



# WCTMWD

## **Water Conservation and Drought Contingency Plans** **Updated 5/07/2024**

West Central Texas Municipal Water District  
410 Hickory, Abilene, TX 79601  
OFF (325) 673-8254  
FAX (325) 673-8272  
[www.wctmwd.org](http://www.wctmwd.org)

**WATER CONSERVATION AND DROUGHT CONTINGENCY PLANS  
WEST CENTRAL TEXAS MUNICIPAL WATER DISTRICT**

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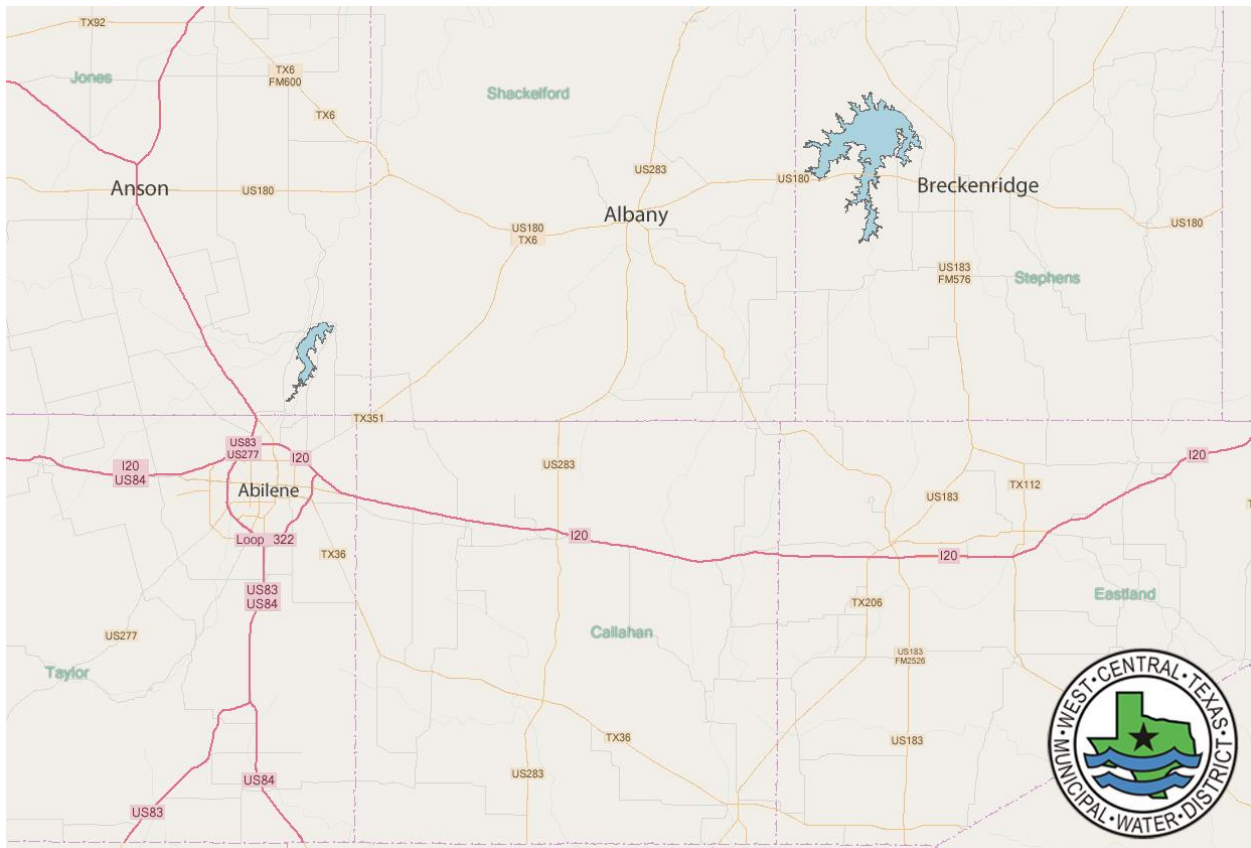
# WEST CENTRAL TEXAS MUNICIPAL WATER DISTRICT WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN

Updated 5/07/2024

## 1.00 INTRODUCTION

The West Central Texas Municipal Water District (WCTMWD) is a conservation and reclamation district created in 1955 under the authority of Article XVI, Section 59 of the Texas Constitution. The 54th Legislature passed HB 407 to provide the enabling legislation for the formation of the District. Formed for the primary goal of securing water rights and constructing Hubbard Creek Reservoir in Stephens County, the District is a raw-water source for its Member Cities Abilene, Albany, Anson, and Breckenridge, and currently focuses on maintaining the reservoir and a system of pumps and pipelines that deliver raw water to its members and other customers (see **FIGURE No. 1**). The District is a wholesale raw water provider. Municipalities receive the water, treat it, and deliver it to their customers.

*FIGURE No. 1 – Member City Map*



The District is governed by a Board of Directors appointed by the governing body of each Member City in accordance with the Act, as follows:

- (1) Each Member City having a population of 10,000 or less according to the most recent federal census appoints two directors. This currently applies to the cities of Anson, Albany, and Breckenridge.
- (2) Each Member City having a population of more than 10,000 according to the most recent federal census appoints two directors plus one additional director for each 10,000 population or part thereof over 10,000; provided, that no Member City shall appoint more than one-half of the members of the Board. This currently applies only to the city of Abilene.

The District owns and operates Hubbard Creek Reservoir (HCR) in Stephens County, Texas, and a water transmission system for the delivery of raw water to the Member Cities and other customers of the District. The District's administrative offices are in Abilene, Texas, and additional operating facilities are located at or near HCR, including the District's primary pump station. The District has approximately 24 full-time employees.

Pursuant to permits issued to the District by the Texas Board of Water Engineers (now the Texas Commission on Environmental Quality), the District is authorized to impound and store water in HCR up to elevation 1,183.00 feet above Mean Sea Level (MSL) measured using the National Geodetic Vertical Datum (NGVD) 1929. That same elevation is equal to elevation 1,183.31 feet MSL as measured using the North American Vertical Datum (NAVD) 1988. The United States Geological Survey (USGS), the District and other State and Federal agencies currently use the NAVD '88 datum for the water level in HCR making the reservoir's maximum impoundment level 1,183.31 feet MSL.

The District is currently authorized to divert up to 56,000 acre feet (AF) of water each year for multiple purposes (municipal, industrial/mining, irrigation, agriculture, and domestic and livestock) under Certification No. 12-4213C.

The District provides water to its Member Cities pursuant to a Water Contract between the District and each Member City which prescribes and limits the annual amount of water which such Member City may take from HCR depending on the water surface elevation of HCR.

Water which is not allocated to the Member Cities under such Water Contracts is sold to users pursuant to various pipeline contracts, each and all of which by their express provisions, are subordinate to the obligations of the District to furnish water from HCR to the four Member Cities of the District. Water sales to customers other than the four Member Cities may be restricted or terminated with a 30-day notice that the District’s Board of Directors has determined such delivery jeopardizes the ability of the District to meet its obligations to deliver municipal water to its Member Cities.

On January 29, 2016, the District purchased the West Central Brazos Water Distribution System (WCBWDS) from the Brazos River Authority (BRA). Originally constructed in the late seventies and early eighties by the Texas Pacific Oil Company and purchased by BRA in 2002, the system was used to deliver raw Possum Kingdom (PK) Reservoir water to oil companies and regional water districts. The purchase added District operations in Eastland and Palo Pinto Counties. In time, the District will be able to deliver raw water from this source to all Member Cities. PK is BRA’s largest storage reservoir with 538,139 AF at conservation capacity. The District only transmits water through this system. The District, or other entities, must contract with BRA or others for the water supply.

At the present time, the number of water customers of the District within each of the categories for which the District provides or sells water is as follows:

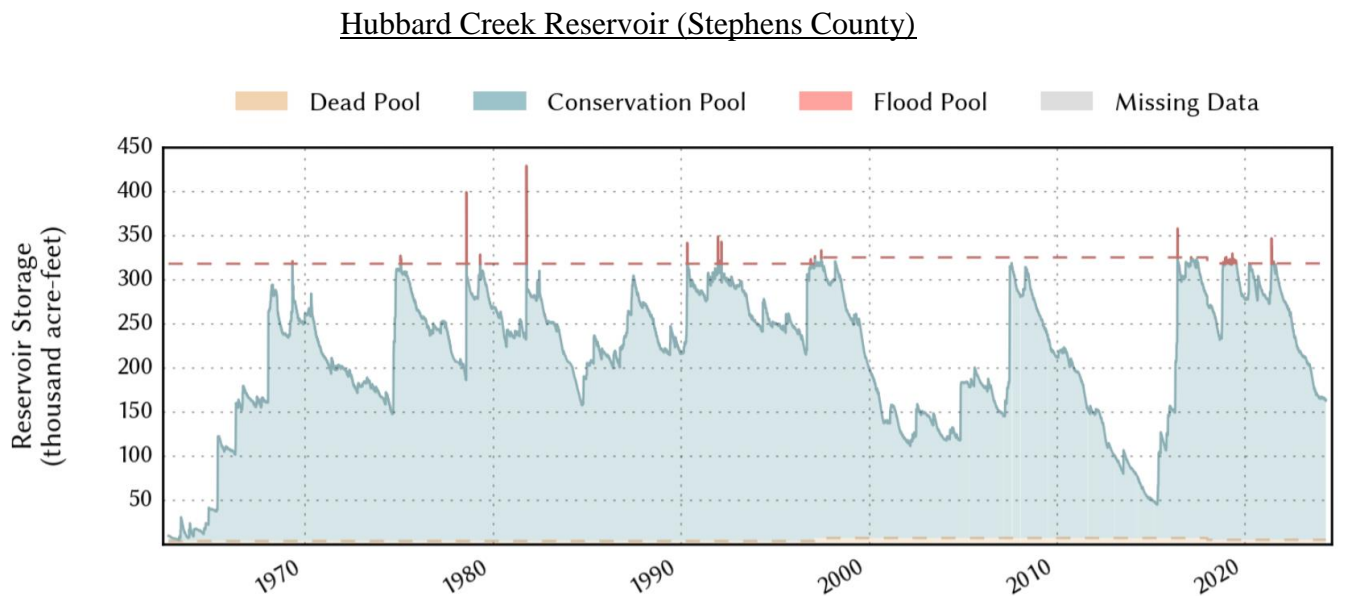
Category	Number of Customers	2023 AF Usage
Municipal	6	14,509
Industrial/Mining	16	756
Domestic and Livestock	108	956
Lake Lot (estimated usage)	239	525
<b>Totals</b>	<b>369</b>	<b>16,746</b>

The City of Abilene developed a “bridge” or interconnection line between the WCBWDS and the District’s HCR System in 2016. This “bridge” includes a 36-inch “Veale Parks” line which brings PK water to a Raw Water Roughing Facility (RWRf) in Breckenridge. Partially treated demineralized water is then pumped from that facility through a 36-inch Product Water Line to a connection with the HCR System. The District will own and/or operate all transmission components of this system, while the City will own and operate the RWRf, and its associated “reject” line extending from the RWRf back to Possum Kingdom Reservoir.

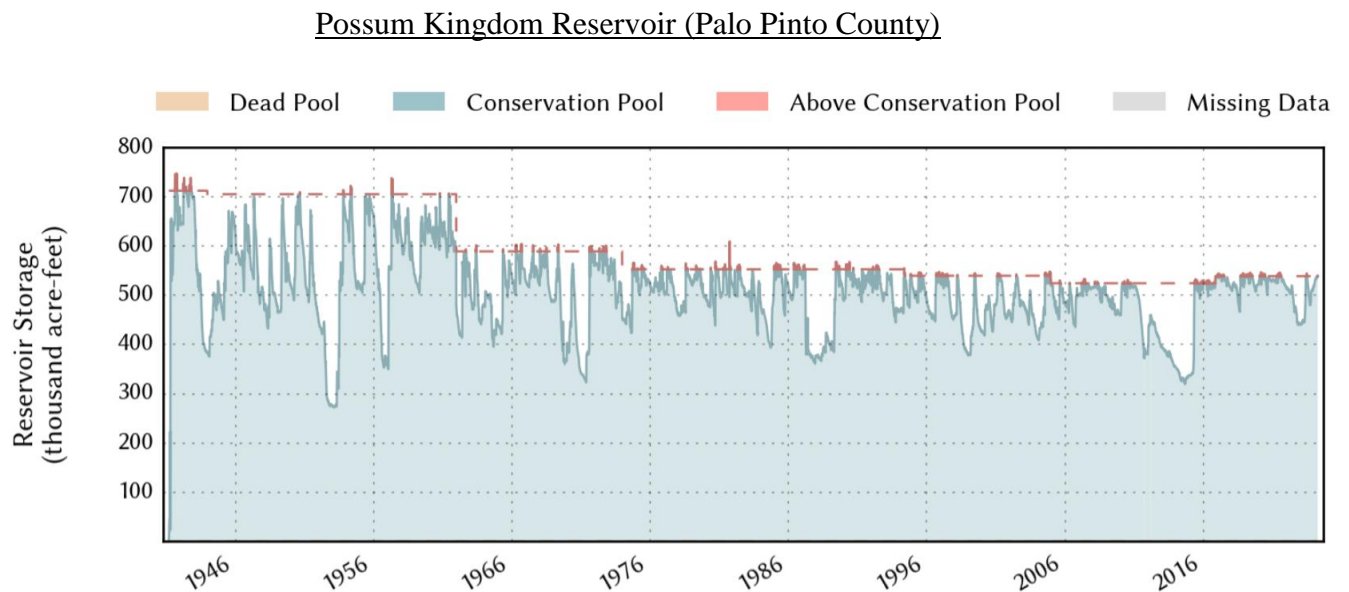
After the Roughing Facility comes online, this interconnection will provide the District greater flexibility and redundancy in maintaining raw water deliveries to all of its Member Cities.

Graphs exhibit historic water levels in acre feet for both Hubbard Creek and Possum Kingdom Reservoirs. The red dotted line indicates full conservation capacity, but also reflects changes due to periodic volumetric surveys performed by TWDB.

**FIGURE No. 2 Reservoir Storage Level Histories**



Note: Significant water was not pumped consistently from this source until 1998.





