WRIGHT WATER ENGINEERS, INC.

City of Creede Water Efficiency Plan

March 2026 DRAFT – For Review and Comment

PREPARED FOR THE CITY OF CREEDE

MARCH 2025 241-025.000

1666 N. Main Ave., Ste. C
Durango, CO 81301

Water Efficiency Plan

DRAFT

March 2026

Prepared for

The City of Creede

241-025.000

Prepared by

WRIGHT WATER ENGINEERS, INC.

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ACKNOWLEDGEMENTS

This report was completed with support from the Headwaters Alliance (HWA) and City of Creede Staff. WWE gratefully acknowledges the contributions of these individuals:

Heather Greenwolf, Executive Director – Headwater Alliance
Louis Fineberg, City Manager – City of Creede (previous)
Katie Sickles, City Manager – City of Creede
Scott Johnson, Public Works Director – City of Creede
Treva Crenshaw, Deputy Clerk – City of Creede

City of Creede Board of Trustees
Headwaters Alliance Board of Directors

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Colorado Water Conservation Board
City of Creede Board of Trustees
Sonoran Institute
Rio Grande Water Conservation District

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DRAFT NOTE: Appendix B and C will be added after Public Review and Formal Approval.

ATTACHMENTS

ACRONYMS

AF ..... Acre-Feet

AWWA ..... American Water Works Association

BMP Guidebook ..... Guidance of Best Practices for Municipal Water Conservation in Colorado

City ..... City of Creede

CDPHE ..... Colorado Department of Public Health and Environment

cfs ..... cubic feet per second

DWR ..... Colorado Division of Water Resources

EPA ..... United States Environmental Protection Agency

EQR ..... Equivalent Residential Unit

gpd ..... gallons per day

gpm ..... gallons per minute

HWA ..... Headwaters Alliance

MGD ..... million gallons per day

SCADA ..... Supervisory Control and Data Acquisition

SWPP ..... Source Water Protection Plan

SWSI ..... Surface Water Supply Index

WEP ..... Water Efficiency Plan

WWTF ..... Wastewater Treatment Facility

WWE ..... Wright Water Engineers, Inc.

City of Creede – Water Efficiency Plan

1.0 INTRODUCTION

1.1 Location

The City of Creede (referred to herein as City or Creede) is a statutory town located in Mineral County, Colorado at an elevation of approximately 8,800 feet (see Figure 1). Creede is located along Willow Creek, a tributary to the Rio Grande River, and is situated off State Hwy 149. Nearby communities include South Fork, CO, located 20 miles to the southeast, and Lake City, CO, located 50 miles to the northwest. The nearest communities with increased services are Alamosa, CO (located 70 miles to the southeast), Pagosa Springs, CO (located 60 miles south), and Durango, CO (located 120 miles to the southwest). An Environmental Protection Agency (EPA) managed Superfund site, generally known as the Nelson Tunnel/Commodore Waste Rock Pile, is located about 1 mile north of Creede.

1.2 Background

Creede is the County seat and the only incorporated town in Mineral County and has a current population of approximately 257 people (Colorado Department of Local Affairs, 2024) – the most populous community in Mineral County. Mineral County has a population of 935 residents (Colorado Department of Local Affairs, 2024). The majority of land in Mineral County is under federal ownership, largely due to the Rio Grande National Forest.

Creede is situated in the headwater of the Rio Grande River basin, which flows from the San Juan Mountains and through the San Luis Valley, making it an integral part of the region's agriculture and ranching community. It is estimated that 40 percent of Creede's population is seasonal (City of Creede, 2024), with a large portion of short-term renters who enjoy outdoor activities in Creede during the summer months. The Surface Water Supply Index (SWSI) for Creede in June of 2025 was -2.67 on a scale of -4 to +4 (Division of Water Resources Map Viewer, 2025), where -4 indicates severe drought and +4 indicates abundant water supply. Over the course of the planning period presented herein (2010 to 2024) the SWSI has historically ranged from a low of -3.73 in June 2022, and a high of +4 in July 2019 (Division of Water Resources, 2025).

1.3 Motivation

The Project Team members who contributed to this WEP are listed in Table 1. The Project Team considered the administrative capacity of a small mountain town in the development and selection of the water efficiency measures presented herein. The Project Team also relied on the Municipal Water Efficiency Plan Guidance Document (MWEPGD) prepared by AMEC Environment and Infrastructure, Guidance of Best Practices for Municipal Water Conservation in Colorado (BMP Guidebook), as well as information provided by City staff. Creede is fully vested in developing a water efficiency plan to support development of healthy watersheds and promote aquifer sustainability while simultaneously reducing water demand and saving money for the community and surrounding environments.

The motivation for creating a Water Efficiency Plan (WEP) for the City of Creede was a product of the 2022 San Luis Valley Growing Water Smart Conference, facilitated by the Sonoran Institute and hosted by the Salazar Rio Grande del Norte Center at Adams State University. The Mineral County work group identified

Table 1
Project Team
City of Creede WEP
Draft

Name	Title
City of Creede	
Treva Crenshaw	Deputy Clerk
Louis Fineburg	Town Manager
Scott Johnson	Public Works Director
Richard Mehren	Water Rights Attorney
Headwaters Alliance	
Heather Greenwolf	Executive Director and Project Manager
Wright Water Engineers, Inc.	
Peter Foster, P.E.	Project Manager
Hayes Lenhart, P.E.	Consultant
Danielle Nelson	Consultant
Aiden Ingenthron	Consultant

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MINERAL COUNTY, COLORADO

CITY OF CREEDE - LOCATION MAP

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PROJECT NO. 241-025.000

DRAFT FIGURE 1

a shortage of clear, concise, and readily available information regarding water use, policies, and documentation regarding current water systems. The lack of available and collated resources presented a challenge to the group to make more meaningful recommendations and identified development of a Water Efficiency Plan for the City of Creede as a base need.

While the Colorado Water Conservation Board (CWCB) *Guidance of Best Practices for Municipal Water Conservation in Colorado* provided the template and framework for developing the WEP, the WEP project manager, Headwaters Alliance, and Creede recognized that there were other objectives for this effort. Creede is a remote, rural, low-resource community. A goal for the WEP was to provide a living document of the City's water system, supply, future demand, current infrastructure, and identify needs, challenges, and opportunities for water efficiency. In turn, this document would enable institutional knowledge to be passed down to subsequent City Trustees and staff and the community at large to promote integrated continuity in the decision-making process. A key goal of this Water Efficiency Plan is to support Creede in its efforts to improve the operation and management of its water system and empower increased participation by Creede in stewarding the vital headwaters of the Rio Grande River basin.

2.0 PROFILE OF EXISTING WATER SUPPLY SYSTEM

Creede owns and operates a water system that includes:

1. Physical raw water supply – including two alluvial wells
2. Drinking Water Treatment System
3. Water Storage – including two potable water tanks
4. Distribution system
5. Wastewater Treatment Facility (WWTF)

Creede also operates a non-potable water supply and distribution system that includes an infiltration gallery located in East Willow Creek (see Figure 2). The infiltration gallery served as Creede's primary raw water supply before the existing water system began operating. The non-potable water supply system is now physically disconnected from Creede's water system, providing a source of water for non-potable uses, including construction, dust control, fire prevention and the City's ice rink.

The following sections provide an overall summary of Creede's existing physical water, legal water, and water quality characteristics of its existing water supply.

2.1 Physical Water Supply Source

Creede's primary source of raw water supply for its potable water system consists of two alluvial groundwater wells, Creede Well No. 1 and Creede Well No. 2 (see Attachment **1**), located north of the Mineral County Memorial Airport (see Figure 2 and Photograph 3 in Attachment **2**). Historical diversion records from the Colorado Division of Water Resources (DWR) and annual production data from Creede's Public Works Director for years 2020 through 2023 are shown in Table 2. Based on the available data between 2020 and 2023, Creede pumped 350 acre-feet (AF) of water from the wells on an average annual basis and ranged between 397 AF in 2023 and 270 AF in 2020 (see Table 2). Creede does not own or operate raw water supply reservoirs.

Table 2
Well Diversion Records Summary
City of Creede
Draft

Water Year	Total (AF) (1)	Total (Gallons) (2)	Data Source
1996	325	105,800,561	Colorado Division of Water Resources
1997	299	97,468,551	
1998	331	107,902,300	
1999	284	92,688,317	
2000	308	100,404,469	
2001	509	165,698,492	
2002	275	89,537,338	
2003	242	78,862,459	
2004	250	81,479,043	
2005	264	85,956,235	
2006	286	93,346,536	
2007	307	100,166,597	
2008	315	102,610,480	
2009	599	195,034,858	
2010	340	110,672,034	
2011	227	73,961,660	
2012	258	84,160,796	
2013	245	79,866,080	
2014	226	73,759,632	
2015	242	78,764,704	
2016	300	97,800,919	
2017	277	90,417,135	
2018	298	97,077,530	
2019	266	86,539,509	
2020	270	88,117,000	City of Creede
2021	307	100,016,100	
2022	386	125,868,900	
2023	397	129,442,000	
Average	308	100,479,294	
Maximum	599	195,034,858	
Minimum	226	73,759,632	
Average (2020 to 2023)	340	110,861,000	

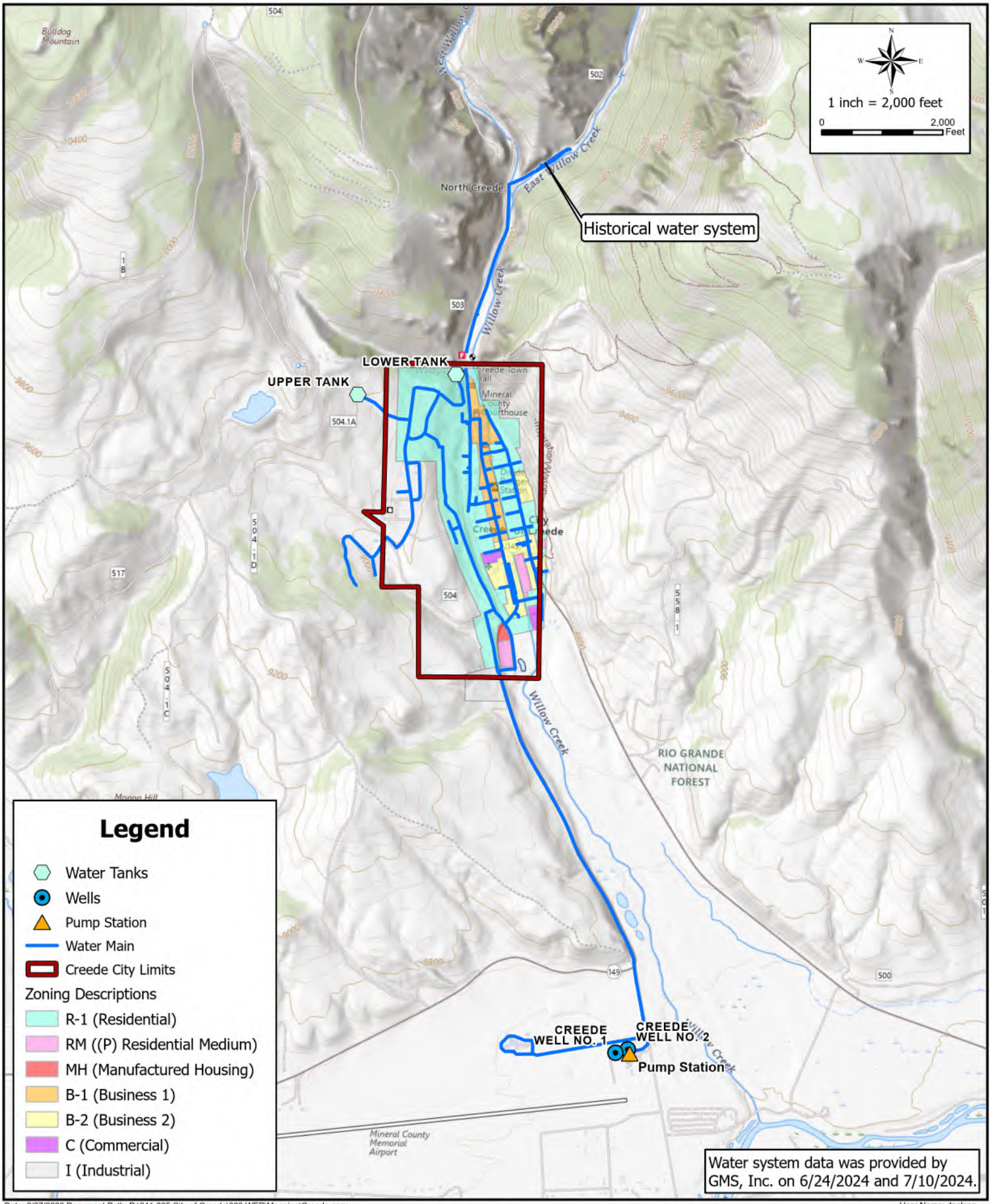
General Notes:

Table is based on Water Year (12- month period from November 1 through October 31).

Column Notes:

(1) Well diversion records from the Division of Water Resources (DWR) or City of Creede.

(2) Equals Column (1) x 325,851 gallons per AF



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CITY OF CREEDE - WATER SYSTEM PROFILE

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PROJECT NO. 241-025.000

DRAFT FIGURE 2

Based on the well construction and pump installation reports (see Attachment **1**), Creede Well No. 1 and Creede Well No. 2 were both constructed in 1995, and had the following characteristics at the time of their construction:

Creede Well No. 1 is a 120-foot deep well with an 8.625-inch diameter casing. The static water level measured 33 feet below the ground surface, and the well pump intake was set 58 feet below the ground surface, providing 25 feet of available drawdown (difference between static water level depth and pump intake depth). The reported sustained well production rate was 500 gallons-per-minute (gpm) over a 24-hour test period.

Creede Well No. 2 is a 115-foot deep well with a 10-inch diameter casing. The static water level measured 33 feet below the ground surface, and the well pump intake was set at 58 feet below the ground surface, providing 25 feet of available drawdown. The reported sustained well production rate was 625 gpm.

WWE did not find any historical post pumping aquifer recovery information for either well to evaluate how the groundwater level recovers after pumping cycles. The wells appear to produce enough groundwater supply to meet the needed water demands of the Creede, but additional well drawdown and recovery testing information would be helpful to evaluate the sustainable yield of the groundwater for the wells and their capacity to meet future water demands. The wells are not equipped with groundwater level monitoring equipment. WWE recommends Creede consider regular groundwater level monitoring in the wells. Monitoring groundwater levels can be accomplished by hand using a sounder or equipping the wells with down-hole monitoring equipment. WWE recommends installing a sounding tube in each well to prevent the sounding or monitoring equipment from interfering with the down-hole electrical service lines to the pump.

Creede operates a SCADA (Supervisory Control And Data Acquisition) system that tracks gallons of water pumped from the booster pump station into the distribution system and water storage levels in the storage tanks (see Photograph 5, Attachment **2**).

As in the case of many small water systems equipped with SCADA, data tracking is in real time and reporting functionality is limited due to lack of programming reports. WWE recommends programming the SCADA software to provide reporting that includes daily and monthly water production and water production trends that can help identify leaks and excessive water use in the water distribution system. To help track water loss and control, Creede could monitor key parameters, including system input volume, water supplied, metered authorized consumption, non-metered authorized consumption, and authorized consumption that is not billed.

2.2 Legal Water Supply

A summary of Creede's water rights is provided in Table 3, and the locations of Creede's water rights and well permits are shown on Figure 3. Creede Well No. 1 and No. 2 operate under well permit Nos. 46924-F, 46925-F, 61905-F, and 61906-F pursuant to augmentation plans decreed in Case Nos. 94CW31 and 07CW60.

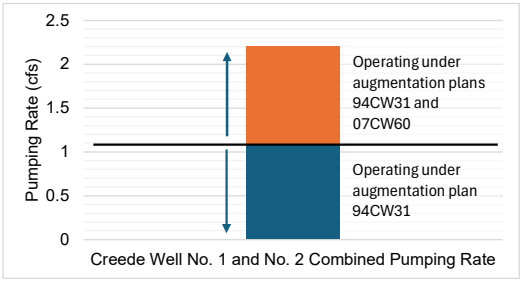
Based on Case No. 94CW31 and 07CW60 (see Attachment **3**), when the combined pumping rate from Creede Well No. 1 and No. 2 is less than 1.1 cubic feet per second (cfs) (494 gpm), then the wells are operating under the augmentation plan decreed in 94CW31. When the combined pumping rate from Creede Well No. 1 and No. 2 is equal to or between 1.1 cfs (494 gpm) and 2.2 cfs (987 gpm), then the wells

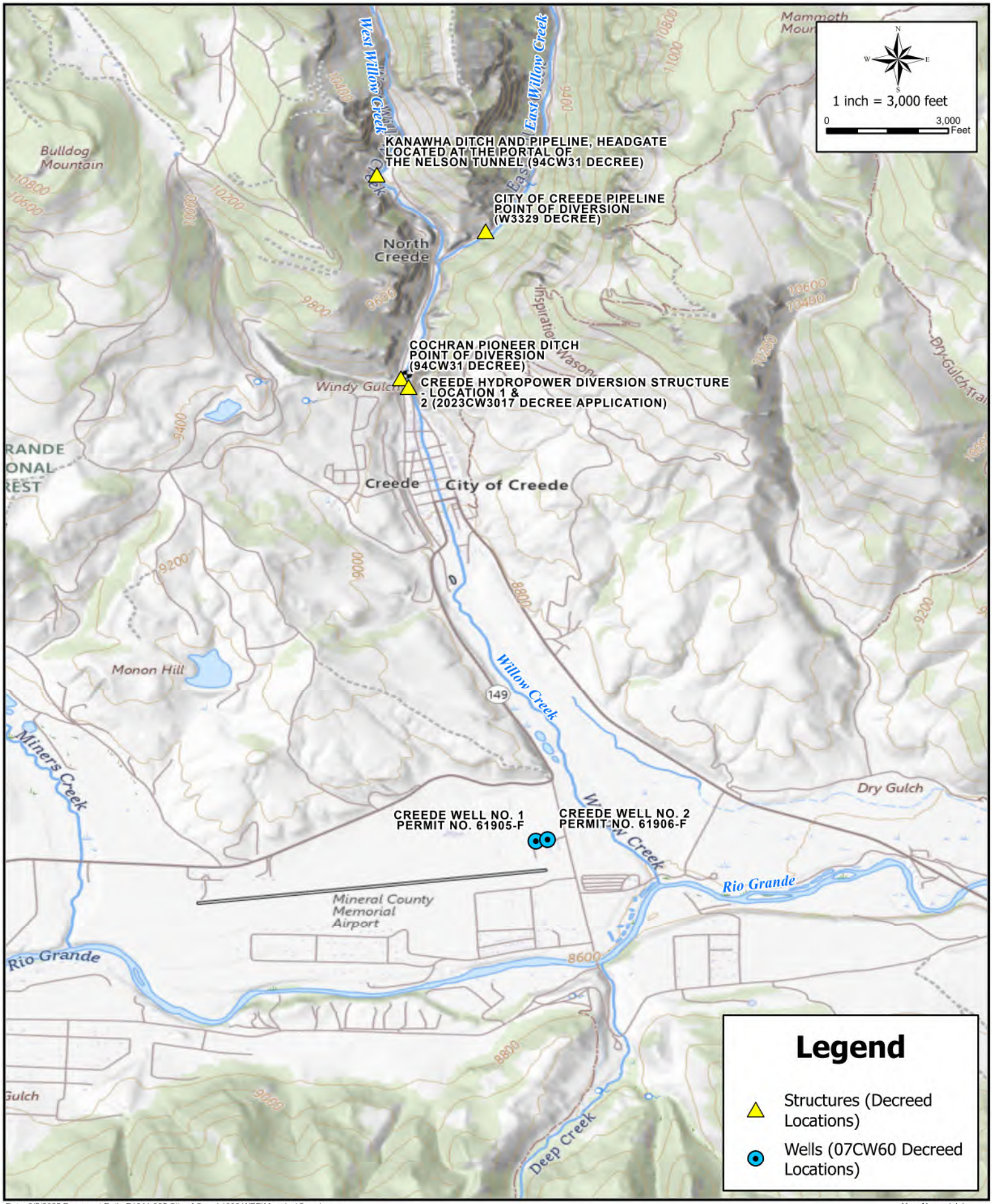
Table 3
Water Rights Summary
City of Creede
Draft

Structure Name	WDID	Adjudication Date	Previous Adjudication Date	Appropriation Date	Administration No.	Priority No.	Associated Case Numbers	Decreed Rate (cfs)	Amount Owned by City (cfs)	Decreed Status	Decreed Use(s)	Comments
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(10)	(11)	(12)
Creede Well No 1	2013702						94CW0031, 02CW0010, 07CW60	N/A	N/A	N/A	Municipal	As per Decree 07CW060, Creede Well Nos. 1 and 2 do not have individual water rights decreed for diversion by the wells. They may only operate in accordance with the plans for augmentation decreed in Case Nos. 94CW31 and 07CW060. Under the decrees in Case Nos. 94CW31 and 07CW60 Creede Well Nos. 1 and 2 may pump at a combined cumulative rate of 2.2 cfs.
Creede Well No 2	2013703						94CW0031, 02CW0010, 07CW60	N/A	N/A	N/A	Municipal	
Kanawha Ditch and Pipeline (Nelson Tunnel)	2001055	1/27/1960	9/16/1938	2/1/1894	32400.16103	1959-2	W3329, 94CW31	7	0.5	Absolute	Mining, Agriculture, Domestic, Power Purposes, and Augmentation	Creede owns the first 0.5 cfs of the full decreed rate of 7 cfs.
Cochran Pioneer Ditch	2000582	5/1/1896		6/9/1872	8196.00000	13	05/01/1896, CA3792, 94CW31	3	0.5	Absolute	Industrial, Manufacturing, Domestic, Agricultural, Irrigation, All Other Beneficial Uses, and Augmentation	Homestake milling alternative point for 1.5 cfs, see CA 9/11/1905. Creede owns 0.5 cfs out of the full decreed rate of 3 cfs.
City of Creede Pipeline	2001117	12/31/1975	12/31/1974	12/28/1892	45655.15703	0	W3329	1	1	Absolute	Municipal, Domestic	Original water source for Creede's water system. Current source of water for non-potable municipal water uses.
Creede Hydropower Diversion Structure				10/17/2023			23CW3017	18		Conditional	Hydropower Use	

Column Notes:
(1) Structure name from Colorado's Decision Support Systems (CDSS) Site.
(2) WDID from CDSS.
(3) Adjudication date from CDSS.
(4) Previous adjudication date from CDSS.
(5) Appropriation data from CDSS.
(6) Priority administration number from CDSS.
(7) Priority number from CDSS.
(8) Associated case numbers from CDSS.
(9) Decreed rate from CDSS.
(10) Status from CDSS.
(11) Decreed uses from CDSS.
(12) Comments from CDSS and information found in decrees.

Augmentation Plan and Well Pumping Rate Figure





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CITY OF CREEDE - WATER RIGHTS AND WELL PERMIT LOCATIONS

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DRAFT FIGURE 3

are operating under both augmentation plans decreed in 94CW31 and 07CW60 (see Table 3 for a figure illustrating well pumping rate operations and associated augmentation plans).

The replacement sources for the augmentation plans include the Kanawha Ditch and Pipeline Water Right (Nelson Tunnel Water Right) and the Cochran Pioneer Ditch Water Right. Creede owns the first 0.5 of the 7.0 cfs water right decreed to the Nelson Tunnel Water Right. Since the Nelson Tunnel is an important replacement supply for Creede's Augmentation Plans, care needs to be taken not to diminish or injure the physical supply of the Nelson Tunnel Water Right.

Creede also owns 0.5 cfs of the 1.5 cfs originally decreed to the Cochran Pioneer Ditch. There are agreements with local mining companies regarding the use of the historical consumptive use credits available from the Cochran Pioneer Ditch.

According to Case No 07CW60, Creede Well Nos. 1 and 2 both deplete water from Willow Creek at points closest to the location of the wells. As shown in Figure 3, the Nelson Tunnel and Cochran Pioneer Ditch are both located in the Willow Creek watershed upstream of Creede's Wells Nos. 1 and 2 points of depletion on Willow Creek.

2.3 Water Quality

Creede Well Nos. 1 and 2 are groundwater sources from an alluvial aquifer. However, the aquifer is relatively shallow and may be influenced by surface water. The shallow depth and unconfined nature of the alluvial aquifer is also more susceptible to contamination and source water protection is important to protect Creede's water supply.

As per the 2024 consumer confidence Drinking Water Quality Report, Creede has no standing violations, significant deficiencies, or formal enforcement actions (City of Creede, 2024).

2.4 Water Supply Infrastructure

2.4.1 Water Treatment and Pressurization

Water pumped from the groundwater wells is stored in a clear well located underneath the pump station. The general location of Creede's pump station is shown in Figure 2. At the pump station, water pumped from the clear well is metered, chlorinated, and monitored by Creede's SCADA system as it enters the distribution system. This allows Creede to view real-time data and directly monitor and interface with the pump station operations. Photographs of the SCADA interface, meter, and pumping station are included in Attachment **2**. Creede treats water pumped form the clear well using liquid sodium hypochlorite (liquid chlorine) for disinfection treatment before it enters the distribution system and gets delivered to the potable water storage tanks.

2.4.2 Treated Water Storage

Creede owns and operates two potable water storage tanks with capacities of 150,000 and 250,000 gallons, providing 400,00 gallons total of potable water storage. The general locations of the storage tanks are shown on Figure 2. A photograph of the lower storage tank is provided in Attachment **2** (Photograph 7).

2.4.3 Treated Water Distribution

Creede's water distribution system provides potable water to residents and businesses in the Creede water service area (see Figure 2). While Creede is in the process of developing Capital Improvement Plan to help guide and prioritize future infrastructure improvements and anticipated costs, it does not yet exist. Creede has made improvements to the water system, including replacing sections of water mains (see Figure 4) and transitioning its source of raw water supply from surface water to groundwater wells.

