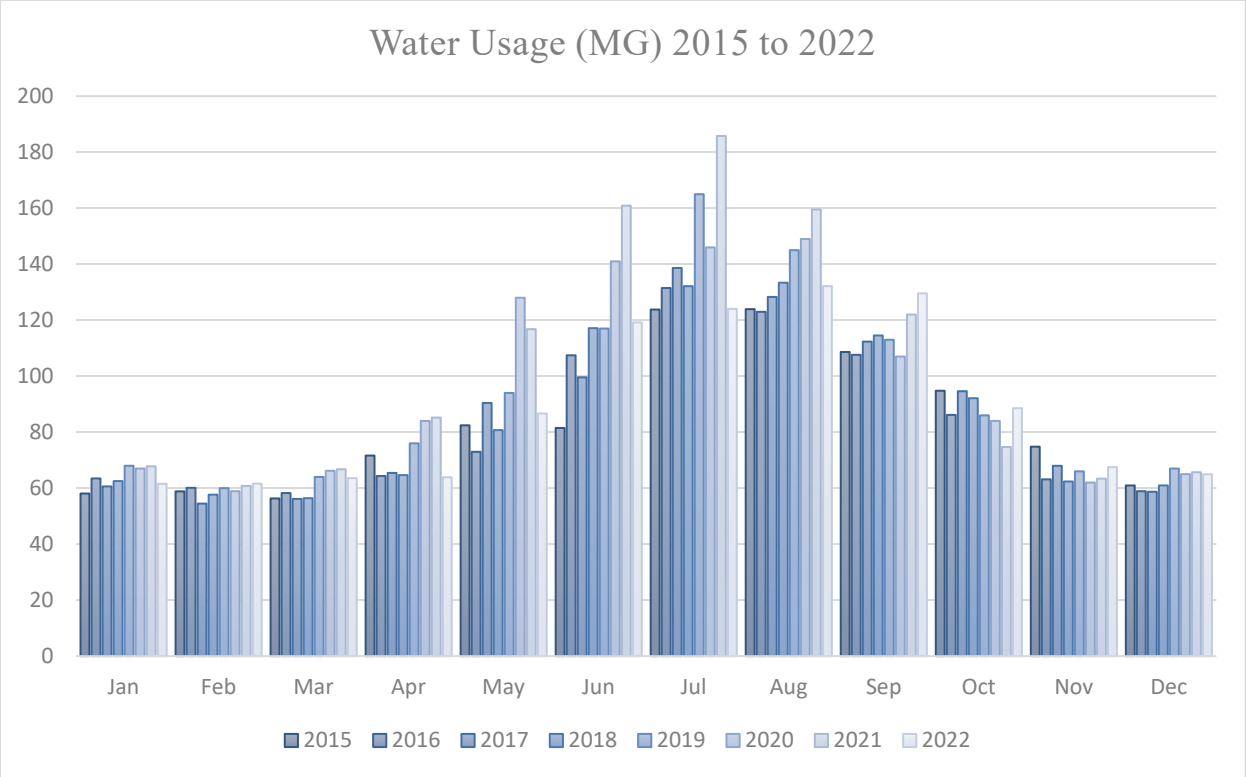


Figure 3-3

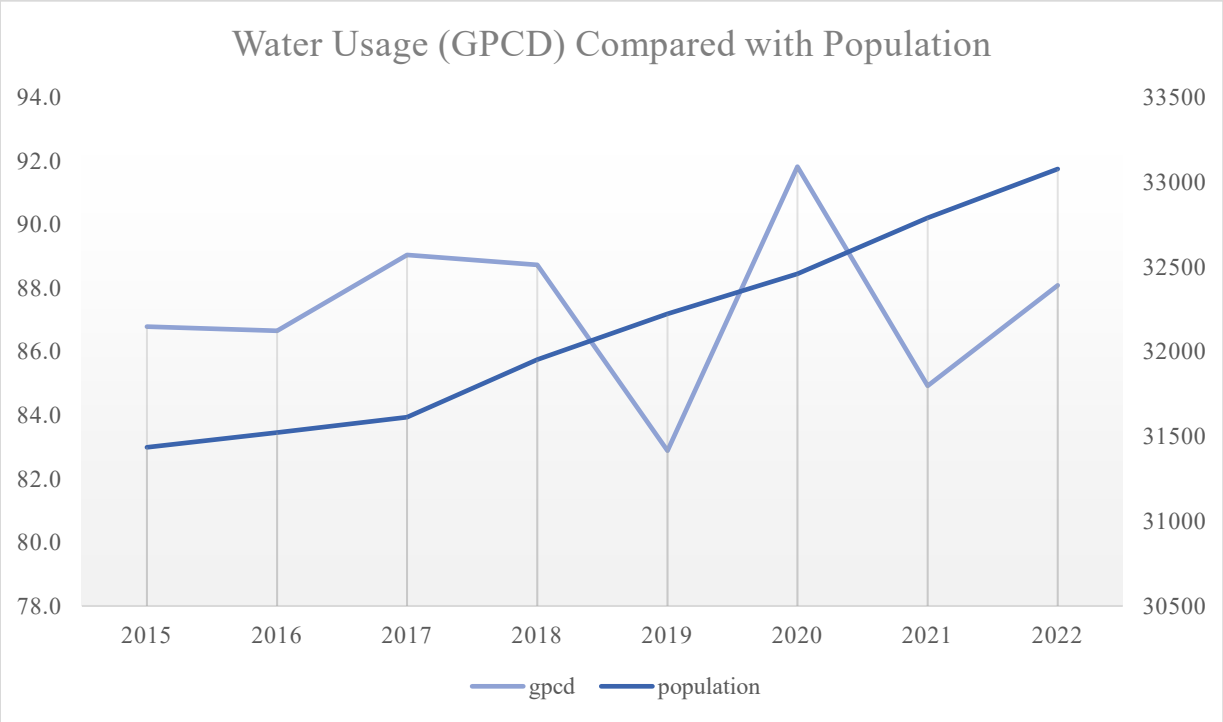


Figure 3-4

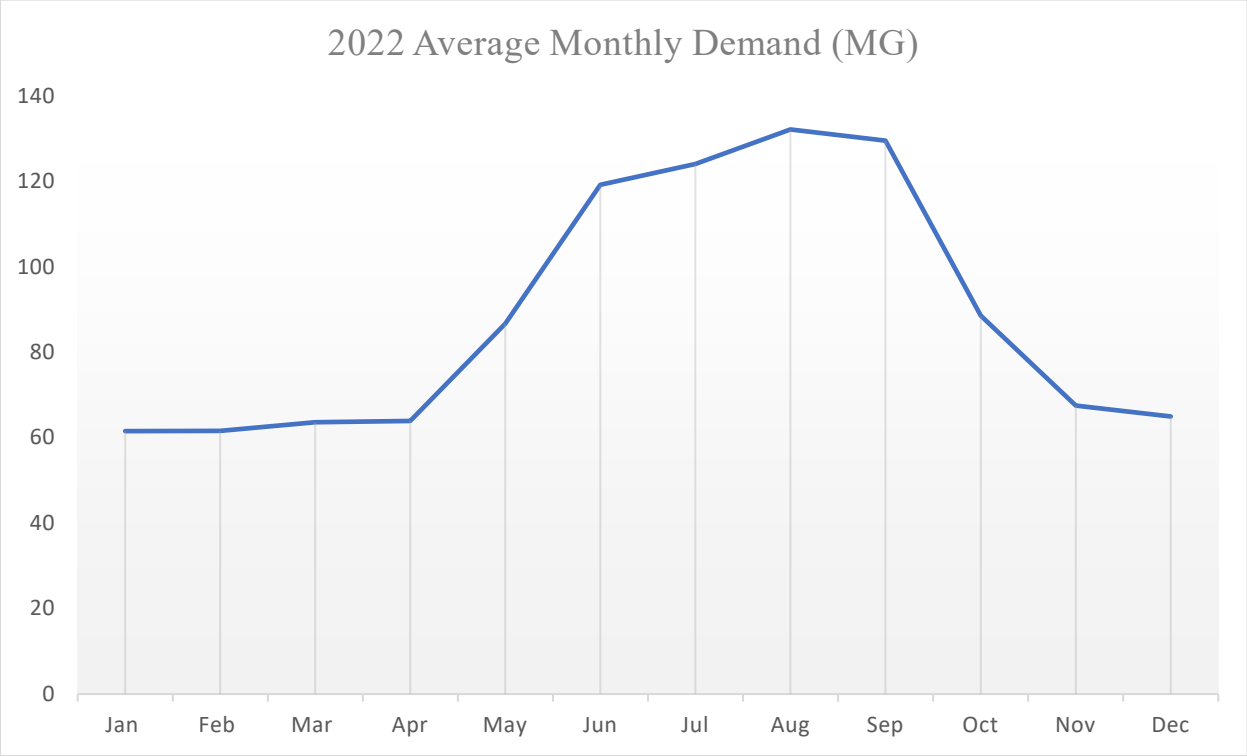
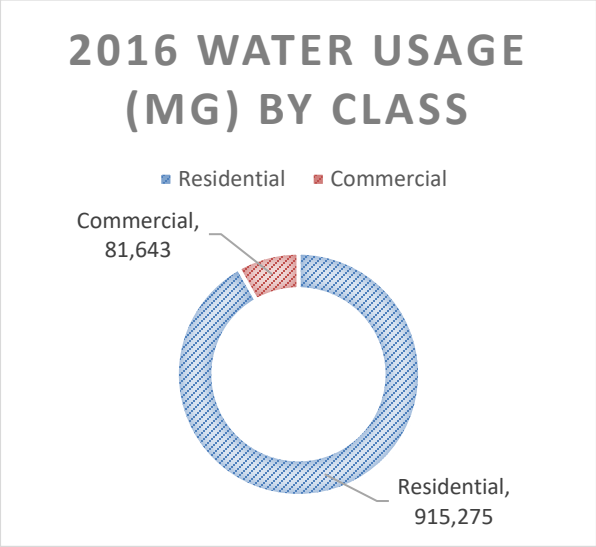
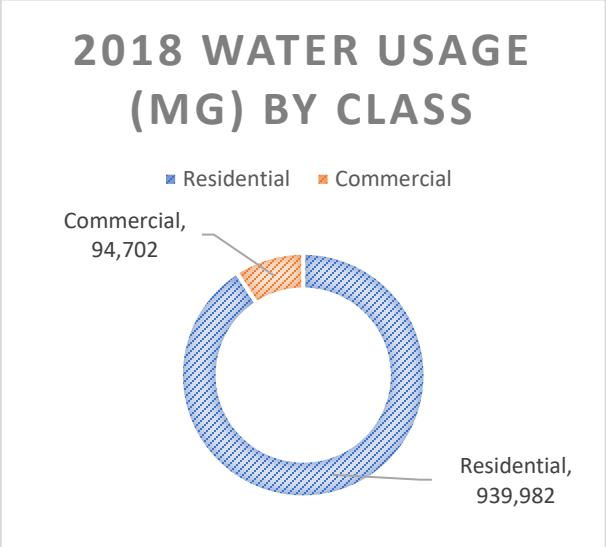
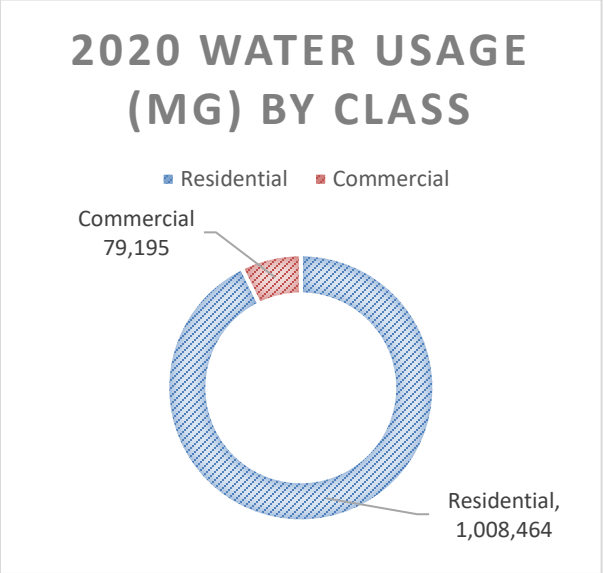


Figure 3-5


2016 WATER USAGE (MG) BY CLASS
Residential
Commercial
Commercial, 81,643
Residential, 915,275


2018 WATER USAGE (MG) BY CLASS
Residential
Commercial
Commercial, 94,702
Residential, 939,982


2020 WATER USAGE (MG) BY CLASS
Residential
Commercial
Commercial 79,195
Residential, 1,008,464

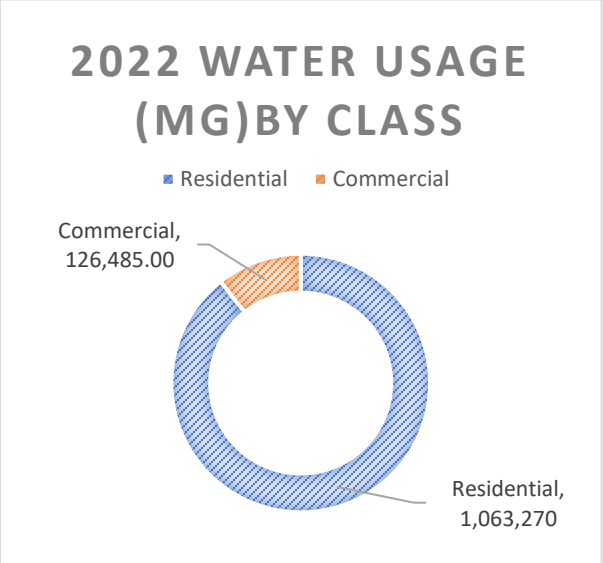

2022 WATER USAGE (MG)BY CLASS
Residential
Commercial
Commercial, 126,485.00
Residential, 1,063,270

Table 3-2 Top Commercial Customers 2022

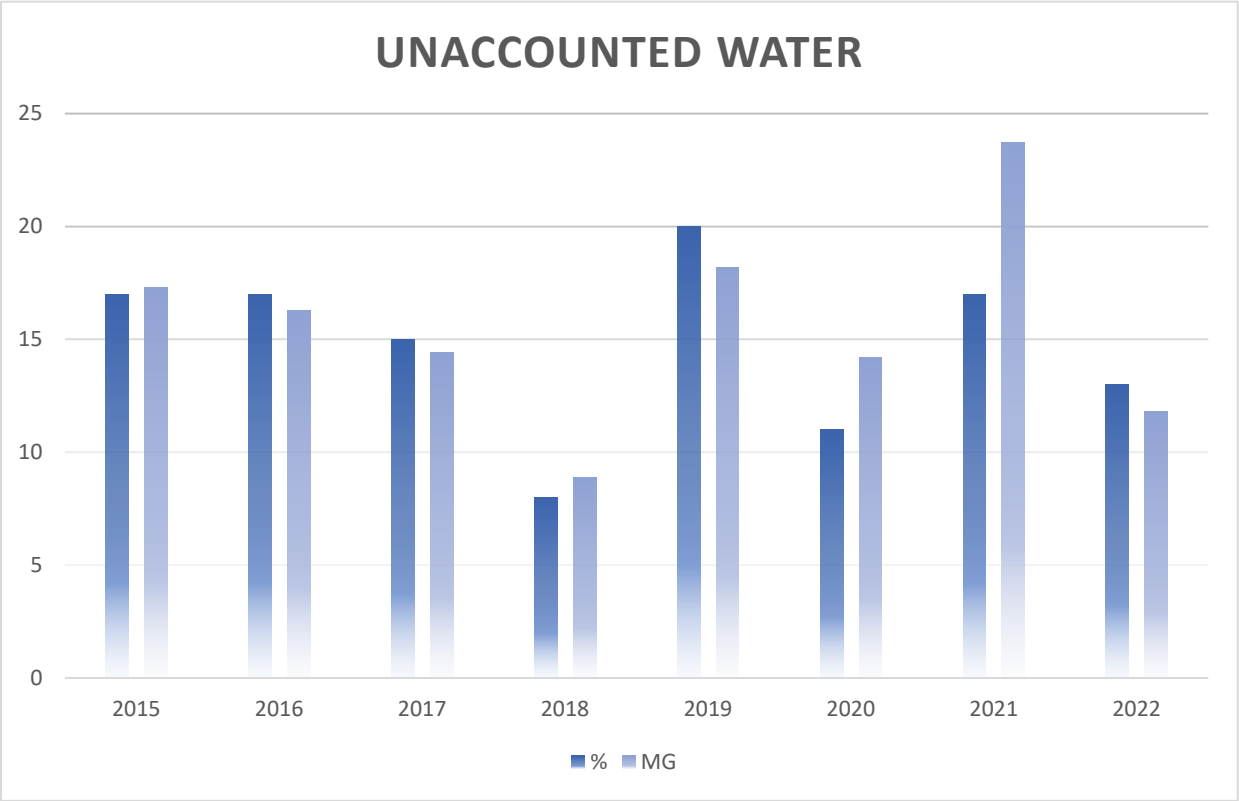
Customer	Percentage	Water Use (million gallons/year)
Car Wash #1	0.4%	4.2
Car Wash #2	0.2%	2.4
Hotel	0.2%	2.2
Grocery Store	0.2%	2.2
Shopping Center	0.2%	2.2

Total water used by the five largest C-I customers in 2022	13.2
Total water billed in 2022	1063.4
Percentage of 2022 billed water billed in 2022	1.2%

Unaccounted Water

Unaccounted water is the discrepancy between the volume of water produced and the amount measured by the meter. This includes system leaks, system flushing, and firefighting within the District's system. Figure 3-6 depicts the annual estimates of unaccounted water as a percentage of production volumes from 2015 to 2022. The District manages unaccounted water volumes using a leak detection and repair program, as well as investigating accounts with abnormal consumption rates to identify leaks. This program has been effective in detecting service and mainline leaks promptly. However, the District suspects that the variability in unaccounted water estimates may be partly due to missing historical water usage data. Consequently, the District is currently implementing a software conversion to improve their data management and analysis methods. Note, in 2021, 30 million gallons of water was given to the City of Grand Junction, which resulted in an increase in unaccounted water.