### 1.01 WCTMWD Water Supply System

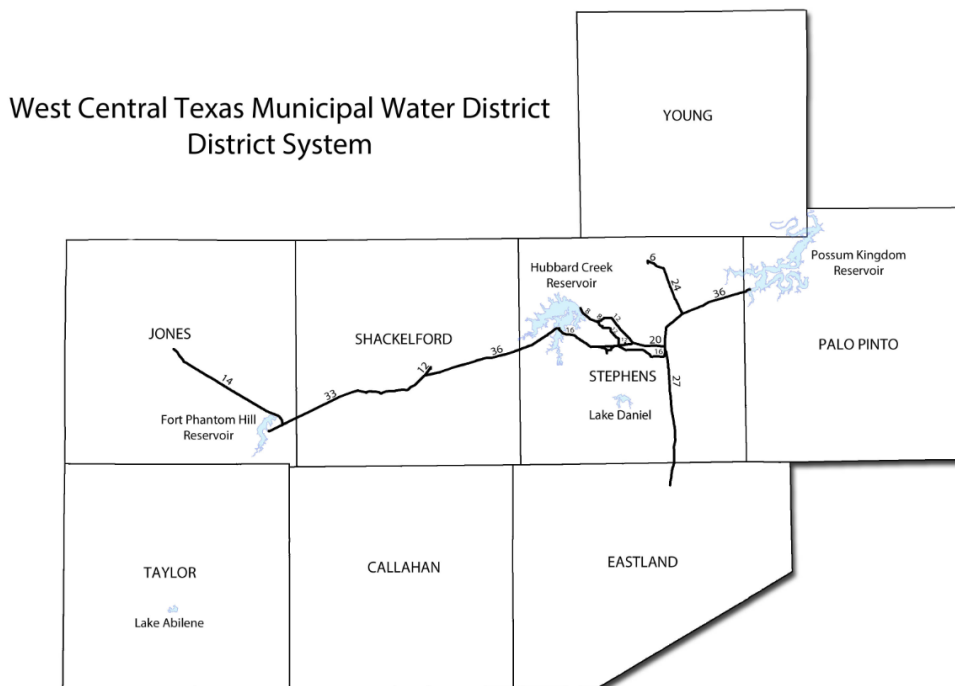
The District’s water sources include Hubbard Creek Reservoir (HCR) near Breckenridge in Stephens County (completed in 1962) and, as of the 2016 WCBWDS acquisition, access to Possum Kingdom Reservoir (PK) in Palo Pinto County (completed in 1941). HCR has a multi-use diversion right to include municipal, industrial/mining, agricultural, and domestic and livestock usage. Maximum capacities shown in the table below are in acre feet (AF).

**TABLE No. 1 – Water Sources and Reservoir Capacities**

Reservoir	Purpose	Year	Owner	Maximum Capacity
Hubbard Creek	Water Supply	1962	WCTMWD	313,298 AF
Possum Kingdom	Water Supply	1941	BRA	538,139 AF

The District also owns and operates a water distribution network encompassing five pump stations and 211 miles of water transmission pipelines (**Figure No. 3**). This system features numerous miles of parallel lines and interconnects, which make it quite flexible. In time, the District will be able to furnish any of its four Member Cities with water from two different reservoir sources.

**FIGURE No. 3 – District Pipeline System**



**TABLE No. 2 – WCTMWD Pipeline Network 2024**

Pipeline	System	Installed	Diameter	Pipe	Miles	HCR System	WCB System	PK System
Anson Line	Hubbard	1964	14	AC	18.22	18.22		
Breckenridge Line	Hubbard	1970	16	AC	4.32	4.32		
Breckenridge Line	Hubbard	1970	18	AC	2.14	2.14		
Ward C	WCBWDS	1983	12	C303	3.07		3.07	
Black Stoker Line	WCBWDS	1983	12	C303	2.71		2.71	
Ward B	WCBWDS	1983	12	C303	1.01		1.01	
PK Line (Phase 2)	WCBWDS	1980	16	C303	0.92		0.92	
Breckenridge Line	WCBWDS	1983	20	C303	5.26		5.26	
Ward C	WCBWDS	1983	20	C303	1.35		1.35	
Elliasville Line (Phase 1)	WCBWDS	1977	24	C303	9.62		9.62	
Hubbard Line	Hubbard	1964	27	C303	2.06	2.06		
Hubbard Line	Hubbard	1972	33	C303	25.74	25.74		
Parallel Line	Hubbard	1985	36	C303	42.50	42.50		
Product Water Line	PK	2016	36	C303	7.59			7.59
Veale Parks Line	PK	2016	36	C303	9.26			9.26
PK Line (Phase 1)	WCBWDS	1977	36	C303	9.73		9.73	
PK Line (Phase 2)	WCBWDS	1980	36	C303	5.86		5.86	
Ward B	WCBWDS	1975	12	Fiberglass	0.90		0.90	
Ranger Line	WCBWDS	1980	27	L301	18.43		18.43	
Hubbard Line	Hubbard	1968	33	L301	14.70	14.70		
Albany Line	Hubbard	1984	12	PVC	1.66	1.66		
Concentrate Line	PK	2016	12	PVC	15.18			15.18
Ward B	WCBWDS	1975	12	Steel	8.79		8.79	
Breckenridge Line	Hubbard	1961	16	Steel	0.85	0.85		
<b>TOTALS</b>					<b>211.87</b>	<b>112.19</b>	<b>67.65</b>	<b>32.03</b>

## **1.02 Water Supplies to Municipal Water Users**

The following is an entity-by-entity summary of the District's water supply capabilities for serving its Municipal Customers. This list encompasses the District's Member Cities plus Stephens Regional Special Utility District (SRSUD). Included therein are each Entity's recent water demands, sources used to meet those demands, and a description of each city's water treatment plant(s). Additional information regarding water demands is presented in Appendix A (Page 53).

## **1.03 City of Abilene Water System (Taylor and Jones Counties)**

The City of Abilene's 2040 Regional Water Plan population estimate is 127,252.

However, Abilene also delivers treated water to 8 Water Supply Corporations (WSCs), 5 small adjacent municipalities, and a manufacturing industrial park... all of which represent about 16% of their normal usage. These entities include: View/Caps WSC, SUN WSC (Merkel), Steamboat Mountain WSC, Potosi WSC, Hawley WSC, Hamby WSC, EULA WSC, Blair WSC (Merkel), City of Tye, City of Merkel, City of Lawn, City of Clyde, and the City of Baird.

The 2040 population of Abilene plus its served entities is 132,973. This combined population served is expected to swell to 141,659 by 2070. (*Source: TWDB 2021 Regional Water Plan WUG Projections*)

Abilene currently utilizes three reservoirs for its water supply needs. They are Hubbard Creek (WCTMWD / 313,298 AF), Fort Phantom (Abilene / 70,030 AF), and OH Ivie (CRMWD / 554,340 AF). In time, Possum Kingdom Reservoir will join this list (BRA / 538,139 AF). All AF figures are at full capacity.

The District is responsible for supplying much of the water needs for the City and its customers. As a Member City, our contract with Abilene states in part:

*"Based upon the Safe Yield of Hubbard Creek Reservoir, and subject to the mechanical ability of the District to furnish the amount of water specified herein. District will deliver water to City, at the delivery point hereinafter specified or as otherwise agreed by District and City, and City will accept water for its own use and for distribution to all of the customers served by City's water distribution system."*

Thus the District will provide and the City may take any quantity of water City desires up to the limit set by its Water Contract which is based upon the Safe Yield of the Reservoir.

**TABLE No. 3 – Amendment 2 Contract Limits**

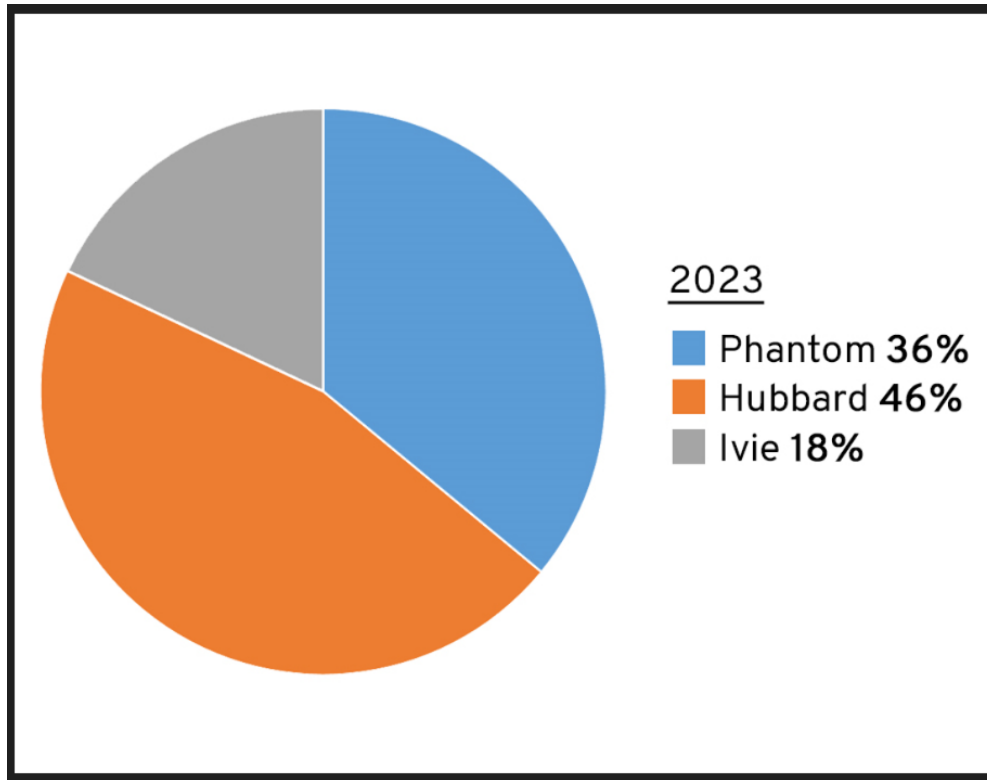
<b>HCR Elevation</b>		<b>Original Limits</b>	<b>Current Limits</b>
Below	At or Above	Amendment 2 (AF / Year)	Based upon 2017 Safe Yield (AF / Year)
----	1170	25,500	16,300
1170	1155	20,400	13,000
1155	1153	15,300	9,800
1153	1150	10,200	6,500
1150	1148	5,100	3,300
1148	----	0	0

Abilene’s use of District supplied water has varied over the years. Some years it has taken almost no water from HCR, relying instead on their other sources. Peak demand on District water occurred in 1999 when it took 7,483 million gallons (MG) (22,963 AF). Its second highest year was in 2000 when they took 6,907 MG (21,196 AF). No real trend of water use from the District has been apparent over the years due to weather variations and system operations. Peak month use was 459 MG in 2023, while the peak day was 16.7 million gallons per day (MGD). Also see **Table No. 9** (page 54) in Appendix A.

Under ordinary conditions, the City of Abilene obtains raw water furnished by the District usually with a blend from two other sources: (1) Hubbard Creek Reservoir, (2) Fort Phantom Reservoir, and (3) OH Ivie Reservoir. The City determines their blend based upon reservoir contents, source water quality, economics, and customer demand.

Abilene’s total reservoir water usage percentages for 2023 are illustrated in **FIGURE No. 4** on the following page.

**FIGURE NO. 4 Abilene Reservoir Water Usage**



The District has the ability to deliver to the City a maximum of 30 MGD of water from its Booster 2 Pump Station on a consistent basis (32 MGD short term). This capability is supplemented by the two above ground storage tanks (10MG open top, and 1.69 MG closed top) both located at High Point just 14 miles NE of the Abilene vault. In the event of power loss or needed repairs, the two tanks can gravity flow water for several hours depending upon demand. High Point is 287 feet higher than the Abilene vault and that, combined with 47 feet of water storage, produces 334 feet (145 psi) based on the total elevation difference.

Abilene’s raw water delivery system includes parallel lines from HCR to the Abilene Vault made of pre-stressed reinforced concrete pipe, one 33/27-inch diameter line and one 36-inch diameter line. This redundancy enables the District to perform repairs if necessary on one line while the other maintains reliable raw water delivery.

As mentioned earlier in this document, the District will eventually be able to blend PK water with HCR water and deliver blended raw water to the City of Abilene, and eventually to all of its Member Cities. This creates greater water supply redundancy for our four West Texas Member Cities.

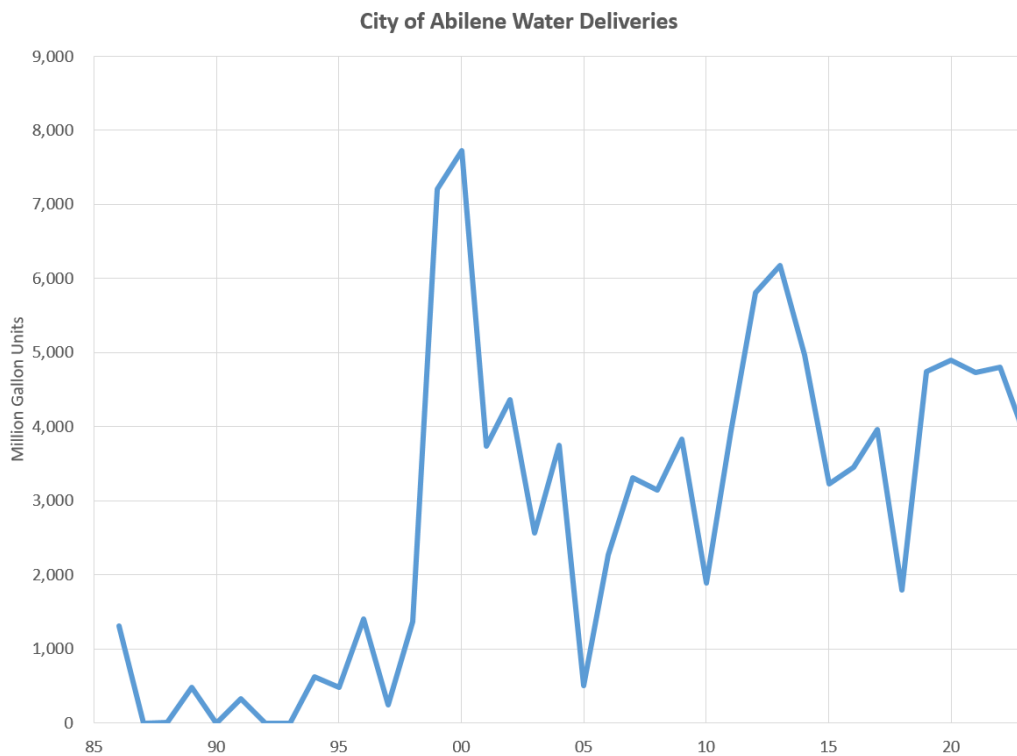
Abilene also has a permit to scalp water into Fort Phantom Reservoir from the Clear Fork of the Brazos River, which runs ¼ mile west of the reservoir. This can only be done during high flow rates shortly after heavy rain events but still provides Abilene a replenishing option when conditions merit.