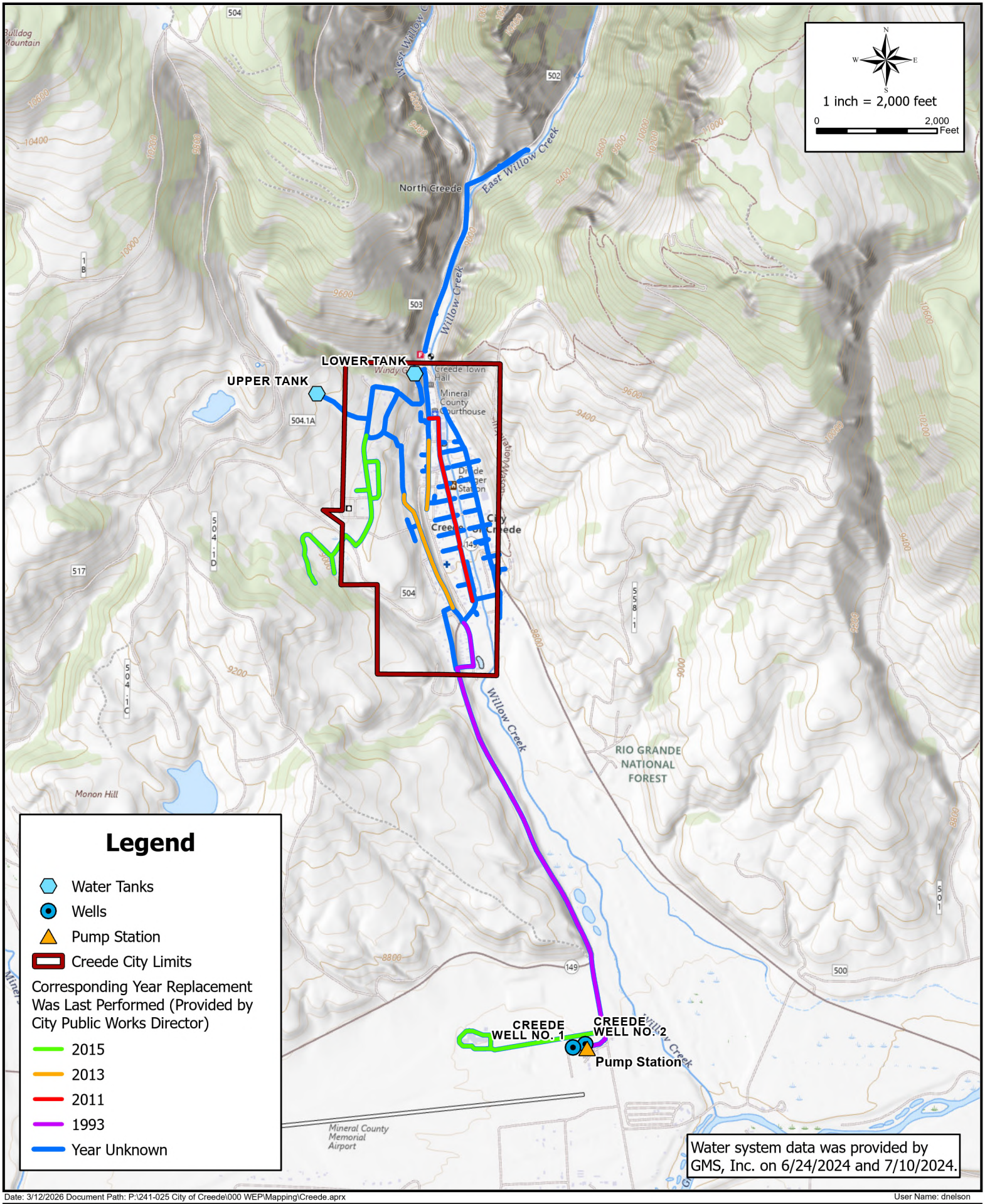
2.4.4 Wastewater Treatment Facility

Creede operates a Wastewater Treatment Facility (WWTF) and collection system. The reason the WWTF is discussed in this WEP is because increases in water efficiency can save the community resources by reducing hydraulic loading on the WWTF. The existing WWTF is a 3-lagoon system; two aerated lagoons and a final polishing pond with a permit limit of 0.56 million gallons per day (MGD), which is based on the hydraulic and treatment capacity of the facility. The Capacity Assessment of the WWTF conducted in 2021 (SGM, 2021) found the current treatment capacity of the facility is approximately 433 Equivalent Residential Units (EQRs). Additionally, the current WWTF processes cannot reduce nitrogen and ammonia to meet future Colorado Department of Public Health and Environment (CDPHE) nutrient standards, and upgrades to the WWTF may be needed in the future.

According to SGM (2022), the design and phased construction of a new WWTF, designed with a mechanical Sequencing Batch Reactor system to meet future CDPHE criteria, has an estimated capital construction cost of $11.23 million (please note this cost estimate is preliminary and may change). The new WWTF would satisfy Creede's immediate capacity needs for the upcoming Deep Creek, Creede America, and the Mineral County Fairgrounds developments (totaling 606 EQRs) and include considerations for a future expansion to satisfy long term planned obligations totaling 1,211 EQRs.

The wastewater collection system is experiencing issues with inflow and infiltration (I&I) of water. I&I is the entry of groundwater and stormwater into a sewer collection system from sources other than domestic wastewater. The I&I adds hydraulic loading to the WWTF and can reduce WWTF efficiency. In addition, given the mineralization in the area and presence of metals in the groundwater, I&I is likely adding metals to the WWTF inflow, and the WWTF is not currently equipped to treat metals. Zinc and cadmium have been problem metals in the WWTF discharge, and the source of the metals is likely I&I.

The existing WWTF is nearly at treatment capacity under current conditions. Proposals to accept additional EQRs (from Creede America Expansion, Mountain View PUD, or Mineral County Fairground Campsite) for treatment may exceed the limit of the facility. The 2021 Capacity Assessment estimates that the facility cannot adequately meet ammonia discharge limits with the additional EQRs and recommends expansion or upgrade of the WWTF. Increases in water efficiency by Creede could reduce the hydraulic loading to the WWTF and may delay or reduce the future capacity need for Creede's new WWTF, providing real cost savings to Creede.



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CITY OF CREEDE - WATER DISTRIBUTION SYSTEM REPLACEMENT HISTORY

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PROJECT NO. 241-025.000

DRAFT FIGURE 4

2.5 Water Supply Reliability

For the purposes of this WEP, WWE evaluated water supply reliability for the following primary water supply categories: physical water supply, legal water supply, water quality and treatment reliability.

2.5.1 Physical Water Supply Reliability

The source of Creede's physical water supply is alluvial groundwater supplied by two wells, Creede Well No. 1, and No. 2. Historical DWR diversion records between 1996 and 2023 indicate the average annual combined water production from Creede Well No. 1 and No. 2 was approximately 310 AF per year. The reported maximum annual combined water production from the wells was 599 AF and occurred in 2009 (see Table 2).

Aquifer drawdown and recovery monitoring were not performed when the wells were constructed. Based on discussions with Creede's Public Works Director and review of the pump installation reports for the wells, there is no down-hole monitoring equipment installed to monitor the groundwater, and Creede has not historically hand measured and recorded depth to groundwater level in the wells. Trends in groundwater level draw down and recovery rates, or changes in static groundwater level could not be assessed to better understand long-term physical water supply reliability of the alluvial groundwater source.

Based on the aquifer tests conducted in 1995 (Attachment **1**), Creede Well No. 1 and Well No. 2 could produce up to 2.2 and 2.7 AF per day (720,000 and 900,000 gallons per day (gpd), respectively. If the wells were able to pump at this rate over the full year, Creede Well No. 1 and Well No. 2 could produce up to 803 and 986 AF per year, respectively. Based on the well characteristics reported in 1995, it appears the wells can produce enough water to meet Creede's current water demands. However, because an aquifer recovery test has not been conducted, it is unknown how quickly the aquifer recovers after pumping occurs. Without information on aquifer recovery the sustainable yield of the aquifer is currently unknown.

2.5.2 Legal Water Supply Reliability

Creede Well No. 1 and Well No. 2 do not have a water rights priority and are operated pursuant to augmentation plans. As outlined in the augmentation plans, Creede has two replacement sources: the Nelson Tunnel and the Cochran Pioneer Ditch.

The Nelson Tunnel is part of the United States Environmental Protection Agency (EPA) Nelson Tunnel/Commodore Waste Rock Pile Superfund Site. The EPA is currently proposing to install a bulkhead on the Tunnel. It is important that installation of the bulkhead or treatment does not reduce the amount of physical water discharged from the Nelson Tunnel.

2.5.3 Water Quality Reliability

Treatment of Creede's water supply is based on the natural filtration of its alluvial aquifer groundwater supply, disinfection (i.e., chlorination), and adequate chlorine contact time. Due to the shallow nature of the alluvial aquifer, source water protection is important for Creede's water supply.

In 2021 the CDPHE issued Creede drinking water sanitary violations during a routine sanitary survey. These violations included 1) uncontrolled cross connections that could have allowed contamination to enter the drinking water supply and 2) finished water storage structure conditions that could have allowed potential

sources of contamination to enter the tank. Based on WWE's communication with the Creede Public Works Director during preparation of this report, all violations reported by CDPHE were addressed by Creede and its water supply and distribution system are currently in compliance with CDPHE sanitary regulations.

2.5.4 Reliability of Wastewater Treatment

As discussed in Section 2.4.4, the reliability of Creede's current WWTF to meet future discharge permit limits for nutrients and metals is a concern for Creede. Given the anticipated expense of the future WWTF upgrades that are required to meet these limits, reduction of future hydraulic loading through improved water efficiency could result in significant WWTF project cost savings for Creede by reducing the required capacity of the new WWTF.

2.6 Supply-Side Limitations and Future Needs

Supply side limitations consist of:

1. Physical groundwater yields of the wells.
2. Continued water quality of the groundwater supply, and classification as a designated groundwater supply source.
3. The availability and volume of the augmentation replacement supplies that allows the groundwater wells to operate without injury to downstream water rights.
4. The ability of the WWTF to meet future discharge permit limits.

Future needs of the water system identified during the development of this plan include:

1. The need for water meters on individual service taps.
2. Monitoring equipment to assess drawdown and recovery of the groundwater level in the wells.
3. Protection of Creede's current augmentation water supplies.
4. Source water protection planning.
5. Improved water efficiency to reduce the rate and volume of wastewater (hydraulic loading) that requires treatment.
6. Capital Improvement planning to assess timing and costs of future improvements.
7. Conducting additional rate studies to help transition from the EQR based billing system to a metered rate structure and incorporate findings from capital improvement planning to inform revenue requirements.

3.0 PROFILE OF WATER DEMANDS AND HISTORICAL DEMAND MANAGEMENT

3.1 Demographics and Key Characteristics of the Service Area

Creede provides water to approximately 257 year-round residents within its service area. The median age is 42.4 years, with approximately three-quarters of the population aged 18-64 (US Census Bureau, 2023). The average number of residents per household is 1.8 people per occupied household (US Census Bureau, 2020). Creede experiences large seasonal swings in service area population due to visitation during the

summer months, making actual water use difficult to quantify, especially without water meters. According to the 2020 Census, at least 107 housing units are vacant for part of the year.

Creede currently has a total of 348 active water service accounts. To group water service accounts into different use categories, WWE cross referenced Mineral County parcel data with each location of Creede's water service account and generated EQR counts by parcel type. Of the active service accounts there were 56 commercial accounts, 11 manufactured housing accounts, 6 multi-family accounts, and 262 single-family accounts. The majority of the accounts in the system are not metered. There are only three metered accounts (Sunnyside Chapel, Creede School District, and one miscellaneous parcel labeled as "special use"). A detailed breakdown of the accounts is shown in Table 4.

The EQR rates for Creede (Attachment 5) were applied to Mineral County parcel "use type" to estimate EQR totals for Creede using parcel data. There is a difference of over 50 EQRs between the estimated EQR total and the actual EQR total for the registered accounts in Creede in 2024 under this model (see Table 5).

Creede's service area is shown on Figure 2 and is bounded by mountains, forest land, and existing developments that have their own water supply and are not currently considered for annexation. There is one area, the Creede America housing development, which could potentially add up to 71 new single-family residential service taps to Creede's service area. Creede irrigates approximately 1.90 acres of parks (see Figure 5). The parks consist of Basham Park (0.30 acres), Seime Park (0.42 acres), and Hargraves (Ballfield/Skate) Park (1.18 acres).

There were no current planning documents with basic information on demographics and land use planning to further inform this section. It appears that the City of Creede may have developed a Source Water Protection Plan (SWPP) in or around 2015. However, as of the date of this report, a copy of the SWPP could not be located by City staff. If the SWPP is found subsequent to finalizing this WEP, WWE recommends incorporating pertinent information from the SWPP during a future WEP update.

3.2 Historical Water Demands

Creede does not have individual water meters so well production data is used in this report to assess historical water demands. Historical DWR diversion records by water year for each well are shown in Table 2. Creede did not have monthly production data available for Creede Well No. 1 and No. 2 before water year 2020 (defined as November 1, 2019, through October 31, 2020). As discussed in Section 2.1, water production has ranged from 279 AF per year to 399 AF per year (see Table 2).

WWE used available monthly well production data between 2020 to 2023 to estimate an annual and seasonal demand profile for Creede, on both a gallons-per-capita-per-day (gpcd) and gallons-per-day (gpd) per EQR basis. Calculated average annual and seasonal water demand for calendar years 2020 through 2023 is provided in Table 6.

Between 2020 and 2023 the calculated average annual water demand on a per capita basis was 1,191 gpcd (see Table 6), which is significantly greater than Colorado's 30-year state average of 130 gpcd (Maupin, Ivahnenko, & Bruce, 2018). Calculated average outdoor water use from 2020 to 2023 was 228 gpcd while indoor water use was 963 gpcd.

Between 2020 and 2023 the calculated average annual water demand on a per EQR basis was 753 gpd per EQR (Table 6), which is greater than the EPA reported national average of approximately 300 gpd per

Table 4

Equivalent Residential Unit (EQR) Summary By Account Rate Code Classification

City of Creede

Draft for Review and Comment

General Classification	City of Creede Water Rate Code Classification and Associated EQR																								Total Accounts	Total EQRs
	Rate Code -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**20**	**21**	**22**	**23**	**24**	**26**	**27**	**28**		
	EQR Value -->	0.70	0.85	1.00	1.25	1.40	1.50	1.60	1.70	1.75	2.00	2.25	2.30	2.50	2.72	2.75	2.80	3.00	5.00	5.50	6.00	6.30	7.70	Metered	Metered	3.50		
	Mineral County Parcel Use Type Designation																											
Commercial	**Commercial**																											
	Commercial															1											1	2.75
	Lodging			1				1							1				2								5	15.32
	Merchandising			1	12		1				1	1		1		1											18	27
	Restaurant			3	2		2				3					2				1						1	14	29
	Special	1			15					1								1									18	24.2
	Subtotal	**1**		**5**	**29**		**3**	**1**		**1**	**4**	**1**		**1**	**1**	**4**		**1**	**2**	**1**						**1**	**56**	**98.27**
Manufactured Housing	**Manufactured Housing**																											
	Manufactured Housing			6													2					1	2				12	33.3
	Subtotal			**6**													**2**					**1**	**2**				**11**	**33.3**
Multi-Family	**Multi-Family**																											
	Duplex/Triplex			1																							1	1
	Multi-Family-(4+)			2																	1						3	8
	Multi-Family-(9+)															1	1										2	5.55
	Subtotal			**3**												**1**	**1**				**1**						**6**	**14.55**
Single Family	**Single Family**																											
	Single Family		14	232	10	1			1		2		1						1								262	270.8
	Subtotal		**14**	**232**	**10**	**1**			**1**		**2**		**1**						**1**								**262**	**270.8**
Other	**Other**																											
	Church			2	2																				1		5	4.5
	Inactive			1																							1	1
	Miscellaneous			3																					1		4	3
	Other																											0
	School																							1			1	0
	Warehouse Storage	2			1																						3	2.65
	Subtotal	**2**		**6**	**3**																			**1**	**2**		**14**	**11.15**
Total		**3**	**14**	**252**	**42**	**1**	**3**	**1**	**1**	**1**	**6**	**1**	**1**	**1**	**1**	**5**	**3**	**1**	**3**	**1**	**1**	**1**	**2**	**1**	**2**	**1**	**349**	**428.07**

Table 5

Current Total Active Equivalent Residential Unit (EQR) Count - Mineral County Parcel Use Type versus City Account Records

City of Creede

Draft for Review and Comment

Mineral County Parcel Use Type Classification	Estimated EQR Value Based on Mineral County Parcel Use Type	Registered City EQR Accounts in 2024	
	# of EQRs	# of EQRs	% of Total
	(1)	(2)	(3)
Residential			
Single Family Housing	273	304.1	71%
Multi-Family Housing	16.8	14.55	3%
Commercial			
Lodging	8.9	15.32	4%
Restaurants	14	29	7%
Commercial (General and Merchandising)	46.25	53.95	13%
Other Uses			
Churches, School, and Miscellaneous	13	10.15	2%
Total Active	**371.95**	**427.07**	**100%**

Column Notes:

(1) Calculated by assigning EQRs to each property served based on the Mineral County Parcel Use Types and its corresponding EQR value from Table 6.4.1 in the City's Municipal Code of Ordinance Section 13-6-40.

(2) Calculated by using the EQR rates assigned to each property served as indicated on the City of Creede's Active Service Accounts for Water Service.

(3) Equal to Column (2) / Total of Column (2)

Table 6
2020 - 2023 Well Production and Per Capita Water Demands
City of Creede
Water Efficiency Plan
Draft

Month	Well Production (Gallons)				
	2020	2021	2022	2023	**Average**
January	5,840,800	6,206,300	8,496,700	9,780,800	7,581,150
February	5,379,900	5,644,200	8,455,300	8,914,600	7,098,500
March	5,816,300	6,179,600	9,493,200	9,916,100	7,851,300
April	5,955,700	6,585,400	9,900,500	10,316,900	8,189,625
May	10,559,500	9,083,500	13,615,900	10,815,200	11,018,525
June	10,598,500	12,781,500	14,516,800	12,685,900	12,645,675
July	9,913,600	12,452,500	13,052,600	15,246,600	12,666,325
August	10,318,800	10,755,600	12,276,600	13,088,100	11,609,775
September	8,019,300	10,527,400	11,613,400	11,416,200	10,394,075
October	6,757,400	8,187,200	9,716,600	8,451,600	8,278,200
November	5,717,900	6,865,500	9,196,100	7,753,600	7,383,275
December	5,895,000	7,865,800	9,613,900	8,085,300	7,865,000
Total	90,772,700	103,134,500	129,947,600	126,470,900	112,581,425
Avg Production, gpd	248,013	282,560	356,021	346,496	308,442
Average Winter Production, gpd[1]	188,707	221,515	298,017	287,786	249,399
Population[2]	259	259	259	259	259
Average Annual Per Capita Water Demand (gpcd)	958	1,091	1,375	1,338	1,191
Average Winter Per Capita Water Demand (gpcd)	729	855	1,151	1,111	963
Average Per Capita Outdoor Water Use[3] (gpcd)	229	236	224	227	228
Equivalent Residential Unit (EQR)[4]	403	405	415	415	410
Average Annual Per EQR Water Demand (gpd per EQR)	615	698	858	835	753
Average Winter Demand Per EQR (gpd per EQR)	468	547	718	693	609

Notes:
Production data received from Dannah Koeniger (GMS, Inc.) on 4/30/2024.
gpcd = gallons per capita per day
gpd = gallons per day
Footnotes:
[1]Winter flow was determined using the water production numbers from the months of January through February and November through December.
[2]2020 Census population approximated by Colorado Demographers office for municipalities and counties
[3]Average Per Capita Outdoor Water Use calculated by subtracting Average Winter Per Capita Demand from Average Annual Per Capital Water Demand.
[4]Annual EQR based on the 2020-2023 Usage Reports received from Treva Crenshaw on 7/9/2024.

Date: 9/5/2025 Document Path: P:\241-025 City of Creede\000 WEP\Mapping\Creede.aprx

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MINERAL COUNTY, COLORADO

CITY OF CREEDE - IRRIGATED PUBLIC PARKS

HEADWATERS ALLIANCE

PROJECT NO. 241-025.000

DRAFT FIGURE 5

EQR (EPA, 2025). Calculated average outdoor water use from 2020 to 2023 was 144 gpd per EQR while indoor water use was 609 gpd per EQR.

There are a few potential reasons why Creede's calculated water demands are above average:

- Creede may not have an accurate estimate of assigned EQRs for parcels; structures may be consuming a larger quantity of water than their assigned EQR rate.
- Creede also has a large influx of seasonal visitors during the summer that likely skew gpd per EQR, and gpcd water estimates. It is important to recognize that high visitation rates in the summer months are likely causing the higher than typical per capita demand calculations.
- Unidentified system leaks and/or homes which intentionally run water continuously during the winter to prevent freezing pipes.

Due to the lack of water metering in Creede, it makes identifying the potential reasons for above average water use difficult.

3.3 Past and Current Demand Management Activities and Impacts to Demands

Creede included physical paper notices alongside customers' bills to inform customers of recent changes to water rate structures and pricing. Creede began including a paper newsletter with its customer bills in November 2025 to communicate a variety of informational items. The potential impact to water demands from Creede's rate structure change is currently unknown.

3.4 Demand Forecasts

The average annual EQR growth rate over the 2021 to 2024 study period was 1.52 percent based on historical EQR account data provided by Creede (see Table 7). Forecasted future demands are based on the low, medium, and high annual EQR growth rates shown in Table 7. Annual water demand projections for the low, medium, and high annual EQR growth rate scenarios are provided in Figure 6.

Creede staff selected an annual 1 percent EQR growth rate as the medium (or baseline) value for planning purposes. The medium annual EQR growth rate selected by Creede staff is lower than the calculated average annual EQR growth rate of 1.52 percent. However, Creede staff noted that the 3.13 percent annual increase in EQRs between 2023 to 2024 was an outlier (see Table 7), and that a 1 percent medium growth rate was more appropriate based on experience. For comparison, the Colorado Department of Local Affairs (DOLA) estimates Mineral County's projected average growth rate from 2024 to 2050 at -0.26 percent (Colorado Department of Local Affairs, 2024).

At the end of the planning period in 2044, the total number of EQRs in the City of Creede service area are expected to range from 473 EQRs (low growth) to 576 EQRs (high growth). Under the high growth scenario (1.50 percent growth in EQR total per year), Creede would reach full build out in or around 2045. Under both low and medium growth scenarios, Creede would not reach full build out by 2050 (see Table 7, and Figure 6).

Creede's full buildout EQR estimate is based on discussions with the City Manager, that anticipates Creede will reach full buildout once another 100 to 150 EQRs are added to its current 2024 EQR count of 428. These additional EQRs would be added from the planned "Creede America" development (an additional 60± EQRs), and anticipated infill within Creede's current water service area (an additional 50± EQRs).

Table 7
Equivalent Residential Unit (EQR)
Growth Projections at Build-out
City of Creede
Draft for Review and Comment

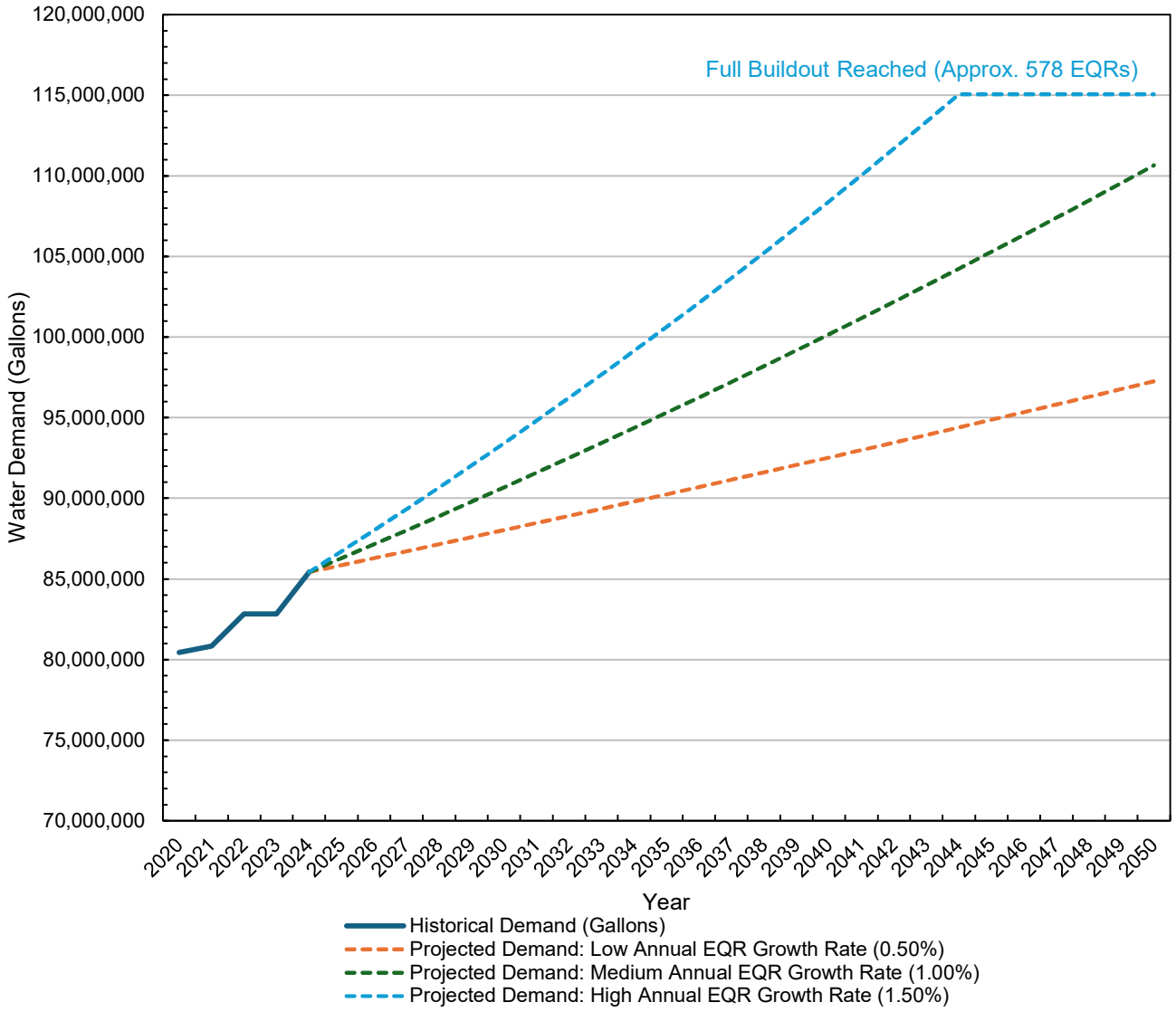
Year	Historical EQR Accounts	City of Creede			Average Historical Growth Rate
		Low Projection	Medium Projection	High Projection	
		0.50%	1.00%	1.50%	
	(1)	(2)	(3)	(4)	(5)
2020	403				-
2021	405				0.50%
2022	415				2.47%
2023	415				0.00%
2024	428				3.13%
2025		430	432	434	
2026		432	437	441	
2027		434	441	448	
2028		437	445	454	
2029		439	450	461	
2030		441	454	468	
2031		443	459	475	
2032		445	463	482	
2033		448	468	489	
2034		450	473	497	
2035		452	478	504	
2036		454	482	512	
2037		457	487	519	
2038		459	492	527	
2039		461	497	535	
2040		464	502	543	
2041		466	507	551	
2042		468	512	560	
2043		471	517	568	
2044		473	522	576	
2045		475	527	Full Buildout Reached	
2046		478	533		
2047		480	538		
2048		482	543		
2049		485	549		
2050		487	554		
Average Historical Growth Rate (2020-2024)					1.52%

Notes:

Full Buildout is based off of conversations with Town Manager assuming 100-150 additional EQRs past the 2024 rate of 428 EQRs, with a maximum of 578 EQRs.

(1) Historical EQR data provided by the City of Creede
(2) City of Creede's low population projection of 0.5%.
(3) City of Creede's medium population projection of 1%.
(4) City of Creede's high population projection of 1.5%.
(5) Equals (Current Year Column (1) - Previous Year Column(1)) / Previous Year Column (1)

Figure 6
Historical and Projected Annual Water Demands
City of Creede
Draft for Review and Comment



4.0 INTEGRATED PLANNING AND WATER EFFICIENCY BENEFITS AND GOALS

4.1 Water Efficiency and Water Supply Planning

The WEP team identified the following needs for future water efficiency and water supply planning (provided in no particular order):

- Installation of meters on individual service connections.
- Land Use and Development Planning.
- Capital Improvement Plans to assess future timing and costs of future water system improvements.
- Rate Adjustment Evaluation to assist with financing capital improvement and transition from EQR system to meters.
- Monitoring groundwater levels and assessing sustainable yield for the wells.

One of the identified goals of this WEP is to consider activities that can provide basic water use data to inform future land use and water supply planning. The components of a standard water balance as defined by the Colorado Water Loss Initiative are shown in the following figure. Under the current system, Creede can only calculate system input water. Detailed breakdowns of water in the table (water supplied, exported, or water losses) cannot be calculated.

