

Bell County WCID 1 Update

Killeen City Council Workshop

August 28, 2018

District Overview and Operations
Update

Bell County WCID 1 Update

- District background
- Wastewater Treatment review and projections
- Water Treatment and Transmission review and projections
- Capital Projects report
 - South Wastewater plant improvements
 - Stillhouse Water Plant and Transmission

BACKGROUND

THE BEGINNING-FORT HOOD



Fort Hood

[Killeen, Texas](#)

The War Department announced the selection of Camp Hood in January 1942. Most utilities were in place by August 1942.

Type

Army post

Coordinates

[31°08'N 97°47'W / 31.13°N 97.78°W / 31.13; -97.78](#)
Coordinates: [31°08'N 97°47'W / 31.13°N 97.78°W / 31.13; -97.78](#)

Built

1942

Camp received water from a transmission line on the Lampasas River near the Dam on Lake Stillhouse.

DISTRICT BACKGROUND

LAKE BELTON CONSTRUCTION

- Construction of the lake started in 1949 and was completed in 1954
- Cost to build-\$17 million
- Conservation pool level=594 feet above sea level
- Between 1949 and 1954, the Army constructed a 12 MGD treatment plant on Lake Belton because the water from the Lampasas River was not adequate to serve the Base and Killeen

CREATION OF DISTRICT

- City of Killeen needed water and Ft. Hood wanted to assist City
- Department of Army ruling prohibited Ft. Hood from being in the wholesale water business and selling water to any City
- Bell County WCID #1 was created in March 1952 to be the vehicle to sell water to Killeen and other area cities by leasing the plant from the Army.

Bell County WCID 1 Update

- Wastewater Treatment
 - Condition
 - Capacity
 - Flow Projections
 - Rate and rate projections



WWTP 1&2
201 S. 38th Street

Plant 2

Plant 1

Ops Bldg

Admin
Bldg

© 2017 Google

Google Earth

31°06'35.53" N 97°42'11.74" W elev 772 ft eye alt 2516 ft



© 2016 Google

Google earth

31°02'36.77" N 97°40'02.48" W elev 717 ft eye alt 3359 ft

Compost Facility

Write a description for your map.

