



# **CHEROKEE METROPOLITAN DISTRICT**

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## **Water Provider's Supplementary Report for Proposed Redevelopment of 6895 Space Village Avenue**

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This document has been prepared in response to El Paso County review comments regarding calculation of anticipated water demand for the redevelopment of 6985 Space Village.

## Introduction

Cherokee Metropolitan District (CMD) is a Title 32 special District which provides water and wastewater to an approximately 5000-acre enclave of unincorporated El Paso county surrounded by the City of Colorado Springs. Currently CMD serves approximately 7000 residential taps and 600 commercial taps in addition to bulk users in eastern El Paso County including Schriever Air Force Base.

CMD water is sourced entirely from groundwater in two regions. The majority is recovered from the alluvial Upper Black Squirrel (UBS) Aquifer in eastern El Paso County through 20 wells. The remainder is sourced from two wells in deep bedrock aquifers in the northern part of the county on the “Sundance Ranch” property. Water from eight of the 20 wells in the eastern part of the county can only be used to serve a fixed set of customers. Water for the main service area of CMD comes only from the remaining 12 wells in UBS along with the two wells in Black Forest.

## Calculation of Anticipated Water Demand

6895 Space Village has been a District customer since 1985. For much of that history it was a motel, but since at least 1994 it has been classified as a residential use by the El Paso County Assessor. This project will not significantly change the number of units nor the intensity of water use in each unit. The property has had stable water use in the last five years (Table 1). The monthly data show a water use variability that does not follow regular seasonal variation associated with irrigation, indicating that there is no significant irrigation on the property (Appendix A). The developer has stated that this will not change after the redevelopment. The recommitment of 2.3 AFY is the highest water use by the property in the last 5 years and is the District’s high estimate of water use by the development, even as occupancy rates may change.

Table 1: Annual water demand on the property in the last 2015-2019

<b>Year</b>	2019	2018	2017	2016	2015
<b>AFY</b>	2.08	1.75	1.25	1.66	2.46

With 22 units, the per-unit water use value is lower than El Paso County’s multi-family presumptive use value of 0.2 AFY/SFE. Based on observed water use data for this property the assumed, use value is not accurate for this development. Since an floor space and use type are not changing as part of this development, CMD does not expect overall property water use to change as a result of this project.

## Water Supplies

Cherokee has eight wells that are restricted to serving a maximum of 653 AFY to specified in-basin customers. Excess allocation for these wells is unavailable for new developments, even if they are inside the Basin, so this water is tracked separately from CMD's general supply portfolio. CMD's other alluvial wells are available for export outside the UBS basin. The total annual volume available to CMD from these exportable supplies is 3,985 AFY (Table 2). The physical yield of these wells is significantly higher than their annual appropriation, allowing flexibility in satisfying summer peak demand.

Table 2: Water rights and tributary status of Exportable Wells

Well Number	Water Right (AFY)	2020 Use (AFY)	Permit Number	Aquifer	Aquifer Status
Well 9	176	175	14145-FP-R	UBS Alluvium	Tributary
Well 10	176	143	14146-FP-R	UBS Alluvium	Tributary
Well 11	244	174	6821-FP-R	UBS Alluvium	Tributary
Well 12	244	166	11198-FP	UBS Alluvium	Tributary
Well 13	1268	830	49988-F	UBS Alluvium	Tributary
Well 14	0	0	52429-F	UBS Alluvium	Tributary
Well 15*	281	117	54070-F	UBS Alluvium	Tributary
Well 16*	219	115	54069-F	UBS Alluvium	Tributary
Well 17*	175	123	63094-F	UBS Alluvium	Tributary
Well 18	225	161	16253-RFP-R	UBS Alluvium	Tributary
Well 19	95	65	20567-RFP-R	UBS Alluvium	Tributary
Well 20	400	94	4332-RFP	UBS Alluvium	Tributary
Well 21	290	224	81782-F	UBS Alluvium	Tributary
DN-4**	110	88	78315-F	Denver Aquifer	Non-Tributary
AR-1***	347.7	306	75881-F	Arapahoe Aquifer	Non-Tributary
<b>Total</b>	<b>4184.7</b>	<b>2464</b>			

\*Wells 15-17 can produce a total of 609 AFY instead of their nominal total of 675 AFY. This limitation is reflected in the 3984.7 AFY total available production.