<table>
<tr><td rowspan="11">Volume from Own Sources (corrected for known errors)

Water Imported (corrected for known errors)</td><td rowspan="11">System Input Volume</td><td>Water Exported (corrected for known errors)</td><td colspan="3">Billed Water Exported</td><td>Revenue Water</td></tr>
<tr><td rowspan="10">Water Supplied</td><td rowspan="3">Authorized Consumption</td><td rowspan="2">Billed Authorized Consumption</td><td>Billed Metered Consumption</td><td>Revenue Water</td></tr>
<tr><td>Billed Unmetered Consumption</td></tr>
<tr><td>Unbilled Authorized Consumption</td><td>Unbilled metered Consumption

Unbilled unmetered consumption</td><td rowspan="8">Non-revenue Water</td></tr>
<tr><td rowspan="7">Water Losses</td><td rowspan="3">Apparent Losses</td><td>Systematic Data Handling Errors</td></tr>
<tr><td>Customer Metering Inaccuracies</td></tr>
<tr><td>Unauthorized Consumption</td></tr>
<tr><td rowspan="4">Real Losses</td><td>Leakage on Transmission and Distribution Mains</td></tr>
<tr><td>Leakage and Overflows at Utility's Storage Tanks</td></tr>
<tr><td>Leakage on Service Connections up to the point of Customer Metering</td></tr>
</table>

NOTE: All data in volume for the period of reference, typically one year.

Figure 7. Standard Water Balance as Defined by the Colorado Water Loss Initiative

The City's elected Board previously approved several improvement measures, including the implementation of Advanced Metering Infrastructure (AMI) to help forecast more accurate water demand for users. This infrastructure would provide real-time information on utility consumption, which would support more accurate data measurement and more efficient utility billing. Furthermore, AMI would also

help detect leaks in the distribution system earlier, leading to reductions in water loss. Additionally, metering is required to participate in water loss management programs. Installation of a metering system enables Creede to quantify water loss, a prerequisite to most water loss control and management activities.

The industry standard for water auditing is based on the American Water Works Association (AWWA) standard methodology for determining water loss for municipal water providers (AWWA, 2009). At the most basic level, water auditing should be performed for municipal facilities. The Colorado Water Conservation Board's *Guidelines Regarding the Reporting of Water Use and Conservation Data by Covered Entities* advises annual system water reports should include billed unmetered water use, unbilled authorized water use, apparent losses, and real losses. The development of a water auditing dashboard to provide detailed water reporting information for these facilities can help track water losses.

In development of larger master planning efforts, Creede would like water supply and associated ordinances and policies to be evaluated. The first step that Creede recently accomplished is a Rate Study completed in January 2025 (Attachment **4**). The rate study demonstrates a need for rate increases in the existing system to account for the current system's maintenance. Rate changes are politically difficult, however, Creede's Board of Trustees approved two utility rate changes in 2025.

4.2 Water Efficiency Goals

Developing infrastructure (metering) to better account for water use and loss is a goal identified in this planning effort. Creede's goal is to reduce water use by 5 to 10 percent on a system side basis though the implementation of this water efficiency plan.

4.3 Water Efficiency Benefits

Lowering water demands because of increased water efficiency can assist Creede in avoiding, downsizing, or postponing the construction of water supply, treatment, and wastewater treatment facilities.

Implementation of water efficiency measures allow provides other potential benefits, could include and may not be limited to the following:

- Lowering customer water bills due to decreased water use.
- Reduction of wastewater influent and discharges due to reduction in indoor water use. This can improve water quality and aquatic habitat downstream of the wastewater treatment facility and reduce costs of wastewater treatment.
- Demonstrating commitment to sustainability.
- Demonstrating leadership to the community that being more efficient is the right thing to do in an arid environment.
- Lowering operational costs (such as pumping, water treatment and wastewater treatment).
- Decreasing the amount of chemicals needed to treat water.
- Providing security against uncertainties associated with climate change.
- Meeting community expectations for sustainable water use.

5.0 SELECTION OF WATER EFFICIENCY ACTIVITIES

5.1 Summary of Selection Process

WWE met with City staff on two occasions to review the water efficiency goals and processes outlined in Appendix **A**. Each line item in the worksheet was discussed and evaluated for Creede under the following qualitative context:

- Creede is a small municipality with limited capacity to implement water efficiency measures.
- It is important to Creede that they have a Water Efficiency Plan that is economically feasible under their current budgetary constraints.
- It is important to Creede that they have a Water Efficiency Plan that is physically possible to implement.

The water efficiency measures identified by Creede for implementation as part of this plan include:

1. Increasing available funding for water system improvements and meters.
2. The installation of water meters.
3. Potential installation of groundwater well monitoring equipment.

A high level summary of the activities selected for detailed evaluation is provided in Table 8 and a detailed evaluation of each water efficiency measure can be found in Appendix **A**.

5.2 Demand Management Activities

The recommended Demand Management activities primarily focus on foundational activities to better estimate the City's water use and delivery.

5.2.1 Foundational Activities

It is anticipated that the proposed water efficiency measures will reduce water use by 5 percent to 10 percent. The following activities were selected for further evaluation. These activities are not ranked in order and may change in priority from year to year. Information surrounding the potential cost and timeline of each measure is in Appendix **A**.

1. Installation of phased metering in the City of Creede. Creede aims to install water meters for the majority of active accounts to inform future analyses on water use.
2. Evaluate data produced from meters and prepare and assess various proposed improvements to the rate structure and billing program for review by the City staff and the Board. The goal is to provide a rate structure that is fair, covers water system costs, holds people accountable for water usage, and promotes water efficiency.
3. Increase available funding for the water system to cover needed capital improvements.

Table 8
Selected Water Efficiency Activities and Target Timeline
Water Efficiency Plan
City of Creede

Water Efficiency Activity	Target Begin Date[1]	Notes
Increase available funding for water system improvements and meters.	Ongoing	DOLA funding, CWCB funding, Federal funding, etc.
Installation of phased metering	Years 5-6	Selection of a meter product to be installed, coordination of purchase and delivery of meters to Creede, development of an installation plan, and installation of meters.
Evaluation of existing rate structure and billing program	Years 6-7	Evaluate feasibility of proposing and assessing improvements to the rate structure that promote water efficiency while remaining fair, covering water system costs, and holding people accountable for their water usage.
Development of a Capital Improvement Plan	Years 1-3	Includes developing an inventory of pumps, valves, water main, and storage tanks and creation of a repair/replacement schedule. Includes evaluating the development of a process to monitor leak detection equipment.
Implementation of a system-wide auditing program	Years 6-7	Evaluate apparent and real losses, leaks, unauthorized consumption, and potential data inaccuracies. Opportunity to also develop a monitoring and reporting system for the collection of water use data.
Evaluate installation of groundwater monitoring equipment	Years 1-5	Temporary or permanent down-hole groundwater level monitoring equipment for Creede Well No. 1 and Creede Well No. 2 to monitor trends in groundwater levels over time.

[1] Start Dates are subject to change and are year from WEP plan approval.

4. Development of a Capital Improvement Plan for the City of Creede which identifies future improvements and maintenance for the water system, which is economically feasible and has a reasonable timeline for completion of tasks. This includes an inventory of appurtenances including pumps, valves, main, and storage tanks and development of a repair/replacement schedule. As a component of the Capital Improvement Plan, WWE recommends evaluating leak detection equipment and monitoring as part of system improvement. The capital improvement plan would serve partly as the basis for water system funding needs.
5. Implementation of a system-wide water auditing program. Auditing would identify apparent and real losses and allow Creede to more efficiently identify leaks, unauthorized consumption, and data inaccuracies that contribute to non-revenue water consumption. Development of a monitoring and reporting system for the collection of water use data by account. Creede will expand its exiting water reporting system to include monitoring to better account for water losses within the system.
6. Evaluate the temporary or permanent installation of down-hole groundwater level monitoring equipment in Creede Well Nos. 1 and 2. The purpose of the monitoring equipment is to monitor aquifer drawdown and recovery and trends in groundwater levels over time.
7. Ongoing protection of Creede's augmentation replacement sources for future operation of the augmentation plan.

6.0 IMPLEMENTATION AND MONITORING PLAN

6.1 Implementation Plan

The plan for implementation of the selected water efficiency measures identifies key steps for implementation, the associated costs, and the responsible parties for implementation. The preliminary estimated costs for each activity are available in Appendix **A**. The anticipated total cost of implementing metering in Creede is approximately $1,428,000 (City of Creede WaterSMART Application, 2024). It is assumed that funding will come from multiple sources. Creede has applied for a WaterSmart Grant to cover roughly half of the cost. Creede will provide the matching funds for this project through a combination of their Capital Improvement Fund and a grant through DOLA. Creede staff would take responsibility for implementation of the plan, including implementation and monitoring of data.

The proposed Capital Improvement Plan is recommended for completion early in the planning period (see Appendix **A**) to refine cost estimation and integrate the costs of selected measures into Creede's existing budget. Installation of measurement devices (both water metering system and down-hole monitoring at the wells) should be prioritized before any further activities are considered.

Installation of the water meters could be completed within 180 days of the executed contract with the construction contractor according to the WaterSMART Grant Creede applied for in 2024 (City of Creede WaterSMART Application, 2024). A water savings of 185.8 AF annually is estimated as a direct result of this project, Adding AMI at each customer location will provide an accurate assessment of and will encourage responsible water usage.

If funded, Creede anticipates beginning the installation of meters before December 2026. To achieve this, Creede anticipates completing the following tasks:

1. Selection of a meter product to be installed.

2. Coordination of purchase and delivery of meters to Creede.
3. Development of an installation plan for accounts.
4. Installation of meters for Creede accounts.
5. Implementation of a metered rate system for water pricing and communication to customers of the new rate system.

Updates to the billing system and water rates will be made after the implementation of the metering system.

6.2 Monitoring Plan

The monitoring plan will adapt and adjust over the course of plan implementation depending on changing conditions to capture the effectiveness of the water selected water efficiency activities, and to properly monitor water efficiency activities. Data collected using the monitoring plan will help inform future rate studies for Creede.

6.2.1 Data Monitoring

Creede should monitor water demand using metered water use records to inform future monitoring activities upon implementation of metering. Additional monitoring includes relevant weather data, annual population estimates, and any other data that is deemed necessary to monitor water use trends in Creede. Another key aspect of the monitoring plan is monitoring Creede's groundwater supply. Creede should install temporary or permanent down-hole monitoring equipment in Creede Well Nos. 1 and 2 to monitor trends in groundwater levels over time.

Creede will be able to more accurately calculate system losses using the metering data (as end-point use) and pumping data (as start-point use). This will help inform future water efficiency activities.

6.2.2 Additional Monitoring Considerations

Creede should periodically consider the following aspects for each water efficiency activity in addition to collecting, maintaining, and tracking water use and supply data:

- Actual Water Savings Realized.
- Public Feedback.
- Any Significant Changes Relevant to the Water Efficiency Activities.
- Potential Improvements for Increased Efficiency.
- Lessons Learned.

6.2.3 Evaluation and Communication of Monitoring Data

Evaluation and communication of the monitoring data to decision makers, along with recommendations on how to improve the effectiveness of each activity, should be an ongoing process that occurs at least every two years. The more frequently this evaluation and communication occurs, the less effort will be required to effectively utilize the monitoring data and when updating the WEP.

6.2.4 Monitoring of Water Savings

Estimation of water savings for this WEP should be conducted on a per meter basis by comparing current demands with historical water demands. Depending on timing of implementation of water efficiency activities, per meter savings may be estimated for individual water efficiency activities, or for the water efficiency activities that are overlapping.

Once all water efficiency activities have been implemented, total per-meter water savings may be estimated. Additional factors should be considered that may influence metered water demands, such as drought, water use restrictions, or interruptions in service, when estimating per-meter water savings.

Once Creede identifies a preferred tiered water utility rate structure and develops a better understanding of customers' metered water consumption, the City will be able to assess potential changes to its water utility revenue.

6.2.5 Data Organization and Adaptive Adjustments

Thorough and well-organized documentation of monitoring data and the associated decisions made to adapt water efficiency activities can play a key role in the success of the WEP. Continuing to maintain thorough and well-organized data and documentation can provide current and future decision makers with a clear idea of which activities were most effective for water savings, which aspects of WEP implementation could use improvement, and can help guide and inform future WEP updates.

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

7.1 Adoption of New Policy

This section will be finalized after the public review and comment period is complete.

7.2 Public Review Process

This WEP was made available for public review and comment between *MONTH DAY* and *MONTH* DAY. A draft of the WEP was made available on *PLATFORM FOR ACCESS (i.e., website)*, and the public were encouraged to submit comments via email to *DESIGNATED STAFF.*

This section will be finalized after the public review and comment period is complete.

7.3 Local Adoption and State Approval Processes

This section will be finalized after the public review and comment period is complete.

7.4 Periodic Review and Update

A review and update of the WEP should be considered based on changes in water use patterns and following implementation of the water efficiency activities presented herein. A formal review and update to the WEP is anticipated to begin in *MONTH* of *YEAR* in accordance with CWCB recommendations.

8.0 REFERENCES

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APPENDICES

Appendix A –

Proposed Water Efficiency Activities Screening and Selections

Appendix A.1
Step 1: Identification and Screening of Foundational Activities
Water Efficiency Plan
City of Creede

Water Efficiency Activities for Screening	State Statute Requirement	Identification		Qualitative Screening					Carry to Evaluation	Reason for Elimination
		Existing or Potential Activity	Targeted Customer Category	Provides or Improves Water Use Data Collection and Monitoring	Provides Operational Cost Information	Helps to Decrease System Losses	Public Acceptance or Public Education	Additional Pro/Cons (i.e. financial feasible, measurable, appropriate for City's current system)		
Metering										
Phased Metering Throughout System		**P**	R/C	X	X	X	X	City submitted a WaterSMART grant application in 2024 to secure grant funding for meters.	Yes	
Automatic Meter Reading Installation and Operators		**P**	R/C	X	X	X	X		Yes	
Submetering for Large Users (Indoor and Outdoor)										
Meter Replacement Program		**P**	C	X	X	X	X	May replace existing meters for consistency with new meter program.	Yes	
Meter Upgrades										
Identify Unmetered / Unbilled Treated Water Uses										
Data Collection - Monitoring and Verification										
Frequency of Meter Reading		**E**	R/C	X	X	X	X	Existing meters currently read once per month, and City anticipates continuing this practice with new meters.	No	Will continue to maintain monthly reading / billing.
Tracking Water Use by Customer Type		**P**	R/C	X	X	X	X		No	Would like to install meters and get metering program operational and then follow up on additional measures once metering program is in place.
Upgrade Billing System to Track Use by Sufficient Customer Types		**P**	R/C	X	X	X	X		No	
Tracking Water Use for Large Customers										
Area of Irrigated Land in Service Area (e.g. acres)		**E**	C	X	X	X	X	Public parks are already managed and irrigated by City staff using water efficient practices.	No	Not a significant amount of irrigated private lands in service area. City staff manage irrigation of parks.
Groundwater Supply Monitoring		**P**	R/C		X		X	Monitor groundwater drawdown and recovery and static water level trends in the City's existing supply wells to support groundwater yield evaluation.	Yes	
Water Use Efficiency Oriented Rates and Tap Fees										
Volumetric Billing		**P**	R/C	X	X	X	X	Will need to be a component of the new metering and billing program	Yes	
Water Rate Adjustments		**E / P**	R/C	X	X	X	X	Required as part of implementing the metering program and revenue needed to provide service	Yes	
Frequency of Billing		**E**	R/C	X	X	X	X	Already consistent at once a month	No	Already billing once a month.
Inclining/Tiered Rates		**P**	R/C			X	X	Yes likely in the adopted rate schedule	Yes	
Water Budgets										
Tap Fees with Water Use Efficiency Incentives										
Rate Study		**E / P**	R/C					Rate Study completed November 2024, based on EQR rate adjustment. Need rate study for meter one installed.	No	Already completed new EQR based Rate study in 2024.
System Water Loss Management and Control										
System Water Audit		**P**	R/C	X	X	X	X		Yes	City would like to install meters and get metering program operational and then follow up on additional measures to manage and track overall system losses once metering program is in place.
Control of Apparent Losses (with Measuring on system infrastructure)		**P**	R/C	X	X	X	X		No	
Leak Detection and Repair		**P**	R/C	X	X	X	X		No	
Water Line Replacement Program		**P**	R/C			X	X		No	
Water Service Meter Program		**P**	R/C	X	X	X	X		No	
Planning										
Integrated Water Resources Plans										
Master Plans/Water Supply Plans		**P**	R/C		X		X	In development of larger master planning efforts, the City would like water supply and associated ordinances and policies to be evaluated.	No	Next 5 year or future?
Capital Improvement Plans		**P**	R/C		X		X	Inventory of appurtenances including pumps, valves, main, storage tank coatings, etc. and development of a repair replacement schedule.	Yes	Next 5 year or future?
Feasibility Studies		**P**	R/C		X		X	Assess feasibility of adding North Creede to the Town's water system, feasibility of serving Creede America 2.	No	Future?
Water Adequacy Report		**P**	R/C	X		X	X	Evaluate groundwater yield, evaluate replacement sources for augmentation plan	No	Future?
Staff										
Water Conservation Coordinator										

Appendix A.2
Step 2: Identification and Screening of Targeted Technical Assistance Incentives
Water Efficiency Plan
City of Creede

Water Efficiency Activities for Screening	State Statute Requirement	Identification					Qualitative Screening					Carry to Evaluation	Reason for Elimination
		Existing or Potential Activity	SWSI Framework Levels: Level 1 Municipal Uses	SWSI Framework Levels: Level 2 Customers with the Largest Water Use	SWSI Framework Levels: Level 3 Customer Type(s) in Service Area	Targeted Customer Category	Provides or Improves Water Use Data Collection and Monitoring	Provides Operational Cost Information	Helps to Decrease System Losses	Public Acceptance or Public Education	Additional Pro/Cons (i.e. financial feasible, measurable, appropriate for City's current system)		
Installation of Water Efficient Fixtures and Appliances													
Indoor Audits		P										N	Currently, the City of Creede does not have the resources or staff required to implement these activities. The city is willing to explore these activities in the future. After installation of a metering system has been completed, the City will have a better understanding of each activity's effectiveness. The City will re-screen these activities during the next Water Efficiency Plan update, after meters have been installed.
Toilet Retrofits												N	
Urinal Retrofits												N	
Showerhead Retrofits												N	
Faucet Retrofits (e.g. aerator installation)												N	
Water Efficient Washing Machines												N	
Water Efficient Dishwashers												N	
Efficient Swamp Cooler and Air Conditioning Use												N	
Low Water Use Landscapes													
Drought Resistant Vegetation		P										N	Currently, the City of Creede does not have the resources or staff required to implement these activities. The city is willing to explore these activities in the future. After installation of a metering system has been completed, the City will have a better understanding of each activity's effectiveness. The City will re-screen these activities during the next Water Efficiency Plan update, after meters have been installed.
Removal of Phreatophytes												N	
Irrigation Efficiency Evaluations/Outdoor Water Audits												N	
Outdoor Irrigation Controllers												N	
Irrigation Scheduling/Timing												N	
Rain Sensors												N	
Residential Outdoor Meter Installations												N	
Xeriscaping												N	
Other Low Water Use Landscapes												N	
Irrigation Equipment Retrofits												N	
Water Efficient Industrial and Commercial Water-Using Processes													
Specialized Nonresidential Surveys, Audits, and Equipment Efficiency Improvements		P										N	Currently, the City of Creede does not have the resources or staff required to implement these activities. The city is willing to explore these activities in the future. After installation of a metering system has been completed, the City will have a better understanding of each activity's effectiveness. The City will re-screen these activities during the next Water Efficiency Plan update, after meters have been installed.
Commercial Indoor Fixture and Appliance Rebates/Retrofits												N	
Cooling Equipment Efficiency												N	
Restaurant Equipment												N	
Incentives													
Toilet Rebates		P										N	Currently, the City of Creede does not have the resources or staff required to implement these activities. The city is willing to explore these activities in the future. After installation of a metering system has been completed, the City will have a better understanding of each activity's effectiveness. The City will re-screen these activities during the next Water Efficiency Plan update, after meters have been installed.
Urinal Rebates												N	
Showerhead Rebates												N	
Water Efficient Faucet or Aerator Rebates												N	
Water Efficient Washing Machine Rebates												N	
Water Efficient Dishwasher Rebates												N	
Efficient Irrigation Equipment Rebates												N	
Landscape Water Budgets Information and Customer Feedback												N	
Turf Replacement Programs/Xeriscaping Incentives												N	
Give-Always												N	

Appendix A.3
Step 3: Identification and Screening of Ordinances and Regulations
Water Efficiency Plan
City of Creede

Water Efficiency Activities for Screening	State Statute Requirement	Identification					Qualitative Screening					Carry to Evaluation	Reason for Elimination
		Existing or Potential Activity	SWSI Framework Levels: Level 1 Customer Type(s) within the Existing Service Area	SWSI Framework Levels: Level 2 New Development	SWSI Framework Levels: Level 3 Point of Sales on Existing Building Stock	Targeted Customer Category	Provides or Improves Water Use Data Collection and Monitoring	Provides Operational Cost Information	Helps to Decrease System Losses	Public Acceptance or Public Education	Additional Pro/Cons (i.e. financial feasible, measurable, appropriate for City's current system)		
General Water Use Regulations													
Waste Water Ordinance		P										N	Currently, the City of Creede does not have the resources or staff required to implement these activities. The city is willing to explore these activities in the future. After installation of a metering system has been completed, the City will have a better understanding of each activity's effectiveness. The City will re-screen these activities during the next Water Efficiency Plan update, after meters have been installed.
Time of Day Watering Restriction												N	
Day of Week Watering Restriction												N	
Water Overspray Limitations												N	
Landscape Design/Installation Rules and Regulations													
Rules and Regulations for Landscape Design/Installation		P										N	Currently, the City of Creede does not have the resources or staff required to implement these activities. The city is willing to explore these activities in the future. After installation of a metering system has been completed, the City will have a better understanding of each activity's effectiveness. The City will re-screen these activities during the next Water Efficiency Plan update, after meters have been installed.
Landscaper Training and Certification												N	
Soil Amendment Requirements												N	
Turf Restrictions												N	
Irrigation Equipment Requirements												N	
Outdoor Water Audits/Irrigation Efficiency Regulations												N	
Outdoor Green Building Construction												N	
Indoor and Commercial Regulations													
High Efficiency Fixture and Appliance Replacement		P										N	Currently, the City of Creede does not have the resources or staff required to implement these activities. The city is willing to explore these activities in the future. After installation of a metering system has been completed, the City will have a better understanding of each activity's effectiveness. The City will re-screen these activities during the next Water Efficiency Plan update, after meters have been installed.
Commercial Cooling and Process Water Requirements												N	
Green Building Construction												N	
Indoor Plumbing Requirements												N	
City Facility Requirements												N	
Required Indoor Residential Audits												N	
Required Indoor Commercial Audits												N	
Commercial Water Wise Use Regulations (Car Washes, Restaurants, etc.)												N	

Appendix A.4
Step 4: Identification and Screening of Education Activities
Water Efficiency Plan
City of Creede

Water Efficiency Activities for Screening	Identification					Qualitative Screening					Carry to Evaluation	Reason for Elimination
	Existing or Potential Activity	SWSI Framework Levels: Level 1 One-Way	Level 2 One-Way with Feedback	Level 3 Two-Way Communication	Targeted Customer Category	Provides or Improves Water Use Data Collection and Monitoring	Provides Operational Cost Information	Helps to Decrease System Losses	Public Acceptance or Public Education	Additional Pro/Cons (i.e. financial feasible, measurable, appropriate for City's current system)		
Customer Education												
Bill Stuffers	**E**		X		R			X	X		N	Already provide regular information to customers along with billings
Mass Mailings	**E**		X		R			X	X		N	Provide annual consumer confidence reports to customers.
Customer Surveys	**P**										N	Have done customer surveys in the past for lead and copper; would need to consider reinstating survey program after meter installation.
Newsletter	**P**										N	Currently, the City of Creede does not have the resources or staff required to implement these activities. The city is willing to explore these activities in the future. After installation of a metering system has been completed, the City will have a better understanding of each activity's effectiveness. The City will re-screen these activities during the next Water Efficiency Plan update, after meters have been installed.
Newspaper Articles											N	
Web Pages											N	
Water Fairs											N	
K-12 Teacher and Classroom Education Programs											N	
Message Development/Campaign											N	
Interactive Websites											N	
Social Networking											N	
Focus Groups											N	
Citizen Advisory Boards											N	
Technical Assistance												
Customer Water Use Workshops	**P**										N	Currently, the City of Creede does not have the resources or staff required to implement these activities. The city is willing to explore these activities in the future. After installation of a metering system has been completed, the City will have a better understanding of each activity's effectiveness. The City will re-screen these activities during the next Water Efficiency Plan update, after meters have been installed.
Landscape Design and Maintenance Workshops											N	
Xeriscaping Demonstration Garden											N	
Water Conservation Expert Available											N	

Appendix A.5
Step 5: Evaluation and Selection of Proposed Efficiency Activities
Water Efficiency Plan
City of Creede

Water Efficiency Activities for Evaluation	Information on the Activities	Existing or Potential Activity	Targeted Customer Category	Review of Qualitative Screening				Evaluation								Final Selection		Schedule	
				Qualitative Goals				Projected Water Savings		Projected Implementation Costs	Quantitative Goals				Notes on Additional Pros/Cons to Consider	Selected for Implementation	If Eliminated, Reason Why Eliminated	Anticipated Start Date	Anticipated Completion Date
				Provides or Improves Water Use Data Collection and Monitoring	Provides Operational Cost Information	Helps to Decrease System Losses	Promotes Public Acceptance or Public Education	Total Water Savings (gallons)	Average Annual Water Savings (gallons)		Improved ability to track water use through main system infrastructure	Provides data on quantity of water processed by system	Reduction in system losses as meter data becomes available	Public approval of funding allocations to activity					
Metering																			
Phase Metering Throughout System	Selection of a meter product to be installed, coordination of purchase and delivery of meters to Creede, development of an installation plan, and installation of meters into the water system.	Potential	R/C	X	X	X		60,546,374	60,546,374	$ 1,511,491	X	X	X	N/A	Estimated water savings and costs directly from City's 2024 WaterSMART Grant application.	Y			
Automatic Meter Reading Installation and Operators																			
Meter Replacement Program																			
Data Collection - Monitoring and Verification																			
Groundwater Supply Monitoring	Temporary or permanent down-hole groundwater level monitoring equipment for Creede Well No. 1 and Creede Well No. 2 to monitor trends in groundwater levels over time.	Potential	R/C	X		X						X				Y			
Water Use Efficiency Oriented Rates and Tap Fees																			
Volumetric Billing	Evaluate feasibility of proposing and assessing improvements to the rate structure that promote water efficiency while remaining fair, covering water system costs, and holding people accountable for their water usage. City would like to implement volumetric billing, water rate adjustments, and a tiered rate system after metering has been implemented.	Potential	R/C		X		X				X	X					City would like to evaluate volumetric billing, water rate adjustments, and a tiered rate system after metering has been implemented.		
Water Rate Adjustments		Existing/ Potential	R/C																
Inclining/Tiered Rates		Potential	R/C																
System Water Loss Management and Control																			
System Water Audit	Evaluate apparent and real losses, leaks, unauthorized consumption, and potential data inaccuracies. Opportunity to also develop a monitoring and reporting system for the collection of water use data.	Potential	R/C	X	X	X						X	X				City would like to evaluate system-wide auditing after metering system has been implemented.		
Planning																			
Capital Improvement Plans	Includes developing an inventory of pumps, valves, water main, and storage tanks and creation of a repair/replacement schedule. Includes evaluating the development of a process to monitor leak detection equipment.	Potential	R/C		X	X							X	X		Y			
Staff																			
Installation of Water Efficient Fixtures and Appliances																			
Low Water Use Landscapes																			
Water Efficient Industrial and Commercial Water-Using Processes																			
Incentives																			
General Water Use Regulations																			
Landscape Design/Installation Rules and Regulations																			
Indoor and Commercial Regulations																			
Customer Education																			
Technical Assistance																			

Appendix A.6
Step 6: Cost and Water Savings Calculations for Proposed Efficiency Activities
Water Efficiency Plan
City of Creede

