EASTWOOD VILLAGE

MEADOWBROOK PARKWAY
EL PASO COUNTY, COLORADO

WATER RESOURCE REPORT

APRIL 24, 2023

Prepared by:

Kimley»Horn

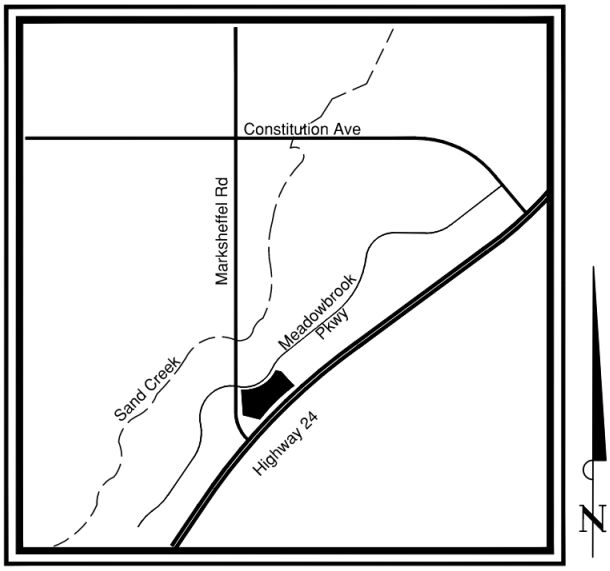
TABLE OF CONTENTS

APPENDIX

SUMMARY OF THE PROPOSED SUBDIVISION

SITE LOCATION

The Site is located at the southeast corner of Marksheffel Road and Meadowbrook Parkway and includes Tract F of the Claremont Ranch Filing No. 7, which has since been renamed to Eastwood Village (the "Site"). More specifically, the Site is situated in the northwest quarter of Section 4, Township 14 South, Range 65 West of the Sixth Principal Meridian, County of El Paso, State of Colorado. The Site is bounded by Meadowbrook Parkway to the north, an existing residential lot to the east, Highway 24 to the south, and Marksheffel Road to the west. A vicinity map is provided below for reference:



VICINITY MAP
N.T.S

DESCRIPTION OF PROPERTY

The overall site is approximately 9.81 acres of undeveloped land. The site development is anticipated to consist of 107 townhomes. Roadway infrastructure proposed within the site will provide access from the Project to adjacent right-of-way and access roadways. Project access will be obtained through Meadowbrook Parkway.

A proposed drive will loop throughout the entirety of the Project connecting to Meadowbrook Parkway to provide proficient emergency access for the site. In addition, there is a proposed gravel emergency access road from Meadowbrook Parkway, and a second proposed gravel access road to loop the proposed drives on the northeast side of the Site. These proposed gravel access roads are to provide emergency fire access and act as public utility easements.

The topography generally drains from east to west. The overall site varies in elevation from a low of approximately 6,386 feet to a high of approximately 6,429 feet.

There are two points of connection for proposed water service to the Site. The connections will be made off the existing 12-inch line within the utility easement in Meadowbrook Parkway. Refer to **Appendix A** for a schematic overview of the utility map for the Site with the points of connection.

The water design presented herein will focus on the water demands anticipated with development of the Site.

INFORMATION REGARDING SUFFICIENT QUANTITY OF WATER

The Project is within the Cherokee Metropolitan District (CMD) service area. The District will provide both water and wastewater services. This Project will comply with the CMD Water and Wastewater Infrastructure Construction Standards of December 2020 and the Colorado Springs Utilities Water and Wastewater Line Extension and Service Standards of 2023.

CALCULATION OF WATER DEMAND

The water system demands were based on a formal letter of Commitment sent by CMD for Eastwood Village dated November 21, 2022. See **Appendix B** for reference.

Demand Factors/Allowed Flows:

- Domestic Annual Water Demand
  - 26.8 acre-foot/year (AFY)
- Irrigation Annual Water Demand
  - 0.9 AFY
- Average Day Demand
  - 223.6 GPD per Unit
- Maximum Day Demand
  - 447.2 GPD per Unit

Based on this information, the domestic water demand was calculated as follows:

DOMESTIC WATER DEMAND CALCULATIONS[1]

Building Type	Units	Average Day Demand (gal/unit)	Average Day Demand (GPD)	Max Day Demand[3] (GPD)
Residential	107	223.6	23,925.5	47,851
Irrigation[2]	-	-	3,188	6,376
	Total Flow Rates:		***27,114***	***54,227***

1. Cherokee Metropolitan District provided Letter of Commitment for water service of 26.8 AFY for domestic use and 0.9 AFY for irrigation. Average Day and Max Day demands were calculated using the annual domestic demand from CMD and number of units in the development. Irrigation use was determined using the irrigation demand from CMD, see note 2 for further information.

2. Irrigation demand was calculated based on the CMD annual irrigation demand of 0.9 AF distributed over the 92-day irrigation season. The irrigation season is April 1st through October 31st (per CMD guidelines), and the irrigation system can be utilized 3 days per week which leads to 92 days per year.

3. Max Day peaking factor is 2.0.

Section 2.6, Water Main Design, of the Colorado Springs Utilities (CSU) standards was used to analyze the proposed water system. CSU standards and water distribution systems design scenarios are as follows:

- Static Scenario
    - No demands on the system. Maximum pressure = 148 PSI.
- Average Day Scenario
    - Average demands on the system based on the conversion listed above. Minimum pressure = 140 PSI.
- Maximum Day + Fire Flow Scenario
    - Fire flow demand of 1,500 GPM at each hydrant. Minimum pressure = 136 PSI.

