

**WATER RESOURCES
&
WASTEWATER REPORT**

for

**Big O Tires
Site Development Plan
Falcon, CO**

January 2018



CONSULTANTS, INC.

**BIG O TIRES
FALCON, CO**

**WATER RESOURCES
&
WASTEWATER REPORT**

January 2018

Prepared for:

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Prepared by:

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1.0 INTRODUCTION

The purpose of this report is to provide an outline of water supply and wastewater treatment availability for the proposed Big O Tires commercial facility in Falcon, CO.

The land on which the proposed facility will be located is adjacent to the service area for the Woodmen Hills Metropolitan District (WHMD, the District). Therefore, the facility will be served by the District and annexed into its service area boundary.

The District currently includes a service area of approximately 2,100 acres, with 2,800 Single Family Equivalent (SFE) water taps made up of residential and commercial customers. An SFE is defined as the water generally used by a single family detached residence.

WHMD’s water supply is primarily dependent on the Denver Basin Aquifer, which is a non-renewable water source. However, a portion of the District’s portfolio is based on alluvial water rights from the Upper Black Squirrel Basin, which are renewable.

2.0 LAND USE

2.1 *Projected Land Uses:* The projected land use for this project is a single commercial facility located on a 1.22-acre parcel, southeast of the intersection of Highway 24 and Meridian Road. Please refer to the Land Use Exhibit in *Appendix A*.

3.0 WATER DEMANDS AND LEGAL SUPPLY

3.1 *Water Demand:* It is expected that the Big O Tires will utilize the following water demands:

**Table 3-1 - Summary of Expected Water Demands
From Table 6-5 of the Uniform Plumbing Code
Water Supply Fixture Units (WSFU)**

Type of Fixture	# of Fixtures	WSFU Value	Total WSFU's	Demand @15 GPD/WSFU	Demand (Gallons/Year)
Hose Bibb	2.0	2.5	5.0	75.0	27,375.0
Lavatory	3.0	1.0	3.0	45.0	16,425.0
Service/Utility Sink	1.0	3.0	3.0	45.0	16,425.0
Service or Mop Basin	1.0	3.0	3.0	45.0	16,425.0
Water Closet	3.0	2.5	7.5	112.5	41,062.5
Totals			21.5	322.5	117,712.5
				Irrigation Use (assumed)	53,357.5
				Grand Total	171,070.0

3.2 *Legal Water Supply:*

Denver Basin Sources

WHMD has adjudicated several Denver Basin rights underlying lands of the District for the purpose of beneficial uses within the District.

Additionally, WHMD owns Denver Basin Water Rights at off-site sources, known as Guthrie Ranch and Hart Water.

Renewable Sources

WHMD has a perpetual agreement with the Cherokee Metro District to provide up to 350 annual acre-feet of Upper Black Squirrel Alluvial water to WHMD. This right, being renewable can be considered as “300-year water”.

WHMD has additional renewable water rights at Guthrie Ranch which are alluvial and produce 89 annual acre-feet to WHMD. These rights are “exportable” from the Upper Black Squirrel and have been temporarily leased to Cherokee in exchange for non-exportable UBS water. This right, being renewable can be considered as “300-year water”.

3.3 *Adequacy of Legal Water Supply*

The WHMD current gross available legal water supply on a “300-year basis is 1442.8 annual acre-feet. It is our opinion that existing legal water supply more than meets the 300-year water supply requirement imposed by El Paso County. **It is our opinion that the current 300-year legal water supply exceeds the currently planned needs.**

4.0 **PHYSICAL WATER SUPPLY**

4.1 *Denver Basin Sources*

WHMD has 15 production wells within the on-site District and an additional 4 wells into the Denver Basin off-site. The off-site wells are shared with Meridian Service Metro District.

4.2 *Alluvial Water Sources*

WHMD owns and operates the Tamlin pumping station and line which connect Cherokee alluvial water to the WHMD District. Contractually, 350 annual acre-feet are dedicated to WHMD and volumes approaching that figure are typically delivered through the Tamlin system.