Water Efficiency Activities for Evaluation	Planning Period (Years from Start)	Total Cost					Total Water Savings*			Cost per Thousand Gallons Saved ($)	Notes on Measure	Sources
		Quantity (#)	One Time Labor/ Material ($)	Average Annual Staff Labor ($ = # hrs. x $35/hr.)	Annual Materials ($)	Total Cost in Planning Period ($)	Gallons saved per unit	Annual Gallons Saved	Total Gallons Saved			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Metering												
Phase Metering Throughout System Automatic Meter Reading Installation and Operators Meter Replacement Program	1 to 2 years	349	$ 4,090	$ 42,000		$ 1,511,491	173,485	60,546,374	121,092,749	$ 12.48	Estimated costs and water savings for City's water meter program provided in 2024 City of Creede WaterSMART Grant Application. Annual labor and materials include AMI metering program costs, labor, vehicle, maintenance, and billing system costs. Assumed $10 per meter per month (ARCADIS, 2020).	See Column (12)
Data Collection - Monitoring and Verification												
Groundwater Monitoring	2 to 7 years	2	$ 5,000	N/A	N/A	$ 10,000	N/A	N/A	N/A	N/A	Intent of the groundwater monitoring program is to inform City on the long term physical reliability of its water supply. Water savings are not anticipated as a direct results of activity.	
Water Use Efficiency Oriented Rates and Tap Fees												
Volumetric Billing Water Rate Adjustments Inclining/Tiered Rates	1 year	1	$ 25,000	N/A	N/A	$ 25,000.00	11,258,143	11,258,143	11,258,143	$ 2.22	Assume initial conceptual budget of $25K to develop a tiered structure rate study. Assumes a 10 percent reduction in annual demand based on a reported range of 10 to 30 percent.	1
System Water Loss Management and Control												
System Water Audit	1 year	1	N/A	$ 7,000	N/A	$ 35,000.00	2,814,536	2,814,536	2,814,536	$ 12.44	Assume City staff work 16 hours per month on maintaining water audit analysis. Assumes a 2.5 percent reduction in water use based on identification of system losses, and breaks within the system. Up to 10 percent savings estimated for this activity.	1, 2
Planning												
Capital Improvement Plan	4 to 7 years	1	$ 30,000.00	N/A	N/A	$ 30,000.00	2,814,536	2,814,536	11,258,143	$ 2.66	Assume initial conceptual budget of $30K to develop a Capital Improvement Plan. Assumes a 2.5 percent reduction in water use based regular maintenance. Up to 10 percent savings estimated for this activity.	1, 2
					Total Cost:	**$1,586,491.00**		**Total Water Saved:**	**146,423,569**	**gallons**		
					Annual Cost:	**$1,586,491.00**		**Annual Savings:**	**77,433,588**	**gallons per year**		

Notes:
(1) Only measures selected for further evaluation are included here (see appendices A-D).
(2) Planning period for implementation of measure: WEP Renewal - 7 years.
(3) Total number of units to be implemented over the planning period for each measure.
(4) Capital costs to implement the program such as purchase of equipment. Labor required to manage the program, install equipment or otherwise carry out the measure is also included. Costs subject to change upon further study and implementation
(5) Annual City staff labor costs for maintaining the equipment or program. Costs subject to change upon further study and implementation
(6) Annual material costs for maintaining the equipment or program. If installation of equipment is annually completed by contractor, the contractor costs are included in this column. Costs subject to change upon further study and implementation
(7) Equals (Column 2 x (Column 5 + Column 6) + (Column 3 x (Column 4 + Column 5))).
(8) May be based on savings per unit x no. of units or may be a percentage of water savings over the entire system (see notes in Column 12).
(9) Equals water saved on an annual basis by the measure.
(10) Equals Column 8 X Column 9 x Column 2.
(11) Equals Column 7 / Column 10. Costs subject to change upon further study and implementation
(12) Notes on implementation of the measures. Notes on the basis of assumptions for the calculations used in this sheet.
(13) Sources to accommodate the assumptions for cost and water savings.
1) The Colorado Waterwise Guidebook of Best Practices for Municipal Water Conservation in Colorado (Colorado Water Conservation Board): https://coloradowaterwise.org/
2) United States Environmental Protection Agency (EPA) water sense website: https://www.epa.gov/watersense/best-management-practices

Appendix A.7
Step 7: Proposed Implementation and Monitoring Plan
Water Efficiency Plan
City of Creede

Selected Water Efficiency Activities	Period of Implementation	Implementation Actions	Milestone Deadlines	Total Budget	Entity/Staff Responsible for Implementation	Entity/Staff Responsible for Data Collection	Schedule of Data Collection	Coordination and Public Involvement	Additional Comments
Phase Metering Throughout System Automatic Meter Reading Installation and Operators Meter Replacement Program	Years 5 to 6	Secure grant funding for City's water metering project, solicit bids and hire contractor to install meters, and complete meter installation.	1) Secure grant funding 2) Design and bidding 3) Contract award 4) Contract completion	$ 1,511,491	Public Works Director / City Manager	Public Works Staff	Collect meter readings at least monthly.	Will require public notice through bill stuffers.	Implementation of this activity is subject to receiving funding for project.
Groundwater Monitoring	Years 1 to 5	Install down-hole monitoring equipment for Creede Well No. 1 and Creede Well No. 2 and monitor groundwater levels.	1) Secure funding	$ 10,000	Public Work Director	Public Works Staff	Continuous monitoring to record drawdown and recovery of wells. Collect and summarize data at least monthly after installation.	N/A	
Volumetric Billing Water Rate Adjustments Inclining/Tiered Rates	Years 6 to 7	Evaluate feasibility of proposing and assessing improvements to the rate structure. City would like to implement volumetric billing, water rate adjustments, and a tiered rate system after metering has been implemented.	Timing is subject to installation of water meters.	$ 25,000	Public Work Director / City Manager	N/A. Rate Study to be performed by qualified consultant.	Use first years worth of meter data to inform rate study.	Implementation of new rate structure will require board approval and will require public notice through bill stuffers.	Implementation of this activity is subject to receiving funding for the installation of water meters.
System Water Audit	Years 6 to 7	Evaluate apparent and real losses, leaks, unauthorized consumption, and potential data inaccuracies.	Timing is subject to installation of water meters.	$ 35,000	Public Works Director	Public Works Staff	1 to 2 years post meter installation	N/A	Implementation of this activity is subject to receiving funding for the installation of water meters.
Capital Improvement Plan	Years 1 to 3	Develop an inventory of pumps, valves, water main, and storage tanks and creation of a repair/replacement schedule.	1) Secure funding	$ 30,000	Public Works Director	Public Works Staff.	Assume plan developed by qualified consultant with input from Public Works Staff.	N/A	

Total Cost for Implementation of All Proposed Measures: $1,611,491

Deadlines are based on time from the approval of the Water Efficiency Plan and or when funding is available. For example '1 year' is 1 year from the time the plan is approved.
Data collection is only for system-wide meters and the leak detection study. Future updates to the plan may consider more extensive monitoring once system baseline data is available.
For cost estimate basis, see Cost and Water Savings Calculations for Efficiency Measures.

Appendix B –

Public Notice of Draft Water Efficiency Plan for Public Review and Public Comment

Appendix C –

Public Comments Received and Resolution

ATTACHMENTS

Attachment 1 –

Well Permits and Well Construction and Pump Installation Information

Form No.
GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES

818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

736

WELL PERMIT NUMBER 46925 - F -

DIV. 3 CNTY. 40 WD 20 DES. BASIN MD

Lot: Block: Filing: Subdiv:

APPLICANT

CREEDE CITY OF
BOX 457
CREEDE CO 81130-

(719)658-2276

APPROVED WELL LOCATION
MINERAL COUNTY

SE 1/4 SW 1/4 Section 6
Twp 41 N RANGE 1 E NM P.M.

DISTANCES FROM SECTION LINES

870 Ft. from South Section Line
1360 Ft. from West Section Line

AMENDED PERMIT TO USE AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of the permit does not assure the applicant that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.

2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.

3) Approved pursuant to CRS 37-90-137(2) and the decree granted for well no. 1 in case no. 94CW031, Division 3 Water Court. The operation of this well is subject to the terms and conditions of said decree.

4) The maximum pumping rate shall not exceed 494 GPM. The simultaneous maximum pumping rates of this well and well no. 46924-F shall not exceed 494 GPM.

5) The combined annual amount of ground water to be appropriated by this well and well no. 46924-F shall not exceed 470 acre-feet.

6) The use of ground water from this well is limited to municipal purposes.

7) The owner shall mark the well in a conspicuous place with well permit number(s), name of the aquifer, and court case number(s) as appropriate. The owner shall take necessary means and precautions to preserve these markings.

8) Totalizing flow meters must be installed on this well and well no. 46924-F, or some other measuring system acceptable to the Division Engineer, and maintained in good working order. Permanent records of all diversions must be maintained by the well owner (recorded at least annually) and submitted to the Division Engineer upon request.

9) This well is subject to administration by the Division Engineer in accordance with applicable decrees, statutes, rules, and regulations.

10) Approved to use an existing well constructed under monitoring hole notice **MH-22644**, which was acknowledged on April 12, 1994.

APPROVED
HCF

Hal D. Simpson
State Engineer

Dick Wolfe
By

Receipt No. 0401886B

DATE ISSUED JUL 24, 1996

EXPIRATION DATE JUL 24, 1997

FORM NO. GWS-32 11/90

PUMP INSTALLATION AND TEST REPORT

STATE OF COLORADO, OFFICE OF THE STATE ENGINEER

For Office Use only

RECEIVED

JUN 30 1997

WATER RESOURCES STATE ENGINEER COLO.

1. WELL PERMIT NUMBER 046925-F

2. OWNER NAME(S) City of Creede
Mailing Address Box 457
City, St. Zip Creede, Colo. 81130
Phone (719) 658-2276

3. WELL LOCATION AS DRILLED: ____ 1/4 ____ 1/4, Sec. ____ Twp. ____ , Range ____ .
DISTANCES FROM SEC. LINES:
____ ft. from ____ (north or south) Sec. line. and ____ ft. from ____ (east or west) Sec. line.
SUBDIVISION: ____ LOT ____ BLOCK ____ FILING(UNIT) ____
STREET ADDRESS AT WELL LOCATION: ____

4. PUMP DATA: Type Submersible Installation Completed 7/5/95
Pump Manufacturer Gould Pump Model No. 8RJLC
Design GPM 450/500 at RPM 3500, HP 7.5, Volts 460, Full Load Amps 11.9
Pump ~~Intake~~ Depth 58 Feet, ~~Drop/Column Pipe Size~~ 6 ~~Inches, Kind~~ Steel

ADDITIONAL INFORMATION FOR PUMPS GREATER THAT 50 GPM:
TURBINE DRIVER TYPE: [X] Electric [ ] Engine [ ] Other ____
Design Head 89 feet, Number of Stages 1, Shaft size 1 3/16 inches.

5. OTHER EQUIPMENT:
Airline Installed [ ] Yes [ ] No, Orifice Depth ft. ____. Monitor Tube Installed [ ] Yes [ ] No, Depth ft. ____
Flow Meter Mfg. ____ Meter Serial No. ____
Meter Readout [ ] Gallons, [ ] Thousand Gallons, [ ] Acre feet, [ ] Beginning Reading ____

6. TEST DATA: [ ] Check box if Test data is submitted on Supplemental Form.

Total Well Depth	105	Date	6/20/97
Static Level	33	Time	10:00 am
Date Measured	6/20/97	Rate (GPM)	488
		Pumping Lvl.	38'

7. DISINFECTION: Type HTH Amt. Used 4oz

8. Water Quality analysis available. [ ] Yes [ ] No

9. Remarks ____

10. I have read the statements made herein and know the contents thereof, and that they are true to my knowledge. [Pursuant to Section 24-4-104 (13)(a) C.R.S., the making of false statements herein constitutes perjury in the second degree and is punishable as a class 1 misdemeanor.]

CONTRACTOR Ken C. Burk/Burk Drilling Inc. Phone (719) 852-4845 Lic. No. 1137.
Mailing Address 1499 North Hwy 285 Monte Vista, Colo. 81144

Name/Title (Please type or print)	Signature	Date
	Ken C. Burk	6-20-97

FORM NO. GWS-31 10/94

WELL CONSTRUCTION AND TEST REPORT
STATE OF COLORADO, OFFICE OF THE STATE ENGINEER

For Office Use only

RECEIVED
JAN 2 8 1997
WATER RESOURCES
STATE ENGINEER
COLO.

1. WELL PERMIT NUMBER 046925-F

2. OWNER NAME(S) City of Creede
Mailing Address P.O. Box 457
City, St. Zip Creede Colorado 81130
Phone (719) 658-2276

3. WELL LOCATION AS DRILLED: SE 1/4 SW 1/4; Sec. 6 Twp. 41 N, Range 1 E
DISTANCES FROM SEC. LINES:
1980 ft. from South (north or south) Sec. line. and 1000 ft. from West (east or west) Sec. line. OR
SUBDIVISION: LOT BLOCK FILING(UNIT)
STREET ADDRESS AT WELL LOCATION:

4. GROUND SURFACE ELEVATION ft. DRILLING METHOD Air Rotary Casing Advance
DATE COMPLETED 12-1-94 TOTAL DEPTH 122 ft. DEPTH COMPLETED 120 ft.

5. GEOLOGIC LOG:

Depth	Description of Material (Type, Size, Color, Water Location)
0-2	Sandy Top Soil
2-122	Fine sand to large boulders, Materials are Rio Grande Alluvium. Pebbles & cobbles are rounded.
122'	Refusal- Extremely large boulder or bedrock encountered which could not be penetrated

6. HOLE DIAM.

(in.)	From (ft)	To (ft)
12.75	0	122
16"	0	25

7. PLAIN CASING

OD (in)	Kind	Wall Size	From(ft)	To(ft)
12.75	Steel	.375	0	122
8.625	Steel	.322	59	62
8.625	Steel	.322	77	85
8.625	Steel	.322	115	120

PERF. CASING: Screen Slot Size: .125/.080

8.625	Stainless	N/A	62	77
8.625	Stainless	N/A	85	105
8.625	Stainless	N/A	105	115

8. FILTER PACK:
Material N/A
Size
Interval

9. PACKER PLACEMENT:
Type K Packer
Depth 60'

10. GROUTING RECORD:

Material	Amount	Density	Interval	Placement
Bent	5	10.4	18.25	Gravity
Cement	.25 yd	15	10-11	Gravity

REMARKS: Screens above 105' are .125"
Screen below 105' is .080".
Bentonite Pellets from 18-25 BGS.
See attached diagram.

11. DISINFECTION: Type Chlorine 10 % Amt. Used 25 Gallons

12. WELL TEST DATA: ☐ Check box if Test Data is submitted on Form No. GWS 39 Supplemental Well Test.
TESTING METHOD Pump Test
Static Level 36 ft. Date/Time measured 5-8-94, 9 am, Production Rate 500 gpm.
Pumping level 42 ft. Date/Time measured 5-9-94, 9am, Test length (hrs.) 24 hrs
Remarks

13. I have read the statements made herein and know the contents thereof, and that they are true to my knowledge. [Pursuant to Section 24-4-104 (13)(a) C.R.S., the making of false statements herein constitutes perjury in the second degree and is punishable as a class 1 misdemeanor.]

CONTRACTOR Layne-Western Phone (303) 755-1281 Lic. No. 1200
Mailing Address 8301 E. Iliff Avenue, Denver, Colorado 80231

Name/Title (Please type or print)	Signature	Date
David A. Tormoehlen, District Manager	David A. T	1-24-97

COLORADO DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES
1313 SHERMAN ST., RM. 818, DENVER CO 80203
phone - info: (303) 866-3587 main: (303)866-3581

94 E

RECEIVED
JUN 07 1996
WATER RESOURCES
STATE ENGINEER
COLO.

GENERAL PURPOSE

Water Well Permit Application

(Please note: other forms are available for *specific* uses including - residential, livestock, monitoring/observ., gravel pits, *registration* of old wells)

Review instructions prior to completing form

Must be completed in black ink or typed

1. APPLICANT INFORMATION

Name of applicant: City of Creede

Mailing Address: P.O. Box 457

City: Creede | State: CO | Zip Code: 81130

Telephone number (include area code): 719 658-2276

2. TYPE OF APPLICATION (check applicable box(es))

- ☐ Construct new well
- ☐ Use existing well
- ☐ Replace existing well
- ☐ Change or Increase Use
- ☐ Change (source) Aquifer
- ☐ Reapplication (expired permit)
- ☒ Other: Replace monitoring well

3. REFER TO (if applicable):

Water court case #: 94CW031 | Permit #: Denied

Emergency Verbal #: -VE- | Monitoring hole acknowledgment #: MH- 22644

Well name or #: Creede Well No. 1

4. LOCATION OF WELL

County: Mineral (OK 6-27-96) | Quarter/quarter: SW ¼ | Quarter: SW ¼

Section: 6 | Township: 41N ☒ N ☐ S | Range: 1E ☒ E ☐ W | Principal Meridian: NMPM

Distance of well from section lines: 870 ft from ☐ N ☒ S (4-5-96) 1360 ft from ☐ E ☒ W

Well location address, if different from applicant address (if applicable):

For replacement wells only - distance and direction from old well to new well: feet direction

5. TRACT ON WHICH WELL WILL BE LOCATED

A. LEGAL DESCRIPTION (may be provided as an attachment):
Legal Description of pump house tract attached

B. STATE PARCEL ID# (optional):

C. # acres in tract | D. Owner

E. Will this be the only well on this tract?
☐ YES ☐ NO (if other wells are on this tract, see instructions)

6. USE OF WELL (please attach *detailed* description)

- ☒ INDUSTRIAL
- ☒ OTHER: Fire Protection
- ☒ COMMERCIAL
- Recreation and all other
- ☒ MUNICIPAL
- Beneficial Purposes
- ☒ IRRIGATION
- ☐ FEED LOT -- number of head :

7. WELL DATA

Maximum pumping rate: 494 gpm | Annual amount: N/A acre-feet

Total depth: 122 feet | Aquifer: Rio Grande

8. LAND ON WHICH GROUND WATER WILL BE USED

A. LEGAL DESCRIPTION (may be provided as an attachment):
The wells will be a public water supply for the City of Creede located in the S½ of Section 25 and the east ½ of Section 36, T42N,R1W,NMPM, Mineral County, Colorado
(If used for crop irrigation, attach scaled map that shows irrigated area.)

B. # acres: 275 | C. Owner: City of Creede

D. List any other wells or water rights used on this land:
Well Nos. 1 & 2 are used pursuant to augmentation plan in Case 94CW031

9. PROPOSED WELL DRILLER (optional)

Name: Layne Environmental Services, Inc | License number: 1200

10. SIGNATURE of applicant(s) or authorized agent

The making of false statements herein constitutes perjury in the second degree, which is punishable as a class 1 misdemeanor pursuant to C.R.S. 24-4-104(13)(a). I have read the statements herein, know the contents thereof, and state that they are true to my knowledge.

Must be original signature

Title: Mayor | Date: April 11, 1996

OPTIONAL INFORMATION

USGS map name | DWR map no. | Surface elev.

Office Use Only

Consumptive use limited to 113.1 AF

Combined pumping rate 4.1 cfs

PLOTTED MH-22644 4-12-94

CHECKS TRN401886 060796 120.00 DIV OF WATER RESOURCES

DIV 3 CO 40 WD 20 BA ____ MD ____

401886B USE(S)

Form GWS-45 (12/95)

Form No.
GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES

818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

EXST

WELL PERMIT NUMBER 61905 -F -
DIV. 3 WD 20 DES. BASIN MD

APPLICANT

CITY OF CREEDE
PO BOX 457
CREEDE, CO 81130-

(719) 658-2276

APPROVED WELL LOCATION
MINERAL COUNTY
SE 1/4 SW 1/4 Section 6
Township 41 N Range 1 E New Mex P.M.

DISTANCES FROM SECTION LINES
870 Ft. from South Section Line
1360 Ft. from West Section Line

UTM COORDINATES (NAD83)
Easting: Northing:

CHANGE/EXPANSION OF USE OF AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
3) Approved for the expansion and increase in use of an existing well, Creede Well no. 1, permit no. 46925-F, pursuant to CRS 37-90-137(2) on the condition that this well is operated in accordance with the San Luis Valley Water Conservancy District Augmentation Plan approved by the Division 3 Water Court in case no. 94CW62. If this well is not operated in accordance with the terms of said decree, it will be subject to administration including orders to cease diverting water under this permit.
4) This well is included in case no. 94CW62 under San Luis Valley Water Conservancy District Certificate no. 421-A.
5) The increase in use of ground water from this well approved under this permit is limited to the in-house needs and irrigation of up to 2,6000 square-feet per dwelling for 7 single family dwellings in Phase 1 of Creede Mesa Estates subdivision, Mineral County.
6) The increase in pumping rate hereby permitted is 6 gpm. The maximum pumping rate of this well under this permit and permit no. 46925-F, and the simultaneous maximum pumping rate of this well and Creede Well no. 2 (permit nos. 46924-F and 61906-F) shall not exceed 500 gpm.
7) The increase in average annual amount of water to be appropriated by this well under this permit is 3 acre-feet. The combined average annual amount of ground water to be appropriated by this well under this permit and permit no. 46925-F, and Creede Well no. 2 (permit nos. 46924-F and 61906-F), shall not exceed 473 acre-feet.
8) A metering method must be established for this well which is satisfactory to the Division Engineer.
9) The owner shall mark the well in a conspicuous place with well permit numbers and court case numbers as appropriate. The owner shall take necessary means and precautions to preserve these markings.
10) This well shall be located at least 600 feet from any existing well, completed in the same aquifer, that is not owned by the applicant.

APPROVED
KVH

Hal D. Simpson
State Engineer

Keith VanderHorst
By

Receipt No. 9302568A DATE ISSUED 10-29-2004 EXPIRATION DATE N/A

COLORADO DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES
1313 SHERMAN ST., RM 818, DENVER, CO 80203
phone – info: (303) 866-3587 main: (303) 866-3581
fax: (303) 866-3589 http://www.water.state.co.us

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WATER RESOURCES
STATE ENGINEER
COLO.

Form GWS-45 (1/2004)

GENERAL PURPOSE
Water Well Permit Application

Review instructions on reverse side prior to completing form.
The form must be completed in black ink.

1. Applicant Information

Name of applicant: City of Creede

Mailing address: PO Box 457

City: Creede | State: CO | Zip code: 81130

Telephone #: (719) 658-2276

2. Type Of Application (check applicable boxes)

- ☐ Construct new well
- ☐ Replace existing well
- ☐ Change source (aquifer)
- ☐ Other:
- ☒ Use existing well
- ☒ Change or increase use
- ☐ Reapplication (expired permit)

3. Refer To (if applicable)

Well permit #: 46925-F | Water Court case #: 94CW31 / 94CW62

Designated Basin Determination # | Well name or #: Creede Well No. 1

4. Location Of Proposed Well

County: Mineral | SE 1/4 of the SW 1/4

Section	Township	N or S	Range	E or W	Principal Meridian
6	41	☒ ☐	1	☒ ☐	NMPM

Distance of well from section lines (section lines are typically not property lines): 870 Ft. from ☐ N ☒ S | 1360 Ft. from ☐ E ☒ W

For replacement wells only – distance and direction from old well to new well: feet | direction

Well location address (if applicable)

Optional: GPS well location information in UTM format
Required settings for GPS units are as follows:

Format must be UTM
Zone must be 13
Units must be Meters
Datum must be NAD27 (CONUS)
Unit must be set to true north
Were points averaged? ☐ YES ☐ NO

Northing _____
Easting _____

5. Parcel On Which Well Will Be Located

A. Legal Description (may be provided as an attachment):

See Attached Exhibit A

B. # of acres in parcel: 0.39 | C. Owner: Mineral County

D. Will this be the only well on this parcel? ☐ YES ☒ NO (if no – list other wells): 46924-F

E. State Parcel ID# (optional): N/A

6. Use Of Well (check applicable boxes)

Attach a detailed description of uses applied for. SLVWCD Cert #538

- ☐ Industrial
- ☐ Other (describe):
- ☒ Municipal → See decrees of the City of Creede
- ☐ Irrigation
- ☐ Commercial 94CW31 + 02CW10

7. Well Data (proposed)

Maximum pumping rate: 494 decree + 6 add = 500 gpm | Annual amount to be withdrawn: 470 decreed + 3 aug = 473 acre-feet

Total depth: 120 feet | Aquifer: Alluvium

8. Land On Which Ground Water Will Be Used

Legal Description (may be provided as an attachment):

City of Creede

Creede Mesa Group, Phase 1

(If used for crop irrigation, attach a scaled map that shows irrigated area.)

A. # Acres | B. Owner: City of Creede, Individual owners

C. List any other wells or water rights used on this land: Well No. 46924-F, City of Creede Aug Plan 94CW31

9. Proposed Well Driller License #(optional): Existing

10. Signature Of Applicant(s) Or Authorized Agent

The making of false statements herein constitutes perjury in the second degree, which is punishable as a class 1 misdemeanor pursuant to C.R.S. 24-4-104 (13)(a). I have read the statements herein, know the contents thereof and state that they are true to my knowledge.

Sign here (Must be *original* signature): Clyde Dooley | Date: 7-1-04

Print name & title: Clyde Dooley

Office Use Only

USGS map name: Creede | DWR map no.: 94E | Surface elev.:

Receipt area only

9302568A

WE ✓
WR ✓
CWCB
TOPO
MYLAR
SB5

DIV 3 WD 20 BA ____ MD ____

FORM NO. GWS-32 11/90

PUMP INSTALLATION AND TEST REPORT

STATE OF COLORADO, OFFICE OF THE STATE ENGINEER

For Office Use only

RECEIVED

JUN 30 1997

WATER RESOURCES STATE ENGINEER COLO.

1. WELL PERMIT NUMBER 046925-F

2. OWNER NAME(S) City of Creede
Mailing Address Box 457
City, St. Zip Creede, Colo. 81130
Phone (719) 658-2276

3. WELL LOCATION AS DRILLED: ____ 1/4 ____ 1/4, Sec. ____ Twp. ____, Range ____
DISTANCES FROM SEC. LINES:
____ ft. from ____ (north or south) Sec. line. and ____ ft. from ____ (east or west) Sec. line.
SUBDIVISION: ____ LOT ____ BLOCK ____ FILING(UNIT) ____
STREET ADDRESS AT WELL LOCATION: ____

4. PUMP DATA: Type Submersible Installation Completed 7/5/95
Pump Manufacturer Gould Pump Model No. 8RJLC
Design GPM 450/500 at RPM 3500, HP 7.5, Volts 460, Full Load Amps 11.9
Pump Intake Depth 58 Feet, Drop/Column Pipe Size 6 inches, Kind Steel

ADDITIONAL INFORMATION FOR PUMPS GREATER THAT 50 GPM:
TURBINE DRIVER TYPE: [X] Electric [ ] Engine [ ] Other ____
Design Head 89 feet, Number of Stages 1, Shaft size 1 3/16 inches.

5. OTHER EQUIPMENT:
Airline Installed [ ] Yes [ ] No, Orifice Depth ft. ____. Monitor Tube Installed [ ] Yes [ ] No, Depth ft. ____
Flow Meter Mfg. ____ Meter Serial No. ____
Meter Readout [ ] Gallons, [ ] Thousand Gallons, [ ] Acre feet, [ ] Beginning Reading ____

6. TEST DATA: [ ] Check box if Test data is submitted on Supplemental Form.

Total Well Depth	105	Date	6/20/97
Static Level	33	Time	10:00 am
Date Measured	6/20/97	Rate (GPM)	488
		Pumping Lvl.	38'

7. DISINFECTION: Type HTH Amt. Used 4oz

8. Water Quality analysis available. [ ] Yes [ ] No

9. Remarks ____

10. I have read the statements made herein and know the contents thereof, and that they are true to my knowledge. [Pursuant to Section 24-4-104 (13)(a) C.R.S., the making of false statements herein constitutes perjury in the second degree and is punishable as a class 1 misdemeanor.]