Pipe sizing calculations:

- WaterCAD was used to size water mains.
- Minimum diameter = 8 inches for water mains, 6 inches for hydrant laterals.
- Hazen-Williams Coefficient = 130 for all PVC pipes.

The proposed water main will tap into the existing 12-inch water main on Meadowbrook Parkway northwest of the Project in two locations. Eastwood Village, with an average day residential demand of 23,925.5 GPD and a max day residential demand of 47,851 GPD is expected to not exceed the water usage outlined in the CMD Commitment Letter. Each unit in the development will be served by a ¾" HDPE water service line.

An HGL of 6,735.07 feet was used to model the connections to the existing system based off the fire flow test provided in March of 2023. The HGL was calculated from the dynamic pressure during the fire flow test of 148 PSI, multiplied by the unit conversion of 2.31 to get an elevation value of 341.9 feet. This number was then added to the elevation of the nearest junction to get the required elevation of the reservoir. The fire flow results can be reviewed in **Appendix E**. The full hydraulic analysis and results using WaterCAD can be reviewed in **Appendix A** as well.

The townhomes within the development shall be constructed per the 2021 International Fire Code (IFC) and 2021 International Building Code (IBC), or most current code. The proposed buildings will require fire flows per the International Fire Code. The building's construction type is V-B and will not be sprinkled. Based on Table B105.1(2) in the IFC, the total fire flow required is 1,500 GPM for two hours, and six fire hydrants spaced at 450 feet will provide the fire flow requirements for the buildings.

Upon analysis of the calculated HGL and fire flow requirements, all pressure and velocity constraints are met with proposed 8" PVC water mains throughout the entire system. Pressures and velocities in each scenario can be reviewed in the WaterCAD results in **Appendix A** below.

CALCULATION OF QUANTITY OF WATER AVAILABLE

Cherokee Metropolitan District has a "Water Provider's Supplement to the Water Resources Report for Tract F Claremont Ranch Filing No. 7" dated March 31st, 2023, which is included in **Appendix C**. The supplemental information confirms the availability of water service to this project. This Site will be served by Cherokee Metro District water mains only.

CMD water supply has 4,411.5 AFY of exportable supply and 4,293 AFY of current commitments which results in a water balance of 118.5 AFY before the proposed development. After a commitment of 26.8 AFY to this Eastwood Village, the District will have 91.7 AFY remaining for additional commitments. Below is a table showing the District's water balance with the proposed development.

Water Supply Yield	4,364.8 AFY
Current Water Commitments (without New Commitment)	4,046.6 AFY
Current Water Balance Yield (without New Commitment)	318.2 AFY
New Commitment: Eastwood Village	27.7 AFY
Water Balance Remaining	**290.5 AFY**

INFORMATION REGARDING SUFFICIENT DEPENDABILITY OF WATER SUPPLY

Currently Cherokee Metropolitan District serves approximately 18,000 people in El Paso County which includes approximately 8,000 residential taps and 600 commercial taps in addition to Schriever Air Force Base and several small developments along State Highway 94. See **Appendix D** for the limits of CMD service area. CMD obtains its water supply from 22 different groundwater wells located in the vicinity of its service area. Most of the water supply recovered from the alluvial Upper Black Squirrel (UBS) Aquifer in eastern El Paso County, and the remainder is sourced from two wells in deep bedrock aquifers in the northern part of the county on the "Sundance Ranch" property.

CMD also assures that the physical yield of these wells is significantly higher than their annual appropriation, allowing flexibility in satisfying summer peak demand. The supplement to the Water Resource Report provided by CMD provides a more thorough description of the water supply, calculations demonstrating quantity, and sufficient evidence of reliable water system sources.

INFORMATION REGARDING SUFFICIENT QUALITY

Cherokee Metropolitan District uses a water system based on groundwater sources where water is treated to conform to all Federal and State regulatory requirements. In 2020, CDPHE conducted a Per- and polyfluoroalkyl substances (PFAS) sampling project for drinking water quality. Three entry points of the CMD water system were tested, and 3 out of the 18 tested PFAS were detected. However, of the 3 PFAS that were detected, all fell within the acceptable range for safe drinking water. Additional details regarding the sufficient quality of the water supply can be found in the provider's supplement report in **Appendix C**.

PUBLIC AND PRIVATE COMMERCIAL WATER PROVIDERS

Cherokee Metro District has a "Water Provider's Supplement to the Water Resources Report for Tract F Claremont Ranch Filing No. 7" included in **Appendix C**. This supplement provides content that meets or exceeds the information provided in this Water Resource Report for Eastwood Village.

REFERENCES

Cherokee Metropolitan District. "Water Provider's Supplement to the Water Resources Report for Tract F Claremont Ranch Filing No. 7". March 31, 2023.

Cherokee Metropolitan District. "Water and Wastewater Infrastructure Construction Standards". December 15, 2020.