Figure 3-6



Demand Forecast

Future water demands for the District were estimated based on future equivalent population growth projections and an assumed unit demand rate. Based on a review of the District's historical billing data and current estimated population, the unit demand for existing population is approximately 73 gallons per capita per day (gpcd). To estimate demands of future population growth, a unit demand of 70 gpcd was assumed. This lower unit rate assumes development occurs on smaller lots and that even if new accounts do not have non-potable water available for irrigation, additional conservation efforts and smaller lawn areas will maintain the lower per capita demand. Existing and future water demands are presented in Table 2-5, below. Future demands are calculated based on the existing demand and a water usage of 70 gpcd for the projected population growth. MDD and PHD are estimated based on selected peaking factors of 2.2 and 4.3, respectively. By 2040, the District will be approaching the buildout based on an average land use development density. At buildout, the District estimates that it will provide water service to 49,300 people (see Figure 3-7).

Figure 3-7: Build-Out Based on Available Land

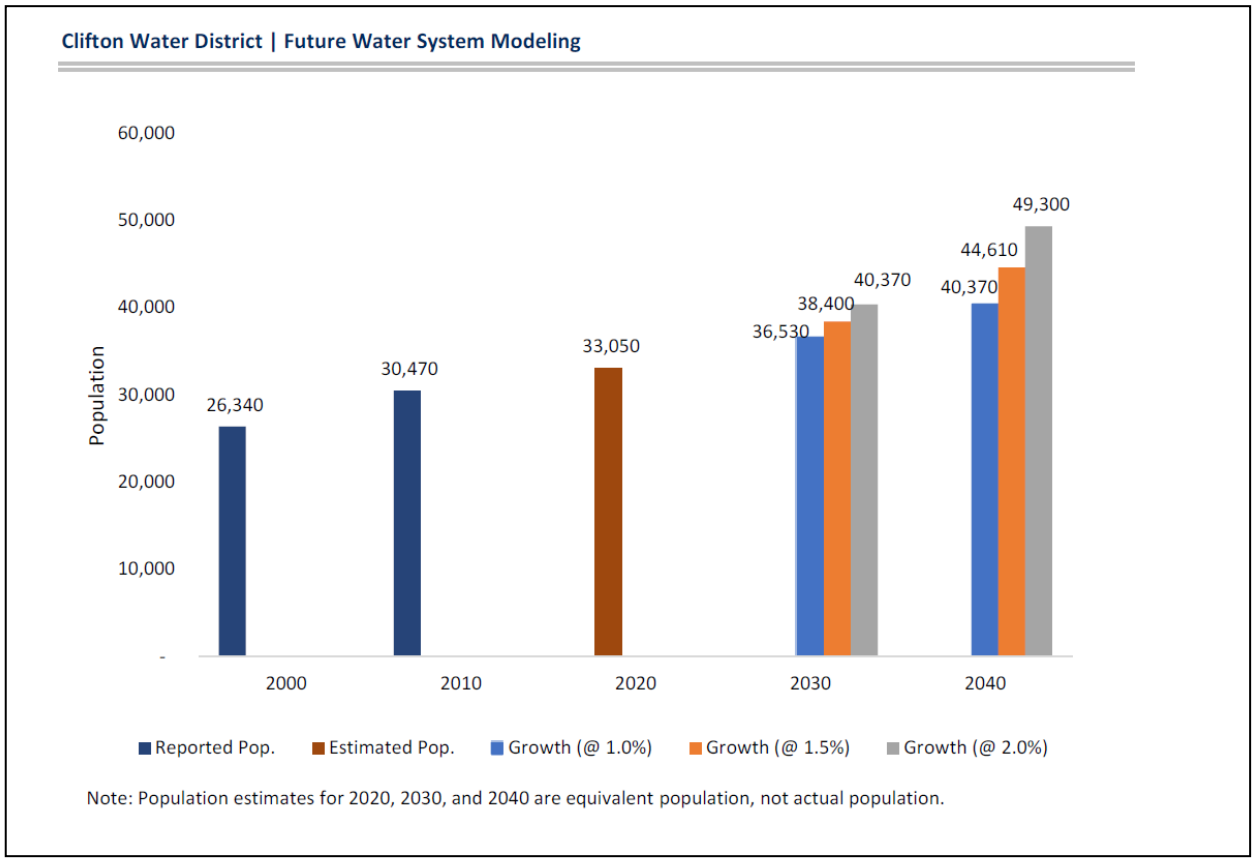
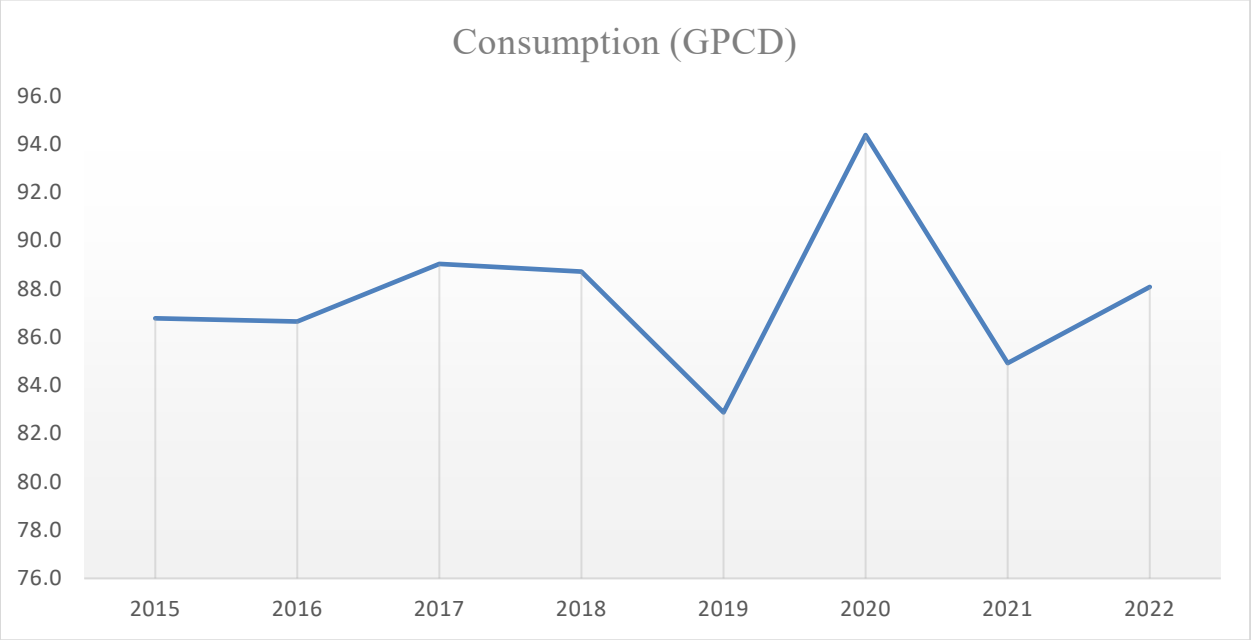


Table 3-3: Build-Out Based on Production Capacity

Description	Existing	2030	2040	Build-Out
Equivalent Population	33,050	38,450	44,680	52,830
ADD (mgd)	3.03	3.41	3.84	4.41
MDD (mgd)	6.67	7.5	8.46	9.71
PHD (mgd)	13.03	14.65	16.53	18.98

Figure 3-8



Current Rate Structure and Tap Fees

Starting in January 2023, the rate structure underwent revisions aimed at promoting conservation efforts. As a part of this initiative, residential customers now face an additional tier for usage exceeding 25,000 gallons. A separate rate structure for irrigation services has also been introduced. The irrigation rates are set at twice the commercial rates. Information about the current water rates and Plant Investment Fees can be found in Tables 3-4, 3-5, 3-6 and 3-7.

Table 3-4 Residential Rates

Usage (Gallons)	In-District Water Rate	Out-of-District Water Rate
0 to 3,000	$27.00	$40.50
3,001 to 10,000	$3.22 per 1,000 gallons	$4.83 per 1,000 gallons
10,001 to 18,000	$4.37 per 1,000 gallons	$6.56 per 1,000 gallons
18,001 to 25,000	$6.67 per 1,000 gallons	$10.01 per 1,000 gallons
Greater than 25,000	$13.34 per 1,000 gallons	$20.01 per 1,000 gallons

Table 3-5 Commercial Rates

Usage (Gallons)	In-District Water Rate	Out-of-District Water Rate
0 to 3,000	$27.00	$40.50
3,001 to 10,000	$3.22 per 1,000 gallons	$4.83 per 1,000 gallons
10,001 to 18,000	$4.37 per 1,000 gallons	$6.56 per 1,000 gallons
Greater than 18,000	$6.67 per 1,000 gallons	$10.01 per 1,000 gallons

Table 3-6 Irrigation Rates

Usage (Gallons)	In-District Water Rate	Out-of-District Water Rate
0 to 3,000	$54.00	$81.00
3,001 to 10,000	$6.44 per 1,000 gallons	$9.66 per 1,000 gallons
10,001 to 18,000	$8.74 per 1,000 gallons	$13.12 per 1,000 gallons
Greater than 18,000	$13.34 per 1,000 gallons	$20.02 per 1,000 gallons

Table 3-7 Tap Fees

Tap Size*	In-District	Out-Of-District
5/8”	$8,500	$12,750
¾” x ¾”	$9,300	$13,950
1”	$17,000	$25,500
1-1/2”	$15,000	$22,500
2”	$22,500	$33,750
3”	$33,750	$50,625

* Irrigation taps are sold at 2-times the advertised price.

Figure 3-9

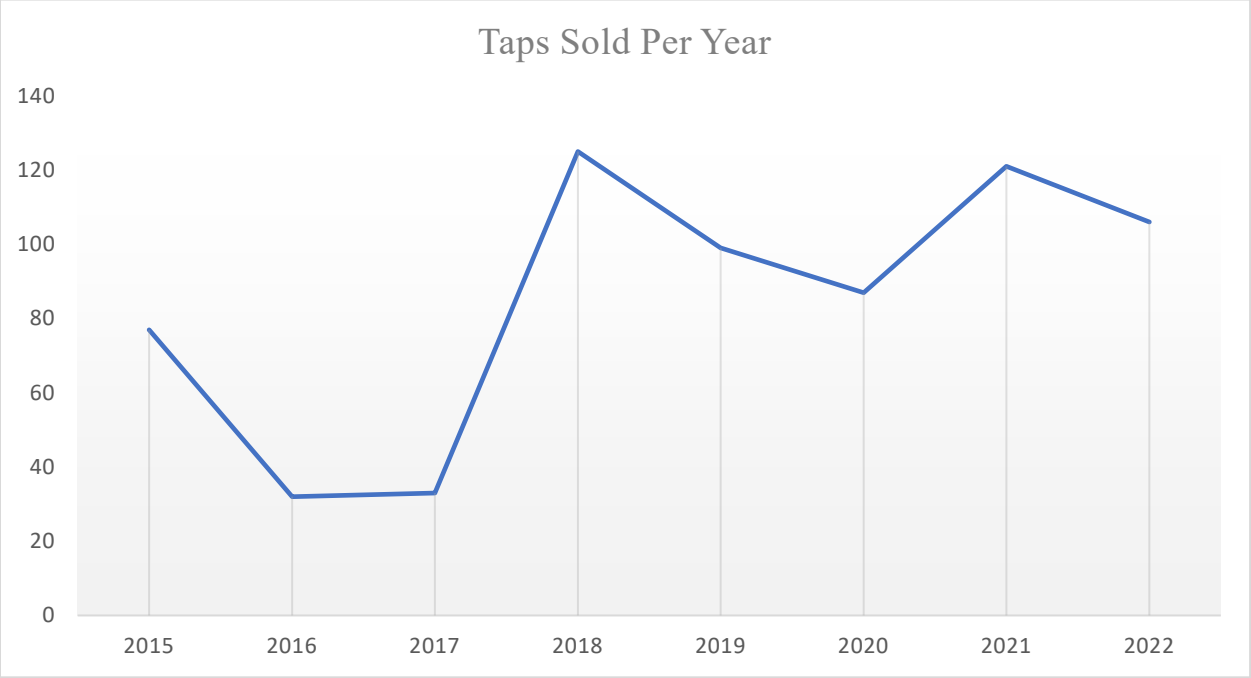
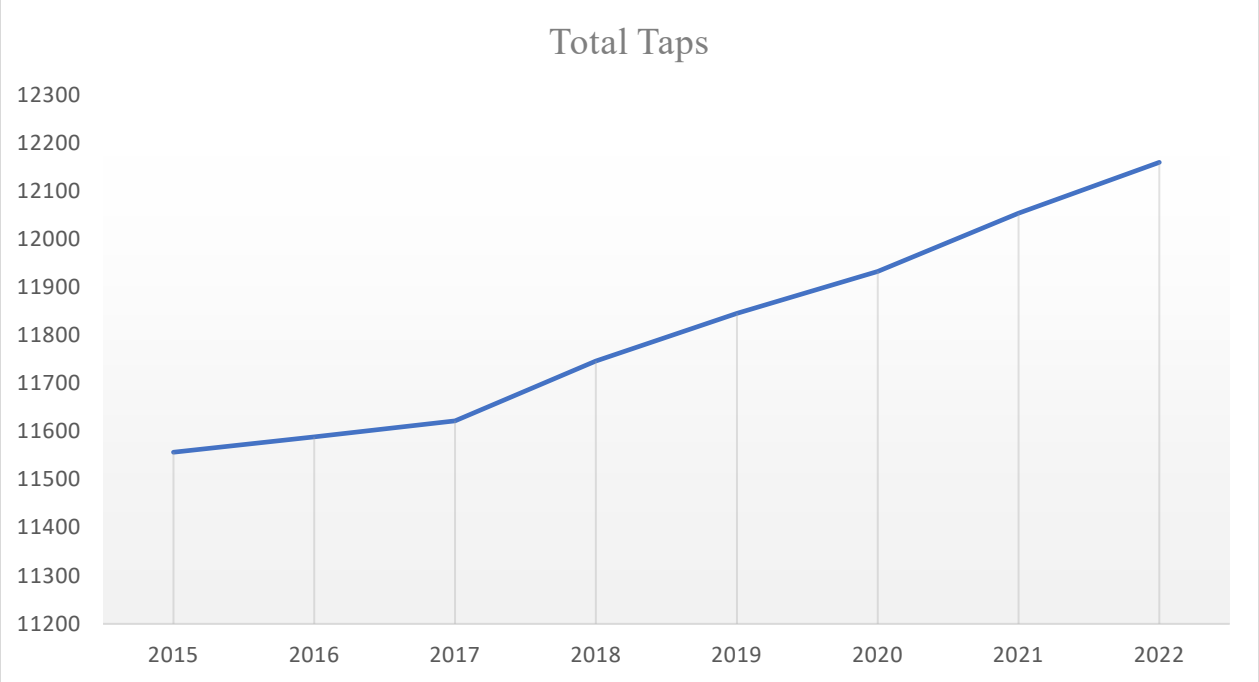
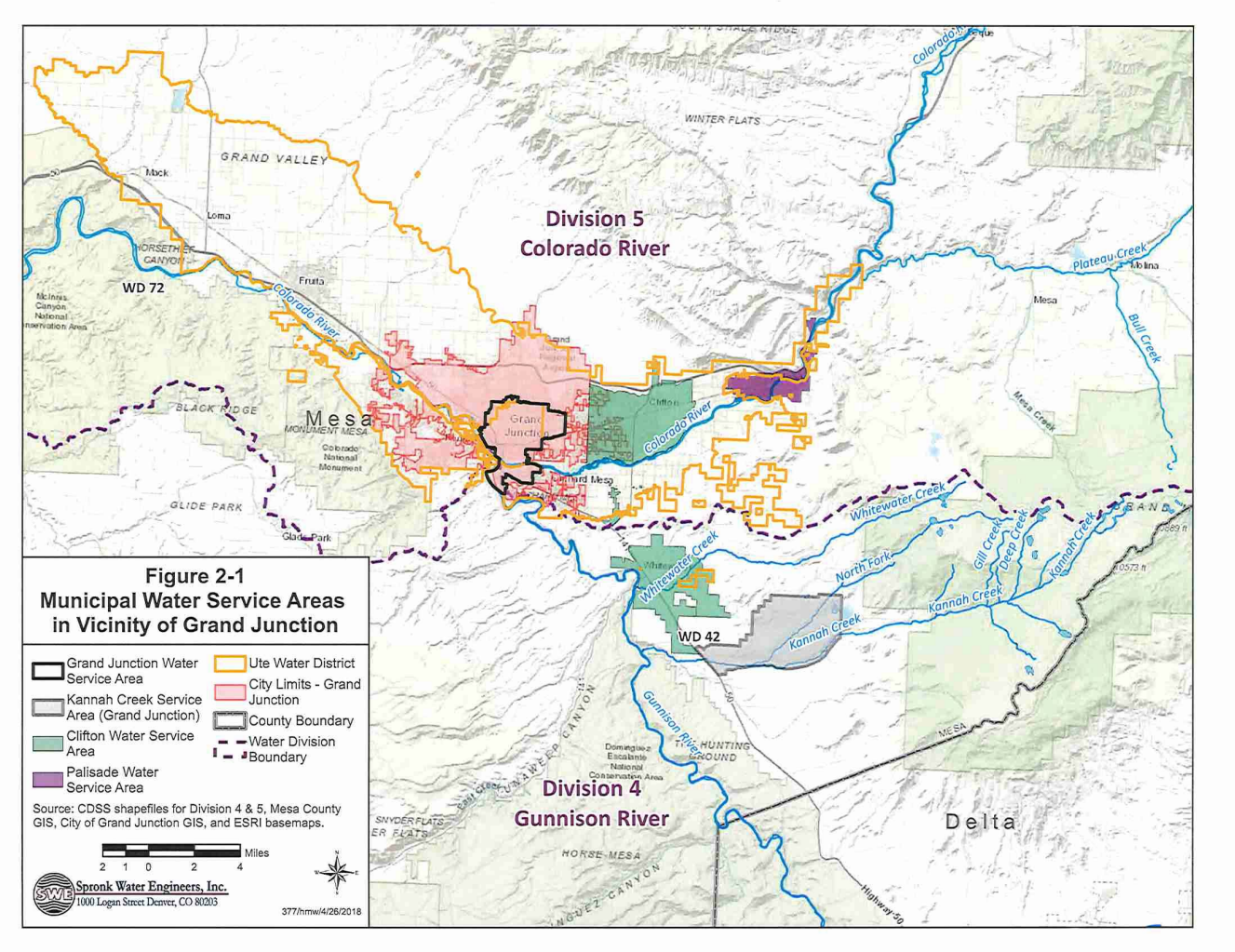


Figure 3-10



4.0 Profile of Existing Water Supply System: The Ute Water Conservancy District



Ute Water Conservancy District's Service Area is outlined in yellow.

