RESOLUTION NO. 112-2024

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ABILENE, TEXAS, APPROVING THE 2024 WATER CONSERVATION PLAN UPDATE AND AFFIRMING THE DROUGHT CONTINGENCY PLAN ORDINANCE AS ADOPTED.

WHEREAS, Texas Administrative Code (TAC) Chapter 288, "Water Conservation Plans, Drought Contingency Plans, Guidelines and Requirements", requires water systems holding surface water rights in excess of 1,000 acre-feet per year to maintain and submit to the Texas Commission on Environmental Quality (TCEQ) a current Water Conservation Plan (WCP) and a current Drought Contingency Plan (DCP); and

WHEREAS, on April 24, 2014 through Resolution 09-2014 the City of Abilene approved updates to the City's Water Conservation Plan; and

WHEREAS, the City maintains a Drought Contingency Plan ordinance (under Chapter 32, Article VI of the City of Abilene Municipal Code, Water Conservation Plan ordinance), last amended on July 14, 2022 through Ord. No. 27-2022; and

WHEREAS, the City is committed to enacting and implementing a Water Conservation Plan that will increase water use efficiency and ensure the longevity of the City's water supplies; and

WHEREAS, the TCEQ requires each WCP to be updated at least every five years, with this update submitted to the TCEQ by May 1, 2024; and

WHEREAS, in order to comply with the TCEQ requirement, staff desires to update the Water Conservation Plan at this time; and

WHEREAS, the TCEQ requires each DCP to be reviewed and, if needed, updated at least every five years, with this submittal due to the TCEQ by May 1, 2024; and

WHEREAS, in order to comply with the TCEQ requirement, staff desires to have the Drought Contingency Plan ordinance affirmed with no changes at this time;

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ABILENE, TEXAS:

Part 1: That the 2024 update to the City of Abilene Water Conservation Plan shall be approved as presented.

Part 2: That the 2024 updates to the Water Conservation Plan, which include the following system inventory information, are accepted and approved: (1) Utility Profile and Water Conservation Plan Requirements for Municipal Water Use by Retail Public Water Suppliers; (2) Profile and Water Conservation Plan Requirements for Wholesale Public Water Suppliers;

(3) System Inventory and Water Conservation Plan for Agricultural Water Suppliers Providing Water to More than One User; and (4) Industrial/Mining Water Conservation Plan.

Part 3: That Exhibit "A" is the 2024 Water Conservation Plan Update to be submitted to the Texas Commission on Environmental Quality, the Texas Water Development Board, and to the Region G Water Planning Group, and which describes the goals for total and residential water consumption, goals for wholesale, industrial and agricultural water consumption and use, and goals for water loss, which are accepted and approved.

Part 4: That Exhibit "B" is a redlined version of the 2024 Water Conservation Plant Update showing recent edits to the document in response to questions and an intensive review by staff and consultant Enprotec/Hibbs & Todd, Inc.

Part 5: That Exhibit "C" provides a general summary of the Drought Contingency Plan ordinance last updated on July 14, 2022, which is affirmed to have been reviewed without changes.

ADOPTED this 9th day of May, 2024.

ATTEST:

Shawna Atkinson, City Secretary

Weldon Hurt, Mayor

APPROVED:

Stanley E. Smith, City Attorney

WATER CONSERVATION PLAN AND DROUGHT CONTINGENCY PLAN

CITY OF ABILENE

PWSID 2210001

APRIL 2024

Prepared for:
CITY OF ABILENE
PO BOX 60
ABILENE, TEXAS 79601

Abilene I Lubbock I Granbury
PE Firm Registration No. 1151
PG Firm Registration No. 50103
RPLS Firm Registration No. 10011900

Corporate Headquarters
402 Cedar Street
Abilene, Texas 79601
T: (325) 698-5560
F: (325) 690-3240

www.e-ht.com

Enprotec | Hibbs & Todd

TABLE OF CONTENTS

WATER CONSERVATION PLAN

DROUGHT CONTINGENCY PLAN

APPENDICES

Exhibit B (Redline Version)

TABLE OF CONTENTS

WATER CONSERVATION PLAN

DROUGHT CONTINGENCY PLAN

APPENDICES

Appendix A	Service Area Maps
Appendix B	Utility Profile for Retail Water Supplier
Appendix C	Water Conservation Goals for Retail Water Supplier
Appendix D	City of Abilene Reservoir Operation Plan
Appendix E	Resolution Adopting the Water Conservation Plan and Affirming Drought Contingency Plan Ordinance
Appendix F	Notification to Wholesale Purchasers
Appendix G	City of Abilene Water Rate Structure

CITY OF ABILENE, TEXAS
WATER CONSERVATION PLAN

Section I. Declaration of Policy, Purpose and Intent

The City of Abilene (City) recognizes the importance of its water resources and seeks to protect and maximize those supplies. The City recognizes the importance of efficient use of our existing supplies to make them last as long as possible. The City 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. Through its direct reuse program the City provides treated wastewater effluent from the Hamby Water Reclamation Facility to a number of users throughout the City, including golf courses and universities, in order to reduce reliance on potable water. Through its indirect potable reuse program, treated wastewater effluent from the Hamby Water Reclamation Facility is discharged into Lake Fort Phantom Hill which serves as one of the City's surface water sources. The City's extensive reuse program has successfully lowered the City's water usage. The City also aggressively pursues water conservation through the enactment and implementation of this Water Conservation Plan.

The purpose of the Water Conservation Plan (Plan) is 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 that educate customers about water and wastewater facilities operations, and water conservation.

In accordance with 30 Texas Administrative Code (TAC) Chapter 288, the City of Abilene practices and promotes conservation of water through the implementation of practices described in the Texas Water Development Board's (TWDB's) *Best Management Practices (BMP) Guide for Municipal and Wholesale Users*. The City has implemented a number of those municipal BMPs identified by the TWDB in order to maximize its water conservation efforts. BMPs implemented by the City are noted throughout the Plan.

Section II. Definitions

The following words and terms, when used in this Plan, shall have the following meanings, unless the context clearly indicates otherwise (Source: 30 TAC §288.1).

A. Agricultural or Agriculture: Any of the following activities:

1. cultivating the soil to produce crops for human food, animal feed, or planting seed or for the production of fibers;

2. the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or non-soil media by a nursery grower;

3. raising, feeding, or keeping animals for breeding purposes or for the production of food or fiber, leather, pelts, or other tangible products having a commercial value;

4. raising or keeping equine animals;

5. wildlife management; and

6. planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure.

B. Agricultural use: Any use or activity involving agriculture, including irrigation.

C. Best management practices: Voluntary efficiency measures that save a quantifiable amount of water, either directly or indirectly, and that can be implemented within a specific time frame.

D. Conservation: Those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.

E. Commercial use: The use of water by a place of business, such as a hotel, restaurant, or office building. This does not include multi-family residences or agricultural, industrial, or institutional users.

F. Drought contingency plan: A strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies. A drought contingency plan may be a separate document identified as such or may be contained within another water management document(s).

G. Industrial use: The use of water in processes designed to convert materials of a lower order of value into forms having greater usability and commercial value, and the development of power by means other than hydroelectric, but does not include agricultural use.

H. Institutional use: The use of water by an establishment dedicated to public service, such as a school, university, church, hospital, nursing home, prison or government facility. All facilities dedicated to public service are considered institutional regardless of ownership.

I. Irrigation: The agricultural use of water for the irrigation of crops, trees, and pastureland, including, but not limited to, golf courses and parks which do not receive water from a public water supplier.

J. Irrigation water use efficiency: The percentage of that amount of irrigation water which is beneficially used by agriculture crops or other vegetation relative to the amount of water diverted from the source(s) of supply. Beneficial uses of water for irrigation purposes include, but are not limited to, evapotranspiration needs for vegetative maintenance and growth, salinity management, and leaching requirements associated with irrigation.

K. Mining use: The use of water for mining processes including hydraulic use, drilling, washing sand and gravel, and oil field re-pressuring.

L. Municipal use: The use of potable water provided by a public water supplier as well as the use of sewage effluent for residential, commercial, industrial, agricultural, institutional, and wholesale uses.

M. Nursery grower: A person engaged in the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or nonsoil media, who grows more than 50% of the products that the person either sells or leases, regardless of the variety sold, leased, or grown. For the purpose of this definition, grow means the actual cultivation or propagation of the product beyond the mere holding or maintaining of the item prior to sale or lease, and typically includes activities associated with the production or multiplying of stock such as the development of new plants from cuttings, grafts, plugs, or seedlings.

N. Pollution: The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

O. Public water supplier: An individual or entity that supplies water to the public for human consumption.

P. Residential use: The use of water that is billed to single and multi-family residences, which applies to indoor and outdoor uses.

Q. Residential gallons per capita per day: The total gallons sold for residential use by a public water supplier divided by the residential population served and then divided by the number of days in the year.

R. Regional water planning group: A group established by the Texas Water Development Board to prepare a regional water plan under Texas Water Code §16.053.

S. Retail public water supplier: An individual or entity that for compensation supplies water to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants when that water is not resold to or used by others.

T. Reuse: The authorized use for one or more beneficial purposes of use of water that remains unconsumed after the water is used for the original purpose of use and before that water is either disposed of or discharged or otherwise allowed to flow into a watercourse, lake, or other body of state-owned water.

U. Total use: The volume of raw or potable water diverted and provided by a public water supplier to billed customer sectors or nonrevenue uses and the volume lost during conveyance, treatment, or transmission of that water.

V. Total gallons per capita per day (GPCD): The total amount of water diverted and/or pumped for potable use divided by the total permanent population divided by the days of the year. Diversion volumes of reuse as defined in 30 TAC Section 288.1 shall be credited against total diversion volumes for the purposes of calculating GPCD for targets and goals.

W. Water conservation plan: A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water. A water conservation plan may be a separate document identified as such or may be contained within another water management document(s).

X. Wholesale public water supplier: An individual or entity that for compensation, diverts and supplies water to another for resale to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants as an incident of that employee service or tenancy when that water is not resold to or used by others, or an individual or entity that conveys water to another individual or entity but does not own the right to the water which is conveyed, whether or not for a delivery fee.

Y. Wholesale use: Water diverted and sold from one entity or public water supplier to other retail water purveyors for resale to individual customers.

Section III. Utility Profile Summary

The City supplies treated potable water to municipal, industrial and wholesale users, limited amounts of raw water to some industrial and agricultural users, and one public water supplier, and treated wastewater for reuse to agricultural users and to irrigation users as reclaimed water (recognized under Municipal BMP 8.3). The City holds Certificate of Convenience and Necessity (CCN) Number 11823. Abilene's municipal, industrial and agricultural use customers are located within Abilene's CCN area encompassing approximately 108 square miles as depicted in the service area map in Appendix A.

Abilene's wholesale service area for potable water encompasses approximately 874 square miles situated outside of Abilene's CCN. Maps of the potable water wholesale service area have been included in Appendix A. A more detailed utility profile is included in Appendix B. The utility profile is summarized as follows.

A. Population

Abilene's population in the year 2023 as estimated using information supplied by the Texas Water Development Board (TWDB) for the Brazos G Regional Water Planning Group is estimated to be 124,262 and is projected to reach 134,466 by 2030. Abilene supplies treated water to wholesale purchasers who in turn resell that water to their system users. Total population of wholesale users receiving potable water in the year 2023 is estimated to be 33,736 and is projected to reach 42,976 persons by the year 2030. Table 1 provides population figures for City and Abilene's potable water wholesale users for the previous five years.

Table 1: Population for City of Abilene and Potable Water Wholesalers for Preceding Five Years

Year	Abilene Population	Wholesale Population
2019	121,994	33,164
2020	122,542	33,273
2021	123,115	33,427
2022	123,688	33,581
2023	124,262	33,736
Source: 2021 Regional Water Plan, and Texas Drinking Water Watch		

Table 2 depicts projected population figures for Abilene and Abilene's wholesale users through the year 2060.

Table 2: Projected Population for City of Abilene and Potable Water Wholesalers

Year	Abilene Population	Wholesale Population
2030	134,466	42,976
2040	145,047	46,149
2050	153,959	48,877
2060	162,895	51,985
2070	172,845	55,425
Source: 2026 Regional Water Plan, and Texas Drinking Water Watch		

B. Customer Data and Water Use Data

On average, the City diverts approximately 23,800 acre-feet per year of raw water from its surface water sources to satisfy the demands of raw and treated water users. The City produces an average of 22,500 acre feet per year of treated surface water from its three surface water treatment plants. The raw water diverted by the City goes to some raw water industrial and irrigation users, one public water supplier (supplemental supply for the City of Ballinger) and for production of potable water at the City's treatment plants.

Abilene's water customers consist of a mixture of residential, commercial, industrial, wholesale, institutional and irrigation users. The City serves approximately 52,383 residential connections, 5,416 commercial connections, 1,140 institutional connections, and 43 industrial connections. Wholesale customers that purchase treated potable water from Abilene for resale are summarized in Table 3.

Currently 25 contracted reclaimed water customers citywide and an additional approximately 10 agricultural irrigators around the Hamby Water Reclamation Plant utilize treated wastewater for agricultural and irrigation use. Supplemental raw water of 280 acre feet per year is currently contracted to Ballinger.

Abilene customers including residential, commercial, industrial, and institutional users use approximately 87% of the total water delivered from the City's potable water treatment works while wholesale potable water customers use approximately13% of the total water delivered from the City's treatment works. Table 4 summarizes the expected water use figures for Abilene municipal and wholesale potable water users over the next decade.

Table 3: City of Abilene Wholesale Potable Water Purchasers

Wholesale Customer	Contracted Amount (ac-ft/yr)
City of Baird	77
Blair WSC	77
City of Buffalo Gap	153
City Clyde	307
Eula WSC	61
Hamby WSC	308
Hawley WSC	307
City of Lawn	153
City of Merkel	353
Potosi WSC	307
S.U.N. WSC	230
Steamboat Mountain WSC	307
Tuscola Taylor County WCID 1	92
City of Tye	184
View-Caps WSC	199
Total	**3,115**
Source: City of Abilene Records	

Table 4: Projected Water Demand for the Coming Decade

Year	Abilene Population	Wholesale Population	Abilene Demand (gal/yr)	Wholesale Demand (gal/yr)	Total Demand (gal/yr)
2025	129,824	39,592	7,187,947,209	1,367,094,675	8,555,041,884
2026	130,752	40,268	7,297,042,124	1,432,495,609	8,729,537,733
2027	131,681	40,945	7,406,137,039	1,497,896,544	8,904,033,583
2028	132,609	41,622	7,515,231,953	1,563,297,479	9,078,529,433
2029	133,538	42,299	7,624,326,868	1,628,698,414	9,253,025,282
2030	134,466	42,976	7,733,421,783	1,694,099,349	9,427,521,132
2031	135,524	43,293	7,842,516,698	1,707,361,485	9,549,878,183
2032	136,582	43,611	7,951,611,613	1,720,623,620	9,672,235,233
2033	137,640	43,928	8,060,706,527	1,733,885,756	9,794,592,284
2034	138,698	44,245	8,169,801,442	1,747,147,892	9,916,949,334
Source: 2026 Regional Water Plan, and Texas Drinking Water Watch					

C. Water Supply System

1. Water Sources

Abilene's water sources are presented in Table 5. Appendix D presents Abilene's Reservoir Operations Plan, outlining the coordinated use of supplies from Lake Ft. Phantom Hill and Hubbard Creek Reservoir. Use of the Reservoir Operation Plan optimizes raw water supplies delivered from these sources.

Table 5: Water Sources

Source	Amount (ac-ft/yr)
Lake Fort Phantom Hill	9,316
Hubbard Creek Reservoir [1]	13,080
Lake O.H. Ivie [2]	13,441
Possum Kingdom Lake [3, 4]	17,282

[1] Delivered under contract from the West Central Texas MWD.
[2] Delivered under contract from the Colorado River MWD. Amount limited to current treatment capacity of approximately 12 million gallons per day (MGD).
[3] Abilene has executed various System Water Availability Agreements with the Brazos River Authority which total 19,418 acre-feet per year. Due to elevated dissolved solids in Possum Kingdom requiring advanced treatment, 89% (17,282 acre-feet per year) is considered available as a water source.
[4] Abilene contracted in 2024 with the Palo Pinto County Municipal Water District No. 1 for 3,000 acre-feet per year of its Possum Kingdom supply. During the term of the contract, Abilene's available water supply from Possum Kingdom would be reduced by 2,670 acre-feet per year (89% of 3,000 acre-feet per year).

Raw surface water is supplied to Abilene's treatment works from several sources. The City owns and holds surface water rights to 30,690-acre feet per year (ac-ft/yr) from Lake Fort Phantom Hill, of which 25,690 ac-ft/yr are for municipal purposes, 4,000 ac-ft/yr are for industrial purposes, and 1,000 ac-ft/yr are for irrigation. The Clear Fork Diversion, owned and operated by Abilene, allows a maximum of 30,000 ac-ft/yr to be diverted from the Clear

Fork of the Brazos to Lake Fort Phantom Hill. The City holds 17,282 ac-ft/yr of available water from Possum Kingdom Lake for municipal water use.

The City owns and is allocated use of 1,675 ac-ft/yr of water for municipal purposes from Lake Abilene. Lake Abilene, however, is not considered a dependable supply by the City and is currently not used. The City also holds surface water rights to 3,880 ac-ft/yr from Lake Kirby, also owned by Abilene, for multiple use purposes. Hubbard Creek Reservoir, owned and operated by the West Central Texas Municipal Water District, provides by contract 13,080 ac-ft/yr of raw surface water for use by the City. Abilene may utilize by contract up to 16.54% of the safe yield of Lake O.H. Ivie, however, this source is limited by current treatment capacity to 13,441 ac-ft/yr.

2. Water Treatment

A pump station located on the eastern bank of Lake Ft. Phantom Hill pumps raw surface water from Lake Ft. Phantom Hill to the Northeast Treatment Plant and the Grimes Treatment Plant. A raw water delivery system consisting of two parallel pipelines can provide up to 27 million gallons per day (MGD) from Hubbard Creek Reservoir to the Ft. Phantom Hill delivery system. During times when water shortage requires supplementing surface water from the City's other sources, raw surface water may be pumped from Possum Kingdom Lake to the Raw Water Roughing Facility in Breckenridge to undergo treatment to reduce the total dissolved solids concentration in the raw water from Possum Kingdom Lake. The water treated at the roughing facility is pumped to the raw water delivery system from Hubbard Creek Reservoir to Abilene and is subsequently treated at the Grimes and Northeast water treatment plants (WTPs) as described below. Raw water is pumped approximately 50 miles from Lake O.H. Ivie to the Hargesheimer Water Treatment Plant located on Highway 83/84 near Tuscola. A pump station on the banks of the Clear Fork of the Brazos River, near Lake Ft. Phantom Hill provides diversion pumping of up to 30,000 ac-ft/yr into Lake Ft. Phantom Hill.

The City's Water Treatment System consists of three treatment plants having a maximum rated treatment capacity of 62 MGD (49.5 MGD sustained capacity). The Northeast Water Treatment Plant on East Lake Road has a rated capacity of 25 MGD (sustained capacity of 22.5 MGD) and treats raw water drawn from Lake Ft. Phantom Hill and Hubbard Creek Reservoir. The Grimes Water Treatment Plant on East Highway 80 has a rated treatment capacity of 25 MGD (sustained capacity of 15 MGD) and treats water drawn from Lake Ft. Phantom Hill and Hubbard Creek Reservoir. The Hargesheimer Water Treatment Plant located on Highway 83/84 near Tuscola has a micro-filtration and a rated and sustained reverse osmosis/ blended capacity of 12.0 MGD, and treats raw water drawn from Lake O.H. Ivie.

3. Water Distribution

The City's water distribution system provides economical and compatible facilities that are capable of furnishing sufficient water at suitable pressures to both Abilene retail and wholesale purchasers. The system consists of approximately 955 miles of underground water mains, twelve pumping stations, seven ground storage tanks, eight elevated storage tanks, over 13,400 valves, over 3,215 fire hydrants, and nearly 43,000 meters.

After the water is processed at the treatment plants, it is stored in ground and elevated storage tanks with a combined volume of 38.60 million gallons. The distribution network is laid out in a continuous looped system to circulate water and maintain constant system pressure. Pumping stations are located strategically throughout the system to pump water, maintain uniform pressure and maintain storage tank levels.

Treated water from the Abilene treatment plants enters the potable water wholesalers' systems through metered interconnections. According to TCEQ's records as available through the Texas Drinking Water Watch (TDWW), production and delivery capacity of the wholesale purchasers' systems amount to approximately 22.3 MGD. Based on TDWW records, ground storage capacity within the wholesalers' systems is approximately 5.0 million gallons while total elevated and pressure storage volume is approximately 4.5 million gallons.

D. Wastewater System

1. Wastewater Collection

Abilene's wastewater collection system consists of a network of approximately 670 miles of sewers, five lift stations, and approximately 10,000 manholes serving the cities of Abilene, Tuscola, Tye and the Hawley Independent School District. Sewage flows by gravity, aided when necessary by lift stations, through the collection system into the Buck Creek Pump Station, which has a rated pumping capacity of approximately 24 MGD. Sewage is metered at the Buck Creek Pump Station and pumped approximately five miles to the wastewater treatment plant. Collected wastewater is treated at the City's Hamby Wastewater Reclamation Plant which is operated under a permit issued by the TCEQ.

2. Wastewater Treatment

When wastewater reaches the Hamby treatment facilities northeast of town, it undergoes full biological treatment that includes grit removal, screening, membrane bioreactor treatment, and disinfection. A portion of the treated effluent is either discharged to Deadman Creek via Outfall 001 or is sent to

reuse customers/Kirby Lake through Outfall 002. A portion of the effluent from the AT Storage Basin may also be sent to the advanced treatment processes where it undergoes treatment via two advanced treatment trains. Advanced Treatment Train 1 consists of reverse osmosis treatment while Advanced Treatment Train 2 includes ozonation and BAC filtration. Effluent from both advanced treatment trains are blended together and then chemically disinfected, pH adjusted, aerated, dechlorinated and discharged through Outfall 003 to Lake Fort Phantom Hill which serves as one of the City's three surface water sources. The permitted capacity of the Hamby facility is 22.0 MGD.

Wastewater quality is protected against industrial pollution through Abilene's Industrial Pre-Treatment Program. Industrial users are required to treat wastewater to specific standards before it is released into the municipal sanitary sewer system. Irrigators in and around the City reuse some of the treated effluent (recognized under Municipal BMP 8.3). The remainder is discharged to Deadman Creek by way of Freewater Creek or is discharged to Lake Kirby by way of the City's reclaimed water system. Sewage biosolids are disposed of in a sludge disposal unit at the Hamby treatment plant site.

Section IV. Water Conservation Goals

A. Municipal Use Goals

The 5- and 10-year goals (also referred to as targets) for total per capita water use by City users is to maintain per capita water use at or below 147 gallons per capita per day (gpcd) by the end of 2029, and at or below 146 gpcd by the end of 2034. The 5- and 10-year goal for residential per capita water use by City users is to maintain residential per capita water use at or below 74 gpcd by the end of 2029 and 73 gpcd by the end of 2034. The 5- and 10-year per capita water loss goal is to maintain per capita water loss at less than 8 gpcd by the end of 2029 and 7 gpcd by the end of 2034. These goals are set in accordance with the 2026 Regional Water Plan and City records.

B. Wholesale Use Goals

Wholesale potable water users served by the City, located outside the City's CCN coverage area, historically use approximately 77 gpcd of water supplied by Abilene. The 5- and 10-year goals for wholesale users supplied potable water by the City is to maintain per capita use at 76 gpcd by the end of 2029 and 75 gpcd by the end of 2034 with loss rates for wholesale water deliveries to the wholesale users maintained at less than 15%. These goals are set in accordance with contracted water sales totals with Abilene's wholesale potable water users.

C. Industrial Use Goals

The 5- and 10-year target for industrial water savings is to maintain source water diversion for processing, wash-down, transport, dust control and sanitary/domestic uses by current industrial users at not more than 500 acre-feet per year through the end of 2029 and 2034. The 5- and 10-year goals were developed considering Abilene's current industrial user base.

D. Agricultural Use Goals

The 5- and 10-year target for agricultural water savings is to maintain the irrigation requirement at or below the area agronomic standard of 24-inches per acre per year through the end of 2029 and 2034. It should be noted that occasionally the City may allow the agronomic standard rate to be exceeded in order to flush the crop root zone to improve plant productivity, livelihood, growth enhancement and overall reduction in crop water demand.

Section V. Metering Devices

It is Abilene's policy to purchase meters that meet at least the minimum standards developed by the American Water Works Association. All metering devices used to meter water diverted from the source of supply are accurate to within plus or minus 5% to measure and account for water diverted from the source of supply. All service connections in the distribution system are metered. Meters are systematically tested and replaced, if necessary, to assure reliability of meter performance. The City has established the following meter maintenance and replacement programs:

Meter Type	Calibration Period and Replacement
Master Meters	Annually and replaced, as needed
1-1/2 inch and larger	Replaced as needed [1,2]
1-1/2 inch and smaller	Replaced as needed [1,2]

Notes [1] Representative meter samples are tested annually to verify meter accuracy.
[2] Meters are replaced as necessary.

The wholesale water purchasers are responsible for metering device installation, maintenance and calibration for meters located within their service areas.

Section VI. Universal Metering

It is Abilene's policy to individually meter all water usage, except for fire protection and flushing to maintain a safe potable water distribution system, including all new construction within the City's CCN coverage area. Combined with an aggressive leak detection and repair program, electronic data collection devices, and a computerized billing system, Abilene's universal metering program has resulted in a water delivery accuracy rate within industry operating standards and comports with Municipal BMP 4.1.

Section VII. Measures to Determine and Control Unaccounted-For Uses of Water

The record management system utilized by the City segregates water sales and users into user classes of single-family residential, multi-family residential, commercial, public/institutional, and industrial. It is Abilene's policy to investigate customer complaints of low pressure and possible leaks. Abilene visually inspects suspected leaks and makes quick and timely repairs to those leaks when detected. Abilene utilizes a record management system which records water pumped, water delivered, water sales and water losses to track water transmission, distribution, and delivery to customers. Customer delivery is segregated by user class. This information is used to evaluate the integrity of the water delivery system from source to end user to control and minimize unaccounted-for uses of water.

Section VIII. Water Conservation Program

The City's Water Conservation Program utilizes Supply Management Methods and Demand Management Methods to work towards optimizing use of Abilene's water resources.

A. Supply Management Program Elements consist of:

1. Coordinated use of water supplies to ensure the City withdraws water from its water supply reservoirs in a manner that ensures optimum dependable yield and efficiency of operation.

2. Watershed management to ensure diversion channels, creeks, natural drainage ways, etc. discharging to Lake Ft. Phantom Hill are clean, relatively straight, and obstruction-free to increase captured water flow while minimizing flooding potential in populated areas, and reducing siltation entering Lake Ft. Phantom Hill.

3. Metering all service connections to ensure maximum return for delivered water while minimizing unaccounted-for water loss.

4. Leak detection and repair to minimize unaccounted-for water loss.

5. Treated wastewater reuse and recycling to lessen the demand for raw water used to produce potable water for irrigation uses pursuant to Municipal BMP 8.3.

B. Demand Management Program Elements consist of:

1. Water pricing as a mechanism for encouraging water customers to conserve pursuant to Municipal BMP 3.1.

2. Regulations for conserving water via the Water Conservation Plan and the Drought Contingency Plan ordinance adopted by the City.

3. Plumbing Code for the City requires maximum standard plumbing fixture capacities not be exceeded.

4. Continuing education programs to increase public awareness of supply, treatment and conveyance systems in Abilene, to increase public awareness of the benefits and need for conservation, and to make information about practical cost-effective methods and technologies to achieve conservation available (Effort recognized under Municipal BMPs 6.1, 6.2 and 6.3).

5. The City utilizes year-round water conservation measures to restrict certain potable water use activities by all customers of the Water Utility System (recognized under Municipal BMP 5.3). Pursuant to this measure all potable water irrigation by commercial, industrial and residential customers utilizing individual sprinklers, or sprinkler systems, on lawns, gardens, landscaped areas, trees, shrubs or other plants may water only on designated day(s) and then only during designated hours as outlined in the City's Drought Contingency Plan ordinance.

Section IX. Public Education

Public education is an ongoing and integral part of Abilene's water conservation programs. A public information and education program developed and implemented by the City is an important component in the City's water conservation strategy. Water Utilities education programs have these principal objectives including:

- Increase public awareness of supply, treatment, and conveyance systems in Abilene, and
- Increase public awareness of the needs for and benefits of conservation.

A variety of communication techniques either have or are being utilized including: electronic information materials via Abilene's internet website; newspaper supplements; presentations at neighborhood, civic, social, and professional organizations; public service announcements; and public school and university programs (recognized under Municipal BMP 6.1).

A. Schools

Water and conservation has been introduced into area schools. Presentations are made directly to classes of all ages, including university level (recognized under Municipal BMP 6.2). Presentations are supported by a variety of printed materials. Tours of the water treatment plants are often used by area teachers as an education tool.

Water conservation is emphasized to Leadership Abilene participants. Leadership Abilene is a program sponsored by the Abilene Chamber of Commerce designed to develop competent community leaders.

Water conservation is also emphasized in the City University Program, a community leadership and involvement program that offers a way for participants to become better informed about City programs and services. The program teaches participants how to access government and elected officials and explores the value of serving on City boards and commissions. Participants go behind the scenes of City facilities, find out how various divisions operate and meet City employees who deliver City services.

B. Landscaping

Implementation of the Xeriscape Program began in 1986 with the creation of a Xeriscape Advisory Committee composed of representatives of the landscape industry, business and residential communities. The committee assisted in the development of an informational brochure and plant list.

A public information campaign called "Project Xeriscape" has included public service announcements, workshops, displays, landscape competition, a coloring contest for children, and distribution of materials. The City's website offers useful information regarding xeriscaping and water conservation landscaping measures. The City's efforts have increased landscape irrigation conservation and are recognized under Municipal BMPs 5.3 and 7.5.

In addition, the City has actively pursued the transfer of golf course irrigation from potable water use to reclaimed water use. Currently, all golf courses within the City are irrigated using reclaimed water, an effort reflective of Municipal BMP 5.2.

C. Commercial/Industrial Conservation

The Water Utilities Department works with area businesses to keep water bills as low as possible by conserving water use. Written contracts, industrial inspections, and individual responses to public inquiries about water and waste help to focus conservation efforts towards the commercial sector needs (recognized under Municipal BMP 7.1).

D. Agricultural Conservation

In order to lessen the demand on the City's raw water sources the City relies on reuse of treated wastewater for supply to irrigators located within the City's service area fulfilling Municipal BMP 8.3. It is the City's policy to assist irrigators where feasible and practical to utilize reclaimed wastewater as their irrigation supply water. The City strives to work closely with local irrigation water users to ensure effective use of the City's water resources.

E. Local Media

The Water Utilities Department has prepared several public service announcements which are periodically aired on local television stations addressing the education program objectives. The Water Utilities Department routinely presents information on local public broadcasting systems addressing the objectives described above (recognized under Municipal BMP 6.1).

Section X. Water Rate Structure

The City has adopted a non-promotional, inverted rate structure. Under this rate structure the billing rate increases as individual water consumption increases. This rate structure promotes conservation and shifts the cost of supplying water to those consumers using it most. The City's rate structure incents conservation and comports with Municipal BMP 3.1. A copy of the City's current water rates is provided in Appendix G.

Section XI. Means of Implementation and Enforcement

This Water Conservation Plan has been adopted by the City. A copy of the resolution adopting this Plan is included in Appendix E. The City Manager works with the Director of Water Utilities in the implementation and enforcement of the Plan, and in the City's submission of its annual water conservation implementation report. This report is used by the City to review the effectiveness of its water conservation program.

The Director of Water Utilities designates a member of the Water Utilities Department staff as a Conservation Coordinator. The Conservation Coordinator is responsible for implementation and coordination of water conservation programs (recognized under Municipal BMP 2.1).

To support the City's Water Conservation Plan and water conservation efforts, the City maintains a Drought Contingency Plan Ordinance (see City of Abilene Municipal Code Chapter 32, Article VI-Water Conservation Plan). This ordinance provides year-round water conservation measures, as well as conservation measures during times of water shortage or other emergency water supply conditions. The ordinance provides for enforcement of ordinance violations.

A. Enforcement Within Abilene's CCN Area

The Plan is enforced within the Abilene CCN coverage area by providing service taps only to customers complying with adopted ordinances, maintaining a non-declining rate structure, discontinuing service to those customers who do not pay their water bills until payment is made, and verifying new construction conforms to adopted ordinances and plumbing codes.

B. Enforcement for Abilene's Wholesale Purchasers

Wholesale customers receive written notification of Plan adoption and any subsequent Amendments. Adoption of this Plan by the City per 30 Texas

Administrative Code (TAC) §288.5 obligates wholesale customers as defined in 30 TAC §288.1 to implement water conservation measures. A copy of the notification letter to wholesale users has been included in Appendix F. The City makes best efforts to ensure implementation and enforcement of the Plan by wholesale users via these contractual requirements and outreach efforts, fulfilling Municipal BMP 3.2.

Section XII. Additional Wholesale Water Contract Requirements

It is Abilene's policy to include in every wholesale water supply contract entered into or renewed after official adoption of the Plan, including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using applicable elements in 30 TAC Chapter 288. If the wholesale customer intends to resell the water, then the contract between Abilene and the wholesale customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with 30 TAC Chapter 288. These efforts are recognized as part of Municipal BMP 3.2.

Section XIII. Coordination with Brazos G Regional Water Planning Group

All of the customers served by the City are located within the Brazos G Regional Water Planning Area. Abilene has provided a copy of this Plan to the Brazos G Regional Water Planning Group.

Section XIV. Revisions to the Water Conservation Plan

The City will review and update this water conservation plan, as appropriate, based on new or updated information. As a minimum the Plan will be updated every five (5) years.

Section XV. Severability

It is Abilene's intention that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable. If, any phrase, clause, sentence, paragraph or section shall be declared unconstitutional by a valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs or sections of this Plan, since the same would not have been enacted by Abilene without the incorporation into this Plan of any such unconstitutional phrase, clause, sentence, paragraph or section.

CODE OF THE CITY OF ABILENE, TEXAS
CHAPTER 32 ARTICLE VI
WATER CONSERVATION PLAN

DIVISION 1 GENERALLY

Sec. 32-140. Declaration of Policy

In order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire prevention 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 City of Abilene hereby adopts the following regulations and restrictions on the delivery and consumption of water.