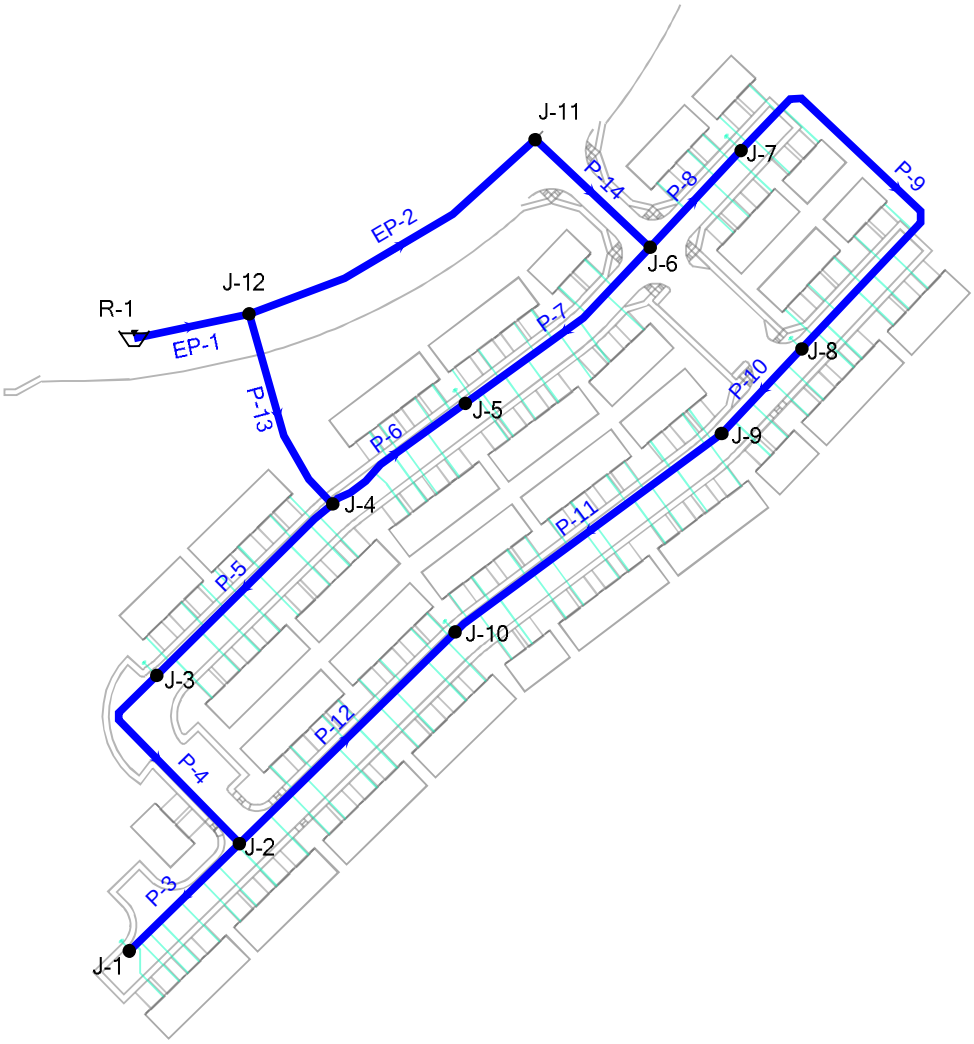
Colorado Department of Public Health and Environment. “2020 PFAS Sampling Project Results”. 2020. *https://cohealthviz.dphe.state.co.us/t/EnvironmentalEpidemiologyPublic/views/PFAS_results_DRAFT/PWS?%3AshowAppBanner=false&%3Adisplay_count=n&%3AshowVizHome=n&%3Aorigin=viz_share_link&%3AisGuestRedirectFromVizportal=y&%3Aembed=y*

Colorado Springs Utilities. “Water Line Extension and Service Standards”. 2023.

International Fire Code. “Appendix B. Fire-Flow Requirements for Buildings”. 2018. https://codes.iccsafe.org/content/IFC2018P6/appendix-b-fire-flow-requirements-for-buildings

APPENDIX A – WATER SYSTEM SCHEMATIC & WATERCAD RESULTS

EASTWOOD VILLAGE
PIPE AND JUNCTION SCHEMATIC



EASTWOOD VILLAGE
PIPE AND JUNCTION SCHEMATIC

STATIC SCENARIO

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	6,405.71	0	6,735.07	142
J-2	6,402.89	0	6,735.07	144
J-3	6,400.88	0	6,735.07	145
J-4	6,398.95	0	6,735.07	145
J-5	6,400.81	0	6,735.07	145
J-6	6,404.01	0	6,735.07	143
J-7	6,407.01	0	6,735.07	142
J-8	6,411.26	0	6,735.07	140
J-9	6,408.93	0	6,735.07	141
J-10	6,405.37	0	6,735.07	143
J-11	6,401.69	0	6,735.07	144
J-12	6,393.52	0	6,735.07	148

Pipe Table - Time: 0.00 hours

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (ft/s)
EP-1	104	J-12	R-1	12.0	PVC	130.0	0	0.00
EP-2	300	J-11	J-12	12.0	PVC	130.0	0	0.00
P-3	136	J-1	J-2	8.0	PVC	130.0	0	0.00
P-4	206	J-2	J-3	8.0	PVC	130.0	0	0.00
P-5	218	J-3	J-4	8.0	PVC	130.0	0	0.00
P-6	148	J-4	J-5	8.0	PVC	130.0	0	0.00
P-7	215	J-5	J-6	8.0	PVC	130.0	0	0.00
P-8	118	J-6	J-7	8.0	PVC	130.0	0	0.00
P-9	382	J-7	J-8	8.0	PVC	130.0	0	0.00
P-10	103	J-8	J-9	8.0	PVC	130.0	0	0.00
P-11	294	J-9	J-10	8.0	PVC	130.0	0	0.00
P-12	267	J-10	J-2	8.0	PVC	130.0	0	0.00
P-13	187	J-12	J-4	8.0	PVC	130.0	0	0.00
P-14	139	J-11	J-6	8.0	PVC	130.0	0	0.00

