

Water Resources and Water Quality Report
For
Cloverleaf Subdivision
El Paso County, CO

November, 2020

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JR Project No. 25158.01

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1.1. Purpose

This document is intended to serve as the Water Resources and Water Quality Report for the Cloverleaf Subdivision. The purpose of this document is to estimate average and peak water demand and provide Woodmoor Water and Sanitation District (WWSD) with system junctions with corresponding lot counts and elevations of the grading to help the District model the water demands.

1.2. Summary of Proposed Development

The proposed single-family residential subdivision, known as "Cloverleaf" from herein, is a parcel of land located in Section 24 & 23, Township 11 South, Range 67 West of the 6th Principal Meridian in El Paso County, Colorado. Cloverleaf is a 38.75 acre, urban, single-family-development, and is comprised of 141 single-family residential units and associated infrastructure. Three isolated ½ acre lots are also included within the project, bringing the total lots to 144. Cloverleaf is bound by existing residential developments. Cloverleaf Road bounds the property to the east, Woodmoor Greens Fil. 1 & 2 a single-family residential subdivision borders the subdivision to the west & north, and Walters Commons Fil. No. 1 and Country Ridge Estates, multi-family residential subdivisions border the property to the south. A vicinity map of the area is presented in Appendix A.

1.3. Potable Water Supply

The primary water distribution system for Cloverleaf will be connected to the existing Woodmoor Water and Sanitation District (WWSD) water mains at four locations. The eastern connection is the existing 6" water main within Cloverleaf Drive. The western connection will be to the existing 6" water main in Leggins Way. The southern connection will be to the existing 6" water main in Walters Point. The northern connection is to the existing 6" water main in Bowstring Road. The WWSD modeling indicates that 6" water mains are adequate with Cloverleaf and have been shown in the Preliminary Plan.

The 6 lots along Walters Point in the SE of the subdivision will install service lines off the existing 6" water main in Walters Point adjacent to the lots. The three isolated ½ acre lots will install service lines off of the existing water mains located in existing roadways adjacent to each lot. Refer to Appendix B for the proposed utility plan which provides additional information.

The potable water demand was calculated on a single-family equivalent (SFE) basis. Water System demands shown below were established using annual demand values

provided by Woodmoor for single family homes and irrigation. Peaking factors were taken from the "Colorado Springs Utilities Waterline Standards".

- Single Family Home average annual water usage: 0.3584 ac.ft./year
- Peaking Factor: 5.0

Based on the above criteria, the average daily use for the 150 single family lots will be:

$$144 \text{ lots} \times 0.3584 \text{ ac.ft./yr} = 51.61 \text{ acre feet annually} = 46,074 \text{ gpd}$$
$$\text{Peak daily flow will be } 46,074 \text{ gpd} \times 5.0 \text{ peak factor} = 230,370 \text{ gpd}$$

There are 1.74 acres of irrigated open spaces and tracts within the Cloverleaf subdivision. WWSD utilizes 0.5 ac.ft./year/acre to estimate annual use. Cloverleaf open space irrigation needs are estimated at 0.87 ac.ft./year. These needs are not included in the above average daily or peak flow estimates for the lots.

Woodmoor Water and Sanitation District has been in existence for many years and has developed their water demand values based on their past experience with actual usage. Per the El Paso County Land Development Code (LDC) when using alternative water demand estimates, a calculation providing the presumptive use values within the LDC will also be calculated and is shown below;

- Single Family Home - 0.264 ac.ft./year
- Lot Landscaping – 0.0566 ac.ft./year per 1,000 sq. ft.
- Common Area Irrigation – 2.46 ac.ft./year per acre

- 144 Single Family Homes X 0.26 ac.ft./yr = 37.44 ac.ft./year
- 133 lots w 2,000 sf of landscaping X 0.0566 ac.ft./yr = 15.06 ac.f./year
- 8 lots w 5,000 sf of landscaping x 0.0566 ac.ft./yr= 2.26 ac.f./year
- 3 lots w 8,000 sf of landscaping X 0.0566 ac.ft./yr = 1.36 ac.f./year
- 1.74 ac Common Area Irrigation X 2.46 ac.ft./yr = 4.28 ac.f./year

Total Annual Water Demand per EPC = 60.4 ac.ft./year

Total Annual Water Demand per WWSD = 51.61 ac.ft./year

Contained within Appendix B of this report is a tabulation spreadsheet with the nodes/junctions and corresponding single-family unit counts. In addition, the elevation of the projected junction(s) at the conceptual over lot grading is also provided. This information is provided to help the Woodmoor Water and Sanitation district incorporate the water model into their comprehensive district model. The utility map within Appendix C contains the site plan, junction placement, and the projected water network layout for the site.

1.4. Water Supply, Resources and Quality

Contained within Appendix E of this report is a summarization of the District's Long Range Plan (LRP) describing the existing water supply and distribution system, as well as descriptions of possible future improvements and expansions to the system. Summarized in the LRP are the water rights owned by the District. Based on data contained in the LRP regarding the water resources that are available to the District, subdivisions served by WWSD be supplied with water resources meeting the requirements of EL Paso County's 300-year water supply regulations. A commitment to serve letter for Cloverleaf Subdivision has been issued by WWSD.

The quality of the water produced by the WWSD for domestic and commercial consumption is subject to regulations prescribed by the CDPHE that limit the amount of certain contaminants in treated or untreated water. See Appendix E for a copy of the WWSD Consumer Confidence Report.