In January 2015 Abilene completed its Water Reclamation Indirect Reuse Project. The city can now move up to 7 MGD of treated effluent into Fort Phantom Reservoir.

Abilene has two water treatment plants (WTPs) which can treat water from Hubbard Creek Reservoir, Possum Kingdom Reservoir and/or Lake Fort Phantom Hill. These plants have a maximum combined treatment capability of 37.5 MGD.

The City also has the Hargesheimer WTP which treats water from the OH Ivie Reservoir. This plant uses micro-filtration and reverse osmosis to treat and blend a maximum of 12 MGD. The City typically produces only 4-6 MGD from this facility though.

**FIGURE No. 5 Abilene Water Deliveries from District (GAL/YR)**



#### **1.04 City of Albany Water System (Shackelford County)**

The City of Albany's 2040 Regional Water Plan population estimate is 2,314.

The District typically provides all of the water needs for the City and its customers, with the City saving its own supplies for emergencies.

As a Member City, our contract states in part:

*"... based upon the safe yield of Hubbard Creek Reservoir, and based upon the mechanical ability of the District to furnish the amount of water specified herein, District will deliver water to City, at the point herein specified or as otherwise agreed by District and City..."*

Therefore the District uses its best efforts to deliver any quantity of water the City desires up to the Contract Quantity which is based upon the safe yield of Hubbard Creek Reservoir.

At one point in time, the District *operated and maintained* a city-owned pipeline and pumps running from Lake McCarty to the WTP. This is a small (approximately 300 acre) lake located 6 miles southwest of the City which was once used as their main water supply. Once the City became a Member of the District, the lake became a backup municipal supply. The District terminated this contract in 2015, but the lake remains available for use in the event of an emergency.

Also as a Member City, our contract with Albany continues in part:

*"... the water purchased under the terms of this contract shall be used to supplement the water supply used by the City of Albany. The city will not sell any water for mining or oilfield waterflood purposes to any buyer without prior written agreement by the District."*

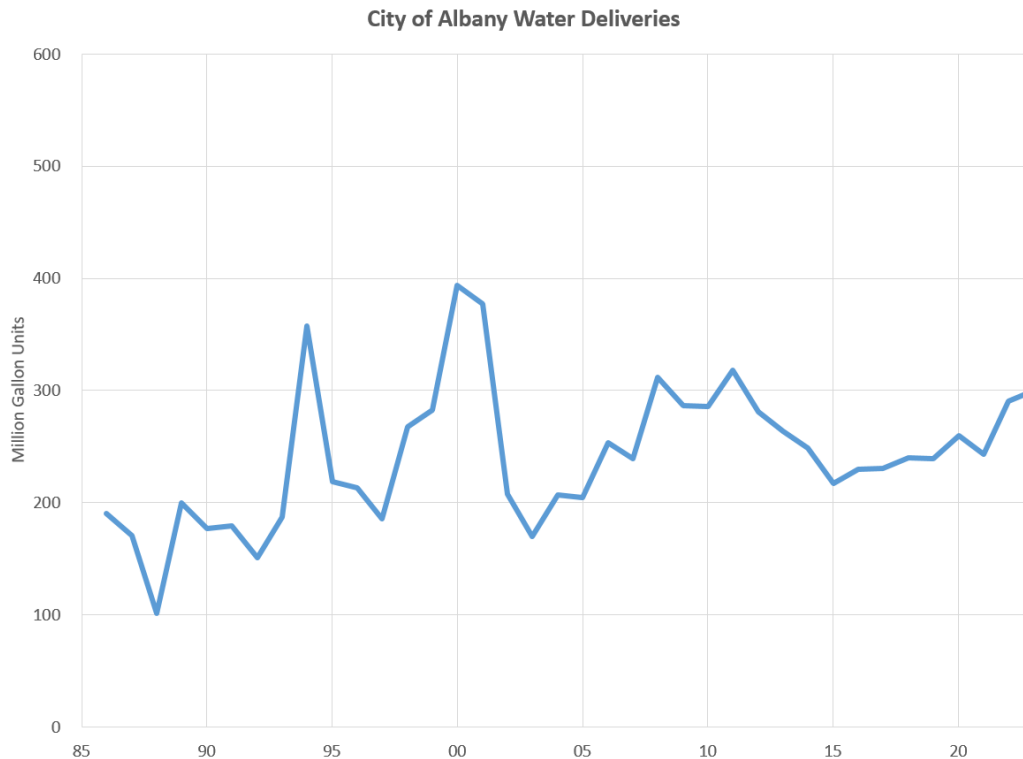
Thus the City may resell water for Municipal use, but is limited in their resale of water for other uses.

Although the District is not responsible for delivering all of the Albany's water, their use of District provided water has increased over the years as shown in Figure No. 6. The City ceased taking significant amounts of water from Lake McCarty in the 1990's, which prompted more water to be taken from the District. Their peak

year of District water consumption occurred in 2000 when they received 425 MG (1,305 AF). Recently their take has been between 250 and 300 MG/YR. Peak month use was 41.1 MG in 2023, while the peak day was 1.94 MGD. See **Table No. 10** (Page 54) in Appendix A.

The delivery system to Albany is a single 12-inch diameter PVC line coming from the District's Albany vault (branching from the pre-stressed reinforced concrete 33/36-inch twin Hubbard lines) to the city's WTP. The District can provide a maximum of 2.3 MGD on a consistent basis. Albany's single WTP has a 5.4 MGD capacity.

**FIGURE No. 6 Albany Water Deliveries from District (GAL/YR)**



### 1.05 City of Anson Water System (Jones County)

The City of Anson's 2040 Regional Water Plan population estimate is 2,821.

The District typically provides all of the water needs for the City and its customers, with the City saving its own supplies for emergencies.



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As a Member City, our contract states in part:

*“... based upon the safe yield of Hubbard Creek Reservoir, and based upon the mechanical ability of the District to furnish the amount of water specified herein, District will deliver water to City, at the point herein specified or as otherwise agreed by District and City...”*

Therefore, the District uses its best efforts to deliver any quantity of water the City desires up to the Contract Quantity which is based upon the safe yield of Hubbard Creek Reservoir.

Also as a Member City, our contract with Anson continues in part:

*“... the water purchased under the terms of this contract shall be used to supplement the water supply used by the City of Anson. The city will not sell any water for mining or oilfield waterflood purposes to any buyer without prior written agreement by the District.”*

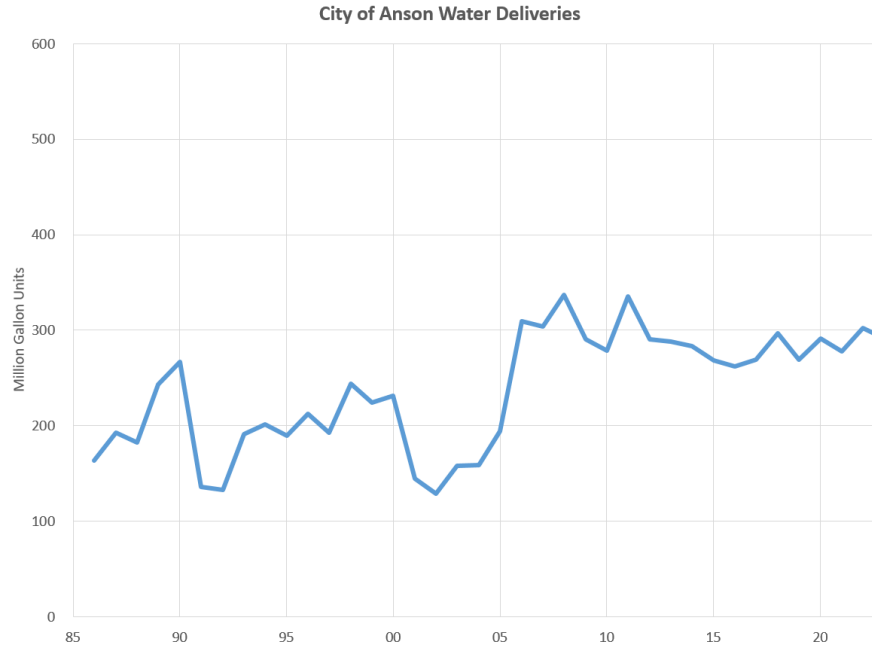
Thus the City may resell water for Municipal use, but is limited in their resale of water for other uses.

Anson’s District water use has varied over the years. They contracted to supply water to the city of Hamlin in 2006, which has increased their demand in recent years. Their peak year occurred in 2011 when they used 339 MG (1,040 AF). More recently they have used between 230 and 300 MG/YR. Peak month use in 2023 was 30.1 MG, while the peak day was 0.99 MGD (does not include Hamlin).

The delivery system to Anson is a 14-inch pipeline branching off of our pre-stressed reinforced concrete 33/36-inch twin Hubbard lines at the Anson vault and extending to the 0.5 MG “Anson Tank” and then to the WTP. The District can deliver a maximum of 1.9 MGD on a consistent basis.

The District can gravity flow water if necessary from the “Anson Tank,” as well as the 13 MG total storage at High Point. Anson’s single WTP has a .46 MGD capacity. See **Table No. 11** (Page 55) in Appendix A.

**FIGURE No. 7 Anson Water Deliveries from District (GAL/YR)**



### 1.06 City of Breckenridge Texas (Stephens County)

The City of Breckenridge’s 2040 Regional Water Plan population estimate is 6,232.

The District typically provides all of the water needs for the City and its customers, with the City saving its own supplies for emergencies.

As a Member City, our contract states in part:

*“... based upon the safe yield of Hubbard Creek Reservoir, and based upon the mechanical ability of the District to furnish the amount of water specified herein, District will deliver water to City, at the point herein specified or as otherwise agreed by District and City...”*

Therefore, the District uses its best efforts to deliver any quantity of water the City desires up to the Contract Quantity which is based upon the safe yield of Hubbard Creek Reservoir.

Also as a Member City, our contract continues in part:

*“... based upon the safe yield of Hubbard Creek Reservoir, and based upon the mechanical ability of the District to furnish the amount of water specified herein,*

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*District will deliver water to City, at the point herein specified or as otherwise agreed by District and City...*”

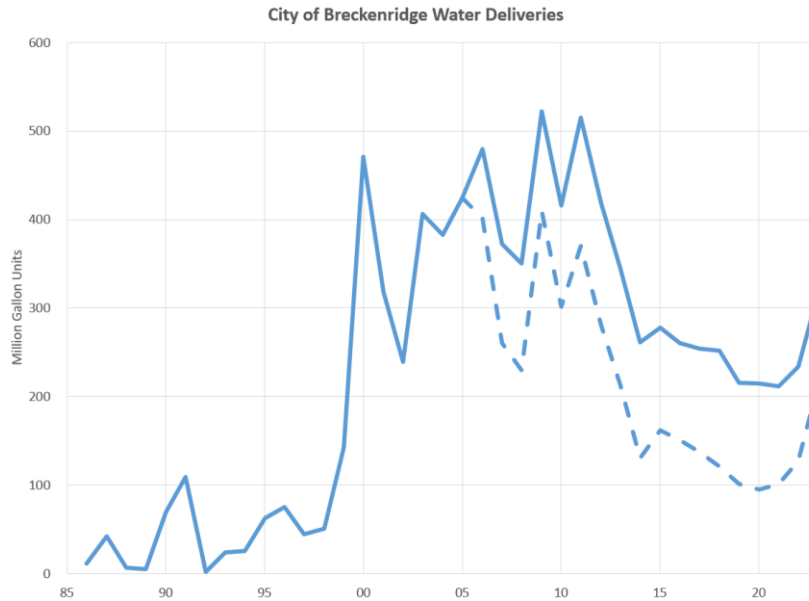
Breckenridge’s District water use was minimal until the late 1990’s when the city switched from using predominately Lake Daniel’s water. Since then they reached a peak in 2000 of 867 MG (2,661 AF). More recently their use has varied between 250 and 300 MG/YR depending on weather conditions. Peak month use was 42.7 MG in 2023, while the peak day was 2 MGD. See **Table No. 12** (page 55) in Appendix A.

The delivery system to Breckenridge is a 16/18-inch pipeline coming directly off of our Hubbard Creek Reservoir Pump Station Intake and running to the Breckenridge WTP. Water for the line is supplied through three dedicated pumps located in the Pump Station.

The pipeline includes a 0.5 MG storage tank at its highest point. The District can deliver a maximum of 3 MGD to Breckenridge on a consistent basis.

The District’s agreement with the City of Abilene covering the ownership and operation of the “bridge” or interconnection pipeline (greater description Pages 3-4) includes the option for the District to use a portion of this line to deliver HCR water to the City of Breckenridge during the time when the system is not being used for PK water delivery. This feature gives the District a redundant option for delivering water to Breckenridge.

**FIGURE No. 8 Breckenridge Water Deliveries from District (GAL/YR)**



(Solid line is Breckenridge plus Hamlin. Dotted line is Breckenridge only.)

### **1.07 Stephens Regional Special Utility District (SRSUD, Stephens County)**

The SRSUD’s 2040 Regional Water Plan population estimate is 2,473.

The District typically provides all of the water needs for the SUD and its customers.

As a Municipal Customer, our contract with SRSUD states in part:

*“While this Agreement remains in force, the District agrees to make available to Purchaser for withdrawal from the System an amount of water not to exceed the Annual Contracted Amount.”*

At one time the SRSUD purchased water from the City of Breckenridge through four master meters located around the City. SRSUD still maintains these four master meters for redundancy but began purchasing and treating raw water primarily from Possum Kingdom Reservoir May 2013 through the BRA owned WCBWDS. The District purchased this system as of January 2016. The Contract amount with the SUD is 800 AF per year.

SRSUD’s service area encompasses approximately 776 square miles and includes portions of Eastland, Shackelford, Stephens, Palo Pinto, and Throckmorton Counties. The existing water distribution system for SRSUD has pipe sizes

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ranging from 1.5-inch to 10-inch, a 1.0 MGD water treatment plant, five hydro-pneumatic pump stations, and approximately 1,490 service connections. SRSUD also has 907,500 gallons of tank storage capacity.

The SUD customers receive water from five different pressure planes. These five areas are served by the North, South, Harpersville and Necessity Pump Stations and by the high service pump station at the water treatment plant. There is also an elevated tank located in Woodson.

SRSUD's use of District water has increased over the past three years. They received 136 MG (417 AF in 11 months) following the District's purchase of the WCBWDS in January 2016.

The peak District delivery of water to SRSUD in the past five years was 195 MG (599 AF) in 2022. 2023 deliveries were 150 MG (461 AF).

Peak month use during the past five years was 23 MG (71 AF) in August of 2022. The average flow during that month was 0.75 MGD. See **Table No. 13** (page 56) in Appendix A.