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Hydraulic Grade (ft)
R-1	6,735.07	6,735.07

EASTWOOD VILLAGE
PIPE AND JUNCTION SCHEMATIC

AVERAGE DAY SCENARIO

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	6,405.71	1	6,735.07	142
J-2	6,402.89	2	6,735.07	144
J-3	6,400.88	1	6,735.07	145
J-4	6,398.95	2	6,735.07	145
J-5	6,400.81	2	6,735.07	145
J-6	6,404.01	1	6,735.07	143
J-7	6,407.01	1	6,735.07	142
J-8	6,411.26	1	6,735.07	140
J-9	6,408.93	2	6,735.07	141
J-10	6,405.37	3	6,735.07	143
J-11	6,401.69	0	6,735.07	144
J-12	6,393.52	0	6,735.07	148

Pipe Table - Time: 0.00 hours

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (ft/s)
EP-1	104	J-12	R-1	12.0	PVC	130.0	17	0.05
EP-2	300	J-11	J-12	12.0	PVC	130.0	8	0.02
P-3	136	J-1	J-2	8.0	PVC	130.0	1	0.00
P-4	206	J-2	J-3	8.0	PVC	130.0	5	0.03
P-5	218	J-3	J-4	8.0	PVC	130.0	6	0.04
P-6	148	J-4	J-5	8.0	PVC	130.0	0	0.00
P-7	215	J-5	J-6	8.0	PVC	130.0	1	0.01
P-8	118	J-6	J-7	8.0	PVC	130.0	6	0.04
P-9	382	J-7	J-8	8.0	PVC	130.0	5	0.03
P-10	103	J-8	J-9	8.0	PVC	130.0	4	0.02
P-11	294	J-9	J-10	8.0	PVC	130.0	1	0.01
P-12	267	J-10	J-2	8.0	PVC	130.0	2	0.01
P-13	187	J-12	J-4	8.0	PVC	130.0	8	0.05
P-14	139	J-11	J-6	8.0	PVC	130.0	8	0.05

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Hydraulic Grade (ft)
R-1	6,735.07	6,735.07

EASTWOOD VILLAGE
PIPE AND JUNCTION SCHEMATIC

MAX DAY SCENARIO

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	6,405.71	1	6,735.07	142
J-2	6,402.89	4	6,735.07	144
J-3	6,400.88	2	6,735.07	145
J-4	6,398.95	4	6,735.07	145
J-5	6,400.81	3	6,735.07	145
J-6	6,404.01	2	6,735.07	143
J-7	6,407.01	2	6,735.07	142
J-8	6,411.26	4	6,735.07	140
J-9	6,408.93	3	6,735.07	141
J-10	6,405.37	7	6,735.07	143
J-11	6,401.69	0	6,735.07	144
J-12	6,393.52	0	6,735.07	148

Pipe Table - Time: 0.00 hours

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (ft/s)
EP-1	104	J-12	R-1	12.0	PVC	130.0	33	0.09
EP-2	300	J-11	J-12	12.0	PVC	130.0	17	0.05
P-3	136	J-1	J-2	8.0	PVC	130.0	1	0.01
P-4	206	J-2	J-3	8.0	PVC	130.0	9	0.06
P-5	218	J-3	J-4	8.0	PVC	130.0	12	0.08
P-6	148	J-4	J-5	8.0	PVC	130.0	1	0.01
P-7	215	J-5	J-6	8.0	PVC	130.0	3	0.02
P-8	118	J-6	J-7	8.0	PVC	130.0	12	0.08
P-9	382	J-7	J-8	8.0	PVC	130.0	9	0.06
P-10	103	J-8	J-9	8.0	PVC	130.0	6	0.04
P-11	294	J-9	J-10	8.0	PVC	130.0	2	0.01
P-12	267	J-10	J-2	8.0	PVC	130.0	4	0.03
P-13	187	J-12	J-4	8.0	PVC	130.0	17	0.11
P-14	139	J-11	J-6	8.0	PVC	130.0	17	0.11

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Hydraulic Grade (ft)
R-1	6,735.07	6,735.07

EASTWOOD VILLAGE
PIPE AND JUNCTION SCHEMATIC

MAX DAY + FIRE FLOW SCENARIO
Fire Flow Report - Time: 0.00 hours

Label	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (System)	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity
J-1	1,501	1,502	0	136	J-8	9.59	P-3
J-2	1,504	1,505	0	139	J-8	6.09	P-5
J-3	1,502	1,503	0	141	J-8	6.93	P-5
J-4	1,504	1,505	0	144	J-8	5.74	P-13
J-5	1,503	1,504	0	143	J-8	5.19	P-6
J-6	1,502	1,503	0	142	J-8	5.79	P-14
J-7	1,502	1,503	0	139	J-8	7.48	P-8
J-8	1,504	1,505	0	136	J-9	5.83	P-8
J-9	1,503	1,504	0	136	J-8	5.48	P-8
J-10	1,507	1,508	0	138	J-8	5.20	P-5
J-11	1,500	1,501	0	144	J-8	4.35	EP-1
J-12	1,500	1,501	0	148	J-8	4.35	EP-1