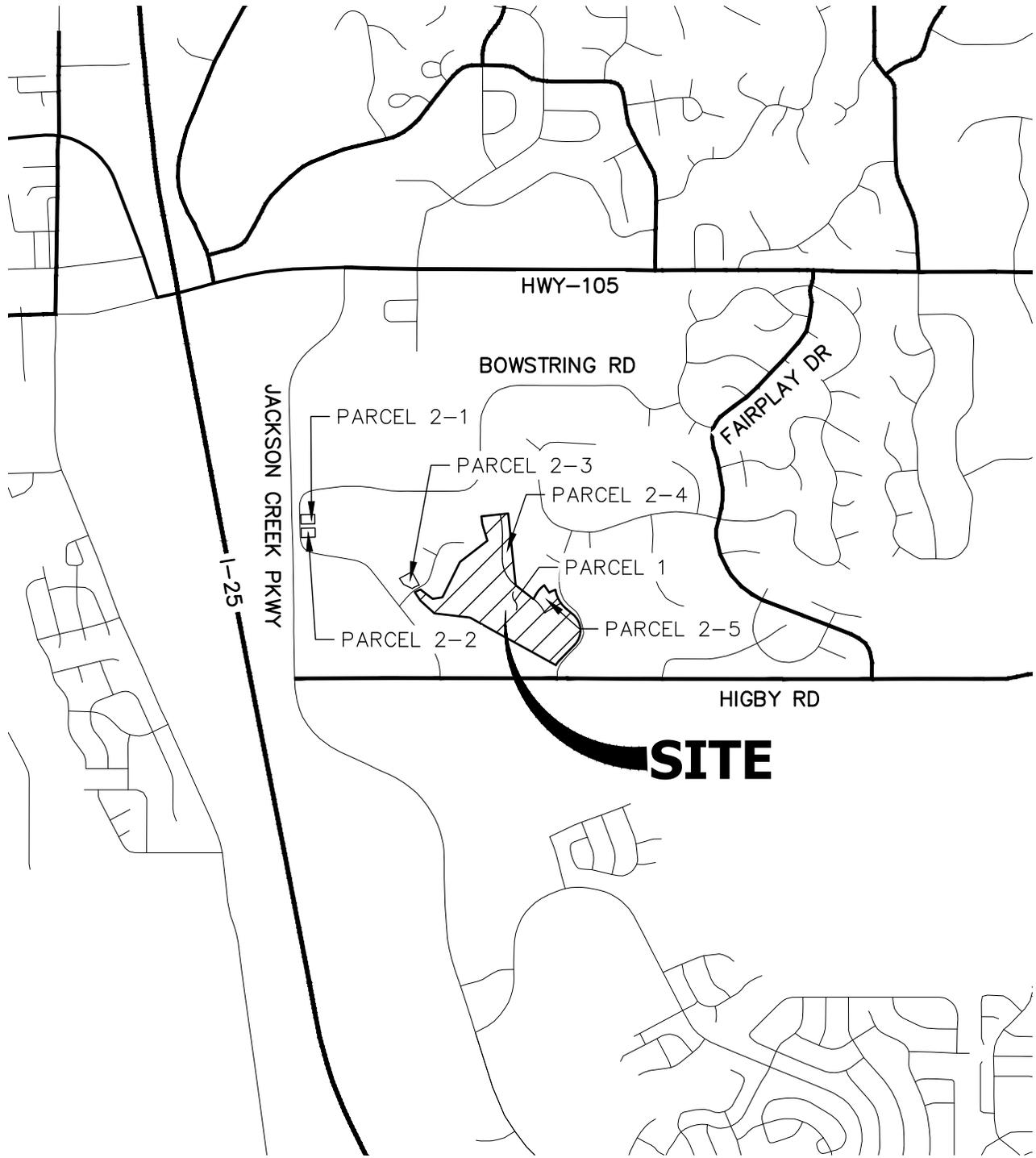
1.5. Waivers from Criteria

There are no waivers from the El Paso County Land Development Code or the criteria established by the Woodmoor Water and Sanitation District requested for this project.

1.6. Compliance with Standards

The water distribution system design will conform to all applicable criteria set forth by El Paso County and the Woodmoor Water and Sanitation District.

APPENDIX A: VICINITY MAP



2000 1000 0 2000



ORIGINAL SCALE: 1" = 2000'