The SUD Water Treatment Plant includes a blended system of Reverse Osmosis and Microfiltration. This system is located on a 125-acre tract northeast of the City of Breckenridge.

A WCBWDS 20-inch water line crossing the tract provides water to a SUD owned 16 AF raw water holding pond before treatment. The District can provide a maximum of 1.43 MGD to this pond on a consistent basis.

Currently the WTP system is designed with two Microfiltration (MF) trains and two Reverse Osmosis (RO) trains which can supply 1.0 MGD at a blend ratio of 20:80 (MF: RO). The facility has room for expansion within the structure for up to 1.75 MGD if needed.

### **1.08 Industrial/Mining Customers (Eastland and Stephens Counties)**

For most of the District's recent history, it has had one industrial customer on the HCR System. Water used for waterflood purposes in the oilfield comes from Hubbard Creek Reservoir, and is delivered to PETEX (formerly Breck Operating) via the Hubbard System. Deliveries for this purpose began in 1967 with 43.01

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MG/YR (132 AF), peaked in 2005 with 377.0 MG/YR (1,157 AF), and was recently 5.4 MG/YR (16.6 AF) in 2023. See **Table 14** (page 56) in Appendix A.

As mentioned earlier in this document, the District purchased the WCBWDS in 2016, inheriting the 3 industrial/mining waterflood customers being serviced from this system. Customers served from Possum Kingdom Reservoir are BASA Resources and Team Operating (formerly GTG) both located in Stephens County, and DFG Energy in Eastland County. Deliveries for 2023 totaled 240.8 MG (739 AF). See **Tables No. 14, 15, 16, and 17** (Pages 56, 57, and 58) in Appendix A.

### **1.09 Irrigation, Domestic and Livestock, and Lake Lot Customers (Eastland, Jones, Palo Pinto, Shackelford, and Stephens Counties)**

Hubbard Creek Reservoir and the West Central Brazos Systems deliver raw water to 108 irrigation, agricultural, domestic and livestock, and 239 lake lot customers. See **Table No. 18** (page 58) in Appendix A.

## **2.00 OBJECTIVES**

Water in West Texas is a scarce commodity. New sources of water may be many miles from the needed area, and are most often very costly to develop and operate. Therefore, proper water conservation and drought management will continue to play a critical role in the development and usage of water throughout the current century; not as a direct source, but in the “stretching” of available supplies.

Our primary mission is to deliver raw water to the District’s Member Cities (Abilene, Albany, Anson, and Breckenridge) and other customers for municipal, industrial/mining, domestic and livestock and irrigation purposes, as authorized and/or required by the Act creating the District (Art. 8280-162), Auxiliary Water Laws adopted by the Texas Commission for Environmental Quality, and individual contracts between the District and its customers.

This mission can be enhanced through the proper management of water at the wholesale level, using tools such as diversion of poor quality water, strategic water releases, precipitation enhancement, brush management, leak detection, management and reduction, resiliency, replacement of critical infrastructure, and public education.

The efficient use of water also includes water management during times of drought. By selective use and management of the District’s water sources, we

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have been able to continue an uninterrupted water supply to our customers, even when our reservoirs experienced extended periods of low reserves due to limited inflow.

Additionally, the District has developed but did not have to implement ways of transferring lake water up to the pump station intake after the HCR level drops below the elevation of that intake. This “pump back” operation would allow us to continue the deliveries of water from the lake after it is “functionally dry” and very little water remains in its basin.

By meeting this objective of efficient water gathering, transportation and delivery, the District and its customers can delay the costly construction of new or upgraded water supplies, thereby realizing a considerable savings for all concerned.

### **3.00 WATER CONSERVATION PLAN**

The West Central Texas Municipal Water District has been involved in the conservation of municipal quality water for decades. Our efforts on the wholesale level have included the conjunctive use of water sources, diversion of poor quality water via our low elevation (1,134 feet MSL) service outlet, strategic water releases, Tamarisk (salt cedar) brush control, aggressive leak detection management and reduction, and public education.

Our District Water Conservation Plan (WCP), in addition to our website address, promotes conservation tips for water savings in agricultural applications as well as both indoor and outdoor residential water usage via a link to TWDB's *Water IQ: Know Your Water* on its website.

#### **3.01 District Conservation Goals**

Achieving these goals will largely be up to the District's Member Cities and water customers for reasons described below:

**IMPORTANT NOTE:** The District is obligated to deliver water to each of our customers up to the quantities defined in their respective contracts. For example, **TABLE No. 3** (page 8) herein shows that the Contract quantities for HCR water delivered to the City of Abilene varies with the amount of reserves left in that reservoir. Other contract quantities are fixed amounts. Therefore, the District's direct ability to conserve water is limited to improving the efficiency of water movement through our transmission system.

We are a raw water wholesaler bound by Member City Contracts and do not have enforcement authority with Water Conservation Plan goals. **Therefore, the District is obligated to deliver any quantity of water the Customer desires, up to its Contract Quantity.**

Since our Member Cities and Customers have other water sources outside of the District, measuring the population served by the District's delivered water becomes a largely meaningless exercise. Thus the Gallon per Capita Day (GPCD) calculations derived within the individual City and Customer plans, and not this plan, should be used as a benchmark to determine whether or not these entities are meeting their conservation goals.



Regardless, the District includes the following goals to improve conservation within our transmission and delivery system:

A. Encourage the District Member Cities and Customers to meet or exceed the required municipal GPCD goals set out in the Region G – Regional Water Planning Group’s Plan.

B. Account for uses and losses of water from Hubbard Creek Reservoir and the District’s water transmission system, including water furnished to Member Cities, sales to other customers, losses due to evaporation and other natural conditions, and losses during transmission through District pipeline systems. The accuracy of water loss accounting is limited by the  $\pm 2\%$  allowable variance of water meters and by unmetered losses such as those experienced during pipeline leaks.

C. Maintain the estimated unaccounted for water loss at less than 15%.

D. Regularly monitor, inspect and repair District water storage and transmission facilities and systems to minimize loss to leaks and waste of water by the District.

E. Meter and monitor the use of District water by all Member Cities and other pipeline customers to ensure compliance with contract requirements and restrictions.

F. Remind Member Cities and other water customers on a regular and periodic basis of the need to use District water in the most efficient and conservative manner possible and to avoid and minimize loss or waste of District water. ***The municipal entities served by the District retain primary responsibility for public water conservation education efforts.***

G. Pursuant to authority granted by contracts with water customers, other than the Member Cities, monitor and inspect water taps and meters to ensure proper operation, recording, and ensure compliance of water customers with contract provisions requiring conservation and prevention of leaks and other water loss in customer systems.

H. Encourage, promote and to the extent permitted by law or contract, require water customers to adopt, implement and enforce water conservation and drought contingency plans.

I. Provide services as necessary and available to support and facilitate contract compliance and water conservation plans and measures implemented by Member Cities and other water customers.

J. Improve WCBWDS to reduce water loss and improve system efficiency. Maintain clear pipeline easements to facilitate quicker location and repair of water leaks. Maintain real-time monitoring equipment at major customer delivery points and at key locations within the system in order to alert the operators to a potential water loss or system malfunction in a timelier manner. Monitor water contracts to prevent overuse or waste.

### **3.02 Measuring Devices and Meter Replacement Program**

The District meters the water passing through our system at each point of diversion and customer location. The large diversion meters are now mostly high volume ultrasonic meters installed over the past few years as part of a multi-year meter improvement program.

Efforts completed during this 5-year cycle include:

- A. Replacement of the two old venturi meter at Anson with an ultrasonic meter.
- B. Replacement of the old propeller meter at the Breckenridge Delivery Point with an ultrasonic meter.
- C. Replacing the old Haliburton Propeller Meter at DFG with an ultrasonic meter.
- D. Replacing old Haliburton Meters with ultrasonic meters at 10 of the BASA delivery points.
- E. Replacing the old Haliburton Propeller Meter at Team Operating (formerly GTG) with a new ultrasonic meter.
- F. Install new ½-inch water meters on the “small taps” along the Ranger and Possum Kingdom pipelines. *This work is being expanded throughout the entire WCBWDS System.*
- G. All ultrasonic meters on the HCR system were calibrated annually by Siemens.
- H. The ultrasonic meters at PK Intake were calibrated annually by Siemens. *All other ultrasonic meters on the WCBWDS are calibrated on a rotating three-year basis.*

Efforts completed during the prior 5-year cycle were:

- A. Replacing the two venturi meters at HCR Lake Station (2015), replacing similar meters at the Abilene Vault (2016), replacement of the Breckenridge

Line Meter at HCR Pump Station (2016), and the “piggyback” 8-inch meter at the PK Intake Station.

- B. Third-party calibration of all major ultrasonic meters every year.
- C. Calibration of all WCBWDS Delivery Meters under a rotating 3-year cycle.

### **3.03 Monitoring, Water Accounting, and Record Management Program**

The District’s SCADA system allows for the remote operation and monitoring of our pump stations, pipelines, and related facilities. The District maintains control rooms at both the Abilene District Office and the Lake Office to provide real-time information to the administration staff and to provide redundancy.

Recent improvements to the system designed to improve system efficiency include:

- A. SCADA system was expanded to include the reporting of pressure and flow at SRSUD and all BASA sites. *This provides real-time information as more sites scattered across the WCBWDS to more quickly identify leaks and to minimize the risk of pipeline damage due to errant operation.*
- B. The District expanded the use of iPads for System Control, including by the on-call personnel. *These allow system information to be accessed while personnel are in the field.*
- C. Incorporated the use of Verizon cellular data links for the “backbone” of the SCADA System. *The existing radio based system is maintained on-line as an on-line backup.*

The improved SCADA system allows for more reliable monitoring and control of the District’s system thereby minimizing both the number of potential leaks and the length of time needed to identify and located leaks when they do occur.

The District’s Water Management activities continued to include:

- A. The use of iPads for field meter readings that allow for some reading checks to be performed while the meter reader is still in the field.
- B. Recording water usage data daily, with monthly and annual usage data also tabulated.
- C. Data will be checked each month and annually to evaluate progress towards per capita use goals.

### **3.04 Metering, Leak Detection, and Repair**

The District operates a large scale, high pressure water transportation network, not a distribution system. Therefore, leak detection is primarily done by monitoring pressure and flow changes through the SCADA system or observed by water reaching the ground's surface, and is either spotted by District personnel or by landowners who report leaks to the District.

Methods to monitor flow and pressure variations through SCADA include:

- A. Information is available and monitored at the District's Abilene Office, Lake Shop Office, and via iPads and Smart Phones.
- B. Critical values are also alarmed to instantly alert the on-call operator to an indicator of a potential leak.

Ground surface observations, either by District personnel or others, provide notification of water wasting leaks in the pipeline system.

- A. Large scale leaks are typically reported by landowners or ranch foremen. *The District maintains a capable staff and owns the necessary equipment to repair major leaks quickly without the need for outside forces or rental equipment.*
- B. District staff drives most of the pipelines each month when they take meter readings. *The installation of new 1/2-inch meters along the WCBWDS means that entire pipeline network must be driven which gives an opportunity for Staff to spot and repair minor leaks quickly.*

The District will maintain contract requirement provisions for customers to have Water Conservation Plans. Staff will continue to incorporate the requirement for a Water Conservation Plan for all new large scale contractual agreements.

### **3.05 Multiple Sources**

The District has been limited to one reservoir since its construction in 1962; but, since the purchase of the WCBWDS in 2016, the District now has a second water source (PK Reservoir) allowing for the preconditioning and blending PK water with Hubbard Creek Reservoir water. In times of drought, this will become a critical asset to meet municipal needs.

Abilene will soon have five sources from which to obtain and blend water: Hubbard Creek Reservoir, Fort Phantom Reservoir, OH Ivie Reservoir, scalping

from the Clear Fork of the Brazos during high-flow rain events, and eventually Possum Kingdom Reservoir. Their “Raw Water Roughing Facility” (RWRF) was constructed in 2016, but is yet to be commissioned. The City expects the commissioning to take one year once they decide that step is necessary.

Once the RWRF comes online (which will take water from WCBWDS), the City will also be able to precondition water from Possum Kingdom Reservoir, reducing its chloride levels prior to blending with HCR water and then make delivery to our Member Cities, thus making water from that source useful for municipal purposes.

Other District customers have alternative water sources as well. The City of Albany uses Lake McCarty, the City of Breckenridge operates Lake Daniels and SRSUD can purchase treated water from Breckenridge.

### **3.06 District Water Quality Enhancement**

The District has the ability to divert HCR water utilizing our 48-inch service outlet structure which ties into our Morning Glory Spillway as shown in the **FIGURE 9** on the following page. Its intake is located 194 feet from the Morning Glory at 1,134 feet MSL, which is 49 feet below conservation pool elevation. When conditions are favorable with water level, temperature, and salinity, the District can divert substantial quantities of high chloride water through our spillway to reduce chloride levels in the main body of the reservoir. This improves the water quality of HCR and water delivered from HCR. Even though this has only been done once in the history of the Reservoir, this remains an effective option should future conditions warrant.

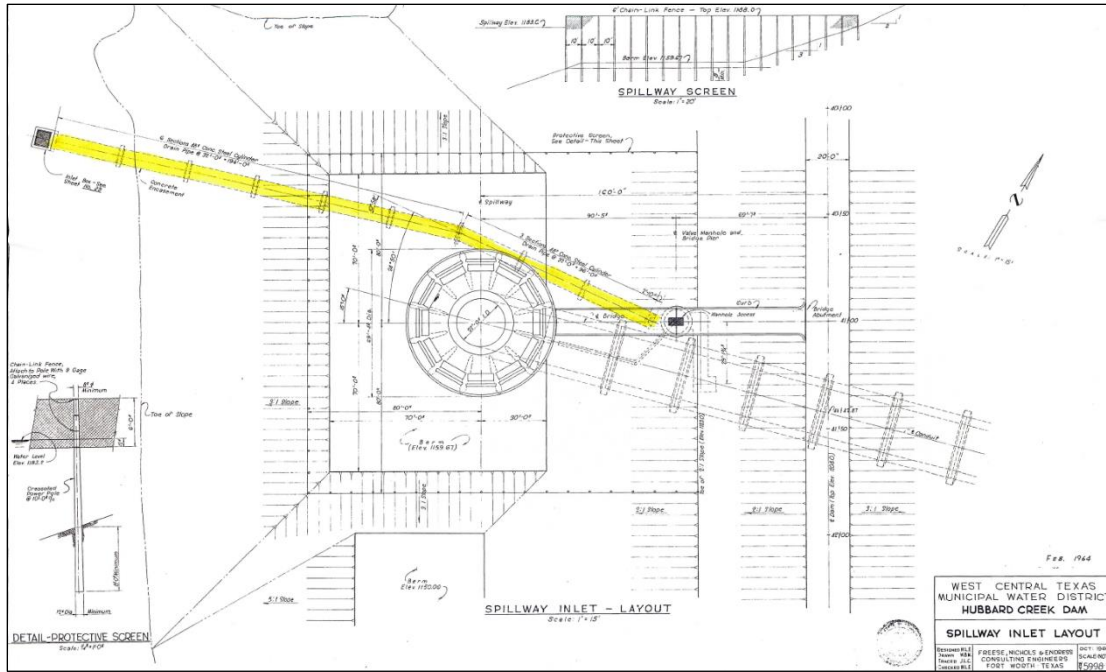
Regardless, HCR is historically a low chloride raw water source, which easily meets the Secondary Standards for drinking water. Nonetheless, the service outlet release measure remains a viable resource for high chloride diversions should conditions warrant.