History and Water Supply

The Ute Water Conservancy District (District) was formed on April 4, 1956, by decree of the Mesa County Court. The District serves an estimated 60 percent of the Mesa County population, with the District's boundaries starting in Cameo, east of the Town of Palisade, and ending near the Colorado-Utah State line.

The primary source of supply for the District is the Jerry Creek Reservoirs (No. 1 and 2) with a combined capacity of 8,736 AF. The Jerry Creek Reservoirs are filled from the Ute Pipeline Headgates No.1 or No.3 which has a senior water right for 20 cfs and a junior water right for 30 cfs. The Ute Pipeline Headgate No. 3 diverts water directly from Plateau Creek and Headgate No. 1

diverts water from the Lower Molina Power Plant. The District generally diverts water from Headgate No. 1 due to better water quality and yield. The District has an environmental constraint of 20 cfs by-pass flows in Plateau Creek when diverting from headgate No. 3 that was imposed by the US Army Corps of Engineers when the diversion was constructed in 1977 during that year's drought.

The District has converted a portion of its irrigation water rights from the Carver Ranch purchase, diverted from Mesa Creek, to municipal use. The Water Court decree has limited these converted rights from Mesa Creek to 508.9 acre-feet per year. These, and additional water rights diverted from Coon Creek, are diverted into a third intake, and subsequently into the Ute Pipeline. The District owns nine other ranch properties that remain in agriculture. These ranches have numerous direct flow rights, storage rights, and Collbran Water Conservancy District shares.

The raw water from the Jerry Creek Reservoirs is delivered to the District's water treatment plant via a 18.2 mile long, 48-inch diameter Plateau Creek Pipeline (Pipeline). The Pipeline has the capacity to deliver 40.3 mgd, or 62.2 cfs, from the Jerry Creek Reservoirs. The Pipeline travels along the Plateau Creek valley floor for approximately 11.2 miles before entering the Lower Canyon Tunnel. After exiting the Lower Canyon Portal, the Pipeline alignment follows Plateau Creek for approximately 1.2 miles before entering the 3,300 ft long Lower Mesa Tunnel. Upon exiting the Lower Mesa Tunnel the Pipeline travels along the south-westerly wall of DeBeque Canyon above Interstate 70 for approximately 3.2 miles before entering the District's water treatment plant.

In addition to the Plateau Creek Pipeline, diversions can also be made from the Colorado River through the Rapid Creek Pumping Pipeline and the Bridges Switch Pumping and Pipeline which has a pumping capacity of 31 cfs. Since the formation of the Ute Water Conservancy District, the District has acquired numerous water rights in the Grand Mesa watershed. Table 4-1 is a list of storage rights and Table 4-2 is a list of direct flow rights owned by Ute Water Conservancy District.

In 1976 and again in 1985, the Water Treatment Plant was expanded to meet the growing demand for domestic water. In 2009, the District's Water Treatment Plant underwent a $7.2 million dollar expansion that included the installation of four new filters. The District's current Water Treatment Plant capacity is 34 MGD, with treated storage of approximately 16 million gallons of water, which brings the District's system-wide treated water storage to 27.5 million gallons. Ute Water currently has approximately 930 miles of distribution pipelines and service lines. In 2021, the District served 37,650 residential and commercial taps with an estimated population of about 88,000.

In 2012, the District purchased 12,000 acre-feet of annual stored water in Ruedi Reservoir for use as a secondary water source and to provide for future growth. In 2013, the District completed an

upgrade of the Treatment Plant's flocculation and sedimentation basins with the addition of settling plates to increase treatment capacity. The upgrade allows for increased effectiveness in maintaining a high level of water quality when treating water from sources such as the Colorado River. From 2015 to 2017, the District completed construction upgrades to their pump stations near the Colorado River necessary to continue the conveyance of water from the pump station on the Colorado River to the District's treatment facilities. Completion of the pump station upgrades provides a secondary source of water that exceeds the District's current maximum daily demand. The District will continue its efforts to ensure its ability to provide adequate water to its customers into the future and to comply with current and anticipated water quality regulations.

A first for the District, in 2021, approximately 1,890 acre-feet of the Ruedi Reservoir water was released in 2021 to supplement demand due to drought conditions.

Table 4-1

Ute Water Conservancy District
Summary of Storage Water Rights

Name	Stream Name	Acre Feet	Use	Comments
Big Creek Reservoir Company	Big Creek	404.57	I	35.75 shares
Big Park Reservoir	Leon & Park Creeks	5,650.0	D	Conditional
Bull Basin Reservoir No. 1	Bull Creek	125.6	I	100% interest
Bull Basin Reservoir No. 2	Bull Creek	96.1	I	two adjudications
Bull Creek Reservoir Company	Bull Creek	167.89	I	94 shares
Buzzard Creek Dam & Reservoir	Buzzard Creek	4,500.0	D	Conditional
Coldsore Reservoir	Cottonwood Creek	90.7	I	aka Jensen
Coon Creek Reservoir & Canal Co.	Coon Creek	531.1	I	781 shares
Coon Creek Reservoir No. 3	Coon Creek	201.0	I	3/8 interest
Cottonwood Lakes Reservoir Co.	Cottonwood Creek	371.88	I	61 shares
Jerry Creek Reservoir No. 1	Plateau Creek	1,102.0	D	
Jerry Creek Reservoir No. 2	Plateau & Jerry Creeks	9,591.1	D	7791 af cond. refill rt.
Kirkendall Reservoir	Leon Creek	110.0	I	1922.49 af cond., aka Hunter
Mesa Creek Res. And Canal Co.	Mesa Creek	189.3	I	182 shares
Monument Reservoir No. 1	Leon Creek	572.7	I	4,682 af cond.
Monument Reservoir No. 2	Leon Creek	254.0	I	
Owens Park Reservoir	Owens & Buzzard Crk	7,152.0	D	Conditional
Stubbs McKinney & Clark Res	Bull Creek	206.0	I	aka Long Slough
Twin Reservoir	Bull Creek	129.2	I	
Vega Reservoir	Plateau Creek	797.0	I	
Willow Creek Reservoir	Buzzard Creek	19,488.0	I	Conditional

D – Domestic, I – Irrigation

Table 4-1
(Continued)
Ute Water Conservancy District
Summary of Direct Flow Water Rights

Water Right Name	Stream Name	Cubic Feet per Second	Use	Comments
Atwell Waste & Seep Ditch	Mesa Creek	3.06	I	0.06 cfs conditional
Carver Ranch Pipeline	Mesa Creek	11.00	D	Mesa Intake
Independent Ditch	Mesa Creek	8.17	I	7.11 cfs conditional
King Ditch	Mesa Creek	1.43	I	
Mason & Eddy Ditch	Mesa Creek	8.84	D	Ltd. 508 af
Mesa Creek Ditch	Mesa Creek	6.50	D	
Mesa Creek Ditch	Mesa Creek	16.62	I	
Blackman, Dunlap & Clark D.	Plateau Creek	0.72	I	
Heely Ditch No. 1	Plateau Creek	0.66	I	
Heely Ditch No. 2	Plateau Creek	0.66	I	
Heely Ditch No. 3	Plateau Creek	0.66	I	
Heely Ditch No. 6	Plateau Creek	0.66	I	
Ute Pipeline	Plateau Creek	50.00	D	
Marin Crawford Ditch	Rapid Creek	8.00	D	
Cedar Ditch	Salt Creek	3.70	I	
Hill-Johnson Ditch	Salt Creek	1.57	I	7/24 interest in ditch
Bridges Switch PP & PL	Colorado River	30.00	D	Conditional
Grand Valley Canal	Colorado River	4.10	I	GVIC, 397 shares
Rapid Creek Pumping Plant	Colorado River	15.00	D	Absolute
Ute Pumping Station & PL	Colorado River	50.00	D	Conditional
Palmer Ditch	Big Creek	20.23	I	2/9 int. in 2nd & 3rd adj.
Golden Age Ditch	Big Creek	2.46	I	
Golden Age Ditch	Big Creek	0.19	D	
Kiggins & Goyn Ditch	Big Creek	1.41	I	

Table 4-1
(Continued)

Ute Water Conservancy District
Summary of Direct Flow Water Rights

Name	Stream Name	Cubic Feet per Second	Use	Comments
Boyle Creek Ditch	Bull Creek	0.60	I	Conditional
Bull Basin Highline Ditch	Bull Creek	5.90	I	
Stubbs McKinney, & Clark Res Feeder Ditch	Bull Creek	7.00	I	
Atwell East Ditch	Coon Creek	2.82	D/I	Domestic use conditional
Charles A. Atwell East Ditch	Coon Creek	0.75	I	
Brown Ditch	Coon Creek	2.08	I	Additional 1.0 cfs for stock
Coon Creek Pipeline	Coon Creek	6.00	D	1.9 cfs is conditional
Craig & Stewart Ditch	Coon Creek	4.68	I	
Heely Ditch No. 4	Coon Creek	2.00	I	
Heely Ditch No. 5	Coon Creek	0.66	I	
Pisel Ditch	Coon Creek	0.65	I	
Vance & Fortsch Ditch	Coon Creek	2.60	I	
Welch Ditch	Coon Creek	1.63	I	
Wildcat Ditch	Coon Creek	0.15	S	
Kiggins & Salisbury Ditch	Leon Creek	31.20	I	Ownership of 300 shares
Leon Ditch	Leon Creek	6.69	I	40% ownership in ditch
Little Finn Ditch	Leon Creek	3.25	I	aka Provo Ditch

D – Domestic, I – Irrigation, S - Stock

Retail Water Sales

Ute Water currently provides retail water to residents and businesses that are in its service area (see domestic water providers map, appendix A). This includes approximately 75% of the incorporated area of the City of Grand Junction. At the end of 2022, there were 39,612 active taps with an average water demand of just under 3 billion gallons per year for the years 2016 through 2022.

Approximately 95% of homes in the Ute Water Conservancy District enjoy the use of direct-flow irrigation water. Residents within the District receive irrigation water from the Government Highline Canal, operated by the Grand Valley Water Users Association. Also providing irrigation water within the District boundaries is the Redlands Canal, owned and operated by the Redlands Water & Power Company, the Grand Valley Canal, owned and operated by the Grand Valley Irrigation Company, and the Orchard Mesa Canal, owned and operated by the Orchard Mesa Irrigation District

Monthly Water Demand 2016-2022

The average daily demand for January for the study period was 6.8 million gallons per day (mgd) and the average daily demand in July was 13.9 mgd. The ratio of the January daily demand to the July daily demand was 2, or water demand for July is two times that of an average day in January. This difference is estimated to be the result of home cooler demand during the hot summer months and limited lawn or outside watering use. Unbilled water averaged 9% over the past six years and is based upon water billed in a month plus additional known uses compared to measured production. The unbilled water percentage can be affected by the accuracy of meter readings and unauthorized fire hydrant usage. The unbilled water percentage can also be impacted by fire-fighting usage. Table 4-3 shows Ute Water's monthly and annual demand for the study period, as well as detailed water use for those years, and Figure 4-1, illustrates the monthly water demand.

Sector Water Use

Table 4-4 shows billed water use patterns for residential and commercial-industrial sectors for 2016 through 2022 as well as a percentage of water use and percentage of taps by each sector. For the years 2016-2022, residential water use averaged 74% of water sales and approximately 96% of active water taps. The commercial-industrial sector averaged 26% of water sales but only approximately 4% of active water taps.

As shown in Table 4-4, the distribution of water taps for the Commercial-Industrial (C-I) sector has remained constant over the years. When looking at the C-I sector, it was noted that the 5 largest C-I customers were billed for 2.9% of the total water use in 2018. The C-I customers include a

manufacturer, hotel, car wash, farming/livestock, and retailer. Table 4-5 shows the distribution of water use for the 5 largest C-I customers for 2022.

Table 4-2
Ute Water Conservancy District Monthly Billed Water
(values in million gallons)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2016	190	152	172	196	208	288	351	331	312	252	189	179	2,820
2017	181	168	164	213	236	315	371	321	342	230	203	182	2,926
2018	181	177	166	200	239	335	344	366	315	255	198	174	2,950
2019	192	175	157	181	230	284	310	348	243	198	198	186	2,702
2020	188	180	168	202	272	312	367	372	337	270	213	179	3,060
2021	202	167	172	234	255	316	379	333	313	266	188	185	3,010
2022	190	174	165	214	236	308	336	329	348	248	212	192	2,952
Average	189	170	166	206	239	308	351	343	316	246	200	182	2,917

Detailed Water Use

Average Annual Water Use	2917.1 mg
Average Unbilled Water	291.3 mg
Average Annual Water Loss	9%
Average Day Use (July	13.9 mgd
Average Day Use (January)	6.8 mgd
Average July Day to Average January Day Ratio	2.0

Figure 4-1

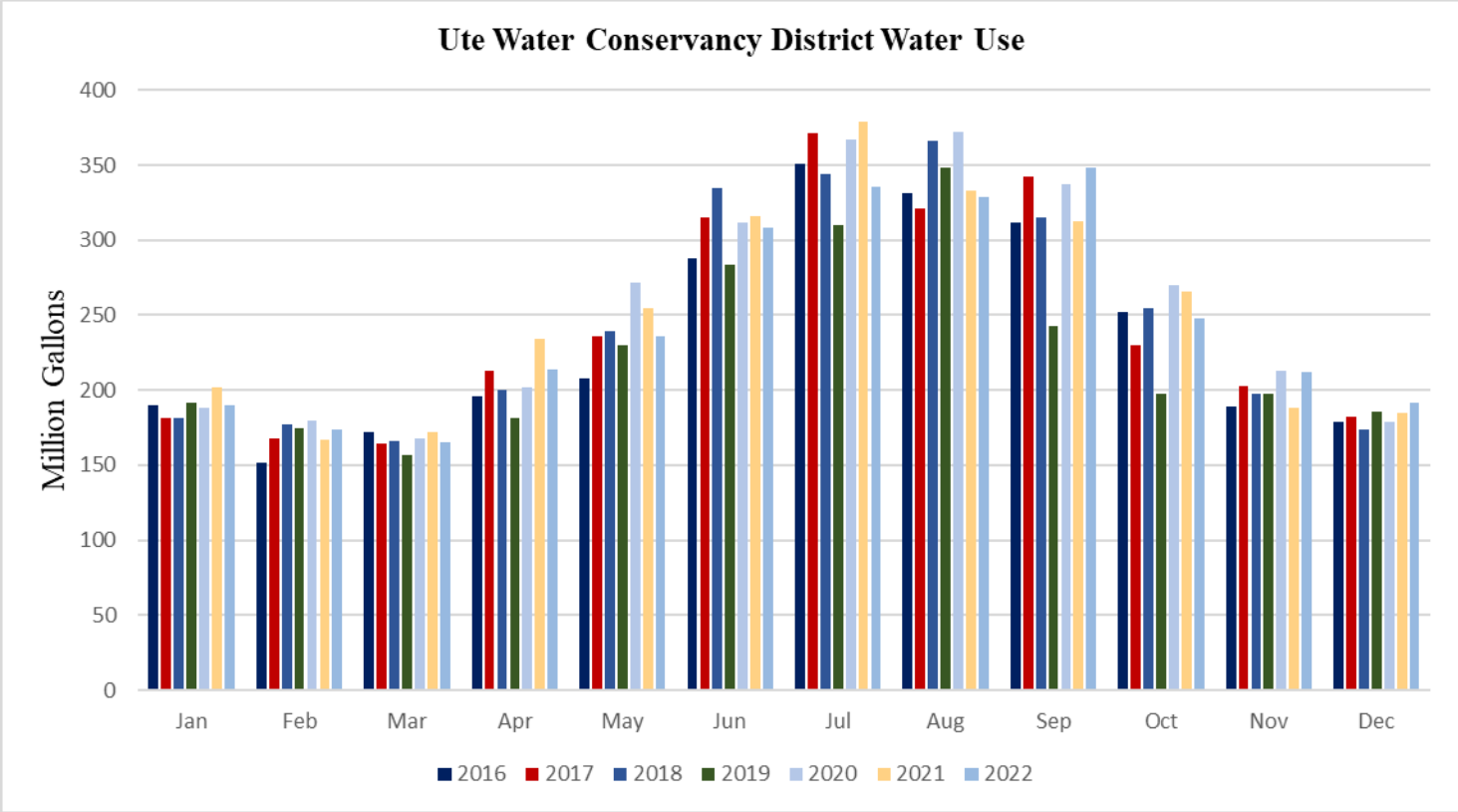

Ute Water Conservancy District Water Use
Million Gallons
400
350
300
250
200
150
100
50
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2016
2017
2018
2019
2020
2021
2022

Table 4-3

Ute Water Conservancy District
Sector Water Use

Year	Customer Class	Total Taps	Metered Water (1000 gallons)	Average per Tap (1000 gallons)	Per Capita	Water Use (% of Total)
2022	Residential	38,195	2,135,625	55.9	65.0	74.9%
	Commercial	1,417	714,655	504.3		25.1%
	Total	39,612	2,850,280			
2021	Residential	37,650	2,202,880	58.5	69.0	73.2%
	Commercial	1,414	805,817	569.9		26.8%
	Total	39,064	3,008,697			
2020	Residential	36,881	2,291,129	62.1	69.0	74.7%
	Commercial	1,396	774,116	554.5		25.3%
	Total	38,277	3,065,245			
2019	Residential	36,174	2,102,785	58.1	69.0	73.6%
	Commercial	1,386	754,867	544.6		26.4%
	Total	37,560	2,857,652			
2018	Residential	35,622	2,179,724	61.2	69.0	73.9%
	Commercial	1,368	770,268	563.1		26.1%
	Total	36,990	2,949,992			
2017	Residential	35,185	2,171,310	61.7	69.0	74.2%
	Commercial	1,338	755,109	564.4		25.8%
	Total	36,523	2,926,419			
2016	Residential	34,753	2,098,331	60.4	68.0	74.4%
	Commercial	1,318	721,886	547.7		25.6%
	Total	36,071	2,820,217			

Table 4-4

Ute Water Conservancy
Five Largest Commercial-Industrial Customers 2022

Sector	Percentage	Water Use (mg)
Fill Station/Construction	1.1%	38.8
Hotel	0.8%	24.0
Mobile Home Park	0.7%	21.0
Car Wash	0.5%	16.0
Manufacturer	0.5%	15.3
Total		115.1
Total water billed in 2022		2949.0
Percentage of 2022 billed water		3.9%

Current Rate Structure and Tap Fees

During the November 2022 regular board meeting, Ute Water's Board of Directors approved a water rate and tap fee increase that will increase the $22 minimum, for the first 3,000 gallons of water, to a $25 minimum, effective for water delivered in January 2023 and billed beginning February 1, 2023. The tiers for residential water usage above the 3,000-gallon minimum increased by approximately 15 percent for residential and non-residential water usage. Tiered rates include an aggressive increasing block rate structure. The 2023 water rate and tap fee increase is the first time Ute Water has increased water rates and tap fees since 2016.