Water uses regulated or prohibited under this water conservation plan (the plan) are considered to be non-essential and continuation of such uses during times of water shortage or other emergency water supply conditions are deemed to constitute a waste of water which subjects the offender(s) to penalties as defined in Sections 32-147 through 32-155 of this Plan.

No person shall make, cause, use or permit the use of water from the City of Abilene Water Utility System for residential, commercial, industrial, agricultural, governmental or any other purpose in a manner contrary to provisions of this plan or in an amount in excess of that use permitted by the plan in effect pursuant to action taken by the mayor or his/her designee in accordance with the provisions of this Plan.

Sec. 32-141. Authorization

The Mayor, Mayor Pro Tempore, or the City Manager, if so designated, is hereby authorized, consistent with the Charter of the City of Abilene, Sections 21 and 22, to exercise those powers considered to be reasonable or necessary for the protection of persons or property in assessing the current state of our water supply and directing the City Manager to implement or terminate any stage, phase, or portion of the Water Conservation Plan. In the event that the triggering criteria specified in Section 32-145 of the Plan have been met for Stage 3-Water Emergency, or Stage 4- Water Crisis water shortage conditions, the City Manager is hereby authorized to initiate allocation of water supplies on a pro rata basis in accordance with Texas Water Code §11.039. Implementation and termination of any stage may occur, but is not mandated to occur, when conditions warrant.

Sec. 32-142. Application

The provisions of this Plan shall apply to persons, customers, and property utilizing the City Water Utility System wherever situated, including customers such as water supply corporations, and any others that receive water from the City of Abilene on a contract basis. The City shall include a provision in every wholesale water contract entered into or renewed after adoption of this Plan, including contract extensions, that in case of shortage of water in the City's water supply , the water to be distributed shall be divided by the City in accordance with Texas Water Code §11.039 among all users pro rata, according to the amount each may be entitled to, so that preference is given to no one and everyone suffers alike.

The City utilizes a variety of alternative water sources including an extensive nonpotable reuse program, and an indirect potable water reuse system. The City encourages its customers to utilize alternative water sources during periods of water shortage. These water use restrictions do not apply to the utilization of alternative water sources including nonpotable water and groundwater (well water). Customers using water from private groundwater wells on days other than those designated in this plan, or those watering from private groundwater wells during the hours of 10:00 a.m. and 6:00 p.m., must post a sign stating "WELL WATER." The sign must be properly sized and posted so it is visible from the street. The city strongly encourages the use of alternative water sources from groundwater for landscape purposes.

These water use restrictions do apply to those persons without a reclaimed water contract who divert raw surface water from Lake Kirby or Lake Fort Phantom Hill for landscape irrigation. Whenever the term or reference to water, or potable water or similar and like words are used in this "water conservation plan," it shall be understood to include the use of raw surface water from Lake Kirby and Lake Fort Phantom Hill for landscape irrigation.

These water use restrictions do apply to the time for the use of treated wastewater (reclaimed water) for landscape irrigation. Use of reclaimed water or raw water under a reclaimed water contract for landscape irrigation is only allowed during the hours of 12:00 midnight to 10:00 a.m., and from 6:00 p.m. until 12:00 midnight. All other uses of reclaimed water shall be in accordance with Title 30 Texas Administrative Code, chapter 210 and the City of Abilene's Authorization No. R10334-004, as amended.

Sec. 32-143. Regional Water Planning Groups and Public Involvement and Education

Sec. 32-143.1 Coordination with Regional Planning Groups

The service area of the City is currently located within the Brazos G Regional Water Planning Area. The City will cooperate and provide information regarding the Plan as needed to all Regional planning area groups.

Sec. 32-143.2 Public Involvement

The adoption of this Plan and any amendments will provide for public input at a public hearing held in conjunction with one of the readings of said ordinance enacting the Plan or amendments thereto.

Sec. 32-143.3 Public Education of Action on Water Conservation Stages

In conjunction with Section 32-141, the initiation and termination of any drought response stage (Water Conservation Stage) shall be announced to the public and wholesale customers at a media conference, and shall become effective immediately upon such announcement. In addition to public announcements of initiation and termination of a Water Conservation Stage and Year Round Water Use Management information, continuing public education and information regarding the Plan shall be publicized via posting on the City's website.

DIVISION 2 WATER CONSERVATION PLAN PROCEDURES

Sec. 32-144. Year Round Water Use Management

To conserve water supplies available to the City of Abilene, Year Round Water Use Management shall be implemented to restrict certain potable water use activities by all customers of the City of Abilene Water Utility System.

When conditions warrant, pursuant to Sec 32-141, the Water Conservation Plan will be implemented in accordance with the applicable provisions of this Plan.

1. Year-Round Water Use Management. The following year-round provisions shall apply to all potable water customers of the City of Abilene Water Utility System:

   a. Watering Days: Customers are encouraged to conserve water by watering their lawn areas only once every seven (7) days on one of their designated watering days.

   A customer's watering day is determined by the last digit of the house number or property address. Multi-unit properties will use the lowest address number. Customers on rural routes will use the last number of their post office box number or their route number if they do not have a post office box number. Customers at Ft. Phantom Lake will use the last number of their lake lot. Customers in trailer parks will use the last number of their lot number.

   When combined storage in Hubbard Creek Reservoir and Lake Fort Phantom Hill is above fifty (50) percent, the following three-day a week watering schedule applies:

Designated Watering Days:	
Wednesday, Friday, Sunday	Odd numbered addresses
Tuesday, Thursday, Saturday	Even numbered addresses
Monday, Wednesday, Friday	Industrial, commercial, government customers, public and private schools and universities

   When combined storage in Hubbard Creek Reservoir and Lake Fort Phantom Hill is between forty and fifty (40-50) percent, the following two (2) day a week watering schedule applies:

Designated Watering Days:	
Thursday, Sunday	Odd numbered addresses
Tuesday, Saturday	Even numbered addresses
Monday, Friday	Industrial, commercial, government customers, public and private schools and universities

   b. Watering Times:

   Watering by all commercial, industrial, and residential customers utilizing individual sprinklers, or sprinkler systems, on lawns, gardens, landscaped areas, trees, shrubs or other plants is prohibited except on designated day(s) and then only during the hours of 12:00

midnight to 10:00 am and from 6:00 pm until 12:00 midnight.

c. Watering of gardens, flowerbeds, trees and shrubs is permitted at any time of any day if:

   i. A garden hose is used and is held in the hand during the duration of the irrigation event, or

   ii. A faucet-filled container of five (5) gallons or less is used, or

   iii. A drip irrigation system such as a soaker hose, deep root water system, or bubbler is used. For the purpose of this section a drip irrigation system is defined as an irrigation device or system designed to emit water at low volumes and low pressures directly onto soil surface or below soil surface without airborne streams or droplets.

d. Irrigation of lawns is permitted at any time on any day if:

   i. A garden hose is used and is held in the hand during the duration of the irrigation event, or

   ii. A faucet-filled container of five (5) gallons or less is used.

   A Drip Irrigation System shall not be used to irrigate lawns except on designated days and at designated times.

e. New lawns that have been seeded (not to include re-seeding or overseeding existing turf), sodded or mulched may be watered daily for eight (8) minutes once during each of the following periods: 11:00 a.m. to 1:00 p.m.; 2:00 p.m. to 4:00 p.m.; 5:00 p.m. to 7:00 p.m.; and at regular intervals between 9:00 p.m. and 10:00 a.m. for a maximum of three (3) weeks. To qualify under this section, new lawns are those installed in conjunction with the construction of a new residence and for a period six (6) months thereafter or the re-tilling of an area equaling at least fifty (50) percent of an existing yard.

f. Water Wasting. The following uses of water are defined as "waste of water" and are absolutely prohibited:

   i. Allowing water to run off a property through the street, gutter, ditch, alley, or drain for more than seventy-five (75) feet from the downgrade of the property line;

   ii. Failure to repair a controllable leak, including a broken sprinkler head, a leaking valve, leaking or broken pipes, or a leaking faucet.

   iii. Operating a permanently installed irrigation system with a broken sprinkler head; a sprinkler head that is spraying over a street or parking lot because it is out of adjustment; or a sprinkler head that is misting due to high pressure.

g. Use of water from fire hydrants shall be limited to firefighting activities or other activities necessary to maintain public health, safety, and welfare. The Director of Water Utilities will review written requests on a case-by-case basis for the purchase and withdrawal of fire hydrants for land development and building construction processes.

h. Ornamental fountains are allowed if the fountain is equipped with a device for recycling water and water may be added to sustain appropriate maintenance levels only on the customer's regularly designated watering days.

i. Water may be added to swimming pools to sustain appropriate maintenance levels only on the customer's regularly designated watering days.

j. The operation of charity car washes must:

   i. Not allow water to run-off more than seventy-five (75) feet, and

   ii. Use hoses with on/off nozzles and buckets.

k. Large-scale recreational development, such as, but not limited to, water parks, shall submit a plan to the Director of Water Utilities that detail expected water consumption and maintenance requirements. Any deviation from the requirements of this ordinance will be resolved on a case-by-case method.

2. Administrative Enforcement, Presumption of Ownership & Control; Hearing Officers; Administration of Hearings, Hearings, Appeals, Payment, Subsequent Violations, Fees, and Requests for Variances as pertaining to Year Round Water Use Management are addressed in Sections 32-147 through 32-156.

Sec. 32- 145. Water Conservation Stages

WATERING DAYS

1. During Water Conservation Stages, a customer's watering day is determined by the last digit of the house number or property address. Multi-unit properties will use the lowest address number. Customers on rural routes will use the last number of their post office box number or their route number if they do not have a post office box number. Customers at Ft. Phantom Lake will use the last number of their lake lot. Customers in trailer parks will use the last number of their lot number.

If a residential customer's last number is:	Customer's watering day is:
7 or 8	Sunday
9	Monday
0	Tuesday
1	Wednesday
2	Thursday
3 or 4	Friday
5 or 6	Saturday

For example: If an address is 555 Walnut Street, the last number is five (5) and the watering day is Saturday.

For purposes of this section only, residential usage includes single-family residences, multifamily residences and apartment complexes. Non-residential customers shall follow the above schedule with the exception of the following changes:

7 or 8	Wednesday
5 or 6	Tuesday

2. Bi-weekly watering as prescribed in Stage 2 will occur according to location in East or West sides of the City, bounded on the north side of the City by Grape St. and then Pine St. to the north City Limits (north of Grape St.) and on the south side of the City by Sayles Blvd. to Buffalo Gap Road and then Buffalo Gap Road to the south City Limits.

3. Entities with large, open spaces (e.g., schools, universities, city parks, golf courses) using potable water may submit alternate watering schedules to the Director of Water Utilities except as otherwise prohibited in this ordinance. Upon his/her written approval acknowledged by the entity in question, these entities may follow the approved schedule rather than the calendar system, and will be held responsible for all the provisions of this article, based on the approved schedule.

STAGE 1 WATER ALERT

Implementation Criteria:
Combined treatment plant pumpage in excess of 45.0 MGD for two (2) consecutive days (while in year-round water use management trigger parameters); or, continually falling water storage facility levels which do not refill above fifty (50) percent overnight; or, combined storage in Hubbard Creek Reservoir and Lake Fort Phantom Hill is between thirty to forty (30-40) percent, or any unforeseen conditions that may occur that cause the City Manager to inform the Mayor of implementation.

Upon announcement and implementation by the City of Stage 1 Water Alert, the following restrictions shall apply to all persons during Stage 1 Water Alert:

1. Landscape Irrigation

   a. Irrigation by all commercial, industrial, (including agricultural irrigation), and residential customers utilizing individual sprinklers, or sprinkler systems, of lawns, gardens, landscaped areas, trees, shrubs or other plants is prohibited except on a designated day which shall be once every seven (7) days and then only during the hours of 12:00 midnight to 10:00 a.m. and from 6:00 p.m. until 12:00 midnight.

      Provided, however, irrigation of gardens, flowerbeds, trees and shrubs is permitted at any time of day if:

      i. A garden hose is used and is held in the hand during the duration of the irrigation event, or

ii. A faucet-filled container of five (5) gallons or less is used, or

iii. A drip irrigation system such as soaker hose, deep root water system, or bubbler is used. For the purpose of this section a drip irrigation system is defined as an irrigation device or system designed to emit water at low volumes and low pressures directly onto soil surface or below soil surface without airborne streams or droplets.

Irrigation of LAWNS is permitted at any time on any day if:

i. A garden hose is used and is held in the hand during the duration of the irrigation event, or

ii. A faucet-filled container of five (5) gallons or less is used.

A Drip Irrigation System SHALL NOT be used to irrigate LAWNS except on designated days and at designated times.

b. New lawns that have been seeded (not to include re-seeding or overseeding existing turf), sodded or mulched may be watered daily for eight (8) minutes once during each of the following periods: 11:00 a.m. to 1:00 p.m.; 2:00 p.m. to 4:00 p.m.; 5:00 p.m. to 7:00 p.m.; and at regular intervals between 9:00 p.m. and 10:00 a.m. for a maximum of three (3) weeks. To qualify under this section, new lawns are those installed in conjunction with the construction of a new residence and for a period six (6) months thereafter or the re-tilling of an area equaling at least (50) percent of a new yard.

2. Vehicle Washing

a. It is permissible to wash automobiles, trucks, trailers, boats, and other types of mobile equipment at any time on the immediate premises of a commercial car wash or commercial service station or at any location including a residence by using a five (5) gallon container and/or a hand held hose equipped with a quick shut-off nozzle for quick rinses.

b. If the health, safety and welfare of the public depends upon frequent vehicle cleaning, as determined by the Director of Water Utilities or his/her designee, then washing of vehicles such as emergency vehicles, aircraft, garbage trucks, and vehicles used to transport food and perishables will be allowed.

c. Charity car washes are prohibited.

3. Water may be added to swimming pools to sustain appropriate maintenance levels only on designated irrigation days.

4. Ornamental fountains are allowed if the fountain is equipped with a device for recycling water and water may be added to sustain appropriate maintenance levels only on the customer's regularly designated watering day.

5. Use of water from fire hydrants shall be limited to firefighting activities or other activities necessary to maintain public health, safety and welfare. By written approval from the Director of Water Utilities, businesses may purchase and draw water from fire hydrants for land development and building construction processes.

6. The following uses of water are defined as "waste of water" and are absolutely prohibited:

    a. Allowing water to run off a property through the street, gutter, ditch, alley, or drain for more than seventy-five (75) feet from the downgrade of the property line;

    b. Failure to repair a controllable leak; including a broken sprinkler head, a leaking valve, leaking or broken pipes, or a leaking faucet.

    c. Operating a permanently installed irrigation system with:

        i. A broken sprinkler head;

        ii. A sprinkler head that is spraying over a street or parking lot because it is out of adjustment; or

        iii. A sprinkler head that is misting due to high pressure.

    d. Washing sidewalks, driveways, parking areas, tennis courts, patios or other paved areas, except to alleviate immediate fire, health and safety hazards, or to prepare an area for pavement repair or application.

7. Commercial and Industrial Users

    a. Commercial and industrial users of water shall, in addition to complying with other applicable articles in this ordinance, reduce their monthly consumption of water by a minimum of fifteen (15) percent compared to use during the same month of the previous year.

    b. Industrial users may, in order to justify water use, present a conservation plan for approval by the Director of Water Utilities.

    c. Golf courses will submit a conservation plan for approval by the Director of Water Utilities if potable irrigation water is to be used.

STAGE 2 WATER WARNING

Implementation Criteria:
Combined treatment plant pumpage in excess of 40.0 MGD for two (2) days (while in Stage 1 Water Alert trigger parameters); or, continually falling water storage facility levels which do not refill above forty (40) percent overnight or, combined storage in Hubbard Creek Reservoir and Lake Fort Phantom Hill is between twenty to thirty (20-30) percent or, major line breaks, or pump system failure which causes unprecedented loss of capability to provide service, or any unforeseen conditions that may occur that cause the City Manager to inform the Mayor of implementation.

Upon announcement and implementation by the City of Stage 2 Water Warning, the following restrictions shall apply to all persons during Stage 2 Water Warning:

1. Landscape Irrigation

   a. Irrigation by all commercial, industrial and residential customers utilizing individual sprinklers, or sprinkler systems, of lawns, gardens, landscaped areas, trees, shrubs or other plants is prohibited except on a designated day which shall be once every two (2) weeks and then only during the hours of 12:00 midnight to 10:00 a.m. and from 6:00 p.m. until 12:00 midnight.

      Provided, however, irrigation of gardens, flowerbeds, trees and shrubs is permitted at any time of day if:

      i. A garden hose is used and is held in the hand during the duration of the irrigation event, or

      ii. A faucet-filled container of five (5) gallons or less is used, or

      iii. A drip irrigation system such as soaker hose, deep root water system, or bubbler is used. For the purpose of this section a drip irrigation system is defined as an irrigation device or system designed to emit water at low volumes and low pressures directly onto soil surface or below soil surface without airborne streams or droplets.

      Irrigation of lawns is permitted at any time on any day if:

      i. A garden hose is used and is held in the hand during the duration of the irrigation event, or

      ii. A faucet-filled container of five (5) gallons or less is used.

      A Drip Irrigation System shall not be used to irrigate LAWNS except on designated days and at designated times.

   b. New lawns may be watered daily for eight minutes once during each of the following periods: 11:00 a.m. to 1:00 p.m.; 2:00 p.m. to 4:00 p.m.; 5:00 p.m. to 7:00 p.m.; and at regular intervals between 9:00 p.m. and 10:00 a.m. for a maximum of three (3) weeks. To qualify under this section, new lawns are those installed in conjunction with the construction of a new residence and for a period of six (6) months thereafter. Retiling or any replanting or reseeding of existing lawns shall NOT qualify for new lawn status in this section.

2. Vehicle Washing

   a. It is permissible to wash automobiles, trucks, trailers, boats, and other types of mobile equipment at any time on the immediate premises of a commercial car wash or commercial service station or at any location including a residence by using a five (5) gallon container and/or a hand held hose equipped with a quick shut-off nozzle for quick rinses.

If the health, safety and welfare of the public depends upon frequent vehicle cleaning, as determined by the Director of Water Utilities or his/her designee, then washing of vehicles such as emergency vehicles, aircraft, garbage trucks, and vehicles used to transport food and perishables will be allowed.

b. Charity car washes are prohibited.

3. Water may be added to swimming pools to sustain appropriate maintenance levels weekly, on the customer's regularly designated irrigation day.

4. Ornamental fountains are allowed if the fountain is equipped with a device for recycling water and water may be added to sustain appropriate maintenance levels only on the customer's regularly designated watering day.

5. Use of water from fire hydrants shall be limited to firefighting activities or other activities necessary to maintain public health, safety and welfare. By written approval from the Director of Water Utilities, businesses may purchase and draw water from fire hydrants for land development and building construction processes.

6. The following uses of water are defined as "waste of water" and are absolutely prohibited:

   a. Allowing water to run off a property through the street, gutter, ditch, alley, or drain for more than seventy-five (75) feet from the downgrade of the property line;

   b. Failure to repair a controllable leak; including a broken sprinkler head, a leaking valve, leaking or broken pipes, or a leaking faucet;

   c. Operating a permanently installed irrigation system with:

      i. A broken sprinkler head;

      ii. A sprinkler head that is spraying over a street or parking lot because it is out of adjustment; or

      iii. A sprinkler head that is misting due to high pressure.

   d. Washing sidewalks, driveways, parking areas, tennis courts, patios or other paved areas, except to alleviate immediate fire, health or safety hazards, or to prepare an area for pavement repair or application.

7. Commercial and Industrial Users

   a. Commercial and industrial users of water shall continue to maintain at least a fifteen (15) percent monthly reduction of water use compared to use during the same month of the previous year.

Individual allotments may be adjusted by the Director based on historical water usage conservation practices of customers. The other restrictions of Stage 2 still apply to commercial and industrial users.

b. Industrial users may present a conservation plan for approval by the Director of Water Utilities.

c. Golf courses using potable water will reduce consumption by thirty (30) percent of contracted amount.

STAGE 3 WATER EMERGENCY

Implementation Criteria:
Combined treatment plant pumpage in excess of thirty-six (36) MGD for three (3) days and depletion of the combined storage in Hubbard Creek Reservoir and Lake Fort Phantom Hill to less than twenty (20) percent or major line breaks, or pump system failure which causes unprecedented loss of capability to provide service, or any unforeseen conditions that may occur that cause the City Manager to inform the Mayor of implementation.

Upon announcement and implementation by the City of Stage 3 Water Emergency, the following restrictions shall apply to all persons during Stage 3 Water Emergency:

1. Landscape Irrigation

   Irrigation of gardens, flowerbeds, trees and shrubs (Not Lawns) by all commercial, industrial, and residential customers is permitted at any time on any day only if:

   a. A garden hose is used and is held in the hand during the duration of the irrigation event, or

   b. A faucet-filled container of five (5) gallons or less is used, or

   c. A drip irrigation system such as soaker hose, deep root water system, or bubbler is used. For the purpose of this section a drip irrigation system is defined as an irrigation device or system designed to emit water at low volumes and low pressures directly onto soil surface or below soil surface without airborne streams or droplets.

   d. New lawns may be watered daily for eight (8) minutes once during each of the following periods: 11:00 a.m. to 1:00 p.m.; 2:00 p.m. to 4:00 p.m.; 5:00 p.m. to 7:00 p.m.; and at regular intervals between 9:00 p.m. and 10:00 a.m. for a maximum of three (3) weeks. To qualify under this section, new lawns are those installed in conjunction with the construction of a new residence and for a period of six (6) months thereafter. Retiling or any replanting or reseeding of existing lawns shall not qualify for new lawn status in this section.

      Watering of existing lawns is prohibited at any time.

2. Vehicle Washing

    a. It is permissible to wash automobiles, trucks, trailers, boats, and other types of mobile equipment at any time on the immediate premises of a commercial car wash or commercial service station.

    b. If the health, safety and welfare of the public depends upon frequent vehicle cleaning, as determined by the Director of Water Utilities or his/her designee, then washing of vehicles such as emergency vehicles, aircraft, garbage trucks, and vehicles used to transport food and perishables will be allowed.

    c. Charity car washes are prohibited.

3. Water may be added to swimming pools to sustain appropriate maintenance levels weekly, on the customer's regularly designated irrigation days. New construction of swimming pools is prohibited.

4. Ornamental fountains are allowed if the fountain is equipped with a device for recycling water and water may be added to sustain appropriate maintenance levels only on the customer's regularly designated watering day. New construction of ornamental fountains is prohibited.

5. Use of water from fire hydrants shall be limited to fire-fighting activities or other activities necessary to maintain public health, safety and welfare. By written approval from the Director of Water Utilities, businesses may purchase and draw water from fire hydrants for land development and building construction processes.

6. The following uses of water are defined as "waste of water" and are absolutely prohibited:

    a. Allowing water to run off a property through the street, gutter, ditch, alley, or drain for more than seventy-five (75) feet from the downgrade of the property line;

    b. Failure to repair a controllable leak; including a broken sprinkler head, a leaking valve, leaking or broken pipes, or a leaking faucet;

    c. Operating a permanently installed irrigation system with:

        i. A broken sprinkler head;

        ii. A sprinkler head that is spraying over a street or a parking lot because it is out of adjustment; or

        iii. A sprinkler head that is misting due to high pressure

    d. Washing sidewalks, driveways, parking areas, tennis courts, patios or other paved areas, except to alleviate immediate fire, health or safety hazards, or to prepare an area for pavement repair or application.

7. Commercial and Industrial Users

   a. Commercial and industrial users of water shall continue to maintain at least a fifteen (15) percent monthly reduction of water use compared to use during the same month of the previous year.

      A surcharge rate will be assessed for any water consumption that does not comply with the required reductions. The surcharge in addition to regular charges is as follows:

	First Occurrence	Subsequent Occurrence(s)
First 5,000 gallons over allowed amount per 1,000 gallons	$5.00	$10.00
Next 5,000 gallons per 1,000 gallons	$10.00	$20.00
For higher usage per 1,000 gallons	$20.00	$30.00

      Additionally, if a customer uses more than the allowed amount more than once at any time during Stage 3, the customer's water may be turned off and there will be a two hundred fifty dollar ($250.00) re-connect fee, in addition to the listed fees.

      Individual allotments may be adjusted by the Director of Water Utilities based on historical water usage conservation practices of customer. The other restrictions of Stage 3 still apply to commercial and industrial users.

   b. Industrial users may present a conservation plan for approval by the Director of Water Utilities.

   c. Each golf course using potable water will reduce consumption by fifty (50) percent of contracted amount.

STAGE 4 WATER CRISIS

Implementation Criteria:
Loss of capability to provide water service or contamination of supply source, or any unforeseen/unexpected conditions that may occur that cause the City Manager to inform the Mayor of implementation.

Upon announcement and implementation by the City of Stage 4 Water Crisis, the following restrictions shall apply to all persons during Stage 4 Water Crisis:

1. All outdoor irrigation of vegetation including lawns, using potable water is prohibited.

2. New lawns may be watered daily for eight (8) minutes once during each of the following periods: 11:00 a.m. to 1:00 p.m.; 2:00 p.m. to 4:00 p.m.; 5:00 p.m. to 7:00 p.m.; and at regular intervals between 9:00 p.m. and 10:00 a.m. for a maximum of three (3) weeks. To qualify under this section, new lawns are those installed in conjunction with the construction of a new residence and for a period of six (6) months thereafter. Retiling or any replanting or reseeding of existing lawns shall not qualify for new lawn status in this section.

3. Only washing of mobile equipment in the critical interest of the public health or safety shall be allowed.

4. The filling, refilling or adding of water to swimming and/or wading pools is prohibited. The construction of new swimming pools is prohibited.

5. The operation of any ornamental fountain or similar structure is prohibited. The construction of new ornamental fountains is prohibited.

6. Use of water from fire hydrants shall be limited to fire fighting and related activities or other activities necessary to maintain public health, safety and welfare. Water for domestic use only may be purchased from the bulk loading station.

7. The following uses of water are defined as "waste of water" and are absolutely prohibited:

    a. Allowing water to run off a property through the street, gutter, ditch, alley, or drain for more than seventy-five (75) feet from the downgrade of the property line;

    b. Failure to repair a controllable leak; including a broken sprinkler head, a leaking valve, leaking or broken pipes, or a leaking faucet;

    c. Operating a permanently installed irrigation system with:

        i. A broken sprinkler head;

        ii. A sprinkler head that is spraying over a street or parking lot because it is out of adjustment; or

        iii. A sprinkler head that is misting due to high pressure.

    d. Washing sidewalks, driveways, parking areas, tennis courts, patios or other paved areas, except to alleviate immediate fire, health or safety hazards.

8. Commercial and Industrial Users

    a. Commercial and industrial users of water (for other than drinking water and rest rooms) shall continue to maintain at least a 15 percent reduction of water use compared to use during the same month of the previous year.

    A surcharge rate will be assessed for any water consumption that does not comply with the required reductions. The surcharge in addition to regular charges is as follows:

	First Occurrence	Subsequent Occurrence(s)
First 5,000 gallons over allowed amount per 1,000 gallons	$10.00	$20.00
Next 5,000 gallons per 1,000 gallons	$20.00	$40.00
For higher usage per 1,000 gallons	$30.00	$60.00

Additionally, if a customer uses more than the allowed amount more than once at any time during Stage 4, then after each such overuse these surcharges will be added and the customer's water may be turned off and there will be a five hundred dollar ($500.00) re-connect fee, in addition to the listed fees.

Individual allotments may be adjusted by the Director of Water Utilities based on historical water usage and conservation practices of the customer. The other restrictions of Stage 4 still apply to commercial and industrial users.

b. Water used for industrial purposes not in the immediate interest of the public health, safety and welfare will be curtailed to the extent necessary to effectuate the needs and purposes of this plan.

Sec. 32-146. Target Water Use Goals

The following target goals for water use are established for use during water conservation stages as contained in Section 32-145:

Stage 1 WATER ALERT

Target Water Use Goal:

Combined treatment plant production less than forty-five (45.0) million gallons per day (MGD) for all Abilene water treatment facilities.

Stage 2 WATER WARNING

Target Water Use Goal:

Combined treatment plant production less than forty (40.0) MGD for all Abilene water treatment facilities.

Stage 3 WATER EMERGENCY

Target Water Use Goal:

Combined treatment plant production less than thirty-six (36.0) MGD for all Abilene water treatment facilities.

Stage 4 WATER CRISIS

Target Water Use Goal:

Combined treatment plant production less than thirty (30.0) MGD for all Abilene water treatment facilities.

DIVISION 3 WATER CONSERVATION PLAN ENFORCEMENT

Sec. 32-147. Administrative Enforcement

Violations of this plan are declared to be civil penalties with remedies being fines paid directly to Municipal Court. Non-payment of fines will result in surcharges assessed to the customer's water utility bill. Each violation of a particular component of this Plan shall constitute a separate violation, and each day a violation continues shall be considered a new violation for purposes of enforcement and enhancement.

The surcharge will be in addition to the regular water utility bill amount. The water utility office may discontinue water service to the premises if the surcharge is not paid as required under the Plan. Any person whose service is discontinued for failure to pay the surcharge shall not be restored until payment of a reconnection charge and any other costs incurred by the City in discontinuing service.

The city's authority to seek injunctive or other civil relief available under the law is not limited by this section.

The following procedures shall apply to anyone contesting the penalties for violating the Plan. The hearing process shall be a two-phase hearing process with the final phase being heard before the municipal clerk/administrator or deputy in charge of hearing appeals.

Sec. 32-148. Presumption of Ownership & Control

Presumption of Ownership/Control. Any person, including a person classified as a water customer of City, in apparent control of the property where a violation occurs or originates shall be presumed to be the violator, and proof that the violation occurred on the person's property shall constitute a rebuttable presumption that the person in apparent control of the property committed the violation, but any such person shall have the right to show that he/she did not commit the violation.

All notices shall be issued to the person or entity whose name appears on the water bill.

In any case of a violation of any terms or provisions of this Plan by any corporation, business, partnership, or entity, the officers and/or agents actively in charge of the business or entity shall be subject to the penalty provided herein.

If a customer is irrigating during a time period or on a day when irrigation is not permitted for the street address of that customer and a city worker cannot find any person at that street address to turn off the irrigation system, the city worker may enter the property and turn off the irrigation system and/or the water source.

Sec. 32-149. Hearing Officers

1. There shall be designated a Hearing Officer(s) who shall be appointed by the municipal court clerk/administrator.

2. Hearing Officer(s) shall have the authority to administer oaths and to issue orders compelling the attendance of witnesses and the production of documents.

3. An order compelling the attendance of witnesses or the production of documents may be enforced by the municipal court.

Sec. 32-150. Administration of Hearings

1. The administrative adjudication process for Plan violations shall be initiated by the issuance of a notice which may be issued by a peace officer or other authorized enforcement agent. Authorized enforcement agents shall include any police officer, water utilities worker, city marshal, or other employee of the city designated by the city manager to enforce the provisions of this code in regard to the Plan.

2. The notice may be issued by affixing it to the front door of the property in question, in a conspicuous place.

3. The notice shall provide that the person charged with violation of the Plan shall have the right of hearing to determine the validity for the charged offense. Such right to a hearing shall be exercised by mail or by appearing in person before a hearing officer within ten (10) days from the date of the notice.

4. The original or any copy of the notice or summons is a record kept in the ordinary course of business in the city and is rebuttable proof of the facts it contains.

Sec. 32-151. Hearings

1. At the hearing before the hearing officer, the violator may admit, admit with explanation, or deny the alleged infraction. It is not a defense to the offense that the violator did not intend the alleged infraction, there being no culpable mental state required for the infraction.

2. The issuing officer shall not be required to attend the hearing.

3. It is not required that the city's attorney attend the hearing. Provided, however, that if the defendant is represented by legal counsel at the hearing, the hearing officer shall notify the city attorney who shall have a right to appear on behalf of the city at said hearing.

4. No formal or sworn complaint shall be necessary. The hearing officer shall examine the contents of the notice and the evidence related to ownership of the property in question and shall hear and review the testimony and evidence presented by the violator. If the hearing officer determines by the preponderance of the evidence that the infraction was committed by the violator, he shall find the violator responsible and assess a fine.

5. At the conclusion of the hearing, the hearing officer shall issue an order stating whether or not the person charged is responsible for the violation of the Plan and the amount of the fine assessed against him. The order shall be filed with the clerk of the municipal court. All such orders shall be kept in a separate index or file by the municipal court clerk using appropriate data processing techniques.

6. Failure of a person charged with the offense to appear at a hearing within the aforesaid ten (10) day period shall be considered an admission of liability for the charged offense.

Sec. 32-152. Appeals

A person determined by the hearing officer to be in violation of any provision of the Plan may appeal this determination to the municipal court clerk or a deputy so designated to hear Plan appeals.

The appeal must be instituted by filing a written petition, not later than the tenth day after the filing of the hearing officer's order, with the clerk of the municipal court along with payment of a nonrefundable administrative appeal filing fee in the amount of ten dollars ($10.00).

After filing a petition for appeal, the municipal clerk shall schedule a hearing and notify all parties of the date, time, and place of the hearing.

The appeal hearing shall be a de novo review. The municipal court clerk shall examine the evidence presented at the appellate hearing and if the court clerk determines by the preponderance of the evidence that the infraction was committed by the violator, the court clerk shall find the violator responsible therefore.

Sec. 32-153. Payment

1. Any person alleged to have violated the Plan who merely desires to make payment shall provide same to the municipal court clerk in charge of water violations within ten (10) days after receiving notice of said violation.

2. Any person alleged to have violated the Plan and who fails to appear within the ten (10) days as reflected in 32.150.3 above shall be assessed a surcharge on their next water bill in the amount of the minimum fine.

3. Any person found to have violated the Plan by the Hearing Officer shall pay the fine within ten (10) days of said hearing or the fee shall be assessed in a surcharge on the violator's next water bill.

Sec. 32-154. Subsequent Violations-Increased Fees-Discontinuation of Service-Injunctive Relief

Subsequent violations of the Plan shall result in increased fine or upon the occurrence of three (3) violations, after notice, the discontinuation of services. Services discontinued under this provision shall be restored only upon payment of a reconnection fee and any other costs incurred by the City in discontinuing service.

Compliance with the Plan may also be sought through injunctive relief in district court.

Sec. 32-155. Fines-Minimum and Maximum

1. Any person, firm, or corporation found to have violated any provision of the Plan, shall be assessed a fine in an amount not to exceed one thousand dollars ($1,000.00) for each offense, the amount to be determined by the hearing officer in his reasonable discretion, subject to review on appeal to the municipal court clerk.