### **3.07 Strategic Water Releases**

As described in Section 3.06, the District has performed only one high chloride water release, shortly after the reservoir was completed in 1962. Such measures have not been needed again since that date. HCR is historically a low chloride raw water source, which easily meets the Secondary Standards for drinking water. Nonetheless, the service outlet release measure remains a viable resource for high chloride diversions should conditions warrant.

**FIGURE No. 9 – HCR Outlet Works**

(Service Outlet highlighted in yellow adjacent to Morning Glory spillway)



**Figure No. 10 Raw Water Roughing Facility (RWRf)**



The City of Abilene owned RWRP is shown in **Figure No. 10** (previous page.) Once this plant comes online (which will take water from WCBWDS), the City will also be able to precondition water from Possum Kingdom Reservoir, reducing its chloride levels prior to blending with HCR water and then make delivery to our Member Cities, thus making water from that source useful for municipal purposes.

### **3.08 Precipitation Enhancement**

Taylor County, the City of Abilene, and other West Texas participants previously shared the cost of a precipitation enhancement program a number of years ago. The program involved cloud seeding of larger developing thunderstorms with silver iodide flares utilizing NEXRAD imagery. The program began in April of 2002 and lasted until September of 2006. Similar programs were also run in various other Texas locations with good to excellent results where significant rainfall amounts were generated up and above normal averages. Unfortunately, the Abilene area program produced weak to below normal average rainfall amounts. The District did not participate in the Abilene project, but this option remains a possibility in our overall Water Conservation Plan.

### **3.09 Brush Management**

The District participated in a twelve-month Salt Cedar (Tamarisk) Mitigation Program in 2006. Total cost was \$225,000, with \$100,000 matching funds coming from a Texas Soil and Water Conservation Board Grant. Results were favorable. No further Tamarisk control measures have been needed as of the drafting of this report. The District continues to monitor the results of the 2006 program along with various other studies assessing the effectiveness of brush control within a drainage area.

Hubbard Creek Reservoir experienced very low water levels from 2010 to 2016. This allowed some Salt Cedar and Willow Baccaris (*Baccaris Salicina*) to propagate in the dry lake bed. The reservoir filled again in 2016 and effectively “drowned” the invasive plants within the Reservoir basin, eliminating that problem for a period of time.

### **3.10 Public Education**

The District partners with TWDB’s Water IQ Program to provide our online visitors a uniform statewide water awareness and conservation resource. Links range from access to state and regional water plans... including water sources,

usage breakouts, future demands, projected shortages, planned projects, and other important data. Visitors can check by county to see what projects will be in their areas and when they are scheduled. Other links provide state statutory information, water saving tips, water conservation information, and rainwater harvesting. There are even educational activities and printable material for children.

The District maintains a comprehensive website which provides the public with information on the District's history, operations, and real-time reservoir levels and streamflows. Reservoir release information is also posted and shared through Facebook and Twitter accounts. In addition, our District Water Conservation and Drought Contingency Plans can be found on our District website.

Periodically, District Management and Staff make presentations to various civic groups of Member Cities. These presentations inform participants on the current water conditions, District drought and water conservation strategies.

### **3.11 Water Conservation Plans of Member Cities and SRSUD**

Under current contracts, the District is limited in its ability to require and enforce specific water conservation principles on our Member Cities. As previously noted, we are obligated to provide all of the raw water needs for our Member Cities, up to the quantities in our Water Supply Contracts, without regard for how those needs may change from year to year. Consequently, the District believes water conservation is best encouraged and implemented by our Member Cities at the retail level. All of our Member Cities have developed their own Water Conservation and Drought Contingency Plans. The District obtained Draft copies of most 2024 Member City and SRSUD plans.

All municipal entities served by the District are required to adopt and submit to the Texas Water Development Board a Water Conservation Plan conforming to the Board's requirements. This is included as a condition within District contracts upon renewal. However, such renewal is infrequent since these are typically very long term contracts.

Below are short summaries of these municipal plans. These summaries are provided instead of including each entity's entire plan in the interest of brevity.

**Note: The following Member City Water Conservation Plan figures are taken from their either their 2019 Plans or their Draft 2024 Plans if available. The**



**District takes no responsibility for the accuracy for these summaries or the projections therein.**

### **3.12 City of Abilene Plan**

The City of Abilene has developed a Draft 2024 Water Conservation Plan. The following information was gathered from that Draft Plan and should be considered as “provisional” and possibly subject to change.

Abilene has embraced water conservation and reuse as a way to maximize the longevity and sustainability of its water resources and to protect the water supplies of its citizens. The city maintains an active reuse program, providing treated effluent to a number of users throughout the city, including golf courses and universities, to reduce reliance on potable water. This direct reuse program has effectively lowered the City’s water demands.

In 2015, Abilene completed an \$82 million indirect reuse water reclamation facility. This provides advanced treatment to a portion of Abilene’s final effluent and redirects this treated water back into Fort Phantom Reservoir.

The City has invested millions of dollars over the past several years in technologies for leak detection. Non-intrusive above ground detection along with “live” listening techniques have discovered several unknown leaks which were promptly repaired. The City remains vigilant with leak surveillance efforts for cost savings and water conservation.

Abilene also promotes the wise and responsible use of water by implementing structural programs that result in quantifiable water conservation results; develops, maintains, and enforces water conservation policies and ordinances; and supports public education programs that educate customers about water and wastewater facilities operation and conservation.

**City of Abilene Water Conservation Goals**

	<u>2029</u>	<u>2034</u>
Municipal	147	146
Wholesale	77	75
*Industrial	--	--
*Agricultural	--	--

*\*see plan for details.*

The 5 and 10-year per capita water loss goals are intended to maintain per capita water loss at less than 15%. These goals are set in accordance with Brazos Region G Water Planning Group projections and in accordance with historic water use rates for Abilene water system users.

**3.13 City of Albany Plan**

The City of Albany has also developed a Draft 2024 Water Conservation Plan. Likewise, the following information was gathered from that Draft Plan and should be considered as “provisional” and possibly subject to change.

Albany’s Draft Conservation Plan has been created to promote the wise and responsible use of water by implementing structural programs that result in quantifiable water conservation results; develop, maintain, and enforce water conservation policies and ordinances; and support public education programs to educate customers about water and wastewater facilities operations; water quantity and quality; water conservation, and non-point source protection. Measures to achieve this include public education and wholesale user education efforts, accurate metering and leak detection and repair.

**City of Albany Water Conservation Goals**

	<u>2029</u>	<u>2034</u>
Total	250	245
Residential Only	93	90
Wholesale Only	160	155

The 5-year and 10-year per capita water loss goals were set in accordance with Brazos G Regional Water Planning Group projections and in accordance with historic water use rates for Albany water system users.

**3.14 City of Anson Plan**

The District was unable to obtain a copy of the Draft 2024 Water Conservation Plan prior to developing this Plan. Consequently, the following summary is based on the City’s 2019 Water Conservation Plan.

**City of Anson Water Conservation Goals**

	<u>2019</u>	<u>2024</u>	<u>2029</u>
Total	141	139	137
Residential Only	105	105	105
Wholesale Only	100	100	100

These 5-year and 10-year goals are in line with the overall water conservation goals outlined by both the State of Texas and the Region G Planning Group.

The City of Anson, over the past two years, has experienced on average approximately 24% water loss annually through the water system, which equates to a water loss of approximately 34 GPCD. The City’s 5-year goal is to reduce water loss to below 22% by the end of 2019. The 10-year goal is to reduce water loss to below 20%. The 5-year 10-year goals will be met through replacement of old meters and distribution lines and through more accurate recording of unaccounted for water.

Other measures include more accurate metering, leak detection and repair, and continuing public education programs.

### **3.15 City of Breckenridge Plan**

The City of Breckenridge has a Draft 2024 Water Conservation Plan. Again the following information was gathered from that Draft Plan and should be considered as “provisional” and possibly subject to change.

The Draft Breckenridge Conservation Plan has been created to promote the wise and responsible use of water by implementing structural programs that result in quantifiable water conservation results; develop, maintain, and enforce water conservation policies and ordinances; and support public education programs to educate customers about water and wastewater facilities operations; water quantity and quality; water conservation, and non-point source protection. Measures to achieve this include monitoring meter accuracy, correcting water losses, and making TWDB, TCEQ and other sourced information on water conservation.

#### **City of Breckenridge Water Conservation Goals**

	<u>2029</u>	<u>2034</u>
Total	114	113
Residential Only	56	55
Wholesale Only	--	--

The City has set the preceding goals in accordance with Region G – Regional Water Planning Group projections.

The City of Breckenridge has set a 5- and 10-year per capita water loss goal of 23 GPCD (2029) and 18 GCPD (2034), respectively.

### **3.16 Stephens County Regional Utility District (SRSUD) Plan**

The following summary was derived from the Stephens Regional Special Utility District’s WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN prepared in April, 2019.

The SRSUD system serves a mixture of residential, commercial, industrial institutional and agricultural users. In all, it served approximately 2,687 people in 2018 and was projected to serve 2,882 people by 2060. They purchase Possum Kingdom Lake water from the Brazos River Authority (delivered by WCTMWD) which is treated by a microfiltration, reverse osmosis, and disinfected. The treatment capacity of their plant is 1.0 MGD.

Their Conservation Plan indicated the following per capita day (GPCD) goals for 2029 and 2034:

**Stephens Regional SUD Conservation Goals**

	<u>2029</u>	<u>2034</u>
Total	150	150
Residential Only	--	--
Wholesale Only	--	--

They plan to achieve these goals through:

- Water Metering and Record Keeping. *Monitoring meters for accuracy, conducting water audits, and a leak detection program.*
- Education and Information. *Customer brochures, Board Meetings open to the public, and periodic mail outs.*
- Water Rate Structure. *SRSUD periodically evaluates its water rate structure and adjusts costs and/or structure as needed to promote water conservation.*
- Plumbing Codes. *SRSUD adheres and promotes adherence to all applicable water conservation plumbing codes.*

The 5-year and 10-year per capita water loss goals are to maintain per capita loss at or below 30 GPCD. These goals are set in accordance with Texas Water Development Board’s policies based on consideration of historic water use trends and Regional Water Planning Group projections.

## **4.00 DROUGHT CONTINGENCY PLAN**

### **4.01 Introduction**

Droughts are quite common in West Texas. Fortunately, the West Central Texas Municipal Water District has developed resiliency and redundancy into our water supply system over the years. With the 2016 acquisition of the West Central Brazos Water Delivery System (WCBWDS), our member cities will soon have District delivered water available from two reservoirs when drought once again visits this part of the state.

In order to conserve the available water supply and/or to protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the District adopts the following Drought Contingency Plan.

This Plan represents a guideline for District operations during a severe drought. The implementation of the Plan will need to be done in the matter best suited to the drought conditions. The actions listed may need to be modified to best fit a given situation.

### **4.02 Public Involvement**

A draft version of this document, featuring both the Water Conservation and Drought Contingency Plans, will be made available to the District's Member Cities for comment before the combined Plans are finalized. Copies will also be provided for the public at District headquarters in Abilene. Notice of this availability will be provided through the District's website: [www.wctmwd.org](http://www.wctmwd.org) A public meeting will be scheduled and user input will be taken and considered.

### **4.03 Wholesale Water Customer Information**

The District will provide our Member Cities with information of both Plans, including the times when any stage must be implemented or rescinded. These notices will be provided by telephone, email, or other means. Current water conditions, including lake levels, total water use, total diversions, and water quality, are maintained on a daily basis on the District's website.

This service allows our Member Cities, customers, and the public to continuously monitor the District's water status.

#### **4.04 Coordination with Region G-RWPG**

The District's service area is located within the boundaries of Region G Regional Water Planning Group. A copy of this document, including both the Water Conservation and Drought Contingency Sections, will be provided to the Planning Group upon completion.

#### **4.05 Authorization**

The General Manager of the District, or his designee, is authorized to implement any term or condition contained within these Plans. Board review and approval will also be completed prior to TWDB submission.

#### **4.06 Variances**

The General Manager, or his designee, shall have the authority to grant a variance from any requirement contained in these Plans, if the variance is in the best interest of public health, welfare or safety. The General Manager shall have the authority to adjust withdrawals, pumping or delivery rates within the constraints of the Water Supply Contracts to optimize the quantity and quality of water availability to our Member Cities and customers.

#### **4.07 Contractual Obligations and Limitations**

District Water Supply Contracts obligate us to provide specified contract quantities to our Member Cities and other customers. The contracts also contain language that limit this obligation in the following situations:

*“In case by reason of Force Majeure, either party hereto shall be rendered unable wholly or in part to carry out its obligations under this agreement...”*

*“The term “Force Majeure” as employed herein shall mean acts of God, floods, droughts, orders of any kind of the Government of the United States or the State of Texas... in addition to many other causes listed... “*

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Therefore, the District will use its best efforts to meet its full contract quantities during a drought, but it is not legally required to do so under extreme circumstances.

Of course the District's contracts, like all contracts, are subject to the laws and statutes of the State of Texas.

The District's water management practices have been most successful over the years. Even in the recent drought of record for West Texas (2008-2016), the District did not have to curtail any Member City deliveries or terminate any customers. However, the District had to restrict some non-municipal customers according to contract provisions during this time.

These Contracts, along with Texas statutes and regulations, provide measures by which rationing could be implemented, should it ever become necessary. Stricter penalties would be curtailment of services as per Board action.

#### **4.08 The District's Water Supply System**

As discussed in **Section 1.01**, the District's raw water sources include:

1. Hubbard Creek Reservoir (HCR)
2. Possum Kingdom Reservoir (PK)

Note: The District owns and operates HCR only. The District purchases water from the Brazos River Authority from PK Reservoir. As such, the District is not responsible for establishing or implementing Drought Contingency criteria for PK Reservoir, or for other BRA customers receiving water from that source.