CONTRACTOR Ken C. Burk/Burk Drilling Inc. Phone (719) 852-4845 Lic. No. 1137.
Mailing Address 1499 North Hwy 285 Monte Vista, Colo. 81144

Name/Title (Please type or print)	Signature	Date
	Ken C. Burk	6-20-97

Form No. GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES

618 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

736

WELL PERMIT NUMBER 46924 - F

DIV. 3 CNTY. 40 WD 20 DES. BASIN MD

Lot: Block: Filing: Subdiv:

APPLICANT

CREEDE CITY OF
BOX 457
CREEDE CO 81130-

(719)658-2276

APPROVED WELL LOCATION
MINERAL COUNTY

SE 1/4 SW 1/4 Section 6
Twp 41 N RANGE 1 E NM P.M.

DISTANCES FROM SECTION LINES
900 Ft. from South Section Line
1600 Ft. from West Section Line

AMENDED PERMIT TO USE AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of the permit does not assure the applicant that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.

2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.

3) Approved pursuant to CRS 37-90-137(2) and the decree granted for well no. 2 in case no. 94CW031, Division 3 Water Court. The operation of this well is subject to the terms and conditions of said decree.

4) The maximum pumping rate shall not exceed 494 GPM. The simultaneous maximum pumping rates of this well and well no. 46925-F shall not exceed 494 GPM.

5) The combined annual amount of ground water to be appropriated by this well and well no. 46925-F shall not exceed 470 acre-feet.

6) The use of ground water from this well is limited to municipal purposes.

7) The owner shall mark the well in a conspicuous place with well permit number(s), name of the aquifer, and court case number(s) as appropriate. The owner shall take necessary means and precautions to preserve these markings.

8) Totalizing flow meters must be installed on this well and well no. 46925-F, or some other measuring system acceptable to the Division Engineer, and maintained in good working order. Permanent records of all diversions must be maintained by the well owner (recorded at least annually) and submitted to the Division Engineer upon request.

9) This well is subject to administration by the Division Engineer in accordance with applicable decrees, statutes, rules, and regulations.

10) Approved to use an existing well constructed under monitoring hole notice **MH-25878**, which was acknowledged on June 7, 1995.

APPROVED
HCF

Hal D. Simpson
State Engineer

Dick Wolfe
By

Receipt No. 0401886A

DATE ISSUED JUL 24, 1996

EXPIRATION DATE JUL 24, 1997

FORM NO. GWS-32 11/90

PUMP INSTALLATION AND TEST REPORT

STATE OF COLORADO, OFFICE OF THE STATE ENGINEER

For Office Use only

RECEIVED

JUN 30 1997

WATER RESOURCES STATE ENGINEER COLO.

1. WELL PERMIT NUMBER 046924-F

2. OWNER NAME(S) City of Creede
Mailing Address Box 457
City, St. Zip Creede, Colo. 81130
Phone (719) 658-2276

3. WELL LOCATION AS DRILLED: SE 1/4 SW 1/4, Sec. 6 Twp. 41 N, Range 1 E
DISTANCES FROM SEC. LINES:
900 ft. from South (north or south) Sec. line. and 1600 ft. from West (east or west) Sec. line.
SUBDIVISION: LOT BLOCK FILING(UNIT)
STREET ADDRESS AT WELL LOCATION:

4. PUMP DATA: Type Submersible Installation Completed 10/10/95
Pump Manufacturer Gould Pump Model No. 8RJLC
Design GPM 450 at RPM 3500, HP 7.5, Volts 460 Full Load Amps 11.9
Pump Intake Depth 58 Feet, Drop/Column Pipe Size 6 Inches, Kind Steel

ADDITIONAL INFORMATION FOR PUMPS GREATER THAT 50 GPM:
TURBINE DRIVER TYPE: ☐ Electric ☐ Engine ☐ Other
Design Head 89 feet, Number of Stages 1, Shaft size 1 3/16 inches.

5. OTHER EQUIPMENT:
Airline Installed ☐ Yes ☐ No, Orifice Depth ft. , Monitor Tube Installed ☐ Yes ☐ No, Depth ft.
Flow Meter Mfg. Meter Serial No.
Meter Readout ☐ Gallons, ☐ Thousand Gallons, ☐ Acre feet, ☐ Beginning Reading

6. TEST DATA: ☒ Check box if Test data is submitted on Supplemental Form.

Total Well Depth	105'	Date	6/20/97
Static Level	33'	Time	10:00 a.m.
Date Measured	6/20/97	Rate (GPM)	490
		Pumping Lvl.	35'

7. DISINFECTION: Type HTH Amt. Used 4ozs.

8. Water Quality analysis available. ☐ Yes ☐ No

9. Remarks

10. I have read the statements made herein and know the contents thereof, and that they are true to my knowledge. [Pursuant to Section 24-4-104 (13)(a) C.R.S., the making of false statements herein constitutes perjury in the second degree and is punishable as a class 1 misdemeanor.]

CONTRACTOR Ken C. Burk/Burk Drilling Inc. Phone (719) 852-4845 Lic. No. 1137
Mailing Address 1499 North Hwy 285 Monte Vista, Colo. 81144

Name/Title (Please type or print)	Signature	Date
	Ken C. Burk	6-20-97

FORM NO. GWS-31 10/94

WELL CONSTRUCTION AND TEST REPORT
STATE OF COLORADO, OFFICE OF THE STATE ENGINEER

For Office Use only
RECEIVED
OCT 24 1996
WATER RES. STATE ENGINEER COLO.

1. **WELL PERMIT NUMBER** 046924-F

2. OWNER NAME(S) City of Creede
Mailing Address P.O. Box 457
City, St. Zip Creede, CO 81130
Phone (719) 658-2276

3. WELL LOCATION AS DRILLED: SE 1/4 SW 1/4, Sec. 6 Twp. 41 N, Range 1 E NM P.M.
DISTANCES FROM SEC. LINES:
900 ft. from South (north or south) Sec. line. and 1600 ft. from West (east or west) Sec. line. OR
SUBDIVISION: LOT BLOCK FILING(UNIT)
STREET ADDRESS AT WELL LOCATION:

4. GROUND SURFACE ELEVATION UKN ft. DRILLING METHOD Cable Tool
DATE COMPLETED 8-16-95 . TOTAL DEPTH 115 ft. DEPTH COMPLETED 115 ft.

5. GEOLOGIC LOG:

Depth	Description of Material (Type, Size, Color, Water Location)
0-1	Top soil
1-16	Sand & gravel mixed w/Boulders up to 8: dia.
16-17	Brown clay mixed w/gravel
17-38	Mud stone w/cobles up to 14" dia
38-39	Very large boulders
39-85	Sand & gravel mixed w/boulders
85-115	Sorted gravel w/very porous intervals

REMARKS:

6. HOLE DIAM. (in.)

From (ft)	To (ft)
0	115

7. PLAIN CASING

OD (in)	Kind	Wall Size	From(ft)	To(ft)
12	Sleet	.375	+1	56
10	314 SS	.125	52	57
10	314 SS	.125	77	87
10	314 SS	.125	112	115

PERF. CASING: Screen Slot Size: 60 + 80

10	314 SS	N/A	57	77
10	314 SS	N/A	87	112

8. FILTER PACK:
Material Well Rock
Size 3/4 minus
Interval 24-115

9. PACKER PLACEMENT:
Type K
Depth 53 Ft

10. GROUTING RECORD:

Material	Amount	Density	Interval	Placement
cement	15 bags	6-1	18'-24'	Tremee

11. DISINFECTION: Type Amt. Used

12. WELL TEST DATA: ☐ Check box if Test Data is submitted on Form No. GWS 39 Supplemental Well Test.
TESTING METHOD Pump
Static Level 27'-10" ft. Date/Time measured 8-9-95 7:50 am, Production Rate 625 gpm.
Pumping level 34'-10 1/2 ft. Date/Time measured 8-11-95 7:50 pm, Test length (hrs.) 48.
Remarks

13. I have read the statements made herein and know the contents thereof, and that they are true to my knowledge. [Pursuant to Section 24-4-104 (13)(a) C.R.S., the making of false statements herein constitutes perjury in the second degree and is punishable as a class 1 misdemeanor.]

CONTRACTOR NEWater, Inc. Phone (719) 378-2297 Lic. No. 736
Mailing Address 5522 N. County Rd. 110, Mosca CO 81146

Name/Title (Please type or print)	Signature	Date
Halsey R. Newmyer, President	Halsey R. Newmyer	10-21-96

94E

COLORADO DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES
1313 SHERMAN ST., RM. 818, DENVER CO 80203
phone - info: (303) 866-3587 main: (303)866-3581

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JUN 07 1996
WATER RESOURCES
COLO.

GENERAL PURPOSE Water Well Permit Application

(Please note: other forms are available for *specific* uses including - residential, livestock, monitoring/observ., gravel pits, *registration* of old wells)

Review instructions prior to completing form — **Must be completed in black ink or typed**

1. APPLICANT INFORMATION
Name of applicant: City of Creede
Mailing Address: P.O. Box 457
City: Creede, State: Colorado Zip Code: 81130
Telephone number (include area code): 719 658-2276

2. TYPE OF APPLICATION (check applicable box(es))
☐ Construct new well ☐ Use existing well
☐ Replace existing well ☐ Change or Increase Use
☐ Change (source) Aquifer ☐ Reapplication (expired permit)
☒ Other: Replace monitoring well

3. REFER TO (if applicable):
Water court case #: 94CW031
Permit #: Denied
Emergency Verbal #: -VE-
Monitoring hole acknowledgment #: MH- 25878
Well name or #: Creede Well No. 2

4. LOCATION OF WELL
County: Mineral
Quarter/quarter: SW ¼
Quarter: SW ¼
Section: 6
Township N or S: 4/N ☒ N ☐ S
Range E or W: 1E ☒ E ☐ W
Principal Meridian: NMPM
Distance of well from section lines: 900 ft from ☒ N ☐ S 1600 ft from ☐ E ☒ W
Well location address, if different from applicant address (if applicable):
For replacement wells only - distance and direction from old well to new well: feet direction

5. TRACT ON WHICH WELL WILL BE LOCATED
A. LEGAL DESCRIPTION (may be provided as an attachment): Legal description of pump house tract attached
B. STATE PARCEL ID# (optional):
C. # acres in tract:
D. Owner:
E. Will this be the only well on this tract? ☐ YES ☐ NO (if other wells are on this tract, see instructions)

6. USE OF WELL (please attach *detailed* description)
☒ INDUSTRIAL ☒ OTHER: Fire protection, recreation and all other beneficial purposes
☒ COMMERCIAL
☒ MUNICIPAL
☒ IRRIGATION
☐ FEED LOT — number of head:

7. WELL DATA
Maximum pumping rate: 494 gpm
Annual amount: N/A acre-feet
Total depth: 115 feet
Aquifer: Rio Grande

8. LAND ON WHICH GROUND WATER WILL BE USED
A. LEGAL DESCRIPTION (may be provided as an attachment): The wells will be a public water supply for the City of Creede located in the S½ of Section 25 and the East ½ of Section 36, T2N, R1W, NMPM, in Mineral County, Colorado
(If used for crop irrigation, attach scaled map that shows irrigated area.)
B. # acres: 275
C. Owner: City of Creede
D. List any other wells or water rights used on this land: Well Nos. 1 & 2 used pursuant to augmentation plan in Case No. 94 CW 031

9. PROPOSED WELL DRILLER (optional)
Name: NEWater Incorporated DBA C&N Pump Service
License number: 736

10. SIGNATURE of applicant(s) or authorized agent
The making of false statements herein constitutes perjury in the second degree, which is punishable as a class 1 misdemeanor pursuant to C.R.S. 24-4-104(13)(a). I have read the statements herein, know the contents thereof, and state that they are true to my knowledge.

Must be original signature: [signature]
Title: Mayor
Date: [handwritten date] 1996

OPTIONAL INFORMATION
USGS map name:
DWR map no.:
Surface elev.:

Office Use Only
Consumptive use limited to 113.1 AF
Combined pumping rate 1.1 CFS
PLOTTED
CHECKS TR#401886 060796 120.00
DIV OF WATER RESOURCES
MH 25878 13533 AD
401886 A
DIV 3
CO 40
WD 20
BA
USE(S)
MD

Form GWS-45 (12/95)

Form No. GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES

818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

EXST

WELL PERMIT NUMBER 61906 -F -
DIV. 3 WD 20 DES. BASIN MD

APPLICANT

CITY OF CREEDE
PO BOX 457
CREEDE, CO 81130-

(719) 658-2276

APPROVED WELL LOCATION
MINERAL COUNTY
SE 1/4 SW 1/4 Section 6
Township 41 N Range 1 E New Mex P.M.

DISTANCES FROM SECTION LINES
900 Ft. from South Section Line
1600 Ft. from West Section Line

UTM COORDINATES (NAD83)
Easting: Northing:

CHANGE/EXPANSION OF USE OF AN EXISTING WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
3) Approved for the expansion and increase in use of an existing well, Creede Well no. 2, permit no. 46924-F, pursuant to CRS 37-90-137(2) on the condition that this well is operated in accordance with the San Luis Valley Water Conservancy District Augmentation Plan approved by the Division 3 Water Court in case no. 94CW62. If this well is not operated in accordance with the terms of said decree, it will be subject to administration including orders to cease diverting water under this permit.
4) This well is included in case no. 94CW62 under San Luis Valley Water Conservancy District Certificate no. 421-A.
5) The increase in use of ground water from this well approved under this permit is limited to the in-house needs and irrigation of up to 2,6000 square-feet per dwelling for 7 single family dwellings in Phase 1 of Creede Mesa Estates subdivision, Mineral County.
6) The increase in pumping rate hereby permitted is 6 gpm. The maximum pumping rate of this well under this permit and permit no. 46924-F, and the simultaneous maximum pumping rate of this well and Creede Well no. 1 (permit nos. 46925-F and 61905-F) shall not exceed 500 gpm.
7) The increase in average annual amount of water to be appropriated by this well under this permit is 3 acre-feet. The combined average annual amount of ground water to be appropriated by this well under this permit and permit no. 46924-F, and Creede Well no. 1 (permit nos. 46925-F and 61905-F), shall not exceed 473 acre-feet.
8) A metering method must be established for this well which is satisfactory to the Division Engineer.
9) The owner shall mark the well in a conspicuous place with well permit numbers and court case numbers as appropriate. The owner shall take necessary means and precautions to preserve these markings.
10) This well shall be located at least 600 feet from any existing well, completed in the same aquifer, that is not owned by the applicant.

APPROVED
KVH

Hal D. Simpson
State Engineer

Keith VanderHorst
By

Receipt No. 9302568B DATE ISSUED 10-29-2004 EXPIRATION DATE N/A

COLORADO DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES
1313 SHERMAN ST., RM 818, DENVER, CO 80203
phone – info: (303) 866-3587 main: (303) 866-3581
fax: (303) 866-3589 http://www.water.state.co.us

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STATE ENGINEER
COLO.

Form GWS-45 (1/2004)

GENERAL PURPOSE
Water Well Permit Application

Review instructions on reverse side prior to completing form.
The form must be completed in black ink.

1. Applicant Information

Name of applicant: City of Creede

Mailing address: PO Box 457

City: Creede | State: CO | Zip code: 81130

Telephone #: (719) 658-2276

2. Type Of Application (check applicable boxes)

- ☐ Construct new well
- ☐ Replace existing well
- ☐ Change source (aquifer)
- ☐ Other:
- ☒ Use existing well
- ☒ Change or increase use
- ☐ Reapplication (expired permit)

3. Refer To (if applicable)

Well permit #: 46924-F | Water Court case #: 94CW31 / 94CW62

Designated Basin Determination # | Well name or #: Creede Well No. 2

4. Location Of Proposed Well

County: Mineral

SE 1/4 of the SW 1/4

Section	Township	N or S	Range	E or W	Principal Meridian
6	41	☒ ☐	1	☒ ☐	NMPM

Distance of well from section lines (section lines are typically not property lines)
900 Ft. from ☐ N ☒ S 1600 Ft. from ☐ E ☒ W

For replacement wells only – distance and direction from old well to new well
feet direction

Well location address (if applicable)

Optional: GPS well location information in UTM format
Required settings for GPS units are as follows:

Format must be UTM
Zone must be 13
Units must be Meters
Datum must be NAD27 (CONUS)
Unit must be set to true north
Were points averaged? ☐ YES ☐ NO

Northing _____
Easting _____

5. Parcel On Which Well Will Be Located

A. Legal Description (may be provided as an attachment):

See Attached Exhibit A

B. # of acres in parcel: 0.39 | C. Owner: Mineral County

D. Will this be the only well on this parcel? ☐ YES ☒ NO (if no – list other wells)
46925-F

E. State Parcel ID# (optional): N/A

6. Use Of Well (check applicable boxes)

Attach a detailed description of uses applied for.

- ☐ Industrial
- ☐ Other (describe): See Certificate #538
- ☒ Municipal
- ☐ Irrigation
- ☐ Commercial

See Paragraph 5.F. of the ~~94CW~~ 02 CW 10 Decree

7. Well Data (proposed)

Maximum pumping rate: 494 decreed + 6 add = 500 gpm
Annual amount to be withdrawn: 470 decreed + 3 aug = 473 acre-feet
Total depth: 115 feet
Aquifer: Alluvium

8. Land On Which Ground Water Will Be Used

Legal Description (may be provided as an attachment):

City of Creede

Creede Mesa Group, Phase 1

(If used for crop irrigation, attach a scaled map that shows irrigated area.)

A. # Acres | B. Owner: City of Creede, Individual owners

C. List any other wells or water rights used on this land:
well No. 46925-F, City of Creede Aug Plan 94CW31

9. Proposed Well Driller License #(optional): existing

10. Signature Of Applicant(s) Or Authorized Agent

The making of false statements herein constitutes perjury in the second degree, which is punishable as a class 1 misdemeanor pursuant to C.R.S. 24-4-104 (13)(a). I have read the statements herein, know the contents thereof and state that they are true to my knowledge.

Sign here (Must be *original* signature): Clyde Dooley | Date: 7-1-04

Print name & title: Clyde Dooley, City Manager

Office Use Only

USGS map name: Creede | DWR map no.: 94-E | Surface elev.:

Receipt area only

See permit 61905-F for supporting paper work. KVH

WE ✓
WR ✓
CWCB
TOPO
MYLAR
SB5

9302568B

DIV 3 WD 20 BA ____ MD ____

FORM NO. GWS-32 11/90

PUMP INSTALLATION AND TEST REPORT

STATE OF COLORADO, OFFICE OF THE STATE ENGINEER

For Office Use only

RECEIVED

JUN 30 1997

WATER RESOURCES STATE ENGINEER COLO.

1. WELL PERMIT NUMBER 046924-F

2. OWNER NAME(S) City of Creede
Mailing Address Box 457
City, St. Zip Creede, Colo. 81130
Phone (719) 658-2276

3. WELL LOCATION AS DRILLED: SE 1/4 SW 1/4, Sec. 6 Twp. 41 N, Range 1 E
DISTANCES FROM SEC. LINES:
900 ft. from South (north or south) Sec. line. and 1600 ft. from West (east or west) Sec. line.
SUBDIVISION: LOT BLOCK FILING(UNIT)
STREET ADDRESS AT WELL LOCATION:

4. PUMP DATA: Type Submersible Installation Completed 10/10/95
Pump Manufacturer Gould Pump Model No. 8RJLC
Design GPM 450 at RPM 3500, HP 7.5, Volts 460 Full Load Amps 11.9
Pump Intake Depth 58 Feet, Drop/Column Pipe Size 6 Inches, Kind Steel

ADDITIONAL INFORMATION FOR PUMPS GREATER THAT 50 GPM:
TURBINE DRIVER TYPE: ☐ Electric ☐ Engine ☐ Other
Design Head 89 feet, Number of Stages 1, Shaft size 1 3/16 inches.

5. OTHER EQUIPMENT:
Airline Installed ☐ Yes ☐ No, Orifice Depth ft. . Monitor Tube Installed ☐ Yes ☐ No, Depth ft.
Flow Meter Mfg. Meter Serial No.
Meter Readout ☐ Gallons, ☐ Thousand Gallons, ☐ Acre feet, ☐ Beginning Reading

6. TEST DATA: ☒ Check box if Test data is submitted on Supplemental Form.

Total Well Depth	105'	Date	6/20/97
Static Level	33'	Time	10:00 a.m
Date Measured	6/20/97	Rate (GPM)	490
		Pumping Lvl.	35'

7. DISINFECTION: Type HTH Amt. Used 4ozs.

8. Water Quality analysis available. ☐ Yes ☐ No

9. Remarks

10. I have read the statements made herein and know the contents thereof, and that they are true to my knowledge. [Pursuant to Section 24-4-104 (13)(a) C.R.S., the making of false statements herein constitutes perjury in the second degree and is punishable as a class 1 misdemeanor.]

CONTRACTOR Ken C. Burk/Burk Drilling Inc. Phone (719) 852-4845 Lic. No. 1137
Mailing Address 1499 North Hwy 285 Monte Vista, Colo. 81144

Name/Title (Please type or print)	Signature	Date
	Ken C. Burk	6-20-97

Attachment 2 –

Project Related Photographs

Photo Log

Photo 1. Booster Pump Station

Photo 2. Cochran Pioneer Ditch Alternate POD

Photo 3. Creede Well Nos. 1 and 2

Photo 4. Master Flow Meter for Booster Pump Station

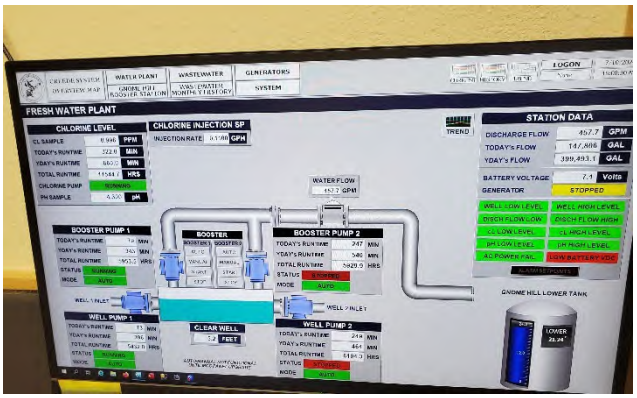


Photo 5. SCADA for Well System

Photo 6. Willow Creek proposed location for Hydro Power Plant

Photo 7. Storage Tank

Attachment 3 –

Water Rights Decrees

DISTRICT COURT, WATER DIVISION NO. 3, STATE OF COLORADO

Case No. 94CW31

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RULING OF THE REFEREE

CONCERNING THE APPLICATION FOR WATER RIGHTS OF THE CITY OF CREEDE, COLORADO, A COLORADO TOWN

IN WILLOW CREEK, TRIBUTARY TO THE RIO GRANDE RIVER

IN MINERAL COUNTY

The application for underground water right and approval of plan for augmentation in this matter was filed on November 29, 1994. Having considered the pleadings, the evidence presented, and being fully advised in the premises underlying the application, the Referee enters the following findings of fact, conclusions of law and ruling of the Referee:

FINDINGS OF FACT

1. Name, address, and telephone number of applicant:

   City of Creede
   P. O. Box 457
   Creede, Colorado 81130
   Attention: Merle Knous, Mayor
   (719) 658-2360

2. The application requests a decree confirming two underground conditional water rights and approving a plan for augmentation.

3. Timely and adequate notice of the application was given in the manner required by law. The Court has jurisdiction over the subject matter of this proceeding and over all persons who have standing to appear as parties, whether they have appeared or not.

4. Timely statements of opposition were filed by the State Engineer and the Division Engineer for Water Division No. 3 and by the Rio Grande Water Users Association. No person or entity sought to intervene. The time for filing statements of opposition has expired.

FIRST CLAIM
APPLICATION FOR UNDERGROUND WATER RIGHTS

5. The City of Creede is entitled to a decree recognizing and confirming the underground water rights for Creede Well No. 1 and Creede Well No. 2 described below:

A. Names of wells and date of permit applications: Creede Well No. 1 was drilled pursuant to an application to drill a monitoring well which was approved by the office of the State Engineer on April 22, 1994. Creede Well No. 2 was drilled pursuant to a notice of construction of a monitoring well which was filed with the office of the State Engineer on June 7, 1995. Well permit applications for these two wells were denied by the State Engineer on February 8, 1995 on the grounds that these wells were not covered by a plan for augmentation.

B. Legal description of wells:

(1) The approximate location of Creede Well No. 1 is in the SE¼SW¼, Section 6, T41N, R1E, of the N.M.P.M., Mineral County, Colorado, at a point approximately 870 feet from the south section line and 1,360 feet from the west section line.

(2) The approximate location of Creede Well No. 2 is in the SE¼SW¼ Section 6, T41N, R1E, of the N.M.P.M., Mineral County, Colorado, at a point approximately 900 feet from the south section line and 1,600 feet from the west section line.

C. Source: The source of both wells is the alluvium of Willow Creek, a tributary of the Rio Grande, and the alluvium of the Rio Grande.

D. Depth: Creede Well No. 1 has been drilled to a depth of approximately 122 feet. Creede Well No. 2 has been drilled to a depth of approximately 115 feet.

E. Date of initiation of appropriation: November 30, 1994.

F. How appropriation initiated: The appropriations were initiated by formation of the intent to develop the subject wells and by manifestation of that intent by drilling a monitoring well, filing well permit applications and the application for underground water rights.

G. Amount claimed: 1.1 cfs, conditional. The 1.1 cfs is the cumulative amount claimed by Creede for the two wells. The entire 1.1 cfs may be pumped from either well, but pumping from the two wells combined will not exceed 1.1 cfs.

H. Proposed use: Water pumped from Creede Well No. 1 and Creede Well No. 2 may be used for all municipal purposes, including domestic, industrial, commercial, fire protection, and recreation. Water from the wells will also be used to irrigate lawns, gardens, and landscape through the Creede municipal system and may be used for all other beneficial purposes.

I. Name and address of owner of land on which well is located: The property which is the site of both wells is Mineral County Memorial Airport owned by Mineral County. All correspondence regarding the airport property should be sent to the Mineral County Commissioners, P. O. Box 70, Creede, Colorado 81130.

6. These wells are sought for use in connection with Creede's plan for augmentation which is set forth below. Because of operation of the Rio Grande Compact, there are only two sets of circumstances where the wells will be able to operate under their own priority without injury to other water users. Such operation may occur only (1) in years when there is an actual spill from Elephant Butte Reservoir and no credits or debits for that year are computed by the Rio Grande Compact Commission as provided in Article VI of the Rio Grande Compact or (2) in years when Colorado has obtained, or in the judgment of Colorado's Compact Commissioner is certain to obtain, in excess of 150,000 acre-feet of annual credit under Article VI of the Rio Grande Compact. Any such diversions must also be in priority with respect to other water rights in Colorado.

SECOND CLAIM
APPLICATION FOR APPROVAL OF PLAN FOR AUGMENTATION

7. The Referee finds that the following information and statements are true:

A. Name of structure to be augmented: Creede Well No. 1 and Creede Well No. 2, described above in paragraph 5.

B. Water rights to be used for augmentation: The Kanawha Ditch and Pipeline Water Right (also known as the "Nelson

Tunnel" water right) and the Cochran Pioneer Water Right described below are owned, subject to conditions, by the City of Creede and will be used for augmentation.