Legend

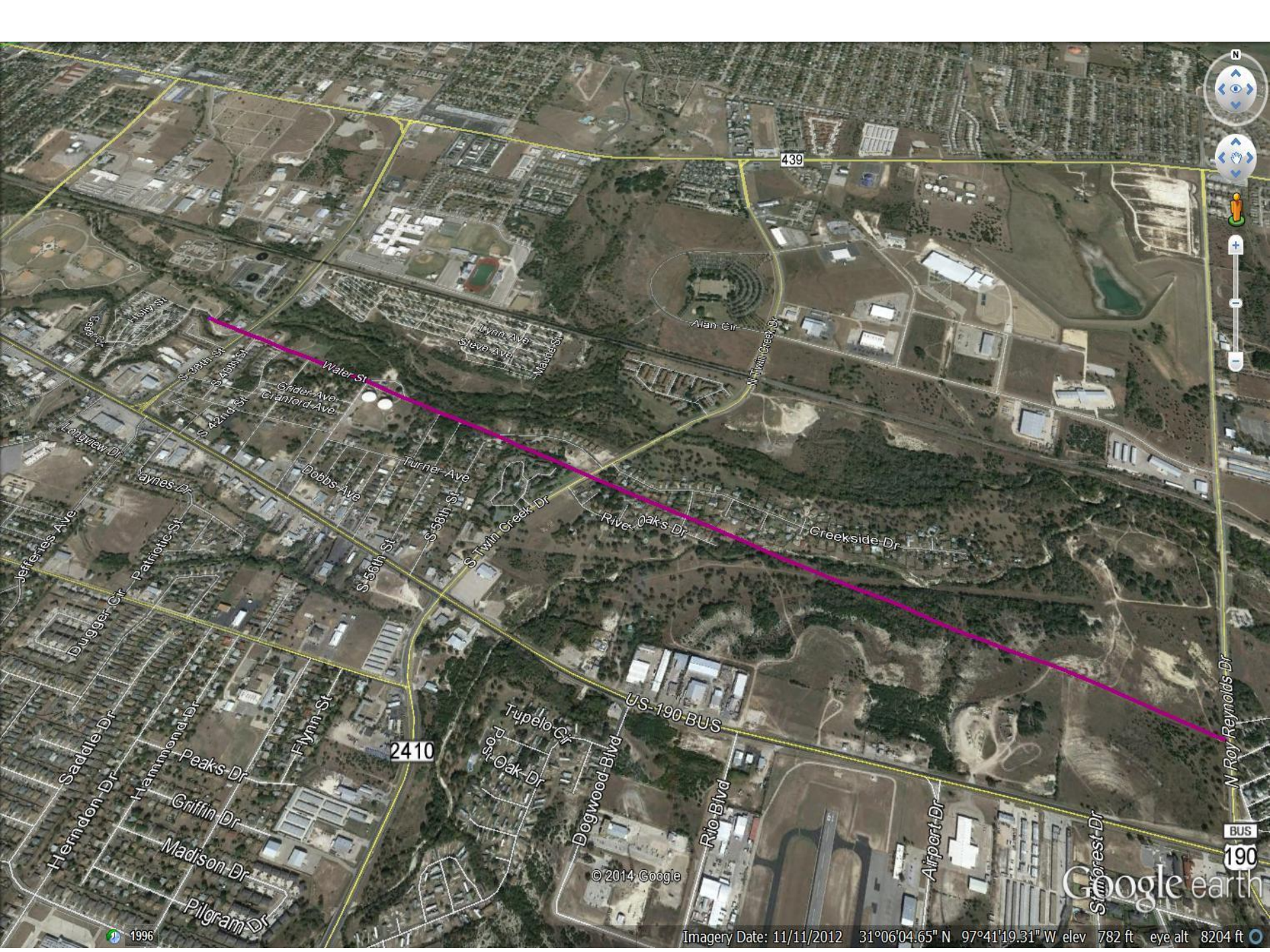
Google Earth

© 2018 Google



500 ft





Google earth

© 2014 Google

Imagery Date: 11/11/2012 31°06'04.65" N 97°41'19.31" W elev 782 ft eye alt 8204 ft

Wastewater Treatment

Condition

- The 38th Street plant was upgraded in 2009. Most aspects of the plant are in fair condition with a couple of exceptions; the large blowers and the digester mixer assemblies.
- The Chaparral Plant or South Plant was recently improved and is generally in very good condition. The most critical recurring maintenance is with the influent lift station pumps.

500 hp Blowers



Untitled Map

Write a description for your map.

Legend

I-14 Widening

Digesters and Thickeners

50 hp drives







Wastewater Treatment

Condition

- South Plant Improvements included; Improved headworks to reduce grease, other loadings ahead of SBR. Additional air for treating higher strength waste within the SBR. Additional digester capacity. Also alum injection facilities to enable us to meet the phosphorus limit to discharge to Trimmier Creek