2. Unless higher amounts are required by state law or a lesser amount is determined by the hearing officer or municipal court clerk or so designated deputy, the minimum fines for violating the Plan shall be as follows:

   a. Violation of Year Round Water Use Management, first offense ...$50.00
   b. Violation of Year Round Water Use Management, second offense ...$75.00
   c. Violation of Year Round Water Use Management, subsequent offenses...$250.00
   d. Violation of Stage 1, first offense...$50.00
   e. Violation of Stage 1, second offense...$75.00
   f. Violation Stage 1, subsequent offenses...$250.00
   g. Violation of Stage 2, first offense...$100.00
   h. Violation of Stage 2, second offense...$150.00
   i. Violation of Stage 2, subsequent offenses...$500.00
   j. Violation of Stage 3 or 4, first offense...$250.00
   k. Violation of Stage 3 or 4, second offense...$500.00
   l. Violation of Stage 3 or 4, subsequent offenses...$1,000.00
   m. Reconnect Fees for failure to pay the surcharge...$250.00
   n. Reconnect Fees for repeated violations of the Plan...$500.00

3. It is an affirmative defense to any violation of this article if the customer proves that the misused wasted water is from an operable water well serving said property.

4. Fraudulent misrepresentation of well water use will result in a five hundred dollar ($500) fine.

Sec. 32-156. Requests for Variance

Requests for variance should be made in writing to the Director of Water Utilities. Requests must include name of customer, location, type of variance requested, reason for variance request and duration of deviation from this plan. Upon the Director's written approval acknowledged by the entity in question, these entities may follow the requested variance and will be responsible for all other provisions of this article.

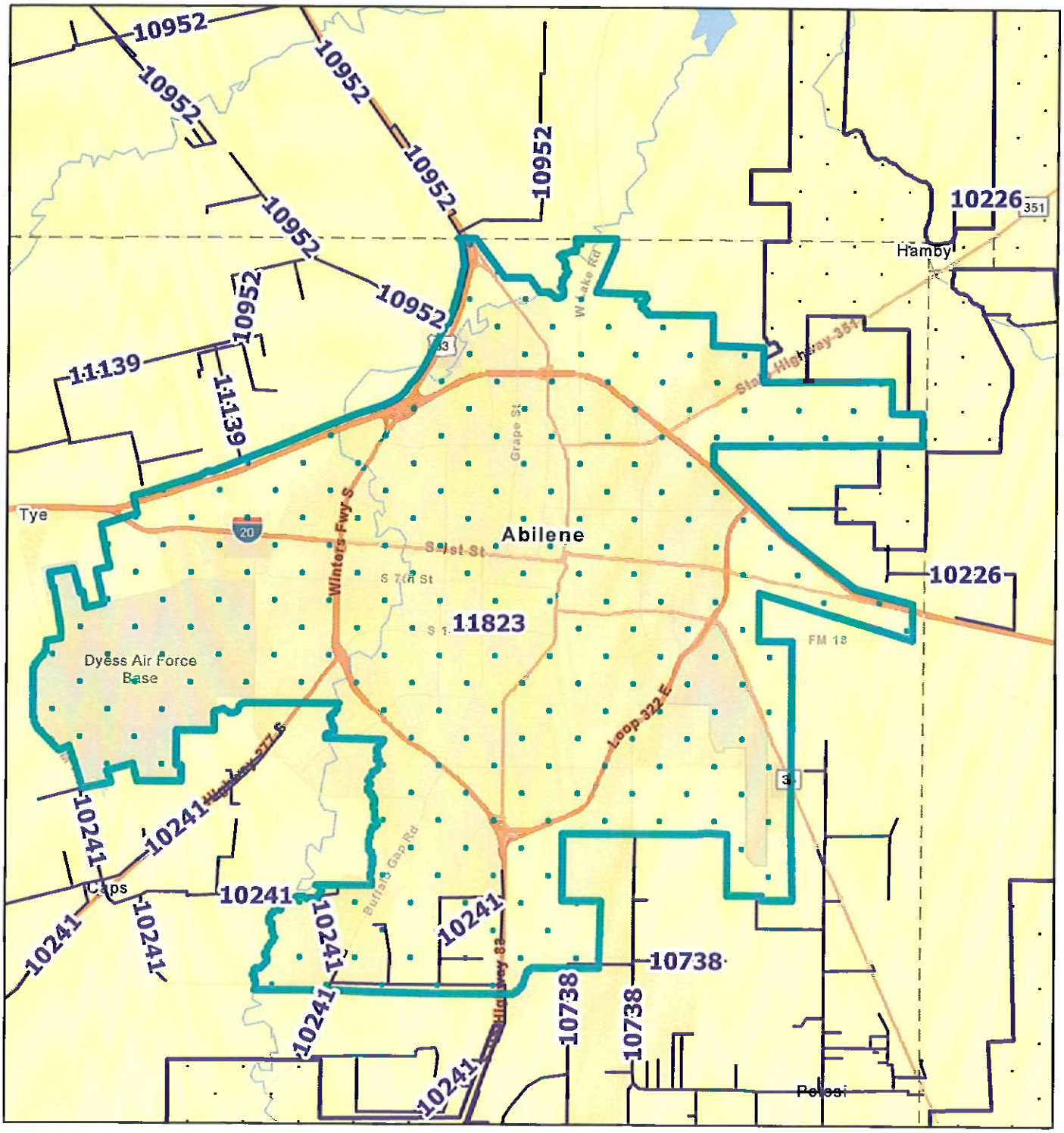
Sec. 32-157. Severability

If any provision or any section of this Plan shall be held to be void or unconstitutional, such holding shall in no way affect the validity of the remaining provisions or sections of the Plan, which shall remain in full force and effect.

Appendix A

Service Area Maps

City of Abilene Water Service Area (11823)



3/7/2024, 12:32:24 PM

1:163,793

0 1 2 4 mi

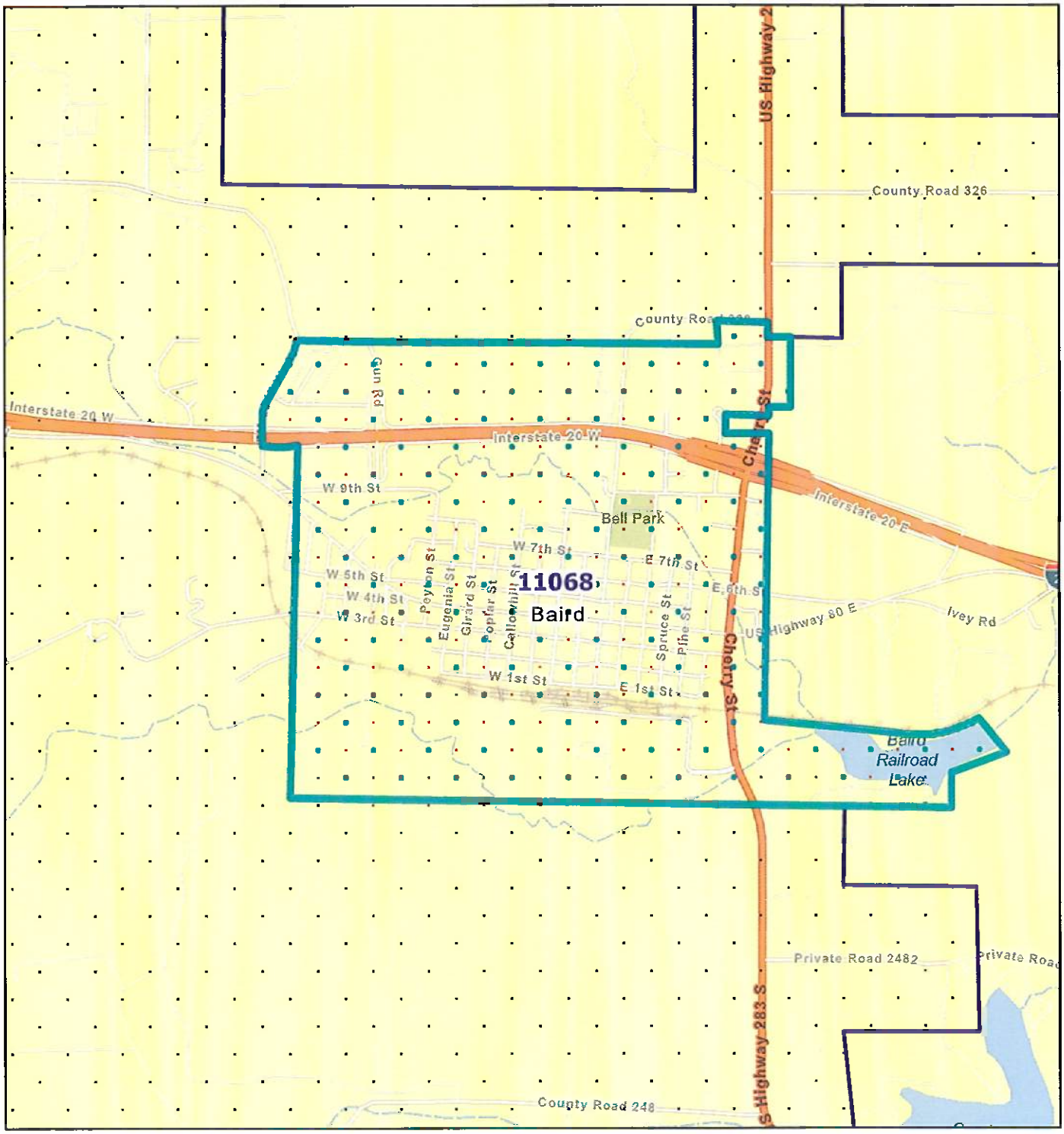
0 1.75 3.5 7 km

Water CCN Facility Lines

Water CCN Service Areas

City of Abilene, Taylor County, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

City of Baird Water Service Area



3/7/2024, 12:58:23 PM

1:35,379

0 0.25 0.5 1 mi

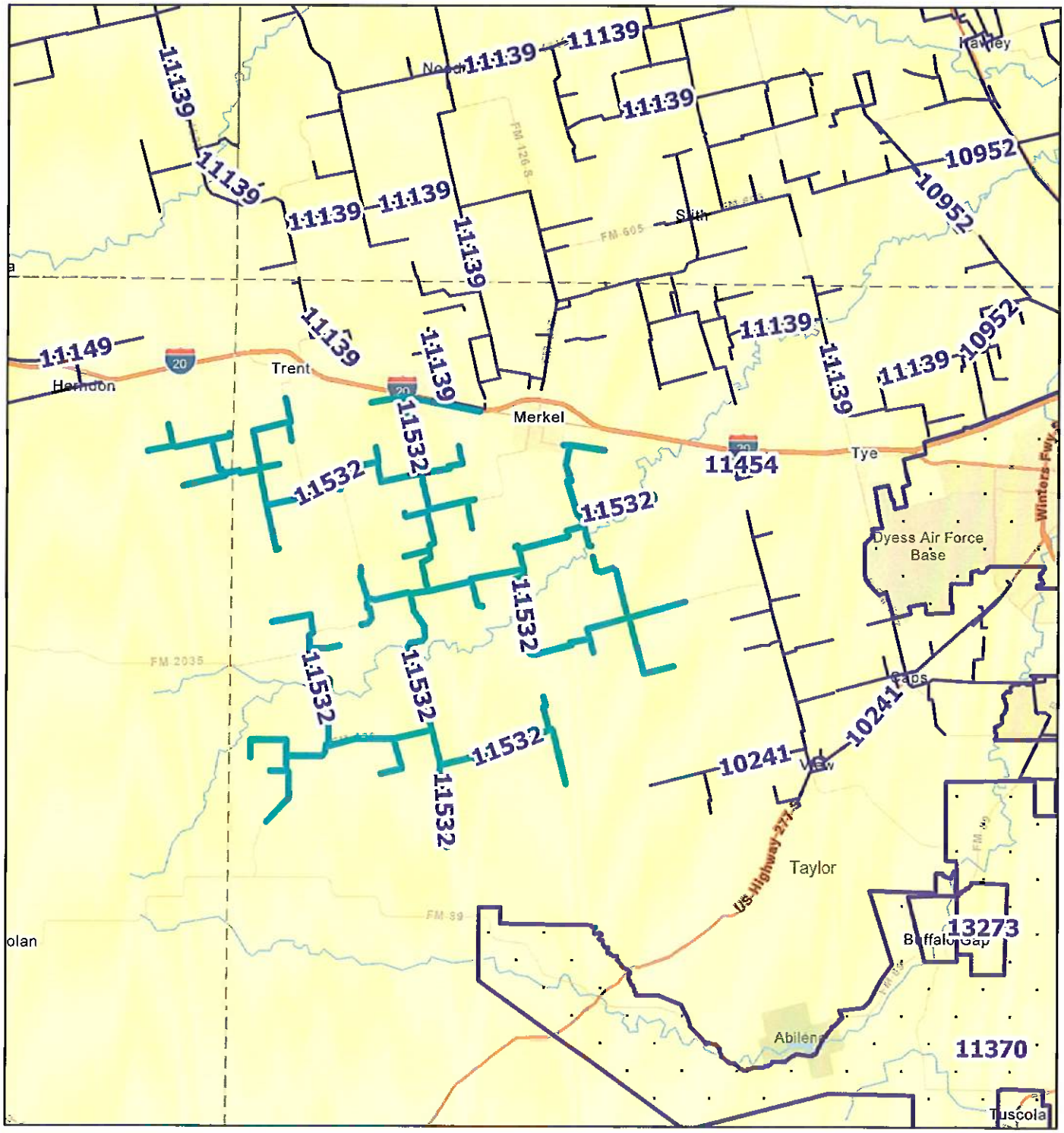
0 0.4 0.8 1.6 km

Water CCN Service Areas

Sewer CCN Service Areas

Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Blair WSC Water Service Area (11532)



3/7/2024, 12:37:19 PM

1:272,989

0 2 4 8 mi

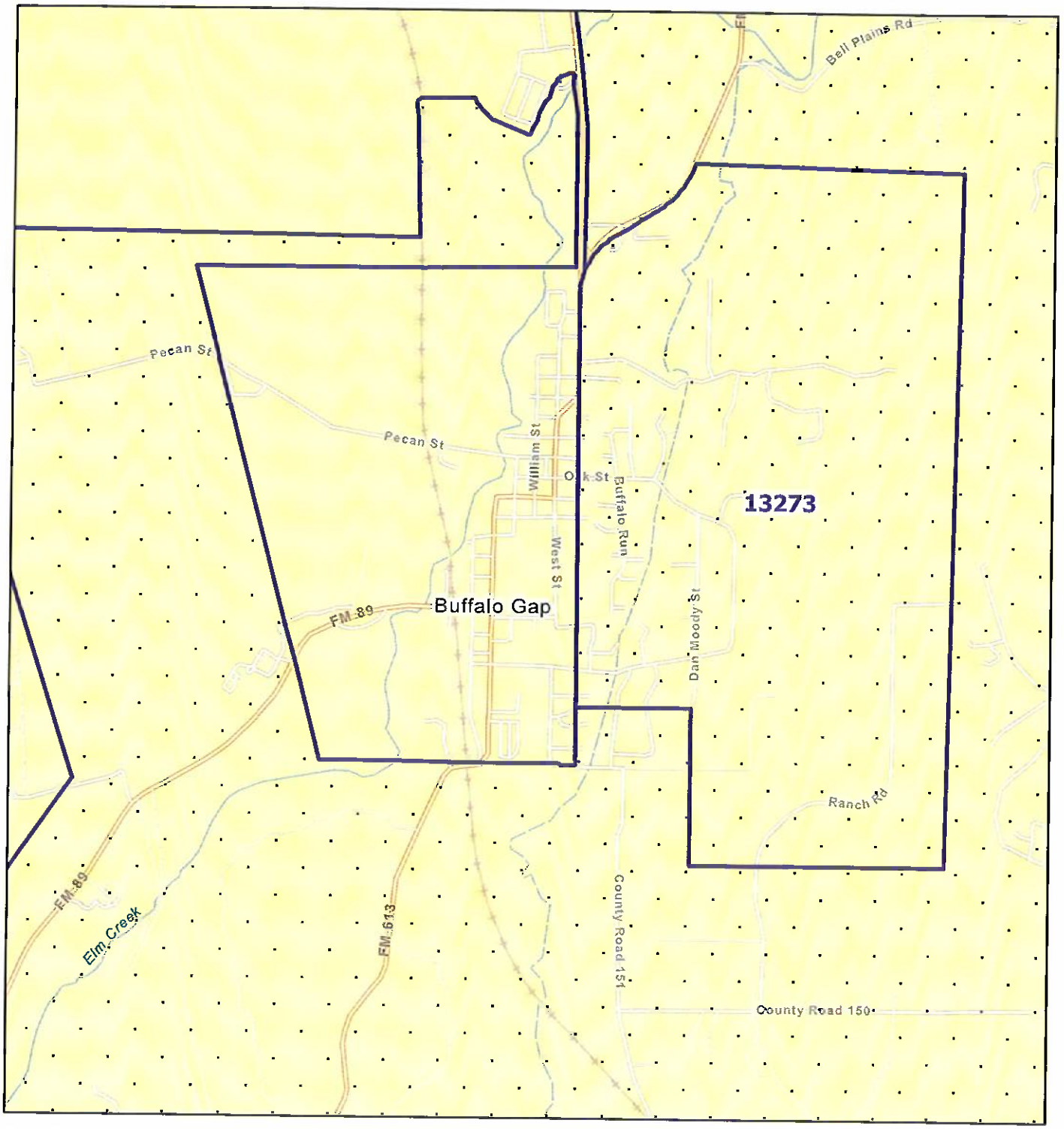
0 3 6 12 km

Water CCN Facility Lines

Water CCN Service Areas

City of Abilene, Taylor County, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

City of Buffalo Gap Water Service Area (10738)



3/7/2024, 1:07:28 PM

Water CCN Service Areas

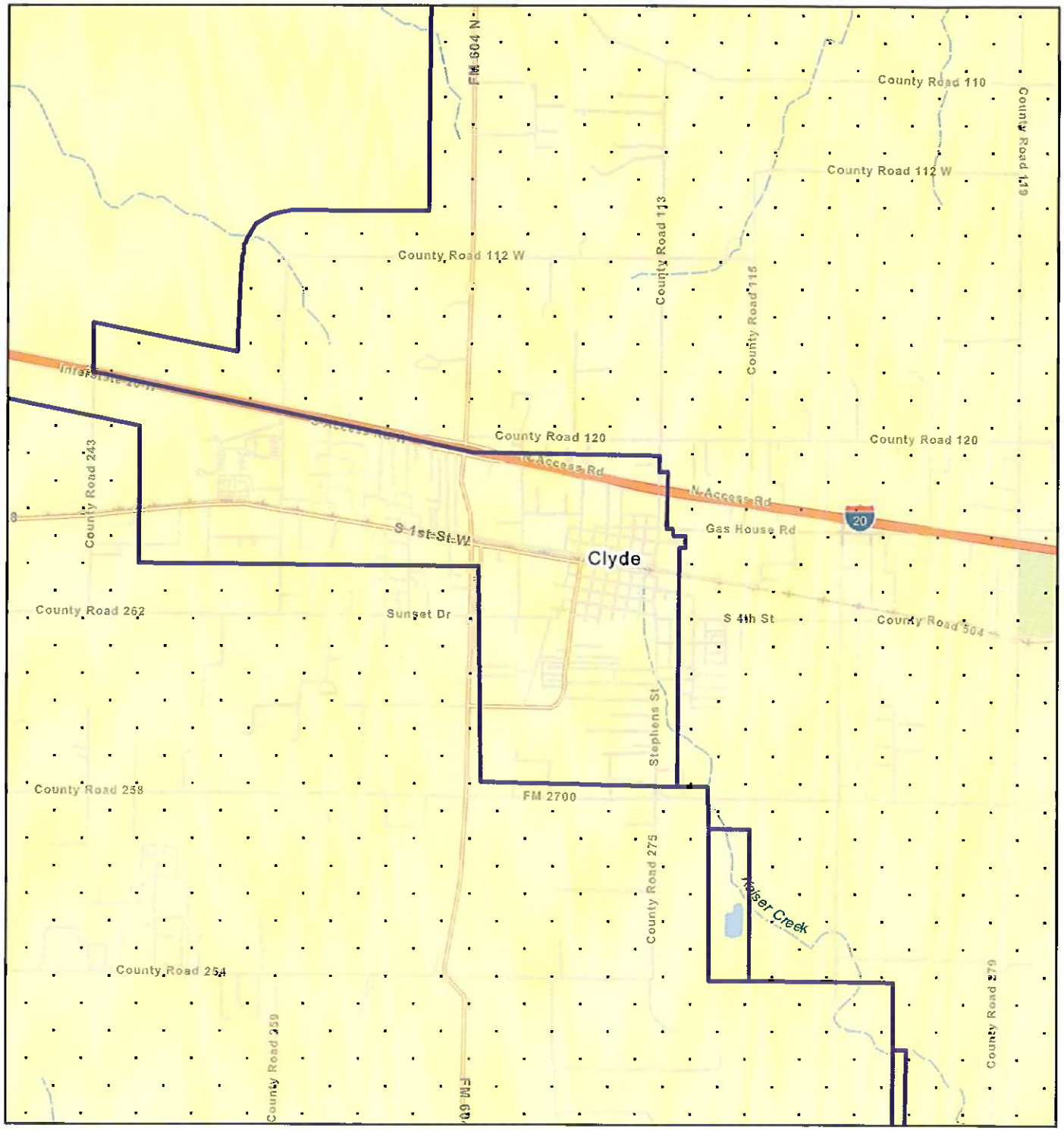
1:35,459

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

City of Abilene, Taylor County, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

City of Clyde Water Service Area



3/7/2024, 12:56:54 PM

1:58,966

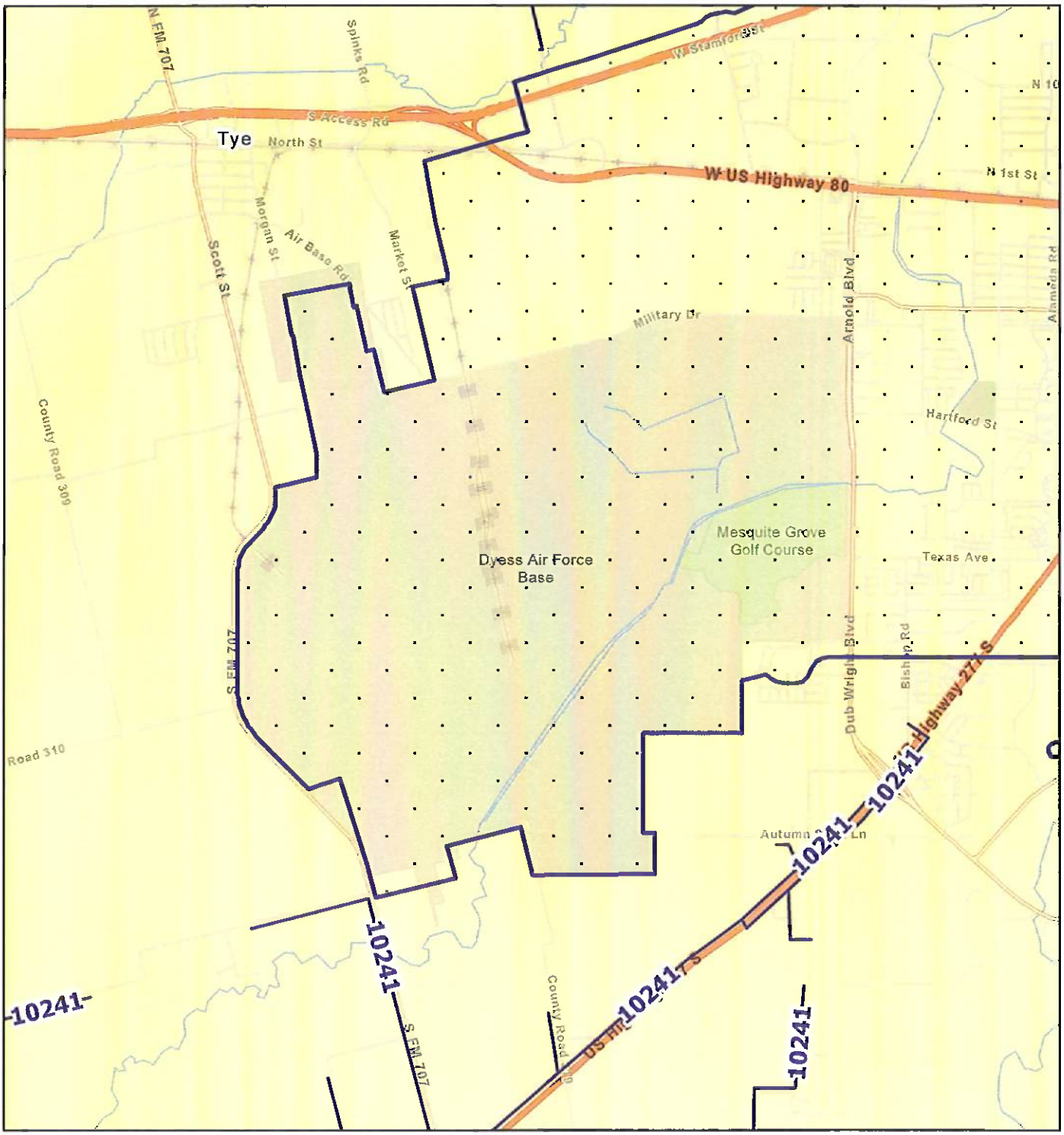
Water CCN Service Areas

0 0.42 0.85 1.7 mi

0 0.5 1 2 km

Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

Dyess Air Force Base Water Service Area



3/7/2024, 1:00:44 PM

1:59,098

0 0.42 0.85 1.7 mi

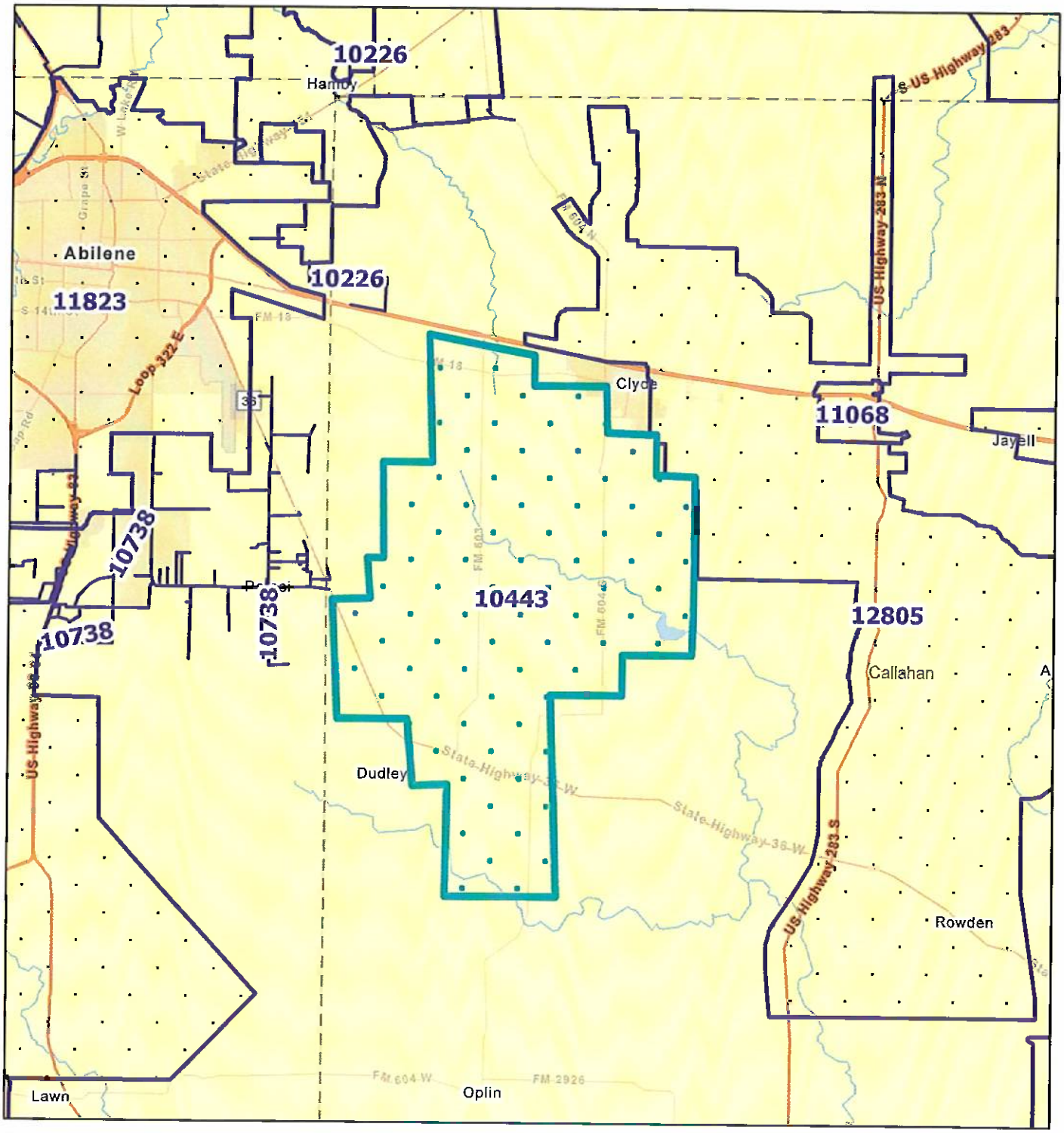
0 0.5 1 2 km

Water CCN Facility Lines

Water CCN Service Areas

City of Abilene, Taylor County, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

Eula WSC Water Service Area (10443)



3/7/2024, 12:47:38 PM

1:272,989

0 2 4 8 mi

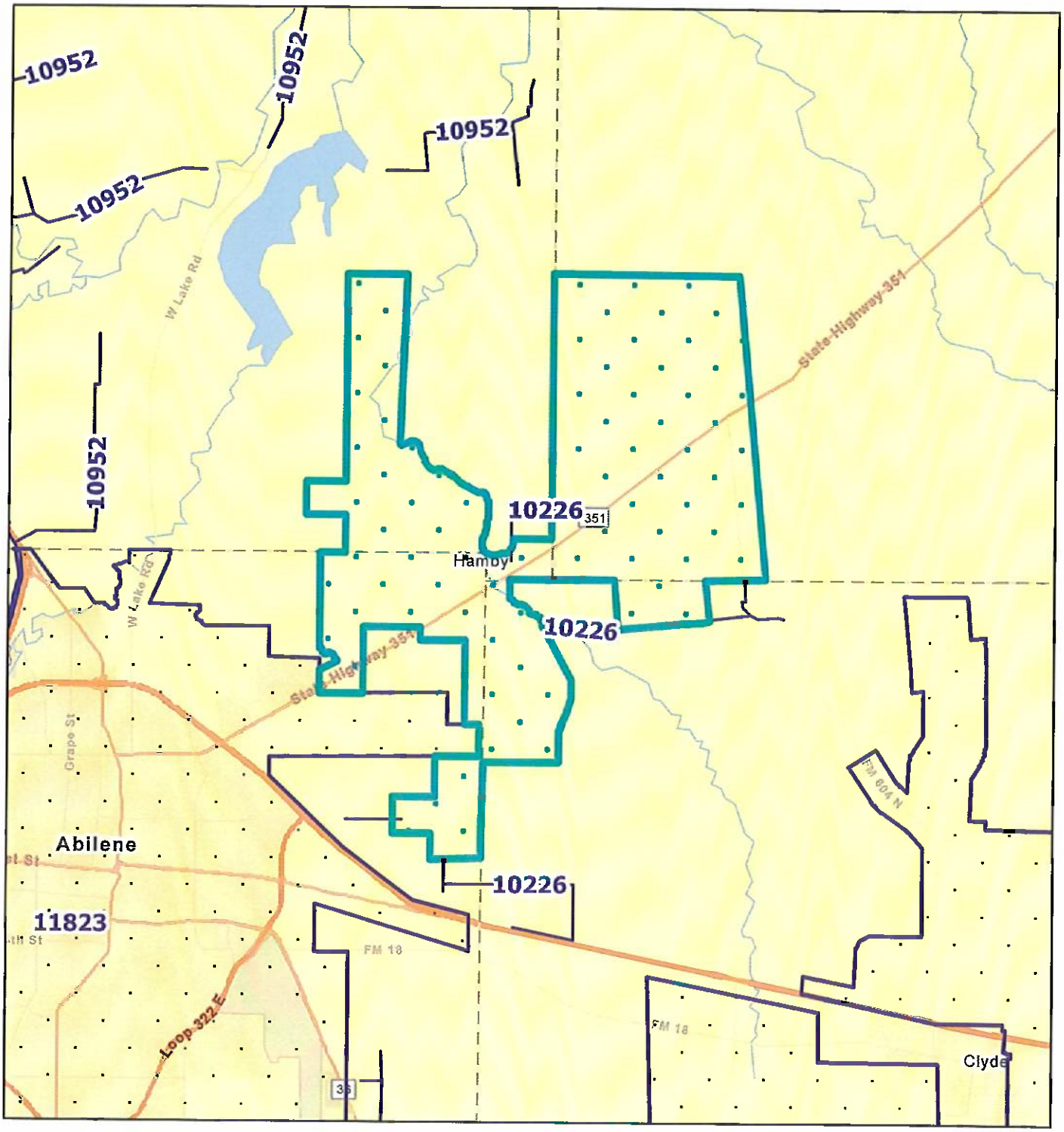
0 3 6 12 km

Water CCN Facility Lines

Water CCN Service Areas

Sewer CCN Service Areas

Hamby WSC Water Service Area (10226)