\*\*CMD holds additional water rights in the Denver Aquifer associated with the Sundance Ranch property but this particular well has a maximum annual recorded yield of 110 AFY.

\*\*\*As of December 2019 AR-1 has 2040 AF of banked water which allows actual pumping to exceed allocation on a limited basis.

CMD is developing owned water supplies to increase available water and improve flexibility in provision of summer peak flows. By the end of 2020, these new wells will contribute 458 AFY of capacity to the CMD system (Table 3) for a total of 4,443.0 AFY. Since

2011, actual demand from CMD customers has fallen 30-35% below commitments, partially due to some currently committed developments being incomplete but largely due to water saving measures undertaken by CMD customers.

Table 3: New water supplies slated for completion in 2020

Well Number	Water Right (AFY)	Permit Number	Aquifer	Aquifer Status
Well 22	153.5	27571-FP	UBS Alluvium	Tributary
DA-1	40.3	83604-F	Dawson	Not Non-Tributary
DA-4	64.5	83603-F	Dawson	Not Non-Tributary
<b>Total</b>	<b>258.3</b>			

By the end of 2021, CMD will have a total of 4,443 AFY of exportable water supplies sourced from alluvial and deep bedrock aquifers. Further development in the Denver Basin is not planned at this time and instead CMD is focusing on acquiring new renewable supplies proximate to existing infrastructure.

## Water Commitments

CMD's water commitments stand at 4,033 AFY before the addition of the proposed development. These commitments are broken down below in Table 4. The Tipton and Kane commitments are related to an arrangement from the mid-2000's where developers reserved commitments on two new wells. The water from these wells is considered fully committed to these developers even if they have not yet begun the projects associated with the reserved commitments. Due to a complex legal history, the "Kane" water right was not tied to a specific physical water well but instead operates as a commitment served from CMD's general supply portfolio. The "Tipton" water right corresponds to CMD's Well 18.

Table 4: CMD Commitments before addition of new development

Commitments	AFY
In-District (2015)	2693
Committed Since 2015	560.5
Schriever Air Force Base	537
Kane	200
Tipton	225
Construction	25
Parks	25
<b>Total</b>	<b>4265.5</b>

## **Water Balance**

With 4,443.0 AFY of exportable supply and 4,265.5 AFY of commitments, CMD has a water balance of 177.5 AFY before the subject development. This development is included in pre-2015 in-District commitments, and since it is not expected to change its water use significantly, the District's water balance will not change as a result of this project.

## **Other Relevant District Information**

### **Recent Water Acquisitions/Losses**

CMD has not acquired any new water rights since 2015 but has been developing owned water rights. CMD has not engaged in any water trades nor lost any water rights in the last year. The District is not currently under contract to purchase new water rights although CMD is investigating purchases of renewable water rights proximate to its existing infrastructure on an ongoing basis.

### **New Augmentation Plans**

CMD is currently pursuing a replacement plan in partnership with Meridian Service Metropolitan District (MSMD) in order to maximize the efficiency of its water supplies.

### **Major Water System Capital Improvements**

CMD has been actualizing owned water by drilling wells and beginning production on several well sites. In February of 2020 CMD brought the Sweetwater 5 well (81782-F) online after a year of planning and construction. The District recently completed drilling of the Albrecht Well (Well 22) which after connection to the system will produce 153.5 AFY annually.

CMD is currently preparing to install pumps in two existing wells in the Dawson Aquifer (83603-F & 83604-F). Beyond these projects, additional well construction in the Denver Basin is not anticipated at this time, although CMD has a substantial amount of undeveloped water rights in the Denver Basin Aquifers.

Smaller-scale improvements to the distribution system to improve reliability and resiliency have been ongoing and include deeper computer integration, upgrades to treatment systems, rehabilitation of tanks, and emergency generator refurbishment.

Appendix A: Monthly water use from 2014-2019 for 6895 Space Village Avenue.