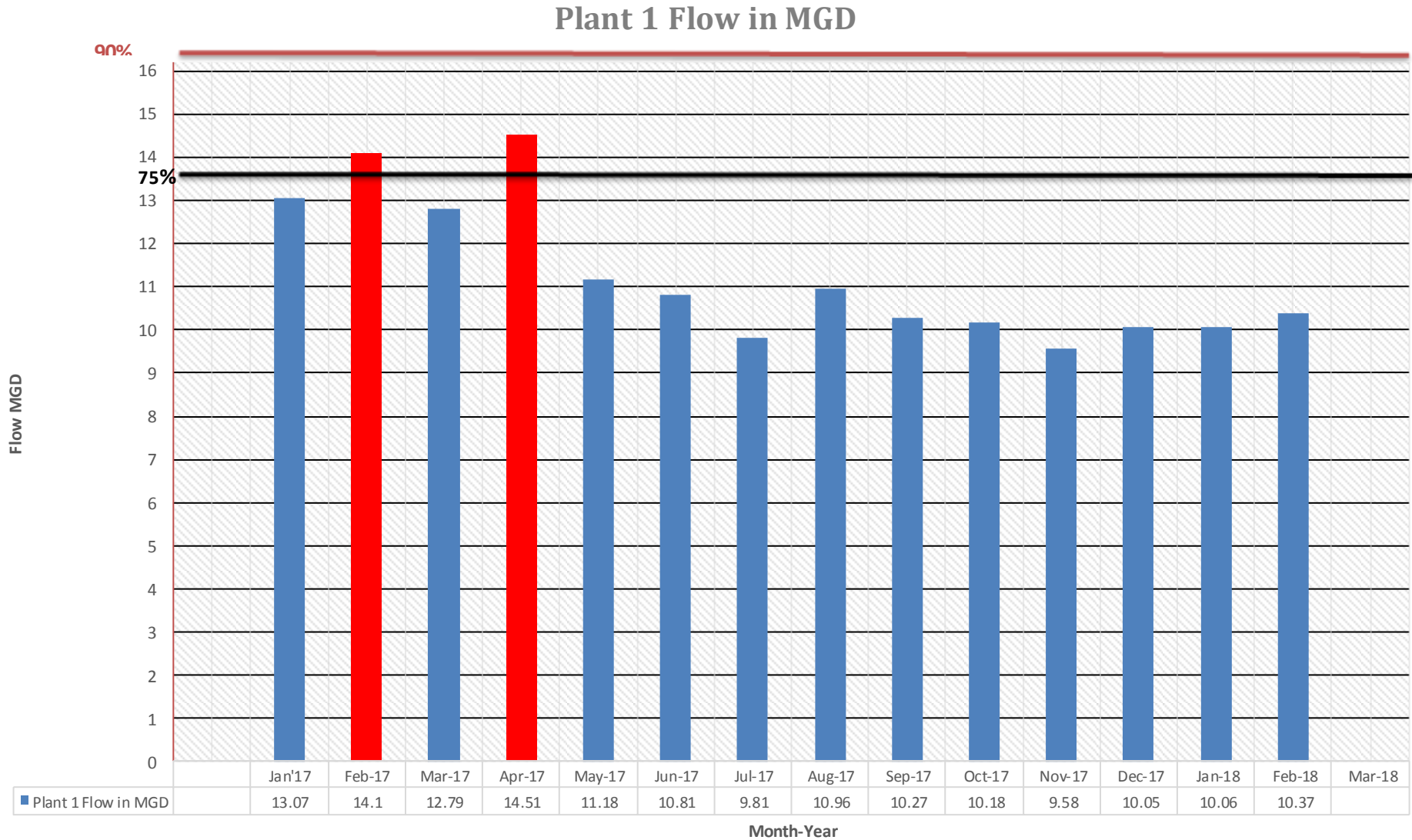
EXCERPTS FROM TAC RE: WW PLANT PLANNING

Texas Administrative Code

<u>TITLE 30</u>	ENVIRONMENTAL QUALITY
<u>PART 1</u>	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
<u>CHAPTER 305</u>	CONSOLIDATED PERMITS
<u>SUBCHAPTER F</u>	PERMIT CHARACTERISTICS AND CONDITIONS
<u>RULE §305.126</u>	Additional Standard Permit Conditions for Waste Discharge Permits

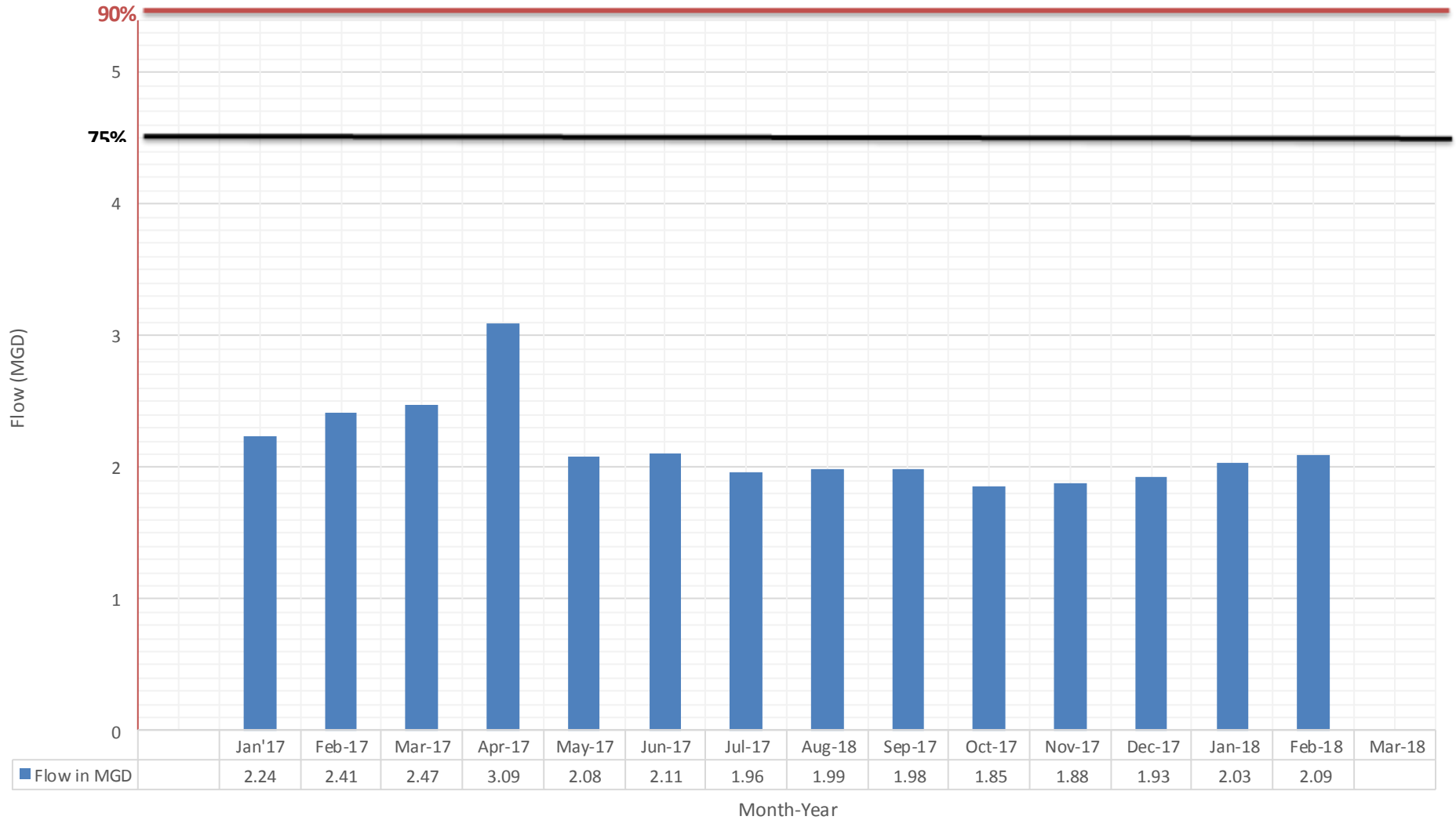
(a) Whenever flow measurements for any sewage treatment plant facility in the state reaches 75% of the permitted average daily or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the wastewater treatment and/or collection facilities. Whenever the average daily or annual average flow reaches 90% of the permitted average daily flow for three consecutive months, the permittee shall obtain necessary authorization from the commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a wastewater treatment facility which reaches 75% of the permitted average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee will submit an engineering report supporting this claim to the executive director. If in the judgment of the executive director the population to be served will not cause permit noncompliance, then the requirements of this section may be waived. To be effective, any waiver must be in writing and signed by the director of the enforcement division of the commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