The District is a "Cooperator" with the United States Geological Survey on a lake level gauge at HCR and two streamflow gauges within the watershed. These provide near real-time feedback and historical data which is used to make reservoir operational decisions and as the basis for drought stage implementation. Staff monitors this information continually as the reservoir nears critical levels.

#### Water Data Updates:

Drought Contingency Criteria for District Member Cities receiving water from HCR was established under WATER CONTRACT AMENDMENT No. 2 between the District and said Member Cities.



The District had Freese & Nichols, Inc. update the yield calculations for HCR in April, 2017 (Project 2017 - 20). This reduced the Safe Yield from 32,800 AF per year to 21,800 AF per year, largely due to the drought that ended in 2016.

In response, the District’s Board of Directors reduced the Allocated Safe Yield, which is the basis for District Member Contract quantities, from 27,900 AF/YR to 17,900 AF/YR on November 11, 2017. The reduced volume each Member City may withdraw, is the basis for **TABLE No. 4** below.

TWDB completed a Volumetric Survey of HCR in June, 2018 (Project 2017 – 21). They found the “conservation level” volume of the reservoir had decreased from 324,983 AF to 318,174 AF.

**TABLE No. 4 HCR - Amendment 2 Maximum Annual Quantities to Member Cities**  
(Allocated Safe Yield 17,900 AF/YR)

	HCR Elevation		ABILENE		ALBANY		ANSON		BRECKENRIDGE	
	At or Below	Above	AF per Yr	Avg MGD	AF per YR	Avg MGD	AF per YR	Avg MGD	AF per YR	Avg MGD
		1170	16,300	14.55	1,800	1.61	2,000	1.79	2,400	2.14
STAGE 1	1170	1155	13,000	11.61	1,400	1.25	1,600	1.43	1,900	1.70
STAGE 2	1155	1153	9,800	8.75	1,400	1.25	1,600	1.43	1,900	1.70
STAGE 3	1153	1150	6,500	5.80	1,400	1.25	1,600	1.43	1,900	1.70
STAGE 4	1150	1148	3,300	2.95	1,400	1.25	1,600	1.43	1,900	1.70
	1148	1113	0	0.00	1,400	1.25	1,600	1.43	1,900	1.70

The District also has an additional 3,180 AF per year available for other Municipal, Industrial/Mining, Domestic & Livestock (D&L) or Agricultural uses. The District suspended deliveries to Non-Municipal, D&L and Agricultural users at Stage 3 (elevation 1,153) in 2015. Such suspensions are at the decision of the District’s Board. Curtailment or suspension of water deliveries from PK Reservoir will be done under the direction of the Drought Contingency Plan for that reservoir developed by the BRA. See 2019 BRA DCP link:

<https://brazos.org/Portals/0/Documents/DCP/DCP-2019.pdf?ver=V2i-29oA-DwgoB4PWd-PMg%3d%3d>

HCR and PK have sufficient supply to meet all of our Member Cities and customer's needs on a day to day basis, both now and for the foreseeable future.

However, these surface water sources are vulnerable in the following areas:

1. Low water reserves as previously described
2. High dissolved solids and chloride levels
3. Short term contamination from localized pollution

It should be noted that surface water evaporation significantly depletes the District's water reserves each year. Throughout our service area, the average rainfall is only 26-28 inches per year, while the average gross evaporation rate averages 58-68 inches per year.

Subtracting these numbers yields a net evaporation of 30-42 inches per year. We can lose more to evaporation each year than all of our Member City raw water deliveries combined.

For example, assuming the minimum net of evaporation of 30 inches per year, and starting with the reservoir at Conservation Level, HCR would lose 37,748 AF in a year. The sum total of the maximum annual authorized withdrawals under the District Member City Contracts, with no drought stage, would only be 22,500 AF, or 60% of that lost to evaporation.

The water supply system's problems, with the exception of a localized pollution problem, are typically long term resulting from sustained drought periods. These problems develop slowly, such as drought depleting available water reserves, but can resolve themselves quickly when heavy rains finally arrive. Managing these problems often occurs on a multi-year timeframe.

The District has a distribution system for our raw water system which encompasses 6 pump stations and 211 miles of pipeline. This system includes more than 21 MG in storage tank capacity.

The distribution system is vulnerable to disruption due to the following:

1. Equipment failure: pipeline breaks, motor and pump failures
2. Loss of electric power
3. System damage from storms, vandalism, improper operation, or unintended damage from a contractor

4. Terrorist activity (unlikely, but possible)
5. Loss of SCADA control

Distribution system problems are typically short term. They occur quickly, but can usually be resolved within one or two days.

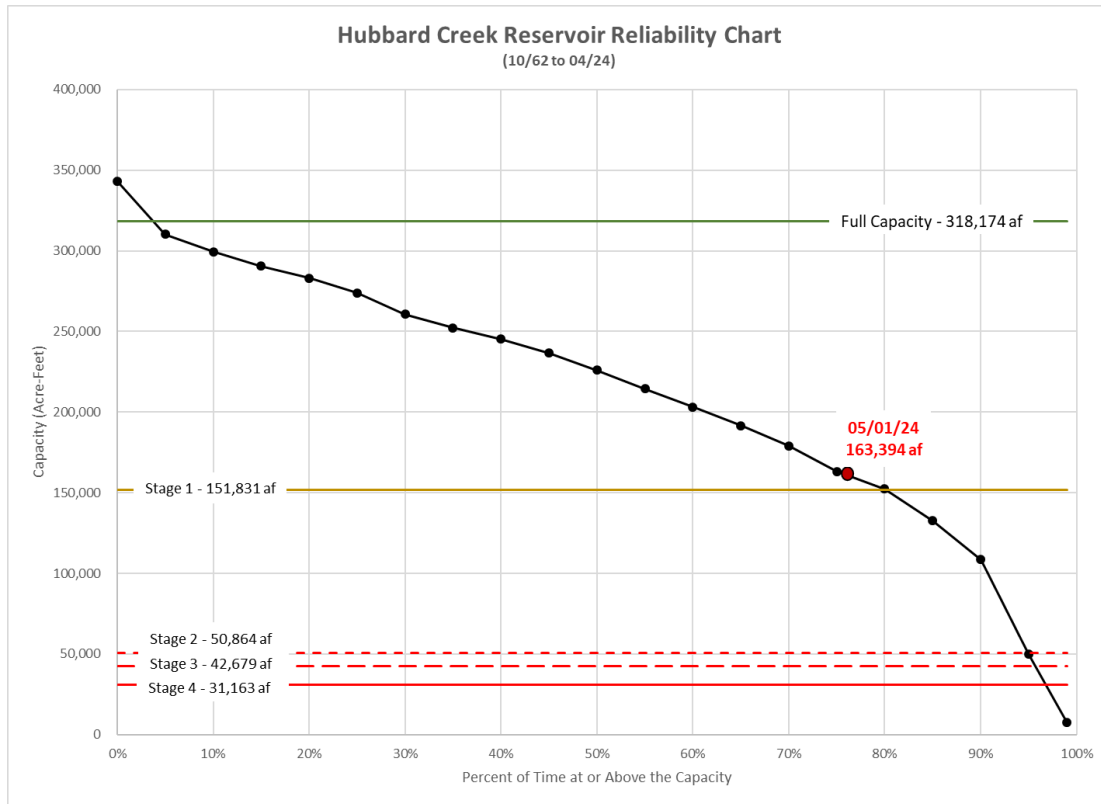
The District keeps a reasonable amount of spare components on hand which are used to resolve distribution system issues in a timely manner. However, some issues such as loss of electric power, are beyond our control or ability to determine when the issue will be resolved.

The flexibility of the distribution system, which now includes two raw water reservoirs, multiple storage tanks, and parallel pipelines to the District's many customers, reduces the impact of a critical water shortage at any one particular location.

#### **4.09 Source Constraints**

District supplies are currently adequate to meet the needs of our municipal customers under almost all conditions. During a drought, low reserves may affect Hubbard Creek Reservoir from time to time; but with the recent addition of the West Central Brazos Water Distribution System, which accesses Possum Kingdom Reservoir, we will soon have the capability to blend pre-conditioned PK water with Hubbard water for Member City deliveries during such shortages.

**FIGURE No. 11 – HCR Reliability Chart**



**FIGURE No. 11** indicates that, even with the numerous droughts that have occurred over the past 56 years, Hubbard has held at 72% capacity for over half of its lifespan and has remained at or just above Stage 1 80% of the time. With the addition of PK Reservoir as another source, all four Member Cities and other District customers should have adequate water well beyond 2070.

**TABLES No. 5 and No. 6** (Page 41) show a comparison between the raw water available for the District’s Member Cities and other customers and their actual water demands under various conditions. HCR Safe Yield is 21,800 AF/YR. PK yield is unknown but is considerable. PK water available to the District is set by District-BRA Surface Water Agreements, not by the yield of PK.

Of course the City of Abilene actively uses multiple sources to meet its total water demand. Applying the “Hubbard” percentage for 2023 from Page 9, the 2040 and 2070 District supplied estimates for that City become 11,969 and 12,568 acre-feet, respectively. Adding this to the total for the other District entities means the District will need an estimated 15,273 acre-feet of water in 2040 and 15,955 acre-feet in 2070.

**TABLE No. 5 District Source Water Availability**

Water Source	Maximum Annual Water Available Based on Safe Yield or Contract Acre Feet	Normal Pumping Ability MGD	Maximum Pumping Ability MGD
Main HCR Pumps	21,800	5-23	35
Breckenridge Pumps	21,800	1.5	3-4
PK Pumps	15,000	0.5-2.8	13

**TABLE No. 6 District & Served Entity Municipal Water Consumption**

Member City	District Only 2023 AF/YR	Projected Total 2040 AF/YR	Projected Total 2070 AF/YR
Abilene <sup>(1)</sup>	11,282	26,019 <sup>(2)</sup>	27,322 <sup>(2)</sup>
Albany	877	624 <sup>(3)</sup>	624 <sup>(3)</sup>
Anson <sup>(1)</sup>	865	1,187	1,264
Breckenridge	1,002	1,006	1,015
SRSUD	461	273 <sup>(3)</sup>	271 <sup>(3)</sup>
FGSUD	-0-	214	213
Totals	14,487	29,323	30,709
Current District Maximum Delivery		53,767 (Both reservoirs)	

**NOTES:**

<sup>(1)</sup> Includes other cities and utility districts served by that City.

<sup>(2)</sup> Projected 2040 and 2070 figures for Abilene include water from all sources and not just the District.

<sup>(3)</sup> Region G estimates from the 2021 Brazos G Regional Water Plan appear to be low. *Current District deliveries exceed these numbers.*

Oilfield usage should continue to slowly decline over the coming years; and that, combined with slower population growth of our Member Cities who compared to other areas of the state, will help mitigate demand. Most of the state’s growth is east of Interstate 35. Water demands for Member Cities actually show a decline of 2.6% by 2070 due primarily to enacted conservation measures offsetting the increased demand caused by modest population growth.

PK Reserves fell to 61% of conservation capacity at the height of our most recent drought, which eclipsed the former record drought of the 50’s. Fort Phantom Reservoir (one of Abilene’s main sources) fell to 30% and Hubbard fell to just below 15%. Even still, no municipality was cut off

from District water supplies. The District adjusted the Member City delivery quantities going forward, consistent with the City Contracts, as a result of reduced HCR yields caused by the recent drought.

#### 4.10 Distribution Capacity Constraints

The District’s primary Customers are shown by water source in **TABLE No. 7**.

**TABLE No. 7 Summary of District Water Systems and Primary Customers**

	SystemSource	Customer
1	Hubbard Creek Reservoir	City of Abilene City of Albany City of Anson City of Breckenridge PETEX Hubbard Creek Ranch Oman Cattle Musselman Ranch Domestic and Livestock Users Lake Lot Owners
2	Possum Kingdom Reservoir	FGSUD SRSUD BASA Resources Team Operating DFG Energy Carter Land and Cattle Cenizo 301 LLC Clay Elder MT7 Ranch Rhone Parks Ron Reed Steal Easy Partnership

Normal operating delivery capabilities of the District’s system, as determined by Enprotec, Hibbs and Todd, exceed each Member City’s typical demands as shown below:

#### Normal Operating Delivery Capacities in MGD

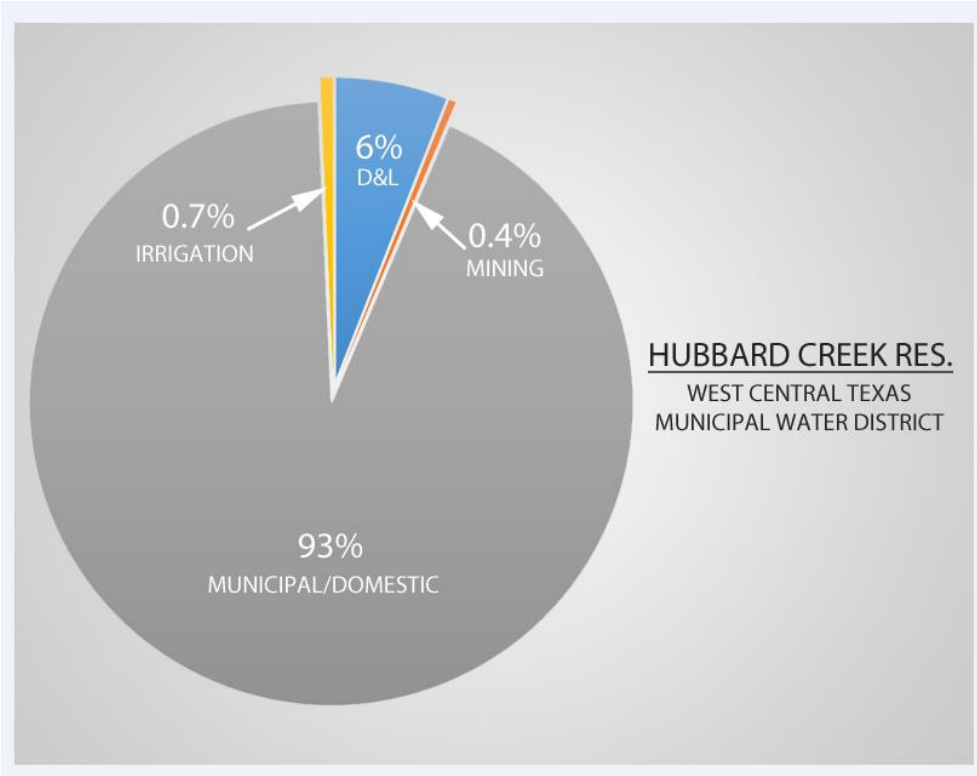
Abilene	Anson	Albany	Breckenridge
26.13	2.56	1.93	3.01