APPENDIX B – CHEROKEE METRO DISTRICT LETTER OF COMMITMENT FOR WATER SERVICES

CHEROKEE METROPOLITAN DISTRICT

6250 Palmer Park Blvd., Colorado Springs, CO 80915-2842
Telephone: (719) 597-5080 Fax: (719) 597-5145

November 21st, 2022
John Raptis
Rockwood Homes, LLC
5436 Carvel Grove
Colorado Springs, CO 80922

Sent via email: Andrew.Lundberg@kimley-horn.com

Re: Water and Sewer Service to **Claremont Ranch Filing 7**
Commitment Letter No. **2022-15 (Revision of 2022-02)**

Dear John Raptis,

As requested, this document will serve is as a formal Letter of Commitment from the Cherokee Metropolitan District to provide municipal water and sewer services for Caliber on Constitution located at the Southeast Corner of Marksheffel Road and Meadowbrook Parkway. The proposed location for this development is located within the District's established boundaries and therefore is eligible for service connections from the District.

Cherokee Metropolitan District staff, along with the developer, have determined that the following will be the total water demand required by this development:

Type of Use	**Demand (AF/yr)**
Domestic	26.8
Irrigation	0.9
Total	**27.7**

Based on a conservatively low 0% consumptive use of domestic water, the development is expected to produce 24,000 gallons of wastewater per day, representing 1% of CMD's wastewater capacity. This usage is in line with anticipated wastewater demand for this area of the District. This 0% consumptive use is calculated for the purposes of ensuring CMD wastewater collection and treatment infrastructure is capable of treating the maximum possible volume of wastewater generated from this development. This is not intended in any way to limit consumptive uses of potable water on the subject property.

This water commitment is hereby made exclusively for this specific development project at this site within the District. To confirm this commitment you must provide the District with a copy of the final

plat approval from El Paso County Development Services within 12 months of the date of this letter. Otherwise, the District may use this allocation for other developments requesting a water commitment. If the subject project is re-platted, you must submit a new commitment request prior to submitting the re-plat to El Paso County, which may result in a recalculation of the water demand for the project.

If I may be of further assistance please contact me at your convenience.

Sincerely,

Amy Lathen
General Manager

Cc: Peter Johnson; Water Counsel: sent via email
Steve Hasbrouck; Board President: sent via email
Jeff Munger; Water Resource Engineer: sent via email
Kevin Brown; Jr. Engineer: sent via email

APPENDIX C – CHEROKEE METRO DISTRICT WATER RESOURCES REPORT

CHEROKEE METROPOLITAN DISTRICT

6250 Palmer Park Blvd., Colorado Springs, CO 80915-2842
Telephone: (719) 597-5080 Fax: (719) 597-5145

Water Provider's Supplement to the Water Resources Report for Tract F Claremont Ranch Filing No. 7

Commitment Number 2022-15

March 31st, 2023

This document was prepared to satisfy the requirements of El Paso County for a Water Provider's Report in support of **the development of Tract F of Claremont Ranch Filing 7** at the **southeast corner of Marksheffel Road & Meadowbrook Parkway.**

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 8000 residential customers and 600 commercial customers 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 withdrawn 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

Estimated water demand for the proposed development was calculated in two parts: domestic use and irrigation use. Cherokee's historic 10-year maximum average per-tap use for multi-family apartments similar to the proposed development is 0.25 AFY. The proposed development will include 107 units which yields an expected water supply requirement of 26.8 AFY. Using the County estimate of 2.43 feet of water for traditionally irrigated areas and the developer's estimate of 16,100 square feet of fully irrigated common spaces with none of the project area designated for reduced watering yields an outdoor watering demand estimate of 0.9 AFY. The total expected water demand for this development is 27.7 AFY.

Water Supplies

Of Cherokee's 23 wells, eight wells 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 and Denver Basin wells are available for export outside the UBS basin. The total annual volume available to CMD from these exportable supplies is 3,953.5 AFY (Table 1). The physical yield of these wells is significantly higher than their annual appropriation, allowing flexibility in satisfying summer peak demand.

Table 1: Water rights and tributary status of Exportable Wells

Well Number	Water Right (AFY)	2022 Use (AFY)	Permit Number	Aquifer	Aquifer Status
Well 9	176	153.5	14145-FP-R	UBS Alluvium	Tributary
Well 10	176	163.6	14146-FP-R	UBS Alluvium	Tributary
Well 11	244	165.3	6821-FP-R	UBS Alluvium	Tributary
Well 12	244	127.4	11198-FP	UBS Alluvium	Tributary
Well 13	1268	1174.9	49988-F	UBS Alluvium	Tributary
Well 14	0	0	52429-F	UBS Alluvium	Tributary
Well 15*	281	105.4	54070-F	UBS Alluvium	Tributary
Well 16*	219	75.6	54069-F	UBS Alluvium	Tributary
Well 17*	175	16.3	63094-F	UBS Alluvium	Tributary
Well 18	225	39.7	16253-RFP-R	UBS Alluvium	Tributary
Well 19	95	44	20567-RFP-R	UBS Alluvium	Tributary
Well 20	400	133.2	4332-RFP	UBS Alluvium	Tributary
Well 21	258.5	74.8	81782-F	UBS Alluvium	Tributary
Well 22	153.5	0	27571-F, 27572-F	UBS Alluvium	Tributary
DN-4**	105	74.8	78315-F	Denver Aquifer	Non-Tributary
AR-1**	306	217.1	75881-F	Arapahoe Aquifer	Non-Tributary
DA-1	40.3	0	83604-F	Dawson Aquifer	Not-Non-Tributary
DA-4	64.5	0	83603-F	Dawson Aquifer	Not-Non-Tributary
Total	**4364.8**	**2547.0**			