Capacity Projections



Capacity Projections

South Plant Flow in MGD



Wastewater Rate and Rate projection

- The current O&M rate is 85 cents per 1,000 gallons treated.
- This is calculated from expense projection divided by flow projection.
- In 2017/2018, wastewater flow dropped to the lowest flow since fy 1999-2000.
- With this change in flow projection, the coming rate will increase by 4 cents per 1,000 gallons to 89 cents/1,000

Bell County WCID 1 Update

- Water Treatment & Transmission
 - Condition
 - Capacity
 - Projections
 - Rate and rate projections



Google earth

1995

Imagery Date: 12/11/2012 31°07'35.65" N 97°31'12.29" W elev 727 ft eye alt 2124 ft

Bell County Water Control & Improvement District No. 1 Master Plan

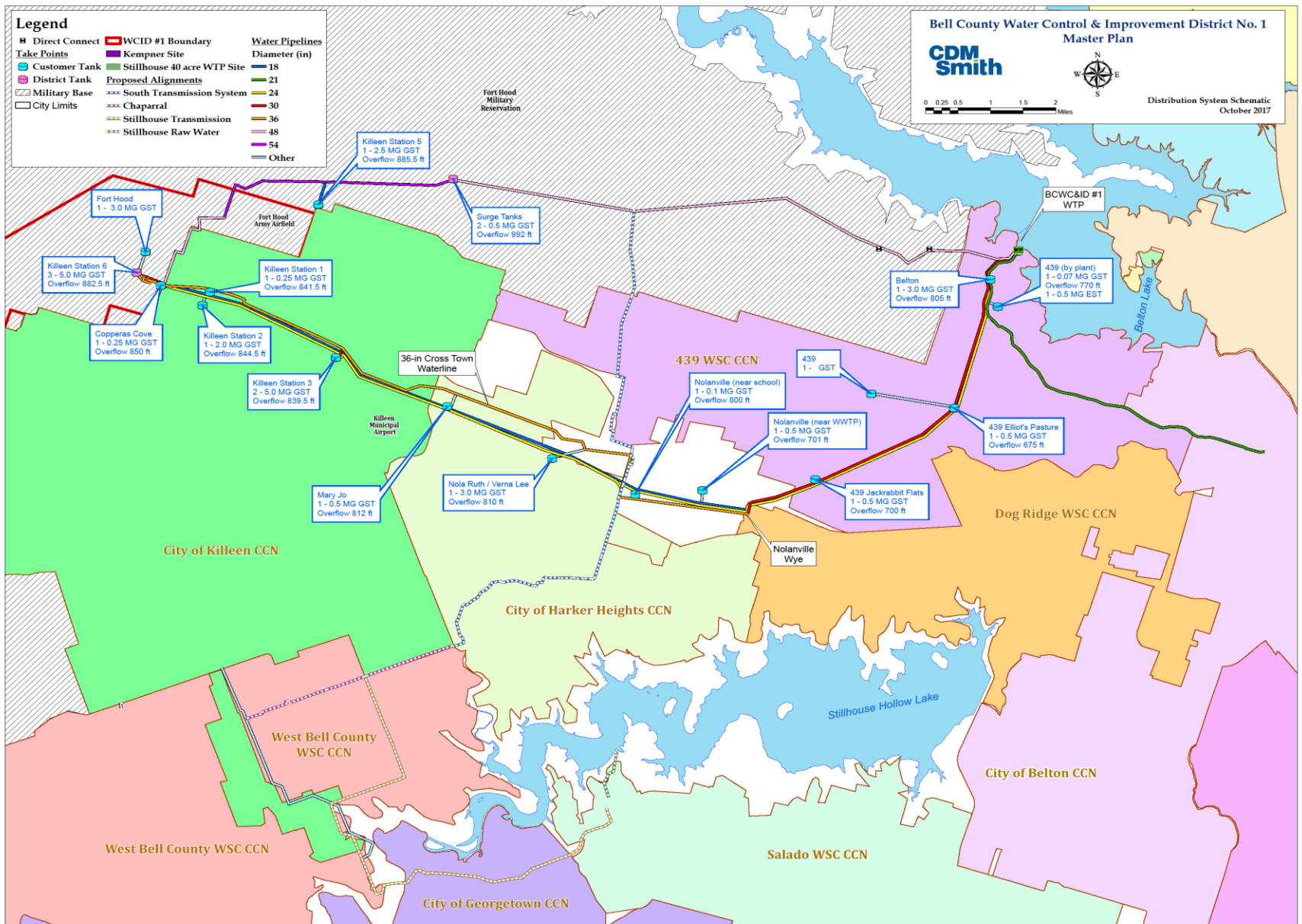
**CDM
Smith**



0 0.25 0.5 1 1.5 2
Miles

Distribution System Schematic
October 2017

- Legend**
- Direct Connect
 - WCID #1 Boundary
 - Kempner Site
 - Stillhouse 40 acre WTP Site
 - District Tank
 - Military Base
 - City Limits
 - South Transmission System
 - Chaparral
 - Stillhouse Transmission
 - Stillhouse Raw Water
 - Water Pipelines
 - Diameter (in)
 - 18
 - 21
 - 24
 - 30
 - 36
 - 48
 - 54
 - Other