(1) The Kanawha Ditch and Pipeline Water Right:

(a) Previous decrees: The City of Creede owns 0.5 cfs of the 7.0 cfs originally decreed to the Kanawha Ditch and Pipeline water right. Creede received this water under an April 21, 1975 deed from B. T. Poxson and Tyrus B. Poxson, recorded in the records of Mineral County, Book 111-E at Page 177. This water right was first decreed in the 1959 general adjudication of priorities in Water District No. 20 and bears Appropriation Priority No. 1959-2. Reference to the Kanawha Ditch and Pipeline water right is made on pages 17-19 of that decree, where it is called "Referee's Case No. 2." This water right was also identified as a source of replacement water in the plan for augmentation decreed to the City of Creede on October 31, 1975 in Case No. W-3329, Water Division No. 3. Both the 1959 decree and the 1975 decree determined that this water right was developed water, not tributary to any stream.

(b) Point of diversion: The portal of the Nelson Tunnel is located at a point from which the north quarter corner of Section 36, T42N, R1W, N.M.P.M., bears South 6°07' West, 6,410.1 feet. The portal of the Nelson Tunnel was erroneously described in paragraph 3 of the 1959 decree and in Case No. W-3329 as located in Section 26, T42N, R1W. The correct description referencing Section 36 was made in the original statement of claim for this water right and in paragraph 6 of the 1959 decree.

(c) Source: As decreed in both the 1959 decree and the 1975 decree, the source of water for the Kanawha Ditch and Pipeline water right is an independent supply, not tributary to any natural stream, developed by the Nelson Tunnel and surrounding mine workings.

(d) Amount: 0.5 cfs

(e) Appropriation date: February 1, 1894.

(f) Decreed uses: Mining, agriculture, domestic, and power purposes.

(g) Historic use: The Kanawha Ditch and Pipeline water right has been used for mining and milling purposes since the 1890's. In 1975, in Case No. W-3329, Water Division No. 3, 0.5 cfs of the Kanawha Ditch and Pipeline water right was dedicated to augment the City of Creede Municipal Pipeline water right.

(2) The Cochran-Pioneer Water Right:

(a) Previous decrees: The Cochran Pioneer Ditch was awarded Construction Priority No. 12 and Appropriation Priority No. 13 by Decree of the District Court for Costilla County, Colorado dated May 1, 1896. This water right was the subject of a subsequent change decree dated December 22, 1967 issued in Civil Action No. 3792, Alamosa County District Court which transferred 0.5 cfs of the water right from the then existing point of diversion in Rio Grande County, Colorado to its current point of diversion on Willow Creek just north of the Town of Creede.

(b) Decreed point of diversion: A point on the westerly side of Willow Creek (a direct tributary to the Rio Grande) which point is North 40°20' East, 1,792.2 feet from the south quarter corner of Section 25, T42N, R1W, N.M.P.M., and being within the SE¼ of Section 25, T42N, R1W, N.M.P.M., Mineral County, State of Colorado.

(c) Source: Willow Creek, a tributary of the Rio Grande.

(d) Amount: 0.5 cfs.

(e) Appropriation date: June 9, 1872.

(f) Decreed uses: Industrial, manufacturing, domestic, agricultural, irrigation and all other beneficial purposes.

(g) Historic use: Prior to its transfer in 1967, the Cochran Pioneer water right was used to irrigate a tract of land located approximately 4.5 miles east of the City of Del Norte, Colorado. In 1967, the point of diversion for part of the water right was changed to a point on Willow Creek just north of Creede.

The 1967 adjudication also changed the purposes for which the 0.5 cfs was permitted to be used from irrigation to industrial, manufacturing, domestic, agricultural, irrigation and all other beneficial purposes.

Following the 1967 change, the 0.5 cfs of the Cochran Pioneer Ditch water right was used in the Homestake Mining Company's Bull Dog Mine, the main portal of which was located in Windy Gulch, approximately 3/4 of a mile northwest of downtown Creede. The water right was used for mining and milling purposes.

The Bull Dog Mine closed in the mid-1980's. In the year after the Bulldog Mine was closed, the Cochran-Pioneer water was used in Homestake's adjacent Equity Mine located approximately 1/3 of a mile northwest up Windy Gulch from the Bull Dog Mine.

Since the Equity Mine shut down in the late 1980's, the water right has been leased each year to the City of Creede for augmentation purposes. The City of Creede received a June 7, 1994 deed from the Homestake Mining Company of California, which deed is recorded in the records of Mineral County, Book 113-E at Pages 41-44. The deed to Creede from Homestake is subject to the condition that Creede may have to reconvey 0.25 cfs of the 0.5 cfs water right back to Homestake. Homestake's right to demand this reconveyance is subject to a number of conditions and expires on June 7, 2015.

C. Plan for augmentation, covering all applicable matters under C.R.S. §§ 37-92-103(9), 302(1), 302(2) and 305(8):

(1) On July 13, 1993, the Colorado Department of Health issued an order requiring Creede to either improve its existing water treatment facilities, or to find a source of municipal water other than that withdrawn at the point of diversion decreed to Creede's Municipal Pipeline water right in Case No. W-3329, District Court, Water Division No. 3. In response to this Health Department order, Creede designed the two wells which are the subject of the application for underground water rights described in the preceding section of this ruling. The wells will draw water from the alluvium of Willow Creek, a tributary of the Rio Grande, and from the alluvium of the Rio Grande, and will transport that water to Creede via a system of pumphouses and pipelines.

The alluvial wells will be used year-round to supply all the municipal water needs of the City of Creede. Pumping of the alluvial wells may result in out of priority depletions to Willow Creek and the Rio Grande that must be augmented. The purpose of this plan for augmentation is to provide replacement water to prevent injury to senior water rights.

(2) The estimated total annual amount of water presently consumptively used in the City of Creede for all beneficial purposes is about 18.7 acre-feet per year. This number was derived by adding the consumptive use attributable to 8.0 acres of irrigated lawns, evaporation from 2.28 surface acres of sewage ponds, and domestic uses for 376 year round residents, 300 summer residents from June through September, and approximately 1400 daily visitors in this same summer period.

The total estimated consumptive use for the City of Creede is described in the following table:

TABLE I

**PRESENT (1995)
TOTAL ESTIMATED CONSUMPTIVE USE
FOR THE
CITY OF CREEDE
(all values are in acre-feet)**

Month	Domestic	Evaporation from Sewage Lagoons	Lawns	Total
Jan	0.18	0.00	0.00	0.18
Feb	0.16	0.00	0.00	0.16
Mar	0.18	0.00	0.00	0.18
Apr	0.17	0.46	0.00	0.63
May	0.18	0.59	2.41	3.18
Jun	0.44	0.72	3.23	4.39
Jul	0.46	0.72	3.13	4.31
Aug	0.46	0.63	1.10	2.19
Sep	0.44	0.49	0.90	1.83
Oct	0.18	0.34	0.49	1.01
Nov	0.17	0.23	0.00	0.40
Dec	0.18	0.00	0.00	0.18
Total	3.20	4.18	11.26	18.64

(3) To offset the amount of water which is consumptively used and to provide sufficient replacement water for future growth, Creede will dedicate both its Kanawha Ditch and Pipeline Water Right and its Cochran Pioneer Water Right to augment Creede Well Nos. 1 and 2.

(4) The nontributary Kanawha Ditch and Pipeline water right will be used to deliver nontributary groundwater directly to Willow Creek. This nontributary water will be supplied at a point approximately 3.25 miles upstream from the stretch of Willow Creek that will be affected by the alluvial wells.

The most recent measurement of the actual production from the portal of the Nelson Tunnel show that the Kanawha right flows were 0.10 cfs, or 72.4 acre-feet for the year 1995. Creede's entitlement in the Kanawha Pipeline water right is only a portion of the total right. As long as no other portion of the right is being taken by its owner, Creede may use the entire amount. In recent years Creede has been using all of the production of the Nelson Tunnel. Creede's portion of this production will be dedicated to augment Creede Well Nos. 1 and 2. It is understood that flows from the Nelson Tunnel will fluctuate with time. Creede will measure the actual production of the Nelson Tunnel three times a year, in March, July and October using a method approved by the Division Engineer, will report on the portion thereof to which it is entitled, and will receive augmentation credit according to the average of its portion of these measurements. In no event will Creede take credit for more than 0.5 cfs even if the owners of other portions do not take their portion.

(5) Since its transfer in 1967, the historic consumptive use attributable to Creede's Cochran-Pioneer water right has averaged 40.7 acre-feet per year. The full amount of this 40.7 acre-feet will also be dedicated to replace out of priority depletions by Creede Well Nos. 1 and 2. The Cochran-Pioneer right will simply not be diverted and will thus effectively augment Willow Creek by supplying replacement water at the historic point of diversion which is just north and upstream of Creede on Willow Creek.

(6) Taken together, the approximately 72.4 acre-feet currently available from Creede's Kanawha water right, and the 40.7 acre-feet from its Cochran-Pioneer water right will produce an annual replacement water supply of approximately 113.1 acre-feet. This amount is more than sufficient to replace Creede's current annual depletions of 18.7 acre-feet and provides about 94.4 acre-feet of surplus augmentation water which will be available to replace increased depletions which may occur as the City of Creede grows.

(7) Creede's future use of water may result in increased consumptive use. For purposes of administration of this plan for augmentation, Creede will submit annual reports to the Division Engineer which identify all increases in consumptive use above the levels identified in this decree. The annual report will be due before November 15 of each year and will account for all increases in year-round residents, summer residents and irrigated acres. For purposes of the annual report, it will be assumed that each additional permanent home will consumptively use 0.02 acre-feet per year, each new summer home will annually consume 0.006 acre-feet and each new irrigated acre will consume 1.41 acre-feet per year. In addition, the annual report will explain any other changes in Creede's annual consumptive use. Based on the annual report and any other information reasonably required by the Division Engineer, the baseline replacement obligation for the upcoming year will be developed by Creede subject to the approval of the Division Engineer.

(8) For the initial six-year period following the date of this ruling, increase in Creede's consumptive use will be limited to an amount that can be replaced by 30 acre-feet of the surplus augmentation water identified in subparagraph (9) of this paragraph. During this initial six-year period, Creede will record the measurements required by this decree. At the conclusion of the six-year period, Creede must file an application with this Court to review the actual consumptive use then occurring with the best data then available. If it appears then that Creede still has additional consumptive use credits, Creede may increase its consumptive use to an amount that can be replaced by the full amount of the augmentation water available, so long as such increases will not cause injury to senior water users.

(9) Because Creede Well No. 1 and No. 2 are located approximately 1/4 of a mile from Willow Creek, there will be lag time between when water is withdrawn from these wells and when that pumping will reduce the flows in Willow Creek and the Rio Grande. Creede's replacement water will be supplied at such times as necessary to prevent

injury to appropriators senior to this decree. The timing of Creede's depletions and replacement water supply is illustrated in the following table:

TABLE II

**REPLACEMENT WATER ON A MONTHLY BASIS:
ESTIMATED ACCRETIONS TO THE RIO GRANDE
(all values in acre-feet)
(based on 1995 water uses and credits)**

Month (1)	Well Depletions (2)	Creede Return Flows (3)	Estimated Rio Grande Depletions (4)	Nelson Tunnel Flows (5)	Creede's Cochran Pioneer Credits (6)	Excess Credits or (Deficits) (7)
Jan	21.4	15.8	5.6	6.1	0.5	1.0
Feb	21.0	17.6	3.4	5.6	0.5	2.7
Mar	21.2	19.5	1.7	6.1	0.5	4.9
Apr	22.3	22.6	(0.3)	6.0	4.3	10.6
May	23.8	23.2	0.6	6.1	5.4	10.9
Jun	28.7	36.6	(7.9)	6.0	6.5	20.4
Jul	31.1	35.0	(3.9)	6.1	6.5	16.5
Aug	30.1	29.2	0.9	6.1	5.7	10.9
Sep	27.9	23.8	4.1	6.0	4.6	6.5
Oct	25.6	19.9	5.7	6.1	3.3	3.7
Nov	24.0	19.2	4.8	6.0	2.4	3.6
Dec	22.9	18.9	4.0	6.1	0.5	2.6
Total	300.0	281.3	18.7	72.4	40.7	94.4

Creede has entered into a stipulation with the Objector Rio Grande Water Users Association, pursuant to which the parties have agreed to entry of a decree in this case. That stipulation has been approved by the Court and is incorporated herein by reference.

The Court finds that so long as Creede replaces all of its depletions to the Rio Grande during each calendar year above the Del Norte gaging station, there will be no reduction in indexed flows.

(10) The City of Creede may continue to operate its plan for augmentation decreed in Case No. W-3329, Water Division No. 3, but may not exercise the Municipal Pipeline water right decreed in that case except for when that right is in priority or when the Kanawha water is not required to augment diversions under Creede Well Nos. 1 and 2 and thus remains available to augment the Municipal Pipeline water right. Creede will notify the Colorado Department of Health and the Division Engineer's office if it uses its Municipal Pipeline water right for municipal purposes.

CONCLUSIONS OF LAW

8. The Court has exclusive jurisdiction over the subject matter of this proceeding pursuant to C.R.S. § 37-92-203 and over all persons or entities affected thereby, whether they have appeared or not.

9. The application for underground water rights for Creede Well Nos. 1 and 2 is in accordance with Colorado law.

10. Creede may only exercise its underground water rights for Creede Well Nos. 1 and 2 on their own priorities without injury to other vested water rights (1) during calendar years when it has been determined that there has been an "actual spill," as that term is defined in Article I(p) of the Compact, from Elephant Butte Reservoir and no credits or debits will be calculated for Colorado under Article VI of the Compact for that year, or (2) during calendar years when it has been determined that Colorado has an "accrued credit," as that term is defined in Article I(j) of the Compact, in excess of 150,000 acre-feet. Depletions arising from any such diversions must also be in priority with respect to other water rights in Colorado.

11. Subject to the provisions of this ruling, the plan for augmentation described herein meets the requirements of Colorado law set forth in C.R.S. §§ 37-80-120, 37-92-103(9), 37-92-302 and 37-92-305.

RULING OF THE REFEREE

12. The Findings of Fact and Conclusions of Law set forth in the preceding paragraphs are incorporated herein by reference and constitute part of the Ruling of the Referee.

13. The application for underground water rights for Creede Well Nos. 1 and 2 is granted with an appropriation date of November 30, 1994 in the cumulative amount of 1.1 cfs, conditional.

14. The application for approval of the plan for augmentation is granted, subject to the provisions of this ruling. Subject to those provisions, the applicant is granted the right to divert water out of priority through Creede Well Nos. 1 and 2 so long as sufficient replacement water from the Kanawha Ditch and Pipeline Water Right and the Cochran Pioneer Water Right is delivered in a manner adequate to prevent injury to senior water rights exercising a valid call. Pursuant to C.R.S. § 37-92-305(8), the State Engineer shall curtail all out-of-priority diversions hereunder, the depletions from which are not so replaced as to prevent injury to vested water rights. The State Engineer shall determine annually the actual schedule of diversion necessary to prevent injury. In the event that the replacement water is insufficient in the future, Creede shall acquire additional sources of replacement water to be added to this plan by appropriate proceeding, or shall reduce or curtail its water usage as required. In the event that such sources of replacement are in excess of Creede's requirements, Creede may sell or lease replacement credits to others. Provided that the temporary use of such credits pursuant to lease shall be approved by the Division Engineer pursuant to statutory authority and any other use shall require Water Court approval.

15. Creede shall install and maintain such measuring devices as the Division Engineer may reasonably require for administration of these water rights, including both sources of augmentation and diversion at the wells. Creede shall maintain records of water pumped from Creede Well Nos. 1 and 2 and shall report such information to the Division Engineer and the Water Commissioner on accounting forms and in accordance with procedures approved by the Division Engineer.

16. Pursuant to C.R.S. § 37-92-304(6), the Court shall retain jurisdiction over the plan for augmentation and change of water right approved herein for a period of 15 years for reconsideration of whether the provisions of this ruling are

necessary or sufficient to prevent injury to other vested water rights. In addition, the Court shall retain jurisdiction indefinitely to address any question arising from any future lack of availability of or entitlement to augmentation water under the Kanawha Pipeline water right or, in the event of a reconveyance of 0.25 cfs as required by the deed described in paragraph B(2)(g) hereof, the Cochran-Pioneer water right and to review the actual amounts of consumptive use occurring under the Creede municipal system. Furthermore, the Court shall retain jurisdiction to review the determination of the State Engineer of the actual delivery schedule necessary to prevent injury to senior appropriators.

17. Creede shall file an application with this Court six (6) years after the entry of this decree in the same month as this decree is entered for review of the actual consumptive use as described in paragraph 7.c.(8) hereof. Such application may be joined with the application for reasonable diligence described in paragraph 18 hereof.

18. If Creede desires to maintain the conditional water right decreed herein for Creede Well Nos. 1 and 2, Creede shall file an application for a finding of reasonable diligence six (6) years after the entry of this decree in the same month as this decree is entered or shall show that such conditional water right has become an absolute water right by virtue of the completion of the appropriation.

DATED this 12th day of January, 1996.

W. A. Martinez

William A. Martinez
Water Referee
Water Division No. 3

RECEIVED

FEB 12 1996

WATER RESOURCES
DIVISION 3, COLO

DISTRICT COURT, WATER DIVISION 3, STATE OF COLORADO

CASE NO. 94 CW 31

FILED

Filed in the Combined Court
Alamosa County, Colorado

JUDGMENT AND DECREE

FEB - 9 1996

CONCERNING THE APPLICATION FOR WATER RIGHTS OF

CITY OF CREEDE, COLORADO, A COLORADO TOWN,

IN MINERAL COUNTY, COLORADO.

Clerk of the Combined Court

THE COURT FINDS that no protest has been filed to the Ruling of Water Referee in the above case within the time provided by law, and that the said Ruling) should be confirmed, approved and adopted,

IT IS, THEREFORE, ORDERED, ADJUDGED AND DECREED that the Ruling of the Water Referee entered on January 12, 1996 be and the same is incorporated herein by reference and is hereby confirmed, approved and adopted as the Judgment of this Court.

IT IS FURTHER ORDERED that the applicant make application to Water Court for Water Division 3 on or before February 28, 2002 for finding of reasonable diligence or to make this conditional water right absolute.

IT IS FURTHER ORDERED, that upon the transfer of the applicant's interest in this decree, the transferee shall notify the Water Court of such transfer and comply with RULE 15, LOCAL RULES, DISTRICT COURT, WATER DIVISION 3, with respect to conditional water right transfers.

DONE this 9th day of February, 1996.

BY THE COURT:

Robert W. Ogburn
DISTRICT JUDGE
Water Division 3

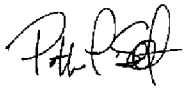
DISTRICT COURT, ALAMOSA COUNTY, COLORADO Court Address: 702 Fourth Street, West Wing, Alamosa, CO, 81101	DATE FILED: March 9, 2013
In the Interest of: CITY OF CREEDE	⚠ **COURT USE ONLY** ⚠
	Case Number: 2007CW60 Division: C Courtroom:

JUDGMENT AND DECREE

The Court finds that no protest has been filed to the Findings and Ruling of the Referee in this case within the time provided by law and that said Findings and Ruling of the Referee should be confirmed, approved and adopted.

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED that the Findings and Ruling of the Referee entered on February 4, 2013 is incorporated herein by reference, and confirmed, approved and adopted as the Judgment of this Court.

Issue Date: 3/9/2013



PATTIE PRATT SWIFT
District Court Judge

DATE FILED: February 4, 2013

DISTRICT COURT, WATER DIVISION NO. 3, COLORADO 702 Fourth Street Alamosa, CO 81101 (719) 589-4996	
CONCERNING THE APPLICATION FOR WATER RIGHTS OF CITY OF CREEDE, COLORADO IN MINERAL COUNTY	▲ COURT USE ONLY ▲ Case Number: 2007CW60

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RULING OF THE WATER REFEREE

This matter comes before the Water Referee upon the Application for Approval of Plan for Augmentation of the City of Creede, Colorado. The Water Referee, having considered the pleadings of the parties, and having made such investigations as are necessary, hereby enters the following Findings of Fact, Conclusions of Law, and Ruling of the Water Referee:

FINDINGS OF FACT

1. Applicant: The applicant is City of Creede, Colorado ("Creede"), c/o Clyde Dooley, City Manager, P. O. Box 457, Creede, Colorado 81130, (719) 658-2276.

2. Application, Notice and Jurisdiction: The application in this case was filed on December 21, 2007. Timely and adequate notice of the application and these proceedings has been given as required by law. Creede has complied with the terms of C.R.S. § 37-92-302. The lands and water rights involved herein are not included within the boundaries of any designated groundwater basin. The Water Referee and Water Court have jurisdiction over the application and the subject matter of these proceedings, and over all who have standing to appear as parties, whether they have appeared or not.

3. Statements of Opposition: Timely statements of opposition were filed by the Colorado Water Conservation Board and the Rio Grande Water Users Association. The time for filing statements of opposition has expired.

4. Stipulations: Creede has entered into stipulations with the Rio Grande Water Users Association and the Colorado Water Conservation Board. The Referee has reviewed those stipulations and has entered orders approving them.

5. Report of the Division Engineer: A report of the Division Engineer, Summary of Consultation, was served on August 25, 2008 pursuant to C.R.S. § 37-92-302(4). That report has been considered by the Court in accordance with C.R.S. § 37-92-305(6).

PLAN FOR AUGMENTATION

6. Plan for Augmentation: Creede requests approval of the following plan for augmentation to replace the stream depletions from pumping Creede Well No. 1 and Creede Well No. 2 at a cumulative rate in excess of 1.1 cfs, up to 2.2 cfs. The plan for augmentation requested herein will operate conjunctively with the plan for augmentation decreed in Case No. 94CW31, Water Division No. 3.

7. Structures to be Augmented:

   A. Names of structures to be augmented:

      i. Creede Well No. 1 (Permit Nos. 46925-F and 61905-F; WDID 2013702).

      ii. Creede Well No. 2 (Permit Nos. 46924-F and 61906-F; WDID 2013703).

   B. Location of structures:

      i. Creede Well No. 1: In the SE¼ SW¼, Section 6, Township 41 North, Range 1 East, of the N.M.P.M., Mineral County, Colorado, at a point approximately 950 feet from the South section line and 1,350 feet from the West section line; UTM Coordinates: Northing 4188170m Easting 331126m, Zone 13S, NAD83. The source of UTM coordinates is GPS by Colorado Division of Water Resources personnel.

      ii. Creede Well No. 2: In the SE¼ SW¼, Section 6, Township 41 North, Range 1 East, of the N.M.P.M., Mineral County, Colorado, at a point approximately 990 feet from the South section line and 1,555 feet from the West section line; UTM Coordinates: Northing 4188182m Easting 331189m, Zone 13S, NAD83. The source of UTM coordinates is GPS by Colorado Division of Water Resources personnel.

   C. Source: Alluvium of Willow Creek, a tributary of the Rio Grande.

   D. Proposed use: All municipal purposes, including domestic, industrial, commercial, fire protection, recreation and all other beneficial uses. Water from

the wells will also be used to irrigate lawns, gardens and landscape through the Creede municipal system.

E. Depth: Creede Well No. 1 has been drilled to a depth of approximately 120 feet. Creede Well No. 2 has been drilled to a depth of approximately 115 feet.

F. Amount: Pursuant to the decree entered on February 9, 1996 in Case No. 94CW31, District Court, Water Division No. 3 ("Case No. 94CW31"), Creede Well No. 1 and Creede Well No. 2 are entitled to pump at a cumulative rate of 1.1 cfs; the entire 1.1 cfs may be pumped from either well, but pumping from the two wells combined shall not exceed 1.1 cfs. This Decree increases the pumping rate for Creede Well No. 1 and Creede Well No. 2 above the limit decreed in Case No. 94CW31 to permit Creede to pump 1.1 cfs from each well simultaneously, which will be augmented as described below.

G. Remarks: Creede Well No. 1 and Creede Well No. 2 do not have individual water rights decreed for diversion by the wells. They may only operate in accordance with the plan for augmentation decreed in Case No. 94CW31 and the plan for augmentation decreed herein.

8. Water Rights To Be Used for Augmentation:

A. Kanawha Ditch and Pipeline Water Right (a/k/a Nelson Tunnel Water Right):

i. Previous decrees: The Nelson Tunnel water right was awarded Appropriation Priority No. 1959-2 in the 1959 general adjudication of priorities in Water District No. 20 ("1959 Decree"). This water right was also identified as a source of augmentation water in the plans for augmentation decreed to Creede on October 31, 1975 in Case No. W-3329, District Court, Water Division No. 3 ("1975 Decree"), and in Case No. 94CW31. Both the 1959 Decree and the 1975 Decree determined that this water right was developed water, not tributary to any stream. That determination was confirmed by the decree entered in Case No. 94CW31.

ii. Point of diversion: The portal of the Nelson Tunnel is located at a point from which the north quarter corner of Section 36, Township 42 North, Range 1 West, N.M.P.M., bears South 6°07' West, 6,410.1 feet.

iii. Source: As decreed in both the 1959 decree and the 1975 Decree and confirmed in the decree entered in Case No. 94CW31, the source of water

for the Kanawha Ditch and Pipeline water right is an independent supply, not tributary to any natural stream, developed by the Nelson Tunnel and surrounding mine workings.

iv. Amount: Creede owns the first 0.5 cfs of the 7.0 cfs originally decreed to the Kanawha Ditch and Pipeline water right.

v. Appropriation date: February 1, 1894.

vi. Decreed uses: Mining, agriculture, domestic, power purposes and use for augmentation.

B. Cochran-Pioneer Ditch Water Right:

i. Previous decrees: The Cochran-Pioneer Ditch was awarded Construction Priority No. 12 and Appropriation Priority No. 13 for the diversion of 4.2 cfs by Decree of the District Court for Costilla County, Colorado, dated May 1, 1896. By decree of the District Court for Costilla County, Colorado, dated September 11, 1905, 1.2 cfs of the 4.2 cfs was transferred to the Rio Grande Ditch No. 4. Pursuant to the decree dated December 22, 1967 issued in Civil Action No. 3792, Alamosa County District Court, up to 1.5 cfs of the remaining 3.0 cfs of the Cochran-Pioneer Ditch water right was transferred from its then existing diversion in Rio Grande County, Colorado to its current point of diversion on Willow Creek just north of Creede. Creede owns 0.5 cfs of the 1.5 cfs that was the subject of Civil Action No. 3792. This 0.5 cfs Cochran-Pioneer Ditch water right was also identified as a source of augmentation water for Creede in Case No. 94CW31.

ii. Decreed point of diversion: A point on the westerly side of Willow Creek (a direct tributary to the Rio Grande) which point is North 40°20' East, 1,792.2 feet from the south quarter corner of Section 25, Township 42 North, Range 1 West, N.M.P.M., and being within the SE¼ of Section 25, Township 42 North, Range 1 West, N.M.P.M., Mineral County, Colorado.

iii. Source: Willow Creek, a tributary of the Rio Grande.

iv. Amount: 0.5 cfs.

v. Appropriation date: June 9, 1872.

vi. Decreed uses: Industrial, manufacturing, domestic, agricultural, irrigation, all other beneficial uses and use for augmentation.

vii. Remarks: Creede received a June 7, 1994 deed from the Homestake Mining Company of California for the 0.5 cfs interest in the Cochran-Pioneer Ditch water right. That deed is subject to the condition that Creede may have to reconvey 0.25 cfs of the 0.5 cfs water right back to Homestake or make available 0.25 cfs of the 0.5 cfs water right for use by Homestake. Rio Grande Silver Inc. is the successor-in-interest to Homestake's reserved right under the deed. By agreement dated April 24, 2012 Creede has agreed to make 0.25 cfs of the 0.5 cfs water right available for use by Rio Grande Silver, Inc., subject to the terms of the agreement, including Creede's right to use the said 0.25 cfs at times when Rio Grande Silver, Inc. is not using the said 0.25 cfs under the agreement.