*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 and well sites in the Dawson, Denver, and Arapahoe Aquifers associated with the Sundance Ranch property. The volume presented is the reliable annual yield of each well.

CMD has 4364.8 AFY of exportable water supply available in its portfolio 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 3897.9 AFY before the addition of the proposed development (Table 3).

Table 3: CMD Commitments before addition of new development

Commitment Category	Volume (AFY)
In-District pre 2015	2693
In-District post 2015	684.6
Schriever Space Force Base	537
Mayberry Communities	82
Construction	25
Parks	25
Total Commitments	**4046.6**

Water Balance

With 4,364.8 AFY of exportable supply and 4046.6 AFY of commitments, CMD has a water balance of 318.2 AFY before the subject development. After commitment of 27.7 AFY to this development, the District will have 290.5 AFY remaining for additional commitments.

Table 4: Water balance with new development

Water Balance Before New Commitment	318.2 AFY
New Commitment: Tract F Claremont Ranch Filing 7	27.7 AFY
Water Balance Remaining	**290.5 AFY**

Other Relevant 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 its well 21 (81782-F) online after a year of

planning and construction. The District completed drilling of the Albrecht Well (Well 22) which after connection to the system will contribute 153.5 AFY annually.

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.

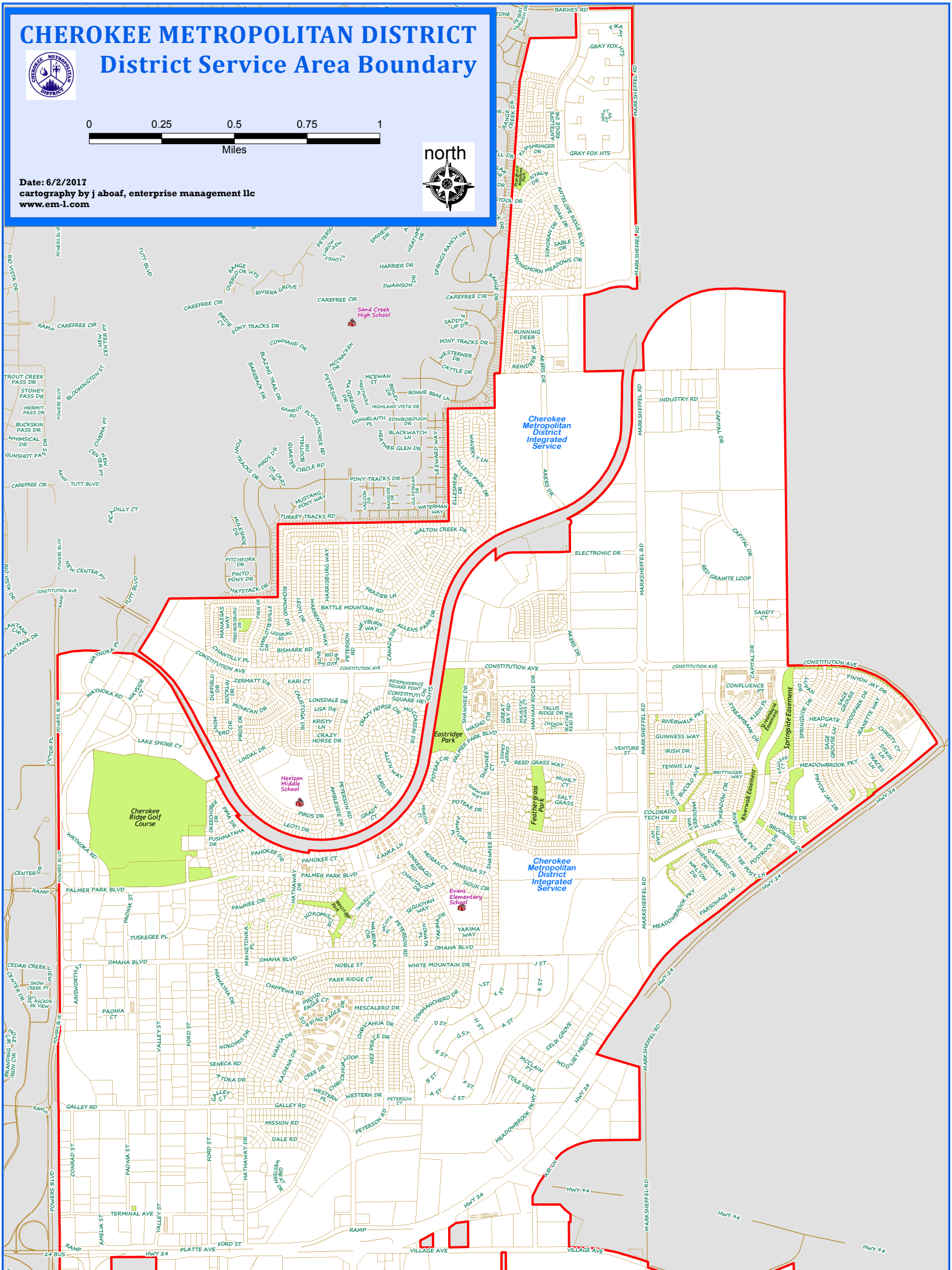
APPENDIX D – CHEROKEE METRO DISTRICT SERVICE AREA MAP

CHEROKEE METROPOLITAN DISTRICT
District Service Area Boundary

0 0.25 0.5 0.75 1
Miles

north

Date: 6/2/2017
cartography by j aboaf, enterprise management llc
www.em-1.com



APPENDIX E – FIRE FLOW TEST RESULTS

FIRE FLOW TEST

DATE 3/15/2023 TIME 2:09pm

LOCATION Marksheffel Rd & Meadowbrook Pkwy

TANK LEVEL 18.1 ft

BOOSTER RUNNING 0 GPM

RESIDUAL HYDRANT

LOCATION Corner of Marksheffel Rd & Meadowbrook Pkwy

STATIC LINE PRESSURE 160 PSI

DYNAMIC LINE PRESSURE 148 PSI

FLOW HYDRANT

LOCATION Meadowbrook Pkwy

Flow/Pressure
READING:
GPM < 2759
PSI < 55

Results taken from gauge on the Big Boy Pitoless Hose Monster

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TAKEN BY: Christian Harbour & Sean Forbes

REVIEWED BY: Tyler Dunich

RESULTS SENT TO: Katy Corkhill @ Kimberly-Horn

APPENDIX F – EL PASO COUNTY WATER RESOURCES REPORT CHECKLIST

2880 International Circle, Suite 110
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Phone 719-520-6300
Fax 719-520-6695
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EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT

WATER RESOURCES REPORT CHECKLIST

Revised: January 2022

Water Resources Report

A water resources report shall be submitted with sketch plans, preliminary plans, final plats, and any subdivision applications which will create a new lot. The water resources report shall be prepared by a qualified hydrogeologist, hydrologist, licensed civil engineer, qualified groundwater geologist, or other qualified professional with appropriate experience. The water resource report shall document the requirements of this Section and shall include the following data, documentation, and analysis at a level of detail necessary to make the determinations of sufficiency.

Sketch Plan Report