WTP Summary of Plant Capacity and Condition

Treatment Process	Plant No. 1	Plant No. 2	Plant No. 3	Plant No. 4
	Capacity (MGD)			
	Condition			
Overall Rated Capacity & Plant Status	13.5	16.2	25.4	35
	Operational	Operational	Operational	Operational
Flocculation	17.9	32.0	39.4	45.2
	Fair	Fair	Poor	Good
Sedimentation	13.7	19.1	39.4	39.0
	Fair	Fair	Poor	Good
Filtration	19.3	20.0	25.4	62.6
	Good	Good	Good	Good
CT	13.5	16.2	25.4	35.0
	N/A	N/A	N/A	N/A
Limiting Process	CT	CT	CT	CT

Water Treatment and Transmission Condition

Overall, the system is in good shape. Several large diameter transmission valves have been replaced over the past 3 years. Filter media has been replaced on about 1/3 of the plant filters. Within the next 2 years an updated master plan is needed to prioritize needs but the Surge Tanks on the 48" feed line are woefully undersized and are a system weakness.

Capacity

Raw Water Supply

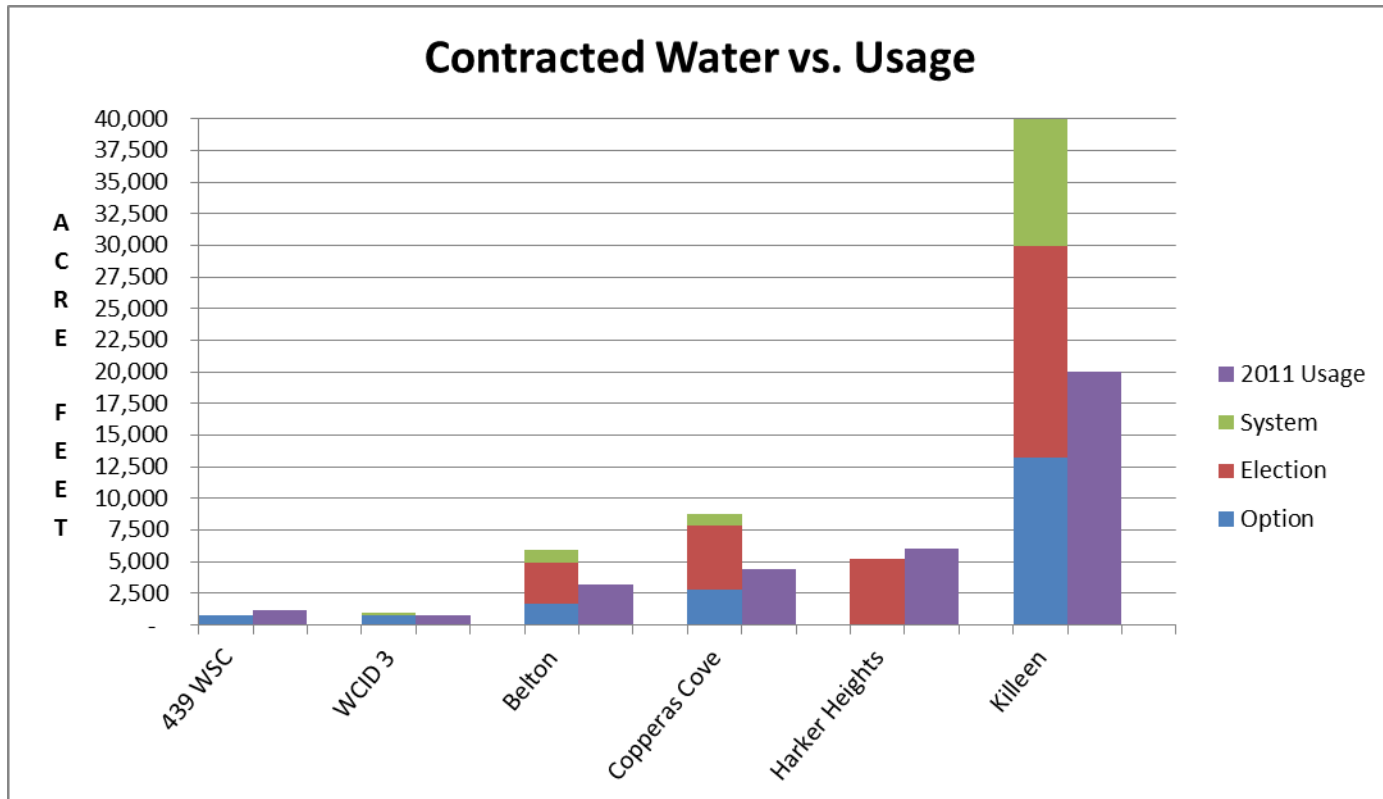
Water User	Contracted RW Supply (Acre Feet/Yr.)	100% of Supply Used (year)
Killeen	39,964	2056
Belton	8,466	Beyond 2060
Copperas Cove	8,824	Beyond 2060
Harker Heights	8,500	2056
439 WSC	2,159	2043
WCID 3 (Nolanville)	990	Beyond 2060
Fort Hood	12,000	Beyond 2060
TOTAL	80,903	