WHMD has partial ownership and operates two alluvial Guthrie wells off-site. This water can be transferred to WHMD via the WHMD/MSMD Guthrie pipeline system or “wheeled” through Cherokee.

4.3 *Adequacy of Physical Supply*

The adequacy of physical supply is analyzed on what is termed the Maximum Daily Demands of the system. Peak-hour demands are met by using equalizing storage within the distribution system.

From Table 3-1 above, expected water demands of the Big O Tires facility are approximately 117,712.5 gallons/year (0.3612 AF) for indoor use and 53,357.5 gallons/year (0.1637 AF) of irrigation.

Current water requirements are being met through existing physical assets and no source of supply improvements are expected or required to service the proposed Big O Tires facility.

5.0 WASTEWATER REPORT

5.1 Projected Wastewater Loads

Wastewater flows are based on 90% of anticipated indoor use. Maximum Monthly Flows are based on 125% of average daily flows. These are summarized as follows

Table 5-1 - Summary of Expected Wastewater Loads

Water Demands		Wastewater Loads	
Indoor Water Use @ 117,712.5 GPY (AF)	Indoor Water Use Average Daily Flow (ADF) (GPD)	Average Daily Flow (ADF) =90% Indoor Use (GPD)	Maximum Monthly Flow (MMF) =125% ADF (GPD)
0.3612	323	290	363

5.2 Collection Facilities

The Big O Tires facility will be required to install a sewer service line per District specifications. It is anticipated that the sewer service line will be a 4-inch pipe that will tie-in to an adjacent sewer main in Meridian Road.

5.3 Treatment Facilities

The Woodmen Hills Metropolitan District owns and operates a 1.3 million-gallon/day (MGD) wastewater treatment facility. Currently, the facility is at about 62% of its permitted capacity.

The expected wastewater loading from this facility represents about 0.03% of the permitted capacity of 1.3 MGD.