The initial water resource report submitted with the sketch plan may be of a general nature, may be based on published and unpublished data and reports, and need not include site-specific hydrogeologic data. The purpose of the report included with the sketch plan is to identify probable compliance of the proposed subdivision with the water supply standards and to identify the need for additional water supplies which will be required for the subdivision.

Preliminary Plan Report

The water resource report submitted with the preliminary plan shall include all of the data needed to determine whether the water supply is sufficient in terms of quality, quantity and dependability for the proposed subdivision. The report shall be based on engineering calculations and site-specific data and shall include a detailed discussion of the water demand, supply, quality, dependability, and supply facilities for the proposed project. The report shall identify those aspects of the water supply plan which are insufficient in terms of quantity, quality or dependability and shall identify the actions to remedy the deficiencies.

Final Plat Report

The water resource report submitted with the final plat shall include all of the data needed to determine whether the proposed water supply is sufficient in terms of quality, quantity and dependability for the type of subdivision proposed. The report shall be based on engineering calculations and site-specific data and shall include a detailed discussion of the water demand, supply, quality, dependability, and supply facilities for the proposed subdivision.

A water resources report is not required if the BoCC made a finding that the proposed water supply plan of the preliminary plan was sufficient in terms of quantity, quality and dependability. However, an amended water resources report is required if there is a substantial change in either the water supply or the estimated water demand.

		Applicant	PCD
	NOTE: Please confirm each item below has been included by placing a check mark in the "Applicant" column. See right for an example. The "PCD" column is for office use only.	√	Office use only
	Report Content		
	Summary of the Proposed Subdivision:		
1	A location map including roads, Township and Range, a copy of all maps required with sketch and preliminary plan and final plat submittals, and legal description; and	✓	
2	A description of subdivision including acreage of each proposed land use, number of dwelling units, etc. For phased projects the description shall clearly describe the acreages, land uses and number of units of each phase. The location of each proposed land use shall be shown on appropriate maps.	✓	
	Information Regarding Sufficient Quantity of Water:		
1	**Calculation of Water Demand:** The water resource report shall include water demand calculations in separate calculations for the type, number and annual water requirements of existing, proposed and potential maximum uses of the subject property and a general timetable when the demands are expected. Acceptable methods of determining water demand.	✓	
2	**Calculation of Quantity of Water Available:** The water resource report shall identify and describe each source of water including: (1) a map showing the location of any off-site water to be used and the location of major water transmission lines, reservoirs, etc; (2) calculations of the quantity of water available from each source (on-site and off-site sources shall be determined separately); and (3) a description of groundwater sources.	✓	

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WATER RESOURCES REPORT CHECKLIST