Capacity

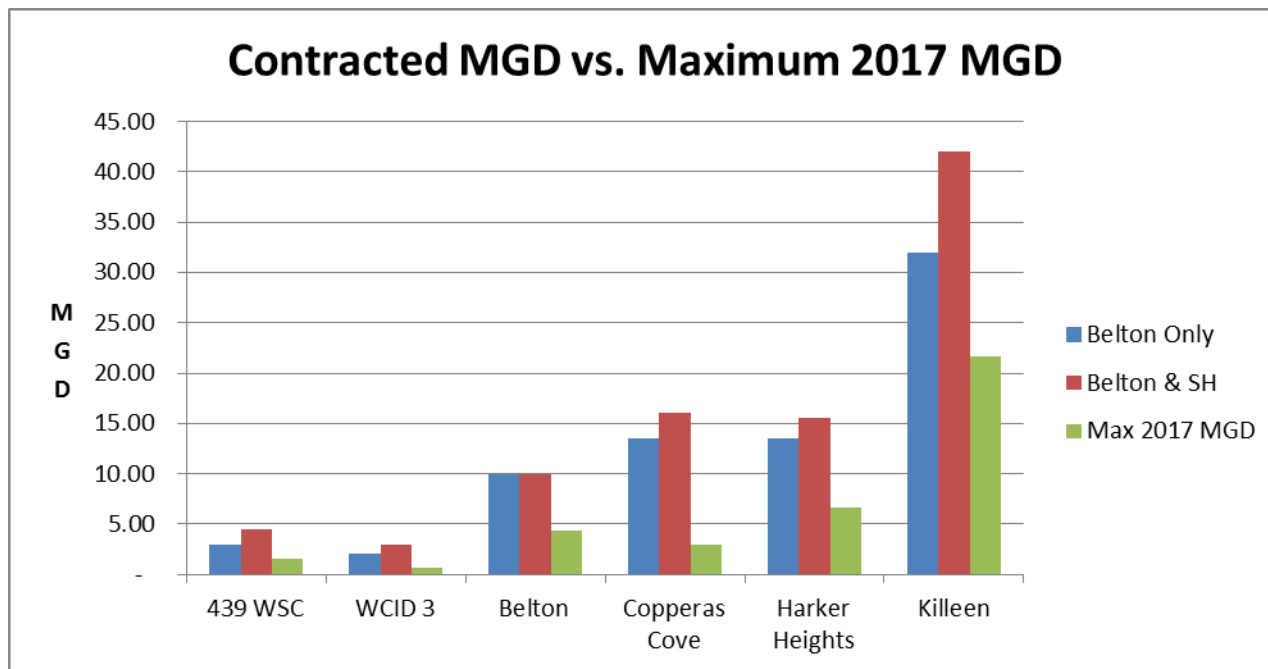
Water Rights Summary

Entity	Two Tier Water (Option/Election Use)	System Water	Other Water Rights	Total Water Rights
Killeen	29,964	10,000	-	39,964
Copperas Cove	7,824	1,000	-	8,824
Belton	4,966	1,000	2,500	8,466
Harker Heights	5,265	-	3,235	8,500
WCID #3	740	250	-	990
439	750	-	1,409	2,159
District	-	750	-	750
Totals	49,509	13,000	7,144	69,653

Capacity-Available and Used



Capacity - Daily Usage



Water Rate and Rate projection

- The current O&M rate is 65 cents per 1,000 gallons treated.
- This is calculated from expense projection divided by flow projection.
- In 2017/2018, water flow was very near projected.
- With increases in chemicals and electricity, the coming rate will increase by 1 cent per 1,000 gallons in the coming fiscal year to 66 cents/1,000 gallons treated

ANNUAL RATE LETTER

June 05, 2018

Mr. Ronald Olson
City Manager
City of Killeen
P.O. Box 1329
Killeen, Texas 76540

Dear Mr. Olson:

I know that you are in the final stages of completing your budget process for the 2018/2019 fiscal year, therefore I have tried to put together an estimate of projected financial obligations that I know your entity may have in connection with the O&M Cost, Debt Service Requirements, and Election/Option use water payments to the Brazos River Authority. These figures may vary slightly but should be relatively close.

- **Debt Service Requirements**

Water:

COMBINED WATER BONDS: REFUNDING 2004/2006 BONDS; 2008 PLANT EXPANSION;
REF 2011/2012; SERIES 2014 NEW & REFUNDED; 2015 NEW; 2106 REFUNDING

City	Debt Service Requirement 2018/2019	Previous Year (over)/under	Total Debt	Monthly Payment
Killeen	\$2,949,853.00	(\$735,198.00)	\$2,214,655.00	\$246,073.00

Sewer:

SERIES 2014 Refunded

City	Debt Service Requirement 2018/2019	Previous Year (over)/under	Total Debt	Monthly Payment
Killeen	\$2,877,147.00	(\$722,547.00)	\$2,154,600.00	\$239,400.00

ANNUAL RATE LETTER CONT'D

- **Election/Option Use Water**

This year some of the member entities will see a change in the amount of election/option acre feet usage.