VICINITY MAP
 CLOVERLEAF
 JOB NO. 25158.01
 04/23/2020
 SHEET 1 OF 1



J·R ENGINEERING

A Westrian Company

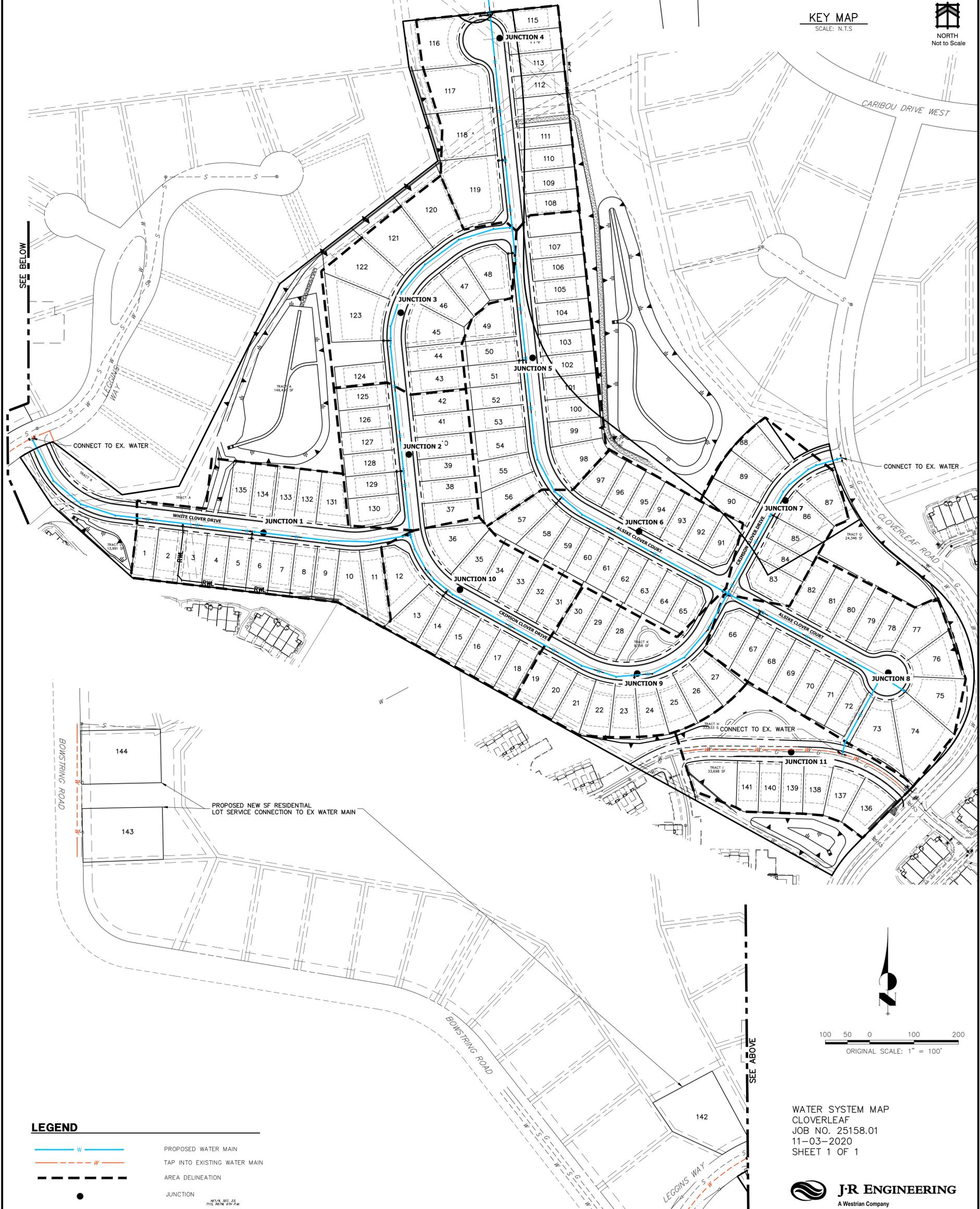
Centennial 303-740-9393 • Colorado Springs 719-593-2593
 Fort Collins 970-491-9888 • www.jrengineering.com

APPENDIX B: TABLE 1: PRELIMINARY UTILITY PLAN

CLOVERLEAF WATER MAP



KEY MAP
SCALE: N.T.S.



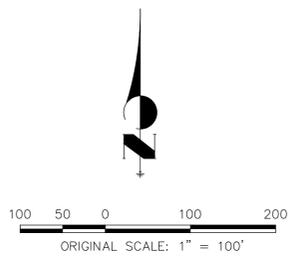
SEE BELOW

SEE ABOVE

LEGEND

- PROPOSED WATER MAIN
- TAP INTO EXISTING WATER MAIN
- AREA DELINEATION
- JUNCTION

NET 1/4" = 25' 0"
11/15/2019 8:14 AM



WATER SYSTEM MAP
CLOVERLEAF
JOB NO. 25158.01
11-03-2020
SHEET 1 OF 1



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APPENDIX C: TABLE 1: JUNCTION TABULATION

Project Name Cloverleaf
Project Number 25158.01
Date 5/29/2020
Created By ARJ
Checked By

TABLE 1 - JUNCTION SUMMARY		
Junction	Junction Surface Elv.	No. of SFE
J-1	7032.06	16
J-2	7046.02	12
J-3	7046.39	11
J-4	7073.75	12
J-5	7066.5	18
J-6	7073.01	16
J-7	7084.26	8
J-8	7088	17
J-9	7065.35	12
J-10	7052.56	13
J-11	7073.7	6
TOTAL		141