Additionally, beginning on February 1, 2023, new development will see a $1,000 increase in tap fees for a 5/8-inch meter, which is the most common meter used in residential services. The new tap fees will increase a 5/8-inch water meter fee from $7,000 to $8,000. Tap fees for larger-sized meters will increase proportionally.

Much like the rest of the country, Ute Water has been subject to increased operating costs driven by inflation and supply chain issues, which in recent years, have increased dramatically, with chemicals critical to the water treatment processes have risen steadily, with some increasing up to 300 percent between 2021 and 2022.

Table 4-5
Ute Water Conservancy District Tap Fees

Meters 3/4" x 5/8" through 1"

Residential		Non-Residential	
Rate	*Amount (gallons)*	*Rate*	*Amount (gallons)*
$4.25 each 1,000 gallons	3,000-9,000	$3.70 each 1,000 gallons	3,000-9,000
$4.85 each 1,000 gallons	9,000-15,000	$4.20 each 1,000 gallons	9,000-15,000
$5.70 each 1,000 gallons	15,000-21,000	$4.95 each 1,000 gallons	over 15,000
$6.55 each 1,000 gallons	21,000-30,000		
$11.75 each 1,000 gallons	over 30,000		

1 1/2 " Meters

Non-Residential		Agriculture
Rate	*Amount (gallons)*	
$125.00 minimum	15,000	Same tap fees and monthly water rates for Commercial Water Service.
$4.25 each 1,000 gallons	next 30,000	
$4.85 each 1,000 gallons	next 30,000	
$5.70 each 1,000 gallons	over 75,000	

2" Meters

Non-Residential		Agriculture
Rate	*Amount (gallons)*	
$200.00 minimum	24,000	Same tap fees and monthly water rates for Commercial Water Service.
$4.25 each 1,000 gallons	next 48,000	
$4.85 each 1,000 gallons	next 48,000	
$5.70 each 1,000 gallons	over 120,000	

3" Meters

Non-Residential		Agriculture	
Rate	*Amount (gallons)*	*Rate*	*Amount (gallons)*
$385.00 minimum	52,500	$385.00 minimum	52,500
$3.70 each 1,000 gallons	next 105,000	$3.70 each 1,000 gallons	next 105,000
$4.20 each 1,000 gallons	next 105,000	$4.20 each 1,000 gallons	next 105,000
$4.95 each 1,000 gallons	over 262,500		

4" Meters

Non-Residential		Agriculture	
Rate	*Amount (gallons)*	*Rate*	*Amount (gallons)*
$660.00 minimum	90,000	$660.00 minimum	90,000
$3.70 each 1,000 gallons	next 180,000	$3.70 each 1,000 gallons	next 180,000
$4.20 each 1,000 gallons	next 180,000	$4.20 each 1,000 gallons	next 270,000
$4.95 each 1,000 gallons	over 450,000		

6" Meters			
Non-Residential		**Agriculture**	
Rate	*Amount (gallons)*	*Rate*	*Amount (gallons)*
$1,540.00 minimum	210,000	$1,540.00 minimum	210,000
$3.70 each 1,000 gallons	next 420,000	$3.70 each 1,000 gallons	next 420,000
$4.20 each 1,000 gallons	next 420,000	$4.20 each 1,000 gallons	next 630,000
$4.95 each 1,000 gallons	over 1,050,000		

Planned New Water Facilities

In 2012, the District initiated the permitting process for the enlargement of Monument Reservoir No. 1. The proposed enlargement of Monument Reservoir No. 1 would give the District 5,000 acre-feet of additional storage for the current raw water delivery system. The Colorado Water Plan listed the Monument No. 1 enlargement plan as an "Identified Project" in securing and protecting safe drinking water now and in the future. The plan further stated that the project aligned with the plan's theme of protecting and restoring healthy streams; sustaining, promoting, and protecting agriculture; developing water-conscious land-use strategies; and encouraging a high-level of basin-wide conservation. In 2020, to better understand the hydrology in the Monument basin, Ute Water voluntarily installed flumes, sensors, and data loggers at the existing reservoir's spillway and Monument Creek's confluence with Leon Creek. In May of 2021, the United State Forest Service released a Final EIS for the project, and later that year in August, a Record of Decision was issued approving the enlargement of Monument Reservoir No. 1. Since the Record of Decision, in 2022, the District has continued working on project permitting and mitigation, as well as dam design.

As a result of utilizing water shares from Ruedi Reservoir to supplement demand in response to 2021 drought conditions, the District is currently constructing sedimentation basins to address the pre-treatment of Colorado River source waters. The wildfires of 2020 and 2021 and their continuing impacts from landslides and other large sediment loading events, require the flexibility that these basins will provide to utilize the river as a dependable secondary source. The District broke ground on the sedimentation ponds at the end of 2022.

5.0 Future Water Demands in the Grand Junction Region

The City of Grand Junction

Because the City of Grand Junction water service area is surrounded by other water providers, growth has occurred at an annual rate of 0.20% between 2012 and 2018 with new taps of only 122 taps for the time period. Table 5-2 is a projection of water demand by the year 2035. Water demand was projected to increase at a 0.95% rate between the years 2020 and 2035. Projected water demand was calculated using projected population multiplied by 90 gpcd then calculated at an annual value and converted to million gallons. The City of Grand Junction's unbilled water is anticipated to remain constant at a rate of 8.0%. The demand study conducted in 2019, is discussed below:

DiNatale Water discussed future growth estimates with Grand Junction Planning Department personnel to estimate future potable water use for the City. Grand Junction's Planning Department uses a 1.4% growth rate for the City based on recent measured population growth. We applied this growth rate to the population within the Grand Junction Utility water service area using the 2010 US Census data and also to an estimate of 2017 population in the service area.

The population according to the 2010 US Census is considered to be the most accurate measurement of population within the Grand Junction service area because the census counts population at the parcel level. No census-level population counts are available for more recent years. However, Grand Junction planning staff have made population estimates through 2017 on the census tract level, which are larger than the more detailed census data. The census tracts do not exactly align with the Grand Junction water service area boundaries, so Grand Junction GIS professionals assisted DiNatale Water with estimating the population within the service areas in 2017 by scaling the tract populations based on the area of each tract within the City's Utility service area, resulting in an estimated 2017 population of approximately 29,500.

We used both the 2010 census-based population and the 2017 estimated population and projected population in 2069 using the 1.4% growth rate. Beginning with the 2010 population, the projected future population is approximately 63,000 people. Beginning with the 2017 population estimate, the future projected population is approximately 61,000 people. As a conservative measure, DiNatale Water chose to use the smaller of the two projections for estimating future demand.

Additionally, DiNatale Water opted to reduce this projected population metric as future growth within the City's water service area will be limited by the space available surrounding the current service area. The 1.4% growth rate was developed city-wide and was not limited to the water utility service area. Within the current water service area, population growth will result primarily from infill development and increasing density of land use, rather than development or new lands within the current service area. Therefore, DiNatale Water reduced the future population estimate

by 20% within the current water service area in the year 2069 to be approximately 49,000, which calculates out to an average growth rate of 0.95% annually.

The City Center of Grand Junction is experiencing an increase in the amount of infill development within the City's service area. Land use within the service area has become denser as parcels that historically served single family homes or were unoccupied have been developed into apartment buildings and hotels. Grand Junction Planning Department personnel provided several examples of this type of infill development where an increase in water demand is expected due to a change to the land use of the same area. The examples provided by the City indicate that infill development is occurring and will result in higher water use within the current service area, even without an expansion of the land area of the City's water service area.

Table 5-1

City of Grand Junction
15-Year Estimated Water Demand
(values in million gallons)

	Year	2015	2020	2025	2030	2035
	Historic:					
1	Population	28,400	28330			
2	Residential Demand	1,072	966			
	Commercial - Industrial Demand	676	635			
3	Unbilled Water	135	159			
4	Total Water Demand	1,883	1,760			
	Projected:					
5	Population			29,701	31139	32647
	Projected Sector Demand:					
6	Residential Demand			1,011	1058	1108
7	Commercial - Industrial Demand			676	676	676
8	Projected Unbilled Water			135	139	143
9	Projected Total Water Demand			1,822	1,873	1,927

1 Residential Units X 2.34
2 Billed water by sector
3 Unbilled water
4 Billed water plus unbilled water
5 Growth to average 0.95% per year
6 Annual increase calculations: Population increase times 90 gpcd times 365 divided by one million
7 C-I demand historical range of 594 mg - 676 mg; estimated to remain at historical high values
8 Projected unbilled water is 8.0% of total demand
9 Sum of sectors and unbilled water

Clifton Water District

The projected future water demand for the Clifton Water District was based on the number of water taps and the water demand for the years 2004-2010. The number of taps increased for that time period by approximately 11% or an annual average of 2.25%. The per capita water demand for the residential sector averaged 85 gallons per day (gpcd) for that same time. In cases where untreated irrigation water is unavailable, treated water is utilized for outdoor irrigation and is included in the per capita calculation (reference Table 3-3). The growth rate and water demand between 2008 and 2010 was flat but optimistic projections are for the growth rate to return to the projected 2% per year by the State Demographer. Table 5-3 is a calculation of the projected water demand for the Clifton Water District through 2035. Projected water demand was calculated using projected population multiplied by a per capita of 85 (gpcd) then calculated at an annual value and converted to million gallons. The commercial-industrial sector was estimated to remain at the historic five-year high and the unbilled water was anticipated to remain constant at a rate of 13%. Note: the unbilled water for 2010 was unusually high at 14.7%.

Table 5-2

	Year	2015	2020	2025	2030	2035
	Historic:					
1	Population	31435	31575			
2	Residential Demand	915	1008			
	Commercial - Industrial Demand	82	79			
3	Unbilled Water	169	120			
4	Total Water Demand	1,166	1,207			
	Projected:					
5	Population			34,015	36,644	39,476
	Projected Sector Demand:					
6	Residential Demand			1,344	1,421	1,503
7	Commercial - Industrial Demand			92	92	92
8	Projected Unbilled Water			187	197	207
9	Projected Total Water Demand			1,623	1,709	1,802

1 2020 Population

2 Billed water by sector

3 Unbilled water was 11% of total treated water for 2020

4 Billed water plus unbilled water

5 Growth estimated to average 2.0% per year

6 Annual increase calculations: Population increase times 80 gpcd times 365 divided by one million

7 C-I demand historical range of 88.5-91.7 mg; estimated to remain at historical high after 2020

8 Projected unbilled water is 13% of total water demand

9 Sum of sectors and unbilled water

Ute Water Conservancy Water District

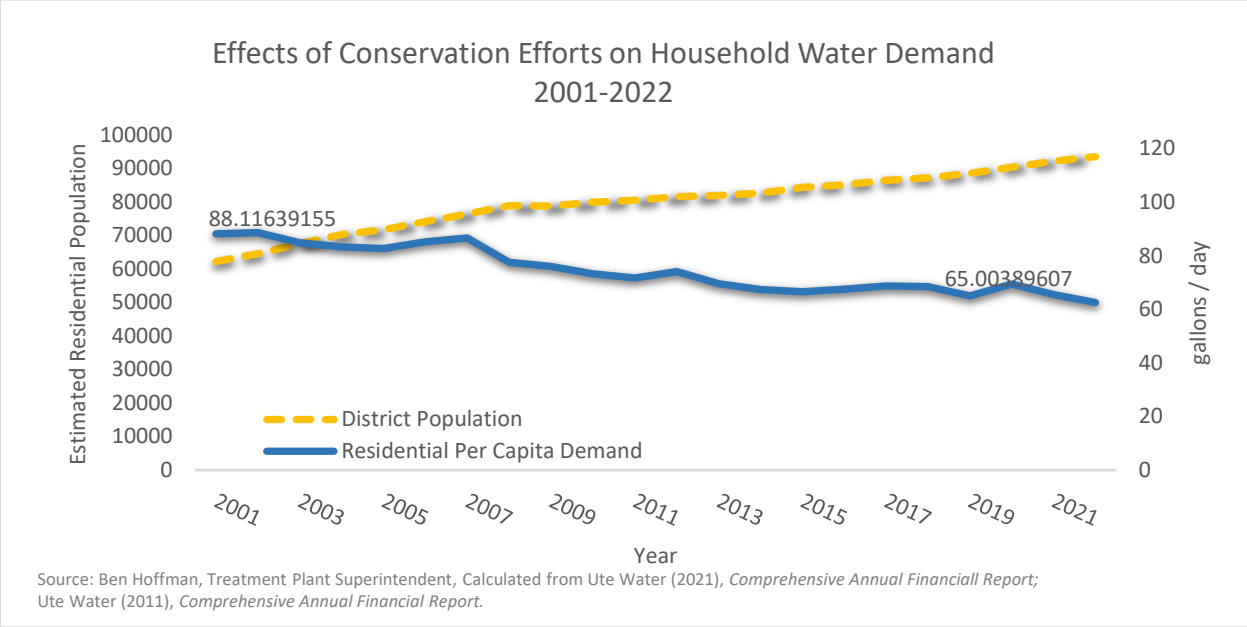
Following the 2020 U.S. Census Bureau results partnered with estimates from the State of Colorado Demographers, the estimates of Mesa County's population will grow from current levels of approximately 157,636 to 221,562 by the year 2050. The District continues to address this challenge by managing financial flexibility to pursue water resource opportunities and by continually strengthening the assessment of long-term plans and projects that will provide for future growth.

Projected water demand for the Ute Water Conservancy District was based on historical data and growth trends seen in the District's service area since 2001. Since 2015, the District has experienced growth that remains consistent with an average of an estimated 1.5% each year. Additionally, according to the July 1, 2022, U.S. Census, Mesa County's average household count was an estimated 2.44. Specifically, within the areas in which Ute Water serves, the Census estimated the following average household count, with growth varying based on the location within the District's service area.

Fruita	2.65
Fruitvale	2.48
Grand Junction	2.27
Orchard Mesa	2.63
Redlands	2.58

Additionally, projected demand and projected savings were estimated based on historical data that combined the District's population, taps billed, and total gallons sold. From that information, Ute Water's customers per capita was calculated and showed an interesting trend of a decrease in per capita water usage by an average of 1 gallon each year, dating back to 2001. It is important to note that although the District's population was 62,269 back in 2001 with a per capita of 88 gallons per day per customer, at the end of 2022, the District's population grew to 88,898 with a per capita of 66 galls per day per customer. Though the District's population has grown significantly through the past two decades, through the decrease per capita, the District has saved millions of gallons each year due to lower consumption from District customers. Figure 5-1 shows a visual representation of the District's population growth and decreased consumption.

Figure 5-1



Source: Ben Hoffman, Treatment Plant Superintendent, Calculated from Ute Water (2021), *Comprehensive Annual Financiall Report;* Ute Water (2011), *Comprehensive Annual Financial Report.*

It is also important to consider that temperatures and local climate impacts customer consumption directly. Summers in the area are hot and dry and reach over 90 degrees Fahrenheit on average over 60 days per year. It is common during winter months that daytime temperature remains below freezing while snowfall can be intermittent and lower in comparison to much of Colorado. In most years, there is a correlation between District consumption and the amount of precipitation temperatures, and the timing of precipitation can be a factor. For example, much of the 2018 precipitation (2018 being a significant drought year) came during the fall, after the hot and dry summer months that drove consumption had passed. Of the 9.8 inches of precipitation received in 2021, 2 inches came in the form of snow during the last two weeks of December while in 2022, almost 6 inches of the 9.2 inches recorded in 2022 was precipitation recorded during the September through December period. Figure 5-2 illustrates the correlation between precipitation in inches per year compared to annually consumed gallons.

Figure 5-2

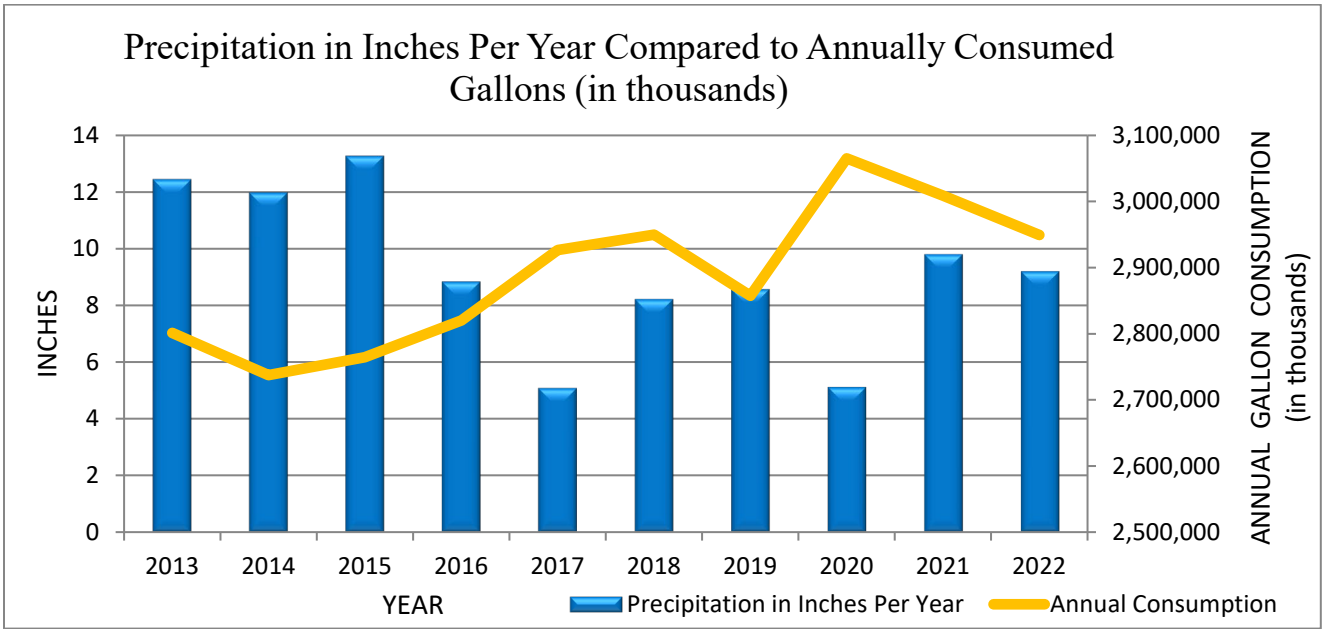

Precipitation in Inches Per Year Compared to Annually Consumed Gallons (in thousands)
INCHES
14
12
10
8
6
4
2
0
3,100,000
3,000,000
2,900,000
2,800,000
2,700,000
2,600,000
2,500,000
ANNUAL GALLON CONSUMPTION (in thousands)
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
YEAR
Precipitation in Inches Per Year
Annual Consumption

Table 5-3

Ute Water Conservancy District
15-year Estimated Water Demand

	Year	2015	2020	2025	2030	2035
Historic:						
1	Population	79,597	86,094			
2	Residential Demand	2126.69	2376.42			
	Commercial - Industrial Demand	747.22	834.96			
3	Unbilled Water	172.75	267.98			
4	Total Water Demand	3046.65	3479.35			
Projected:						
5	Population			92,959	100,143	107,882
6	Projected Sector Demand:					
7	Residential Demand			2363.22	2545.86	2742.62
8	Commercial - Industrial Demand			830.32	894.49	963.62
9	Projected Unbilled Water			354.84	382.26	411.80
10	Projected Total Water Demand			3548.38	3822.62	4118.04

1 Historical data
2 Actual billed water by sector
3 Unbilled water was 5.67% of total treated water for 2015 and 8.15% of total treated water for 2020
4 Actual total water demand
5 Ute Water's estimated increase at 1.5% increase per year, based on average growth trends
6 Projected water demand
7 Projected population at 67 per capita per day
8 Commercial - Industrial demand is estimated to remain at high historic values
9 Projected unbilled water is projected to remain at high historic values of 10%
10 Sum of sectors and unbilled water

Table 5-4 is a summary of anticipated water demand in the Grand Junction Region from 2020 (actuals) through 2035. It should be noted that the values used for the projected water demand are planning values only and are based on current research by both HDR and the State Demographer.