Billing Period Start Date	Billing Period End Date	Water Meter Reading	Consumption (100's cubic feet)	Consumption (acre feet)
12/16/2013	1/17/2014	4568	83	0.19
1/17/2014	2/18/2014	4659	91	0.21
2/18/2014	3/17/2014	4725	66	0.15
3/17/2014	4/17/2014	4795	70	0.16
4/17/2014	5/16/2014	4877	82	0.19
5/16/2014	6/17/2014	4981	104	0.24
6/17/2014	7/17/2014	5070	89	0.20
7/17/2014	8/15/2014	5153	83	0.19
8/15/2014	9/16/2014	5223	70	0.16
9/16/2014	10/17/2014	5289	66	0.15
10/17/2014	11/17/2014	5353	64	0.15
11/17/2014	12/17/2014	5427	74	0.17
12/17/2014	1/15/2015	5480	53	0.12
1/15/2015	2/17/2015	5537	57	0.13
2/17/2015	3/16/2015	5627	90	0.21
3/16/2015	4/16/2015	5680	53	0.12
4/16/2015	5/15/2015	5727	47	0.11
5/15/2015	6/16/2015	5797	70	0.16
6/16/2015	7/16/2015	5860	63	0.14
7/16/2015	8/17/2015	5926	66	0.15
8/17/2015	9/16/2015	5990	64	0.15
9/16/2015	10/15/2015	6050	60	0.14
10/15/2015	11/16/2015	6120	70	0.16
11/16/2015	12/16/2015	6179	59	0.14
12/16/2015	1/15/2016	6230	51	0.12
1/15/2016	2/16/2016	6278	48	0.11
2/16/2016	3/16/2016	6315	37	0.08
3/16/2016	4/15/2016	6344	29	0.07
4/15/2016	5/16/2016	6373	29	0.07
5/16/2016	6/16/2016	6411	38	0.09
6/16/2016	7/15/2016	6449	38	0.09
7/15/2016	8/16/2016	6500	51	0.12
8/16/2016	9/16/2016	6547	47	0.11
9/16/2016	10/17/2016	6595	48	0.11
10/17/2016	11/17/2016	6640	45	0.10
11/17/2016	12/16/2016	6683	43	0.10
12/16/2016	1/17/2017	6728	45	0.10

1/17/2017	2/16/2017	6779	51	0.12
2/16/2017	3/16/2017	6828	49	0.11
3/16/2017	4/17/2017	6891	63	0.14
4/17/2017	5/16/2017	6950	59	0.14
5/16/2017	6/16/2017	7016	66	0.15
6/16/2017	7/17/2017	7084	68	0.16
7/17/2017	8/16/2017	7158	74	0.17
8/16/2017	9/15/2017	7246	88	0.20
9/15/2017	10/16/2017	7319	73	0.17
10/16/2017	11/16/2017	7396	77	0.18
11/16/2017	12/15/2017	7460	64	0.15
12/15/2017	1/16/2018	7545	85	0.20
1/16/2018	2/16/2018	7633	88	0.20
2/16/2018	3/16/2018	7714	81	0.19
3/16/2018	4/16/2018	7810	96	0.22
4/16/2018	5/16/2018	7900	90	0.21
5/16/2018	6/15/2018	8002	102	0.23
6/15/2018	7/16/2018	8119	117	0.27
7/16/2018	8/16/2018	8240	121	0.28
8/16/2018	9/17/2018	8331	91	0.21
9/17/2018	10/16/2018	8391	60	0.14
10/16/2018	11/16/2018	8443	52	0.12
11/16/2018	12/17/2018	8496	53	0.12
12/17/2018	1/16/2019	8544	48	0.11
1/16/2019	2/15/2019	8595	51	0.12
2/15/2019	3/15/2019	8646	51	0.12
3/15/2019	4/15/2019	8701	55	0.13
4/15/2019	5/15/2019	8769	68	0.16
5/15/2019	6/17/2019	8843	74	0.17
6/17/2019	7/15/2019	8910	67	0.15
7/15/2019	8/15/2019	8996	86	0.20
8/15/2019	9/16/2019	9084	88	0.20
9/16/2019	10/15/2019	9166	82	0.19
10/15/2019	11/15/2019	9247	81	0.19
11/15/2019	12/16/2019	9335	88	0.20
12/16/2019	1/15/2020	9422	87	0.20