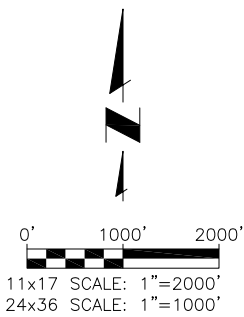
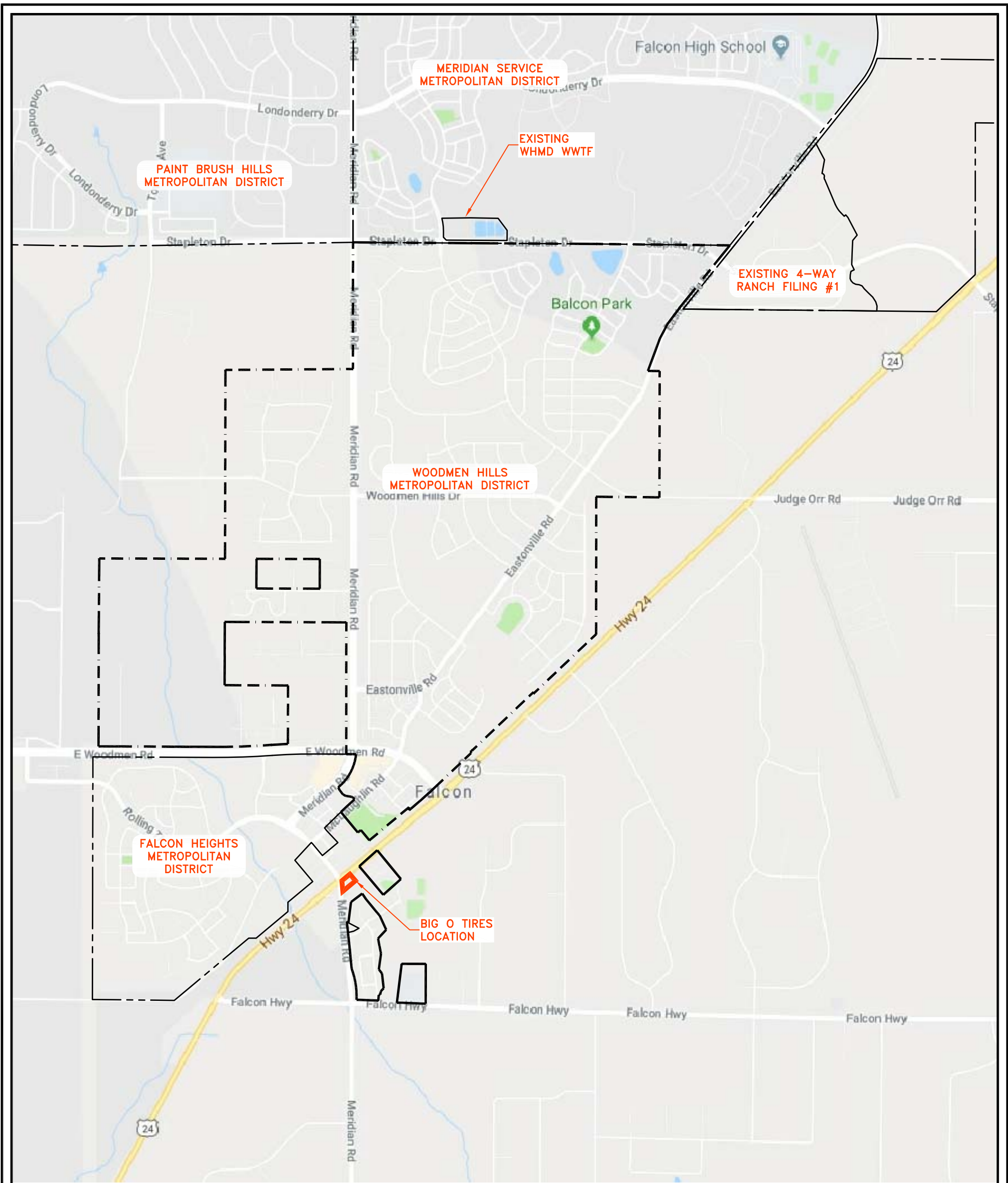
The Woodmen Hills Metropolitan District (WHMD) has committed to serve the subject property with wastewater treatment.

Additionally, WHMD has commenced construction (as of June 2017) of a new facility that is expected to be online in October 2018. This requirement for a new treatment facility was driven not by hydraulic loading, but by changes in effluent parameters (discharge limitations).

5.4 Conclusions

The Woodmen Hills Metropolitan District has the capacity and will provide water and wastewater service to the proposed Big O Tires Facility.

Appendix A



A
of A

Project No.: 138.03
Scale: AS NOTED
Date: 01/05/18
Design: RMM
Drawn: RMM
Check: JPM
Revised:

**BIG O TIRES – FALCON, CO
WATER RESOURCES & WASTEWATER REPORT
LAND USE EXHIBIT**

APPENDIX A

JDS-HYDRO CONSULTANTS, INC.
545 EAST PIKES PEAK AVENUE, SUITE 300
COLORADO SPRINGS, COLORADO 80903
(719) 227-0072

Appendix B

WATER SUPPLY INFORMATION SUMMARY

Section 30-28-133(d), C.R.S. requires that the applicant submit to the County, "Adequate evidence that a Water supply that is sufficient in terms of quantity, quality, and dependability will be available to ensure an adequate supply of water"