Total AC/FT	Election Use	Option Use	Election Fee	Option Fee	Total Due
29,964	16,783	13,181	\$482,511.25 (28.75 ac/ft.)	\$191,124.50 (14.50 ac/ft.)	\$673,635.75

This is a projected figure to be paid in January 2019.

- **System Water Rates**

Ac/Feet	Projected Cost / AcFt	Amount	Due Date
10,000	\$77.00	\$770,000.00	September 1, 2018

- **Water Master Fee**

Total AC/FT	Fee	Total Due
29,964	\$.66	\$19776.24

Payment is due on or before September 1, 2018.

- **Water Rates**

The proposed water rate is .66/1000 gallons.

- **Wastewater Rates**

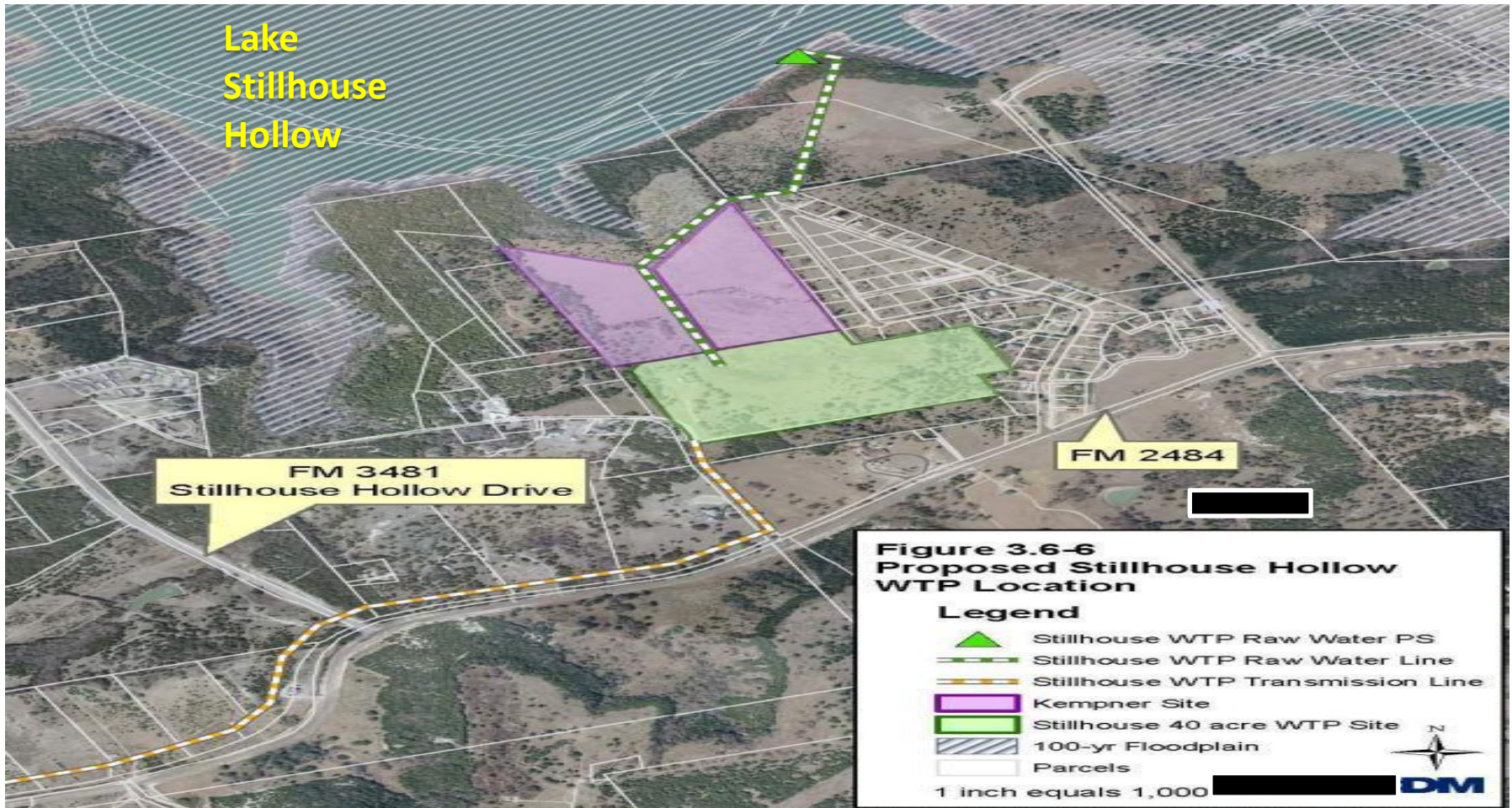
The proposed wastewater rate for the upcoming 2018/2019 budget will be .89/1000 gallons.

I hope this information is useful as you are completing your budget for this coming year. If you have any questions please feel free to call me at 254-501-9243.