SFE = Single-Family Equivalent

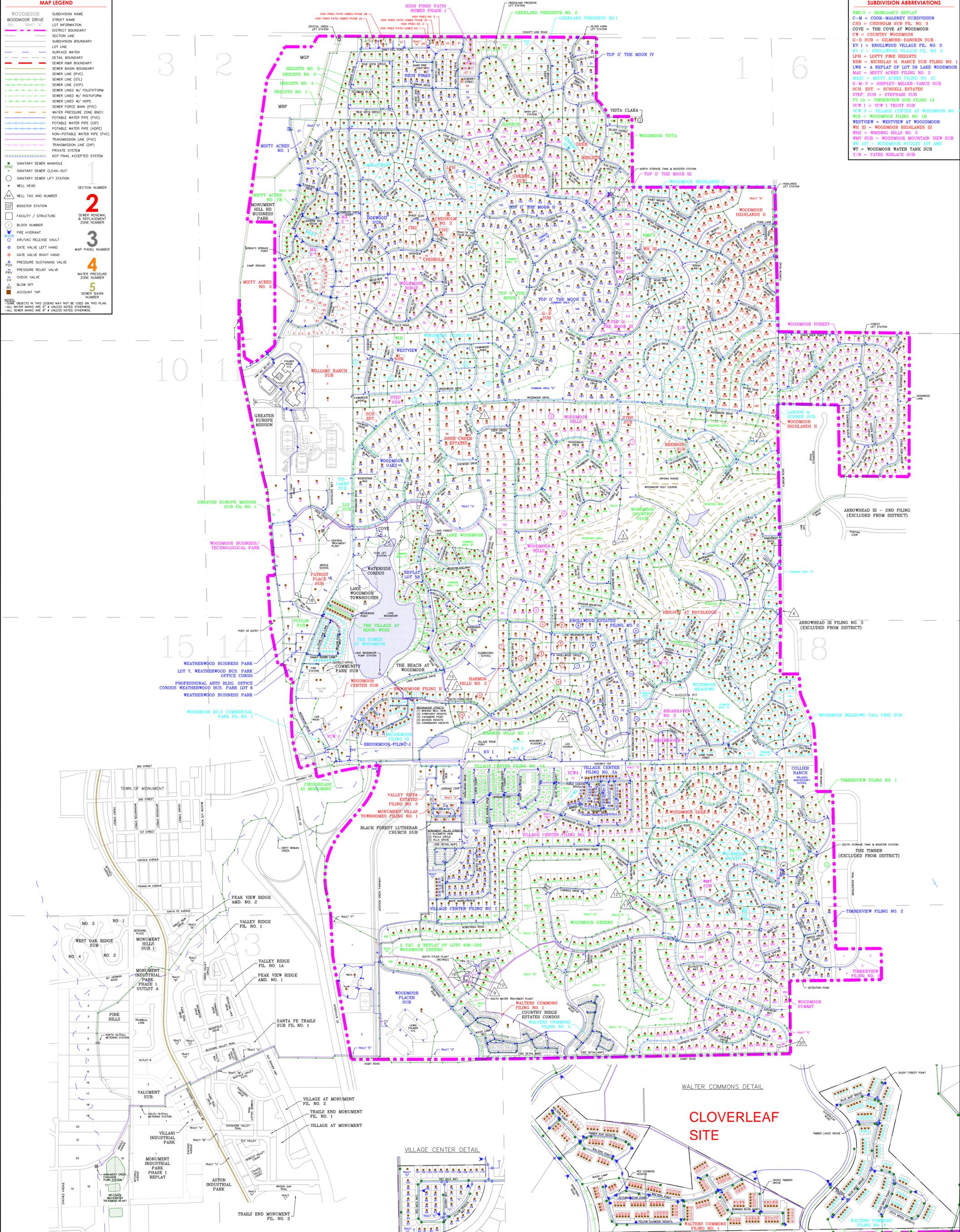
APPENDIX D: WOODMOOR MAP

MAP LEGEND	
WOODMOOR	SUBDIVISION NAME
WOODMOOR DRIVE	STREET NAME
321 TRACT "A"	LOT INFORMATION
---	DISTRICT BOUNDARY
---	SECTION LINE
---	SUBDIVISION BOUNDARY
---	LOT LINE
---	SURFACE WATER
---	DETAIL BOUNDARY
---	SEWER R&R BOUNDARY
---	SEWER BASIN BOUNDARY
---	SEWER LINE (PVC)
---	SEWER LINE (STL)
---	SEWER LINE (VCP)
---	SEWER LINED W/ FOLD/FORM
---	SEWER LINED W/ KISTIFORM
---	SEWER LINED W/ HDPE
---	SEWER FORCE MAIN (PVC)
---	WATER PRESSURE ZONE BNDY.
---	POTABLE WATER PIPE (PVC)
---	POTABLE WATER PIPE (CP)
---	POTABLE WATER PIPE (HDPE)
---	NON-POTABLE WATER PIPE (PVC)
---	TRANSMISSION LINE (PVC)
---	TRANSMISSION LINE (DP)
---	PRIVATE SYSTEM
---	NOT FINAL ACCEPTED SYSTEM
592	SANITARY SEWER MANHOLE
592	SANITARY SEWER CLEAN-OUT
592	SANITARY SEWER LIFT STATION
592	WELL HEAD
592	WELL TAG AND NUMBER
592	BOOSTER STATION
592	FACILITY / STRUCTURE
592	BLOCK NUMBER
592	FIRE HYDRANT
592	AIR/VAC RELEASE VAULT
592	GATE VALVE LEFT HAND
592	GATE VALVE RIGHT HAND
592	PRESSURE SUSTAINING VALVE
592	PRESSURE RELIEF VALVE
592	CHECK VALVE
592	BLOW OFF
592	ACCOUNT TAP

- 1 SECTION NUMBER
- 2 SEWER RENEWAL & REPLACEMENT ZONE NUMBER
- 3 MAP PANEL NUMBER
- 4 WATER PRESSURE ZONE NUMBER
- 5 SEWER BASIN NUMBER

NOTES:
 SOME OBJECTS IN THIS LEGEND MAY NOT BE USED ON THIS PLAN.
 ALL WATER MAINS ARE 6" UNLESS NOTED OTHERWISE.
 ALL SEWER MAINS ARE 8" UNLESS NOTED OTHERWISE.