3/7/2024, 12:45:34 PM

1:163,793

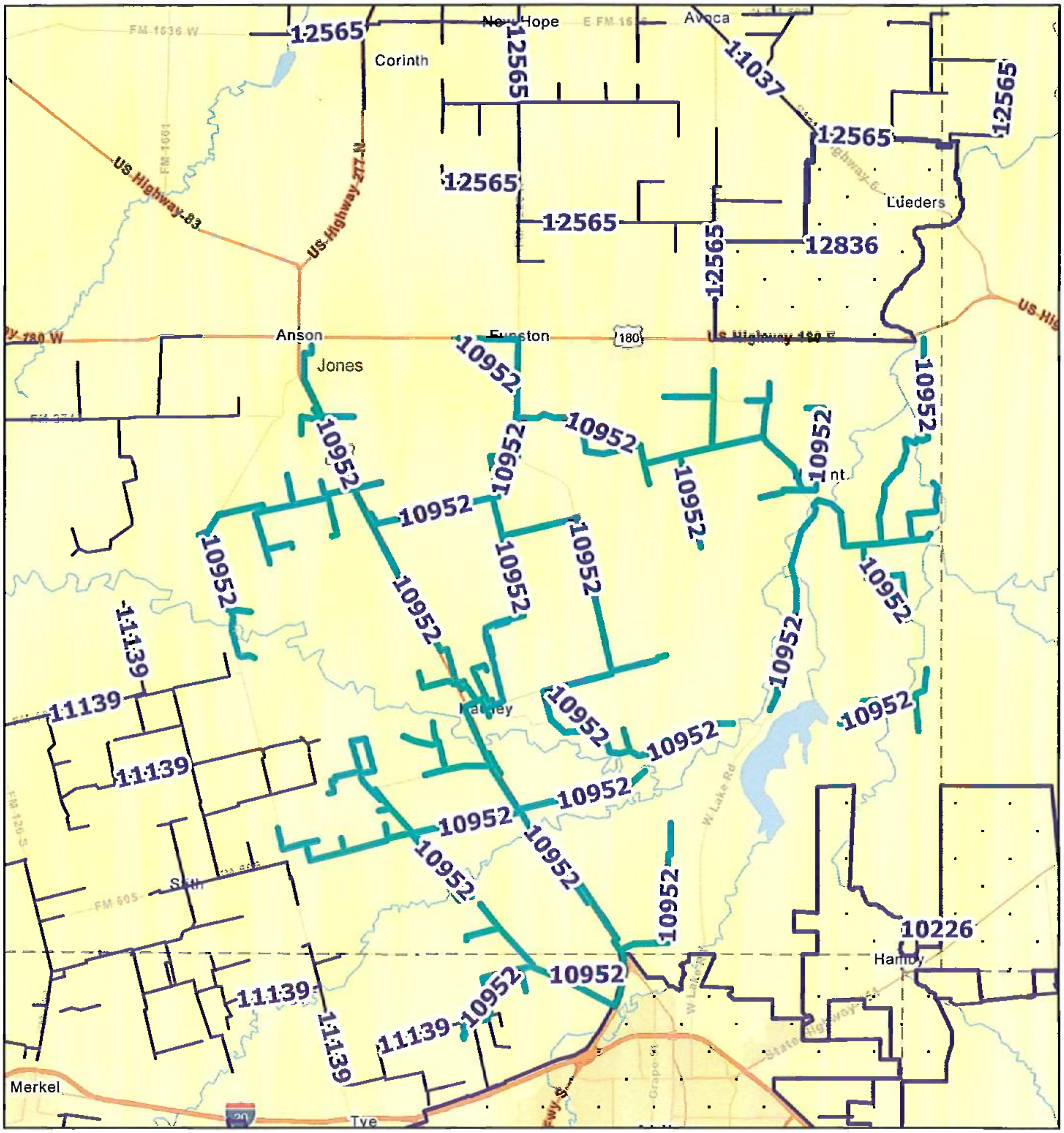
0 1 2 4 mi

0 1.75 3.5 7 km

Water CCN Facility Lines

Water CCN Service Areas

Hawley WSC Water Service Area (10952)



3/7/2024, 12:43:06 PM

Water CCN Facility Lines

Water CCN Service Areas

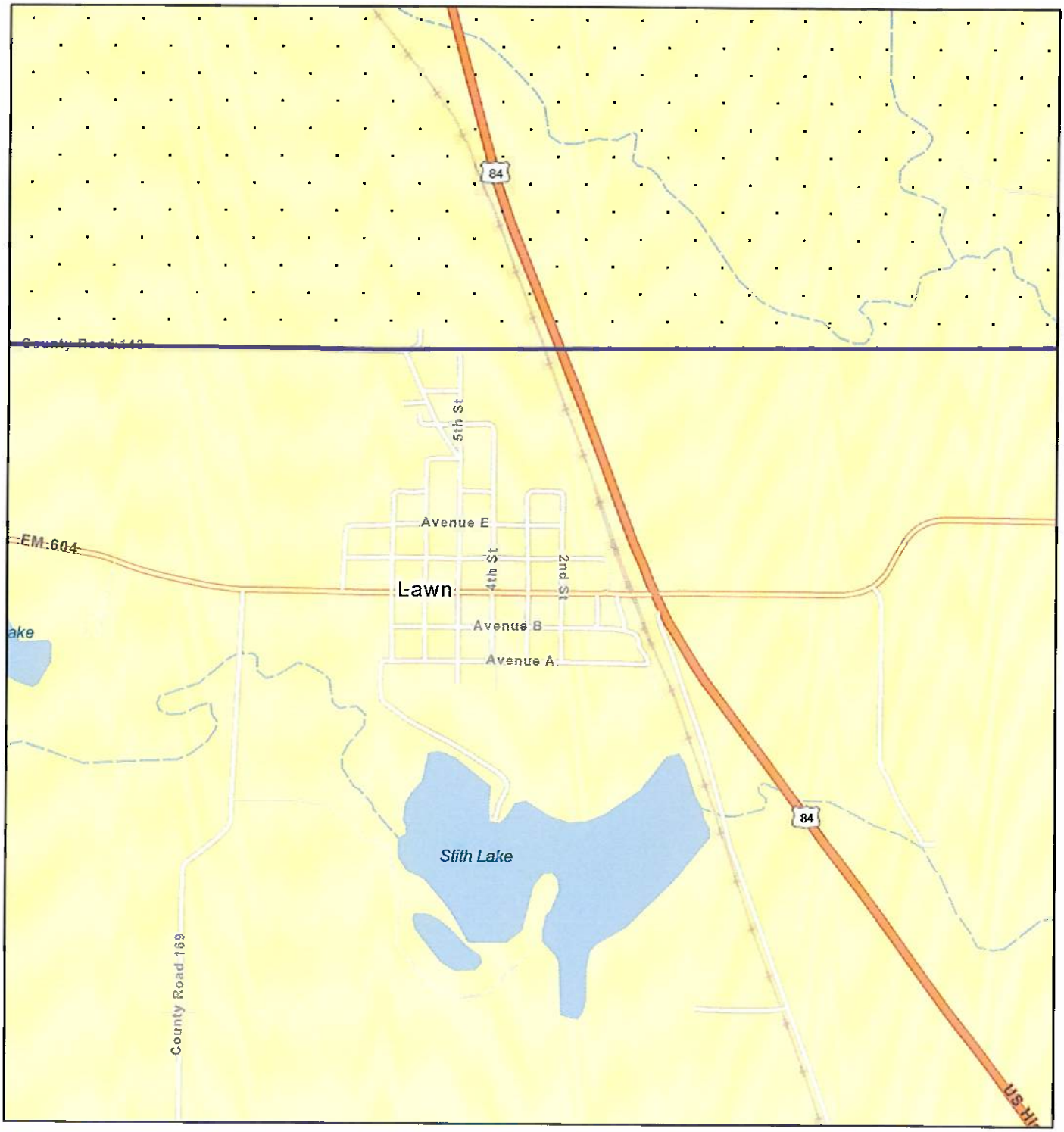
1:272,989

0 2 4 8 mi

0 3 6 12 km

Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

City of Lawn Water Service Area



3/7/2024, 12:54:20 PM

Water CCN Service Areas

1:21,228

0 0.15 0.3 0.6 mi

0 0.23 0.45 0.9 km

City of Abilene, Taylor County, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

City of Merkel Water Service Area

3/7/2024, 1:03:17 PM

1:35,459

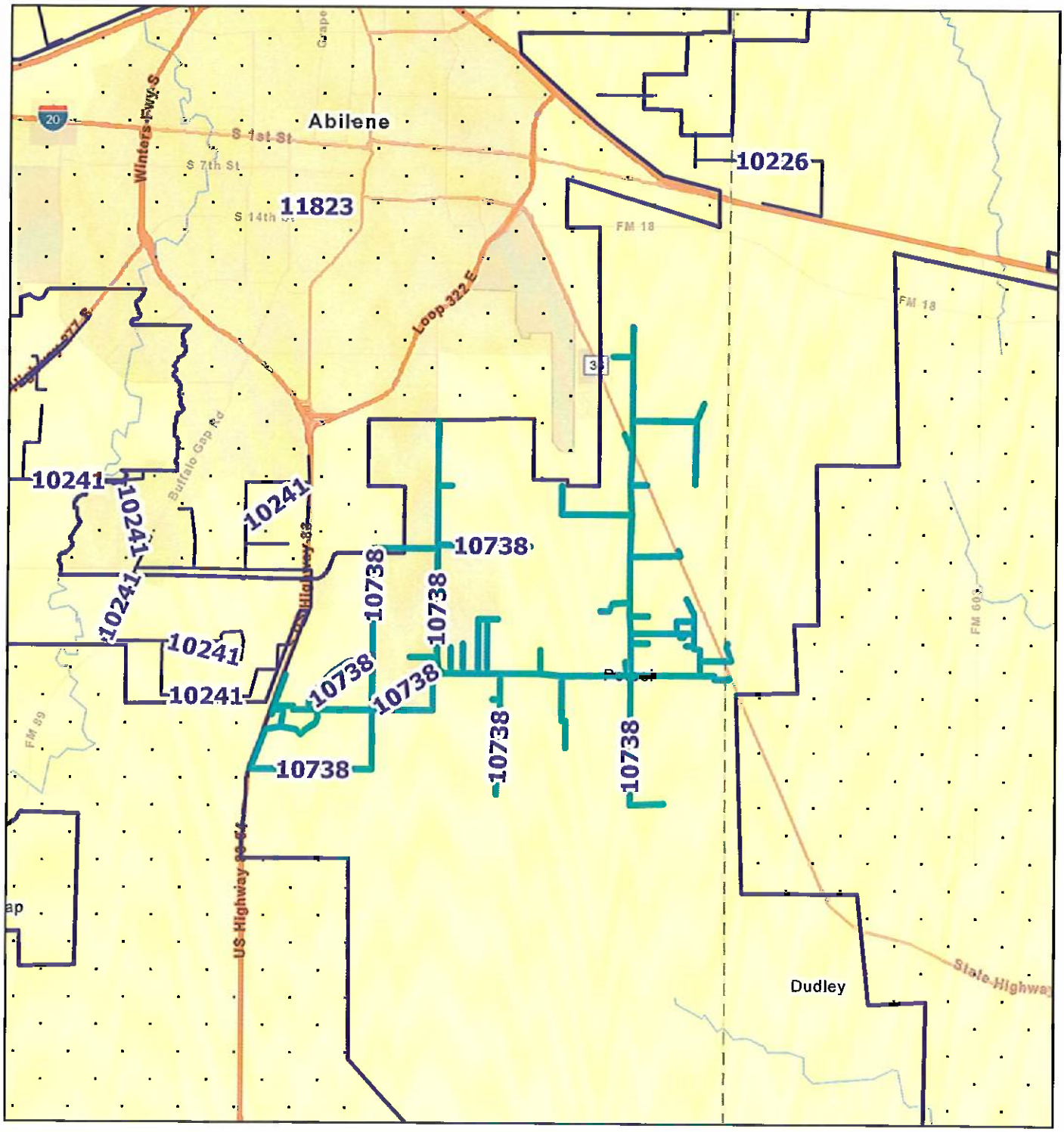
Water CCN Facility Lines

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

City of Abilene, Taylor County, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Potosi WSC Water Service Area (10738)



3/7/2024, 1:05:27 PM

1:164,160

0 1 2 4 mi

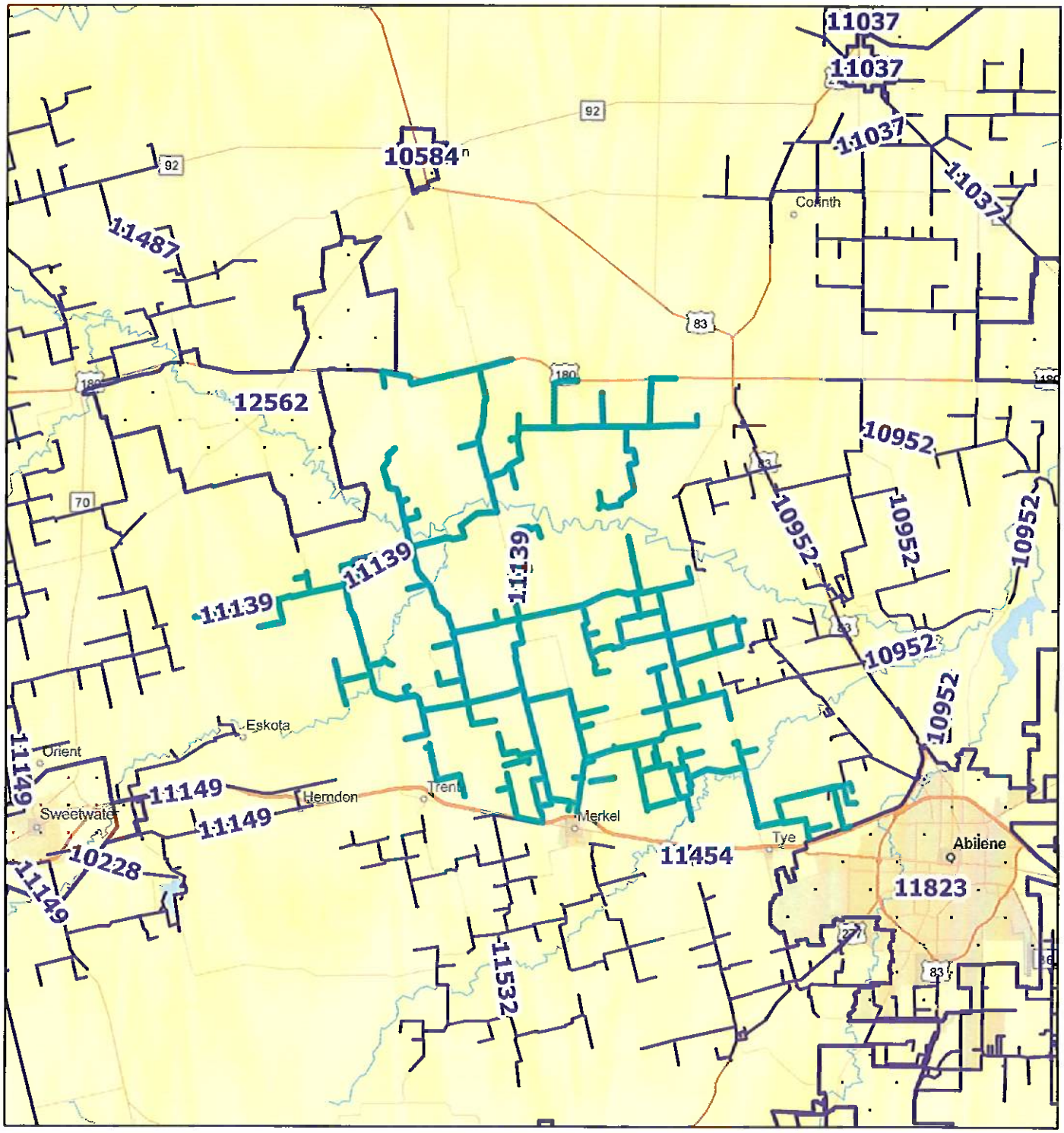
0 1.75 3.5 7 km

Water CCN Facility Lines

Water CCN Service Areas

City of Abilene, Taylor County, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

S U N WSC Water Service Area (11139)



3/7/2024, 12:40:27 PM

1:454,982

0 3.25 6.5 13 mi

0 5 10 20 km

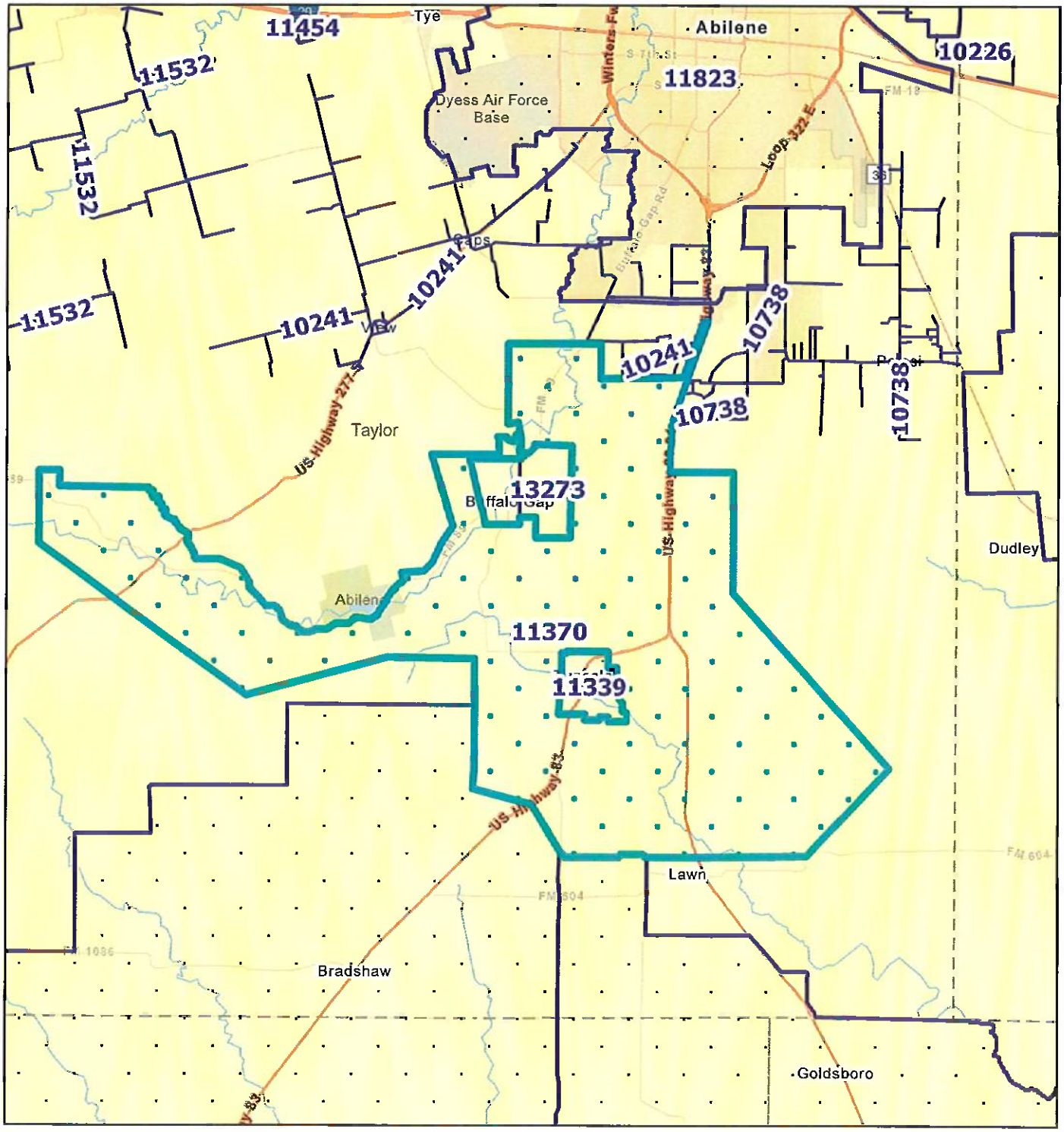
Water CCN Facility Lines

Water CCN Service Areas

Sewer CCN Service Areas

Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS, USFWS

Steamboat Mountain WSC Water Service Area (11370)



3/7/2024, 12:50:06 PM

1:272,989

0 2 4 8 mi

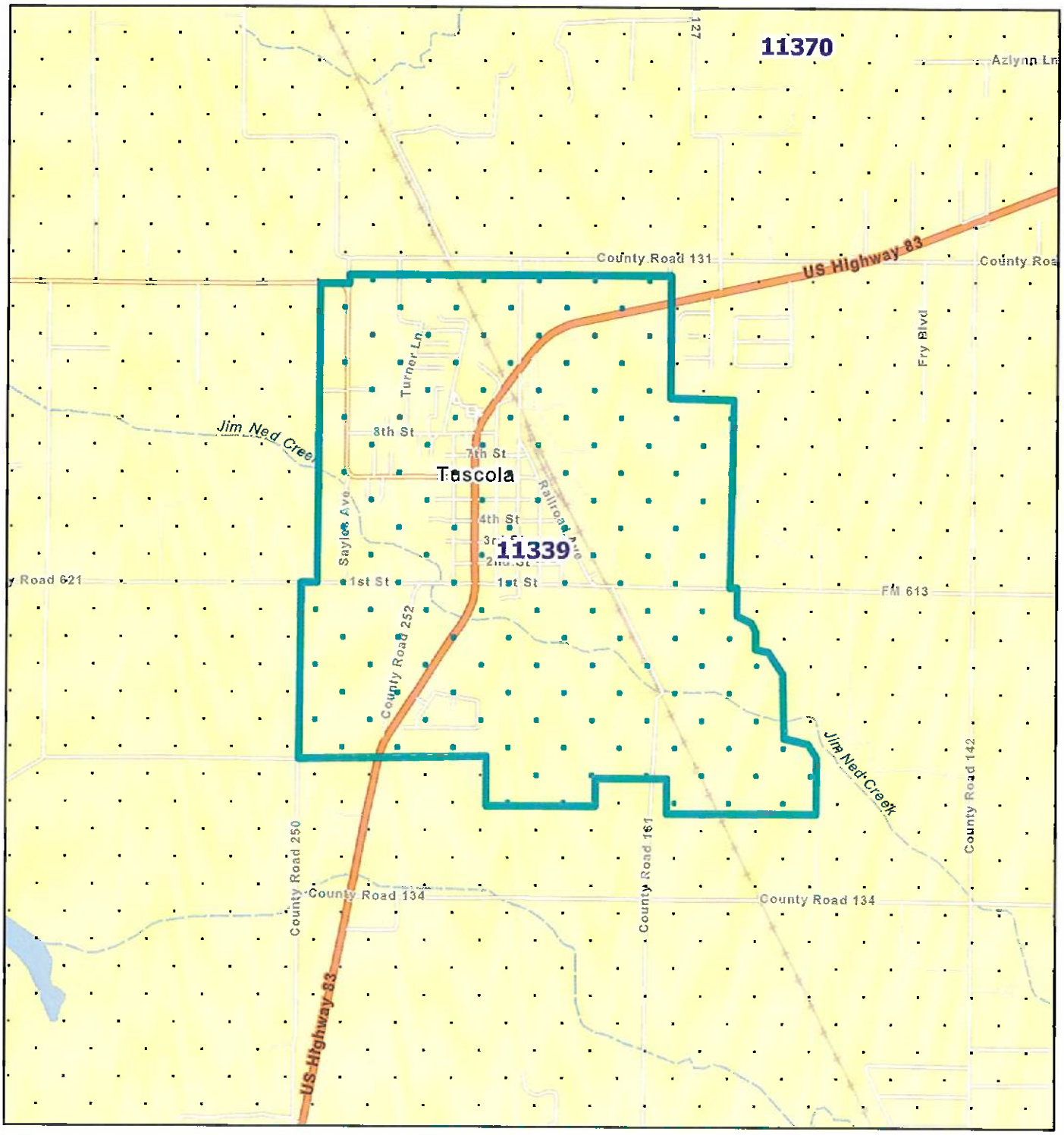
0 3 6 12 km

Water CCN Facility Lines

Water CCN Service Areas

City of Abilene, Taylor County, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

Tuscola-Taylor County WCID 1 Water Service Area (11339)



3/7/2024, 12:52:29 PM

Water CCN Service Areas

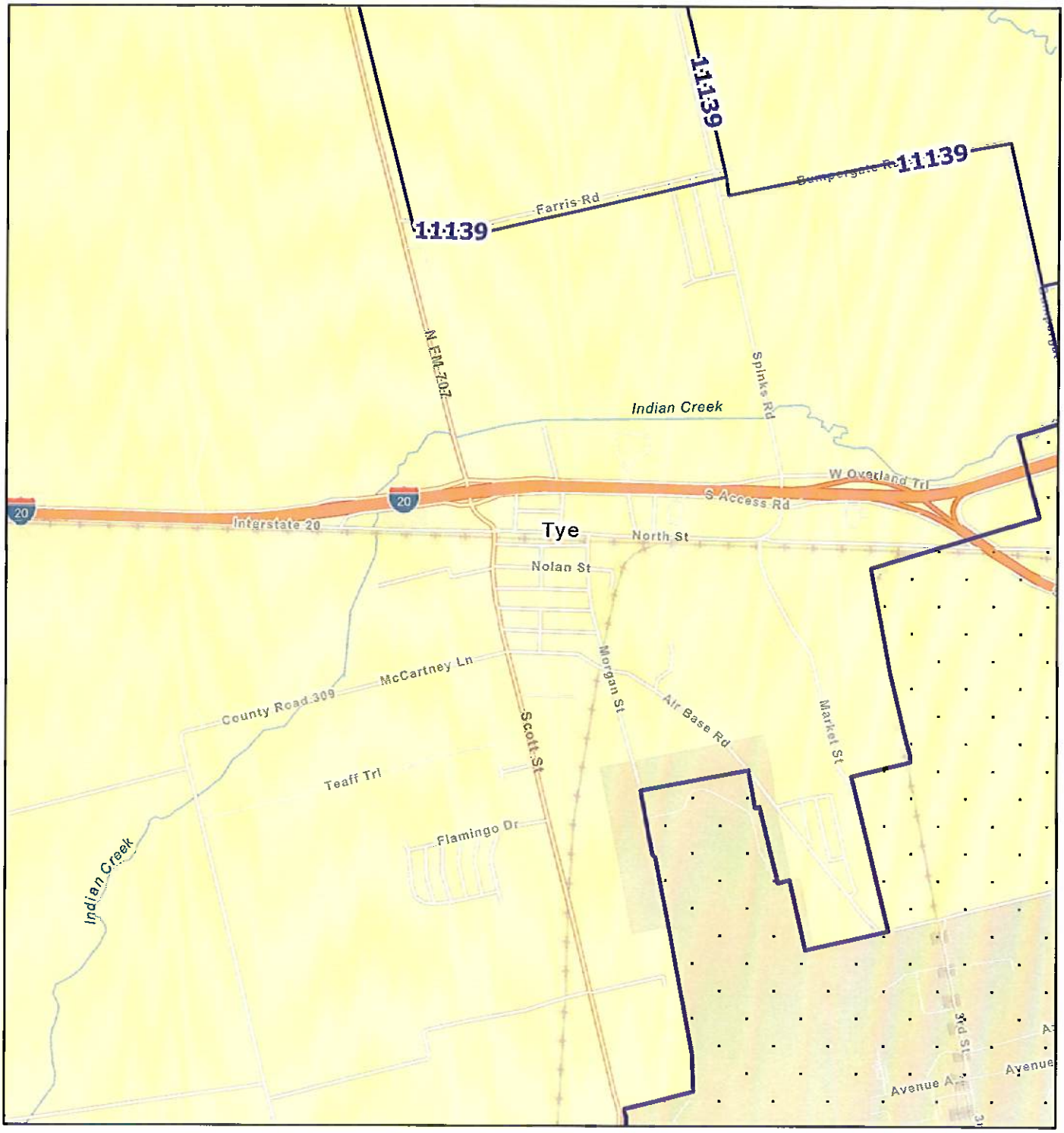
1:35,379

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

City of Abilene, Taylor County, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

City of Tye Water Service Area



3/7/2024, 1:13:45 PM

1:35,459

0 0.25 0.5 1 mi

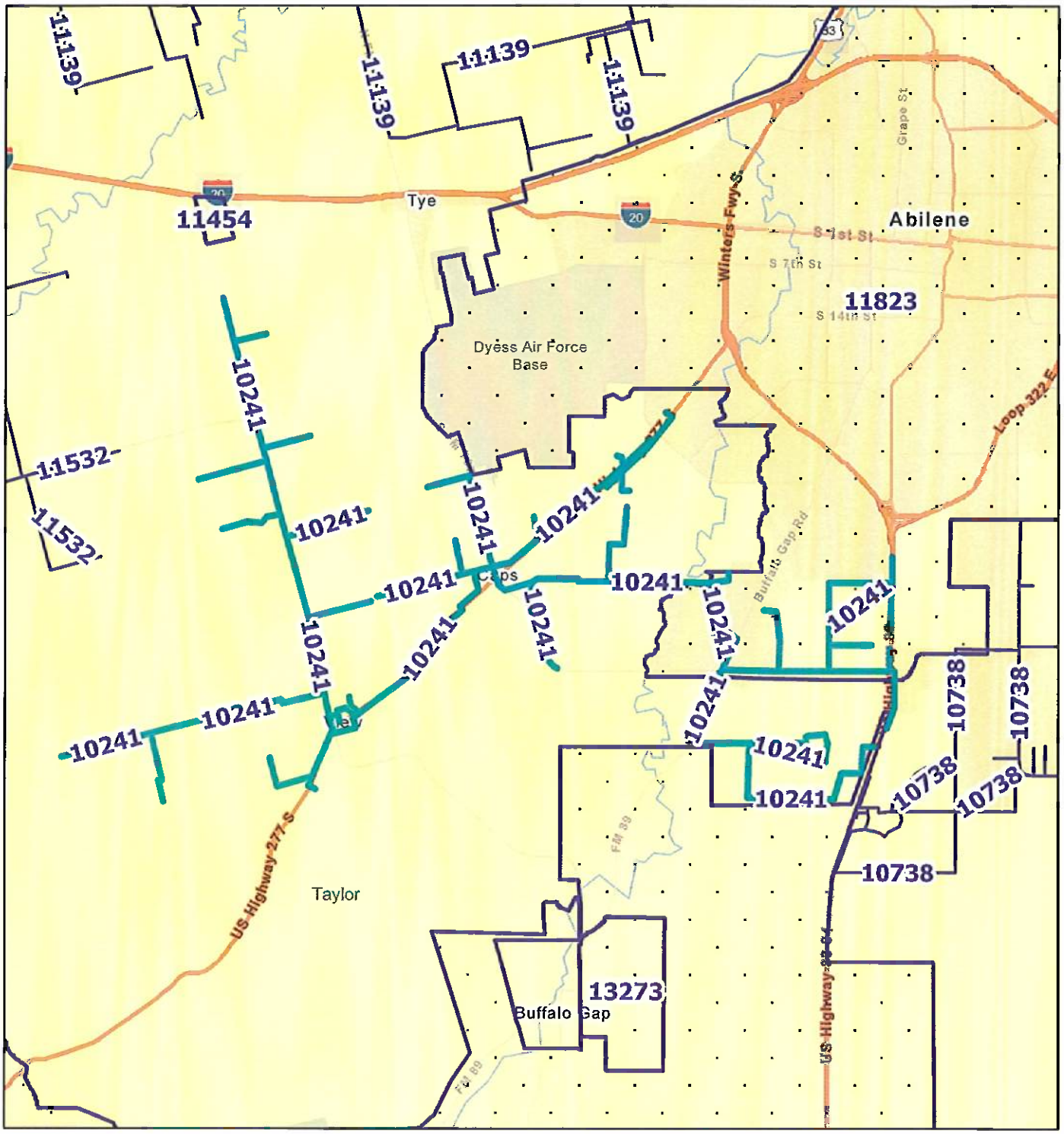
0 0.4 0.8 1.6 km

Water CCN Facility Lines

Water CCN Service Areas

City of Abilene, Taylor County, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

View Caps WSC Water Service Area (10241)



3/7/2024, 12:35:48 PM

1:163,793

0 1 2 4 mi

0 1.75 3.5 7 km

Water CCN Facility Lines

Water CCN Service Areas

City of Abilene, Taylor County, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

Appendix B

Utility Profile for Retail Water Supplier

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

CONTACT INFORMATION

Name of Utility: CITY OF ABILENE

Public Water Supply Identification Number (PWS ID): TX2210001

Certificate of Convenience and Necessity (CCN) Number: 11823

Surface Water Right ID Number: 4139-A, 4142, 4143, 4150-B, 4153, 4161-C, 4165-A, 4266-C, 12212

Wastewater ID Number:

Contact: First Name: Matthew Last Name: Dane

Title: Assistant Water Utilities Director

Address: P.O. Box 60 City: Abilene State: TX

Zip Code: 79604 Zip+4: Email: Matthew.Dane@abilenetx.com

Telephone Number: 3256766474 Date:

Is this person the designated Conservation Coordinator? (•) Yes ( ) No

Regional Water Planning Group: G

Groundwater Conservation District:

Our records indicate that you:

☑ Received financial assistance of $500,000 or more from TWDB

☑ Have 3,300 or more retail connections

☑ Have a surface water right with TCEQ

A. Population and Service Area Data

1. Current service area size in square miles: 108

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

2. Historical service area population for the previous five years, starting with the most current year.

Year	Historical Population Served By Retail Water Service	Historical Population Served By Wholesale Water Service	Historical Population Served By Wastewater Water Service
2023	124,262	33,736	113,078
2022	123,688	33,581	112,556
2021	123,115	33,427	112,035
2020	122,542	33,273	111,513
2019	121,994	33,164	111,015

3. Projected service area population for the following decades.

Year	Projected Population Served By Retail Water Service	Projected Population Served By Wholesale Water Service	Projected Population Served By Wastewater Water Service
2030	134,466	42,976	122,364
2040	145,047	46,149	131,993
2050	153,959	48,877	140,103
2060	162,895	51,985	148,234
2070	172,845	55,425	157,289

4. Described source(s)/method(s) for estimating current and projected populations.

2026 Regional Water Plan and Utility Records.

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. System Input

System input data for the previous five years.
Total System Input = Self-supplied + Imported – Exported

Year	Water Produced in Gallons	Purchased/Imported Water in Gallons	Exported Water in Gallons	Total System Input	Total GPCD
2023	8,063,817,000	0	1,333,308,000	6,730,509,000	148
2022	8,148,538,000	0	1,243,140,000	6,905,398,000	153
2021	7,451,452,000	0	1,015,308,000	6,436,144,000	143
2020	7,657,449,000	0	1,040,090,000	6,617,359,000	148
2019	7,481,704,000	0	911,518,000	6,570,186,000	148
Historic Average	7,760,592,000	0	1,108,672,800	6,651,919,200	148

C. Water Supply System

1. Designed daily capacity of system in gallons: 49,500,000
2. Storage Capacity
   - 2a. Elevated storage in gallons: 6,750,000
   - 2b. Ground storage in gallons: 31,850,000

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

D. Projected Demands

1. The estimated water supply requirements for the next ten years using population trends, historical water use, economic growth, etc.