1. NAME OF DEVELOPMENT AS PROPOSED		<u>Big O Tires, Falcon, CO</u>	
2. LAND USE ACTION		<u>Site Development Plan</u>	
3. NAME OF EXISTING PARCEL AS RECORDED			
<u>N/A</u>			
SUBDIVISION	<u>Town of Falcon</u>	FILING	<u>N/A</u>
BLOCK	<u>23/24</u>	Lot	<u>N/A</u>
4. TOTAL ACREAGE	<u>1.22</u>	5. NUMBER OF LOTS PROPOSED	<u>1</u>
PLAT MAPS ENCLOSED		<input type="checkbox"/> YES See Submittal	
6. PARCEL HISTORY - Please attach copies of deeds, plats, or other evidence or documentation. (In submittal package)			
A. Was parcel recorded with county prior to June 1, 1972?		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
B. Has the parcel ever been part of a division of land action since June 1, 1972?		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
If yes, describe the previous action			
7. LOCATION OF PARCEL - Include a map delineating the project area and tie to a section corner. (In submittal)			
_____ 1/4 OF _____ 1/4 SECTIONS <u>7 & 12</u> TOWNSHIP <u>13</u>		<input type="checkbox"/> N <input checked="" type="checkbox"/> S RANGE <u>64 & 65</u> <input type="checkbox"/> E <input checked="" type="checkbox"/> W	
PRINCIPAL MERIDIAN: <input checked="" type="checkbox"/> 6TH <input type="checkbox"/> N.M. <input type="checkbox"/> UTE <input type="checkbox"/> COSTILLA			
8. PLAT - Location of all wells on property must be plotted and permit numbers provided.			
Surveyors plat <input type="checkbox"/> YES <input type="checkbox"/> NO		If not, scaled hand-drawn sketch <input type="checkbox"/> YES <input type="checkbox"/> NO <u>N/A</u>	
9. ESTIMATED WATER REQUIREMENTS - Gallons per Day or Acre Foot per Year		10. WATER SUPPLY SOURCE	
HOUSEHOLD USE #	<u>0</u> of units <u>0</u> GPD <u>0.0</u> AF	<input checked="" type="checkbox"/> EXISTING <input type="checkbox"/> DEVELOPED	<input type="checkbox"/> NEW WELLS
COMMERCIAL USE # *	<u>0.149</u> Gr. Ac. <u>469</u> GPD <u>0.525</u> AF	WELLS <input type="checkbox"/> SPRING	Proposed Aquifers - (Check One)
IRRIGATION #	_____ acres _____ GPD _____ AF	<i>Wells in WHMD's Portfolio</i>	<input type="checkbox"/> Alluvial <input type="checkbox"/> Upper Arapahoe
STOCK WATERING #	_____ of head _____ GPD _____ AF		<input type="checkbox"/> Upper Dawson <input type="checkbox"/> Lower Arapahoe
OTHER	_____ Multi-fam _____ GPD _____ AF	<input type="checkbox"/> Lower Dawson <input type="checkbox"/> Laramie Fox Hills	<input type="checkbox"/> Denver <input type="checkbox"/> Dakota
TOTAL	<u>469</u> GPD <u>0.525</u> AF	<input type="checkbox"/> MUNICIPAL	<input type="checkbox"/> Other
* Irrigation included in Commercial Use		<input type="checkbox"/> ASSOCIATION	WATER COURT DECREE CASE NUMBERS <i>In WHMD's Portfolio</i>
		<input type="checkbox"/> COMPANY	
		<input checked="" type="checkbox"/> DISTRICT	
		NAME <u>Woodmen Hills MD</u>	
		LETTER OF COMMITMENT FOR SERVICE <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
11. ENGINEER'S WATER SUPPLY REPORT <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If yes, please forward with this form. (This may be required before our review is completed)			
12. TYPE OF SEWAGE DISPOSAL SYSTEM <u>Central Sewer System</u>			
<input type="checkbox"/> SEPTIC TANK/LEACH FIELD		<input checked="" type="checkbox"/> CENTRAL SYSTEM - DISTRICT NAME: <u>Woodmen Hills Metropolitan District</u>	
<input type="checkbox"/> LAGOON		<input type="checkbox"/> VAULT - LOCATION SEWAGE HAULED TO:	
<input type="checkbox"/> ENGINEERED SYSTEM (Attach a copy of engineering design)		<input type="checkbox"/> OTHER:	

Appendix C