SUBDIVISION ABBREVIATIONS	
BMG'S	= BOMGAAR'S REPLAT
C-M	= COOK-MALONEY SUBDIVISION
CHS	= CHISHOLM SUB FIL. NO. 3
COVE	= THE COVE AT WOODMOOR
CW	= COUNTRY WOODMOOR
G-D	= GILMORE-DANSKIN SUB
KV 1	= KNOLLWOOD VILLAGE FIL. NO. 2
KV 2	= KNOLLWOOD VILLAGE FIL. NO. 2
LPH	= LOFTY PINE HEIGHTS
NHM	= NICHOLAS H. NANCE SUB. FILING NO. 1
LWR	= A REPLAT OF LOT 56 LAKE WOODMOOR
MAG	= MISTY ACRES FILING NO. 2
MASC	= MISTY ACRES FILING NO. 2C
S-M-V	= SHIPLEY-MILLER-VANCE SUB
SCH. EST.	= SCHWILL ESTATES
STEP. SUB.	= STEPHAN SUB
TV 1A	= TIMBERVIEW SUB FILING 1A
VCV 1	= VCV 1 TRUST SUB
VCV 3	= VILLAGE CENTER AT WOODMOOR NO. 3
WIB	= WOODMOOR FILING NO. 1B
WESTVIEW	= WESTVIEW AT WOODMOOR
WH III	= WOODMOOR HIGHLANDS III
WES	= WINDING HILLS NO. 2
WVY SUB.	= WOODMOOR MOUNTAIN VIEW SUB
WN 1ST	= WOODMOOR NUGGET 1ST AMD.
WT	= WOODMOOR WATER TANK SUB
Y/M	= YATES BLACKBURN SUB



DISCLAIMER
 THIS MAP IS ONLY A ROUGH DEPICTION OF THE ESTIMATED LOCATION OF WATER AND WASTEWATER INFRASTRUCTURE. ANYONE VIEWING THIS MAP IS HEREBY WARNED THAT THE DISTRICT DOES NOT WARRANT THE ACCURACY OF THIS MAP OR THE LOCATION OF WATER AND SEWER INFRASTRUCTURE.
 © 2017 WOODMOOR WATER & SANITATION DISTRICT NO. 1

2017 WALL MAP

DISTRICT OVERVIEW

500 0 500 1000
 SCALE: 1" = 500'

APPENDIX E:
WWSD LONG RANGE PLAN UPDATE
WWSD 2020 WATER QUALITY REPORT

EXECUTIVE SUMMARY

A summary of the recommendations in the Long Range Plan (LRP) Update for 2017 are presented in this section. The LRP Update evaluates water supply, operations, treatment, water distribution, and wastewater collection. Growth projections used throughout the LRP Update were determined with input from District and Bishop Brogden and Associates (BBA) staff. The LRP update confirms and updates use-rate values for water demand and wastewater production throughout the District. Based on the growth projections and use-rate data, future water demands were determined and water supply alternatives were evaluated to determine what supplies will be used to meet future water demands. Based on the recommended water supply alternative, a Capital Improvements Plan (CIP) was developed that outlines the projects required to meet the District's future water demands. For the District to determine the costs associated with the CIP and continuing maintenance for the District, a cash flow model was developed for use in the District's rate model.

In the LRP Update, growth projections for the District were determined with input from the District staff to project future growth and to determine when the District will meet build-out of its existing boundary. The District currently has 4,192 SFEs and an average annual water demand of 1,376 af/yr. Between 2012 and 2017, the District has experienced an average growth rate of approximately 3.5 percent per year for the short term. Assuming the 3% long-term growth rate for the current and ultimate build-out scenario, the current buildout will occur in 2030 with 6337 SFEs and 2,080 af/yr, and the ultimate buildout will occur in 2038 with 7,801 SFEs and 2,560 af/yr. It is possible the District may expand its boundaries to serve surrounding developments that may petition for inclusion within the District and lead to an ultimate build out of the District. For planning purposes, the Wissler Trust and Home Place Ranch will be included into the District.

Water Projects

Average annual water demand and maximum monthly water demands were evaluated for the District. The average annual water demand decreased from the 2012 LRP Update from 305 gpd/SFE to 293 gpd/SFE likely due to water conservation. Since the last LRP Update, all SCADA systems have been updated to enable the District to monitor water demand on a daily basis. Based on the daily demands, the peak day to average annual peaking factor was updated from 2.2 to 2.1.

This LRP has two areas of focus for the water system which are the short term and long term water supply plan. Since the last LRP Update, a decree was entered in Case No. 12CW01 (Division 2) that changed the use of the Ranch water rights from irrigation to municipal and other uses included in the decree. The change of use will allow the Ranch water rights to be diverted from Fountain Creek at their current point of diversion, stored in a reservoir and ultimately delivered to the District via pipeline to meet municipal demands. A series of infrastructure improvements are needed to treat and convey the water from the Ranch to the District. Before the Ranch water is available as a long-term water supply, the existing groundwater supply must be maintained. The main goal of the short-term water supply projects is to maintain construction of new groundwater wells while implementing IPR at the District to sustain water supply. In the future, other long-term water supply projects will need to be considered, as well as resumed drilling of wells to maintain supply through buildout as well yield decreases. In order to supplement demand, Tetra Tech recommends the district begin construction of Indirect Potable reuse in the District starting in 2019 with a pilot project.

The long-term water supply plan is to construct storage and treatment facilities at the Ranch. The existing Callahan Reservoir at the Ranch should be expanded to 2,200 acre-ft to have enough operational capacity to store and deliver water to the District from the Ranch. The water from the reservoir will be treated at the new Water Treatment Plant before being pumped approximately 44 miles to the District. It is estimated that the earliest that the Ranch water supply can be delivered to the District is 2033 due to obtaining financing and constructing facilities.