Year	Population	Water Demand (gallons)
2025	129,824	8,555,041,884
2026	130,752	8,729,537,733
2027	131,681	8,904,033,583
2028	132,609	9,078,529,433
2029	133,538	9,253,025,282
2030	134,466	9,427,521,132
2031	135,524	9,549,878,183
2032	136,582	9,672,235,233
2033	137,640	9,794,592,284
2034	138,698	9,916,949,334

2. Description of source data and how projected water demands were determined.

2026 Regional Water Plan

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

E. High Volume Customers

1. The annual water use for the five highest volume **RETAIL customers.**

Customer	Water Use Category	Annual Water Use	Treated or Raw
Abilene Plant	Industrial	115,194,000	Treated
Dyess AFB	Institutional	113,562,000	Treated
Jones County-Other Manufacturing	Industrial	19,367,000	Treated
Texas Healthcare Linen	Industrial	13,895,000	Treated
Bridgestone Bandag, Inc.	Industrial	13,302,000	Treated

2. The annual water use for the five highest volume **WHOLESALE customers.**

Customer	Water Use Category	Annual Water Use	Treated or Raw
Steamboat Mountain WSC	Municipal	271,895,000	Treated
Potosi WSC	Municipal	224,256,000	Treated
View-Caps WSC	Municipal	98,249,000	Treated
Hawley WSC	Municipal	97,675,000	Treated
City of Baird	Municipal	89,868,000	Treated

F. Utility Data Comment Section

Additional comments about utility data.

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

Section II: System Data

A. Retail Water Supplier Connections

1. List of active retail connections by major water use category.

Water Use Category Type	Total Retail Connections (Active + Inactive)	Percent of Total Connections
Residential - Single Family	41,082	69.59 %
Residential - Multi-Family	11,301	19.14 %
Industrial	43	0.07 %
Commercial	5,416	9.17 %
Institutional	1,140	1.93 %
Agricultural	51	0.09 %
Total	59,033	100.00 %

2. Net number of new retail connections by water use category for the previous five years.

	Net Number of New Retail Connections						
Year	Residential - Single Family	Residential - Multi-Family	Industrial	Commercial	Institutional	Agricultural	Total
2023	2,342	101	0	48	59	51	2,601
2022	0	462	4	0	0	0	466
2021	531	25	0	36	6	0	598
2020	748	132	0	0	40	0	920
2019	266	0	0	0	7	0	273

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. Accounting Data

The previous five years' gallons of RETAIL water provided in each major water use category.

Year	Residential - Single Family	Residential - Multi-Family	Industrial	Commercial	Institutional	Agricultural	Total
2023	2,951,307,000	515,585,000	161,758,000	959,055,000	863,422,000	9,438,000	5,460,565,000
2022	3,212,813,000	534,664,000	149,223,000	1,013,812,000	1,004,137,000	0	5,914,649,000
2021	2,701,695,000	520,597,000	138,533,000	880,600,000	907,899,000	0	5,149,324,000
2020	2,813,014,000	510,667,000	160,476,000	794,311,000	950,569,000	0	5,229,037,000
2019	2,487,401,000	464,593,000	164,850,000	769,035,000	916,272,000	0	4,802,151,000

C. Residential Water Use

The previous five years residential GPCD for single family and multi-family units.

Year	Total Residential GPCD
2023	75
2022	87
2021	72
2020	74
2019	66
Historic Average	75

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

D. Annual and Seasonal Water Use

1. The previous five years' gallons of treated water provided to RETAIL customers.

Month	Total Gallons of Treated Water				
	2023	2022	2021	2020	2019
January	542,610,000	530,342,000	529,269,000	514,397,000	547,548,000
February	484,771,000	482,667,000	573,483,000	468,365,000	457,886,000
March	587,054,000	554,370,000	553,704,000	496,052,000	530,489,000
April	659,220,000	643,913,000	598,364,000	549,986,000	556,472,000
May	637,391,000	783,623,000	557,713,000	748,576,000	559,534,000
June	676,014,000	829,404,000	605,811,000	754,070,000	594,020,000
July	865,103,000	965,286,000	687,561,000	325,928,000	804,804,000
August	982,928,000	807,862,000	797,652,000	864,773,000	916,239,000
September	789,228,000	755,173,000	785,962,000	626,061,000	784,467,000
October	697,129,000	675,624,000	647,451,000	686,206,000	681,438,000
November	575,881,000	562,220,000	560,209,000	577,252,000	534,978,000
December	566,488,000	558,052,000	554,273,000	545,789,000	513,829,000
Total	8,063,817,000	8,148,536,000	7,451,452,000	7,157,455,000	7,481,704,000

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

2. The previous five years' gallons of raw water provided to RETAIL customers.

Month	Total Gallons of Raw Water				
	2023	2022	2021	2020	2019
January	212,000	128,000	176,000	181,000	281,000
February	214,000	230,000	267,000	140,000	116,000
March	235,000	255,000	157,000	150,000	203,000
April	173,000	187,000	283,000	146,000	264,000
May	229,000	150,000	201,000	239,000	184,000
June	195,000	238,000	197,000	248,000	237,000
July	269,000	337,000	182,000	349,000	161,000
August	339,000	479,000	966,000	176,000	320,000
September	592,000	307,000	818,000	250,000	381,000
October	245,000	368,000	243,000	294,000	439,000
November	178,000	234,000	205,000	223,000	516,000
December	255,000	181,000	163,000	239,000	168,000
Total	3,136,000	3,094,000	3,858,000	2,635,000	3,270,000

3. Summary of seasonal and annual water use.

	Summer RETAIL (Treated + Raw)	Total RETAIL (Treated + Raw)
2023	2,524,848,000	8,066,953,000
2022	2,603,606,000	8,151,630,000
2021	2,092,369,000	7,455,310,000
2020	1,945,544,000	7,160,090,000
2019	2,315,781,000	7,484,974,000
Average in Gallons	2,296,429,600.00	7,663,791,400.00

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

E. Water Loss

Water Loss data for the previous five years.

Year	Total Water Loss in Gallons	Water Loss in GPCD	Water Loss as a Percentage
2023	520,997,005	11	6.57 %
2022	330,616,770	8	4.73 %
2021	180,621,500	4	2.81 %
2020	216,423,408	5	3.27 %
2019	588,145,140	13	8.95 %
Average	367,360,765	8	5.27 %

F. Peak Day Use

Average Daily Water Use and Peak Day Water Use for the previous five years.

Year	Average Daily Use (gal)	Peak Day Use (gal)	Ratio (peak/avg)
2023	22,101,241	27444000	1.2417
2022	22,333,232	28300065	1.2672
2021	20,425,506	22743141	1.1135
2020	19,616,684	21147217	1.0780
2019	20,506,778	25171532	1.2275

G. Summary of Historic Water Use

Water Use Category	Historic Average	Percent of Connections	Percent of Water Use
Residential - Single Family	2,833,246,000	69.59 %	53.35 %
Residential - Multi-Family	509,221,200	19.14 %	9.59 %
Industrial	154,968,000	0.07 %	2.92 %
Commercial	883,362,600	9.17 %	16.63 %
Institutional	928,459,800	1.93 %	17.48 %
Agricultural	1,887,600	0.09 %	0.04 %

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

H. System Data Comment Section

Section III: Wastewater System Data

A. Wastewater System Data

1. Design capacity of wastewater treatment plant(s) in gallons per day: 22,000,000

2. List of active wastewater connections by major water use category.

Water Use Category	Metered	Unmetered	Total Connections	Percent of Total Connections
Municipal	0	49,729	49,729	89.87 %
Industrial	0	43	43	0.08 %
Commercial	0	4,709	4,709	8.51 %
Institutional	0	855	855	1.55 %
Agricultural	0	0	0	0.00 %
Total	0	55,336	55,336	100.00 %

3. Percentage of water serviced by the wastewater system: 93.69 %

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

4. Number of gallons of wastewater that was treated by the utility for the previous five years.

Month	Total Gallons of Treated Water				
	2023	2022	2021	2020	2019
January	315,710,000	306,190,000	383,150,000	368,380,000	488,150,000
February	316,910,000	295,120,000	292,070,000	369,600,000	466,620,000
March	368,240,000	313,910,000	427,530,000	476,560,000	459,450,000
April	417,600,000	328,530,000	379,240,000	423,000,000	470,750,000
May	469,970,000	334,580,000	453,950,000	414,530,000	572,940,000
June	428,720,000	316,740,000	458,230,000	357,970,000	526,990,000
July	397,980,000	333,620,000	437,410,000	362,090,000	466,970,000
August	347,960,000	352,390,000	364,660,000	343,300,000	376,850,000
September	340,010,000	341,820,000	339,930,000	377,100,000	351,830,000
October	334,416,000	340,660,000	363,550,000	367,330,000	345,000,000
November	296,290,000	332,460,000	331,050,000	349,040,000	345,180,000
December	349,650,000	319,580,000	317,050,000	343,060,000	358,770,000
Total	4,383,456,000	3,915,600,000	4,547,820,000	4,551,960,000	5,229,500,000

5. Could treated wastewater be substituted for potable water?

○ Yes ◉ No

B. Reuse Data

1. Data by type of recycling and reuse activities implemented during the current reporting period.

Type of Reuse	Total Annual Volume (in gallons)
On-site Irrigation	21,186,000
Plant wash down	210,240,000
Chlorination/de-chlorination	0
Industrial	0
Landscape irrigation (park,golf courses)	447,382,000
Agricultural	35,484,000
Discharge to surface water	2,313,471,000
Evaporation Pond	0
Other	0
Total	3,027,763,000

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

C. Wastewater System Data Comment

Additional comments and files to support or explain wastewater system data listed below.

Appendix C

Water Conservation Goals for Retail Water Supplier

Texas Water Development Board

WATER CONSERVATION GOALS FOR RETAIL WATER SUPPLIER

CONTACT INFORMATION

Name of Utility: CITY OF ABILENE

Public Water Supply Identification Number (PWS ID): TX2210001

Certificate of Convenience and Necessity (CCN) Number: 11823

Surface Water Right ID Number: 4139-A, 4142, 4143, 4150-B, 4153, 4161-C, 4165-A, 4266-C, 12212

Wastewater ID Number:

Contact: First Name: Matthew Last Name: Dane

Title: Assistant Water Utilities Director

Address: P.O. Box 60 City: Abilene State: TX

Zip Code: 79604 Zip+4: Email: Matthew.Dane@abilenetx.com

Telephone Number: 3256766452 Date:

Is this person the designated Conservation Coordinator? (●) Yes ( ) No

Regional Water Planning Group: G

Groundwater Conservation District:

Our records indicate that you:

- [x] Received financial assistance of $500,000 or more from TWDB
- [x] Have 3,300 or more retail connections
- [x] Have a surface water right with TCEQ

Texas Water Development Board

WATER CONSERVATION GOALS FOR RETAIL WATER SUPPLIER

	Historic 5 Year Average	Baseline	5-Year Goal for Year 2029	10-Year Goal for Year 2034
Water Loss (GPCD)	148	148	147	146
Residential GPCD	75	75	74	73
Water Loss (GPCD)	9	9	8	7
Water Loss Percentage	6.00%	6.00%	5.00%	5.00%

1. Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365
2. Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365
3. Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
4. Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

Appendix D

City of Abilene Reservoir Operation Plan

HDR | ONE COMPANY *Many Solutions*℠

Memo

To: Tommy O'Brien, PE Scott Hibbs, PE	
From: Cory Shockley, PE Ken Choffel, PE	**Project:** Recommended Pumping Plans for Pumping Water from Hubbard Creek Reservoir to Abilene
CC:	
Date: January 22, 2008	**Job No:** 00040701-001

Recommended Pumping Plans for Pumping Water from Hubbard Creek Reservoir to Abilene

Background

The City of Abilene coordinates delivery of water from Hubbard Creek Reservoir (HCR) with the West Central Texas Municipal Water District (WCTMWD) in accordance with an operating plan that was originally developed by Freese and Nichols, Inc. (FNI) in 1980 and updated by FNI in 1998 (1998 plan). The 1998 plan has been used for the past decade to determine when to turn the HCR pipeline pumps on and off in accordance with a schedule based on month of the year and level of Fort Phantom Hill Reservoir (FPH). HDR has recently developed a new computer simulation model referred to as the Abilene Multi-Source Model (AbileneMSM). The AbileneMSM allows for the simulation of Abilene's water supply system under a variety of system demands and operating plans which enables the user to evaluate components of the system including water supply, water quality and pumping and treatment costs.

Using the AbileneMSM, HDR has completed a series of analyses to evaluate new pumping plans to maintain acceptable FPH levels while minimizing pumping costs from Hubbard Creek Reservoir for a range of water demands. In all cases, these new pumping plans reduce pumping costs as compared to the 1998 plan. The new operating plans take into account changes in water demands and electric rate structures that have occurred since the development of the 1998 plan.

Abilene Water Supply System Changes Since 1998

Key assumptions used in the development of the 1998 plan regarding the operations of the Abilene water supply system have changed over time. The following is a list of significant changes:

- Power Plant is no longer in operation on FPH,
- Lake Abilene is no longer used as an active supply (now used as a back-up supply),
- Electric rate structures have changed,
- City has O.H. Ivie supply of up to 6.0 MGD, and
- City has a reuse system in place to meet some demands.

The associated impacts of these changes on the Abilene water supply system were taken into account during the development of the new pumping plans. With the shut down of the power plant, the demand on FPH has been reduced by 2,000 acft/yr and minimum lake level restrictions are no longer

related to power plant operations. Lake Abilene is used today as a back-up supply which means that the water needed to replace this supply (about 1,000 acft/yr) now comes from either the FPH/HCR system or O.H. Ivie Reservoir. Up to 6 MGD (6,720 acft/yr) is now available from O.H. Ivie Reservoir which reduces the demand on the FPH/HCR system. The change in the electric rate structure means that the HCR pipeline pumps do not have to be cycled on and off during the summer months to avoid demand surcharges associated with pumping during the afternoon and evening hours. The reuse system also has the benefit of reducing the system demand by meeting irrigation demands with treated effluent instead of potable water.

Demand Scenarios and Development of New Pumping Plans

The first step in the development of the new pumping plans included determining Abilene's demand on the FPH/HCR portion of the City's water supply system. The FPH/HCR portion of Abilene's demand is calculated by taking the total annual volume of potable water planned to be used by the City (in MGD) and subtracting the annual average volume of potable water planned to be delivered to the City's system from O.H. Ivie (in MGD). The following equation can be used to determine what the FPH/HCR Abilene demand is and which pumping plan should be selected to operate the HCR pipeline pumps:

Abilene's FPH/HCR Demand = Total Abilene Potable Demand – Potable Ivie Supply

Once the projected annual average demand on the FPH/HCR system (in MGD) has been calculated then the appropriate pumping plan (see Figures 1 to 5) can be selected from the following list:

- Pumping Plan 1 - 18 MGD Abilene's FPH/HCR Demand – Figure 1A
- Pumping Plan 2 - 20 MGD Abilene's FPH/HCR Demand – Figure 2A
- Pumping Plan 3 - 22 MGD Abilene's FPH/HCR Demand – Figure 3A
- Pumping Plan 4 - 24 MGD Abilene's FPH/HCR Demand – Figure 4A
- Pumping Plan 5 - 26 MGD Abilene's FPH/HCR Demand – Figure 5A

The new pumping plans are numbered in sequence and named based on the associated demands placed by Abilene on the FPH/HCR system. Once the appropriate pumping plan has been selected then the remaining step is to monitor the level of FPH through each month of the year and co-ordinate with the WCTMWD to activate the appropriate number of HCR pipeline pumps in accordance with the pumping plan as indicated on Figures 1 through 5. Each plan includes a pumping schedule that shows how many additional HCR pipeline pumps are required as the level of FPH drops below selected trigger levels. Depending on the selected pumping plan, the pump(s) should remain on until significant inflow occurs at FPH to raise the level back above the trigger level. The one exception to this plan is under the 18 MGD demand scenario (Figure 1) which does not require pumping from HCR from the beginning of December through the end of the following April. The vertical scale on the pumping plan figures refers to the FPH elevation. Each figure shows the number of pumps needed when the elevation of FPH is within the range shown for each month of the year. For example, if the city is operating under the 18 MGD plan (Figure 1A) and it is May, as soon as the elevation of FPH drops below 1628 ft-msl an operator should turn on one pump from HCR.

History of Recent Potable Water Use by Abilene

For the 2003 to 2006 timeframe total potable water use by Abilene has ranged between 19 and 24 MGD with between 0.9 and 4.0 MGD being supplied from O.H. Ivie.

Operational Constraints used in Development of New Pumping Plans

In the development of the new pumping plans, several operational limits were considered. These limits place practical constraints on the system and include:

- HCR pumps are not operated when FPH levels are above an elevation of 1628 ft-msl. Under Plans 1, 4 and 5, pumping begins when the FPH lake level drops below an elevation of 1628 ft-msl. Under Plans 2 and 3, pumping begins when the FPH lake level drops below an elevation of 1627 ft-msl.
- Minimum FPH lake level is 1616 ft-msl for all plans. (Note: This is the minimum FPH lake level during a stand-alone 1-year safe yield run without any pumping from HCR.)
- Pumping plans minimize pumps cycling on and off. Pumps come on and stay on until significant inflow has occurred at FPH to raise lake level above selected trigger levels. (The one exception to this is under Plan 1 -18 MGD Demand, when there is no pumping from December through April.)
- The maximum monthly pipeline capacity from HCR is limited to 2,600 acft (about 28.2 MGD) based on physical constraints of the delivery system.
- Monthly Abilene demands on the FPH/HCR system are generally equal to or greater than the HCR pipeline pumping rate.
- The AbileneMSM includes operating rules in the water supply contract between the WCTMWD and the City which govern pumping limits associated with the level of HCR.

Comparison of New Pumping Plans with Previous 1998 Plan

Using the AbileneMSM, annual pumping costs were calculated for each new pumping plan and for the previous 1998 plan (using the 2007 electrical rate structure) and compared. Tables 1 to 3 compare average annual, maximum 1-year and maximum 5-year moving average annual pumping costs for the 5 new pumping plans with the 1998 plan. In every case the use of the new operating plan results in a reduction in annual pumping costs. Comparing the average annual operating costs of the five new pumping plans (Table 1) with the previous 1998 plan, average annual savings range from a minimum of $15,849 (-2.2%) to a maximum of $97,647 (-9.7%). Comparing the maximum 1-year operating costs of the five new pumping plans (Table 2) with the previous 1998 plan results in annual savings ranging from a minimum of $23,687 (-0.9%) to a maximum of $701,663 (-43.2%).

Table 1.
Average Annual Cost (1940 – 2003)

FPH/HCR Demand (MGD)	New	1998 Plan	Difference	Percent Difference
18	$ 485,002	$ 521,838[1]	$ (36,836)	-7.1%
20	$ 598,028	$ 618,354[1]	$ (20,326)	-3.3%
22	$ 714,728	$ 730,576[1]	$ (15,849)	-2.2%
24	$ 907,788	$1,005,435[2]	$ (97,647)	-9.7%
26	$1,067,436	$1,129,650[2]	$ (62,214)	-5.5%

[1] 1998 Plan Operating Rules applied to shown demand.
[2] 2008 Plan Operating Rules applied to shown demand.

Table 2.
Maximum 1-Year Cost

FPH/HCR Demand (MGD)	New	1998 Plan	Difference	Percent Difference
18	$ 923,741	$1,625,405[1]	$(701,663)	-43.2%
20	$1,346,942	$1,819,001[1]	$(472,059)	-26.0%
22	$1,974,690	$2,008,165[1]	$ (33,474)	-1.7%
24	$2,188,606	$2,451,425[2]	$(262,818)	-10.7%
26	$2,564,459	$2,588,146[2]	$ (23,687)	-0.9%

[1] 1998 Plan Operating Rules applied to shown demand.
[2] 2008 Plan Operating Rules applied to shown demand.

Table 3.
Maximum 5 -Year Moving Average Annual Cost

FPH/HCR Demand (MGD)	New	1998 Plan	Difference	Percent Difference
18	$860,154	$ 1,009,411[1]	$(149,257)	-14.8%
20	$1,093,652	$ 1,186,563[1]	$ (92,911)	-7.8%
22	$1,347,065	$ 1,386,566[1]	$ (39,501)	-2.8%
24	$1,640,697	$ 1,738,144[2]	$ (97,447)	-5.6%
26	$1,923,800	$ 1,931,672[2]	$ (7,832)	-0.4%

[1] 1998 Plan Operating Rules applied to shown demand.
[2] 2008 Plan Operating Rules applied to shown demand.

Pumping Plan 1 - 18 MGD Abilene's FPH/HCR Demand

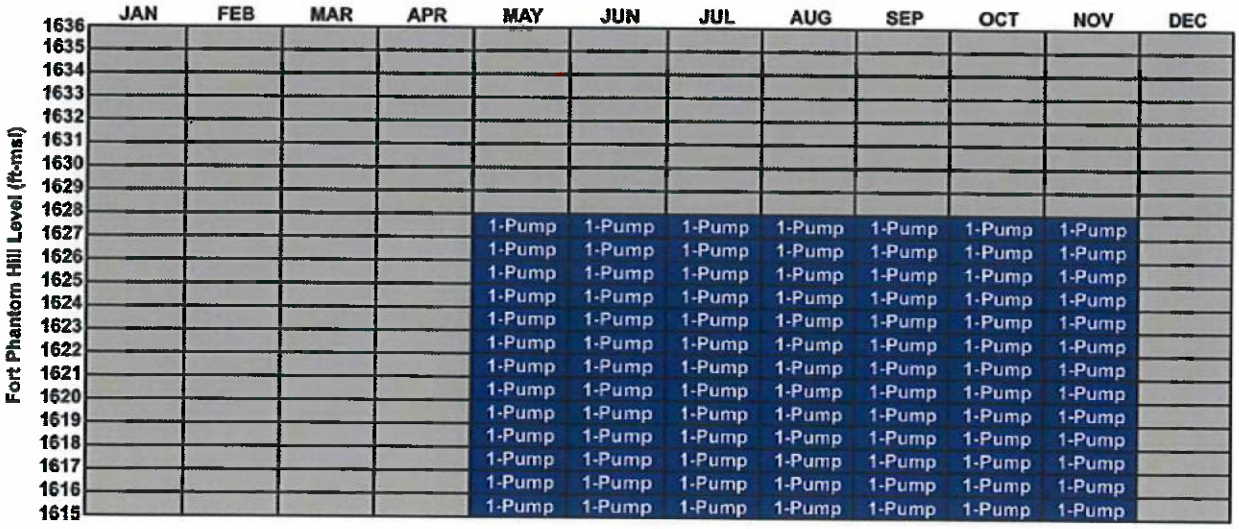


Figure 1A – FPH Triggers for Plan 1 - 18 MGD Abilene's FPH/HCR Demand

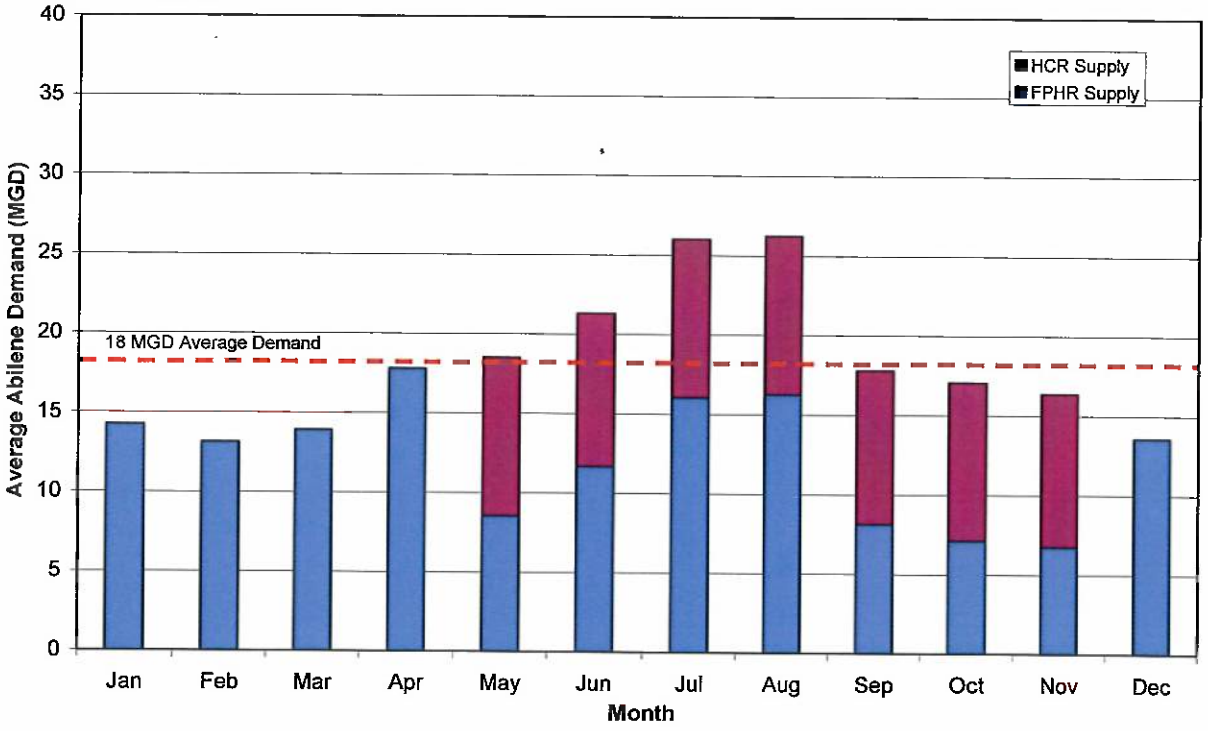


Figure 1B – FPH/HCR Blend Ratios for 18 MGD Demand (with HCR pump on)

Pumping Plan 2 - 20 MGD Abilene's FPH/HCR Demand

Fort Phantom Hill Level (ft-msl)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1636												
1635												
1634												
1633												
1632												
1631												
1630												
1629												
1628												
1627												
1626	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1625	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1624	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1623	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1622	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1621	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1620	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1619	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1618	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1617	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1616	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1615	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump

Figure 2A – FPH Triggers for Plan 2 - 20 MGD Abilene's FPH/HCR Demand

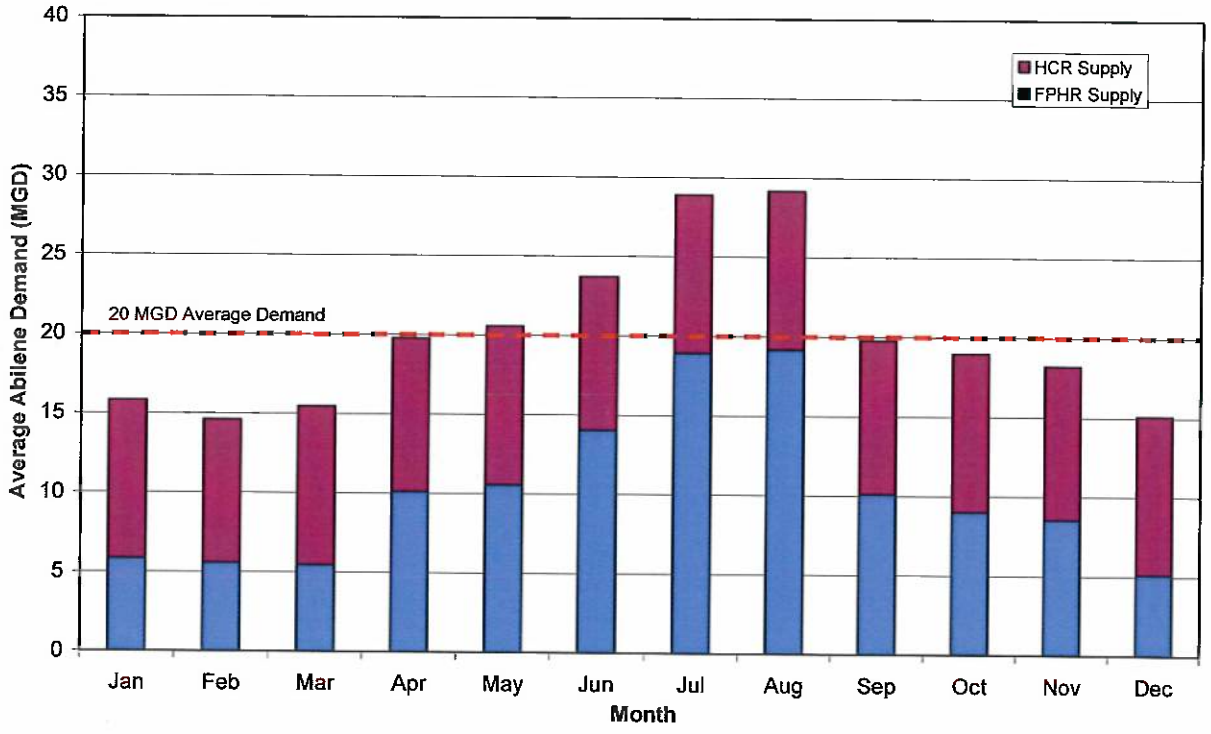


Figure 2B – FPH/HCR Blend Ratios for 20 MGD Demand (with HCR pump on)

Pumping Plan 3 - 22 MGD Abilene's FPH/HCR Demand

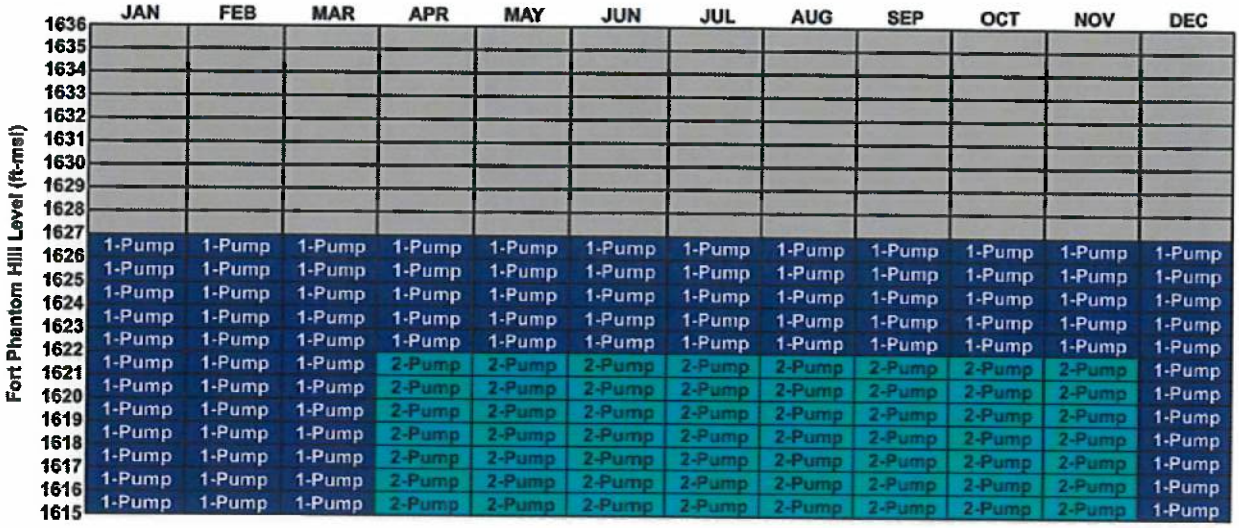


Figure 3A – FPH Triggers for Plan 3 - 22 MGD Abilene's FPH/HCR Demand

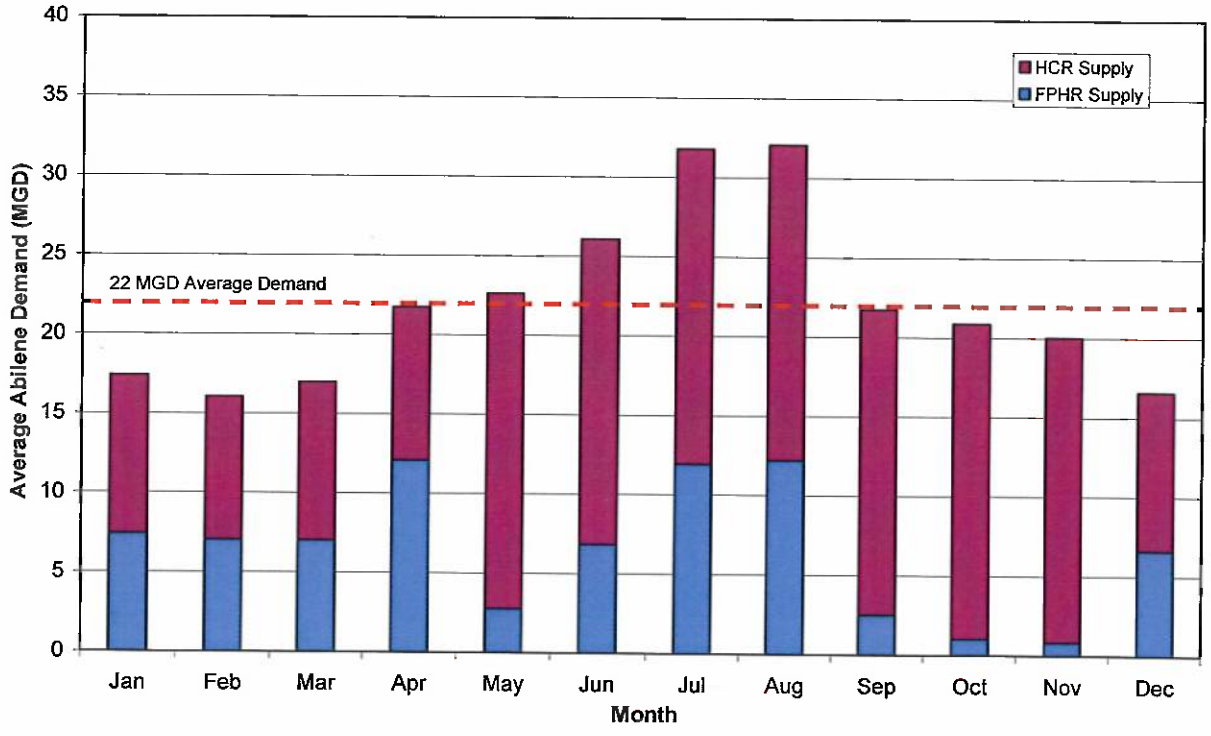


Figure 3B – FPH/HCR Blend Ratios for 22 MGD Demand (with up to 2 HCR pumps on)