9. Statement of Plan for Augmentation:

A. The cumulative pumping rate limitation of 1.1 cfs in the decree entered in Case No. 94CW31 for Creede Well No. 1 and Creede Well No. 2 may not provide Creede with sufficient operational flexibility to meet its peak water demand. Accordingly, Creede requests approval of this plan for augmentation to replace the stream depletions from pumping Creede Well No. 1 and Creede Well No. 2 at a cumulative rate in excess of 1.1 cfs, up to 2.2 cfs in order to prevent injury to senior water rights. The plan for augmentation decreed herein will not supercede or amend the terms of the plan for augmentation decreed in Case No. 94CW31. Instead, it will operate conjunctively with the plan for augmentation decreed in Case No. 94CW31 so that the net stream depletion amount (i.e. consumptive use) from the first 1.1 cfs pumped individually or cumulatively from Creede Well No. 1 and Creede Well No. 2 will continue to be replaced by the plan for augmentation decreed in Case No. 94CW31. The net stream depletions from pumping Creede Well No. 1 and Creede Well No. 2 individually or cumulatively in excess of 1.1 cfs, up to a total cumulative pumping rate of 2.2 cfs, will be replaced by the plan for augmentation decreed herein.

B. Creede Well No. 1 and Creede Well No. 2 deplete Willow Creek at the points closest to Willow Creek from each such well. For purposes of administration of this plan for augmentation, Creede will submit annual reports to the Division Engineer which identify all increases in consumptive use above the levels identified in **Exhibit A** attached to this Decree. The annual report will be due before November 15 of each year and will account for all increases in year-round residents, summer residents and irrigated acres. For purposes of the annual

report, it will be assumed that each additional permanent home will consumptively use 0.02 acre-feet per year, each new summer home will annually consume 0.006 acre-feet and each new irrigated acre will consume 1.41 acre-feet per year. In addition, the annual report will explain any other changes in Creede's annual consumptive use. Based on the annual report and any other information reasonably required by the Division Engineer, the baseline replacement obligation for the upcoming year will be developed by Creede subject to the approval of the Division Engineer. By using the above-stated assumptions for administration of this plan for augmentation, the amount and timing of the net stream depletions to Willow Creek caused by pumping Creede Well No. 1 and Creede Well No. 2 under the plan for augmentation decreed herein will be determined and replaced in a manner consistent with paragraph 7.C.(7) of the decree entered in Case No. 94CW31. The accounting for the operation of the plan for augmentation decreed herein shall be integrated with the accounting of the plan for augmentation decreed in Case No. 94CW31 to ensure that the net depletions resulting from pumping Creede Well No. 1 and Creede Well No. 2 pursuant to this Decree or pursuant to the plan for augmentation decreed in Case No. 94CW31 are replaced so as to prevent injury to senior water rights.

C. As summarized in the accounting report submitted by Creede to the Division Engineer in November 2011 pursuant to paragraph 7.C.(7) of the decree entered in Case No. 94CW31 attached to this Decree as **Exhibit A,** the estimated amount of water consumptively used by Creede (i.e. the net stream depletion) during the period of November 2010 through October 2011 was 37.25 acre-feet. To offset the amount of water that will be consumptively used under the plan for augmentation decreed herein, Creede will dedicate both its Kanawha Ditch and Pipeline water right and its Cochran-Pioneer Ditch water right to augment Creede Well No. 1 and Creede Well No. 2.

D. As determined by the decree entered in Case No. 94CW31, the historical consumptive use attributable to Creede's Cochran-Pioneer Ditch water right is 40.7 acre-feet per year with the following monthly distribution: January, 0.5 acre-feet; February, 0.5 acre-feet; March, 0.5 acre-feet; April, 4.3 acre-feet; May, 5.4 acre-feet; June, 6.5 acre-feet; July, 6.5 acre-feet; August, 5.7 acre-feet; September, 4.6 acre-feet; October, 3.3 acre-feet; November, 2.4 acre-feet; December, 0.5 acre-feet. Accordingly, during the period of November 2010 through October 2011, the Cochran-Pioneer Ditch water right supplied 40.7 acre-feet of augmentation water for use by Creede. Creede owns the first 0.5 cfs of the 7.0 cfs decreed to the Kanawha Ditch and Pipeline water right. During the period of November 2010 through October 2011, the Kanawha Ditch and Pipeline water right supplied 362.89 acre-feet of augmentation water for use by Creede.

E. Accordingly, Creede has surplus augmentation water available for Creede to replace increased stream depletions which may occur as Creede grows. Although Creede is not proposing to increase its consumptive use with this plan for augmentation beyond that allowed by the plan for augmentation decreed in Case No. 94CW31, the surplus of augmentation water projected to be available to Creede under its Kanawha Ditch and Pipeline water right and Cochran-Pioneer Ditch water right assures that Creede has more than sufficient water resources to provide augmentation water for the plan for augmentation decreed herein.

F. Augmentation water available to the Kanawha Ditch and Pipeline water right will be delivered directly to Willow Creek at a point approximately 3.25 miles upstream from the reach of Willow Creek that will be affected by Creede Well No. 1 and Creede Well No. 2, consistent with paragraph 7.C.(4) of the decree entered in Case No. 94CW31. Consistent with paragraph 7.C.(4) of the decree entered in Case No. 94CW31, Creede will measure the actual production of the Nelson Tunnel three times a year, in March, July and October using a method approved by the Division Engineer, will report on the amount to which it is entitled, and will receive augmentation credit according to the average of its entitlement to the water produced by the Kanawha Ditch and Pipeline water right. Augmentation water available to the Cochran-Pioneer Ditch water right will be left in Willow Creek at the historic point of diversion, which is just north and upstream of Creede on Willow Creek, consistent with paragraph 7.C.(5) of the decree entered in Case No. 94CW31.

10. No Injury: Creede's operation of this plan for augmentation in accordance with the terms, conditions and limitations of this Decree will not result in material injury to the vested rights of others.

CONCLUSIONS OF LAW

11. Incorporation of Findings of Fact: The foregoing Findings of Fact are incorporated herein as part of these Conclusions of Law.

12. Notice and Jurisdiction: Timely and adequate notice of the application was given in the manner required by law and the Court has jurisdiction over the subject matter of this proceeding and over all persons, owners of property and water rights that may be affected hereby, whether or not they have appeared.

13. Plan for Augmentation Contemplated By Law: The application for approval of a plan for augmentation is in accordance with law, meets the requirements of C.R.S. § 37-92-101, *et seq.*, and should be granted subject to the terms and conditions of this Decree.

RULING OF THE WATER REFEREE

14. Incorporation of Findings of Fact and Conclusions of Law: The Findings of Fact and Conclusions of Law set forth in paragraphs 1 through 13 above are incorporated herein.

15. Approval of Plan for Augmentation: The plan for augmentation described herein is hereby approved, subject to the terms and conditions set forth herein.

16. No Material Injury: The terms and conditions contained in this Decree are sufficient to ensure that no material injury to any water users will result from operation of the plan for augmentation decreed herein.

17. Adequacy of Augmentation Sources: Pursuant to C.R.S. § 37-92-305(5), the augmentation supplies that Creede will use for operation of the plan for augmentation are of a quality and quantity so as to meet the requirements of use for which the water of senior appropriators has normally been used and such water shall be accepted by senior appropriators in substitution for water derived by exercise of their decreed water rights.

18. Curtailment: Pursuant to C.R.S. § 37-92-305(8), the State Engineer shall curtail all out-of-priority diversions, the depletions from which are not so replaced as to prevent injury to vested water rights. In the event that the replacement water is insufficient in the future, Creede shall acquire additional sources of replacement water to be added to this plan by appropriate proceeding, or shall reduce and/or curtail its water usage as required. In the event that such sources of replacement are in excess of Creede's requirements, Creede may sell or lease replacement credits to others. Provided that the temporary use of such credits pursuant to lease shall be approved by the Division Engineer pursuant to statutory authority and any other use shall require Water Court approval.

19. Measuring Devices: Creede shall install and maintain measuring devices as are reasonably required by the Division Engineer, pursuant to C.R.S. § 37-92-502(5)(a).

20. Accounting: Creede shall modify its accounting and reporting forms for Case No. 94CW31 in a manner acceptable to the Division Engineer to incorporate the plan for augmentation decreed herein. Such accounting and reporting forms may be changed with the approval of the Division Engineer. The accounting forms shall be provided to the Division Engineer on the same frequency as required in Case No. 94CW31.

21. Administration: The State Engineer and the Division Engineer shall administer this Decree in accordance with the terms and conditions set forth herein.

22. Retained Jurisdiction: Pursuant to C.R.S. § 37-92-304(6), the plan for augmentation approved herein shall be subject to reconsideration by the Water Judge on the question of injury to the vested water rights of others, commencing upon the entry of this Decree and continuing for three (3) years from the date Creede first pumps Creede Well No. 1 and Creede Well No. 2 at a combined rate of 1.65 cfs and provides notice of such operation to the Court and all parties to this case. In addition, the Court shall retain jurisdiction indefinitely to address any question arising from any future lack of availability of or entitlement to augmentation water under the Kanawha Ditch and Pipeline water right or, in the event of a reconveyance of 0.25 cfs as required by the deed described in paragraph 8.B.vii. hereof, the Cochran-Pioneer Ditch water right and to review the actual amounts of consumptive use occurring under the Creede municipal system. Furthermore, the Court shall retain jurisdiction to review the determination of the State Engineer of the actual delivery schedule necessary to prevent injury to senior appropriators.

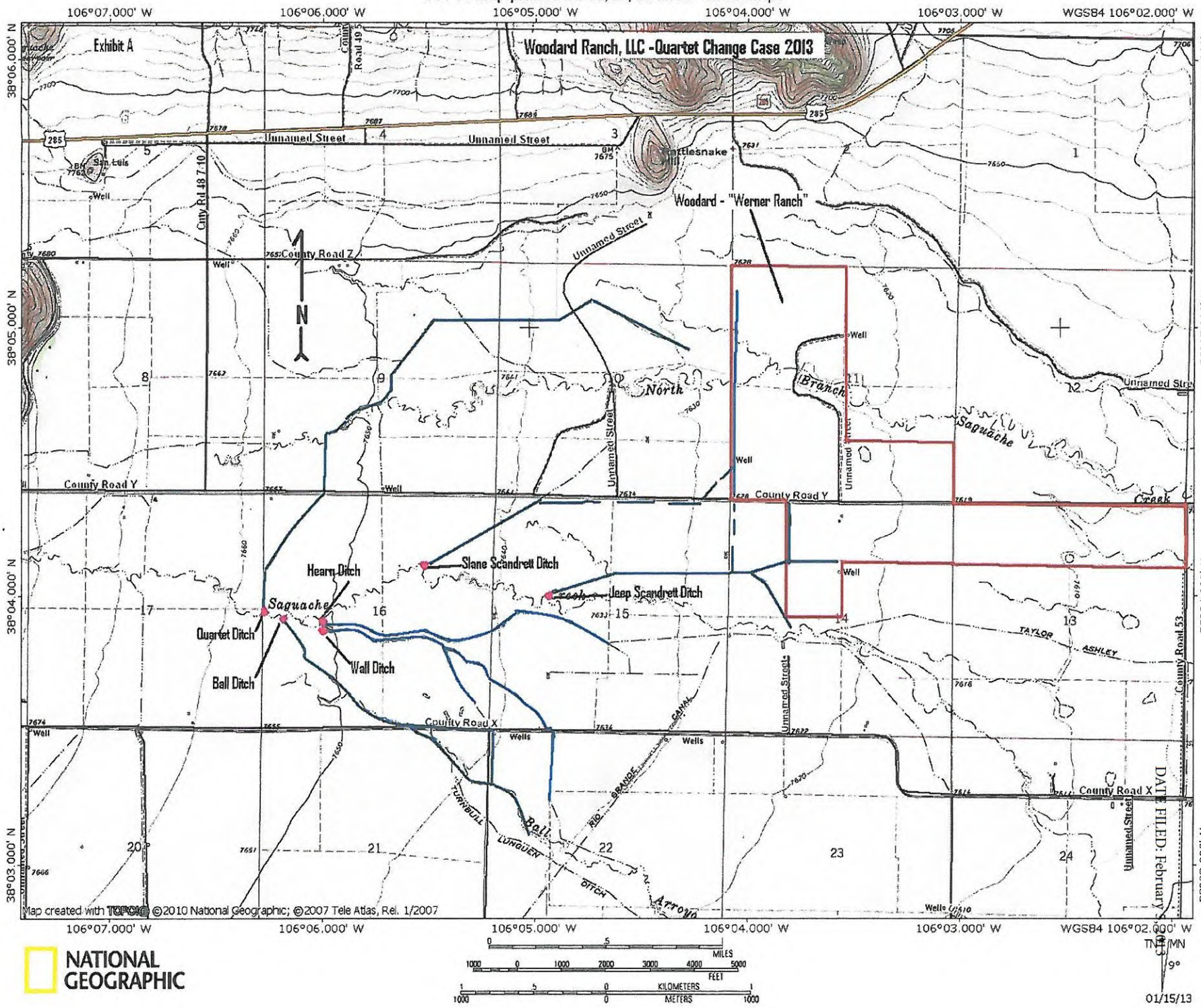
DATED this 4th day of February, 2013.

Patrick H. Hayes
2013.02.04
15:52:15 -07'00'

Patrick Hayes
Water Referee
Water Division No. 3

quartet topo map.jpg (1537x1295x24b jpeg)

TOPO! map printed on 01/15/13 from "Untitled.tpo"



Attachment 4 –

Recent Rate Study Conducted by the City of Creede

WATER AND SEWER USER RATE STUDY

Prepared for the:

CITY OF CREEDE

GMS, Inc.
Consulting Engineers

WATER AND SEWER USER RATE STUDY

FOR
CITY OF CREEDE

PROJECT NO. 2022-054.101

JANUARY 2025

OWNER:

CITY OF CREEDE
PO BOX 457
CREEDE, COLORADO 81130

PREPARED BY:

GMS, INC.
CONSULTING ENGINEERS
611 NORTH WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

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SECTION I
EXECUTIVE SUMMARY

The City of Creede (City) requested GMS, Inc. to complete a water and sewer user rate study. The purpose of the rate study is to determine what the appropriate water and sewer user rates would need to be in order for the City to cover planned operation expenditures for a five-year period.

The City is located in north-central Mineral County, approximately 64 miles northwest of Alamosa. Creede is located at the headwaters of the Rio Grande River Basin and the Willow Creek Subbasin. The City owns and maintains the water and sewer infrastructure within the City limits and currently provides water service to 348 customers and wastewater services to 346 customers.

GMS, Inc. evaluated the City's existing rate structures and how the rates would need to increase to cover the cost of rising operational expenses. The final recommended rate structure is a water base rate of $50 per month and a sewer base rate of $45 per month.

SECTION II
INTRODUCTION

A. PURPOSE AND SCOPE

The purpose of this report is to evaluate the existing water and sewer rate structures and propose new water and sewer rate structures, as required, for the City of Creede. The new rate is to ensure that there are adequate revenues for the proper operation of the water and sewer systems. A component of the proper operation of the water and sewer systems is having adequate funds for operations and debt service. Currently, the City utilizes sales tax revenue to fund capital improvement projects. The capital improvements will continue to be funded by this sales tax revenue; thus, the user rate was not evaluated to cover this expense.

B. BACKGROUND

The City has provided water and wastewater services to the residents since before 1973. The City is responsible for generating sufficient revenues to pay all costs for the management of the water and wastewater systems to include operations, debt service and capital improvements.

The City contracted with GMS, Inc. for the purpose of evaluating the cost of water and wastewater services, considering both the existing and proposed expenditures by the City. The current rate structure is not sufficient to cover existing or proposed operations. The proposed increase will allow the City to generate enough revenue to meet the current cost of service while also meeting the projected cost of service for the next five years through 2029.

C. SERVICE AREA

The City of Creede is located in the mountains of southwest Colorado. It lies within the northcentral portion of Mineral County approximately 64 miles northwest of Alamosa and 25 miles southeast of Lake City. The community is located within Sections 25 and 36 of Township 42 North, Range 1 West of the New Mexico Principal Meridian and consists of

approximately 370 acres. Colorado Highway 149 loops through the southern end of the City and the Rio Grande River is located approximately 1.75 miles south of the City.

SECTION III

RATE STUDY

A. EXISTING RATE STRUCTURE

Prior to proposing a new rate, it is important to define the existing rate structure. The existing rate structure was set in 2022 and is shown in the following table.

TABLE 1

CITY OF CREEDE

2022 WATER AND SEWER RATE STRUCTURE

Within City Limits	Fee
Water Base Rate	$46.06/month
Water Tap Fee	$250
Water System Development Fee	$2,750
Sewer Base Rate	$20.00/month
Sewer Tap Fee	$250
Sewer System Development Fee	$2,750
Water meters, all labor, materials, and related expenses	At City's Cost
Outside City Limits	**Fee**
Water Tap Fee	$375
Water System Development Fee	$4,125
Sewer Tap Fee	$375
Sewer System Development Fee	$4,125
Water meters, all labor, materials, and related expenses	At City's Cost

The City assesses a $250 tap fee for new water and sewer services within City limits and a $375 tap fee for new water and sewer services outside of City limits. This study did not evaluate the tap fee structure. Prior to the rate adjustment in 2022, the monthly water base rate was $22.08 per month and the sewer base rate was $9.71 per month. The water and sewer base rate apply to both residential and commercial accounts; however, each customer's water and sewer bill varies based on their assigned Equivalent Residential Unit (EQR). The City's user fees are calculated by multiplying the assigned EQR by the base rate. The City

has limited water meters installed; thus EQR assignments are not based on water consumption. Instead, EQRs are determined by the type of building use and interior features. The EQR structure presents several residential and commercial classifications and additional EQRs can be added based on the number of rooms and bathrooms or features specific to specialized commercial spaces. Following is the valuation of EQRs utilized for water and sewer utilities:

TABLE 2

CITY OF CREEDE

EQUIVALENT RESIDENTIAL UNIT (EQR) SCHEDULE

Class of User	EQR
Single-Family Residential Units [1)]	
Single-family homes having not more than 3 bedrooms or baths; individually billed mobile homes; mobile homes on single lots; mobile homes established for permanent residences (per each)	1
Add for each additional bedroom/bath	0.2
Multi-Family Residential Units [2)]	
Small sized unit - shall not have more than 1 bedroom and bathroom	0.5
Medium sized unit - shall not have more than 2 bedrooms or bathrooms	0.75
Large sized unit - shall not have more than 3 bedrooms and 2.5 bathrooms	0.9
Any larger single unit	1
Transient Residential Units [3)]	
Manager's unit (per each)	0.8
Motels, hotels, and rooming houses without kitchen facilities - with not more than 2 bed spaces per room (per each rental room)	0.2
Motels, hotels, and rooming houses without kitchen facilities - with more than 2 bed spaces per room (per each room)	0.3
Motels with kitchen facilities - with not more than 2 bed spaces per room (per each rental room)	0.25
Motels with kitchen facilities - with more than 2 bed spaces per room (per each rental unit)	0.35
Dormitories (per each rental bed space)	0.1
Add for laundry facilities (or available hookup) in each building, % of total EQR served	20%
Mobile homes in park with laundry	0.70/space
Commercial Classification [4)]	
Restaurants and bars (per 20 seats)	1
Banquet rooms (per 20 seats)	0.4
Drive-ins (per car stall)	0.2
Drive through take-out service window	0.5

Class of User	EQR
Offices and office buildings (per 1,000 s.f. of gross floor area) [5]	0.5
Retail sales area (per 1,000 s.f. of gross sales and display area) [5]	0.3
Laundromats (per washing machine) [5]	0.8
Service stations - first set of pumps [6]	1.2
Service stations - each additional set of pumps [6]	0.8
Service stations - add for each bay/rack where cars can be washed	1.4
Non-retail work areas such as garages, machine shops (per each 10 employees)	0.7
Church and School Classification	
Churches (per 100 seats) [7]	1
Schools, day care centers, public, and private day schools - without gym and without cafeteria (per 50 students) [8]	1.4
Schools, day care centers, public, and private day schools - without gym and with cafeteria or with gym and without cafeteria (per 50 students) [8]	1.75
Schools, day care centers, public, and private day schools - with gym and with cafeteria (per 50 students) [8]	2.1
Miscellaneous Classifications	
Private pools associated with single-family residential units (per 40,000 gallons of pool volume) [9]	0.4
Pools associated with multi-family and transient residential units (per 40,000 gallons of pool volume) [9]	0.8
Commercial and public pools - first 40,000 gallons of pool volume [9]	1.05
Commercial and public pools - each additional 40,000 gallon capacity [9]	0.75
Recreational Vehicle Waste Disposal Stations [10]	3 unless otherwise determined
Medical hospital (per bed) [11]	0.35
Public Restrooms (per toilet or urinal)	0.15
Assisted living facilities (per occupied unit)	0.35

1) Subrental privileges of all kinds are not permitted under the single-family category.
2) Multi-Family Residential Units - Apartments, condominiums, townhouses, and similar facilities in the same complex; all units intended for long-term rental or ownership.
3) Hotels, motels, mobile home parks, dormitories, and similar facilities. Includes laundry facilities in mobile homes; swimming pools and laundry facilities (except those in mobile homes) are additive; room counts shall include rooms furnished to employees; each billing unit shall have a minimum of 1 manager's unit.
4) Restaurants, bars, loungers, banquet rooms, drive-ins, office buildings, retail sales buildings, multiple-use buildings, laundromats, service stations, shops, garages, and similar facilities.
5) No process water will be allowed to enter the sewer.
6) A set of pumps is defined as 1 fueling station regardless of the number of hoses. No process water will be allowed to enter the sewer.
7) Rectories, social areas with kitchen facilities, are additive.
8) Includes teachers, librarians, custodians, and administrative personnel associated with the school function; administrative, centers, warehouses, equipment (such as buses), repair and/or storage centers, swimming pools, and similar facilities are additive.
9) A permanent sign must be placed prominently at all pool filter installations stating that pools are not to be drained without permission from the manager, that pool drainage rates will be subject to the approval of the City, and that draining shall be limited to the hours between 11 p.m. and 6 a.m. the next day.
10) The operator of the disposal facility shall provide a means acceptable to the City of counting the number of times the disposal facilities are used. The City shall review and approve charges made to users of dumping facilities by facility owners; no system development fees will be assessed for camper dump facilities, and the City reserves the right to cease service to such facilities at any time.
11) Includes staff and administrative personnel associated with the hospital function.

The City does not monitor inactive accounts. If a building is connected to the system, it is being charged whether or not it is vacant. The City provides water and sewer services to a total of 348 water customers and 346 sewer customers. The following is a summary of current customer EQRs from the City.

TABLE 3
CITY OF CREEDE
EQR TABULATION

Customer EQR	Active Water Services	Water EQR	Active Sewer Services	Sewer EQR
0.7 EQR	14	9.8	14	9.8
0.85 EQR	14	11.9	14	11.9
1 EQR	248	248	246	246
1.25 EQRs	41	51.25	40	50
1.4 - 1.75 EQRs	8	12.45	8	12.45
2.0 - 2.8 EQRs	16	39.12	16	39.12
3.0 - 7.70 EQRs	7	37	7	37
Deep Creek 78 EQRs	SEWER ONLY		1	78
Total	348	409.52	346	484.27

The above table shows an estimated 409.52 water EQRs and 484.27 sewer EQRs served by the City of Creede.

B. EXISTING FINANCIALS

In order to evaluate user rates, the existing revenues and expenditures were analyzed. The City operates a combined Water and Sewer Fund. Water and sewer user rates should be set to ensure there is adequate revenue to cover the operating expenditures and meet the minimum coverage ratio for any loans. Sales tax, via the Capital Improvement Fund, funds the City's capital improvements and loan payments.

The City's audits and budgets were analyzed for the purpose of comparing operating revenues and operating expenditures. The City's audits present combined revenue and expenditures

for the Water and Sewer Fund and does not differentiate revenue and expenditures between water and sewer. The budgets itemize the revenues and expenditures to better illustrate which belongs to water or sewer. The values utilized in the analysis are based on the 2020 through 2023 audits and the 2024 budget, as well as data provided by the City. The following is a table showing the annual water and sewer revenue operations from 2020 through 2024.

TABLE 4
CITY OF CREEDE
WATER AND SEWER REVENUES

Year [1]	Charges for Services [3]	Tap Fees [4]	Grant/Loan Revenue	Transfers From Capital Imp. Fund	Misc. [5]	Total Revenue
2020	$348,187	$103,438	$0	$64,942	$10,857	$527,424
2021	$370,641	$479,071	$0	$159,895	$3,810	$1,013,417
2022	$382,113	$545,703	$0	$348,974	$3,841	$1,280,631
2023	$358,800	$12,000	$0	$0	$12,000	$382,800
2024 [2]	$430,800	$12,000	$330,000	$470,000	$12,000	$1,254,800

1) From the annual Audits.
2) From the 2024 Budget.
3) Includes total operating revenues less miscellaneous revenue listed on the budgets.
4) Listed on the audit as capital contributions. The City budgets define capital contributions as tap fees.
5) Includes interest income and other revenue from audits. From budgets, includes miscellaneous and interest income.

A review of the City's budgets reveals that drainage revenue may also be included in the Water and Sewer Fund revenues. For this study, drainage revenue is not included in the analysis as drainage/storm fee is not in the scope of the project.

As can be seen in the above table, revenue has steadily increased each year except in 2023. The City's customer base has increased steadily over the period of review and this increase can be seen with the steady rise in the City's total operating revenue and the increase in tap fee revenue between 2020 and 2022. The City also manages a Capital Improvement Fund, financed by its sales tax revenue. This fund is used to support capital improvement projects as well as to provide matching funds for grants.

The analysis focused on the expenditures attributed to both the water and sewer functions. The expenditures of the water and sewer system are combined in audits; thus, the budgets were utilized to categorize expenses into water or sewer. The audits categorize related

expenditures as shown on the budget into a broader category. The audits also show depreciation as an expense, but typically, depreciation is not budgeted. It is crucial that the proposed water and sewer rate structure covers the cost of service for the corresponding functions. Some items were completely attributed to one function. Other expenses could not be readily divided between water and sewer. The City indicated the percentage allocations for each shared budget category. The following sections provide more detail regarding water and sewer expenses, as this is the first step in determining the cost of service.

1. Water Expenditures

The City's water expenditures fluctuate throughout the years. In reviewing the water system expenditures, the City's salaries and benefits, which account for the water system's largest expense, also fluctuate similarly to the total expenditures. The salaries and benefits were split as 60% attributable to the water activities, except overtime, which was split 50% between water and sewer. Other items were split 50%, including office supplies, tools and equipment, insurance, telephone, postage, IT, miscellaneous, and other expenses. The City's water debt principal and interest payment accounts for the second largest expense, followed closely by the utilities associated with the water system. The utilities were attributed 75% towards the water system. Other items in the expenditure categories were very clearly split between water and sewer; for instance, water testing, water supplies and meters, propane-water plant, electricity–water plant, and water miscellaneous are 100% attributable to the water system.

The water system carries one debt instrument from a water system improvement project completed in 2009. This project was funded with a loan through the Colorado Water Resources and Power Development Authority (CWR&PDA), Drinking Water Revolving Fund (DWRF), for $1,250,000. It is a 30-year loan with an interest rate of 1.75% and bi-annual payments of $27,156 due in May and November for an annual total of $53,108, until paid in full. The final CWR&PDA payment will be due May 1, 2039.

Utilizing this financial data, the subcategories were combined into the following table to reflect the estimated expenditures attributed to the water system. A detailed breakdown of the expenditures as split is provided in Appendix A.

