

CITY OF CARTHAGE, TEXAS

**WATER CONSERVATION
PLAN**

APRIL 2019

PREPARED BY:



TBPE FIRM REGISTRATION NO. F-1356

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City of Carthage, Texas
Water Conservation Plan
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1.0 INTRODUCTION

In accordance with the requirements found in Subchapter A of Chapter 288 of the Texas Administrative Code, this plan has been developed to present the practices and procedures that the City of Carthage has implemented to permanently reduce the quantity of water utilized within the City.

2.0 PURPOSE

This water conservation plan has been developed for the purpose encouraging a permanent reduction in the quantity of water utilized by the City of Carthage's residential, commercial, and industrial water service customers through the implementation of efficient water supply and usage practices. Through the structured and systematic application of the contents of this water conservation plan, the City anticipates a significant reduction in per capita water use over the next 10 years.

3.0 LOCATION AND GENERAL DESCRIPTION

The City of Carthage is located in east Texas at the intersection of U.S. Highway 59 and U.S. Highway 79 in Panola County. The 2010 U.S. Census showed the City of Carthage had a population of 6,854 residents. The City's sources of income include oil and gas industries, timber, a poultry plant, and tourism. The Texas Country Music Hall of Fame and Tex Ritter Museum are both located in Carthage; these two facilities are popular tourist destinations in the City.

4.0 WATER SYSTEM DESCRIPTION

A map of the City of Carthage's service area has been included in this plan as Exhibit 1.

4.1 Service Area: The City of Carthage currently provides water to approximately 4,048 service connections. The majority of these connections are located within the Carthage city limits. The City however provides water service to several residential, commercial, and industrial customers north of the City along U.S. Highway 79, and south of the City along Business Highway 59. The City's approximate water service area and Certificate of Convenience and Necessity (CCN) limits (CCN 10379) are shown on attached Exhibit 1.

4.2 Water Supply: The City of Carthage currently obtains its water from Lake Murvaul. The City's current water supply facilities contract for Lake Murvaul is through the Panola County Fresh Water District. The City is authorized to withdraw approximately 12,000,000 gallons or 36.8 acre-feet per day from Lake Murvaul. A copy of the City's contract with Panola County Fresh Water District has been included in Appendix A of this plan.

The City has two water wells that are located on the west side of town. The first water well is located off Bird Drive and the second water well is located off Old

Clayton Road. Neither of the two city-owned wells are in operation. The sole source of water supply is Lake Murvaul.

- 4.3 Water System Operation: Water is supplied to the City of Carthage via an 18-in. waterline from the City's intake at Lake Murvaul. Raw water is conveyed to the City's 8.0 MGD water treatment plant before being discharged into its distribution system.

The City of Carthage's water distribution system includes three (3) elevated storage tanks which are utilized to maintain system pressure. Capacities of each of these tanks are as follows:

- Two 500,000 gallon elevated storage tanks, and
- One 250,000 gallon elevated storage tank

In addition to the four elevated storage tanks, the City also has one 750,000 gallon ground storage tank.

5.0 UTILITY PROFILES

Appendices B-D of this plan are a utility profiles for the City of Carthage which include population and customer information, water use data, water supply data, and wastewater system data. Appendix B is a utility profile for retail public water suppliers as required by the Texas Commission on Environmental Quality (TCEQ). Appendix C is a utility profile for wholesale public water suppliers as required by the TCEQ. Appendix D is a utility profile for retail public water suppliers as required by Texas Water Development Board (TWDB).

6.0 SPECIFIC, QUANTIFIED 5 & 10-YEAR TARGETS

Based on historic water use records, average water consumption within the City of Carthage is approximately 320 gallons per capita per day (gpcd).

Specific 5 and 10 year water conservation targets for the City of Carthage are as follows:

- 5 -Year Target: Reduce average per capita water consumption by 5% to 304 gallons per capita per day.
- 10-Year Target: Reduce average per capita water consumption by 10% to 288 gallons per capita per day.

7.0 METERING DEVICES

The City of Carthage maintains a meter at the City's water treatment plant that measures the amount of treated water delivered into the City's distribution system. The City also maintains a master meter at each of the City's water wells to measure the amount of water being pumped from each well. Each of the City's master meters shall be calibrated annually to within $\pm 5\%$ accuracy to insure proper measurement of the quantity of water delivered into its distribution system.

8.0 UNIVERSAL METERING

The City of Carthage meters all water pumped into its distribution system as described in the section above. Meter testing is done annually for meters that are larger than 1-inch. Meters 1-inch and smaller are tested every ten years. Repair is done to meters with a poor classification rated by Meter Readers. Annual testing of large meters, testing, maintaining, and replacement of inoperative meters will enable water consumption to be tracked; thus providing a more efficient conservation plan.