Pumping Plan 4 - 24 MGD Abilene's FPH/HCR Demand

Figure 4A – FPH Triggers for Plan 4 - 24 MGD Abilene's FPH/HCR Demand

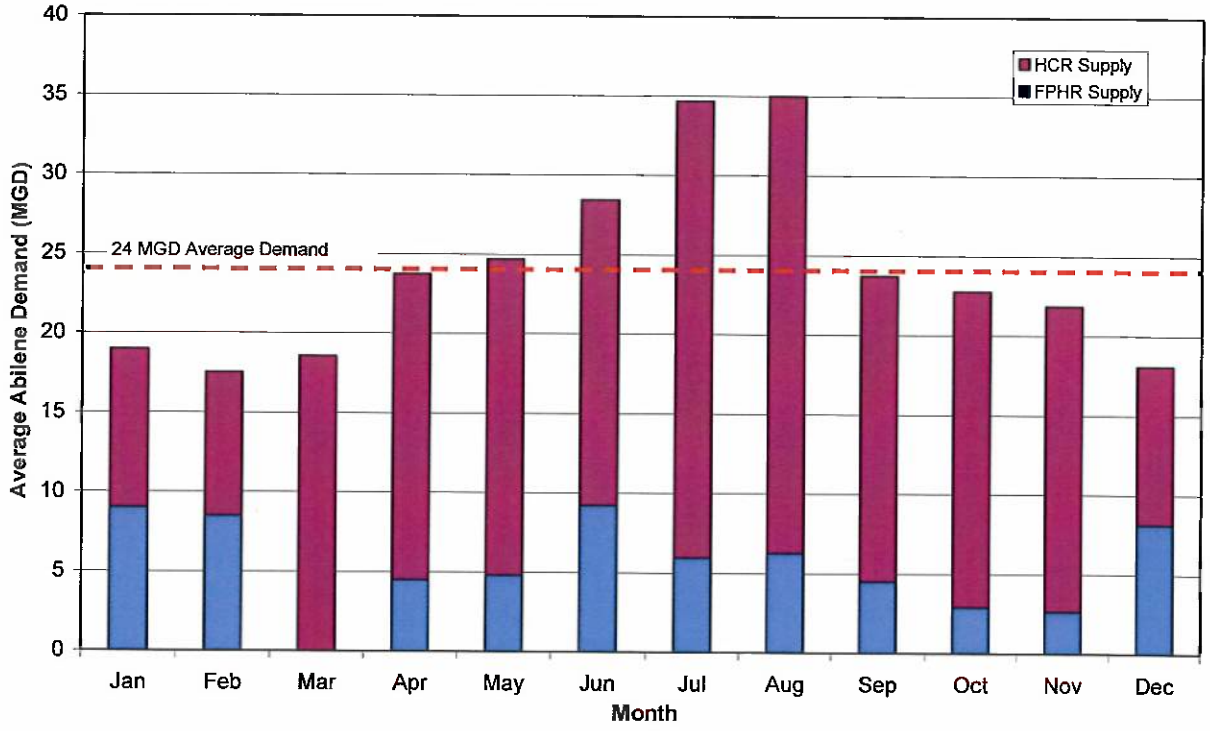


Figure 4B – FPH/HCR Blend Ratios for 24 MGD Demand (with up to 3 HCR pumps on)

Pumping Plan 5 - 26 MGD Abilene's FPH/HCR Demand

Fort Phantom Hill Level (ft-msl)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1636												
1635												
1634												
1633												
1632												
1631												
1630												
1629												
1628	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1627	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1626	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump	1-Pump
1625	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump
1624	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump
1623	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump
1622	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump
1621	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump
1620	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	3-Pump	3-Pump	3-Pump	2-Pump	2-Pump	2-Pump	2-Pump
1619	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	3-Pump	3-Pump	3-Pump	2-Pump	2-Pump	2-Pump	2-Pump
1618	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	3-Pump	3-Pump	3-Pump	2-Pump	2-Pump	2-Pump	2-Pump
1617	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	3-Pump	3-Pump	3-Pump	2-Pump	2-Pump	2-Pump	2-Pump
1616	2-Pump	2-Pump	2-Pump	2-Pump	2-Pump	3-Pump	3-Pump	3-Pump	2-Pump	2-Pump	2-Pump	2-Pump
1615												

Figure 5A – FPH Triggers for Plan 5 - 26 MGD Abilene's FPH/HCR Demand

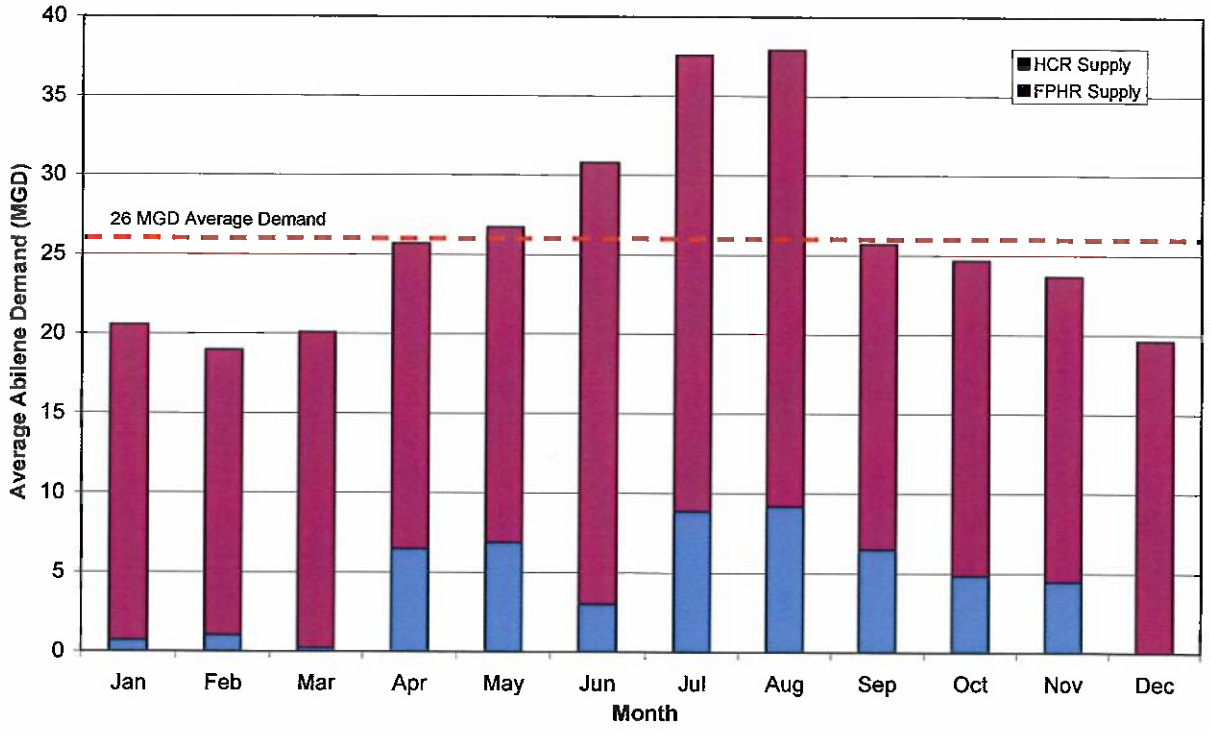


Figure 5B – FPH/HCR Blend Ratios for 26 MGD Demand (with up to 3 HCR pumps on)

Recommendation for Use of New Pumping Plans

Based on analyses using the AbileneMSM, five new pumping plans were developed for operating the HCR pipeline pumps while maintaining critical levels in FPH and minimizing pumping costs. HDR recommends that the City adopt the pumping plans contained in this document for future operations of the HCR pipeline pumps. These new plans will replace the previous plan used since 1998. Figure 6 shows cumulative system cost for the new pumping plan and compares these costs with the previous 1998 operating plan for the same demand of 18 MGD. This figure shows that over the 67-year timeframe, the City would save about $3,000,000 by operating under the new plan. Figure 7 shows a comparison of the frequency of annual total system costs for the new and previous plans for a demand of 18 MGD. Both figures show how the new pumping plan results in reduced pumping costs compared to the previous plan for the same level of demand. Similar results are obtained when comparing demands of 20, 22, 24 and 26 MGD. HDR recommends that the City utilize these new pumping plans when making operational decisions regarding the FPH/HCR system.

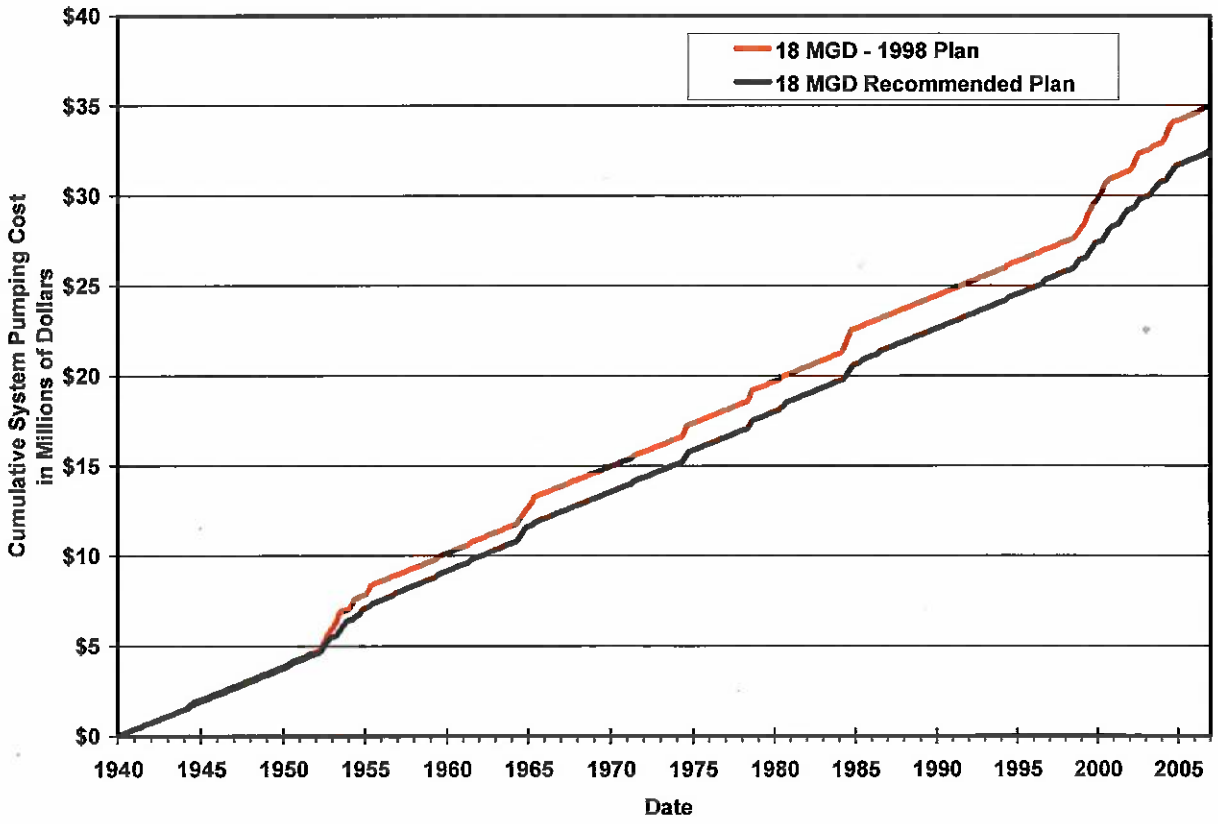


Figure 6 – Comparison of Cumulative Cost for Recommended Pumping Plan and 1998 Plan for 18 MGD FPH/HCR Demand

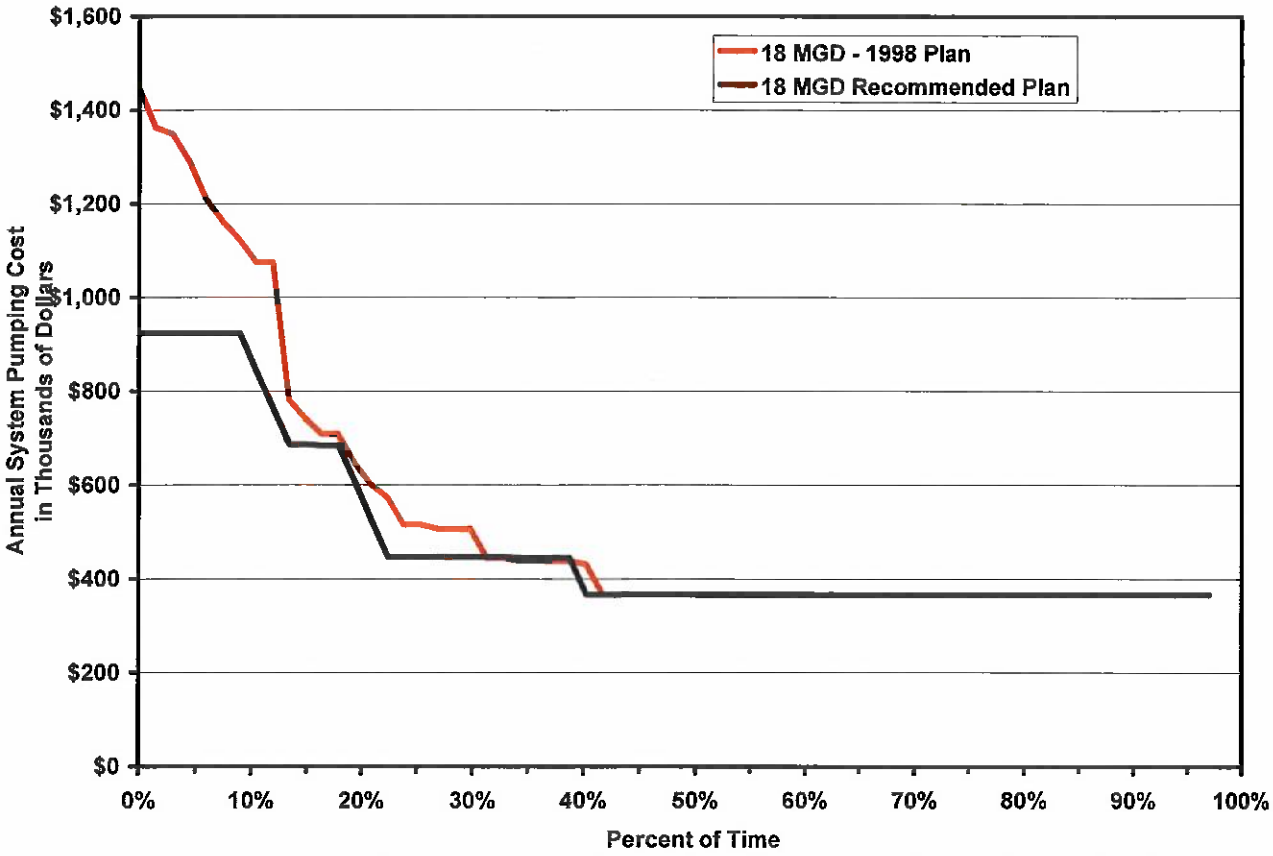


Figure 7 – Comparison of Frequency of Annual Cost for Recommended Pumping Plan and 1998 Plan for 18 MGD FPH/HCR Demand

Figures 8 and 9 show lake level frequency plots for FPH for the various pumping policies. Figure 8 compares the current plan (orange line) with the recommended plan (black line). The graph shows that the current plan results in a higher FPH lake level more of the time. However, this higher lake level comes with the higher costs that are shown in Figures 6 and 7. Figure 9 shows a comparison of FPH levels for all the recommended pumping policies considering demands of 18, 20, 22, 24, and 26 MGD. Figure 9 shows that as demand increases, FPH levels decrease most of the time but the minimum level of 1616 ft-msl is always maintained as pumping from HCR increases as the FPH level decreases.

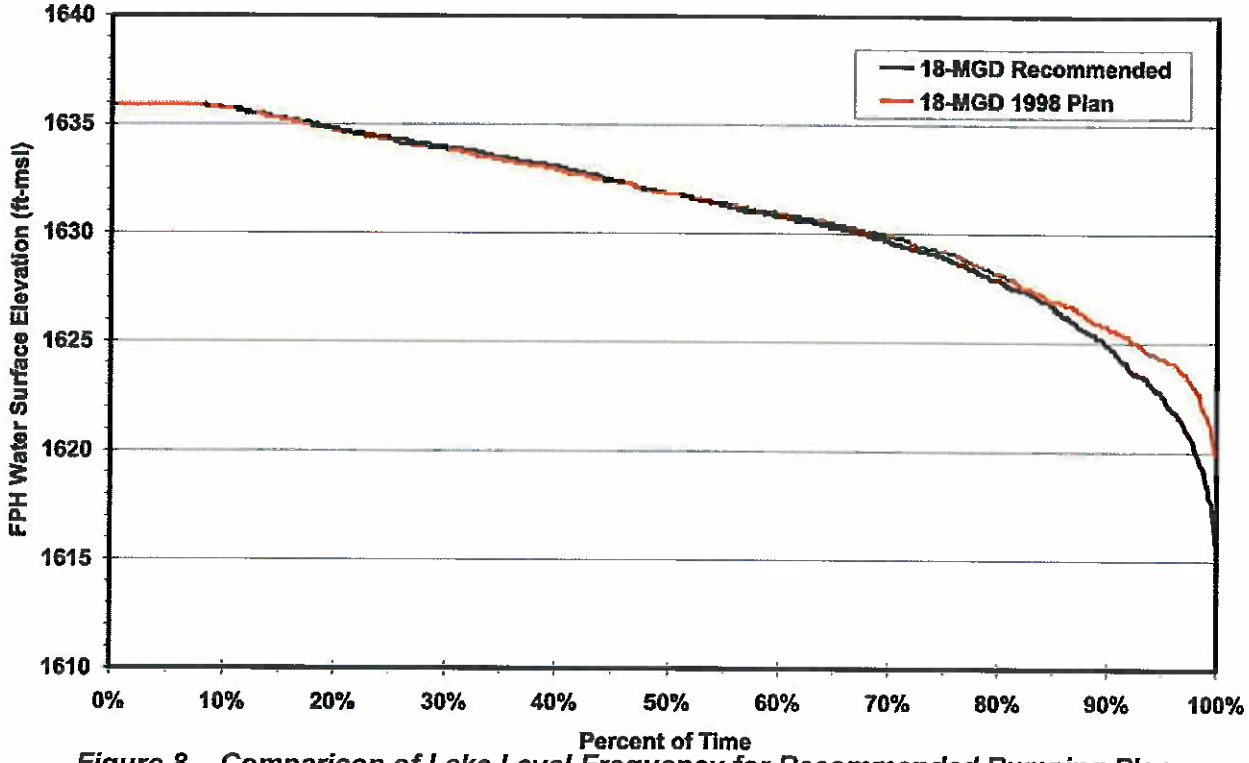


Figure 8 – Comparison of Lake Level Frequency for Recommended Pumping Plan and 1998 Plan for 18 MGD FPH/HCR Demand

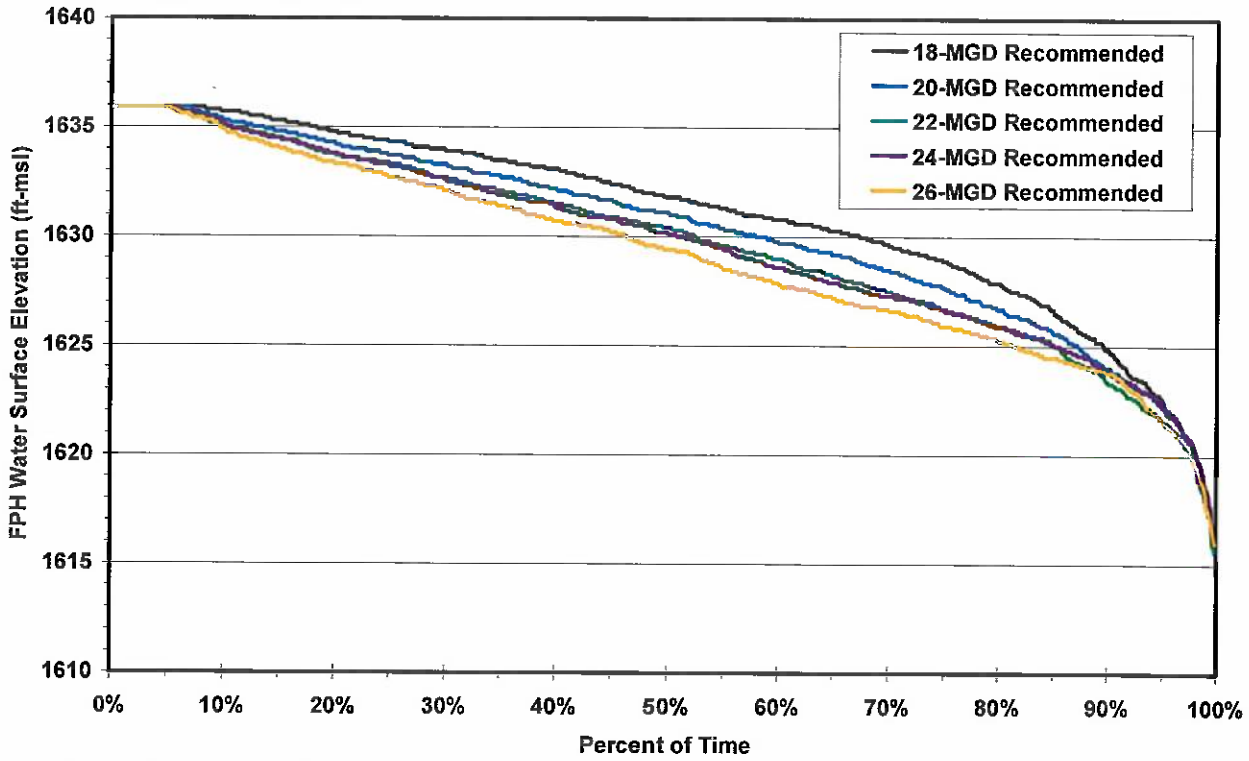


Figure 9 – Comparison of Lake Level Frequency for all Recommended Pumping Plans

Comparison of Changes in Water Quality

The AbileneMSM computes estimates of monthly average concentrations for three constituents; total dissolved solids (TDS), chlorides and sulfates. Two pairs of model analyses were performed for both Plan 1 (18 MGD) and Plan 5 (26 MGD) considering the new recommended pumping plan and the 1998 plan. Results of these analyses are shown on Figure 10 for the two 18 MGD pumping plans and on Figure 11 for the two 26 MGD pumping plans. Figure 10 shows that for the 18 MGD pumping plans, the new pumping plan provides better water quality to the City almost all of the time. Figure 11 shows a comparison of the two 26 MGD pumping plans and shows that 90% of the time the new plan provides better water quality and that during the other 10% of the time (extreme drought conditions) both plans generally provide about the same quality.

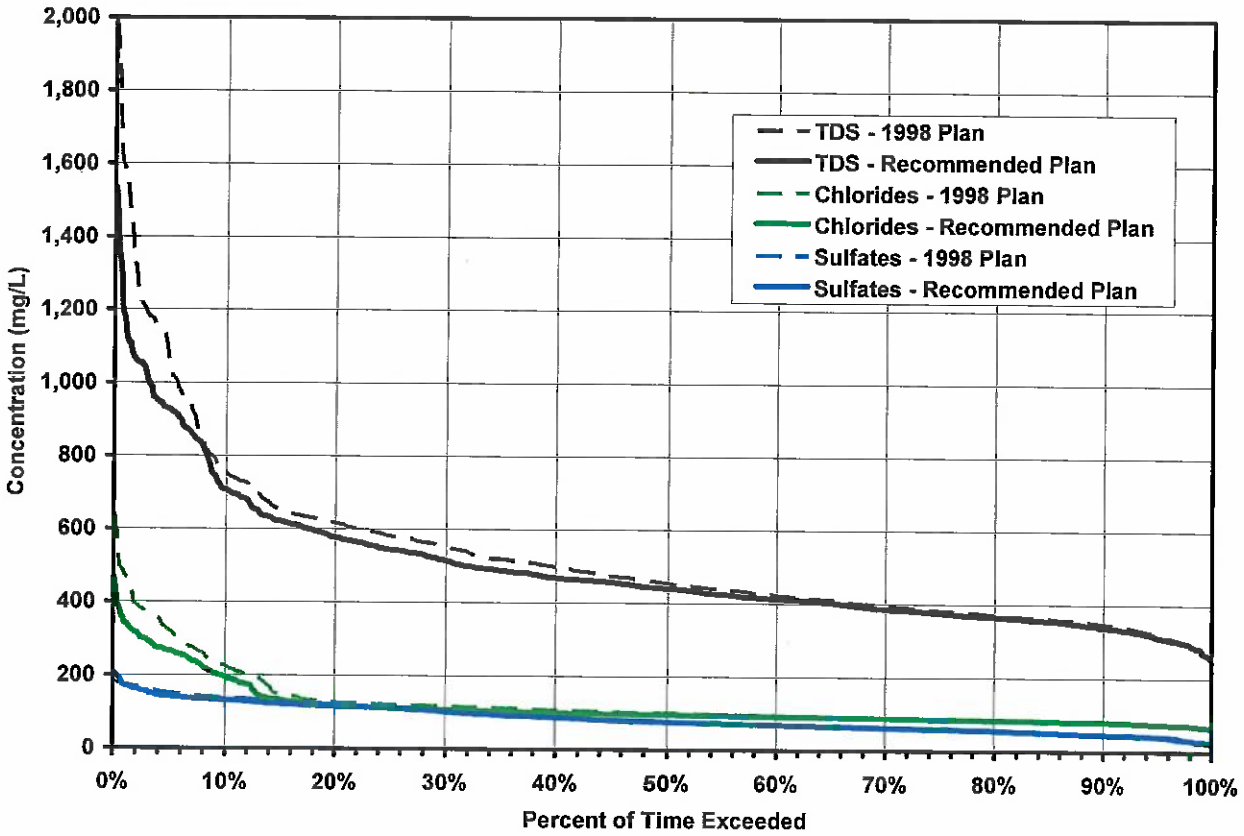


Figure 10 – Comparison of Frequency of Occurrence of Blended Water Quality at WTP's for 18-MGD FPH/HCR Demand

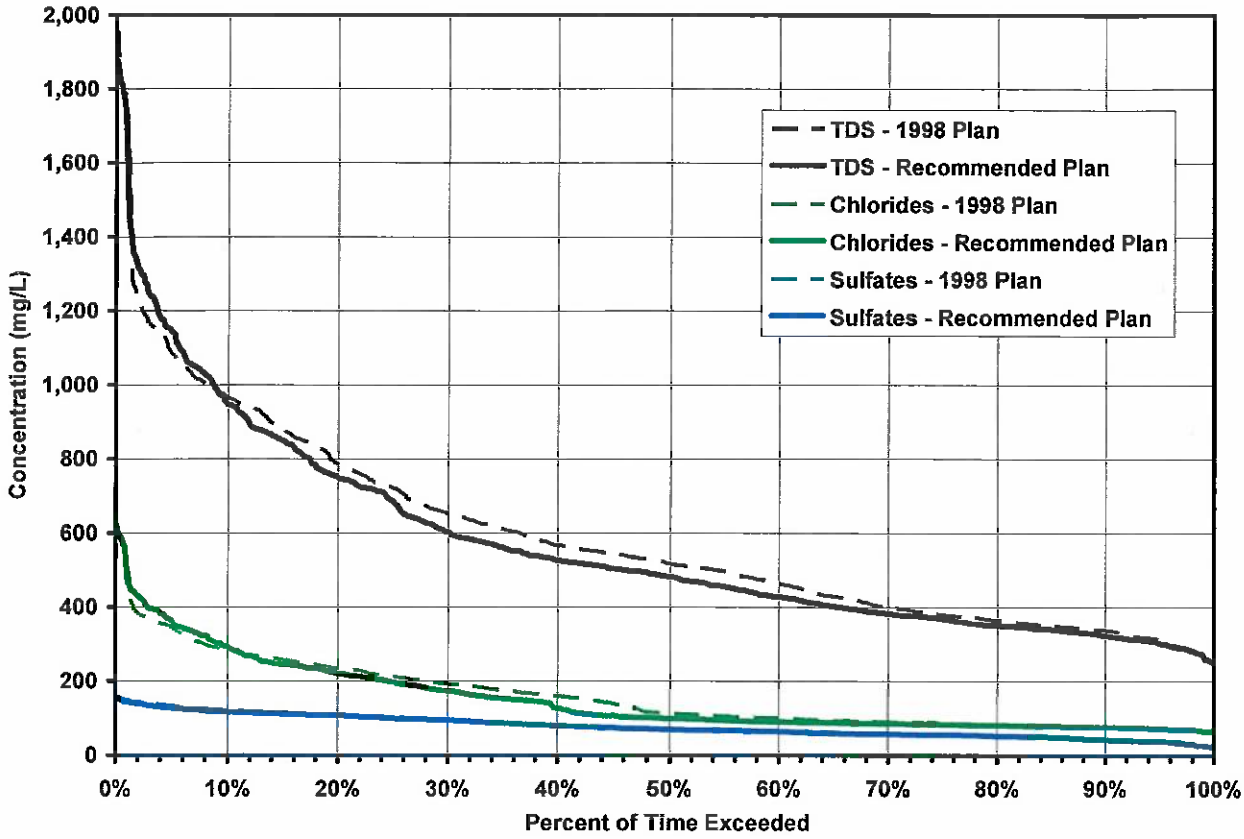


Figure 11 – Comparison of Frequency of Occurrence of Blended Water Quality at WTP's for 26-MGD FPH/HCR Demand

Appendix E

Resolution Adopting the Water Conservation Plan and Affirming Drought Contingency Plan Ordinance

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ABILENE, TEXAS, APPROVING THE 2024 WATER CONSERVATION PLAN UPDATE AND AFFIRMING THE DROUGHT CONTINGENCY PLAN ORDINANCE AS ADOPTED.

WHEREAS, Texas Administrative Code (TAC) Chapter 288, "Water Conservation Plans, Drought Contingency Plans, Guidelines and Requirements", requires water systems holding surface water rights in excess of 1,000 acre-feet per year to maintain and submit to the Texas Commission on Environmental Quality (TCEQ) a current Water Conservation Plan (WCP) and a current Drought Contingency Plan (DCP); and

WHEREAS, on _____ through Resolution _____ the City of Abilene approved updates to the City's Water Conservation Plan; and

WHEREAS, the City maintains a Drought Contingency Plan ordinance (under Chapter 32, Article VI of the City of Abilene Municipal Code, Water Conservation Plan ordinance), last amended on _____ through Resolution _____; and

WHEREAS, the City is committed to enacting and implementing a Water Conservation Plan that will increase water use efficiency and ensure the longevity of the City's water supplies; and

WHEREAS, the TCEQ requires each WCP to be updated at least every five years, with this update submitted to the TCEQ by May 1, 2024; and

WHEREAS, in order to comply with the TCEQ requirement, staff desires to update the Water Conservation Plan at this time; and

WHEREAS, the TCEQ requires each DCP to be reviewed and, if needed, updated at least every five years with this submittal due to the TCEQ by May l, 2024; and

WHEREAS, in order to comply with the TCEQ requirement, staff desires to have the Drought Contingency Plan ordinance affirmed with no changes at this time;

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ABILENE, TEXAS:

Part 1: That the 2024 update to the City of Abilene Water Conservation Plan shall be approved as presented.

Part 2: That the 2024 updates to the Water Conservation Plan, which include the following system inventory information, are accepted and approved: (l) Utility Profile and Water Conservation Plan Requirements for Municipal Water Use by Retail Public Water Suppliers; (2) Profile and Water Conservation Plan Requirements for Wholesale Public Water Suppliers; (3) System Inventory and Water Conservation Plan for Agricultural Water Use Suppliers Providing Water To More than One User; and (4) Industrial/Mining Water Conservation Plan

Part 3: That Exhibit "A" provides a general summary of the changes made to address goals for total and residential water consumption, goals for wholesale, industrial and agricultural water consumption and use, and goals for water loss, which are accepted and approved.

Part 4: That Exhibit "B" provides a general summary of the Drought Contingency Plan. ordinance 2005 which is affirmed to have been reviewed without changes.

ADOPTED this _____ day of April, 2024.

APPROVED:

_____

Weldon Hurt, Mayor

ATTEST:

_____

City Secretary

APPROVED AS TO FORM:

_____

City Attorney

Appendix F

Notification to Wholesale Purchasers

April __, 2024 (NOTE: Placeholder copy only...Signed copies to be inserted for all groups)

City of Baird
328 Market St.
Baird, TX 79504-6410

Re: Update of City of Abilene Water Conservation Plan

Dear _____;

As you are aware, in accordance with requirements found in 30 Texas Administrative Code (TAC) Chapter 288, the City of Abilene (City) is required by the State of Texas to develop, implement, and maintain a Water Conservation Plan ("Plan"). The City's existing Plan, in place since the mid 1980's, was recently updated. While essential and required elements of the Plan remain unchanged, we take this opportunity to remind you (on behalf of the City of Abilene) of the requirements for your water system. A summary of the City of Abilene, Texas Water Conservation Plan is provided for your review. The full version of the plan is available upon your request.

As a wholesale water customer of the City of Abilene, your system is obligated to develop a Water Conservation Plan of your own. The requirement for your system to develop a Water Conservation Plan is found in 30 TAC §288.5 (G). We request that at the time you submit your system's plan to the State, you furnish a copy to the City of Abilene as well. Providing a copy to the City of Abilene ensures a higher degree of accuracy as Abilene updates their Plan on a regular and prescribed basis. Please call me at 325.698.5560 if I may be of assistance to you on this matter.

Sincerely,

Enprotec/Hibbs & Todd, Inc.

Jordan S. Hibbs, P.E.

c: Rodney Taylor City of Abilene

Appendix G

City of Abilene Water Rate Structure

Billing Structures

Water & Sewer Utility Rates as of November 1, 2023

Residential

Commercial

Residential Water Rates

Type of Rate / Charge / Fee	Rate / Charge / Fee Amount
First 6,000 Gallons	$3.85 per 1,000 gallons
7,000 to 15,000 Gallons	$6.55 per 1,000 gallons
Over 15,000 Gallons	$9.20 per 1,000 gallons
Customer Service Charge	Based on meter size (listed in "Monthly Fees" section)

Residential Sewer Rates

Type of Rate / Charge / Fee	Rate / Charge / Fee Amount
First 10,000 Gallons	$2.90 per 1,000 gallons
Over 10,000 Gallons	No charge
Customer Service Charge	$16.00 minimum

Monthly Residential Fees

Type of Fee	Fee Amount
Environmental Fees	$3.50 - Supports Stormwater services and Solid Waste Environmental Program
Multiple Housing Units	$2.90 for each additional living or business unit
Fire Line Sprinkler System	$2.00 per inch in diameter of the service connection

Meter Size Charges (Per Month)

Meter Size (Inches)	Fee Amount
5/8 or 3/4	$18.25 minimum per month
1	$28.00
1 1/4	$51.75
2	$86.00

Meter Size (Inches)	Fee Amount
3	$162.00
4	$243.00
6	$452.00
8	$734.00
10	$990.00

All Rates

View the City of Abilene Fee Schedule.