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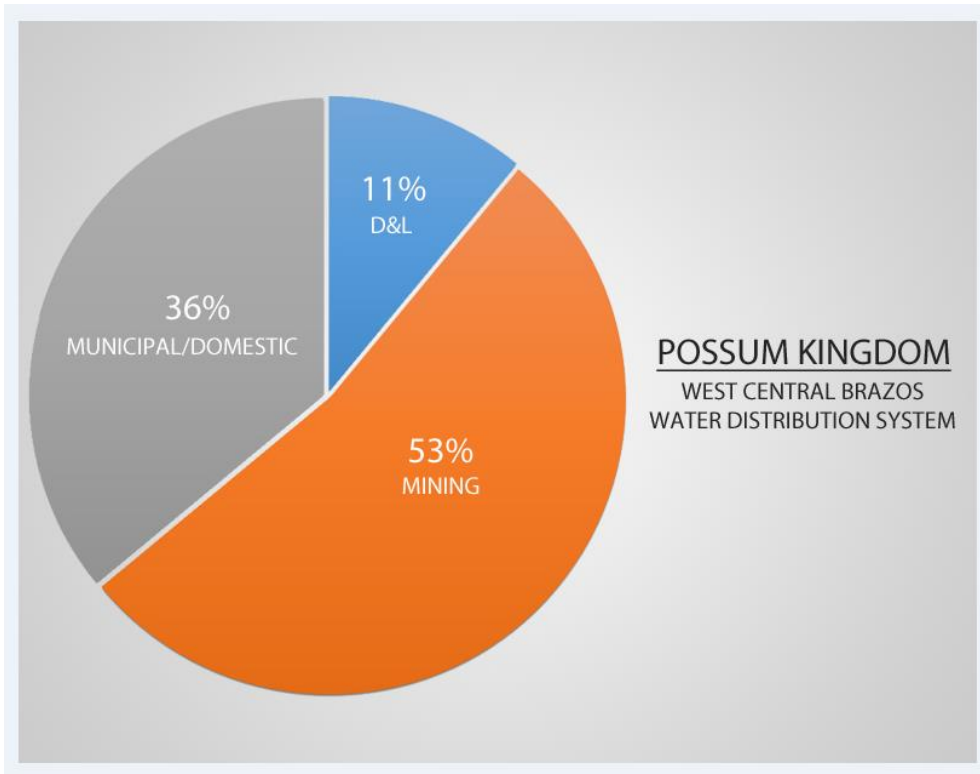
Of course the District's system supplies other customers with different uses for the water. A distribution of customer uses, by water source, is shown on **FIGURE No. 12**.

**FIGURE No. 12A Water Source Usage 2023**

(Categories: Municipal/Domestic, Irrigation, Domestic & Livestock, and Industrial/Mining)



**FIGURE No. 12B Water Source Usage 2023 (Continued)**



#### **4.11 Supply Trigger Levels**

As previously noted, the District systems now include two supply/distribution long-term water sources and several facilities capable of supplying our municipal customers. **Table No. 8** (Page 45) shows a summary of trigger levels for HCR. These triggers are based upon Amendment No. 2 of the Water Supply Contract with each of our Member Cities, as modified by Board Action following the revised yield study by Freese and Nichols on April 12, 2017.

Any actions based on a particular water source reaching a “trigger level” must be applied to those customers obtaining water from that source. In the comments below **Table No. 4** (Page 37), the District’s surface water assets can be effectively used nearly all of the time. Even though the District utilizes PK Reservoir water, PK Reservoir trigger levels are controlled by the Brazos River Authority.

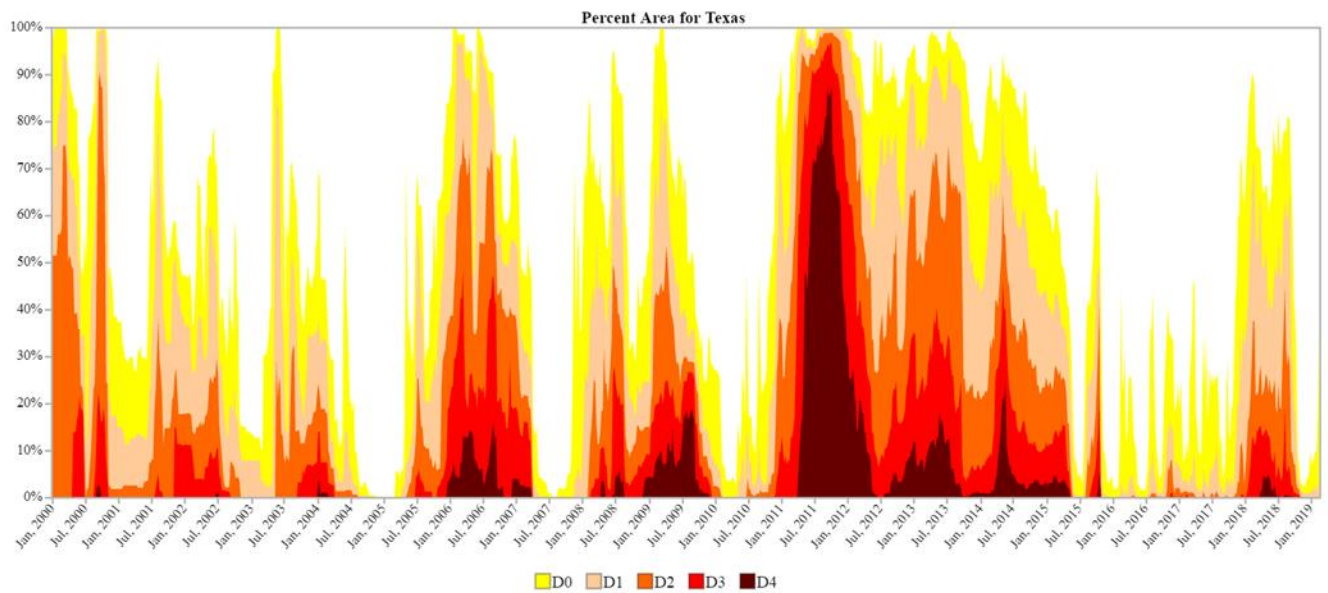


**TABLE No. 8 Hubbard Creek Reservoir Trigger Levels**

Stage	Elevation	Reservoir Capacity		Situation	Historic % at or Above
		Volume	Percent		
1	1170	151,831 AF	48%	Mild	80.1%
2	1155	50,864 AF	16%	Moderate	94.9%
3	1153	42,679 AF	13%	Severe	95.7%
4	1150	32,163 AF	10%	Very Severe	96.7%

Member Cities are required by contract to decrease their available water from HCR as the Reservoir reaches the trigger levels shown in **Table No. 8** (above). Of course, the District, if necessary has the ability to, maintain, and operate the appropriate facilities required to lift HCR water to the pump station as required. The work will be done independently of the listed trigger levels.

**FIGURE No. 13 US Drought Monitor – Texas 2000-2019**



**Figure No. 13** (above) is included for illustrative purposes only... to poignantly show the *recurring drought cycle* in Texas. Make special note of the recent drought of 2008-2016. At the drafting of this report, most of our area lakes are full... but this graph depicts what we regularly or periodically face in West Texas. The U.S. Drought Monitor is jointly produced by the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. Graphic courtesy of NDMC.

#### **4.12 Mild Conditions (HCR Elevation 1,170 - 151,831 AF)**

Upon reaching each of the above listed trigger levels, the District will perform the following actions:

1. Notify all Member Cities that Hubbard Creek Reservoir has reached the current stage
2. Recommend all appropriate customers institute the “Mild Drought” conditions of their own individual plans

#### **4.13 Moderate Conditions (HCR Elevation 1,155 - 50,864 AF)**

Upon reaching the above-listed trigger level, the District will perform the following actions:

1. Notify all Member Cities that Hubbard Creek Reservoir has reached this stage
2. Recommend all appropriate customers institute the “Mild Drought” conditions of their own individual plans
3. Recommend Abilene cease large scale pumping operations
4. Ready snorkel assembly for intake installation

#### **4.14 Severe Conditions (HCR Elevation 1,153 - 42,679 AF)**

Upon reaching the above-listed trigger level, the District will perform the following actions:

1. Notify all Member Cities that Hubbard Creek Reservoir has reached this stage
2. Recommend all appropriate customers institute the “Moderate Drought” conditions of their own individual plans
3. Deploy snorkel assembly for intake assist, if necessary
4. Ration water between appropriate customers as determined by Board action

#### **4.15 Very Severe Conditions (HCR Elevation 1,150 - 32,163 AF)**

1. Notify all Member Cities that Hubbard Creek Reservoir has reached this stage
2. Recommend all appropriate customers institute the “Severe Drought” conditions of their own individual plans
4. Ration water between appropriate customers as determined by Board action

#### **4.16 System Emergency (Critical Condition)**

A pipeline break, equipment failure, or system contamination can cause an extremely critical water problem within a short period of time. However, in most cases, the District is prepared to handle such situations without significant disruption of water deliveries.

As previously mentioned, the District delivery system from Hubbard Creek Reservoir includes two lines, a 33-inch line built in 1964 and a parallel 36-inch line built in 1984. Both lines serve Abilene, Albany, and Anson.

The District can also use the 36-inch “bridge” product water line, which parallels the existing Breckenridge 16/18-inch line, in an emergency to deliver water to the city of Breckenridge. If one line should need repair, the other line can be utilized while repairs are being made.

The Hubbard Intake Pump Station, as well as our Booster Stations, utilize multiple pumps, so again, if one should fail, other pumps can be used while repairs are made. Downtimes are kept to a minimum and usually only occur with power failures. In these circumstances, the District has 21 MG of tank storage and can gravity flow water to Member Cities until power is restored. These episodes are generally rare and last only hours at a time.

As discussed in **Section 1.03** (Page 7), our largest Member City, Abilene, does not depend solely on the District for raw water. Abilene also has Fort Phantom and OH Ivie Reservoirs as resources; and Abilene has agreed to utilize these in the event we must make emergency repairs.

Our new WCBWDS also utilizes multiple pumps, both at the PK Intake Pump Station and our Veale Park Pump Station; but it is a single line system that requires shutting down while repairs are made on the line or equipment. At this point in time though, only one municipal client relies upon the WCBWDS, the Stephens Regional Special Utility District (SRSUD). SRSUD used 461 AF in 2023.

In the event of a system emergency, the District staff will assess the situation, the part of the system which has a failure, the estimate the time for repairs, the water demands for the Cities or other customers affected, alternate sources available, our current storage capacity, and each Member City’s internal storage capacity. Each City which has been or could be affected would then be briefed by telephone.

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Should the situation persist, and the District’s reserve storage continues to be depleted, the affected Cities may be asked to implement the restrictions listed under the “Emergency Condition” portion of their Drought Contingency Plans.

#### **4.17 Termination Procedures**

When the emergency situation has abated, or when conditions can be downgraded to a less severe situation, the District will notify all affected parties.

#### **4.18 Plan Reviews**

These Plans will be reviewed every five years or as otherwise required by TCEQ or applicable law. The Plans will be updated following these reviews as needed.

#### **4.19 Drought Contingency Plans of Member Cities and SRSUD**

The cities of Abilene, Albany, Anson, Breckenridge, and SRSUD all have current Drought Contingency Plans. A summary of the actions called for by the different plan triggers is outlined in the following pages.

#### **Abilene**

##### *Mild Conditions / Stage 1 Water Alert*

Inform Public

All watering once per week only on designated times and days

Hand watering allowed any day or time

Vehicle washing allowed according to guidelines

No charity carwashes

Commercial and industrial users reduce consumption 15% over previous year

##### *Moderate Conditions / Stage 2 Water Alert*

Inform Public

All watering once every 2 weeks only on designated times and days

Hand watering allowed any day or time

Vehicle washing allowed according to guidelines

No charity carwashes

Commercial and industrial users maintain 15% reduction over previous year

##### *Severe Conditions / Stage 3 Water Alert*

Inform Public

No lawn watering at any time with potable water

Hand watering allowed any day or time for landscaping only

Updated 5/07/2024

Vehicle washing allowed according to guidelines  
No charity carwashes  
Commercial and industrial users maintain 15% reduction over previous year  
(fines imparted for non-compliance)

### *Emergency Conditions*

Inform Public  
No lawn watering at any time with potable water  
No landscape watering at any time with potable water  
Vehicle washing only allowed if usage is for public health or safety  
No charity carwashes  
Commercial and industrial users maintain 15% reduction over previous year  
(fines imparted for non-compliance)

## **Albany**

### *Mild Conditions / Stage 1 Water Alert*

Inform Public  
Promote voluntary water conservation within city  
Promote voluntary water conservation with wholesale customers

### *Moderate Conditions / Stage 2 Water Alert*

Inform Public  
Promote voluntary water conservation within city and limited outside watering  
Promote voluntary water conservation with wholesale customers  
Discuss possible curtailment with wholesale customers  
Begin weekly report with local media on water conditions

### *Severe Conditions / Stage 3 Water Alert*

Inform Public  
Request mandatory restrictions on all non-essential water usage  
Request mandatory restrictions on all non-essential wholesale usage  
Initiate pro-rata curtailment of water to wholesale customers  
Weekly report with local media on water conditions

### *Emergency Conditions*

Inform public  
Goal is to limit treated water usage to .7 MGD  
Meet with wholesale customers to achieve this goal  
If necessary, notify city, county, state officials for assistance  
Take necessary steps to solve problem

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## **Anson**

### *Mild Conditions / Stage 1 Water Alert*

Inform Public

Achieve a voluntary 10% reduction in daily water usage

Request voluntary reduction in wholesale water usage and implement Stage 1 DCP

Weekly report to media on water conditions

### *Moderate Conditions / Stage 2 Water Alert*

Inform Public

Achieve 20% reduction in daily water usage

Reduce or discontinue flushing mains

Request voluntary reduction in wholesale water usage and implement Stage 2 DCP

Discuss pro-rata curtailment with wholesale customers

Wholesale customers initiate measures to reduce non-essential usage

Weekly report to media on water conditions

### *Severe Conditions / Stage 3 Water Alert*

Inform Public

Achieve 40% reduction in daily water usage

All Stage 2 requirements remain in force

Wholesale customers initiate voluntary restrictions and invoke Stage 3 DCP

Wholesale customers initiate additional measures to reduce non-essential usage

Initiate pro-rata curtailment of wholesale customers

Weekly report to media on water conditions

### *Emergency Conditions*

Inform Public

Meet with wholesale customers to reduce usage

If necessary, notify city, county, state officials for assistance

Take necessary steps to solve problem

## **Breckenridge**

### *Mild Conditions / Stage 1 Water Alert*

Develop Information Center and designate POC (target 3.4 MGD)

Inform Public

Encourage voluntary reductions in usage

Encourage commercial users to initiate conservation methods

Contact wholesale users to make voluntary reductions in usage

Provide weekly updates to media

Make adjustments as necessary

### *Moderate Conditions / Stage 2 Water Alert*

Updated 5/07/2024

Continue Information Center and POC (target 3.0 MGD)

Inform Public

Ban non-essential water usage

Establish rotating schedule for landscape watering

Follow up with commercial users to initiate conservation methods

Contact wholesale users to make mandatory curtailments in usage

Provide weekly updates to media

Make adjustments as necessary

### *Severe Conditions / Stage 3 Water Alert*

Continue Information Center and POC (target 2.4 MGD)

Inform Public

Ban non-essential water usage

Ban any usage not related to public health or safety

Explore alternate water sources, deliveries, etc.