9.0 UNACCOUNTED-FOR WATER USE

In effort to reduce unaccounted-for water use due to broken water mains, leaky joints, faulty service meters, illegal service connections, and unmetered water usages such as line flushing, the City shall perform the following tasks:

- Yearly: Perform water system audits comparing the amount of water pumped into the distribution system to the amount of water consumed based on water meter readings.
- Monthly: Review monthly water consumption for all system meters in comparison to previous monthly usages.
- Daily: Record unmetered water usages such as line flushing activities and review monthly.
- Daily: Observe distribution system piping and meters for leaks daily.

10.0 CONTINUING PUBLIC EDUCATION & INFORMATION

The City of Carthage is committed to providing continuing public education on the importance of water conservation and water conserving strategies. The City's continuing public education and information program is as follows:

- The City shall provide a packet of water conservation literature to all new water customers.
- The City shall provide water conservation literature to all customers annually.
- The City shall conduct a public participation meeting annually to review this water conservation plan and to solicit input from water service customers.
- The City shall obtain water conservation literature and materials as developed by the Texas Water Development Board (TWDB) and the American Water Works

Association (AWWA) and make this information readily available to all water service customers.

Water conservation literature to be distributed shall include information on low flow plumbing features and devices, retrofitting existing plumbing features, conservation oriented landscaping and irrigation, and other general conservation strategies.

11.0 NON-PROMOTIONAL WATER RATE STRUCTURE

In effort to maintain a water rate structure that encourages water conservation, the City shall examine its rates annually.

Current water rates for the City are as follows:

- \$20.00 minimum which includes first 2,000 gallons
- \$3.85 for each additional 1,000 gallons up to 498,000 gallons
- \$4.31 for each additional 1,000 gallons up to 4,000,000 gallons
- \$2.36 for each additional 1,000 gallons over 4,000,000 gallons

12.0 RESERVOIR SYSTEMS OPERATIONS PLAN

The City of Carthage has a contract with the Panola County Fresh Water District to obtain 12,000,000 gallons or 36.8 acre-feet per day from Lake Murvaul. The Panola County Fresh Water District is responsible for operating Lake Murvaul in accordance with its Reservoir Management Plan.

13.0 ENFORCEMENT PROCEDURE & PLAN ADOPTION

Implementation and enforcement of this plan shall be by the authority of the City of Carthage, a municipal entity in the State of Texas.

The City Manager and Water Superintendent shall be responsible for implementation of this water conservation plan. The City Manager shall be responsible for general oversight of all portions of implementation and enforcement of this plan, as well as notifying customers of deviations in the City's water conservation plan. The Water Superintendent shall be responsible for record keeping and preparation of an annual report on the status of the City's water conservation program. The annual report shall include but not be limited to an evaluation of the overall effectiveness of the plan, public acceptance of the plan, and the status of implementation for this water conservation plan. This report shall be submitted to the City Manager and presented for approval before the City Council.

The City shall perform the following items in conjunction with enforcing and adopting this plan:

- Adopt a resolution supporting the water conservation plan.

- Adopt an ordinance to levy penalties for failure to comply with this plan.
- Adopt an ordinance implementing this plan.

A copy of the official ordinance adopting this water conservation plan has been included in Appendix E of this plan.

14.0 COORDINATION WITH THE REGIONAL WATER PLANNING GROUPS

The service area of the City of Carthage is located within the East Texas Regional Water Planning Area, Region I. The City of Carthage has provided a copy of this water conservation plan to the Region I Water Planning Group.

15.0 WATER CONSERVATION RETROFIT PROGRAM

Retrofit of existing plumbing fixtures for the City of Carthage shall be accomplished through voluntary efforts of City water customers. The City shall encourage citizens to install conservation oriented plumbing features through literature and materials distributed as a part of the public education portion of this water conservation program. Local plumbers shall also be encouraged to recommend water conserving appliances and devices including but not limited to low flow toilets, shower heads, faucets, and urinals. Recirculation filtration equipment will also be encouraged for use in swimming pools.

16.0 WATER AUDITS AND LEAK DETECTION

The City of Carthage Audit System monitors monthly consumption and the Audit has become a major tool in System management. Classification of Meter condition as proposed in this Plan will provide a reliable and effective leak detection program. Unaccounted for water must be reduced by 5% per year for the first two years of the Water Conservation Program. The City is aware that assistance in leak detecting surveys can be obtained from the Texas Water Development Board Staff. The Agency has portable leak detection equipment available for loan to cities and can provide personnel for demonstration of equipment and assist in planning survey programs.