TABLE 5

CITY OF CREEDE

WATER SYSTEM EXPENDITURES

Year [1]	Salaries & Benefits	Materials & Supplies	Admin	Testing Fees	Professional Services	Insurance	Operations, Repair, and Maintenance	Utilities	Misc.	Debt P&I	Total
2020	$103,273	$11,272	$0	$2,359	$30,338	$0	$13,518	$31,520	$4,931	$53,108	$250,319
2021	$95,269	$12,104	$0	$2,198	$8,742	$0	$8,276	$34,950	$13,061	$53,109	$227,709
2022	$103,003	$15,575	$0	$2,529	$20,246	$0	$8,997	$44,633	$14,230	$53,108	$262,321
2023	$84,562	$10,750	$1,450	$2,000	$15,000	$3,750	$16,000	$36,500	$4,000	$53,108	$227,120
2024 [2]	$145,800	$16,000	$3,100	$2,000	$15,000	$3,750	$21,360	$36,500	$4,000	$53,108	$300,618

1) From the annual Audits.
2) From the 2024 Budget.

2. Sewer Expenditures

The City's sewer expenses were compiled using the same method as the water expenses. As mentioned in the water expenditures, the salaries and benefits were split as 40% attributable to the sewer activities, except overtime, which was split 50% between water and sewer. Other items were split 50%, including office supplies, tools and equipment, insurance, telephone, postage, IT, miscellaneous, and other expenses.

The utilities were attributed 25% towards the sewer system. Other items in the expenditure categories were very clearly split between water and sewer; for instance, electricity-sewer plant, sewer testing, sewer supplies, and sewer miscellaneous are 100% attributable to the sewer system. Professional services (80%), testing fees (89%), and treatment fees (60%) are primarily attributed to the sewer system. There is also debt principal and interest payment attributable to the sewer system only.

The City's sewer expenditures also fluctuate over the years. Looking at the sewer system expenditures more closely, the City's two largest expenses are salaries and benefits, and professional services. The City's debt, principal, and interest payments are the third biggest expense for the sewer system.

Currently, the Sewer Fund carries one debt instrument from a rehabilitation project for the existing collection system. This project was funded with a loan through the CWR&PDA, Water Pollution Control Revolving Fund for $1,000,000. It is a 30-year loan with an interest rate of 1.5% and bi-annual payments of $20,991 due in May and November for an annual total of $41,981, until paid in full. The final CWR&PDA payment will be due May 1, 2052.

The following table presents the expenditures incurred within the Sewer Fund for the same period as that summarized for revenues. A detailed breakdown of the expenditures as split is provided in Appendix A.

TABLE 6

CITY OF CREEDE

SEWER SYSTEM EXPENDITURES

Year [1]	Salaries & Benefits	Materials & Supplies	Admin.	Testing Fees	Professional Services	Insur.	Operations, Repair, and Maint.	Utilities	Misc.	Debt P&I	Total
2020	$76,332	$9,222	$0	$19,086	$121,352	$0	$20,276	$10,507	$4,931	$0	$261,706
2021	$70,417	$9,904	$0	$17,787	$34,968	$0	$12,414	$11,650	$13,061	$0	$170,201
2022	$70,417	$12,744	$0	$20,461	$80,984	$0	$13,496	$14,878	$14,230	$3,460	$230,670
2023	$76,133	$10,750	$1,450	$15,000	$60,000	$3,750	$24,000	$12,000	$4,000	$41,982	$249,065
2024 [2]	$58,041	$11,000	$3,100	$20,000	$60,000	$3,750	$32,040	$12,000	$4,000	$41,981	$245,912

1) From the Annual Audits.
2) From the 2024 Budget.

Several observations and trends can be identified when comparing the prior revenue and expense tables. The operating revenues, made up of the charges for service, steadily increased each year except for in 2023. Based on the operating revenues and the total water and sewer operating expenditures, there is an annual deficit. The City relies on the General Fund to help support the Water and Sewer Fund, but they would like to phase out their reliance on the General Fund.

The revenue table also reflects the non-operating revenue, which is largely attributed to tap fees and transfers from the Capital Improvement Fund. The debt service is shown as an operating expense since the City incurs the expense annually. Non-operating expenditures are typically for large capital improvement projects or for non-recurring expenditures.

The Town also operates a Capital Improvement Fund. This account has grown over the four audit years, 2020 to 2023, to an amount over $1,500,000. This fund is supported by the City's sales tax and is utilized to finance capital improvement projects and grant/loan matches.

SECTION IV
EXPENDITURES

A. OPERATION, MAINTENANCE, AND REPAIR

When planning for current and future expenditures, assessing costs related to operations, maintenance, and repairs is essential. These can include regular monthly expenses, as well as annual costs and unplanned emergency expenditures. As stated, the City does not separate the expenditures between water and sewer in the annual audit. The annual budget separates a few expenditures specific to water or sewer. City staff went through each budget category and estimated the expenditure split between the water and sewer systems if the category was shared. Thus, the expenditures for both water and sewer are estimated, and the actual expenditures for each could vary.

Regarding the water system, the largest expenditures over the four years is for salaries and debt from capital improvement projects. These two categories represent approximately 63% of the expenditures attributed to the water system. Regarding the sewer system, the largest expenditures over the four years is for salaries and professional services. These two categories represent approximately 54% of the expenditures attributed to the sewer system. Due to ongoing wastewater collection system projects, the City has increased professional services expenses.

The operational, maintenance, and repairs account for 5% of the expenditures attributed to the water system and 8% of the expenditures attributed to the sewer system. There are no additional proposed changes to operations, repairs, and maintenance expenditures. The City undertook water system improvement projects less than 20 years ago; therefore, the water system is believed to be in good condition with minimal repairs required. Repair and maintenance costs almost doubled in 2023 largely due to the sewer sysetm and continue to increase year over year, but this expense is split such that the sewer utility takes on slightly more of this expense. Since the City's water system is relatively new, only a small portion of this expense, 20%, is attributable to the Water Fund. The wastewater system recently completed the 3rd phase of improvements. The completion of this phase of the project and future projects will help to decrease the operations, maintenance, and repair expenses.

The utilities associated with the City's water system operations account for approximately 14% of the expenditures. The City is working to pursue a water meter project that will slightly offset the City's utility costs. It is likely that with the installation of new water meters, the City will see a significant decrease in water usage, which in turn will affect the City's water utilities due to less pumping from the wells and less treatment. Additionally, a potential hydroelectric project could reduce and possibly eliminate the City's utility expense; however, this change was not depicted in the projected expenses to maintain a conservative projection.

As mentioned above, the water and sewer systems carry one debt instrument each for capital improvement projects. The water debt is meant to be paid in full in 2039, and the final sewer debt payment will be in 2052. Both debts carry a minimum coverage ratio that requires the City's water and sewer operating revenues to be 120% and 110% of their operating expenses, respectively.

B. MANAGEMENT AND ADMINISTRATIVE

Salaries and benefits account for 43% of the expenditures attributed to the water system and 27% to the sewer system. Currently, the City relies on the General Fund to supplement maintenance and administrative personnel salaries. The City indicated the desire for the Water and Sewer Fund to carry the appropriate salaries and eliminate its reliance on the General Fund. City staff stated that only 25% of the Clerk and City Manager's time is attributed to activities associated with the water and sewer systems. Approximately 75% of the Deputy Clerk and all maintenance personnel's time is attributed to the water and sewer system activities. Increasing the salary and benefits costs attributed to the Water and Sewer Fund results in a 26% increase in the City's salary expense, which is then split 60% to water and 40% to sewer.

Additionally, the General Fund has covered most other administrative expenses such as office supplies and IT. Some of these expenses should be attributed to the Water and Sewer Fund. Supplies like paper, envelopes, and postage are required for billing, and there are some personnel who spend the majority of their time doing water and sewer tasks utilizing computers. Therefore, the IT expenses were increased to $2,000, and the office supplies

were increased to $5,000 for the 2025 proposed expenditures and were then split equally between water and sewer.

The remaining 18% of the water system expenditures are attributed to materials and supplies, administrative expenses, testing fees, professional services, insurance, and miscellaneous expenses. The remaining 38% of the wastewater system expenditures are attributed to materials and supplies, administrative expenses, testing fees, insurance, utilities, and miscellaneous expenses. Except for those abovementioned changes, expenses are expected to increase 4% annually.

SECTION V
RATE ANALYSIS

A. TYPES OF WATER RATE STRUCTURES

Four main types of water and sewer rate structures are typically utilized. The best rate structure for a community varies from place to place and many factors are considered when establishing a rate structure. Many elements factor into the rate structure, including the availability of water resources, the types and classes of the users, and the community's economic status. The rate structure should be set, ensuring there is adequate revenue for current and future expenditures in the period of review. Often, rate structures account for future capital expenditures, especially for any anticipated debt payment; however, for the City the Capital Improvement Fund subsidizes capital improvements. Rate structures are often utilized to discourage wasteful use while also ensuring that it is fair across all user classes.

The most common rate structures are uniform rates, increasing block rates, and decreasing block rates. Uniform rates charge the same amount for every 1,000 gallons of water. Increasing block rate charges a higher price for larger usage and it could be various rates. Decreasing block rate structure is the opposite with a lower price per 1,000 gallons with increased usage. In Colorado, the rate structures are typically either uniform or increasing block rates. Decreasing block rate structures are not typical in areas where water supply is limited; thus, this structure is not common in Colorado.

The City of Creede currently utilizes a uniform rate structure for both water and sewer rates. The City has limited customer water meters. Therefore, the rate structure is based on a flat fee per EQR, as discussed in the previous section. It is suggested that there be no change in the user charge system at this time, as no other rate structure is possible without metering. It appears that there has been an appropriate management system to apply the appropriate EQR to each user, demonstrating a reasonable attempt at equity among all users; however, once water meters are installed throughout the City, an increasing block rate should be considered after sufficient water data has been collected and customers have corrected leaks.

B. USER CLASSIFICATIONS

In setting a user rate structure, the base rate is determined by the type of user classification. Typical user classifications include residential, commercial, and industrial users. An alternate way of defining user classifications is by setting a base rate by the tap size. This is more beneficial in communities with various tap sizes. Typically, the larger the tap size the larger the water and sewer use; thus, a larger incremental water and sewer base rate.

The City of Creede's service area consists of residential and commercial accounts. As stated above, the City utilizes EQRs to classify user accounts. Customers with larger EQRs are expected to have a higher water demand and sewer flow. This user classification and associated rate structure results in a larger incremental water and sewer rate for customers with larger EQRs by multiplying the calculated EQR by the base rate. It would not be equitable to charge for usage for the small number of customers with water meters. It is suggested that there is no change in the user classification system as the EQR table utilized by the City is the industry standard where water usage data is unavailable.

C. COMPARABLE COMMUNITIES RATE STRUCTURE

It is also helpful when setting water and sewer rates to understand what other communities of similar size and demographics charge for water and sewer service for general comparison only. Nearby communities with similar demographics (median household income and median home value are comparable) were reviewed. It is noted that the cost of service varies from community to community based on the cost of operations, and a direct comparison should not be used to set rates. Nearby communities are shown in the following table.

The City of Creede is nearly at the midpoint when comparing 8,000 gallons of usage. Most communities listed utilize an increasing block rate structure for water consumption except the City of Creede and the Town of Saguache.

TABLE 7

CITY OF CREEDE

COMPARABLE COMMUNITIES

Community Name	Population	Median Household Income	Water Base Rate	Consumption Rate (per 1,000 gallons)			Water bill with 8,000 gallon consumption	Sewer Base Rate
				Tier 1	Tier 2	Tier 3		
City of Del Norte	1,808	$40,756	$33.54/month [1)]	$2.01 for using above 0 gal	-	-	$49.62	$43.85/month
Town of Lake City	465	$57,548	$40/month [2)]	$3.00 for using 14,000 - 17,999 gal	$4.25 for using 18,000-23,999 gal	$5.50 for using over 23,999 gal	$40.00	$40.00/month
Town of South Fork	458	$70,804	$45/month [3)]	$3.60 for using 1-5,000 gal	$4.00 for using 5,001-15,000 gal	$6.00 for using 15,001-25,000 gal	$75.00	$37.96/month
Town of Saguache	535	$35,795	$30.00/month	-	-	-	$39.00	$37.00/month
City of Creede	280	$51,033	$46.06/month	-	-	-	$46.06 [4)]	$20.00/month

1) Base rate of $27.54, plus $6.00 water improvement fee.
2) Customers billed bi-monthly. Base rate includes up to 13,999 gal of water usage.
3) For standard 5/8-inch water meter
4) Representative of customers assigned 1 EQR, which is the most common classification for customers

D. ASSUMPTIONS FOR RATE CALCULATION

To calculate the revenue that would be generated with a new rate structure, assumptions are made, and these assumptions are determined by the information provided by the City.

According to the Colorado State Demographer, the population projections for the next five years for Mineral County will increase by an average of 0.3% per year through 2027, then decrease by an average of 0.1% per year through 2029. The State Demographer's office compiles population forecasts for both counties and regions but not for individual communities or unincorporated portions of individual counties. The population base within the City is influenced by factors other than county and regional growth rates. There are some undeveloped parcels within the City's service area. For this study, it is assumed that customer accounts will increase by two (2) customers each year for the period of the evaluation. These new customers are assumed to be classified with one (1) EQR. This equates to an EQR growth rate of approximately 0.4% annually.

As stated above, the City currently relies on the General Fund to supplement the salaries for maintenance and administrative personnel. Initially, it was assumed that the Water and Sewer Fund would carry the appropriate salaries and eliminate the City's reliance on the General Fund. However, it was determined that this approach is not practical in the short term; therefore, the General Fund will still be required to partially cover these salaries.

The projected 2025 expenditures were calculated by increasing the 2023 audited figures by 4.59%, resulting in total Water and Sewer Fund expenditures of approximately $500,000. Following this, it is anticipated that expenditures will increase annually by 4%, which closely aligns with the Consumer Price Index (CPI). This may result in a modest increase in expenditures. According to the U.S. Bureau of Labor Statistics, the consumer price index for the Western United States in 2023 was 4.14%. The CPI was significantly impacted by COVID-19, increasing to 9.06% midway through 2022. Since July of 2022, the CPI has been decreasing, and the downward trend has continued through 2024 with an average CPI of 3.02%. Thus, the annual expenditures inflation by 4% is reasonable and conservative.

The loans with CWR&PDA require a coverage ratio, (operating revenues minus operating expenditures divided by the loan payment), of 110% of the annual debt service. Initially, it was assumed that the proposed water and sewer rates would need to be adequate to meet the loan coverage ratios; therefore, the rates were adjusted until the net operating income was 110% of the annual debt service. In speaking with the CWR&PDA, if an entity has year-over-year transfers into the fund which the loan is being serviced, the income is considered operational. Thus, the coverage ratio of 110% can be met with this transfer. In the initial iteration of the rate study, this transfer was excluded, as the objective was to evaluate rates under the assumption of independent fund operation. To meet this condition, significant rate increases would be necessary. Furthermore, it was concluded that the debt payments would be handled by the Capital Improvement Fund (CIF), given that the debt arises from infrastructure projects, and thus, the CIF is responsible for covering these costs.

E. BASE FEE AND USAGE RATE

Four new potential rate structures, two water rate structures and two sewer rate structures, were presented to the City Board of Directors in June 2024. One rate structure, for each water and sewer, was presented with a single rate increase that would cover projected expenditures for the next five years and the other rate structure with an annual increase that would cover projected expenditures each year. The following table presents the water and sewer rate structures that were presented. A detailed breakdown of these rate structures and the corresponding presentation is provided in Appendix B.

TABLE 8
CITY OF CREEDE
PROPOSED WATER & SEWER RATE COMPARISON

Type of Increase	Proposed Base Rate
Water	
1 Time Rate Increase	$77.50/month/1 EQR
Annual Increase between 2.50% and 3.00%	$69.50/month/1 EQR in 2025
Sewer	
1 Time Rate Increase	$61.75/month/1 EQR
Annual Increase between 2.75% and 3.20%	$55.00/month/1 EQR in 2025

The above rate structures were the proposed 2025 rates. The proposed rate structures continue to be uniform, as they have been in the past. The one (1) time rate increase would cover the projected expenditures for the next five years.

Under the water annual increase rate structure, the base rate would increase by 2.50% in 2026, 2.75% in 2027, 3.00% in 2028, and 2.75% in 2029 to achieve a loan coverage ratio of 110%. For the wastewater annual increase rate structure, the base rate would increase by 2.75% in 2026, 3.00% in 2027 and 2028, and 3.20% in 2029 to achieve a loan coverage ratio of 110%.

In presenting the water base rate of $77.50 per month per EQR, the consultant analyzed ways to lower the rate increase impact by reducing expenditures. The options for this included the implementation of the hydropower project, continuation of the General Fund subsidy for salaries, and debt payments from the Capital Improvement Fund. As discussed earlier, the City will continue to subsidize salaries and debt payment will come from the CIF. The hydropower project will likely not be implemented in the review period; thus, it is not a realistic expenditure adjustment. The table below indicates the expenditure and the impact on the water base rate.

TABLE 9

CITY OF CREEDE

POTENTIAL WATER EXPENDITURE REDUCTION

	Rate	Difference	Annual Cost Reduction for 2025
Water Base rate with no expenditure adjustment	$77.50	-	-
Adjust Expenditures by the following actions:			
Hydropower project eliminating utility cost	$69.00	($8.50)	$37,960
General Fund providing 30% subsidy for salaries	$65.50	($12.00)	$52,200
Debt payments from the Capital Improvement Fund (CIF)	$67.00	($10.50)	$53,108
Hydropower project eliminating utility cost and debt payment from CIF	$58.50	($19.00)	$91,068

A similar exercise was completed for the sewer expenditures.

TABLE 10

CITY OF CREEDE

POTENTIAL SEWER EXPENDITURE REDUCTION

	Rate	Difference	Annual Cost Reduction for 2025
Sewer Base rate with no expenditure adjustment	$61.75	-	-
Adjust Expenditures by the following actions:			
Hydropower project eliminating utility cost	$59.50	($2.25)	$12,480
General Fund providing 30% subsidy for salaries	$55.00	($6.75)	$35,580
Debt payments from the Capital Improvement Fund (CIF)	$54.75	($7.00)	$41,981
Hydropower project eliminating utility cost and debt payment from CIF	$52.25	($9.50)	$54,461

SECTION VI
PROPOSED RATE STRUCTURE

During and after the Board Meeting, additional feedback was provided, which resulted in another water and sewer rate structure being recommended for implementation. The discussion introduced new lower base rates that increase annually to account for inflation. Most of the previously stated assumptions remain valid; the Board discussed utilizing the General Fund to cover employee salaries. At this juncture, the Board has opted to continue funding a portion of employee salaries through the General Fund. As the health of the fund increases, it is noted that this decision may be altered in the future. In September of 2024 the City of Creede Board of Directors approved the following rate structure:

TABLE 11
CITY OF CREEDE
PROPOSED WATER AND SEWER RATE STRUCTURES

Type	Proposed Base Rate
Water Base Rate	$50/month/1 EQR
Sewer Base Rate	$45/month/1 EQR

The City increased the water base rate from $46.06 to $50.00 per EQR per month and increased the sewer base rate from $20 to $45 per EQR month. This rate increase was made effective immediately. This will generate an additional $21,336 annually in base fee revenue for water system operations and $146,361 annually in base fee revenue for wastewater system operations. The City will also increase the base rate annually by 10% to account for inflation and gradually allocate more employee salaries with the Water and Sewer Funds. A detailed breakdown of the approved rate structures is provided in Appendix C.

The Environmental Protection Agency recommends that the sum of the average water and sewer bill not exceed 5% of the median household income (MHI). According to DOLA, the MHI for the City of Creede is $49,375. Thus, 5% would be equivalent to an average water and sewer bill total of $205.73 per month. Most of the City's water and sewer residential customers are assigned 1

EQR, making the proposed water bill for those customers $50 and the sewer bill $45 for a total of $95.

A. 5-YEAR PROJECTION

The City of Creede has not implemented a rate increase since 2022. In many larger communities and a few small communities, rate increases are done annually. Increases are directed by rate studies or by the Consumer Price Index (CPI). Therefore, the proposed rate structure is suggested to increase by 10% annually over the next five years of projected expenditures. This is intended to ensure that user rates exceed inflation and to accommodate the salary costs associated with the Water and Sewer Fund.

TABLE 12
CITY OF CREEDE
5-YEAR PROJECTION OF PROPOSED RATE STRUCTURE

Type	2025	2026	2027	2028	2029
Water Base Rate	$50	$55	$60.50	$66.55	$73.21
Sewer Base Rate	$45	$49.50	$54.45	$59.90	$65.88

SECTION VII
CONCLUSION

Several rate structures were evaluated in this rate study and the Board of Directors determined that the best option is to increase the water and sewer base rates to ensure that the fund only needs transfers for very specific costs, i.e. debt and salaries. New rates are needed to ensure adequate revenue for the proper operation of the water and sewer systems and to ensure that revenues exceed expenditures.

In September of 2024, the Board adopted a revised rate structure that included increasing the water base rate from $46.06 to $50 per month and the sewer base rate from $20 to $45 per month. The base rates will increase annually by 10% through 2029 to exceed inflation and allocate more revenue toward properly funding employee salaries.

Attachment 5 –

EQR Rate Codes in Use by the City of Creede

Sec. 13-6-40. EQR Schedules.

For the setting of certain fees, the City has found it convenient to establish Equivalent Residential Unit Schedules. The base for this schedule is an average detached single-family residence, or its equivalent. The schedules are given in the following table.

TABLE 6.4.1

EQUIVALENT RESIDENTIAL UNIT (EQR) SCHEDULE

WATER AND SEWER UTILITIES

	CLASS OF USER	***EQR***
	CLASS OF USER	***EQR***
A.	RESIDENTIAL CLASSIFICATIONS	
1.	Single-Family Residential Units (per each)	1.0
	Single-family homes having not more than 3 bedrooms or baths; individually billed mobile homes; mobile homes on single lots; mobile homes established for permanent residences	
	Add for each additional bedroom/bath	0.2
	Note: Subrental privileges of all kinds are not permitted under the single-family category	
2.	Multi-Family Residential Units	
	Apartments, condominiums, townhouses and similar facilities in the same complex; all units intended for long-term rental or ownership	
	small sized unit. Shall not have more than 1 bedroom and 1 bathroom.	0.5
	medium sized unit. Shall not have more than 2 bedrooms or 2 bathrooms.	0.75
	large sized unit. Shall not have more than 3 bedrooms and 2½ bathrooms.	0.90
	any larger single unit.	1.0
3.	Transient Residential Units	
	Hotels, motels, mobile home parks, dormitories and similar facilities	
	Note: Includes laundry facilities in mobile homes; swimming pools and laundry facilities (except those in mobile homes) are additive; room counts shall include rooms furnished to employees; each billing unit shall have a minimum of 1 Manager's unit	
a.	Manager's unit (per each)	0.80
b.	Motels, hotels and rooming houses without kitchen facilities.	
	with not more than 2 bed spaces per room (per each rental room)	0.20
	with more than 2 bed spaces per room (per each room)	0.30
c.	Motels with kitchen facilities	
	with not more than 2 bed spaces per unit (per each rental unit)	0.25
	with more than 2 bed spaces per unit (per each rental unit)	0.35
d.	Dormitories (per each rental bed space)	0.10
e.	Add for laundry facilities (or available hookup) in each building, % of total EQR served	20%
f.	Mobile homes in park; with laundry	0.70/space
B.	COMMERCIAL CLASSIFICATION	
1.	Restaurants and Bars	
	Restaurants, bars, lounges, banquet rooms and drive-ins	
a.	Restaurants and bars (per 20 seats)	1.0
b.	Banquet rooms (per 20 seats)	0.4
c.	Drive-ins (per car stall)	0.2
d.	Drive through take-out service window	0.5
2.	Commercial Buildings	
	Office buildings, retail sales buildings, multiple use buildings, Laundromats, service stations, shops, garages and similar facilities.	

	Note: No process water will be allowed to enter the sewer	
a.	Offices and office buildings (per 1,000 s.f. of gross floor area)	0.50
b.	Retail sales area (per 1,000 s.f. of gross sales and display area)	0.30
c.	Laundromats (per washing machine)	0.8
d.	Service stations (a set of pumps is defined as 1 fueling station regardless of the number of hoses)	
	First set of pumps	1.2
	Each additional set of pumps (per set)	0.8
	Add for each bay/rack where cars can be washed	1.4
e.	Nonretail work areas such as garages, machine shops (per each 10 employees)	0.7
C.	CHURCH AND SCHOOL CLASSIFICATION	
1.	Churches (per 100 seats)	1.0
Note:	Rectories, social areas with kitchen facilities are additive	
2.	Schools	
	Day care centers, public and private day schools	
	Note: Includes teachers, librarians, custodians and administrative personnel associated with the school function; administrative centers, warehouses, equipment (such as buses) repair and/or storage centers, swimming pools and similar facilities are additive.	
a.	Without gym and without cafeteria (per 50 students	1.4
b.	Without gym and with cafeteria or with gym and without cafeteria (per 50 students)	1.75
c.	With gym and cafeteria (per 50 students)	2.10
D.	MISCELLANEOUS CLASSIFICATIONS	
1.	Swimming pools and wading pools	
	Note: A permanent sign must be placed prominently at all pool filter installations stating that pools are not to be drained without permission from the Manager, that pool drainage rates will be subject to approval of the City, and that draining shall be limited to the hours between 11 p.m. and 6 a.m. the next day.	
a.	Private pools associated with single-family residential units (per 40,000 gallons of pool volume)	0.40
b.	Pools associated with multi-family and transient residential units (per 40,000 gallons of pool volume	0.80
c.	Commercial and public pools. Total EQR to be computed from pool volume and per capita capacity as follows:	
	First 40,000 gallons of pool volume	1.05
	Each additional 40,000 gallon capacity.	0.75
2.	Recreational Vehicle Waste Disposal Stations	3.0 Unless otherwise determined
	The operator of the disposal facility shall provide a means acceptable to the City of counting the number of times the disposal facilities are used.	
	The City shall review and approve charges made to users of dumping facilities by facility owners; no system development fees will be assessed for camper dump facilities, and the City reserves the right to cease service to such facilities at any time.	
3.	Medical Hospital	
	Note: Includes staff and administrative personnel associated with the hospital function.	
	Per bed	0.35
4.	Public Restrooms (per toilet or urinal)	0.15
5.	Assisted Living Facilities per Occupied Unit	0.35
E.	OTHER CLASSIFICATIONS	

	Equivalents shall be established on an individual basis for all users other than those identified in Classifications A, B, C, and D above. Industrial users will be subject to the requirements of the Environmental Protection Agency as those requirements pertain to assessment of users charges and cost recovery (refer to 40 C.F.R. § 35 (1987)).	
F.	GENERAL NOTES	
1.	Each customer of the system will be charged a minimum of 1 EQR for purposes of establishing fixed costs.	

TABLE 6.4.2

EQUIVALENT RESIDENTIAL USER (EQR) SCHEDULE

DRAINAGE UTILITY

	CUSTOMER CATEGORY	***EQR VALUE***
	CUSTOMER CATEGORY	***EQR VALUE***
1.	Single-Family Residential Detached, average density, 3.2 DU/gross acre. Actual Density 1.0 to 6 DU/acre	1.0 EQR/Unit
2.	Multi-Family Residential (townhomes, Single-Family Attached, Apartment, Condominiums)	
	Gross density – dwelling units/acre*	
	Less than 4.0 DU/Acre	1.0 EQR/Unit
	4.0 to 6.99 DU/Acre	0.8 EQR/Unit
	7.0 to 9.99 DU/Acre	0.7 EQR/Unit
	10.0 to 12.99 DU/Acre	0.6 EQR/Unit
	13.0 or more DU/Acre	0.5 EQR/Unit
3.	Commercial Area	5.25 EQR/Acre
4.	Schools, Government-Type Buildings	3.5 EQR/Acre
5.	Open Space	0.0 EQR/Acre
* includes platted area with all streets, but does not include dedicated open space.		

(Ord. 334 §6.4, 2005)

City of Creede Water Efficiency Plan

PREPARED FOR

City of Creede

March 2026 241-025.000

WRIGHT WATER ENGINEERS, INC.