The water level in the Denver Basin aquifers is declining which results in decreased production rates. To make up for the declining water supply without drilling additional wells, the Tri-Lakes Water Reclamation Plant will be constructed to enhance the supply in Monument Creek. The supply will be enhanced by providing advanced treatment of the effluent from the Tri-Lake Wastewater Plant so that the treated water can be discharged above the Monument Creek Exchange Pump Station. The exchanged and reclaimed water will be pumped to Lake Woodmoor which will provide natural attenuation before the water will be treated at the South Water Treatment Plant before being sent to the distribution system.

The capital improvements for the TL-WWTF were arranged in phases based on the Nutrient Engineering Report provided by Tetra Tech. Phase 1 focused on constructing processes that met Regulation 85 limits and was completed in 2017. Phase 2 and 3 are future phases that will meet upcoming regulations. Phase 2 primarily targets towards improving solids handling at the TL-WWTF. Phase 3 will address capital improvements required for Regulation 31 compliance. Miscellaneous projects are included to upgrade existing equipment and provide emergency power. Below is a summary description of the work for each phase.

TL-WWTF Phase 2 Improvements

- Decommission of the existing headworks and solids lagoon
- Construction of a new solids handling system including: gravity thickener, aerobic digester, dewatering equipment, solids handling building, solids loading station, and other ancillary equipment
- Construction of a new odor control system
- Construction of a new headworks facility including: fine mechanical bar screen, screenings handle equipment, and a vortex grit removal system in a new building

TL-WWTF Phase 3 Improvements

- Construction of a mixed liquor pump station
- Construction of new post-anoxic denitrification and reaeration basins
- Construction of chemical storage and feed pumps
- Construction of a tertiary filters

Miscellaneous Projects

- Upgrade blower system from multi-stage blowers to more efficient high speed turbo blowers
- Install an emergency generator for the activated sludge system

Based on the future well production projections and the exchange system yield, capital improvement projects are recommended in order to continue to meet the diminishing capacity and growing water demand. A list of the projects is presented in the table below.

Classification		Project Description	Opinion of Probable Cost in 2017 Dollars	Year of Start	Year of Completion
Water CIP	Water Treatment	South Filter Plant	\$791,820	2018	2020
Water CIP	Groundwater Supply	Well AR-21	\$2,700,000	2018	2019
Water CIP	Water Treatment	Pilot WTP for TL WTP and JV WTP	\$191,232	2019	2020
Wastewater CIP	Wastewater Treatment	Tri-Lakes Wastewater Treatment Misc. Projects	\$538,796	2020	2021
Water CIP	Surface Water Supply	Lake Woodmoor Pump Station Improvements	\$532,000	2020	2021

Classification		Project Description	Opinion of Probable Cost in 2017 Dollars	Year of Start	Year of Completion
Water CIP	Groundwater Supply	Well AR-22	\$2,700,000	2020	2020
Water CIP	Water Treatment	IPR at Tri-Lakes	\$28,496,058	2020	2024
Water CIP	Water Treatment	CWTP Improvements and Surface Water Pipeline	\$862,300	2021	2023
Water CIP	Groundwater Supply	Well DA-21	\$450,000	2021	2021
Water CIP	Groundwater Supply	Well DE21	\$1,100,000	2021	2021
Water CIP	Groundwater Supply	Well DA-22	\$450,000	2021	2021
Water CIP	Groundwater Supply	Well DE-22	\$1,100,000	2021	2021
Wastewater CIP	Wastewater Treatment	Tri-Lakes Wastewater Treatment Plant Phase 2 Improvement	\$14,323,801	2022	2025
Water CIP	Groundwater Supply	Well AR-8R	\$1,260,000	2022	2022
Wastewater CIP	Wastewater Treatment	Tri-Lakes Wastewater Treatment Phase 3	\$7,503,637	2027	2032
Water CIP	Storage and Distribution	Ranch Transmission & Conveyance	\$65,827,804	2027	2033
Water CIP	Water Treatment	Ranch WTP Design and Construction FAT Option	\$45,000,000	2030	2033
Water CIP	Storage and Distribution	Calahan Reservoir Expansion	\$20,286,000	2032	2035
Water CIP	Water Treatment	One MG Finished Water Storage Tank	\$1,825,740	2033	2033
Water CIP	Groundwater Supply	Well DA-16	\$450,000	2035	2035
Water CIP	Groundwater Supply	Well DE-16	\$1,100,000	2035	2035
Water CIP	Groundwater Supply	Well DA-18	\$450,000	2035	2035
Water CIP	Groundwater Supply	Well DE-18	\$1,100,000	2035	2035
Water CIP	Groundwater Supply	Well DA-20	\$450,000	2035	2035
Water CIP	Groundwater Supply	Well DE-20	\$1,100,000	2035	2035
Water CIP	Groundwater Supply	Well DA-11	\$450,000	2036	2036
Water CIP	Groundwater Supply	Well DA-1R	\$450,000	2036	2036
Water CIP	Groundwater Supply	Well AR-23	\$2,700,000	2036	2036

Wastewater Collection System

The WWSD sanitary sewer collection system was modeled under existing and future build out conditions to evaluate capacity of the gravity sewers, lift stations and force mains. The modeling was performed using a model maintained by the District with flows assumed to be applied in each scenario in a manner representative of existing and build-out planning. The modeling indicated that the system is able to accommodate the existing and planned taps at build out. Some gravity mains in the system approached design capacity at build out and bear further analysis as the system matures.