Meter classification and aggressive enactment of current detection program will enable City staff to determine the need for seeking further assistance from use of electronic equipment. Current detection program consists of the following observations and activities:

- Leaks reported by citizens.
- Leak detection by Meter Readers.
- Continual checking and servicing of production, pumping and storage facilities.
- Quick response by Maintenance Department and staff to reported problems.

The City has established a plan to replace broken or otherwise malfunctioning meters. The program is conducted by noting cases where meters need to be replaced or meters need to be installed to eliminate illegal connections as the meter reading is conducted. The new residential meters register flow within ½ gallon per minute to more accurately account for water diverted to each customer. The City also has a meter testing program for all types of customers to help account for any discrepancy between water produced and water billed. A monthly review of water produced at the plant versus water sold to customers should be performed to control excessive losses. At such time when excessive discrepancies exist, the City may consider complete water meter replacement to eliminate old, inaccurate meters.

In addition, the city can determine the efficiency of the plant by comparing the raw water intake volume versus the plant discharge. The raw water intake includes a 21" flow meter on the intake line and the treatment facility includes a 14" flow meter on the plant discharge. Both of these meters have an accuracy of ±2% of the actual flow within the normal flow ranges and a 95% minimum accuracy at the low flow rate. Both meters are calibrated annually to ensure accuracy of flow measurements.

17.0 PLUMBING CODE

The City shall consider an ordinance to adopt the National Standard Plumbing Code, 2018 Edition.

18.0 REVISIONS AND MODIFICATIONS

This Plan is applicable to the water supply and water distribution system as it currently exists for the City of Carthage. The City reserves the right to amend this plan when conditions change that affect its water supply and/or distribution system. All modifications, deletions, additions, or changes to this plan shall be submitted to the Texas Water Development Board for approval.

19.0 DROUGHT CONTINGENCY PLAN

Appendix F is the City of Carthage's Drought Contingency Plan. The Drought Contingency Plan is required by all retail and wholesale water suppliers. The plan is put into place in order to conserve the available water supply and/or protect the integrity of water supply facilities.

APPENDIX A

PANOLA COUNTY WATER SUPPLY CONTRACT

AMENDMENT TO WATER CONTRACT

WHEREAS, a Contract dated the 15th day of June, 1967, by and between PANOLA COUNTY FRESH WATER SUPPLY DISTRICT NO. 1 and the CITY OF CARTHAGE, a municipal corporation in Panola County, Texas, was made and has been existing between the two (2) entities;

WHEREAS, PANOLA COUNTY FRESH WATER SUPPLY DISTRICT NO. 1, hereinafter styled "District," and the City of Carthage, Texas, hereinafter styled "City," do hereby desire to amend the original contract and agreement based upon mutual considerations between the two (2) entities, and each entity does hereby agree this amendment is in the best interest of both entities and respective citizens of each entity.

THEREFORE, the District and the City do hereby amend the June 15, 1967, Contract only as follows:

2. The District grants to the City the exclusive right to withdraw water from the Murvaul Lake reservoir for water supply distribution purposes, the quantity to be as follows:

a. Unconditionally such quantity as the City desires to withdraw and use up to 12,000,000 gallons in any one day, from 8:00 o'clock A.M. until 8:00 o'clock A.M. Central Standard Time.

b. Such additional quantity as the City may desire to withdraw and use provided that the City and District shall enter into a mutually acceptable contract for such additional quantity. It is agreed that:

i. The District shall not be prohibited from selling water to a public entity located within Panola County, Texas, if the water is used in Panola County, Texas.

ii. The District may sell raw water to the Texas Department of Highways and Public Transportation for its use and purposes as raw water or to an individual for final use as raw water but not for purposes of treatment or resale for human use. The raw water must be sold for actual use in Panola County unless the sale is approved by both the District and the City.

iii. The District shall not sell water to any person or entity who treats raw water for human use or resells water to a buyer for human use or treatment purposes.

iv. Such sales shall in no way restrict or interfere with the unconditional right of the City to the quantity of water stated in paragraph (a) above.

v. The City is not restricted from obtaining water from any other supplier or sources.

3. For the said water and for all other rights of the City, and all other obligations of the District hereunder, the City will pay to the District for the water so withdrawn and used upon the following rate schedule:

a. Eight cents per thousand gallons through December 31, 2006.

b. Beginning January 1, 2007, ten cents per thousand gallons.

c. Every two (2) years beginning January 1, 2009, the rate for payment shall be increased by the lesser of i) by one cent per one thousand gallons or ii) to the average fee or rate being charged municipalities for water in adjoining counties, which ever is lesser.

7. This Contract is renewed and is extended to December 31, 2021.

All other provisions, terms and conditions of the original Contract shall remain the same except for Paragraphs Nos. 2 and 3 which have been changed and amended by this Amendment to Water Contract.