Table 5-4

Year	**2020** (actual)	**2025**	**2030**	**2035**
Projected:				
City of Grand Junction	1,773	1,822	1,873	1,927
Clifton Water District	1,572	1,623	1,709	1,802
Ute Water Conservancy District	3,479	3,548	3,822	4,118
Projected Total Water Demand	**6,824**	**6,993**	**7,404**	**7,847**

SECTION TWO

The Grand Valley Regional Water Efficiency Plan

6.0 Current and On-going Water Conservation

In 1996, the City of Grand Junction (the City), the Clifton Water District (Clifton), and the Ute Water Conservancy District (Ute), collectively referred to as the Entities, each developed a Water Conservation Plan. The City, Clifton, and Ute have taken pro-active positions on water issues and view water conservation as not only necessary for the future but also responsible management of their water resource. The City Council for the City, and the Boards of Directors for Clifton and Ute support water conservation as part of their general mission and took the lead in promoting water conservation in the Grand Junction Region and adopted the initial version of this Regional Water Efficiency Plan for the Grand Junction Region in 2012. Goals set forth in this initial draft were:

> Goal 1: Continue to educate the community, local and regional planning departments, construction and development businesses, landscape contractors, and customers regarding codes and ordinances that promote xeric landscapes and water conservation.
> Goal 2: Continue to create public awareness of wise water use and conservation.
> Goal 3: Continue efforts to reduce residential sector per-capita water demand in the Grand Junction Region.
> Goal 4: Promote water saving awareness in the commercial/industrial sectors.

Demand Management activities selected to implement in order to achieve these goals are discussed in the following section. They include activities such as public education programs and campaigns, commercial audits and targeted technical assistance, implementation of water-efficient fixtures, improved infrastructure for leak detection, and the adoption of policies and water rates that promote water conservation.

Drought Response Plan / Drought Response Information Project (DRIP)

As a result of the 2002-2003 drought, the City, Clifton, and Ute along with the Town of Palisade collectively embarked upon the development of a regional Drought Response Plan. The Drought Response Plan (DRP) was designed to provide Governing Boards and City Council with a set of options to consider when dealing with a prolonged drought event. Appendix B contains the updated copy of the Drought Response Plan (2018). Implementation of the Drought Response Plan has been adopted by the governing bodies of the City of Grand Junction, Clifton Water and Ute Water, and is accomplished through an on-going annual effort, budgeted and paid for by the three domestic water providers. One of the key components of the DRP was to initiate a Drought Response Information Project (DRIP) to provide public education through all sources of media on why and how to reduce per capita consumption across all water use classes in the respective service areas. The DRIP Committee consists of staff members of the three domestic providers (the City,

Clifton, and Ute) as well as representatives of the Colorado State University Tri-River Area Extension, the National Weather Service, and local irrigation providers. This group has run an active media campaign on water conservation for the past fifteen years. The media campaign includes water conservation video presentations on the local public access channel, interviews with various DRIP members on local radio and television stations, weekly water conservation columns in the local newspapers, and face to face presentations to local service groups, homeowner's associations, and community gatherings to further spread the Grand Junction Region water conservation message. During the summer months, the group participates in the local community Farmer's Markets. DRIP members provide information on household and lawn water conservation. A year-round water conservation reference base is provided on the DRIP website (www.dripinfo.com).

Additionally, as a part of the DRIP, the domestic water managers meet monthly to discuss storage levels, potential water shortages and local and regional water issues. Representatives from the DRIP Committee routinely interact with staff members from local governments, Western Slope domestic water providers, irrigation water providers, soil conservation entities, mosquito control entities, local agricultural groups, and federal agencies that have interests in local water use issues. The City of Grand Junction, Ute Water District, and Clifton Water District, contribute up to $10,000 per entity per year to fund DRIP efforts.

Problem-Based Learning Subject-Matter-Experts

Problem-based learning (PBL) is a teaching method that allows students to solve complex, real-world, open-ended problems to develop problem-solving skills and draw attention to issues that may impact students directly. Many students across the valley are participating in a problem-based learning module in which they are tasked with solving local issues and offering solutions that can be implemented not only within their smaller community as a school but also may be applicable to the entirety of the Grand Junction Region. Students spend half the school year learning from experts on the topic, conducting research and experiments, and problem-solving. Upon concluding their project, students must present their findings and their research process to a panel of experts who provide feedback on feasibility and sustainability. Education is a sector that the Entities believe is an impactful and substantial outlet to reach current customers and future customers. The City of Grand Junction, Clifton Water District, and Ute Water Conservancy District have provided data, field-trip experiences, and subject-matter expertise to students within Mesa County Valley School District No. 51 since the Problem-based learning method was integrated into schools within each of the Entities' service areas. With Mesa County Valley School District No. 51 being one of the larger water consumers on the Western Slope, the committee has maintained a positive relationship with the school district in hopes to make water conservation a priority for their entire organization, not just independent schools.

In 2019, after serving as a subject matter expert and an evaluation panelist, Ute Water Conservancy District introduced a PBL group from Tope Elementary School to the Drought Response Information Project (DRIP committee), with the intention of implementing the marketing campaign that the group had developed into a public marketing campaign in partnership with DRIP over the summer, which is typically peak water usage season for the Entities. The PBL group worked to survey residents within a radius of their school and asked about their outdoor watering schedules and habits. From there, the students developed an educational campaign, known as "H2Woah, Did You Know?" and focused the campaign on educating the public about reducing wasteful water habits and ways to conveniently conserve water. Through the introduction to DRIP, the PBL group's concept of "H2Woah, Did You Know?" served as the DRIP committee's annual water conservation campaign in 2019. The group of students worked directly with a graphic designer and marketing experts to develop marketing assets and educational materials to be distributed in Mesa County. Additionally, the PBL group attended DRIP's annual press conference in early spring, in which each water provider gives an update on snowpack and anticipated water levels entering peak water usage season.

Additionally, in 2020, the DRIP committee provided a drinking water fountain audit to a PBL group at Tope Elementary School that was tasked with finding feasible solutions to conserve water within their school. Students had identified that drinking water fountains were largely being used for filling water bottles instead of drinking directly from the fountain. Unfortunately, due to their design, bottles were unable to be fully filled and, in the attempt, to fill the bottles, there was a lot of water waste. After performing a drinking fountain audit, which included documenting the frequency of use, measuring the water wasted when filling bottles, and checking for leaks, the group identified the ideal fountain to be replaced or retrofitted with a bottle-filling station to reduce water waste and promote water conservation. After presenting their findings to the DRIP committee, the committee sponsored the bottle-filling station and encouraged students to continue to keep utilizing the fixture audits to identify other areas of concern that water conservation efforts could be targeted in the future.

The Western Colorado Children's Water Festival

Ute Water Conservancy District, Clifton Water District, and the City of Grand Junction underwrite the Western Colorado Children's Water Festival (Children's Water Festival) held each year. Historically held on the campus at Colorado Mesa University, the Children's Water Festival was recently relocated to be held at Las Colonias Park and Amphitheater due to shifting in Colorado Mesa University's school calendar. Each year for the past 28 years, over 2,000 fifth-grade students attend the two-day program to learn the different roles that water plays in their lives, in their community, and in the world. Over 300 water experts participate in the festival by providing workshops

and hands-on presentations. Each presentation ranges in topics from water rights, water conservation, water pollution, water treatment, water distribution, water, and wildlife including the endangered species in the Colorado River, and each Coloradan's dependency on clean water supplies. The Children's Water Festival is underwritten and sponsored by many businesses and agencies in the Grand Junction Region and has grown to be recognized as the largest water festival in the state of Colorado and the second largest in the nation.

Low Water Use Landscape Programs / Commercial Audits

Tributary Water Conservation Leaders

In 2018, in response to the severity of drought conditions, the Drought Response Information Project (DRIP committee) began recognizing commercial customers that were making changes to their everyday practices to conserve water, also known as "The Tributary Award".

The award is named after a tributary water system, where a smaller body of water feeds and contributes to a larger body of water. Organizations that are recognized through the Tributary Awards are those that are doing their best to make an impact on the larger issue of drought.

Since the implementation of the Tributary Awards, there have been several commercial customers who have implemented individual programs and conservation efforts that have significantly reduced the amount of water, both domestic and irrigation, that is being used. Colorado State University Tri River Area Extension Office, Discount Tires, Dos Hombres, Grand Valley Power, Grand Junction Regional Airport, and Sprigs & Sprouts/ have received recognition for the indoor and outdoor water conservation techniques that were implemented, saving thousands of gallons of domestic and irrigation water. DRIP presents the awards in July since Mesa County Commissioners annually proclaim July as Smart Irrigation Month. Additionally, July is known for being the peak month for water usage. Below are short summaries of the implementations the Tributary recipients have made to reduce water usage.

Colorado State University Tri River Area Extension Office
Colorado State University Tri River Area Extension Office (CSU Tri River Area) is in Mesa County, and the local extension office responds to the horticulture issues, concerns, and needs that are unique to our area and serves Delta, Montrose, and Ouray counties. and offer CSU Tri River Area has historically excelled in helping residents adjust to drought conditions in areas like agriculture, horticulture, range, forestry, and water.

In July of 2018, when Mesa County was experiencing extreme drought conditions, the Mesa County office processed over 1,050 plant and soil samples in one month, compared to the 990

samples they processed the previous year. Through CSU Tri River Area's Master Gardener program, the master gardeners help residential customers daily with turf and plant issues, many due to incorrect watering methods, resulting in major water savings and conservation.

CSU Tri River Area has helped other commercial clients reduce their outdoor water usage as well as find the appropriate landscape that thrives in the Grand Junction Region's climate. One of the successes cited included working with a bank maintenance professional on their watering schedule as the plants were being overwatered in our heavy clay. The bank reduced their outdoor watering down to a fifth of what the landscaper had recommended, and the landscape continues to thrive.

Additionally, when the DRIP committee and the Entities implemented Voluntary Water Restrictions in the summer of 2018, CSU Tri River Area developed a recommended outdoor watering schedule, specific to the local climate and commonly found plants. To date, the suggested outdoor watering schedule developed by CSU Tri River Area is still used to educate customers about the needed watering frequency and duration that their landscape needs.

Discount Tires

Discount Tires is a prime example of how larger commercial organizations can tailor their landscapes to meet the local environment, which ultimately results in a higher survival rate of the landscape and lower water usage.

Upon building a new location and Highway 6&50, Discount Tires partnered with Rob Breeden of NVision Design Studio, a landscape architecture firm that specializes in sustainable landscaping and water conservation strategies. Mr. Breeden has lived in Western Colorado since 2004 and practiced in California and Nevada in his early career. His experience in living in drought-prone areas has provided extensive knowledge of the semi-arid climate and plant selection for desert areas. Many native trees and plants requiring moderate to low watering were introduced into Discount Tire's xeriscape, including Pinyon Pine, Fern Bush, Mormon Tea, Rabbitbrush, Apache Plume, Potentilla, and Sage Brush.

Additionally, Discount Tire's landscape is housed in a bed of decomposed granite, which matches the desert aesthetic while absorbing and retaining water better than other mulches, helping plants receive the water that they need. The trees and plants were also strategically placed so that plants with the same watering needs were included in the same zones for efficient watering and to reduce the chances of overwatering. To ensure that the water is reaching the intended plants, Discount Tires installed an automated drip watering irrigation system that helps reduce evaporation and tailors watering needs to the specific plants.

Following the implementation of xeriscape at the Highway 6&50 location, Discount Tires and Rob worked together to install a similar landscape at the North Avenue location. Along with expanding

their parking lot and adding islands with a native landscape, Discount Tires also added a large section of landscape to their storefront along North Avenue and included large shade trees in the parking lots to help reduce the heat island effect in our urban setting. Because of their location, Discount Tires is not on a dual system, meaning that domestic water has to be used for outdoor watering usage. Even with the addition of the xeric landscape, in 2019, Discount Tires reduced their water consumption and saved nearly 13,000 gallons of water compared to their water usage in 2018 at their North Avenue location.

Both locations of the Discount Tire stores provide an example of how appealing xeriscape and native plants can look if implemented correctly. The improved landscape at both locations also serves as a great reminder of the support the community has from groups like the City of Grand Junction Community Development Department, which reviews landscape plans to ensure that they are using resources efficiently.

Dos Hombres

In 2014, Dos Hombres participated in a commercial audit through the DRIP committee. After implementing some suggestions from the audit, the locally owned restaurant implemented suggestions and to date, have saved thousands of gallons of water. Before the audit, Dos Hombres was using on average 130,000 gallons of water per month in the winter. After the audit in 2018, they dropped their monthly usage to 96,000 gallons of water per month in the winter. In the summer months, Dos Hombres used on average 200,000 gallons of water per month. After the audit in 2018, they dropped their monthly summer usage to 170,000 gallons of water per month.

Grand Valley Power

In 2011, Grand Valley Power moved into its new building located at 845 22 Road. When contracting with their builder and designer, Grand Valley Power discussed a framework that created a cost-saving "smart" building that introduced many technologies such as daylighting, onsite solar generation, low-emitting materials, and xeriscaping techniques. When it came to landscaping, Grand Valley Power utilizes a bubbler system and drip system to reduce evaporation and directly water native plants. When voluntary water restrictions were implemented in the Grand Junction Region in 2018, Grand Valley Power reduced its water consumption by 50 percent.

Grand Junction Regional Airport

After a change in staff in 2014, new ideas and plans to reduce water consumption and landscaping maintenance were implemented at the Grand Junction Regional Airport. After sending several maintenance crews through CSU Tri River Area Extension's Master Gardener program to receive education on appropriate plants and water practices for the Western Slope, the regional airport implemented xeriscape on non-essential turf areas on the airport's campus, including the boulevard strip along Eagle Drive, an island on the east roundabout, and Aviator's Memorial Park.

Sprigs & Sprouts, LLC
A local Mediterranean-themed lavender and vegetable farm located in Palisade utilizes a closed-looped aquaponics system that provides water to an underground greenhouse.

City of Grand Junction Parks Department
The Parks Department utilizes the Maxi-Com Irrigation Program which is a centralized program that runs and monitors all of the irrigation systems in the City including the golf courses. The program is tied to a satellite that downloads information regarding evapotranspiration (ET). The centralized computer program then sets the clocks for each irrigation system according to estimated ET. Each of the 125 clocks that run each irrigation system also have rain gages attached to them which trigger a stop action when a rain event occurs. Using the Maxi-Com Irrigation Program and other improvements in the irrigation system, the irrigation water use in parks, schools, trails, open space, and street medians was reduced by 27.07 mg from 2018-2020. By continuing to expand the system, Parks realizes water savings such as this in other areas as well. New development has increased their irrigated acreage, so comparing total consumption is misleading. An example is Hawthorn Park, which used 4.43 MG during 2018. After removing some turf in areas and converting it to xeric, consumption in 2022 totaled 3.93 MG. The Grand Junction Cemetery is an example of how using rates to incentivize water savings as well as updating the irrigation system can lead to a big reduction in water usage. In 2018, the Cemetery was moved off of a flat rate to being billed per 1000 gallons of usage. The Cemetery also began upgrading their irrigation system to have more zones on timers. The 3-year average usage at the Cemetery for the years 2016-2018 was 76.58 MG/year. This has dropped to average 51.11 MG/year for the years 2020-2022; over a 33% decrease. Furthermore, the Parks Department and Streets Department have collaborated to transition the medians to native, xeric, or no-landscape in an effort to realize additional water savings.

Leak Detection Programs

The City, Clifton, and Ute leak detection efforts all utilize various methods and techniques to pinpoint water loss either on the customer's meter or within their respective distribution systems. These methods and techniques include listening devices, distribution system telemetry, visual observations, usage evaluations and customer notifications.

Due to the Grand Junction Region's soil composition, service and main leaks almost always surface helping in the rapid response of fixing leaks before major structural or road damage occurs. The City's Report a Concern Link on their webpage adds an additional avenue to quickly get staff in the field to investigate issues such as these. For those leaks not surfacing, the entities use several different manufacturer's equipment for investigative purposes. This equipment includes General Gen-Ear Water Leak Locator, Heathscope, and Subsurface Leak Detection Inc. Main line leak

and break history data are tracked for capital expenditure evaluations for future pipe mainline replacements and upgrades. All three entities have pipe replacement capital plans that will further reduce unbilled water losses, as older pipes are replaced.

Beginning in 2019, the City has participated in the Colorado Water Loss Initiative and performed annual audits. All three Entities have meter test benches available to test and troubleshoot customers' water meters. Ute Water additionally has a mobile meter testing unit that can go to the customers' location versus taking the meter offsite for testing.