Businesses operating with water (carwashes, nurseries, etc.) require permission

Priority order: hospitals, residential, schools, industrial, commercial recreational

Contact wholesale users to make mandatory curtailments in usage

Provide weekly updates to media

Make adjustments as necessary

### *Emergency Conditions*

Assess problems, actions, and timelines

If necessary, notify city, county, state officials for assistance

Contact wholesale users to make mandatory curtailments in usage

Provide weekly updates to media

Take necessary steps to solve problem

## **Stephens Regional Special Utility District (SRSUD)**

### *Stage 1 / Mild Water Shortage Conditions*

Achieve 5% reduction in daily water usage

Best management practices implemented, reduce flushing of mains and irrigation of public areas

Implement voluntary reduction in irrigation of landscaping except on designated days

Request reduction of washing vehicles and recreational equipment other than designated watering days, certain public safety related vehicles exempted

Request reduction in filling of pools, hot tubs, etc. other than designated watering days

Cease operation of fountains or ponds other than to support aquatic life

Use of fire hydrant water limited to specific uses

Restaurants serve water to patrons only when requested

Livestock watering tanks with float valves monitored closely, hand filling preferred

Refrain from washing sidewalks, driveways, parking areas, gutters, etc.

Refrain from washing buildings and structures other than for fire control

Refrain from using water for dust control

Encourage quick and prudent leak repairs

*Stage 2 / Moderate Water Shortage Conditions / Achieve 10% Reduction*

Achieve 10% reduction in daily water usage  
Best management practices remain, reduce flushing of mains and irrigation of public areas  
Mandatory reduction in irrigation of landscaping except on designated days  
Refrain from washing vehicles and recreational equipment other than designated watering days, certain public safety related vehicles exempted  
Refrain filling of pools, hot tubs, etc. other than designated watering days  
Cease operation of fountains or ponds other than to support aquatic life  
Use of fire hydrant water limited to specific uses  
Restaurants serve water to patrons only when requested  
Livestock watering tanks only to be hand filled, unless float valves are monitored daily  
Refrain from washing sidewalks, driveways, parking areas, gutters, etc.  
Refrain from washing buildings and structures other than for immediate fire protection  
Refrain from using water for dust control  
Encourage quick and prudent leak repairs  
Board and/or designee shall provide timely reports to media and via website

*Stage 3 / Severe Water Shortage Conditions*

Achieve 20% reduction in daily water usage  
Best management practices remain, reduce flushing of mains and irrigation of public areas  
Landscape irrigation prohibited  
Washing vehicles and recreational equipment prohibited  
Filling of pools, hot tubs, etc. prohibited  
Cease operation of fountains or ponds other than to support aquatic life  
Use of fire hydrant water limited to specific uses  
Restaurants serve water to patrons only when requested  
Livestock watering tanks only to be hand filled, unless float valves are monitored daily  
Board or designee has option to deny any new water service requests  
Board and/or designee shall provide timely reports to media and via website

*Stage 4 / Emergency Water Shortage Conditions*

Achieve 30% reduction in daily water usage  
District President shall:  
Assess severity of problem and identify actions needed and time required to solve problem  
If appropriate, notify city, county, and/or state emergency response officials for assistance  
Undertake necessary actions, including repairs and/or cleanup as needed  
If necessary, utilize the alternative water source from City of Breckenridge  
Prepare a post-event assessment report on incident and steps taken with critique  
As applicable, terminate all Interruptible Water Availability Agreements in affected part of system prior to and during any mandatory pro-rata curtailment of water use under long-term contracts  
Implement water allocations as per District plan and guidelines



**WATER USAGE OF MUNICIPAL  
INDUSTRIAL/MINING, AND DOMESTIC & LIVESTOCK  
APPENDIX A**



**TABLE No. 9 (Municipal)**  
Usage in AF  
City of Abilene

<b>Month</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Average</b>
JAN	1597	1446	877	1440	773	6133	1227
FEB	1152	1111	813	1227	716	5019	1004
MAR	1344	1288	942	846	809	5229	1046
APR	1414	1385	769	84	731	4383	877
MAY	622	1353	809	1103	1028	4915	983
JUNE	676	1366	1411	2171	1069	6693	1339
JULY	1251	1504	1723	1181	1246	6905	1381
AUG	1509	1642	2016	1082	1409	7658	1532
SEPT	884	1274	2005	1053	1142	6358	1272
OCT	789	1237	1680	1083	1064	5853	1171
NOV	554	1031	1458	1074	775	4892	978
DEC	1296	897	1413	854	520	4980	996
<b>TOTALS</b>	<b>13088</b>	<b>15534</b>	<b>15916</b>	<b>13198</b>	<b>11282</b>	<b>69018</b>	<b>1151</b>

**TABLE No. 10 (Municipal)**  
Usage in AF  
City of Albany

<b>Month</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Average</b>
JAN	47	54	46	57	55	259	52
FEB	42	46	44	52	43	227	45
MAR	49	51	53	57	56	266	53
APR	49	54	50	63	64	280	56
MAY	69	70	48	74	61	322	64
JUNE	70	81	68	87	80	386	77
JULY	90	85	103	121	105	504	101
AUG	106	100	76	126	126	534	107
SEPT	86	64	58	85	98	391	78
OCT	76	58	50	108	73	365	73
NOV	59	55	44	68	55	281	56
DEC	58	54	55	56	61	284	57
<b>TOTALS</b>	<b>801</b>	<b>772</b>	<b>695</b>	<b>954</b>	<b>877</b>	<b>4099</b>	<b>68</b>

**TABLE No. 11 (Municipal)**

Usage in AF  
City of Anson

<b>Month</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Average</b>
JAN	56	61	63	71	64	315	63
FEB	53	58	86	62	60	319	64
MAR	63	59	64	65	63	314	63
APR	61	62	66	44	76	309	62
MAY	59	82	61	107	72	381	76
JUNE	63	85	70	94	73	385	77
JULY	89	105	71	108	89	462	92
AUG	108	112	90	95	94	499	100
SEPT	97	75	82	84	81	419	84
OCT	78	77	72	82	71	380	76
NOV	59	65	62	70	61	317	63
DEC	60	60	62	70	61	313	63
<b>TOTALS</b>	<b>846</b>	<b>901</b>	<b>849</b>	<b>952</b>	<b>865</b>	<b>4413</b>	<b>74</b>

**TABLE No. 12 (Municipal)**

Usage in AF  
City of Breckenridge

<b>Month</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Average</b>
JAN	52	54	39	31	69	245	64
FEB	42	38	37	25	64	206	51
MAR	55	42	73	53	66	223	65
APR	53	52	61	65	81	312	64
MAY	49	55	55	76	77	312	70
JUNE	47	60	49	86	81	323	66
JULY	66	67	51	96	108	388	82
AUG	69	85	59	81	131	425	81
SEPT	71	47	68	83	95	364	62
OCT	60	64	47	62	90	323	67
NOV	50	53	42	69	77	291	61
DEC	49	42	31	73	63	258	60
<b>TOTALS</b>	<b>663</b>	<b>659</b>	<b>612</b>	<b>800</b>	<b>1002</b>	<b>3670</b>	<b>66</b>

**TABLE No. 13 (Municipal)**

Usage in AF  
Stephens Regional Special Utility District (SRSUD)

<b>Month</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Average</b>
JAN	31	33	39	49	40	192	38
FEB	29	26	40	39	29	163	33
MAR	30	33	38	42	34	177	35
APR	31	38	40	40	35	184	37
MAY	27	38	36	47	35	183	37
JUNE	36	55	51	56	42	240	48
JULY	50	62	59	66	56	293	59
AUG	62	76	67	71	57	333	67
SEPT	64	53	64	57	39	277	55
OCT	49	44	52	53	38	236	47
NOV	33	41	48	39	28	189	38
DEC	37	39	44	40	28	188	38
<b>TOTALS</b>	<b>479</b>	<b>538</b>	<b>578</b>	<b>599</b>	<b>461</b>	<b>2,655</b>	<b>44</b>

Figures are from WCBWDS which the District purchased January 2016.

**TABLE No. 14 (Industrial Mining)**

Usage in AF  
PETEX (formerly Breck Operating)

<b>Month</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Average</b>
JAN	02	05	01	01	02	11	02
FEB	03	04	01	01	02	11	02
MAR	03	06	01	01	02	13	03
APR	01	05	02	01	02	11	02
MAY	03	05	02	01	02	13	03
JUNE	05	06	02	01	01	15	03
JULY	06	04	01	03	00	14	05
AUG	00	02	02	00	00	04	00
SEPT	03	02	01	02	00	08	02
OCT	05	02	01	01	01	10	02
NOV	03	02	01	03	02	11	02
DEC	07	02	02	02	01	14	03
<b>TOTALS</b>	<b>41</b>	<b>45</b>	<b>17</b>	<b>17</b>	<b>15</b>	<b>135</b>	<b>02</b>

Figures are from WCBWDS which the District purchased January 2016.

Updated 5/07/2024

**TABLE No. 15 (Industrial Mining)**

Usage in AF  
BASA Resources

<b>Month</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Average</b>
JAN	49	49	60	67	58	283	57
FEB	43	45	44	55	47	234	47
MAR	45	48	73	56	65	287	57
APR	50	43	63	51	53	260	52
MAY	51	33	59	59	72	274	55
JUNE	54	56	59	66	59	294	59
JULY	62	54	48	48	44	256	51
AUG	50	56	39	78	51	274	55
SEPT	50	51	46	69	60	276	55
OCT	48	51	56	61	63	279	56
NOV	45	59	54	62	62	282	56
DEC	55	72	57	65	56	305	61
<b>TOTALS</b>	<b>602</b>	<b>617</b>	<b>658</b>	<b>737</b>	<b>690</b>	<b>3,304</b>	<b>55</b>

Figures are from WCBWDS which the District purchased in January 2016.

**TABLE No. 16 (Industrial Mining)**

Usage in AF  
Team Operating (formerly Clearly Petroleum and GTG)

<b>Month</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Average</b>
JAN	00	08	00	00	00	08	03
FEB	00	05	00	00	00	05	02
MAR	00	05	00	00	00	05	02
APR	00	04	00	02	00	06	02
MAY	00	00	00	05	00	05	02
JUNE	00	00	00	06	00	06	02
JULY	09	00	00	05	00	14	06
AUG	08	00	00	11	00	19	08
SEPT	10	05	00	10	00	25	10
OCT	12	02	00	06	00	20	08
NOV	06	00	00	05	00	11	04
DEC	08	00	00	06	00	14	06
<b>TOTALS</b>	<b>53</b>	<b>29</b>	<b>00</b>	<b>56</b>	<b>00</b>	<b>138</b>	<b>05</b>

Figures are from WCBWDS which the District purchased in January 2016.

**TABLE No. 17 (Industrial Mining)**

Usage in AF  
DFG Energy

<b>Month</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Average</b>
JAN	00	01	03	04	03	11	04
FEB	00	00	03	04	02	09	04
MAR	03	00	03	05	04	15	06
APR	06	00	02	06	04	18	07
MAY	21	00	01	03	04	29	12
JUNE	22	00	05	06	06	43	16
JULY	18	00	02	04	05	29	12
AUG	37	00	02	04	06	49	20
SEPT	33	02	00	05	02	42	17
OCT	38	00	00	06	03	47	19
NOV	06	00	00	05	04	15	06
DEC	01	00	02	04	03	10	04
<b>TOTALS</b>	<b>185</b>	<b>03</b>	<b>23</b>	<b>56</b>	<b>46</b>	<b>317</b>	<b>11</b>

Figures are from WCBWDS which the District purchased in January 2016.

**TABLE No. 18 (Domestic and Livestock)**

Usage in AF  
MT-7 Ranch

<b>Month</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Average</b>
JAN	02	04	13	05	08	32	06
FEB	06	00	00	01	00	07	01
MAR	00	00	00	00	00	00	00
APR	00	01	00	02	00	03	01
MAY	00	00	00	02	00	02	00
JUNE	00	14	00	14	01	29	06
JULY	11	22	04	13	01	51	10
AUG	05	14	13	07	09	48	10
SEPT	03	13	12	12	10	50	10
OCT	16	08	08	15	12	59	12
NOV	18	29	29	21	19	116	23
DEC	05	11	18	12	10	56	11
<b>TOTALS</b>	<b>66</b>	<b>116</b>	<b>97</b>	<b>104</b>	<b>70</b>	<b>453</b>	<b>08</b>

Figures are from WCBWDS which the District purchased in January 2016.

**WCP and DCP**  
**Texas Administrative Code**  
Environmental Quality  
Chapter 288 Statute References

**Water Conservation Plan Subchapter A**

TITLE 30 ENVIRONMENTAL QUALITY  
PART 1 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
CHAPTER 288 WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS  
SUBCHAPTER A WATER CONSERVATION PLANS

Rules

- §288.1 Definitions
- §288.2 Water Conservation Plans for Municipal Uses by Public Water Suppliers
- §288.3 Water Conservation Plans for Industrial or Mining Use
- §288.4 Water Conservation Plans for Agricultural Use
- §288.5 Water Conservation Plans for Wholesale Water Suppliers
- §288.6 Water Conservation Plans for Any Other Purpose or Use
- §288.7 Plans Submitted with a Water Right Application for New or Additional State Water

**Drought Contingency Plan Subchapter B**

TITLE 30 ENVIRONMENTAL QUALITY  
PART 1 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
CHAPTER 288 WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS  
SUBCHAPTER B DROUGHT CONTINGENCY PLANS

Rules

- §288.20 Drought Contingency Plans for Municipal Uses by Public Water Suppliers
- §288.21 Drought Contingency Plans for Irrigation Use
- §288.22 Drought Contingency Plans for Wholesale Water Suppliers