IN WITNESS WHEREOF the parties hereto acting under the authority of their respective governing bodies have caused this contract to be duly executed.

ATTEST:

[Signature]
Secretary

PANOLA COUNTY FRESH WATER
SUPPLY DISTRICT NO. 1

BY [Signature]
Chairman of the Board of
Directors

ATTEST:

[Signature]
City Secretary

CITY OF CARTHAGE, TEXAS
BY [Signature]

THE STATE OF TEXAS §
§
COUNTY OF PANOLA §

This instrument was acknowledged before me on 4-2, 1992, by JC Boykin, Chairman of the Board of Directors of the Panola County Fresh Water Supply District No. 1.

[Signature]
NOTARY PUBLIC in and for
Panola County, Texas

THE STATE OF TEXAS §
 §
COUNTY OF PANOLA §

This instrument was acknowledged before me on November 27th
1992, by May 10, Caren C. James of the city
of Carthage.

[Signature]
NOTARY PUBLIC in and for
Panola County, Texas

C O N T R A C T

This Contract dated the 15th day of June, 1967, by and between Panola County Fresh Water Supply District No. 1, created and existing under the laws of the State of Texas, herein called District; and the City of Carthage, Texas, a municipal corporation in Panola County, Texas, herein called the City.

1. Panola County Fresh Water Supply District No. 1, owns Murvaul Lake and dam and approximately 3,890 acres of land, including the lake and dam site, situated on the Murvaul Creek Water Shed in Panola County, Texas and all rights necessary for the maintenance of said lake and dam. The said area of land extends and projects the lake up to the 270 foot contour U.S.G.S. Survey of elevation. The dam has a spillway elevation of 265 feet, U.S.G.S.

The City of Carthage, Texas, owns and operates a municipal water supply system and sells water to customers within, as well as without the city limits of the City of Carthage, in Panola County, Texas, and the said City is desirous of purchasing water from the District for its municipal water supply and distribution system.

2. The District grants to the City the right to withdraw from the Murvaul Lake reservoir and use consumptively water for its municipal water supply in and for the distribution system of said City; the quantity to be as follows:

a. Unconditionally, such quantity as the City desire to withdraw and use up to 8,000,000 gallons in any one day, from 8:00 o'clock A.M. until 8:00 o'clock A.M. Standard Time.

b. Such additional quantity as the City may desire to withdraw and use provided that the City and District shall enter into a mutually acceptable contract for such additional quantity. It is agreed that the District shall not be prohibited from selling water to any other purchaser but in

doing so, such sales shall in no way restrict or interfere with the unconditional right of the City to the quantity of water stated in paragraph (a) above. In like manner, the City is not restricted from obtaining water from any other supplier or sources.

3. For the said water and for all other rights of the City, and all other obligations of the District hereunder, the City will pay to the District for the water so withdrawn and used upon the following rate schedule:

For the first three million (3,000,000) gallons daily -----	@4¢ per thousand gallons,
For the next three million (3,000,000) gallons daily -----	@3-1/2¢ per thousand gallons,
For the next two million (2,000,000) gallons daily -----	@3¢ per thousand gallons,

provided a minimum amount shall be paid for water hereunder of \$600.00 per month, to be credited against the charge made at the gallon rate for water taken; such minimum however, shall not apply until the month following the first deliverance of water under this Contract, as hereinafter provided.

On or before the 20th day of each calendar month, the City shall pay the District for the water taken by the City during the preceding calendar month.

All obligations to pay for water are subject to the provisions of Paragraph 6 hereof.

Payments by the City shall be payable solely from the revenues of the City's water system, and shall not involve any obligation against its taxing powers.

4. The District agrees that the City may withdraw the water from the Lake by and through the District's existing aqueduct, through the dam, into the City's pumping station located below and adjacent to the dam. The City shall cause to be installed necessary valves on the existing aqueduct pipes through the dam, so as to permit the District to discharge water therefrom other than to the City's pump station and the cost of such valves and installation thereof shall be the expense of the City, provided however, a credit of \$600.00 shall be given the City toward such cost and expense from the first sale of water under this Contract. As part of the consideration

of this contract, the District does hereby grant and convey unto the City the exclusive perpetual right and easement to construct, operate and maintain a city water pump station and water main and pipeline and all appurtenances necessary or convenient thereto upon that certain 1.49 acres of land, described by metes and bounds in the appendix and plat attached hereto which is incorporated herein and made a part hereof for all purposes.