No capital improvements are recommended other than to continue the District's current annual manhole rehabilitation projects to further mitigate inflow and infiltration (I&I).

The following collection system studies are recommended as interim projects and/or as part of future LRP updates:

- Flow monitoring study targeting Inflow and Infiltration
- Sewer model calibration based upon periodic flow monitoring
- Lift station capacity analysis

WOODMOOR WSD 2020 Drinking Water Quality Report

Covering Data For Calendar Year 2019

Woodmoor Water and Sanitation District #1

1845 Woodmoor Drive

Monument, Colorado 80132

Public Water System ID: CO0121950

Esta es información importante. Si no la pueden leer, necesitan que alguien se la traduzca.

We are pleased to present to you this year's water quality report. Our constant goal is to provide you with a safe and dependable supply of drinking water. Please contact Gary Potter at 719-488-2525 with any questions or for public participation opportunities that may affect water quality.

General Information

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791) or by visiting epa.gov/ground-water-and-drinking-water.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV-AIDS or other immune system disorders, some elderly, and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and microbiological contaminants call the EPA Safe Drinking Water Hotline at (1-800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- Microbial contaminants:** viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants:** salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides:** may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses.
- Radioactive contaminants:** can be naturally occurring or be the result of oil and gas production and mining activities.
- Organic chemical contaminants:** including synthetic and volatile organic chemicals, which are byproducts of industrial processes and

petroleum production, and also may come from gas stations, urban storm water runoff, and septic systems.

In order to ensure that tap water is safe to drink, the Colorado Department of Public Health and Environment prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems (especially for pregnant women and young children). It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home's plumbing. If you are concerned about lead in your water, you may wish to have your water tested. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at epa.gov/safewater/lead.

Source Water Assessment and Protection (SWAP)

The Colorado Department of Public Health and Environment may have provided us with a Source Water Assessment Report for our water supply. For general information or to obtain a copy of the report please visit wqcdcompliance.com/ccr. The report is located under "Guidance: Source Water Assessment Reports". Search the table using 121950, WOODMOOR WSD, or by contacting JESSIE SHAFFER at 719-488-2525. The Source Water Assessment Report provides a screening-level evaluation of potential contamination that *could* occur. It *does not* mean that the contamination *has or will* occur. We can use this information to evaluate the need to improve our current water treatment capabilities and prepare for future contamination threats. This can help us ensure that quality finished water is delivered to your homes. In addition, the source water assessment results provide a starting point for developing a source water protection plan. Potential sources of contamination in our source water area are listed on the next page.

Please contact us to learn more about what you can do to help protect your drinking water sources, any questions about the

Drinking Water Quality Report, to learn more about our system, or to attend scheduled public meetings. We want you, our valued

customers, to be informed about the services we provide and the quality water we deliver to you every day

Our Water Sources

<u>Sources (Water Type - Source Type)</u>	<u>Potential Source(s) of Contamination</u>
NO 10 WELL (Groundwater-Well) NO 11 WELL (Groundwater-Well) NO 12 WELL (Groundwater-Well) NO 15 WELL (Groundwater-Well) NO 16 WELL (Groundwater-Well) NO 17 WELL (Groundwater-Well) NO 18 WELL (Groundwater-Well) NO 2 WELL (Groundwater-Well) NO 3 WELL (Groundwater-Well) NO 6 WELL (Groundwater-Well) NO 7 WELL (Groundwater-Well) NO 8 WELL (Groundwater-Well) NO 9 WELL (Groundwater-Well) MONUMENT CREEK (Surface Water-Intake) AUGUSTA PIT (Surface Water-Intake) WELL 20 (Groundwater-Well) LAKE WOODMOOR (Surface Water-Intake)	EPA Hazardous Waste Generators, EPA Chemical Inventory/Storage Sites, EPA Toxic Release Inventory Sites, Permitted Wastewater Discharge Sites, Aboveground, Underground and Leaking Storage Tank Sites, Existing/Abandoned Mine Sites, Other Facilities, Commercial/Industrial/Transportation, Low Intensity Residential, Urban Recreational Grasses, Row Crops, Fallow, Pasture / Hay, Deciduous Forest, Evergreen Forest, Septic Systems, Road Miles

Terms and Abbreviations

- **Maximum Contaminant Level (MCL)** – The highest level of a contaminant allowed in drinking water.
- **Treatment Technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water.
- **Health-Based** – A violation of either a MCL or TT.
- **Non-Health-Based** – A violation that is not a MCL or TT.
- **Action Level (AL)** – The concentration of a contaminant which, if exceeded, triggers treatment and other regulatory requirements.
- **Maximum Residual Disinfectant Level (MRDL)** – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Contaminant Level Goal (MCLG)** – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Maximum Residual Disinfectant Level Goal (MRDLG)** – The level of a drinking water disinfectant, below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **Violation (No Abbreviation)** – Failure to meet a Colorado Primary Drinking Water Regulation.
- **Formal Enforcement Action (No Abbreviation)** – Escalated action taken by the State (due to the risk to public health, or number or severity of violations) to bring a non-compliant water system back into compliance.
- **Variance and Exemptions (V/E)** – Department permission not to meet a MCL or treatment technique under certain conditions.
- **Gross Alpha (No Abbreviation)** – Gross alpha particle activity compliance value. It includes radium-226, but excludes radon 222, and uranium.
- **Picocuries per liter (pCi/L)** – Measure of the radioactivity in water.
- **Nephelometric Turbidity Unit (NTU)** – Measure of the clarity or cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the typical person.
- **Compliance Value (No Abbreviation)** – Single or calculated value used to determine if regulatory contaminant level (e.g. MCL) is met. Examples of calculated values are the 90th Percentile, Running Annual Average (RAA) and Locational Running Annual Average (LRAA).
- **Average (x-bar)** – Typical value.