Commercial Water Rates

Type of Rate / Charge / Fee	Rate / Charge / Fee Amount
All Consumption Per 1,000 Gallons	$6.55 per 1,000 gallons
Customer Service Charge	Based on meter size (listed in "Monthly Fees" section)

Commercial Sewer Rates

Type of Rate / Charge / Fee	Rate / Charge / Fee Amount
All Use	$2.90 per 1,000 gallons
Customer Service Charge	$16.00 minimum

Meter Size Charges (Per Month)

Meter Size (Inches)	Fee Amount
5/8 or 3/4	$18.25 minimum per month
1	$28.00
1 1/4	$51.75
2	$86.00
3	$162.00
4	$243.00
6	$452.00
8	$734.00
10	$990.00

All Rates

View the City of Abilene Fee Schedule.

Exhibit B (Redline Version)

TABLE OF CONTENTS

WATER CONSERVATION PLAN

DROUGHT CONTINGENCY PLAN

APPENDICES

CITY OF ABILENE, TEXAS
WATER CONSERVATION PLAN

Section I. Declaration of Policy, Purpose and Intent

The City of Abilene (City) recognizes the importance of its water resources and seeks to protect and maximize those supplies. The City recognizes the importance of efficient use of our existing supplies to make them last as long as possible. The City 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. Through its direct reuse program the City provides treated wastewater effluent from the Hamby Water Reclamation Facility to a number of users throughout the City, including golf courses and universities, in order to reduce reliance on potable water. Through its indirect potable reuse program, treated wastewater effluent from the Hamby Water Reclamation Facility is discharged into Lake Fort Phantom Hill which serves as one of the City's surface water sources. The City's extensive reuse program has successfully lowered the City's water usage. The City also aggressively pursues water conservation through the enactment and implementation of this Water Conservation Plan.

The purpose of the Water Conservation Plan (Plan) is 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 that educate customers about water and wastewater facilities operations, and water conservation.

In accordance with 30 Texas Administrative Code (TAC) Chapter 288, the City of Abilene practices and promotes conservation of water through the implementation of practices described in the Texas Water Development Board's (TWDB's) *Best Management Practices (BMP) Guide for Municipal and Wholesale Users*. The City has implemented a number of those municipal BMPs identified by the TWDB in order to maximize its water conservation efforts. BMPs implemented by the City are noted throughout the Plan.

Section II. Definitions

The following words and terms, when used in this Plan, shall have the following meanings, unless the context clearly indicates otherwise (Source: 30 TAC §288.1).

A. Agricultural or Agriculture: Any of the following activities:

1. cultivating the soil to produce crops for human food, animal feed, or planting seed or for the production of fibers;

2. the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or non-soil media by a nursery grower;

3. raising, feeding, or keeping animals for breeding purposes or for the production of food or fiber, leather, pelts, or other tangible products having a commercial value;

4. raising or keeping equine animals;

5. wildlife management; and

6. planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure.

B. Agricultural use: Any use or activity involving agriculture, including irrigation.

C. Best management practices: Voluntary efficiency measures that save a quantifiable amount of water, either directly or indirectly, and that can be implemented within a specific time frame.

D. Conservation: Those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.

E. Commercial use: The use of water by a place of business, such as a hotel, restaurant, or office building. This does not include multi-family residences or agricultural, industrial, or institutional users.

F. Drought contingency plan: A strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies. A drought contingency plan may be a separate document identified as such or may be contained within another water management document(s).

G. Industrial use: The use of water in processes designed to convert materials of a lower order of value into forms having greater usability and commercial value, and the development of power by means other than hydroelectric, but does not include agricultural use.

H. Institutional use: The use of water by an establishment dedicated to public service, such as a school, university, church, hospital, nursing home, prison or government facility. All facilities dedicated to public service are considered institutional regardless of ownership.

I. Irrigation: The agricultural use of water for the irrigation of crops, trees, and pastureland, including, but not limited to, golf courses and parks which do not receive water from a public water supplier.

J. Irrigation water use efficiency: The percentage of that amount of irrigation water which is beneficially used by agriculture crops or other vegetation relative to the amount of water diverted from the source(s) of supply. Beneficial uses of water for irrigation purposes include, but are not limited to, evapotranspiration needs for vegetative maintenance and growth, salinity management, and leaching requirements associated with irrigation.

K. Mining use: The use of water for mining processes including hydraulic use, drilling, washing sand and gravel, and oil field re-pressuring.

L. Municipal use: The use of potable water provided by a public water supplier as well as the use of sewage effluent for residential, commercial, industrial, agricultural, institutional, and wholesale uses.

M. Nursery grower: A person engaged in the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or nonsoil media, who grows more than 50% of the products that the person either sells or leases, regardless of the variety sold, leased, or grown. For the purpose of this definition, grow means the actual cultivation or propagation of the product beyond the mere holding or maintaining of the item prior to sale or lease, and typically includes activities associated with the production or multiplying of stock such as the development of new plants from cuttings, grafts, plugs, or seedlings.

N. Pollution: The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

O. Public water supplier: An individual or entity that supplies water to the public for human consumption.

P. Residential use: The use of water that is billed to single and multi-family residences, which applies to indoor and outdoor uses.

Q. Residential gallons per capita per day: The total gallons sold for residential use by a public water supplier divided by the residential population served and then divided by the number of days in the year.

R. Regional water planning group: A group established by the Texas Water Development Board to prepare a regional water plan under Texas Water Code §16.053.

S. Retail public water supplier: An individual or entity that for compensation supplies water to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants when that water is not resold to or used by others.

T. Reuse: The authorized use for one or more beneficial purposes of use of water that remains unconsumed after the water is used for the original purpose of use and before that water is either disposed of or discharged or otherwise allowed to flow into a watercourse, lake, or other body of state-owned water.

U. Total use: The volume of raw or potable water diverted and provided by a public water supplier to billed customer sectors or nonrevenue uses and the volume lost during conveyance, treatment, or transmission of that water.

V. Total gallons per capita per day (GPCD): The total amount of water diverted and/or pumped for potable use divided by the total permanent population divided by the days of the year. Diversion volumes of reuse as defined in 30 TAC Section 288.1 shall be credited against total diversion volumes for the purposes of calculating GPCD for targets and goals.

W. Water conservation plan: A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water. A water conservation plan may be a separate document identified as such or may be contained within another water management document(s).

X. Wholesale public water supplier: An individual or entity that for compensation, diverts and supplies water to another for resale to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants as an incident of that employee service or tenancy when that water is not resold to or used by others, or an individual or entity that conveys water to another individual or entity but does not own the right to the water which is conveyed, whether or not for a delivery fee.

Y. Wholesale use: Water diverted and sold from one entity or public water supplier to other retail water purveyors for resale to individual customers.

Section III. Utility Profile Summary

The City supplies treated potable water to municipal, industrial and wholesale users, limited amounts of raw water to some industrial and agricultural users, and one public water supplier, and treated wastewater for reuse to agricultural users and to irrigation users as reclaimed water (recognized under Municipal BMP 8.3). The City holds Certificate of Convenience and Necessity (CCN) Number 11823. Abilene's municipal, industrial and agricultural use customers are located within Abilene's CCN area encompassing approximately 108 square miles as depicted in the service area map in Appendix A.

Abilene's wholesale service area for potable water encompasses approximately 874 square miles situated outside of Abilene's CCN. Maps of the potable water wholesale service area have been included in Appendix A. A more detailed utility profile is included in Appendix B. The utility profile is summarized as follows.

A. Population

Abilene's population in the year 2023 as estimated using information supplied by the Texas Water Development Board (TWDB) for the Brazos G Regional Water Planning Group is estimated to be 124,262 and is projected to reach 134,466 by 2030. Abilene supplies treated water to wholesale purchasers who in turn resell that water to their system users. Total population of wholesale users receiving potable water in the year 2023 is estimated to be 33,736 and is projected to reach 42,976 persons by the year 2030. Table 1 provides population figures for City and Abilene's potable water wholesale users for the previous five years.

Table 1: Population for City of Abilene and Potable Water Wholesalers for Preceding Five Years

Year	Abilene Population	Wholesale Population
2019	121,994	33,164
2020	122,542	33,273
2021	123,115	33,427
2022	123,688	33,581
2023	124,262	33,736
Source: 2021 Regional Water Plan, and Texas Drinking Water Watch		

Table 2 depicts projected population figures for Abilene and Abilene's wholesale users through the year 2060.

Table 2: Projected Population for City of Abilene and Potable Water Wholesalers

Year	Abilene Population	Wholesale Population
2030	134,466	42,976
2040	145,047	46,149
2050	153,959	48,877
2060	162,895	51,985
2070	172,845	55,425
Source: 2026 Regional Water Plan, and Texas Drinking Water Watch		

B. Customer Data and Water Use Data

On average, the City diverts approximately 23,800 acre-feet per year of raw water from its surface water sources to satisfy the demands of raw and treated water users. The City produces an average of 22,500 acre feet per year of treated surface water from its three surface water treatment plants. The raw water diverted by the City goes to some raw water industrial and irrigation users, one public water supplier (supplemental supply for the City of Ballinger) and for production of potable water at the City's treatment plants.

Abilene's water customers consist of a mixture of residential, commercial, industrial, wholesale, institutional and irrigation users. The City serves approximately 52,383 residential connections, 5,416 commercial connections, 1,140 institutional connections, and 43 industrial connections. Wholesale customers ~~are those entities~~

that purchase treated potable water from Abilene for resale and are summarized in Table 3.

Currently 25 contracted reclaimed water customers citywide and an additional approximately 10 agricultural irrigators around the Hamby Water Reclamation Plant utilize treated wastewater for agricultural and irrigation use. Supplemental raw water of 280 acre feet per year is currently contracted to Ballinger.

Abilene customers including residential, commercial, industrial, and institutional users use approximately 87% of the total water delivered from the City's potable water treatment works while wholesale potable water customers use approximately13% of the total water delivered from the City's treatment works. Table 4 summarizes the expected water use figures for Abilene municipal and wholesale potable water users over the next decade.

Table 3: City of Abilene Wholesale Potable Water Purchasers

Wholesale Customer	Contracted Amount (ac-ft/yr)
City of Baird	77
Blair WSC	77
City of Buffalo Gap	153
City Clyde	307
Eula WSC	61
Hamby WSC	308
Hawley WSC	307
City of Lawn	153
City of Merkel	353
Potosi WSC	307
S.U.N. WSC	230
Steamboat Mountain WSC	307
Tuscola Taylor County WCID 1	92
City of Tye	184
View-Caps WSC	199
Total	**3,115**
Source: City of Abilene Records	

Table 4: Projected Water Demand for the Coming Decade

Year	Abilene Population	Wholesale Population	Abilene Demand (gal/yr)	Wholesale Demand (gal/yr)	Total Demand (gal/yr)
2025	129,824	39,592	7,187,947,209	1,367,094,675	8,555,041,884
2026	130,752	40,268	7,297,042,124	1,432,495,609	8,729,537,733
2027	131,681	40,945	7,406,137,039	1,497,896,544	8,904,033,583
2028	132,609	41,622	7,515,231,953	1,563,297,479	9,078,529,433
2029	133,538	42,299	7,624,326,868	1,628,698,414	9,253,025,282
2030	134,466	42,976	7,733,421,783	1,694,099,349	9,427,521,132
2031	135,524	43,293	7,842,516,698	1,707,361,485	9,549,878,183
2032	136,582	43,611	7,951,611,613	1,720,623,620	9,672,235,233
2033	137,640	43,928	8,060,706,527	1,733,885,756	9,794,592,284
2034	138,698	44,245	8,169,801,442	1,747,147,892	9,916,949,334
Source: 2026 Regional Water Plan, and Texas Drinking Water Watch					

C. Water Supply System

1. Water Sources

Abilene's water sources are presented in Table 5. Appendix D presents Abilene's Reservoir Operations Plan, outlining the coordinated use of supplies from Lake Ft. Phantom Hill and Hubbard Creek Reservoir. Use of the Reservoir Operation Plan optimizes raw water supplies delivered from these sources.

Table 5: Water Sources

Source	Amount (ac-ft/yr)
Lake Fort Phantom Hill	9,316
Hubbard Creek Reservoir [1]	13,080
Lake O.H. Ivie [2]	~~6,720~~13,441
Possum Kingdom Lake [3, 4]	~~19,418~~17,282

[1] Delivered under contract from the West Central Texas MWD.
[2] Delivered under contract from the Colorado River MWD. Amount limited to current treatment capacity of approximately 12 million gallons per day (MGD).
[3] Abilene has executed various System Water Availability Agreements with the Brazos River Authority which total 19,418 acre-feet per year. Due to elevated dissolved solids in Possum Kingdom requiring advanced treatment, 89% (17,282 acre-feet per year) is considered available as a water source.
[4] Abilene contracted in 2024 with the Palo Pinto County Municipal Water District No. 1 for 3,000 acre-feet per year of its Possum Kingdom supply. During the term of the contract, Abilene's available water supply from Possum Kingdom would be reduced by 2,670 acre-feet per year (89% of 3,000 acre-feet per year).

Raw surface water is supplied to Abilene's treatment works from several sources. The City owns and holds surface water rights to 30,690-acre feet per year (ac-ft/yr) from Lake Fort Phantom Hill, of which 25,690 ac-ft/yr are for municipal purposes, 4,000 ac-ft/yr are for industrial purposes, and 1,000 ac-ft/yr are for irrigation. The Clear Fork Diversion, owned and operated by Abilene, allows a maximum of 30,000 ac-ft/yr to be diverted from the Clear Fork of the Brazos to Lake Fort Phantom Hill. The City holds ~~19,418~~

ac17,282 ac-ft/yr of available water from Possum Kingdom Lake for municipal water use.

The City owns and is allocated use of 1,675 ac-ft/yr of water for municipal purposes from Lake Abilene. Lake Abilene, however, is not considered a dependable supply by the City and is currently not used. The City also holds surface water rights to 3,880 ac-ft/yr from Lake Kirby, also owned by Abilene, for multiple use purposes. Hubbard Creek Reservoir, owned and operated by the West Central Texas Municipal Water District, provides by contract 13,080 ac-ft/yr of raw surface water for use by the City. Abilene may utilize by contract up to 16.54% of the safe yield of Lake O.H. Ivie, however, this source is limited by current treatment capacity to 13,441 ac-ft/yr.

2. Water Treatment

A pump station located on the eastern bank of Lake Ft. Phantom Hill pumps raw surface water from Lake Ft. Phantom Hill to the Northeast Treatment Plant and the Grimes Treatment Plant. A raw water delivery system consisting of two parallel pipelines can provide up to 27 million gallons per day (MGD) from Hubbard Creek Reservoir to the Ft. Phantom Hill delivery system. During times when water shortage requires supplementing surface water from the City's other sources, raw surface water may be pumped from Possum Kingdom Lake to the Raw Water Roughing Facility in Breckenridge to undergo treatment to reduce the total dissolved solids concentration in the raw water from Possum Kingdom Lake. The water treated at the roughing facility is pumped to the raw water delivery system from Hubbard Creek Reservoir to Abilene and is subsequently treated at the Grimes and Northeast water treatment plants (WTPs) as described below. Raw water is pumped approximately 50 miles from Lake O.H. Ivie to the Hargesheimer Water Treatment Plant located on Highway 83/84 near Tuscola. A pump station on the banks of the Clear Fork of the Brazos River, near Lake Ft. Phantom Hill provides diversion pumping of up to 30,000 ac-ft/yr into Lake Ft. Phantom Hill.

The City's Water Treatment System consists of three treatment plants having a maximum rated treatment capacity of 62 MGD (49.5 MGD sustained capacity). The Northeast Water Treatment Plant on East Lake Road has a rated capacity of 25 MGD (sustained capacity of 22.5 MGD) and treats raw water drawn from Lake Ft. Phantom Hill and Hubbard Creek Reservoir. The Grimes Water Treatment Plant on East Highway 80 has a rated treatment capacity of 25 MGD (sustained capacity of 15 MGD) and treats water drawn from Lake Ft. Phantom Hill and Hubbard Creek Reservoir. The Hargesheimer Water Treatment Plant located on Highway 83/84 near Tuscola has a micro-filtration and a rated and sustained reverse osmosis/ blended capacity of 12.0 MGD, and treats raw water drawn from Lake O.H. Ivie.

3. Water Distribution

The City's water distribution system provides economical and compatible facilities that are capable of furnishing sufficient water at suitable pressures to both Abilene retail and wholesale purchasers. The system consists of approximately 955 miles of underground water mains, twelve pumping stations, seven ground storage tanks, eight elevated storage tanks, over 13,400 valves, over 3,215 fire hydrants, and nearly 43,000 meters.

After the water is processed at the treatment plants, it is stored in ground and elevated storage tanks with a combined volume of 38.60 million gallons. The distribution network is laid out in a continuous looped system to circulate water and maintain constant system pressure. Pumping stations are located strategically throughout the system to pump water, maintain uniform pressure and maintain storage tank levels.

Treated water from the Abilene treatment plants enters the potable water wholesalers' systems through metered interconnections. According to TCEQ's records as available through the Texas Drinking Water Watch (TDWW), production and delivery capacity of the wholesale purchasers' systems amount to approximately 22.3 MGD. Based on TDWW records, ground storage capacity within the wholesalers' systems is approximately 5.0 million gallons while total elevated and pressure storage volume is approximately 4.5 million gallons.

D. Wastewater System

1. Wastewater Collection

Abilene's wastewater collection system consists of a network of approximately 670 miles of sewers, five lift stations, and approximately 10,000 manholes serving the cities of Abilene, Tuscola, Tye and the Hawley Independent School District. Sewage flows by gravity, aided when necessary by lift stations, through the collection system into the Buck Creek Pump Station, which has a rated pumping capacity of approximately 24 MGD. Sewage is metered at the Buck Creek Pump Station and pumped approximately five miles to the wastewater treatment plant. Collected wastewater is treated at the City's Hamby Wastewater Reclamation Plant which is operated under a permit issued by the TCEQ.

2. Wastewater Treatment

When wastewater reaches the Hamby treatment facilities northeast of town, it undergoes full biological treatment that includes grit removal, screening, membrane bioreactor treatment, and disinfection. A portion of the treated effluent is either discharged to Deadman Creek via Outfall 001 or is sent to

reuse customers/Kirby Lake through Outfall 002. A portion of the effluent from the AT Storage Basin may also be sent to the advanced treatment processes where it undergoes treatment via two advanced treatment trains. Advanced Treatment Train 1 consists of reverse osmosis treatment while Advanced Treatment Train 2 includes ozonation and BAC filtration. Effluent from both advanced treatment trains are blended together and then chemically disinfected, pH adjusted, aerated, dechlorinated and discharged through Outfall 003 to Lake Fort Phantom Hill which serves as one of the City's three surface water sources. The permitted capacity of the Hamby facility is 22.0 MGD.

Wastewater quality is protected against industrial pollution through Abilene's Industrial Pre-Treatment Program. Industrial users are required to treat wastewater to specific standards before it is released into the municipal sanitary sewer system. Irrigators in and around the City reuse some of the treated effluent (recognized under Municipal BMP 8.3). The remainder is discharged to Deadman Creek by way of Freewater Creek or is discharged to Lake Kirby by way of the City's reclaimed water system. Sewage biosolids are disposed of in a sludge disposal unit at the Hamby treatment plant site.

Section IV. Water Conservation Goals

A. Municipal Use Goals

The 5- and 10-year goals (also referred to as targets) for total per capita water use by City users is to maintain per capita water use at or below 147 gallons per capita per day (gpcd) by the end of 2029, and at or below 146 gpcd by the end of 2034. The 5- and 10-year goal for residential per capita water use by City users is to maintain residential per capita water use at or below 74 gpcd by the end of 2029 and 73 gpcd by the end of 2034. The 5- and 10-year per capita water loss goal is to maintain per capita water loss at less than 8 gpcd by the end of 2029 and 7 gpcd by the end of 2034. These goals are set in accordance with the 2026 Regional Water Plan and City records.

B. Wholesale Use Goals

Wholesale potable water users served by the City, located outside the City's CCN coverage area, historically use approximately 77 gpcd of water supplied by Abilene. The 5- and 10-year goals for wholesale users supplied potable water by the City is to maintain per capita use at 76 gpcd by the end of 2029 and 75 gpcd by the end of 2034 with loss rates for wholesale water deliveries to the wholesale users maintained at less than 15%. These goals are set in accordance with contracted water sales totals with Abilene's wholesale potable water ~~water~~ users.

C. Industrial Use Goals

The 5- and 10-year target for industrial water savings is to maintain source water diversion for processing, wash-down, transport, dust control and sanitary/domestic uses by current industrial users at not more than 500 acre-feet per year through the end of 2029 and 2034. The 5- and 10-year goals were developed considering Abilene's current industrial user base.

D. Agricultural Use Goals

The 5- and 10-year target for agricultural water savings is to maintain the irrigation requirement at or below the area agronomic standard of 24-inches per acre per year through the end of 2029 and 2034. It should be noted that occasionally the City may allow the agronomic standard rate to be exceeded in order to flush the crop root zone to improve plant productivity, livelihood, growth enhancement and overall reduction in crop water demand.

Section V. Metering Devices

It is Abilene's policy to purchase meters that meet at least the minimum standards developed by the American Water Works Association. All metering devices used to meter water diverted from the source of supply are accurate to within plus or minus 5% to measure and account for water diverted from the source of supply. All service connections in the distribution system are metered. Meters are systematically tested and replaced, if necessary, to assure reliability of meter performance. The City has established the following meter maintenance and replacement programs:

Meter Type	Calibration Period and Replacement
Master Meters	Annually and replaced, as needed
1-1/2 inch and larger	Replaced as needed [1, 2]
1-1/2 inch and smaller	Replaced as needed [1, 2]

Notes [1] Representative meter samples are tested annually to verify meter accuracy.
[2] Meters are replaced as necessary.

The wholesale water purchasers are responsible for metering device installation, maintenance and calibration for meters located within their service areas.

Section VI. Universal Metering

It is Abilene's policy to individually meter all water usage, except for fire protection and flushing to maintain a safe potable water distribution system, including all new construction within the City's CCN coverage area. Combined with an aggressive leak detection and repair program, electronic data collection devices, and a computerized billing system, Abilene's universal metering program has resulted in a water delivery accuracy rate within industry operating standards and comports with Municipal BMP 4.1.

Section VII. Measures to Determine and Control Unaccounted-For Uses of Water

The record management system utilized by the City segregates water sales and users into user classes of single-family residential, multi-family residential, commercial, public/institutional, and industrial. It is Abilene's policy to investigate customer complaints of low pressure and possible leaks. Abilene visually inspects suspected leaks and makes quick and timely repairs to those leaks when detected. Abilene utilizes a record management system which records water pumped, water delivered, water sales and water losses to track water transmission, distribution, and delivery to customers. Customer delivery is segregated by user class. This information is used to evaluate the integrity of the water delivery system from source to end user to control and minimize unaccounted-for uses of water.

Section VIII. Water Conservation Program

The City's Water Conservation Program utilizes Supply Management Methods and Demand Management Methods to work towards optimizing use of Abilene's water resources.

A. Supply Management Program Elements consist of:

1. Coordinated use of water supplies to ensure the City withdraws water from its water supply reservoirs in a manner that ensures optimum dependable yield and efficiency of operation.

2. Watershed management to ensure diversion channels, creeks, natural drainage ways, etc. discharging to Lake Ft. Phantom Hill are clean, relatively straight, and obstruction-free to increase captured water flow while minimizing flooding potential in populated areas, and reducing siltation entering Lake Ft. Phantom Hill.

3. Metering all service connections to ensure maximum return for delivered water while minimizing unaccounted-for water loss.

4. Leak detection and repair to minimize unaccounted-for water loss.

5. Treated wastewater reuse and recycling to lessen the demand for raw water used to produce potable water for irrigation uses pursuant to Municipal BMP 8.3.

B. Demand Management Program Elements consist of:

1. Water pricing as a mechanism for encouraging water customers to conserve pursuant to Municipal BMP 3.1.

2. Regulations for conserving water via the Water Conservation Plan and the Drought Contingency Plan ordinance adopted by the City.

3. Plumbing Code for the City requires maximum standard plumbing fixture capacities not be exceeded.

4. Continuing education programs to increase public awareness of supply, treatment and conveyance systems in Abilene, to increase public awareness of the benefits and need for conservation, and to make information about practical cost-effective methods and technologies to achieve conservation available (Effort recognized under Municipal BMPs 6.1, 6.2 and 6.3).

5. The City utilizes year-round water conservation measures to restrict certain potable water use activities by all customers of the Water Utility System (recognized under Municipal BMP 5.3). Pursuant to this measure all potable water irrigation by commercial, industrial and residential customers utilizing individual sprinklers, or sprinkler systems, on lawns, gardens, landscaped areas, trees, shrubs or other plants may water only on designated day(s) and then only during designated hours as outlined in the City's Drought Contingency Plan ordinance.

Section IX. Public Education

Public education is an ongoing and integral part of Abilene's water conservation programs. A public information and education program developed and implemented by the City is an important component in the City's water conservation strategy. Water Utilities education programs have these principal objectives including:

- Increase public awareness of supply, treatment, and conveyance systems in Abilene, and
- Increase public awareness of the needs for and benefits of conservation.

A variety of communication techniques either have or are being utilized including: electronic information materials via Abilene's internet website; newspaper supplements; presentations at neighborhood, civic, social, and professional organizations; public service announcements; and public school and university programs (recognized under Municipal BMP 6.1).

A. Schools

Water and conservation has been introduced into area schools. Presentations are made directly to classes of all ages, including university level (recognized under Municipal BMP 6.2). Presentations are supported by a variety of printed materials. Tours of the water treatment plants are often used by area teachers as an education tool.

Water conservation is emphasized to Leadership Abilene participants. Leadership Abilene is a program sponsored by the Abilene Chamber of Commerce designed to develop competent community leaders.

Water conservation is also emphasized in the City University Program, a community leadership and involvement program that offers a way for participants to become better informed about City programs and services. The program teaches participants how to access government and elected officials and explores the value of serving on City boards and commissions. Participants go behind the scenes of City facilities, find out how various divisions operate and meet City employees who deliver City services.

B. Landscaping

Implementation of the Xeriscape Program began in 1986 with the creation of a Xeriscape Advisory Committee composed of representatives of the landscape industry, business and residential communities. The committee assisted in the development of an informational brochure and plant list.

A public information campaign called "Project Xeriscape" has included public service announcements, workshops, displays, landscape competition, a coloring contest for children, and distribution of materials. The City's website offers useful information regarding xeriscaping and water conservation landscaping measures. The City's efforts have increased landscape irrigation conservation and are recognized under Municipal BMPs 5.3 and 7.5.

In addition, the City has actively pursued the transfer of golf course irrigation from potable water use to reclaimed water use. Currently, all golf courses within the City are irrigated using reclaimed water, an effort reflective of Municipal BMP 5.2.

C. Commercial/Industrial Conservation

The Water Utilities Department works with area businesses to keep water bills as low as possible by conserving water use. Written contracts, industrial inspections, and individual responses to public inquiries about water and waste help to focus conservation efforts towards the commercial sector needs (recognized under Municipal BMP 7.1).

D. Agricultural Conservation

In order to lessen the demand on the City's raw water sources the City relies on reuse of treated wastewater for supply to irrigators located within the City's service area fulfilling Municipal BMP 8.3. It is the City's policy to assist irrigators where feasible and practical to utilize reclaimed wastewater as their irrigation supply water. The City strives to work closely with local irrigation water users to ensure effective use of the City's water resources.

E. Local Media

The Water Utilities Department has prepared several public service announcements which are periodically aired on local television stations addressing the education program objectives. The Water Utilities Department routinely presents information on local public broadcasting systems addressing the objectives described above (recognized under Municipal BMP 6.1).

Section X. Water Rate Structure

The City has adopted a non-promotional, inverted rate structure. Under this rate structure the billing rate increases as individual water consumption increases. This rate structure promotes conservation and shifts the cost of supplying water to those consumers using it most. The City's rate structure incents conservation and comports with Municipal BMP 3.1. A copy of the City's current water rates is provided in Appendix G.

Section XI. Means of Implementation and Enforcement

This Water Conservation Plan has been adopted by the City. A copy of the resolution adopting this Plan is included in Appendix E. The City Manager works with the Director of Water Utilities in the implementation and enforcement of the Plan, and in the City's submission of its annual water conservation implementation report. This report is used by the City to review the effectiveness of its water conservation program.

The Director of Water Utilities designates a member of the Water Utilities Department staff as a Conservation Coordinator. The Conservation Coordinator is responsible for implementation and coordination of water conservation programs (recognized under Municipal BMP 2.1).

To support the City's Water Conservation Plan and water conservation efforts, the City maintains a Drought Contingency Plan Ordinance (see City of Abilene Municipal Code Chapter 32, Article VI-Water Conservation Plan). This ordinance provides year-round water conservation measures, as well as conservation measures during times of water shortage or other emergency water supply conditions. The ordinance provides for enforcement of ordinance violations.

A. Enforcement Within Abilene's CCN Area

The Plan is enforced within the Abilene CCN coverage area by providing service taps only to customers complying with adopted ordinances, maintaining a non-declining rate structure, discontinuing service to those customers who do not pay their water bills until payment is made, and verifying new construction conforms to adopted ordinances and plumbing codes.

B. Enforcement for Abilene's Wholesale Purchasers

Wholesale customers receive written notification of Plan adoption and any subsequent Amendments. Adoption of this Plan by the City per 30 Texas Administrative Code (TAC) §288.5 obligates wholesale customers as defined in 30 TAC §288.1 to implement water conservation measures. A copy of the notification letter to wholesale users has been included in Appendix F. The City makes best efforts to ensure implementation and enforcement of the Plan by wholesale users via these contractual requirements and outreach efforts, fulfilling Municipal BMP 3.2.

Section XII. Additional Wholesale Water Contract Requirements

It is Abilene's policy to include in every wholesale water supply contract entered into or renewed after official adoption of the Plan, including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using applicable elements in 30 TAC Chapter 288. If the wholesale customer intends to resell the water, then the contract between Abilene and the wholesale customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with 30 TAC Chapter 288. These efforts are recognized as part of Municipal BMP 3.2.

Section XIII. Coordination with Brazos G Regional Water Planning Group

All of the customers served by the City are located within the Brazos G Regional Water Planning Area. Abilene has provided a copy of this Plan to the Brazos G Regional Water Planning Group.

Section XIV. Revisions to the Water Conservation Plan

The City will review and update this water conservation plan, as appropriate, based on new or updated information. As a minimum the Plan will be updated every five (5) years.

Section XV. Severability

It is Abilene's intention that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable. If, any phrase, clause, sentence, paragraph or section shall be declared unconstitutional by a valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs or sections of this Plan, since the same would not have been enacted by Abilene without the incorporation into this Plan of any such unconstitutional phrase, clause, sentence, paragraph or section.

CODE OF THE CITY OF ABILENE, TEXAS
CHAPTER 32 ARTICLE VI
WATER CONSERVATION PLAN

DIVISION 1 GENERALLY

Sec. 32-140. Declaration of Policy

In order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire prevention 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 City of Abilene hereby adopts the following regulations and restrictions on the delivery and consumption of water.

Water uses regulated or prohibited under this water conservation plan (the plan) are considered to be non-essential and continuation of such uses during times of water shortage or other emergency water supply conditions are deemed to constitute a waste of water which subjects the offender(s) to penalties as defined in Sections 32-147 through 32-155 of this Plan.

No person shall make, cause, use or permit the use of water from the City of Abilene Water Utility System for residential, commercial, industrial, agricultural, governmental or any other purpose in a manner contrary to provisions of this plan or in an amount in excess of that use permitted by the plan in effect pursuant to action taken by the mayor or his/her designee in accordance with the provisions of this Plan.

Sec. 32-141. Authorization

The Mayor, Mayor Pro Tempore, or the City Manager, if so designated, is hereby authorized, consistent with the Charter of the City of Abilene, Sections 21 and 22, to exercise those powers considered to be reasonable or necessary for the protection of persons or property in assessing the current state of our water supply and directing the City Manager to implement or terminate any stage, phase, or portion of the Water Conservation Plan. In the event that the triggering criteria specified in Section 32-145 of the Plan have been met for Stage 3-Water Emergency, or Stage 4- Water Crisis water shortage conditions, the City Manager is hereby authorized to initiate allocation of water supplies on a pro rata basis in accordance with Texas Water Code §11.039. Implementation and termination of any stage may occur, but is not mandated to occur, when conditions warrant.

Sec. 32-142. Application

The provisions of this Plan shall apply to persons, customers, and property utilizing the City Water Utility System wherever situated, including customers such as water supply corporations, and any others that receive water from the City of Abilene on a contract basis. The City shall include a provision in every wholesale water contract entered into or renewed after adoption of this Plan, including contract extensions, that in case of shortage of water in the City's water supply , the water to be distributed shall be divided by the City in accordance with Texas Water Code §11.039 among all users pro rata, according to the amount each may be entitled to, so that preference is given to no one and everyone suffers alike.

The City utilizes a variety of alternative water sources including an extensive nonpotable reuse program, and an indirect potable water reuse system. The City encourages its customers to utilize alternative water sources during periods of water shortage. These water use restrictions do not apply to the utilization of alternative water sources including nonpotable water and groundwater (well water). Customers using water from private groundwater wells on days other than those designated in this plan, or those watering from private groundwater wells during the hours of 10:00 a.m. and 6:00 p.m., must post a sign stating "WELL WATER." The sign must be properly sized and posted so it is visible from the street. The city strongly encourages the use of alternative water sources from groundwater for landscape purposes.

These water use restrictions do apply to those persons without a reclaimed water contract who divert raw surface water from Lake Kirby or Lake Fort Phantom Hill for landscape irrigation. Whenever the term or reference to water, or potable water or similar and like words are used in this "water conservation plan," it shall be understood to include the use of raw surface water from Lake Kirby and Lake Fort Phantom Hill for landscape irrigation.

These water use restrictions do apply to the time for the use of treated wastewater (reclaimed water) for landscape irrigation. Use of reclaimed water or raw water under a reclaimed water contract for landscape irrigation is only allowed during the hours of 12:00 midnight to 10:00 a.m., and from 6:00 p.m. until 12:00 midnight. All other uses of reclaimed water shall be in accordance with Title 30 Texas Administrative Code, chapter 210 and the City of Abilene's Authorization No. R10334-004, as amended.

Sec. 32-143. Regional Water Planning Groups and Public Involvement and Education

Sec. 32-143.1 Coordination with Regional Planning Groups

The service area of the City is currently located within the Brazos G Regional Water Planning Area. The City will cooperate and provide information regarding the Plan as needed to all Regional planning area groups.