The rights and easements herein granted shall include the right to construct, install, maintain and operate all necessary or convenient structures, equipment, intake structures, pumps, pipelines, electric power and light transmission lines, telephone lines, control cables, together with the right of ingress and egress over the other property of the District for access to and from the intake structures, pump station site and pipeline easement sites; together with the right to maintain, repair, reconstruct, replace, enlarge and remove all or any part of said facilities, structures or improvements. In the event the City shall construct or open any new or additional access roads to the pump station site on the District's properties, the City shall construct and maintain at the point of entry onto the District's property a gate which shall be under lock and key so as to prevent public use of such access road and be maintained only as the private access of the City, its agents, employees and contractors to the pump station site.

5. The City, at its own expense, shall install a meter or meters of an approved design and capacity on its water main, at the pump station site, behind the pumps, for measurement of the water taken under this contract and pumped into the City's water main. The said meters shall be maintained and used so long as the City receives water hereunder. The District shall have the right of access to said meters and the right to examine and inspect them and if found to be incorrect, the City shall make proper correction, so as to secure accurate measurement of water taken. If the District desires, it shall have the right to install its own meters of any approved design and capacity for checking the accuracy of the City's meters.

6. The District agrees to maintain the dam and appurtenances in good repair, so as effectively to store water at all times in the Lake, as originally intended at the time of construction of the Lake, and to effectively deliver the quantity of water to the City as contracted herein. It is expressly recognized by the City that the District may make alterations, repairs and installations of new or additional equipment from time to time during the life of this contract. However, every reasonable effort shall be made by the District to provide the City with water in accordance with this Contract. In the cases of necessary suspension, the District shall give the City as much advance notice as practicable, in no event to be less than fifteen (15) days and set forth the estimated duration thereof. In the event the District facilities necessary in delivery of water to the City is destroyed or damaged, as a result of any cause, whether by force majeure or otherwise, so as to make deliveries of water requirements as herein specified impossible, the District shall, to the extent of available resources, immediately proceed to restore said facilities. No party shall be held liable or in default or breach of contract for temporary or permanent failure to perform any or all of its obligations hereunder, if such failure is due to an act of God, fire or other casualty, strikes or disagreement with workmen, war, valid governmental requirements or other cause, whether similar or dissimilar to any of the foregoing, which is beyond the control of the party so failing.

No payment by the City shall be required for any time when water cannot be supplied or cannot be used, due to any of the causes mentioned in the last preceding paragraph.

7. This Contract is effective from the date hereof, however, the obligation of the District to supply and the obligation of the City to pay for water, shall be effective when all of the necessary steps are taken and installations made by the City for transmitting water from the Lake Reservoir to the City's supply and distribution system, which are prerequisite

to the commencing of the withdrawal and use of said water by the City. The City will give the District written notice within thirty (30) days after all such steps have been completed. The City agrees to complete the steps for taking of water by July 1, 1968; provided however, if such steps are substantially completed by the last mentioned date, the City shall have an additional six (6) months to complete them.

This Contract shall continue for a term of forty (40) years from the date hereof. Upon the expiration of said term the City shall have the vested right to renew said contract for such additional term or terms and at such water rate charges as the City and District may then agree upon.

8. The City shall fix and collect such rates and charges for water and services to be supplied by its water work system as will make possible the prompt payment of all monies due under this contract to the District. The District shall never have the right to demand payment by the City of any obligation assumed or imposed on it under and by virtue of this Contract from funds raised or to be raised by taxation. The City's obligation under this Contract shall never be construed to be a debt of the City of such kind as to require it, under the Constitution and laws of the State of Texas, to levy and collect a tax to discharge such obligation, it being expressly understood by the parties hereto that all payments due by the City hereunder are to be made from water revenues received by the City. The City represents and covenants that all payments to be made hereunder by it shall constitute operating expenses of its water work system as defined by Article 1113, Vernon Texas Civil Statute.

Should the City fail to collect or be prevented from collecting water revenue by any judicial proceeding or otherwise fails to collect them, no such water user shall receive water available under this Contract. The

District reserves the right, without liability, to refuse delivery of water to the City in the event the City fails to pay to the District the charges at the time and in the manner and in the amounts provided for in this contract. Every installment or charge required to be paid to the Distruct under this contract which remains unpaid after it has become due and payable, shall be subject to a penalty of one-half of one per cent per month from the date of delinquency.

9. Any notice authorized or required by this contract, shall be deemed proper if mailed, postage prepaid, to the City Manager, City of Carthage, Carthage, Texas, on behalf of the City, and Chairman of Board of Directors, Panola County Fresh Water Supply District No. 1, Carthage, Texas, for the District. The designation of the person to be notified or the address of such person may be changed at any time by similar notice.

10. The City may sell or assign this contract or any portion of its allocation of the right to receive water, only with the approval of the District, Under any assignment it must be established to the District's satisfaction that the water right may be transferred under Texas law for diversion as proposed. The alternate user must enter a contract or contract satisfactory to the District.