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3	**Groundwater Source Information:** The water resource report shall list each aquifer to be used. Each aquifer shall be identified as tributary, non-tributary, not non-tributary or from a designated basin, and as either renewable or non-renewable aquifers. The report shall discuss the need for and the status of any augmentation plans required to use the proposed supply. The report shall also describe the annual and the 300-year quantity of water available from each proposed aquifer.	✓	
4	**Production Wells Information:** The water resource report shall discuss location, construction and production details of existing and proposed production wells. The following shall be included: (1) estimated number, size and short- and long-term yields of wells necessary to serve the proposed subdivision; (2) estimated life expectancy of wells; (3) estimated short and long-term well development schedule indicating probable timing of bringing additional wells on line; (4) A map showing locations of wells to be used during the first 5 years of the subdivision and probable locations of wells in the following years; (5) Well drilling logs and well completion reports; and (6) Pumping test data and analysis, including data and analysis of constant rate and step drawdown tests.	✓	
5	**Surface Water Sources:** The report shall list each surface water supply to be used. The report shall discuss the need for and the status of any augmentation plans required to use the proposed supply. In addition, the report shall describe the annual and the 300-year quantity of water available from each proposed surface water supply, and calculate the number of years of water supply. For phased projects, the calculation shall delineate the years of water available for each phase.	✓	
	Information Regarding Sufficient Dependability of Water Supply:		
1	Proof of ownership or right of acquisition of use of existing or proposed water rights sufficient in quality, quantity and dependability to serve the proposed use including well permits, court decrees, well applications, export permits, etc.	✓	
2	Financial plan and capital improvements plan of water provider.	✓	
3	Description of the water supply, location shown on maps, and, when appropriate, engineering designs of existing and proposed water supply facilities, including wells, storage facilities, major transmission lines, etc.	✓	
4	Calculations and documentation demonstrating that the aquifers are capable of supplying the required quantity of water and analysis showing the wells are capable of producing the required water supplies, if groundwater is to be used.	✓	
5	If a public or private water system is to be used, evidence that the source can and will supply water to the proposed subdivision stating the amount of water available for use within the subdivision and the feasibility of extending service to the area. This evidence shall include the following information: (1) A letter indicating a commitment to serve (except in the case of a sketch plan); (2) Name and address of the municipality, quasi-municipality, or water company which will supply the water; (3) Current capacities of the existing system; (4) Total amount of current and committed use; and (5) Amount and timing of water to be supplied to the subdivision.*	✓	
6	*This requirement does not apply to subdivisions to be supplied by individual wells.	✓	
7	Evidence that short-term water supply needs of the subdivision can be met to satisfy fire demand and reduction of supplies as a result of flooding, and damaged or otherwise incapacitated systems. Short-term dependability can be satisfied by such features as reservoirs, cisterns, standby wells and standby connections with other water supply or distribution systems.	✓	

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	Information Regarding Sufficient Quality:		
1	The following shall be supplied: (1) chemical analyses of proposed water from each proposed source; (2) evidence of compliance with County, state and federal water quality standards; and (3) discussion of potential for water quality degradation from on-site and off-site sources. The EPCDHE can provide further information on the required chemical analysis and testing parameters necessary to demonstrate compliance with the Colorado Primary Drinking Water Regulations.	✓	
2	Requirements of the State Engineer: State statute requires the State Engineer to review all proposed water supplies. The State Engineer requires a narrative discussion and a Water Supply Information Summary Form. The following is the minimal information requirements of the State Engineer for all subdivisions.	✓	
3	Plat and legal description of the property and a description of previous actions of the State Engineer's Office regarding the property (e.g. previous exemptions, well applications);	✓	
4	Well number or numbers of existing and sited wells when available including names of previous owners, dates of well construction, depth, etc., if numbers are not available;	✓	
5	Use of water supply on the property as it now exists including number and locations of dwellings supplied, area of irrigated lawn and garden, water use for livestock, etc;	✓	
6	Proposed water supply including a description of wells or water provider to be used for each lot and what aquifer the applicant intends to use; and	✓	
7	Water requirements for each proposed lot including quantity to be used for dwellings, irrigation and livestock.	✓	
8	It is not necessary to include this information as a separate item provided it is included in the water resources report	✓	
	Public and Private Commercial Water Providers:		
1	It is the responsibility of the applicant to provide information regarding the availability of water supplies from any source, including public and private commercial water providers. Should the subdivision fall within a water provider's service district, a general water resources report supplied by the provider may be used to evaluate available water resources provided the content meets or exceeds the requirement of the Water Resource Report.	✓	
2	In those cases where the water provider submits a general Water Resources Report, the water resource report shall be updated annually, by February of each year. Update information shall include: Volume of water sold in the previous year; New water acquisitions, commitments, augmentation plans, etc.; Water trades or other losses of water supplies; Anticipated water acquisitions for the upcoming year; Legal documentation accompanying new water acquisitions and augmentation plans; Major capital improvements accomplished during the past year and anticipated major capital improvements for the upcoming year; and Other information which would be useful in evaluating the availability of water supplies.	✓	
	County Attorney Review		
1	Documents to be included in report for review by the County Attoney Office: Water Supply Information Summary Form Letter of Commitment from Water District Copies of all well permits Copies of all Water Court Decrees Copies of all Colorado Groundwater Commission Determinations of Water Rights State Engineer's Office Opinion (if previuosly provded) Deeds and/or other documents that establish applicant's ownership of water rights for the proposed		