- **Range (R)** – Lowest value to the highest value.
- **Sample Size (n)** – Number or count of values (i.e. number of water samples collected).
- **Parts per million = Milligrams per liter (ppm = mg/L)** – One part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Parts per billion = Micrograms per liter (ppb = ug/L)** – One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- **Not Applicable (N/A)** – Does not apply or not available.
- **Level 1 Assessment** – A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- **Level 2 Assessment** – A very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

Detected Contaminants

WOODMOOR WSD routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table(s) show all detections found in the period of January 1 to December 31, 2019 unless otherwise noted. The State of Colorado requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Therefore, some of our data, though representative, may be more than one year old. Violations and Formal Enforcement Actions, if any, are reported in the next section of this report.

Note: Only detected contaminants sampled within the last 5 years appear in this report. If no tables appear in this section then no contaminants were detected in the last round of monitoring.

Disinfectants Sampled in the Distribution System						
TT Requirement: At least 95% of samples per period (month or quarter) must be at least 0.2 ppm <u>OR</u>						
If sample size is less than 40 no more than 1 sample is below 0.2 ppm						
Typical Sources: Water additive used to control microbes						
Disinfectant Name	Time Period	Results	Number of Samples Below Level	Sample Size	TT Violation	MRDL
Chlorine	December, 2019	<u>Lowest period</u> percentage of samples meeting TT requirement: 100%	0	15	No	4.0 ppm

Disinfection Byproducts Sampled in the Distribution System									
Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Total Haloacetic Acids (HAA5)	2019	7.95	0 to 25.8	8	ppb	60	N/A	No	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM)	2019	19.45	0.6 to 67.1	8	ppb	80	N/A	No	Byproduct of drinking water disinfection

Lead and Copper Sampled in the Distribution System								
Contaminant Name	Time Period	90 th Percentile	Sample Size	Unit of Measure	90 th Percentile AL	Sample Sites Above AL	90 th Percentile AL Exceedance	Typical Sources
Copper	09/17/2019 to 09/25/2019	0.22	40	ppm	1.3	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	05/29/2019 to 05/30/2019	4	40	ppb	15	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	05/29/2019 to 05/30/2019	0.18	40	ppm	1.3	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	09/17/2019 to 09/25/2019	4	40	ppb	15	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Disinfection Byproducts Sampled at the Entry Point to the Distribution System									
Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Bromate	2017	7.67	5.2 to 12	3	ppb	10	0	No	Byproduct of drinking water disinfection

Summary of Turbidity Sampled at the Entry Point to the Distribution System					
Contaminant Name	Sample Date	Level Found	TT Requirement	TT Violation	Typical Sources
Turbidity	Date/Month: Jul	Highest single measurement: 0.68 NTU	Maximum 1 NTU for any single measurement	No	Soil Runoff
Turbidity	Month: Oct	Lowest monthly percentage of samples meeting TT requirement for our technology: 100 %	In any month, at least 95% of samples must be less than 0.3 NTU	No	Soil Runoff

Radionuclides Sampled at the Entry Point to the Distribution System

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Gross Alpha	2018	2.27	0.7 to 3.8	4	pCi/L	15	0	No	Erosion of natural deposits
Combined Radium	2018	2.98	1.9 to 3.6	4	pCi/L	5	0	No	Erosion of natural deposits

Inorganic Contaminants Sampled at the Entry Point to the Distribution System

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Barium	2019	0.09	0.09 to 0.09	1	ppm	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	2019	1	1 to 1	1	ppb	100	100	No	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride	2019	1.35	1.35 to 1.35	1	ppm	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate	2019	0.06	0 to 0.3	5	ppm	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	2019	3	3 to 3	1	ppb	50	50	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines

Secondary Contaminants**

**Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects (such as skin, or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	Secondary Standard
Sodium	2019	25.7	25.7 to 25.7	1	ppm	N/A
pH	2019	7.50	7.12 to 8.02	12	pH	6.5 - 8.5
Total Dissolved Solids	2019	170.81	135.40 to 236.87	12	ppm	500
Alkalinity	2019	97.32	52.70 to 273.50	12	ppm	N/A
Hardness	2019	105.15	25 to 231.49	12	ppm	N/A

Violations, Significant Deficiencies, and Formal Enforcement Actions

Non-Health-Based Violations

These violations do not usually mean that there was a problem with the water quality. If there had been, we would have notified you immediately. We missed collecting a sample (water quality is unknown), we reported the sample result after the due date, or we did not complete a report/notice by the required date.

Name	Description	Time Period
LEAD & COPPER RULE	LATE REPORT	10/01/2019 - 12/11/2019

Additional Violation Information

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

The above “violation” was given because a Certification of Delivery form was turned in late to the Colorado Department of Public Health and Environment. All the lead and copper sample results were below the action level. The late reporting did not have any impact on the water quality of the water delivered to customers. The water continued to be safe for consumption, no one was at risk and no additional action or alternate water supply was necessary. The reporting issue has been corrected and we are in full compliance with Colorado Primary Drinking Regulations.