IN WITNESS WHEREOF the parties hereto acting under the authority of their respective governing bodies have caused this contract to be duly executed in several counter parts, each of which shall constitute an original, all as of the date and year first above written.

ATTEST:

James J. Cobb
Secretary

PANOLA COUNTY FRESH WATER SUPPLY DISTRICT NO. 1

By: *[Signature]*
Chairman of the Board of Directors

ATTEST:

Shelby K. Brannon
Secretary

THE CITY OF CARTHAGE, TEXAS

By: *[Signature]*
Chairman, Commission of City of Carthage

THE STATE OF TEXAS:

COUNTY OF PANOLA:

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this day personally appeared D. B. Daniel known to me to be the person and officer whose name is subscribed to the foregoing instrument and acknowledged to me that the same was the act of the said PANOLA COUNTY FRESH WATER SUPPLY DISTRICT NO. 1, a corporation, and that he executed the same as the act of such corporation for the purposes and consideration therein expressed, and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 21st day of June, 1967.

George Taylor
Notary Public in and for Panola County
Texas

THE STATE OF TEXAS:

COUNTY OF PANOLA:

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this day personally appeared Harold Cadenhead known to me to be the person and officer whose name is subscribed to the foregoing instrument and acknowledged to me that the same was the act of the said THE CITY OF CARTHAGE, TEXAS, a corporation, and that he executed the same as the act of such corporation for the purposes and consideration therein expressed, and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 10th day of July, 1967.

Edw. L. Bonner
Notary Public in and for Panola County
Texas

APPENDIX B

UTILITY PROFILE: TCEQ FORM 10218 RETAIL



Texas Commission on Environmental Quality

Water Availability Division

MC-160, P.O. Box 13087 Austin, Texas 78711-3087

Telephone (512) 239-4691, FAX (512) 239-2214

Utility Profile and Water Conservation Plan Requirements for Municipal Water Use by Retail Public Water Suppliers

This form is provided to assist retail public water suppliers in water conservation plan assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Water users can find best management practices (BMPs) at the Texas Water Development Board's website <http://www.twdb.texas.gov/conservation/BMPs/index.asp>. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name of Water Supplier: City of Carthage

Address: P.O. Box 400, Carthage, TX 75633

Telephone Number: (903) 693-3868 Fax: (903) 693-3882

Water Right No.(s): TX1830001

Regional Water Planning Group: Group I (East Texas)

Water Conservation Coordinator (or person responsible for implementing conservation program): Stephen K. Williams, CPM Phone: (903) 693-3868

Form Completed by: Blake Bogenschutz

Title: Design Engineer

Signature: _____ Date: 04/05/2019

A water conservation plan for municipal use by retail public water suppliers must include the following requirements (as detailed in 30 TAC Section 288.2). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

Utility Profile

I. POPULATION AND CUSTOMER DATA

A. *Population and Service Area Data*

1. Attach a copy of your service-area map and, if applicable, a copy of your Certificate of Convenience and Necessity (CCN).
2. Service area size (in square miles): 10.4
(Please attach a copy of service-area map)
3. Current population of service area: 6,854
4. Current population served for:
 - a. Water 6,854
 - b. Wastewater 6,854

5. Population served for previous five years:

<u>Year</u>	<u>Population</u>
<u>2018</u>	<u>6,828</u>
<u>2017</u>	<u>6,756</u>
<u>2016</u>	<u>6,882</u>
<u>2015</u>	<u>6,882</u>
<u>2014</u>	<u>6,779</u>

6. Projected population for service area in the following decades:

<u>Year</u>	<u>Population</u>
<u>2020</u>	<u>6,925</u>
<u>2030</u>	<u>7,066</u>
<u>2040</u>	<u>7,152</u>
<u>2050</u>	<u>7,232</u>
<u>2060</u>	<u>7,292</u>

7. List source or method for the calculation of current and projected population size.

Texas Water Development Board

B. Customer Data

Senate Bill 181 requires that uniform consistent methodologies for calculating water use and conservation be developed and available to retail water providers and certain other water use sectors as a guide for preparation of water use reports, water conservation plans, and reports on water conservation efforts. A water system must provide the most detailed level of customer and water use data available to it, however, any new billing system purchased must be capable of reporting data for each of the sectors listed below. More guidance can be found at: <http://www.twdb.texas.gov/conservation/doc/SB181Guidance.pdf>

1. Quantified 5-year and 10-year goals for water savings:

	<i>Historic 5-year Average</i>	<i>Baseline</i>	<i>5-year goal for year 2024</i>	<i>10-year goal for year 2029</i>
Total GPCD	284	285	270	256
Residential GPCD	73	70	69	66
Water Loss GPCD	63	75	60	57
Water Loss Percentage	17.96%	17.50%	17.06%	16.16%

Notes:

Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365

Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365

Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365

Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

2. Current number of active connections. Check whether multi-family service is counted as Residential or Commercial?

<i>Treated Water Users</i>	<i>Metered</i>	<i>Non-Metered</i>	<i>Totals</i>
Residential	3,237	0	3,237
Single-Family	3,216	0	3,216
Multi-Family	21	0	21
Commercial	698	0	698
Industrial/Mining	5	0	5
Institutional	81	0	81
Agriculture	0	0	0
Other/Wholesale	0	27	27

3. List the number of new connections per year for most recent three years.

<i>Year</i>	<i>2018</i>	<i>2017</i>	<i>2016</i>
<i>Treated Water Users</i>			
Residential	-44	443	-6
Single-Family	-39	437	0
Multi-Family	-5	6	-6
Commercial	-13	34	15
Industrial/Mining	0	0	0
Institutional	-2	4	2
Agriculture	0	0	0
Other/Wholesale	0	0	14

4. List of annual water use for the five highest volume customers.

<i>Customer</i>	<i>Use (1,000 gal/year)</i>	<i>Treated or Raw Water</i>
Carthage Poultry Plant	343,670	Treated
Rehobeth WSC	25,781	Treated
Hollands Quarters WSC	16,633	Treated
Riderville WSC	16,221	Treated
Other Manufacturing Panola County	13,246	Treated

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

1. List the amount of water use for the previous five years (in 1,000 gallons).

Indicate whether this is diverted or treated water.

<i>Year</i>	2018	2017	2016	2015	2014
<i>Month</i>					
January	72,107	69,706	61,876	73,272	68,813
February	60,032	59,332	76,526	64,760	56,816
March	67,190	68,524	66,170	69,616	60,938
April	65,237	63,822	60,549	64,107	60,144
May	83,761	72,741	64,918	64,223	65,854
June	90,349	76,951	65,858	68,451	68,848
July	87,306	78,001	81,822	91,696	84,508
August	99,074	80,340	70,747	97,313	89,594
September	87,170	77,226	69,495	80,598	85,863
October	68,732	79,521	73,272	79,628	75,672
November	67,718	70,246	62,176	63,948	65,532
December	66,303	65,750	60,624	64,301	66,707
Totals	914,979	862,160	814,033	881,913	849,289

2. Describe how the above figures were determined (e.g, from a master meter located at the point of a diversion from the source or located at a point where raw water enters the treatment plant, or from water sales).

Water Treatment Annual Reports

3. Amount of water (in 1,000 gallons) delivered/sold as recorded by the following account types for the past five years.

<i>Year</i>	2018	2017	2016	2015	2014
<i>Account Types</i>					
Residential	188,060	196,316	167,048	196,316	195,816
Single-Family	179,856	189,490	162,773	189,490	191,536
Multi-Family	8,204	6,826	4,275	6,826	4,280
Commercial	100,755	154,048	184,437	154,048	146,619
Industrial/Mining	341,605	356,434	335,292	356,434	350,513
Institutional	21,845	23,321	23,059	23,321	11,982
Agriculture	0	0	0	0	0
Other/Wholesale	21,200	20,200	19,900	6,000	26,929

4. List the previous records for water loss for the past five years (the difference between water diverted or treated and water delivered or sold).

<i>Year</i>	<i>Amount (gallons)</i>	<i>Percent %</i>
2014	54,226,212	6.38
2015	60,433,197	6.85
2016	18,590,395	2.28
2017	16,344,129	1.89
2018	N/A	N/A

B. Projected Water Demands

1. If applicable, attach or cite projected water supply demands from the applicable Regional Water Planning Group for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirements from such growth.

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

1. List all current water supply sources and the amounts authorized (in acre feet) with each.

<i>Water Type</i>	<i>Source</i>	<i>Amount Authorized</i>
Surface Water	Panola County Fresh Water District	36.83 acre-feet/day
Groundwater		
Other		

B. Treatment and Distribution System (if providing treated water)

1. Design daily capacity of system (MGD): 8.0
2. Storage capacity (MGD):
 - a. Elevated 1.25
 - b. Ground 2.75
3. If surface water, do you recycle filter backwash to the head of the plant?
 Yes No If yes, approximate amount (MGD):

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

1. Design capacity of wastewater treatment plant(s) (MGD): 3.6
2. Treated effluent is used for on-site irrigation, off-site irrigation, for plant wash-down, and/or for chlorination/dechlorination.

If yes, approximate amount (in gallons per month): N/A

3. Briefly describe the wastewater system(s) of the area serviced by the water utility. Describe how treated wastewater is disposed. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and the receiving stream if wastewater is discharged.