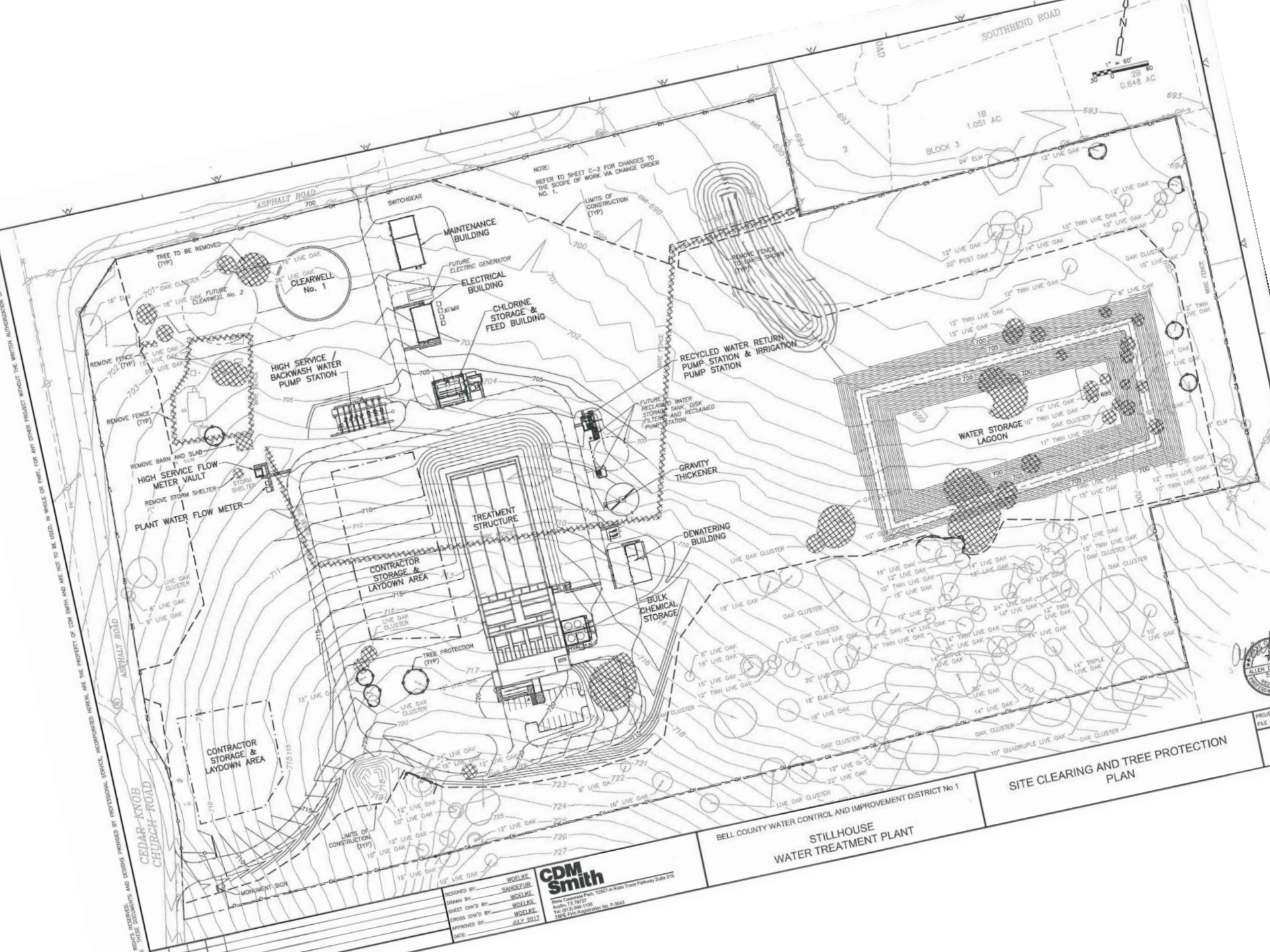
Sincerely,

Richard Garrett, P.E.
General Manager
W.C.I.D. No.1

LOCATION OF PROPOSED STILLHOUSE WTP







SITE CLEARING AND TREE PROTECTION PLAN

BELL COUNTY WATER CONTROL AND IMPROVEMENT DISTRICT No 1
STILLHOUSE
WATER TREATMENT PLANT

DESIGNED BY: WOELKE
DRAWN BY: SARGENT
CHECKED BY: WOELKE
CROSS CHECKED BY: WOELKE
APPROVED BY: DATE: 04.22.2017

CDM Smith

Water Control Plant, 72307-A State Truss Parkway Suite 210
Austin, TX 78717
Tel: 512.446.1100
Toll Free Registration No. 9-9045

Stillhouse WTP Site Comparison

Comparison of Sht CR-1 to aerial photo

Legend

Google Earth

© 2018 Google

CDM
Smith

STILLHOUSE
WATER TREATMENT PLANT

700 ft

N













August 28, 2018 SCHEDULE

[illegible]

STILLHOUSE WATER TREATMENT PLANT DISTRICT COLLABORATION

- On an interim basis (until the new plant is constructed and operational), the District will guarantee Killeen an additional 2 mgd of treated water per day.
- Killeen will not have to pay for the additional water unless the water is actually used.
- This is to help Killeen with the .6 (.39)rule. TAC §290.45(f)(4) states that the capacity of the system shall be at least 0.6gpm per connection (Killeen's variance allows them to use 0.39 gpm instead of 0.6 gpm).

Questions?