Advanced Billing Software and Leak Detection Response

Each of the Entities has invested in advanced water meter reading software recently that allows the agencies to view customers' water usage and provide quick responses to customer accounts that show an unusual increase in usage. The City launched their Customer Connect Portal late in 2022, after replacing roughly 9900 water meters in just 3 years in order to have compatible AMI infrastructure. Through the advanced water meter reading software, the Entities can collect more accurate water metering data faster than before, which will enable the ability to identify potential leaks or excessive consumption. By using advanced water meter reading software, the Entities can identify leaks using real-time data, which will help customers respond to leaks or reevaluate their water consumption.

Meter reading and billing software used by the entities includes Neptune, Caselle, Springbrook and Northstar. The various software programs allow for high/low meter reading comparisons between other existing historical data sets. All three entities have adopted AMI technology to have access to real-time data pertaining to customer water use. Additionally, month-to-month comparisons are performed by billing staff and for those accounts that show atypical usage increases, field technicians are notified via work orders to perform follow up site visits to investigate potential customer leaks. Monthly meter collection data is also used in system-wide trend evaluations for help in determining unaccounted for water. WTP personnel are continuously monitoring plant output versus tank levels and system pressures which provide potential major line break information to distribution personnel for immediate investigation and follow up.

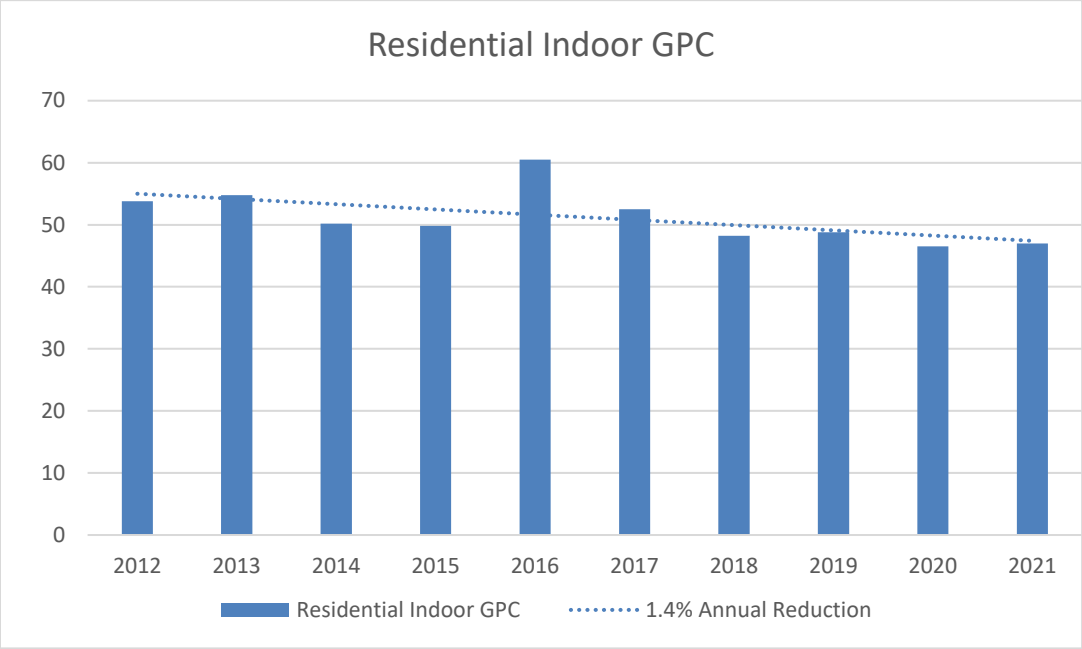
Water Efficiency Oriented Water Rates and Tap Fees

All three entities have an increasing block rate billing structure as listed in previous sections. This rate structure increases the cost per 1000 gallons as usage increases to incentivize water conservation by the customers.

6.1 Evaluation of Effectiveness of Activities to Date

Our water conservation efforts have been a collection of various activities such as outreach programs, rate structures, improved leak detection, targeted technical assistance, and conversations with large water users as to ways to reduce water usage. Conservation outreach programs, such as DRIP, help to establish a culture of wise water stewardship which over time results in behavior change and effective action such as replacing inefficient fixtures and appliances, which would fall under the definition of passive water savings. Conservation outreach may also increase participation levels in other programs such audits and rebates. Savings from a majority of these activities, since they are highly dependent upon human behavior, are difficult to quantify and in many cases cannot be estimated within reasonable accuracy. The approach chosen to quantify water savings includes demonstrating trends in indoor per capita water demands, where residential use during the non-summer months is compared. This should help to reduce some of the variability due to factors such as watering restrictions, climate, and timing of rainfall events, but may also still be skewed by factors such as the economy, tourism, and COVID.

Figure 6-1 Passive Savings Estimate – City of Grand Junction



Quantifying the total water savings resulting from our efforts is difficult. Looking at success stories such as some of our commercial audits reducing water usage by 20%, the Cemetery reducing water usage by 25 MG per year, our residential GPC decreasing at 1.4% annually over the last decade, and the number of citizens young and old that have been engaged in our outreach programs all support the fact that in the 2012 version of this WEP, our estimated consumption for

2020 was 7.55 billion gallons, and the actual was 6.82 billion gallons, or about 225 acre feet of water that was conserved.

7.0 Grand Junction Regional Water Conservation Plan

7.1 Goals and Objectives

The City, Clifton, and Ute have taken proactive positions on water issues and view water conservation as not only necessary for the future but also responsible management of its water resource. As stated earlier, the City Council for the City and the Board of Directors for Clifton and Ute supports water conservation as part of their general mission and have taken the lead in promoting water conservation in the Grand Junction Region. The Entities have come together to develop the Regional Water Conservation Plan for the Grand Junction Region and have identified the following goals and objectives to be achieved through the implementation of measures and programs as outlined in this WEP.

Goal 1: Continue to educate the community, local and regional planning departments, construction and development businesses, landscape contractors, and customers regarding codes and ordinances that promote xeric landscapes and water conservation.

Goal 2: Continue to create public awareness of wise water use and conservation.

Goal 3: Continue efforts to reduce residential sector per-capita water demand in the Grand Junction Region and maintain a 1.4% reduction annually.

Goal 4: Promote water saving awareness in the commercial/industrial sectors.

Goal 5: Encourage implementation of the recently adopted Graywater Ordinance

Goal 6: Establish a valley-wide turf rebate program

Goal 7: Reduce unaccounted water losses.

7.2 Plan Elements

The Colorado Water Conservation Board (CWCB) has listed elements that must be considered in a Water Conservation Plan. Below is a list of minimum required Water Conservation Plan Elements that must be fully considered:

A. Foundational Activities

- Metering
- Data Collection and Billing Systems
- Water Efficiency Oriented Rates and Tap Fees

- System Water Loss Management and Control

B. Targeted Technical Assistance and Incentives
- Water Efficiency Activities – Utility / Municipal
- Management of Largest Customer Demands
- Management of Remaining Customer Demands
- Water reuse systems
- Dissemination of information regarding water use efficiency measures
- Water efficient fixtures & appliances

C. Ordinances and Regulations

D. Education Activities

Following are measures and programs designed to address the plan elements and achieve the goals and objectives of this Water Efficiency Plan.

Regional Water Conservation Measures and Programs

A. Foundational Activities

1. Metering:
   As described in Section 6, the Entities will continue to systematically replace, test, and upgrade water meters as needed. The City and Clifton have nearly 100% of their meters converted to AMR

2. Data Collection and Billing Systems:
   Billing systems of all three Entities are designed to encourage water efficiency in a fiscally responsible manner. Each system affords the flexibility to track usage data of not only multiple customer categories, but triggers can be set to alert the utility of zero reads, as well as higher than expected usage trends over a timeframe set by the user. Furthermore, the Customer Connect Portal for the City of Grand Junction has recently been launched and will afford users the ability to see usage patterns in real-time. Outreach and efforts will be taken to enroll as many customers as possible to take full advantage of this newly implemented technology to maximize water savings.

3. Water Efficiency Oriented Rates and Tap Fees:
   As discussed, and listed in previous sections, all three Entities have implemented inclining block rate structures to discourage excessive customer use. Although the base rates, thresholds, and pricing are not identical between the Entities, customers that use more water than what is included in the base rate see a progressively higher monthly bill to incentivize efficient water use.

Clifton Water has a separate rate structure for taps dedicated to irrigation; fees are double for both the taps fees to establish service and the block rates paid per 1000 gallons of use are also double that of domestic service.

4. System Water Loss Management and Control:
   Current practices are discussed in Section 6.0. Entities participate in the Colorado Water Loss Initiative, tabulate, and monitor unaccounted for water trends (water loss), and follow practices as outlined in the AWWA M36 Manual of Practice. To improve their CWLI score, the City of Grand Junction will formalize a meter testing program. All Entities maintain a 10-year Capital Plan in which replacement of aging waterlines, specifically cast-iron is prioritized.

B. Targeted Technical Assistance and Incentives

1. Water Efficiency Activities- Utility/Municipal

   a. Continue to work with City Parks Department to continue to implement irrigation efficiencies and convert more irrigated areas to xeric

   b. Hire a **Water Conservation Specialist** to promote and oversee water conservation programs

   c. Perform **irrigation audits** at some of the City's Parks properties. These areas encompass over 160 acres of irrigated acreage and about 200 irrigation zones

   d. **Wyland Mayor's Challenge:** Each April, the Entities participate in the Wyland National Mayor's Challenge where citizens of the Grand Junction Region community are asked to participate in the My Water Pledge. My Water Pledge is a friendly competition between cities across the US to see who can be the most "water-wise." Mayors nationwide will challenge their residents to conserve water, energy, and other natural resources on behalf of their city through a series of informative, easy-to-use pledges online. The online pledge asks customers what they can feasibly do to conserve water and provides an individualized total for anticipated water conservation based on the pledge. Because of the Grand Junction Region's unique water district boundaries, customers of Ute Water and Clifton Water District can pledge on behalf of the City of Grand Junction. Cities with the highest percentage of residents who take the challenge in their population category win. Cities will compete in the following population categories: 5,000-29,999, 30,000-99,999, 100,000-299,999, 300,000-599,999, and 600,000+. The challenge taking place in April is the ideal time for the Entities to begin a discussion about water conservation, as irrigation water historically tends to begin delivery in early April.

2. Water Efficiency Activities – Management of Largest Customer Demands

   a. Based off successes seen during the last cycle water audits will continue to be offered to the top ten C-I water users over the next seven years. Focus should be placed on customers that utilize most of their water for outdoor irrigation. Since it is unknown how much water savings will be realized by the commercial water use audits, it was estimated that the results of the audits may be a conservative water savings of 3%-5% per C-I audit. The C-I audits will be performed by internal staff utilizing the best management practices as identified by the Colorado WaterWise Guidebook of Best Practices For Municipal Water Conservation in Colorado. Below is Table 7-1, a listing of the top ten C-I water users in the region showing the 2022 water use and the potential 3% and 5% water savings from the audits. At the 3% water savings from audits, the Grand Junction Region could see a savings of 13.5 mg. At the 5% water savings from audits, the Grand Junction Region could see a savings of 22.5 mg per year. It is estimated that most of the demand for the C-I audits will be in the City and in Ute's service area. The program for the C-I water audits will be reviewed annually by the DRIP Committee for documented water savings and program effectiveness.

Table 7-1
Ten Largest Commercial-Industrial Customers in the Region

Customer	Sector	Water Use (mg)	3% Savings	5% Savings
Municipality	Government	170.2	5.1	8.5
University	Education	75.2	2.3	3.8
Fill Station / Construction	Manufacturing	38.8	1.2	1.9
Hospital	Hospital	33.1	1.0	1.7
County	Government	30.9	0.9	1.5
School	Education	25.9	0.8	1.3
Hotel	Tourism	24.0	0.7	1.2
Mobile Home Park	Mobile Home	21.0	0.6	1.1
Car Wash	Retail	16.0	0.5	0.8
Manufacturer	Retail	15.3	0.5	0.8
Total		450.4	13.5	22.5

3. Water Efficiency Activities – Management of Remaining Customer Demands

   a. **Water Reuse Systems** – The City passed a Graywater Ordinance late in 2022, which would afford residents the opportunity to reuse their graywater for either some indoor or outdoor uses. With this program being in the very early stages, and the Ordinance effective only within in the city limits of the City of Grand Junction, there are limited opportunities for a new subdivision to incorporate these efficiencies; it is unknown what the level of participation is. The City is applying for a grant in July 2023, to help promote, oversee, and incentivize the program to assist with the programs' launch. Once annual funding is secured, the number of rebates per year can be verified – the cost per system is estimated at $20,000 per household. Staff would need to be trained to administer the program, and at that point advertising of the rebate program could begin.

   b. **Turf Rebate Program** – The Grand Junction Region does not currently have a Turf Rebate Program, but there seems to be support from the public to get one going. This will be one of the priorities for the City's Water Conservation Specialist to lead once that person is hired during the second quarter of 2023. This program will also need to identify and secure funding sources to then determine the number of rebates available and in which areas. Parameters for the program and who will oversee compliance will likewise need to be established.

   c. **Dissemination of information regarding water use efficiency measures** – Successful programs and measures are currently in place as described in Section 6, and efforts such as DRIP, the Children's Water Festival, Problem Based Leaning Activities, and media campaigns will be continued.

   d. **Water efficient fixtures & appliances -** As described in Section 6, there is a program to updates drinking fountains at schools that students identify as the most beneficial to replace to realize the highest water savings.

Due to the collaborative nature of the Entities for this Water Efficiency Plan, there are many synergies gained from the partnership. This is one area where it was problematic to determine oversight of a toilet rebate program (i.e., How many rebates per service area, who would fund this, how would we determine eligibility, and who would verify proper implementation?). As a result, there were fewer toilet retrofits implemented during this last evaluation period. To improve our efforts in this area, the Entities will work with HUD in order to identify qualifying households and perform installations. Our goal going forward with this arrangement is to retrofit 15 houses per year under this program.

C. Regulatory measures designed to encourage water conservation:

Regulations or ordinances that strictly prohibit the wasting of water are in place for each of the Entities.

The City: The City of Grand Junction adopted a new landscaping code during December, 2022. The following describe all the ways the proposed code language will use less water:

1. Shrub Reduction – The overall shrub count has been reduced from 1 shrub for every 300 square feet of improved area to 1 shrub for every 450 square feet of improved area. Furthermore, 90% of the shrubs shown on a landscaping plan must be classified as having a xeric or lower water need on the suitable plants list and at least 25% of the shrubs must be native or native alternatives
2. Tree Reduction – The overall number of trees has been reduced from 1 tree at 1.5 caliper inches for every 2,500 square feet of improved area to 2 caliper inches of tree for every 3,000 square feet of improved area. Also, 50% of the proposed tree plantings must have a "preferred" status on the suitable plants list and no more than 25% can have a limited status. The trees identified as "preferred" have lower water needs and have been identified by arborists as trees that should thrive in our climate if properly taken care of
3. Turf Reduction – Development projects requiring a landscape plan will have a maximum allowed turf coverage of 15% of the landscaped area. Some areas classified as function turf areas, such as playing fields or dog parks, can exceed the 15%. Also, the ordinance has a requirement that 75% of the landscaped area have some kind of organic covering, which has typically come from shrubs and turf because the existing regulations do not allow tree canopy to count as coverage. Developers were planting grass beneath the trees to achieve the 75% coverage. The new ordinance allows for tree canopy to count towards that coverage eliminating some of the need developers have had in the past for turf
4. Irrigation Design – The new ordinance will require certified irrigation professional to certify irrigation plans, which should help with better watering practices by design. This certification can come via the Irrigation Association's CID program, or any other EPA Water-Sense labeled irrigation certification program. This requirement will be phased in over the next three years after adoption
5. Graywater – Existing regulations prohibited the use of graywater systems for irrigation. The city has approved an ordinance allowing graywater systems for irrigation, so the proposed landscaping code also allows graywater systems as an irrigation option.

All these changes should significantly decrease the amount of water our basic landscaping standards require while also allowing the city to make progress on the landscaping and tree canopy goals mentioned in the 2020 One Grand Junction Comprehensive Plan.

The City currently has an ordinance, 13.08.370 Wasting Water, which states, "The owner or lessee of any premises to which any water shall be conducted from the water mains shall keep all pipes and their fixtures from the curb line to his premises and on such premises in good repair and protected from the frost, and tight, so as to prevent waste of water. Upon any waste resulting from a breakage of such pipes or fixtures, or any imperfection of such pipes or fixtures, the owner or lessee shall forthwith stop such waste of water by repairing the old work or by laying new work. It shall be unlawful to use water so that it is wasted by flowing off lawns and gardens into the street gutters." (Code 1994 § 38-132; Code 1965 § 31-34) The City is currently developing standards for the installation of irrigation systems in new developments. New subdivisions that have irrigation water available will need to design and install irrigation systems to standard and undergo inspection as part of the infrastructure in the development. These systems will also be included in as-built construction drawings on file with the City and will have a one-year warranty -the same as the rest of the infrastructure required with new development. After construction the irrigation system will then be owned and maintained by the subdivision's Homeowner's Association (HOA). The standards should be completed sometime this summer.

Clifton: Policy #420, Water Usage Fees, Unintentional Water Use and Water Meter Testing. The District is not responsible for water on the customer's side of the meter. When a leak is detected on the customer's side of the meter, the customer should notify the District as soon as possible. Once a leak is detected on the customer side of the meter it is the customer's responsibility to repair the leak as expeditiously as possible. The District will read the meter as soon as possible after receiving notice of the leak. The customer must contact the District within 180 calendar days of detection of a leak to request an adjustment. Clifton is currently looking at developing a more extensive policy regarding wasting of water.

Ute: The following statement is in Ute's District Rules and Regulations: "Each customer shall be responsible for maintaining the entire length of their service line from the road right-of-way property line to the structure(s) or property served. Leaks or breaks in the customer's service line shall be repaired by the customer in a timely manner. If District personnel discover, determine, or confirm the existence of a leak, the customer will be so notified. If satisfactory progress toward repairing the leak has not been accomplished within a reasonable length of time, as determined by the District, the District may shut off the service until the leak(s) or break(s) have been repaired. Only the loss of metered water

that is a direct result of underground leaks or breaks in the customer's service line will be considered for leak adjustments, and only after the District confirms the repair. An individual customer shall be entitled to no more than one leak adjustment to their water bill in any consecutive twelve (12) month period and, when approved, leak adjustments will cover a period of water loss not to exceed sixty (60) days."