Sec. 32-143.2 Public Involvement

The adoption of this Plan and any amendments will provide for public input at a public hearing held in conjunction with one of the readings of said ordinance enacting the Plan or amendments thereto.

Sec. 32-143.3 Public Education of Action on Water Conservation Stages

In conjunction with Section 32-141, the initiation and termination of any drought response stage (Water Conservation Stage) shall be announced to the public and wholesale customers at a media conference, and shall become effective immediately upon such announcement. In addition to public announcements of initiation and termination of a Water Conservation Stage and Year Round Water Use Management information, continuing public education and information regarding the Plan shall be publicized via posting on the City's website.

DIVISION 2 WATER CONSERVATION PLAN PROCEDURES

Sec. 32-144. Year Round Water Use Management

To conserve water supplies available to the City of Abilene, Year Round Water Use Management shall be implemented to restrict certain potable water use activities by all customers of the City of Abilene Water Utility System.

When conditions warrant, pursuant to Sec 32-141, the Water Conservation Plan will be implemented in accordance with the applicable provisions of this Plan.

1. Year-Round Water Use Management. The following year-round provisions shall apply to all potable water customers of the City of Abilene Water Utility System:

   a. Watering Days: Customers are encouraged to conserve water by watering their lawn areas only once every seven (7) days on one of their designated watering days.

   A customer's watering day is determined by the last digit of the house number or property address. Multi-unit properties will use the lowest address number. Customers on rural routes will use the last number of their post office box number or their route number if they do not have a post office box number. Customers at Ft. Phantom Lake will use the last number of their lake lot. Customers in trailer parks will use the last number of their lot number.

   When combined storage in Hubbard Creek Reservoir and Lake Fort Phantom Hill is above fifty (50) percent, the following three-day a week watering schedule applies:

Designated Watering Days:	
Wednesday, Friday, Sunday	Odd numbered addresses
Tuesday, Thursday, Saturday	Even numbered addresses
Monday, Wednesday, Friday	Industrial, commercial, government customers, public and private schools and universities

   When combined storage in Hubbard Creek Reservoir and Lake Fort Phantom Hill is between forty and fifty (40-50) percent, the following two (2) day a week watering schedule applies:

Designated Watering Days:	
Thursday, Sunday	Odd numbered addresses
Tuesday, Saturday	Even numbered addresses
Monday, Friday	Industrial, commercial, government customers, public and private schools and universities

   b. Watering Times:

   Watering by all commercial, industrial, and residential customers utilizing individual sprinklers, or sprinkler systems, on lawns, gardens, landscaped areas, trees, shrubs or other plants is prohibited except on designated day(s) and then only during the hours of 12:00

midnight to 10:00 am and from 6:00 pm until 12:00 midnight.

c. Watering of gardens, flowerbeds, trees and shrubs is permitted at any time of any day if:

   i. A garden hose is used and is held in the hand during the duration of the irrigation event, or

   ii. A faucet-filled container of five (5) gallons or less is used, or

   iii. A drip irrigation system such as a soaker hose, deep root water system, or bubbler is used. For the purpose of this section a drip irrigation system is defined as an irrigation device or system designed to emit water at low volumes and low pressures directly onto soil surface or below soil surface without airborne streams or droplets.

d. Irrigation of lawns is permitted at any time on any day if:

   i. A garden hose is used and is held in the hand during the duration of the irrigation event, or

   ii. A faucet-filled container of five (5) gallons or less is used.

   A Drip Irrigation System shall not be used to irrigate lawns except on designated days and at designated times.

e. New lawns that have been seeded (not to include re-seeding or overseeding existing turf), sodded or mulched may be watered daily for eight (8) minutes once during each of the following periods: 11:00 a.m. to 1:00 p.m.; 2:00 p.m. to 4:00 p.m.; 5:00 p.m. to 7:00 p.m.; and at regular intervals between 9:00 p.m. and 10:00 a.m. for a maximum of three (3) weeks. To qualify under this section, new lawns are those installed in conjunction with the construction of a new residence and for a period six (6) months thereafter or the re-tilling of an area equaling at least fifty (50) percent of an existing yard.

f. Water Wasting. The following uses of water are defined as "waste of water" and are absolutely prohibited:

   i. Allowing water to run off a property through the street, gutter, ditch, alley, or drain for more than seventy-five (75) feet from the downgrade of the property line;

   ii. Failure to repair a controllable leak, including a broken sprinkler head, a leaking valve, leaking or broken pipes, or a leaking faucet.

   iii. Operating a permanently installed irrigation system with a broken sprinkler head; a sprinkler head that is spraying over a street or parking lot because it is out of adjustment; or a sprinkler head that is misting due to high pressure.

g. Use of water from fire hydrants shall be limited to firefighting activities or other activities necessary to maintain public health, safety, and welfare. The Director of Water Utilities will review written requests on a case-by-case basis for the purchase and withdrawal of fire hydrants for land development and building construction processes.

h. Ornamental fountains are allowed if the fountain is equipped with a device for recycling water and water may be added to sustain appropriate maintenance levels only on the customer's regularly designated watering days.

i. Water may be added to swimming pools to sustain appropriate maintenance levels only on the customer's regularly designated watering days.

j. The operation of charity car washes must:

   i. Not allow water to run-off more than seventy-five (75) feet, and

   ii. Use hoses with on/off nozzles and buckets.

k. Large-scale recreational development, such as, but not limited to, water parks, shall submit a plan to the Director of Water Utilities that detail expected water consumption and maintenance requirements. Any deviation from the requirements of this ordinance will be resolved on a case-by-case method.

2. Administrative Enforcement, Presumption of Ownership & Control; Hearing Officers; Administration of Hearings, Hearings, Appeals, Payment, Subsequent Violations, Fees, and Requests for Variances as pertaining to Year Round Water Use Management are addressed in Sections 32-147 through 32-156.

Sec. 32- 145. Water Conservation Stages

WATERING DAYS

1. During Water Conservation Stages, a customer's watering day is determined by the last digit of the house number or property address. Multi-unit properties will use the lowest address number. Customers on rural routes will use the last number of their post office box number or their route number if they do not have a post office box number. Customers at Ft. Phantom Lake will use the last number of their lake lot. Customers in trailer parks will use the last number of their lot number.

If a residential customer's last number is:	Customer's watering day is:
7 or 8	Sunday
9	Monday
0	Tuesday
1	Wednesday
2	Thursday
3 or 4	Friday
5 or 6	Saturday

For example: If an address is 555 Walnut Street, the last number is five (5) and the watering day is Saturday.

For purposes of this section only, residential usage includes single-family residences, multifamily residences and apartment complexes. Non-residential customers shall follow the above schedule with the exception of the following changes:

7 or 8	Wednesday
5 or 6	Tuesday

2. Bi-weekly watering as prescribed in Stage 2 will occur according to location in East or West sides of the City, bounded on the north side of the City by Grape St. and then Pine St. to the north City Limits (north of Grape St.) and on the south side of the City by Sayles Blvd. to Buffalo Gap Road and then Buffalo Gap Road to the south City Limits.

3. Entities with large, open spaces (e.g., schools, universities, city parks, golf courses) using potable water may submit alternate watering schedules to the Director of Water Utilities except as otherwise prohibited in this ordinance. Upon his/her written approval acknowledged by the entity in question, these entities may follow the approved schedule rather than the calendar system, and will be held responsible for all the provisions of this article, based on the approved schedule.

STAGE 1 WATER ALERT

Implementation Criteria:
Combined treatment plant pumpage in excess of 45.0 MGD for two (2) consecutive days (while in year-round water use management trigger parameters); or, continually falling water storage facility levels which do not refill above fifty (50) percent overnight; or, combined storage in Hubbard Creek Reservoir and Lake Fort Phantom Hill is between thirty to forty (30-40) percent, or any unforeseen conditions that may occur that cause the City Manager to inform the Mayor of implementation.

Upon announcement and implementation by the City of Stage 1 Water Alert, the following restrictions shall apply to all persons during Stage 1 Water Alert:

1. Landscape Irrigation

   a. Irrigation by all commercial, industrial, (including agricultural irrigation), and residential customers utilizing individual sprinklers, or sprinkler systems, of lawns, gardens, landscaped areas, trees, shrubs or other plants is prohibited except on a designated day which shall be once every seven (7) days and then only during the hours of 12:00 midnight to 10:00 a.m. and from 6:00 p.m. until 12:00 midnight.

      Provided, however, irrigation of gardens, flowerbeds, trees and shrubs is permitted at any time of day if:

      i. A garden hose is used and is held in the hand during the duration of the irrigation event, or

ii. A faucet-filled container of five (5) gallons or less is used, or

iii. A drip irrigation system such as soaker hose, deep root water system, or bubbler is used. For the purpose of this section a drip irrigation system is defined as an irrigation device or system designed to emit water at low volumes and low pressures directly onto soil surface or below soil surface without airborne streams or droplets.

Irrigation of LAWNS is permitted at any time on any day if:

i. A garden hose is used and is held in the hand during the duration of the irrigation event, or

ii. A faucet-filled container of five (5) gallons or less is used.

A Drip Irrigation System SHALL NOT be used to irrigate LAWNS except on designated days and at designated times.

b. New lawns that have been seeded (not to include re-seeding or overseeding existing turf), sodded or mulched may be watered daily for eight (8) minutes once during each of the following periods: 11:00 a.m. to 1:00 p.m.; 2:00 p.m. to 4:00 p.m.; 5:00 p.m. to 7:00 p.m.; and at regular intervals between 9:00 p.m. and 10:00 a.m. for a maximum of three (3) weeks. To qualify under this section, new lawns are those installed in conjunction with the construction of a new residence and for a period six (6) months thereafter or the re-tilling of an area equaling at least (50) percent of a new yard.

2. Vehicle Washing

a. It is permissible to wash automobiles, trucks, trailers, boats, and other types of mobile equipment at any time on the immediate premises of a commercial car wash or commercial service station or at any location including a residence by using a five (5) gallon container and/or a hand held hose equipped with a quick shut-off nozzle for quick rinses.

b. If the health, safety and welfare of the public depends upon frequent vehicle cleaning, as determined by the Director of Water Utilities or his/her designee, then washing of vehicles such as emergency vehicles, aircraft, garbage trucks, and vehicles used to transport food and perishables will be allowed.

c. Charity car washes are prohibited.

3. Water may be added to swimming pools to sustain appropriate maintenance levels only on designated irrigation days.

4. Ornamental fountains are allowed if the fountain is equipped with a device for recycling water and water may be added to sustain appropriate maintenance levels only on the customer's regularly designated watering day.

5. Use of water from fire hydrants shall be limited to firefighting activities or other activities necessary to maintain public health, safety and welfare. By written approval from the Director of Water Utilities, businesses may purchase and draw water from fire hydrants for land development and building construction processes.

6. The following uses of water are defined as "waste of water" and are absolutely prohibited:

   a. Allowing water to run off a property through the street, gutter, ditch, alley, or drain for more than seventy-five (75) feet from the downgrade of the property line;

   b. Failure to repair a controllable leak; including a broken sprinkler head, a leaking valve, leaking or broken pipes, or a leaking faucet.

   c. Operating a permanently installed irrigation system with:

      i. A broken sprinkler head;

      ii. A sprinkler head that is spraying over a street or parking lot because it is out of adjustment; or

      iii. A sprinkler head that is misting due to high pressure.

   d. Washing sidewalks, driveways, parking areas, tennis courts, patios or other paved areas, except to alleviate immediate fire, health and safety hazards, or to prepare an area for pavement repair or application.

7. Commercial and Industrial Users

   a. Commercial and industrial users of water shall, in addition to complying with other applicable articles in this ordinance, reduce their monthly consumption of water by a minimum of fifteen (15) percent compared to use during the same month of the previous year.

   b. Industrial users may, in order to justify water use, present a conservation plan for approval by the Director of Water Utilities.

   c. Golf courses will submit a conservation plan for approval by the Director of Water Utilities if potable irrigation water is to be used.

STAGE 2 WATER WARNING

Implementation Criteria:
Combined treatment plant pumpage in excess of 40.0 MGD for two (2) days (while in Stage 1 Water Alert trigger parameters); or, continually falling water storage facility levels which do not refill above forty (40) percent overnight or, combined storage in Hubbard Creek Reservoir and Lake Fort Phantom Hill is between twenty to thirty (20-30) percent or, major line breaks, or pump system failure which causes unprecedented loss of capability to provide service, or any unforeseen conditions that may occur that cause the City Manager to inform the Mayor of implementation.

Upon announcement and implementation by the City of Stage 2 Water Warning, the following restrictions shall apply to all persons during Stage 2 Water Warning:

1. Landscape Irrigation

   a. Irrigation by all commercial, industrial and residential customers utilizing individual sprinklers, or sprinkler systems, of lawns, gardens, landscaped areas, trees, shrubs or other plants is prohibited except on a designated day which shall be once every two (2) weeks and then only during the hours of 12:00 midnight to 10:00 a.m. and from 6:00 p.m. until 12:00 midnight.

      Provided, however, irrigation of gardens, flowerbeds, trees and shrubs is permitted at any time of day if:

      i. A garden hose is used and is held in the hand during the duration of the irrigation event, or

      ii. A faucet-filled container of five (5) gallons or less is used, or

      iii. A drip irrigation system such as soaker hose, deep root water system, or bubbler is used. For the purpose of this section a drip irrigation system is defined as an irrigation device or system designed to emit water at low volumes and low pressures directly onto soil surface or below soil surface without airborne streams or droplets.

      Irrigation of lawns is permitted at any time on any day if:

      i. A garden hose is used and is held in the hand during the duration of the irrigation event, or

      ii. A faucet-filled container of five (5) gallons or less is used.

      A Drip Irrigation System shall not be used to irrigate LAWNS except on designated days and at designated times.

   b. New lawns may be watered daily for eight minutes once during each of the following periods: 11:00 a.m. to 1:00 p.m.; 2:00 p.m. to 4:00 p.m.; 5:00 p.m. to 7:00 p.m.; and at regular intervals between 9:00 p.m. and 10:00 a.m. for a maximum of three (3) weeks. To qualify under this section, new lawns are those installed in conjunction with the construction of a new residence and for a period of six (6) months thereafter. Retiling or any replanting or reseeding of existing lawns shall NOT qualify for new lawn status in this section.

2. Vehicle Washing

   a. It is permissible to wash automobiles, trucks, trailers, boats, and other types of mobile equipment at any time on the immediate premises of a commercial car wash or commercial service station or at any location including a residence by using a five (5) gallon container and/or a hand held hose equipped with a quick shut-off nozzle for quick rinses.

If the health, safety and welfare of the public depends upon frequent vehicle cleaning, as determined by the Director of Water Utilities or his/her designee, then washing of vehicles such as emergency vehicles, aircraft, garbage trucks, and vehicles used to transport food and perishables will be allowed.

b. Charity car washes are prohibited.

3. Water may be added to swimming pools to sustain appropriate maintenance levels weekly, on the customer's regularly designated irrigation day.

4. Ornamental fountains are allowed if the fountain is equipped with a device for recycling water and water may be added to sustain appropriate maintenance levels only on the customer's regularly designated watering day.

5. Use of water from fire hydrants shall be limited to firefighting activities or other activities necessary to maintain public health, safety and welfare. By written approval from the Director of Water Utilities, businesses may purchase and draw water from fire hydrants for land development and building construction processes.

6. The following uses of water are defined as "waste of water" and are absolutely prohibited:

   a. Allowing water to run off a property through the street, gutter, ditch, alley, or drain for more than seventy-five (75) feet from the downgrade of the property line;

   b. Failure to repair a controllable leak; including a broken sprinkler head, a leaking valve, leaking or broken pipes, or a leaking faucet;

   c. Operating a permanently installed irrigation system with:

      i. A broken sprinkler head;

      ii. A sprinkler head that is spraying over a street or parking lot because it is out of adjustment; or

      iii. A sprinkler head that is misting due to high pressure.

   d. Washing sidewalks, driveways, parking areas, tennis courts, patios or other paved areas, except to alleviate immediate fire, health or safety hazards, or to prepare an area for pavement repair or application.

7. Commercial and Industrial Users

   a. Commercial and industrial users of water shall continue to maintain at least a fifteen (15) percent monthly reduction of water use compared to use during the same month of the previous year.

Individual allotments may be adjusted by the Director based on historical water usage conservation practices of customers. The other restrictions of Stage 2 still apply to commercial and industrial users.

b. Industrial users may present a conservation plan for approval by the Director of Water Utilities.

c. Golf courses using potable water will reduce consumption by thirty (30) percent of contracted amount.

STAGE 3 WATER EMERGENCY

Implementation Criteria:
Combined treatment plant pumpage in excess of thirty-six (36) MGD for three (3) days and depletion of the combined storage in Hubbard Creek Reservoir and Lake Fort Phantom Hill to less than twenty (20) percent or major line breaks, or pump system failure which causes unprecedented loss of capability to provide service, or any unforeseen conditions that may occur that cause the City Manager to inform the Mayor of implementation.

Upon announcement and implementation by the City of Stage 3 Water Emergency, the following restrictions shall apply to all persons during Stage 3 Water Emergency:

1. Landscape Irrigation

Irrigation of gardens, flowerbeds, trees and shrubs (Not Lawns) by all commercial, industrial, and residential customers is permitted at any time on any day only if:

a. A garden hose is used and is held in the hand during the duration of the irrigation event, or

b. A faucet-filled container of five (5) gallons or less is used, or

c. A drip irrigation system such as soaker hose, deep root water system, or bubbler is used. For the purpose of this section a drip irrigation system is defined as an irrigation device or system designed to emit water at low volumes and low pressures directly onto soil surface or below soil surface without airborne streams or droplets.

d. New lawns may be watered daily for eight (8) minutes once during each of the following periods: 11:00 a.m. to 1:00 p.m.; 2:00 p.m. to 4:00 p.m.; 5:00 p.m. to 7:00 p.m.; and at regular intervals between 9:00 p.m. and 10:00 a.m. for a maximum of three (3) weeks. To qualify under this section, new lawns are those installed in conjunction with the construction of a new residence and for a period of six (6) months thereafter. Retiling or any replanting or reseeding of existing lawns shall not qualify for new lawn status in this section.

Watering of existing lawns is prohibited at any time.

2. Vehicle Washing

   a. It is permissible to wash automobiles, trucks, trailers, boats, and other types of mobile equipment at any time on the immediate premises of a commercial car wash or commercial service station.

   b. If the health, safety and welfare of the public depends upon frequent vehicle cleaning, as determined by the Director of Water Utilities or his/her designee, then washing of vehicles such as emergency vehicles, aircraft, garbage trucks, and vehicles used to transport food and perishables will be allowed.

   c. Charity car washes are prohibited.

3. Water may be added to swimming pools to sustain appropriate maintenance levels weekly, on the customer's regularly designated irrigation days. New construction of swimming pools is prohibited.

4. Ornamental fountains are allowed if the fountain is equipped with a device for recycling water and water may be added to sustain appropriate maintenance levels only on the customer's regularly designated watering day. New construction of ornamental fountains is prohibited.

5. Use of water from fire hydrants shall be limited to fire-fighting activities or other activities necessary to maintain public health, safety and welfare. By written approval from the Director of Water Utilities, businesses may purchase and draw water from fire hydrants for land development and building construction processes.

6. The following uses of water are defined as "waste of water" and are absolutely prohibited:

   a. Allowing water to run off a property through the street, gutter, ditch, alley, or drain for more than seventy-five (75) feet from the downgrade of the property line;

   b. Failure to repair a controllable leak; including a broken sprinkler head, a leaking valve, leaking or broken pipes, or a leaking faucet;

   c. Operating a permanently installed irrigation system with:

      i. A broken sprinkler head;

      ii. A sprinkler head that is spraying over a street or a parking lot because it is out of adjustment; or

      iii. A sprinkler head that is misting due to high pressure

   d. Washing sidewalks, driveways, parking areas, tennis courts, patios or other paved areas, except to alleviate immediate fire, health or safety hazards, or to prepare an area for pavement repair or application.

7. Commercial and Industrial Users

   a. Commercial and industrial users of water shall continue to maintain at least a fifteen (15) percent monthly reduction of water use compared to use during the same month of the previous year.

      A surcharge rate will be assessed for any water consumption that does not comply with the required reductions. The surcharge in addition to regular charges is as follows:

	First Occurrence	Subsequent Occurrence(s)
First 5,000 gallons over allowed amount per 1,000 gallons	$5.00	$10.00
Next 5,000 gallons per 1,000 gallons	$10.00	$20.00
For higher usage per 1,000 gallons	$20.00	$30.00

      Additionally, if a customer uses more than the allowed amount more than once at any time during Stage 3, the customer's water may be turned off and there will be a two hundred fifty dollar ($250.00) re-connect fee, in addition to the listed fees.

      Individual allotments may be adjusted by the Director of Water Utilities based on historical water usage conservation practices of customer. The other restrictions of Stage 3 still apply to commercial and industrial users.

   b. Industrial users may present a conservation plan for approval by the Director of Water Utilities.

   c. Each golf course using potable water will reduce consumption by fifty (50) percent of contracted amount.

STAGE 4 WATER CRISIS

Implementation Criteria:
Loss of capability to provide water service or contamination of supply source, or any unforeseen/unexpected conditions that may occur that cause the City Manager to inform the Mayor of implementation.

Upon announcement and implementation by the City of Stage 4 Water Crisis, the following restrictions shall apply to all persons during Stage 4 Water Crisis:

1. All outdoor irrigation of vegetation including lawns, using potable water is prohibited.

2. New lawns may be watered daily for eight (8) minutes once during each of the following periods: 11:00 a.m. to 1:00 p.m.; 2:00 p.m. to 4:00 p.m.; 5:00 p.m. to 7:00 p.m.; and at regular intervals between 9:00 p.m. and 10:00 a.m. for a maximum of three (3) weeks. To qualify under this section, new lawns are those installed in conjunction with the construction of a new residence and for a period of six (6) months thereafter. Retiling or any replanting or reseeding of existing lawns shall not qualify for new lawn status in this section.

3. Only washing of mobile equipment in the critical interest of the public health or safety shall be allowed.

4. The filling, refilling or adding of water to swimming and/or wading pools is prohibited. The construction of new swimming pools is prohibited.

5. The operation of any ornamental fountain or similar structure is prohibited. The construction of new ornamental fountains is prohibited.

6. Use of water from fire hydrants shall be limited to fire fighting and related activities or other activities necessary to maintain public health, safety and welfare. Water for domestic use only may be purchased from the bulk loading station.

7. The following uses of water are defined as "waste of water" and are absolutely prohibited:

    a. Allowing water to run off a property through the street, gutter, ditch, alley, or drain for more than seventy-five (75) feet from the downgrade of the property line;

    b. Failure to repair a controllable leak; including a broken sprinkler head, a leaking valve, leaking or broken pipes, or a leaking faucet;

    c. Operating a permanently installed irrigation system with:

        i. A broken sprinkler head;

        ii. A sprinkler head that is spraying over a street or parking lot because it is out of adjustment; or

        iii. A sprinkler head that is misting due to high pressure.

    d. Washing sidewalks, driveways, parking areas, tennis courts, patios or other paved areas, except to alleviate immediate fire, health or safety hazards.

8. Commercial and Industrial Users

    a. Commercial and industrial users of water (for other than drinking water and rest rooms) shall continue to maintain at least a 15 percent reduction of water use compared to use during the same month of the previous year.

        A surcharge rate will be assessed for any water consumption that does not comply with the required reductions. The surcharge in addition to regular charges is as follows:

	First Occurrence	Subsequent Occurrence(s)
First 5,000 gallons over allowed amount per 1,000 gallons	$10.00	$20.00
Next 5,000 gallons per 1,000 gallons	$20.00	$40.00
For higher usage per 1,000 gallons	$30.00	$60.00

Additionally, if a customer uses more than the allowed amount more than once at any time during Stage 4, then after each such overuse these surcharges will be added and the customer's water may be turned off and there will be a five hundred dollar ($500.00) re-connect fee, in addition to the listed fees.

Individual allotments may be adjusted by the Director of Water Utilities based on historical water usage and conservation practices of the customer. The other restrictions of Stage 4 still apply to commercial and industrial users.

b. Water used for industrial purposes not in the immediate interest of the public health, safety and welfare will be curtailed to the extent necessary to effectuate the needs and purposes of this plan.

Sec. 32-146. Target Water Use Goals

The following target goals for water use are established for use during water conservation stages as contained in Section 32-145:

Stage 1 WATER ALERT

Target Water Use Goal:

Combined treatment plant production less than forty-five (45.0) million gallons per day (MGD) for all Abilene water treatment facilities.

Stage 2 WATER WARNING

Target Water Use Goal:

Combined treatment plant production less than forty (40.0) MGD for all Abilene water treatment facilities.

Stage 3 WATER EMERGENCY

Target Water Use Goal:

Combined treatment plant production less than thirty-six (36.0) MGD for all Abilene water treatment facilities.

Stage 4 WATER CRISIS

Target Water Use Goal:

Combined treatment plant production less than thirty (30.0) MGD for all Abilene water treatment facilities.

DIVISION 3 WATER CONSERVATION PLAN ENFORCEMENT

Sec. 32-147. Administrative Enforcement

Violations of this plan are declared to be civil penalties with remedies being fines paid directly to Municipal Court. Non-payment of fines will result in surcharges assessed to the customer's water utility bill. Each violation of a particular component of this Plan shall constitute a separate violation, and each day a violation continues shall be considered a new violation for purposes of enforcement and enhancement.

The surcharge will be in addition to the regular water utility bill amount. The water utility office may discontinue water service to the premises if the surcharge is not paid as required under the Plan. Any person whose service is discontinued for failure to pay the surcharge shall not be restored until payment of a reconnection charge and any other costs incurred by the City in discontinuing service.

The city's authority to seek injunctive or other civil relief available under the law is not limited by this section.

The following procedures shall apply to anyone contesting the penalties for violating the Plan. The hearing process shall be a two-phase hearing process with the final phase being heard before the municipal clerk/administrator or deputy in charge of hearing appeals.

Sec. 32-148. Presumption of Ownership & Control

Presumption of Ownership/Control. Any person, including a person classified as a water customer of City, in apparent control of the property where a violation occurs or originates shall be presumed to be the violator, and proof that the violation occurred on the person's property shall constitute a rebuttable presumption that the person in apparent control of the property committed the violation, but any such person shall have the right to show that he/she did not commit the violation.

All notices shall be issued to the person or entity whose name appears on the water bill.

In any case of a violation of any terms or provisions of this Plan by any corporation, business, partnership, or entity, the officers and/or agents actively in charge of the business or entity shall be subject to the penalty provided herein.

If a customer is irrigating during a time period or on a day when irrigation is not permitted for the street address of that customer and a city worker cannot find any person at that street address to turn off the irrigation system, the city worker may enter the property and turn off the irrigation system and/or the water source.

Sec. 32-149. Hearing Officers

1. There shall be designated a Hearing Officer(s) who shall be appointed by the municipal court clerk/administrator.

2. Hearing Officer(s) shall have the authority to administer oaths and to issue orders compelling the attendance of witnesses and the production of documents.

3. An order compelling the attendance of witnesses or the production of documents may be enforced by the municipal court.

Sec. 32-150. Administration of Hearings

1. The administrative adjudication process for Plan violations shall be initiated by the issuance of a notice which may be issued by a peace officer or other authorized enforcement agent. Authorized enforcement agents shall include any police officer, water utilities worker, city marshal, or other employee of the city designated by the city manager to enforce the provisions of this code in regard to the Plan.

2. The notice may be issued by affixing it to the front door of the property in question, in a conspicuous place.

3. The notice shall provide that the person charged with violation of the Plan shall have the right of hearing to determine the validity for the charged offense. Such right to a hearing shall be exercised by mail or by appearing in person before a hearing officer within ten (10) days from the date of the notice.

4. The original or any copy of the notice or summons is a record kept in the ordinary course of business in the city and is rebuttable proof of the facts it contains.

Sec. 32-151. Hearings

1. At the hearing before the hearing officer, the violator may admit, admit with explanation, or deny the alleged infraction. It is not a defense to the offense that the violator did not intend the alleged infraction, there being no culpable mental state required for the infraction.

2. The issuing officer shall not be required to attend the hearing.

3. It is not required that the city's attorney attend the hearing. Provided, however, that if the defendant is represented by legal counsel at the hearing, the hearing officer shall notify the city attorney who shall have a right to appear on behalf of the city at said hearing.

4. No formal or sworn complaint shall be necessary. The hearing officer shall examine the contents of the notice and the evidence related to ownership of the property in question and shall hear and review the testimony and evidence presented by the violator. If the hearing officer determines by the preponderance of the evidence that the infraction was committed by the violator, he shall find the violator responsible and assess a fine.

5. At the conclusion of the hearing, the hearing officer shall issue an order stating whether or not the person charged is responsible for the violation of the Plan and the amount of the fine assessed against him. The order shall be filed with the clerk of the municipal court. All such orders shall be kept in a separate index or file by the municipal court clerk using appropriate data processing techniques.

6. Failure of a person charged with the offense to appear at a hearing within the aforesaid ten (10) day period shall be considered an admission of liability for the charged offense.

Sec. 32-152. Appeals

A person determined by the hearing officer to be in violation of any provision of the Plan may appeal this determination to the municipal court clerk or a deputy so designated to hear Plan appeals.

The appeal must be instituted by filing a written petition, not later than the tenth day after the filing of the hearing officer's order, with the clerk of the municipal court along with payment of a nonrefundable administrative appeal filing fee in the amount of ten dollars ($10.00).

After filing a petition for appeal, the municipal clerk shall schedule a hearing and notify all parties of the date, time, and place of the hearing.

The appeal hearing shall be a de novo review. The municipal court clerk shall examine the evidence presented at the appellate hearing and if the court clerk determines by the preponderance of the evidence that the infraction was committed by the violator, the court clerk shall find the violator responsible therefore.

Sec. 32-153. Payment

1. Any person alleged to have violated the Plan who merely desires to make payment shall provide same to the municipal court clerk in charge of water violations within ten (10) days after receiving notice of said violation.

2. Any person alleged to have violated the Plan and who fails to appear within the ten (10) days as reflected in 32.150.3 above shall be assessed a surcharge on their next water bill in the amount of the minimum fine.

3. Any person found to have violated the Plan by the Hearing Officer shall pay the fine within ten (10) days of said hearing or the fee shall be assessed in a surcharge on the violator's next water bill.

Sec. 32-154. Subsequent Violations-Increased Fees-Discontinuation of Service-Injunctive Relief

Subsequent violations of the Plan shall result in increased fine or upon the occurrence of three (3) violations, after notice, the discontinuation of services. Services discontinued under this provision shall be restored only upon payment of a reconnection fee and any other costs incurred by the City in discontinuing service.

Compliance with the Plan may also be sought through injunctive relief in district court.

Sec. 32-155. Fines-Minimum and Maximum

1. Any person, firm, or corporation found to have violated any provision of the Plan, shall be assessed a fine in an amount not to exceed one thousand dollars ($1,000.00) for each offense, the amount to be determined by the hearing officer in his reasonable discretion, subject to review on appeal to the municipal court clerk.

2. Unless higher amounts are required by state law or a lesser amount is determined by the hearing officer or municipal court clerk or so designated deputy, the minimum fines for violating the Plan shall be as follows:

   a. Violation of Year Round Water Use Management, first offense ...$50.00
   b. Violation of Year Round Water Use Management, second offense ...$75.00
   c. Violation of Year Round Water Use Management, subsequent offenses...$250.00
   d. Violation of Stage 1, first offense...$50.00
   e. Violation of Stage 1, second offense...$75.00
   f. Violation Stage 1, subsequent offenses...$250.00
   g. Violation of Stage 2, first offense...$100.00
   h. Violation of Stage 2, second offense...$150.00
   i. Violation of Stage 2, subsequent offenses...$500.00
   j. Violation of Stage 3 or 4, first offense...$250.00
   k. Violation of Stage 3 or 4, second offense...$500.00
   l. Violation of Stage 3 or 4, subsequent offenses...$1,000.00
   m. Reconnect Fees for failure to pay the surcharge...$250.00
   n. Reconnect Fees for repeated violations of the Plan...$500.00

3. It is an affirmative defense to any violation of this article if the customer proves that the misused wasted water is from an operable water well serving said property.

4. Fraudulent misrepresentation of well water use will result in a five hundred dollar ($500) fine.

Sec. 32-156. Requests for Variance

Requests for variance should be made in writing to the Director of Water Utilities. Requests must include name of customer, location, type of variance requested, reason for variance request and duration of deviation from this plan. Upon the Director's written approval acknowledged by the entity in question, these entities may follow the requested variance and will be responsible for all other provisions of this article.

Sec. 32-157. Severability

If any provision or any section of this Plan shall be held to be void or unconstitutional, such holding shall in no way affect the validity of the remaining provisions or sections of the Plan, which shall remain in full force and effect.

EXHIBIT C

SUMMARY OF EXISTING DROUGHT CONTINGENCY PLAN ORDINANCE

Requirements for drought contingency planning are found in Texas Administrative Code (TAC) Chapter 288, Subchapter B. These requirements mandate that public water systems implement drought contingency planning, and submit adopted drought contingency plans at least on five-year intervals. Drought planning serves to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire prevention. Drought planning is also intended to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions.

While no changes have been made to the City's Drought Contingency Plan (DCP) Ordinance, its adoption must be affirmed by Abilene's governing body and subsequently submitted to the TCEQ on or before May 1, 2024 to comply with TAC Chapter 288 requirements.

The DCP ordinance serves to minimize or eliminate water uses that are considered to be non-essential during times of water shortage or other emergency water supply conditions. Defined activities that constitute a waste of water subjects the offender(s) to penalties established in the DCP ordinance. The DCP ordinance applies to persons, customers, and property utilizing the City's Water System wherever situated, including wholesale customers, and others that receive water from the City on a contract basis. The DCP ordinance provides that if a shortage of water in the City's water supply occurs, the water to be distributed will be divided among all users pro rata, according to the amount each may be entitled to, so that preference is given to no one user or user group. The DCP ordinance does not apply to the use of alternate water sources, including non-potable water and private well water.

The DCP ordinance describes four water conservation stages in order of severity including:

- Stage 1 Water Alert,
- Stage 2 Water Warning,
- Stage 3 Water Emergency, and
- Stage 4 Water Crisis.

The DCP ordinance describes drought contingency plan enforcement procedures including assessment of fines, procedures for making payment of assessed fines, penalties for subsequent violations, and procedures for granting variances to the conditions of the DCP ordinance. The DCP ordinance also includes water use goals in each stage of drought contingency response as described in TAC Chapter 288.