Ute Water's Irrigation Tap Policy

The following statement is included in Ute Water's Rules & Regulations: - The District serves high-quality treated potable water to its customers. The District's policy is that this water should be provided and used to meet the potable water needs of its customers and users and should not be used for irrigation or landscape maintenance purposes. Accordingly, the District's policy is that it will not sell taps solely for irrigation or landscape maintenance purposes. Most areas within the District's boundaries have access to untreated irrigation water for outside uses such as irrigation of lawns, gardens, and other landscaped areas. The District's policy is to require all new parcels, subdivisions, and other developments to use untreated irrigation water, rather than treated water from the District's system, for irrigation and other outdoor uses to the extent irrigation water is available. If irrigation water is not available, the District's policy is to encourage the use of xeriscaping or other landscaping that requires little or no irrigation, rather than the use of treated water from the District's system. The District will adhere to these policies in reviewing water service to new parcels, subdivisions, and developments and in authorizing new taps.

Mesa County: Mesa County has recently adopted a new landscape code for new construction development projects. The DRIP members provided input and document reviews in support of Mesa County's efforts to develop the new landscape code. The new code utilizes a "point system" that encourages the use of low water demand landscapes that encourage long term water conservation. The code allows for projects to include undisturbed native landscapes as key components to the overall landscape plan requirements. There is a heavy emphasis on utilizing drought tolerant plant species that meet the published cold-hardiness zones unique to Mesa County. For proposed developments in areas that have no access to irrigation ditch water, the governing domestic water utility have a major say in the final approved landscape plan as it pertains to potable water use for outdoor irrigation. The specific requirement of the code can be found at the Mesa County website, www.mesacounty.us/planning, within the Landscape Handbook Quicklink.

D. Education Activities

Successful outreach and educational activities such as DRIP, the Children's Water Festival, and PBL projects will continue as described in Section 6.

7.3 Estimated Water Savings and Impact to Demand Forecast:

Table 7-2, outlines the three Water Conservation Programs, time frames for each program and, estimated costs.

Table 7-2
Grand Junction Regional Water Efficiency Plan Measures
And Estimated Water Saving

Water Conservation Program	Details	Number	Water Savings (annually)	Program Cost
Communication Programs	Supports goal of maintaining 1.4% reduction in passive water savings		95 MG[1]	$60,000
Water Loss Management	Goal of reducing Unaccounted for Water by 1% for this evaluation period		5.2 MG[2]	Millions
Efficient Fixture Replacement (water fountains)	Target 1 school per service area per year	3 / year	4500 gallons/ year – PBL activity raises water conservation awareness for students	$4,500 / year
Toilet Retro-fit Program	Retro-fits to be done conjunction w/ HUD projects	15/yr	168,000 gal[3]	$5,000/yr.
Parks Landscape Audits	Conservation Specialist to work with Parks on 2 areas per year.	2/ yr.	250,000 gallons	$10,000.00/yr.
C-I Water Audits	Continue to work with largest water users	10/yr.	3% - 13.5 mg 5% - 22.5 mg	$15,000
Graywater Ordinance		20	$400,000	$400,000
Turf Rebate Program	Establish Program in 2023 w target to replace 25,000 sf of bluegrass. Expand program by 5,000 sf per year.		.93 mg in 2023 5.5 mg in 2030	$50,000 – 2023 $85,000 - 2030

1 – 1.4% of collective Entities' usage in 2020.
2 – Represents a 1% reduction in unaccounted for water by each Entity annually
3- 11,200 gallons saved per retrofit

Modification of Water Demand Forecast

Modification of the demand forecast was calculated using the estimated water savings from the outlined programs above. Table 7-3, below, is a summary of estimated water savings in the Grand Junction Region from Water Conservation Programs.

Table 7-3

		2020	2025	2030	2035
1	**Total Water Demand**	**6,824**	**6,993**	**7,404**	**7,847**
	Estimated Water Savings:				
2	Communication Program		95.0	95.0	95.0
3	Water Loss Mangement		5.2	7.2	7.6
4	Fixture Retro-fits		1.02	6.12	15.47
5	Parks Landscape Audits		1.50	9.00	22.76
6	C-I Audits		13.50	27.00	40.50
7	Graywater ordinance		0.10	0.40	0.80
8	Turf Replacement Program		3.20	5.50	11.00
9	Total Estimated Water Savings		119.52	150.20	193.15
10	**Projected Water Demand with Savings**		**6,873**	**7,254**	**7,654**

1 Water demand from the City, Clifton, and Ute.
2 Passive Water Savings of 1.4% Annually
3 Represents a 1% reduction in Unaccounted for Water
4 Fixture retro-fit savings of 172,500 gallons per year
5 Represent compounding benefit of .25 mg savings per audit per year
6 Estimated C-I water savings at 3%.
7 Estimated savings of 20,000 gallons per household
8 35,000 sf converted by 2025; 60,000 sf by 2030

7.4 Monitoring and Evaluation of the Water Conservation Program Components

The Water Conservation Programs identified in this plan will be implemented upon approval and acceptance of the plan. Monitoring the success of the Water Conservation Program components will include measuring water use as well as money spent on the selected conservation measures and programs. The program elements will be audited annually for effectiveness and water savings. Each entity will be responsible for their individual effectiveness audits and will then be compiled, reviewed, and presented in an annual report by the DRIP Steering Committee. This annual report will be posted public review on the DRIP webpage and be presented to each of the governing bodies of the three entities. Specific data tracking and monitoring will be established as each individual water conservation program measure is implemented. Additionally, the following data will be compiled annually for each entity:

- Monthly metering data, both raw and delivered potable water
- Annual data on new development for each entity, including number of new single family dwelling units, multi-family units, commercial and industrial properties developed
- Public feedback regarding the water conservation measures implemented.

7.5 Public Comment, Council, Board Resolutions and Adoption of the Water Conservation Plan

The following describes the good faith efforts undertaken for the public comment period supporting the adoption of this revised WEP:

The Water Conservation Plan Public Notice was posted in the Daily Sentinel newspaper on April 22,2023 (see Appendix C). The Entities agreed to use an online platform from which visitors could view the information as well as leave any comments. The platform can be found at www.EngageGJ.org/DRIP. In addition to Public Notice, a Press Release was issued (see Appendix C), as well as links posted on the websites for all 3 Entities to the platform. Public comment closed on June 9, 2023. The website received just over 200 views during the public comment period; 60 unique visitors downloaded the document and two comments were received.

The City of Grand Junction Council adopted the Grand Junction Regional Water Conservation Plan on, June 21, 2023, via Resolution No. XX-23 (see appendix C). The Boards for both the Clifton Water District and the Ute Water Conservancy District will adopt the WEP during their July, 2023 Board Meetings.

7.6 Plan Updates and Revisions

The required schedule for updating the Water Conservation Plan is seven years. The progress towards achieving the water savings goals will be monitored on an annual basis, as stated above, by the Entities. The Entities may opt to update the Plan prior to the seven-year requirement if the annual Plan review indicates actual water savings deviating beyond the anticipated projections. The deviations could result from numerous factors which could include greater or lower customer participation in the offered water conservation programs or greater or lower than projected service population growth and resultant water demands.

References

Colorado Water Conservation Board, Municipal Water Efficiency Plan Guidance Document, 2012, Denver, Colorado.

NOAA (National Oceanic and Atmospheric Administration), 1991. Climatology of the United States, No. 81, Monthly Station Normals of Temperature, Precipitation, and Heating and Cooling Degree Days, 1961-1990, Colorado. National Climatic Data Center, Ashville, N.C.

City of Grand Junction Personnel: Personal Communication

City of Grand Junction, Water Conservation Plan, 1996

Clifton Water District: Personal Communication

Clifton Water District, Water Conservation Plan, 1996

Ute Water Conservancy District: Personal Communication

Ute Water Conservancy District, Water Conservation Plan, 1996

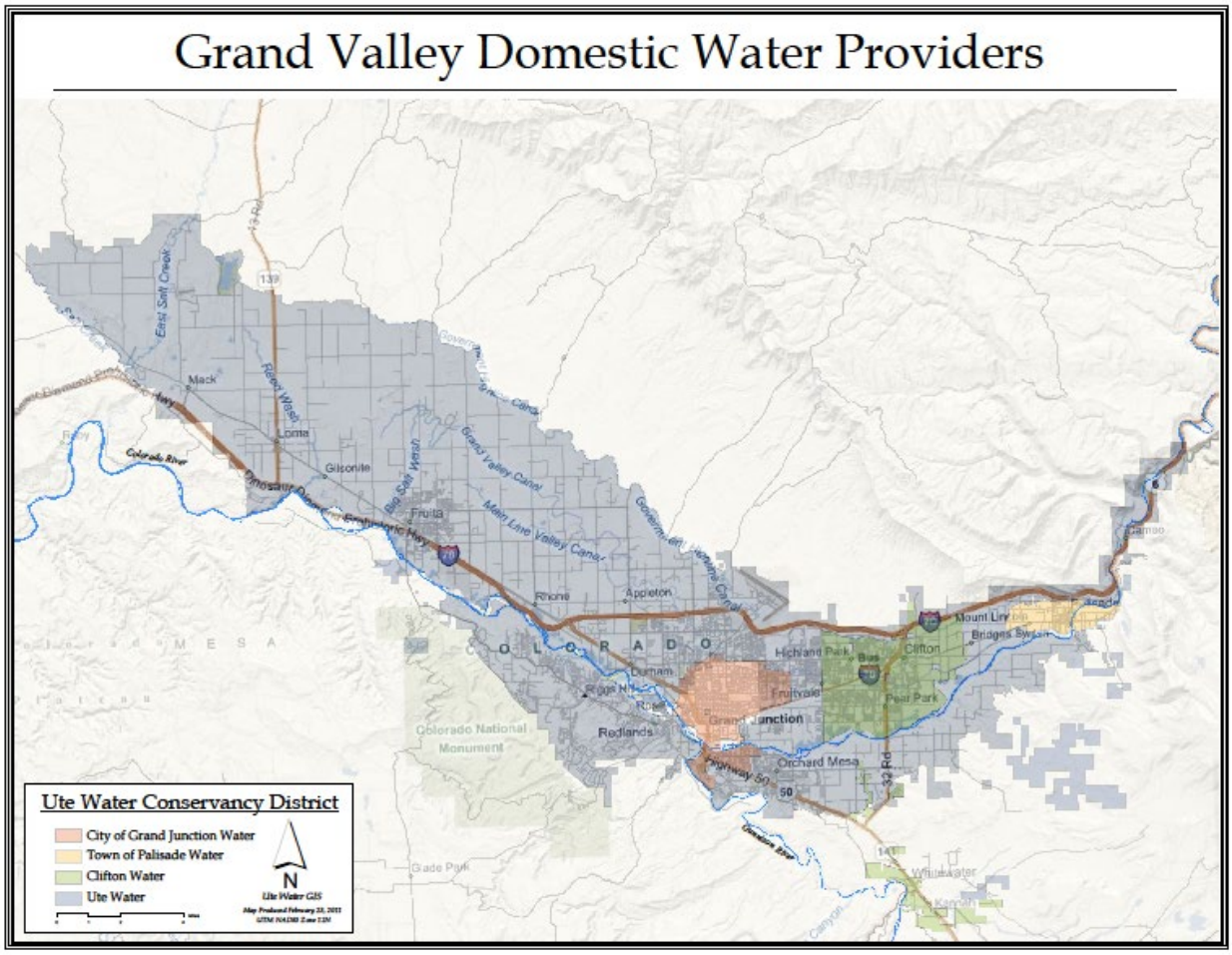
Vickers, Amy, 2002. Handbook of Water Use and Conservation, Amerherst, Massachusetts.

Water Conservation Planning and Implementation Training, 2008. REI Flagship, Denver, Colorado.

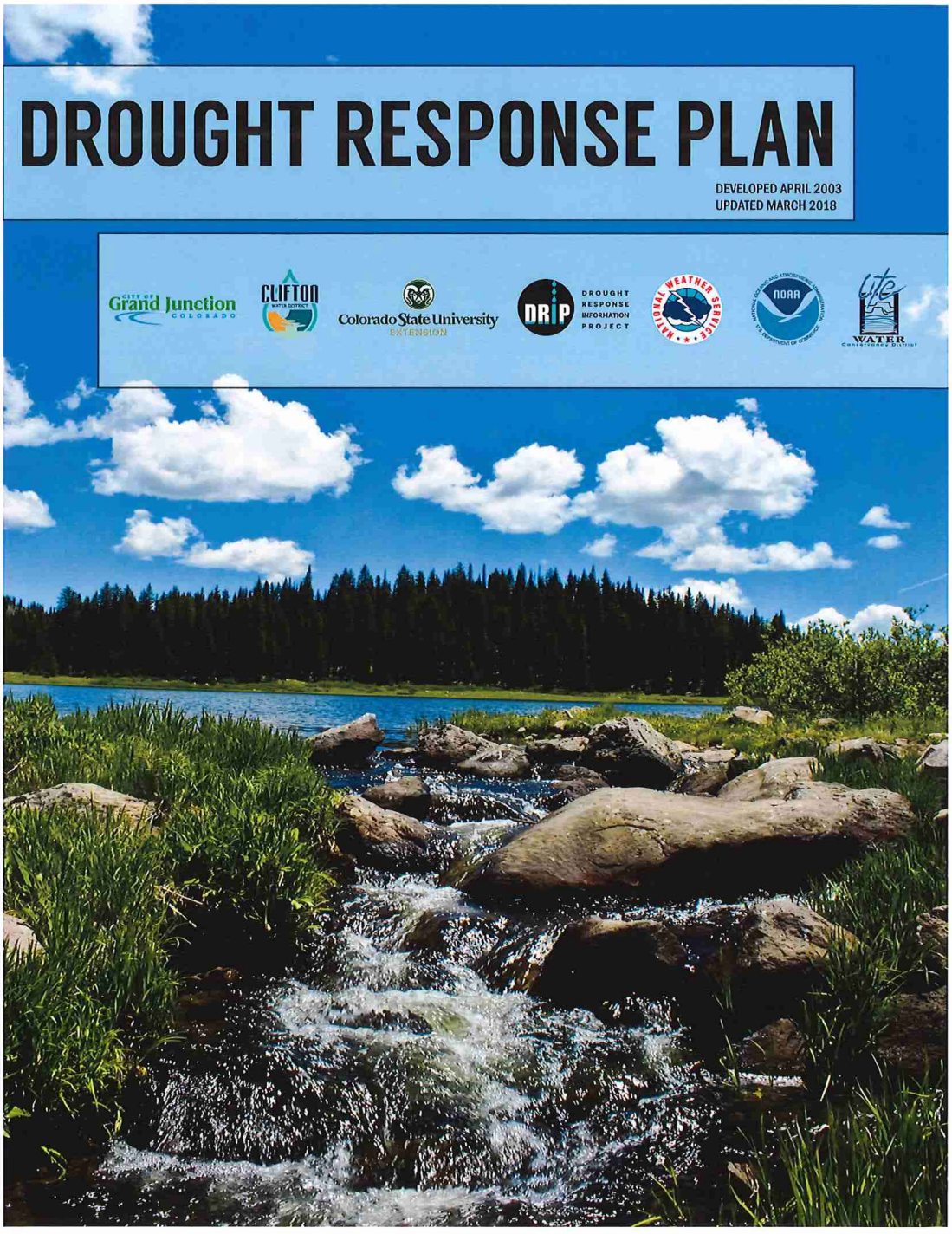
Grand Junction Regional Water Conservation Plan, 2012

Drought Response Plan, Revised 2018

Appendix A – Grand Junction Region Water Providers Map



Appendix B – Drought Response Plan


DROUGHT RESPONSE PLAN
DEVELOPED APRIL 2003
UPDATED MARCH 2018
Grand Junction
COLORADO
CLIFTON
WATER DISTRICT
Colorado State University
EXTENSION
DRIP
DROUGHT
RESPONSE
INFORMATION
PROJECT
NATIONAL WEATHER SERVICE
NOAA
WATER
Conservancy District

INTRODUCTION

Drought can be defined as an extended period of below-average precipitation and/or stream flow that stresses a water supply. Drought is a natural, on-going situation in Colorado - a phenomenon that has recurred regularly throughout Colorado's history.

For planning purposes, the City of Grand Junction, Clifton Water District, and Ute Water Conservancy District's domestic water supply strategy is to have enough water to meet unrestricted customer usage during a period similar to the 1977, 2002, 2012, and 2018 droughts.

No one can predict how long a drought will last or if it will be worse than those used in our calculations. Therefore, the providers must be prepared to recognize drought conditions early and respond appropriately. The attached Drought Response Plan (Plan) is designed to provide Governing Boards and City Council with a set of options to consider in dealing with a prolonged drought.

The City of Grand Junction, Clifton Water District, and Ute Water Conservancy District have developed a Regional Water Conservation Plan. The Regional Water Conservation Plan is tied to the Drought Response Plan through implementation of the stated water conservation goals.

The Drought Response Information Project (DRIP) committee was formed to provide public education on responsible water use and conservation. The committee is represented by the three domestic water providers; The City of Grand Junction, Clifton Water District, and Ute Water Conservancy District. The committee also includes Orchard Mesa Irrigation District, Tri River Area CSU Extension Horticulture Program, and NOAA/National Weather Service. CSU Extension provides research-based information on landscaping, irrigation, xeriscaping (dry landscaping), and appropriate maintenance that best fits the Grand Valley. NOAA/National Weather Service provides up to date information on current and past weather trends and facts to help make appropriate decisions.

The Plan is accomplished through on-going annual efforts, budgeted and paid by the three domestic water providers. The Plan includes, but is not limited to the following items:

- Acquaint customers with measures they can expect if a Voluntary or Mandatory water restriction declaration occurs, through media coverage, social media, campaigns, projects, public outreach, etc.
- Continue with the Drought Response Information Project (DRIP), which provides public education through community involvement and all forms of media on why and how to reduce per capita consumption.
- During the monthly meetings of the DRIP committee, review water supply projections, current reservoir capacity, and ongoing conservation efforts
- Develop campaign proclamations to alert the public of the need to conserve water.
- Publish "water waste reduction" suggestions for households and aggressively promote reduction by including recommendations via water bills, websites, billboards, and Public Service Announcements.
- Monitor potential drought response effectiveness; recommend adjustments as needed to the Governing Boards and Council, and report to the public regularly.
- Coordinate with Mesa County officials and invite them to monthly meetings.

    - Open a discussion about solidifying a unified Grand Valley watering schedule.
- Ensure that adequate irrigation water will be available throughout the irrigation season by communicating with the irrigation districts and companies.
- Examine all municipal and county code provisions that affect water usage, such as landscape standards, storm water best management practices, and building code provisions, and if appropriate, amend applicable code provisions to meet the objectives of the code as originally intended while reducing water consumption.
- Encourage all public institutions and organizations to take the lead in evaluating indoor and outdoor water use practices. Parks, open spaces, medians, golf courses, fountains, etc. will be asked to be audited for current consumption and redesigned or re-operated to reduce consumption.
- Meet with citizen groups and convey messages of basic water conservation and what to expect during Voluntary and Mandatory Water Restriction declarations.
- Encourage customer classes utilizing research based methods provided by Colorado State University Extension to evaluate, redesign, and reconstruct existing landscapes and outdoor water uses to reduce overall consumption.
- Train customer service and field service employees to respond to conservation-related questions and provide meaningful and appropriate information. This includes training them to:
    - Monitor outdoor use.
    - Offer suggestions to customers on water wise use.
    - Identify and work with high volume water users to reduce their monthly consumption.
- Highlight unusually high use on customers' bills. Contact these customers and special interest groups with high water use to get their ideas and suggestions for obtaining long-term reductions (golf courses, parks, hospitals, schools, government).
- Suggest water-use surveys (comprehensive water use analyses) for high volume water users in all customer categories and advise them on ways to reduce water-use and, where appropriate, suggest retrofit devices.
- Develop Demonstration Xeriscape™[1] areas for customers to gain ideas.
- Encourage Xeriscaping and low-water consumption practices.
- Suggest that each water provider consider implementing drought rates.

[1] Denver Water holds the trademark for the term Xeriscape. The word Xeriscape was created in 1981 for landscape water conservation education programs. The name is a combination of "landscape" and the Greek word "xeros", which means "dry."

DROUGHT RESPONSE PLAN

The Drought Response Plan is based on two stages of drought – Voluntary and Mandatory Water Restrictions - each of which is triggered by one or a combination of the following: Historic Users Pool projections, water provider storage, and/or stream flow projections.

In an effort to minimize customer confusion and to keep messaging consistent, the Drought Response Plan will use the U.S. Drought Monitor to guide Grand Valley drought declarations. The U.S. Drought Monitor is produced jointly by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the National Drought Mitigation Center at the University of Nebraska-Lincoln.

The U.S. Drought Monitor provides a consistent big-picture look at drought conditions in the United States. When referencing the U.S. Drought Monitor, it's important to remember that it's often used to identify likely areas of drought impacts, including water shortage, but decision-makers in many circumstances have successfully taken measures to reduce vulnerability to drought. Large urban water systems generally have diverse water supplies and can keep the water flowing in both dry and wet years. The U.S. Drought Monitor is in no way intended to replace assessments or guidance from local water systems as to whether residents should conserve water. Figure 1 shows the U.S. Drought Monitor Categories.

Figure 1

Category	Description	Possible Impacts
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures; fire risk above average. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered.
D1	Moderate Drought	Some damage to crops, pastures; fire risk high; streams, reservoirs, or wells low, some water shortages developing or imminent, voluntary water use restrictions requested.
D2	Severe Drought	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed.
D3	Extreme Drought	Major crop/pasture losses; extreme fire danger; widespread water shortages or restrictions.
D4	Exceptional Drought	Exceptional and widespread crop/pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells, creating water emergencies.

Awareness Restrictions (D0-D2) - *On-going water conservation messaging and Regional Water Conservation Plan implementation activities*

- Domestic water providers, Orchard Mesa Irrigation District, Colorado State University Extension, and NOAA/National Weather Service, are represented on the Drought Response Information Project (DRIP) Committee. The committee attends large, public events throughout the year to provide drought education to the community. The presence of this committee helps the public recognize the efforts on the domestic water provider's end and know there is a voice to listen to in the event of a drought.

Voluntary Restrictions (D2-D3) - *On-going intensive water conservation*

- Conditions are similar to 2002, 2012, and 2018 droughts, but there are no substantial impacts to area domestic water providers. Statewide drought conditions may or may not exist that affect area irrigators.
- Some voluntary water use reductions anticipated.

The 2002 drought had a statewide drought declaration:

- Ute Water Conservancy District's primary water source (the Lower Molina Power Plant) was out of water by mid-July and Vega reservoir did not fill.
- The City of Grand Junction's Purdy Mesa and Juniata Reservoirs started the summer at approximately 75% full with about 1,100 acre feet of municipal water available on top of Grand Mesa.
- The Historic Users Pool (HUP) received approximately 75 – 80% of the full allocation but had water for full irrigation season.

Mandatory Restrictions (D3-D4) – *Mandatory water use reductions and an Emergency Drought Rate is imposed*

- **At least one of the three water provider's** supply is at or near minimum target levels for storage or stream flows requiring drastic water conservation measures to ensure water needs for most essential uses are met for all Grand Valley water customers.

- Actions undertaken involve predominately sharing water supply between domestic water providers.

- Moving from Voluntary Water Restrictions to Mandatory Water Restrictions will be dependent on several factors:
    - During Mandatory Water Restrictions, the DRIP Committee will continue meeting on a monthly basis and increase meetings as needed. All water supplies, either storage or stream flows, will be monitored closely.

    - If the Historic Users Pool (HUP) is expected to only receive less than its full entitlement and irrigation districts are anticipating they will not be able to stretch available water supplies throughout entire irrigation season, domestic water providers will need to take stronger action to ensure domestic supplies are not overburdened due to increased outdoor irrigation use of potable, domestic water.

    - If irrigation canal water is jeopardized and the demand is added to the domestic water demand, it could cause both treatment and capacity delivery problems. Individual triggers to move towards Mandatory Water Restrictions for each domestic water provider have been discussed and will be modified as weather and demand dictate:
        - Ute Water Conservancy District's Jerry Creek Reservoirs are at 75% of storage capacity by mid-summer.
        - Clifton Water District will use the Historic Users Pool storage available as their trigger as it does not anticipate any numeric triggers, only hardship may be getting water to treatment facility from GVIC canal and/or the Colorado River.
        - The City of Grand Junction's Juniata and Purdy Mesa Reservoirs are 75% of storage capacity by the end of spring run-off.

This plan identifies two ways for users and domestic water providers to respond to a drought; increasing water supply and decreasing water use.

Increasing Water Supply

The three area water providers can possibly augment their water supply from other sources. There are several options for doing this, each presenting its own set of intergovernmental and technical considerations. Among the possibilities:

- Call back water rights that others are using. (ranch lessees and water rentals)
- Augment raw water sources through River Pump Stations if river water is available.
- Seek approval from Federal and State agencies to allow diversion and use of irrigation water decrees if available.
- Obtain municipal water contracts from federal projects if available.
- Collective use of all available water rights.

Decreasing Water Use

The prime drought response is to budget water use for the most essential uses for the drought's duration. There are a wide variety of options that could be used to decrease water use. In general, it is expected that reductions would be voluntary. Reduction will become mandatory, which may include implementation of drought rates **when at least one of the three water provider's supply is at or near minimum target levels for storage or stream flows**, as outlined above. We believe it is important to ensure that any discomfort, difficulty, or potential shortage is **shared as equitably as possible across all customer classifications.** Pages 6 and 7 detail the different actions required by customers and the community as well as water providers in an effort to decrease water use for each drought stage.

Customer & Community Drought Actions

Specific details on the drought actions for customers and the community can be found in Appendix A.



Domestic Water Provider Drought Actions

Specific details on the drought actions for customers and the community can be found in Appendix B.



PUBLIC OUTREACH

During a drought, it is essential that the three area water providers communicate effectively not only with their customers, but also with other area water suppliers, local governments, and other groups who may be affected by this drought response.

SUMMARY

Although the options listed in the Drought Response Plan are based on lessons learned, it is important to understand that every drought is different and that the Governing Boards and City Council will adjust and refine measures based on actual drought conditions. This plan is intended to help staff, customers, stakeholders and the Boards and Council to be better prepared when a drought occurs.

APPENDIX A

Suggested Customers & Community Drought Actions

D1 – *No water restrictions*

- Encourage education on water-efficient practices
  - Rain barrels
  - Direct downspouts
  - Evaporative coolers
  - Drip irrigation
  - Performing lawn water audits
  - Proper turf maintenance
- Encourage education on landscaping
  - Transitioning lawns to Xeriscape
  - Caring for landscape during each season
  - Caring for landscape during a drought
  - Low water species
- Encourage efficient watering practices
  - Encourage HOA's to adopt a schedule
  - Encourage watering before 9am and after 6pm
- Encourage the community to educate their neighbors of smart water usage and conservation techniques

D2 – *Possible Voluntary Water Restrictions*

- Recommend customers and communities continue D1 actions
- Recommend hospitality establishments make water conservation efforts
  - Recommend hotels, motels, inns, and bed & breakfast establishments to have only low-flow showerheads and aerators.
- Recommend alternative methods to avoid water waste
  - Recommend other ways to wash vehicles
  - Recommend the removal of non-native landscape
- Recommend proper maintenance of potential water wasting practices
  - Educate homeowners with private pools on efficient operation for in-ground and above-ground pools
  - Educate customers on evaporative cooler maintenance and operation
  - Recommend cutting back on street cleaning, sidewalk, and driveway washing, with the exception of toxic or hazardous substances or where public health and safety issues can only be resolved by washing the impermeable surface

D3 - *Voluntary Water Restrictions, possible Mandatory Restrictions*

- Request that customers and communities continue D1 and D2 actions
- Request hospitality agencies to eliminate common sources of wasting water
  - Request that hotels/motels asks guests to reuse sheets and towels during their stay
  - Request that restaurants only serve water upon request
- Request all ornamental fountains in buildings and parks be turned off
- Request conservation leadership from government entities

    - Request entities reduce their own short-term domestic water use by 30% of the last five-year average
- Request the community to participate in limited residential outdoor watering
- Provide information and assistance to customers for post-drought planning
    - Landscaping properly
    - Transitioning into a Xeriscape
    - Low-flow fixtures
- Request homeowners to not fill up private swimming pools and ornamental fountains

D4 - *Mandatory Restrictions*

- Require customers and communities to continue D1, D2, and D3 actions
- Require all fire hydrant use be eliminated except those required for public health and safety
- Require all hospitality entities to have low-flow fixtures

APPENDIX B

Suggested Domestic Water Providers Drought Actions

D1 – *No water restrictions*

- Maintain monthly DRIP Committee meetings
- Encourage consistency of drought messages, conservation techniques, and drought education through all domestic water providers
    - Training of frontline staff for general drought questions and information (Customer Service, Meter Readers, etc.)
    - All domestic water providers will include the same messages on billing statements, websites, social media, etc.
- Encourage drought awareness and education through community involvement
    - Offer or sponsor a drought expo or show
    - Adopt Xeriscape demonstration gardens in high-traffic areas (Main Street, parks, etc.)
    - Provide school demonstrations and audits
    - Partner with Grand Valley welcoming groups to educate new residents (Welcome Home, Grand Junction Area Chamber of Commerce, etc.)
    - Partner with home-improvement stores to ensure proper equipment and plants are being purchased
    - Develop a leadership summit/conference on water conservation
    - Acknowledge water-smart "Landscape of the Month"
    - Partner with School District #51 to educate students through presentations and installing low-flow fixtures
- Encourage structure and the development of resources for water providers to consistently use and exercise, regardless of drought conditions
    - Develop a Drought Wheel/Monitor that can be regularly updated and displayed (Physically in all domestic water providers' offices and on social media, websites, billing statements, etc.)
    - Create information stations at each utility office
    - Create a "Main Shut-off Valve" campaign
    - Encourage that a percentage of new construction must be Xeriscape
    - Invite irrigators to participate in DRIP Committee meetings
    - Develop a procedure for each domestic water provider to provide regular status updates
    - Partner with municipalities to discuss water savings programs (Parks & Recreations, City of Fruita, golf courses, school campuses, etc.)

D2 – *Possible Voluntary Water Restrictions*

- Recommend domestic water providers continue D1 actions
- Recommend hospitality establishments to make water conservation efforts by communicating about water smart usage
- Monitor drought response effectiveness and recommend adjustments to Governing Board and City Council.
- Partner with Home Owner's Associations to reach more users
    - Develop regulations on turf requirements
    - Perform audits and encourage water conservation on common areas

D3- *Voluntary Water Restrictions, Possible Mandatory Restrictions*

- Increase monthly DRIP meetings as needed
- Develop a unified Grand Valley watering schedule
- Intensify the drought message
    - Localize the drought conditions for chain businesses
    - Contract with an advertising agency to carry out an intense drought campaign
    - Issue "No Watering" advisories when wind speeds create ineffective watering conditions
    - Provide regular media briefings on conditions
- Intensify water conservation leadership
    - Adopt Home Owner's Associations to invest and tests water-saving devices
    - Encourage Colorado Mesa University to develop an on-campus drought campaign
    - Partner with residents to encourage the use of rain-barrels
- Issue notices and publicize water usage
    - Publicize smart water usage
    - Send postcard reminders of drought conditions to the top ten-percent of residential and commercial water users

D4- *Mandatory Water Restrictions*

- Increase DRIP Committee meetings as needed
- Require drought resources for the community
    - Open a centralized drought information center
    - Establish a conversation hotline
- Implement penalties and Emergency Drought Rates
    - Establish a hotline to report water waste
    - Postcards will be sent to those identified as wasting water
    - Homeowners will be required to fix leaks within 72 hours of being notified
    - Send direct notices and calls to all customers about drought conditions
    - Discourage outdoor irrigation
- Develop a community movement addressing the drought conditions
    - Create a pledge program for community leaders to take steps toward smart water usage and water conservation in their organizations
    - Commercial customers will be asked to display "Save Water" signs and develop a conservation plan

Appendix C – Public Notice & Resolutions

Column

INTERIM AD DRAFT

This is the proof of your ad scheduled to run in **Grand Junction Daily Sentinel** on the dates indicated below. If changes are needed, please contact us prior to deadline at **(970) 242-1313**.

Notice ID: 0E2s2AlB1QJZz2zgQuyO | **Proof Updated: Apr. 19, 2023 at 10:39am MDT**
Notice Name: Colorado Water Conservation Board- WEP Notice

This is not an invoice. Below is an estimated price, and it is subject to change. You will receive an invoice with the final price upon invoice creation by the publisher.

FILER	FILING FOR
Communications Team communications-engagement@gjcity.org (970) 244-1516	Grand Junction Daily Sentinel

Columns Wide: 1 **Ad Class:** Legals

04/22/2023: Custom	47.25
Subtotal	$47.25
Tax	$0.00
Processing Fee	$9.73
Total	**$56.98**

The City of Grand Junction, Clifton Water District, and Ute Water Conservancy District have worked in collaboration to develop the 2023 Grand Junction Regional Water Efficiency Plan which is available for public review and comment at EngageGJ.org for a period of 60 days ending on June 11. Following the public comment period, the plan will be presented to the Grand Junction City Council for consideration.
The Grand Junction Regional Water Conservation Plan was adopted by Grand Junction City Council, the Ute Water Conservancy District Board, and the Clifton Water District Board in June 2012 and approved by the Colorado Water Conservation Board (CWCB). The 2023 Grand Junction Regional Water Efficiency Plan provides an update to the previous plan in compliance with the current Municipal Water Efficiency Plan Guidance Document issued by CWCB.
Published: April 22, 2023.

Colorado Water Conservation Board- WEP Notice - Page 1 of 1

NEWS RELEASE

For Immediate Release

Contact:

Sara Spaulding

Communications Director

970-244-1507

saras@gjcity.org

GRAND JUNCTION, CLIFTON AND UTE WATER DISTRICTS COLLABORATE ON 2023 REGIONAL WATER EFFICIENCY PLAN

GRAND JUNCTION, Colo. April 11, 2023 – The City of Grand Junction, Clifton Water District, and Ute Water Conservancy District have worked in collaboration to develop the 2023 Grand Junction Regional Water Efficiency Plan which is available for public review and comment f at EngageGJ.org/DRIP for a period of 60 days ending on June 9. Following the public comment period, the plan will be presented to the Grand Junction City Council for consideration.

The Grand Junction Regional Water Conservation Plan was adopted by Grand Junction City Council, the Ute Water Conservancy District Board, and the Clifton Water District Board in June 2012 and approved by the Colorado Water Conservation Board (CWCB). The 2023 Grand Valley Water Efficiency Plan provides an update to the previous plan in compliance with the current Municipal Water Efficiency Plan Guidance Document issued by CWCB.

Approximate cost to implement the plan is $25,000 per year for the conservation measures, and $20,000 per year for public education programs (water conservation/DRIP) per entity. Staff is monitoring grant opportunities to support additional outreach and incentive programs for graywater and turf replacement programs.

The Colorado Water Conservation Act of 2004 requires all covered entities (retail water providers that sell 2,000 acre-feet or more on an annual basis) to have a state-approved water efficiency plan containing certain required minimum plan elements.

In 1996, the City of Grand Junction, Clifton Water District, and Ute Water Conservancy District all developed water conservation plans. Although the three entities worked cooperatively on the plans, they were submitted to the Colorado Water Conservation Board as individual plans for each entity.

In 2009 the City of Grand Junction, Clifton Water District, and Ute Water Conservancy District decided it was time to revise their water conservation plans to meet the requirements of the Water Conservation Act of 2004. The entities having developed a joint Drought Response Information Project (DRIP) program in response to the 2002 drought, wanted to use the same cooperative approach to water conservation. The 2012 Grand Valley Regional Water Conservation Plan was a result of this cooperative approach.

This 2023 Grand Junction Regional Water Efficiency Plan provides an update to the previous plan in compliance with the current Municipal Water Efficiency Plan Guidance Document issued by CWCB and includes specific measures and programs to achieve the following goals and objectives:

1. Continue to educate the community, local and regional planning departments, construction and development businesses, landscape contractors, and customers regard-ing codes and ordinances that promote xeric landscapes and water conservation.

2. Continue to create public awareness of wise water use and conservation

3. Continue efforts to reduce residential sector per-capita water demand in the Grand Junction area and maintain a 1.4 percent reduction annually

4. Promote water saving awareness in the commercial/industrial sectors

5. Encourage implementation of the recently adopted Graywater Ordinance

6. Establish a regional turf rebate program

7. Reduce non-revenue water losses

Next steps for finalizing and adopting the 2023 Grand Junction Regional Water Efficiency Plan include:

- Submit draft plan to CWCB for review on April 10
- Public notice and comment period- April 10 – June 9
- Presentation at City Council workshop – May 15
- Submit to City Council for adoption of Resolution – June 7