See attachment 2: Treatment Process at the end of this Utility Profile

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: 99%
2. Monthly volume treated for previous five years (in 1,000 gallons):

<i>Year</i>	2018	2017	2016	2015	2014
<i>Month</i>					
January	66,066	57,625	70,746	92,703	60,000
February	72,470	51,370	58,433	71,310	52,257
March	101,415	58,696	81,617	100,906	63,006
April	92,827	56,875	75,927	78,647	68,078
May	68,797	58,435	80,076	78,887	60,823
June	57,554	62,555	70,094	64,541	63,809
July	65,554	56,011	54,500	62,554	63,679
August	64,166	78,646	61,054	60,788	68,352
September	64,746	62,790	53,531	53,835	65,186
October	66,982	58,642	51,836	58,575	61,785
November	74,069	54,204	49,827	68,551	61,501
December	92,378	60,676	56,286	71,670	61,298
Totals	887,024	716,525	763,927	862,967	749,774

Water Conservation Plan

In addition to the utility profile, please attach the following as required by Title 30, Texas Administrative Code, §288.2. Note: If the water conservation plan does not provide information for each requirement, an explanation must be included as to why the requirement is not applicable.

A. Record Management System

The water conservation plan must include a record management system which allows for the classification of water sales and uses in to the most detailed level of water use data currently available to it, including if possible, the following sectors: residential (single and multi-family), commercial.

B. Specific, Quantified 5 & 10-Year Targets

The water conservation plan must include specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in gallons per capita per day. Note that the goals established by a public water supplier under this subparagraph are not enforceable. These goals must be updated during the five-year review and submittal.

C. Measuring and Accounting for Diversions

The water conservation plan must include a statement about the water suppliers metering device(s), within an accuracy of plus or minus 5.0% in order to measure and account for the amount of water diverted from the source of supply.

D. Universal Metering

The water conservation plan must include and a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement.

E. Measures to Determine and Control Water Loss

The water conservation plan must include measures to determine and control water loss (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections; abandoned services; etc.).

F. Continuing Public Education & Information

The water conservation plan must include a description of the program of continuing public education and information regarding water conservation by the water supplier.

G. Non-Promotional Water Rate Structure

The water supplier must have a water rate structure which is not "promotional," i.e., a rate structure which is cost-based and which does not encourage the excessive use of water. This rate structure must be listed in the water conservation plan.

H. Reservoir Systems Operations Plan

The water conservation plan must include a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin in order to optimize available water supplies.

I. Enforcement Procedure and Plan Adoption

The water conservation plan must include a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan.

J. Coordination with the Regional Water Planning Group(s)

The water conservation plan must include documentation of coordination with the regional water planning groups for the service area of the public water supplier in order to ensure consistency with the appropriate approved regional water plans.

K. Plan Review and Update

A public water supplier for municipal use shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The public water supplier for municipal use shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. The revised plan must also include an implementation report.

VI. ADDITIONAL REQUIREMENTS FOR LARGE SUPPLIERS

Required of suppliers serving population of 5,000 or more or a projected population of 5,000 or more within the next ten years:

A. Leak Detection and Repair

The plan must include a description of the program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted for uses of water.

B. Contract Requirements

A requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in this chapter. If the customer intends to resell the water, the contract between the initial supplier and 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 the provisions of this chapter.

VII. ADDITIONAL CONSERVATION STRATEGIES

Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements of 30 TAC §288.2(1), if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

1. Conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;
2. Adoption of ordinances, plumbing codes, and/or rules requiring water conserving plumbing fixtures to be installed in new structures and existing structures undergoing substantial modification or addition;
3. A program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;
4. A program for reuse and/or recycling of wastewater and/or graywater;
5. A program for pressure control and/or reduction in the distribution system and/or for customer connections;
6. A program and/or ordinance(s) for landscape water management;
7. A method for monitoring the effectiveness and efficiency of the water conservation plan; and
8. Any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

VIII. WATER CONSERVATION PLANS SUBMITTED WITH A WATER RIGHT APPLICATION FOR NEW OR ADDITIONAL STATE WATER

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan;
2. evaluates conservation as an alternative to the proposed appropriation; and
3. evaluates any other feasible alternative to new water development including, but not limited to, waste prevention, recycling and reuse, water transfer and marketing, regionalization, and optimum water management practices and procedures.

Additionally, it shall be the burden of proof of the applicant to demonstrate that no feasible alternative to the proposed appropriation exists and that the requested amount of appropriation is necessary and reasonable for the proposed use.

ATTACHMENT 1

SERVICE AREA MAP



Texas Commission on Environmental Quality
 P.O. Box 13887
 Austin, Texas 78711-3887
 For more information
 concerning this map, please contact the
 Water Supply Division at (512) 239-4691.
 11/20/2012

**The Selected Area
 of Interest**

Miles

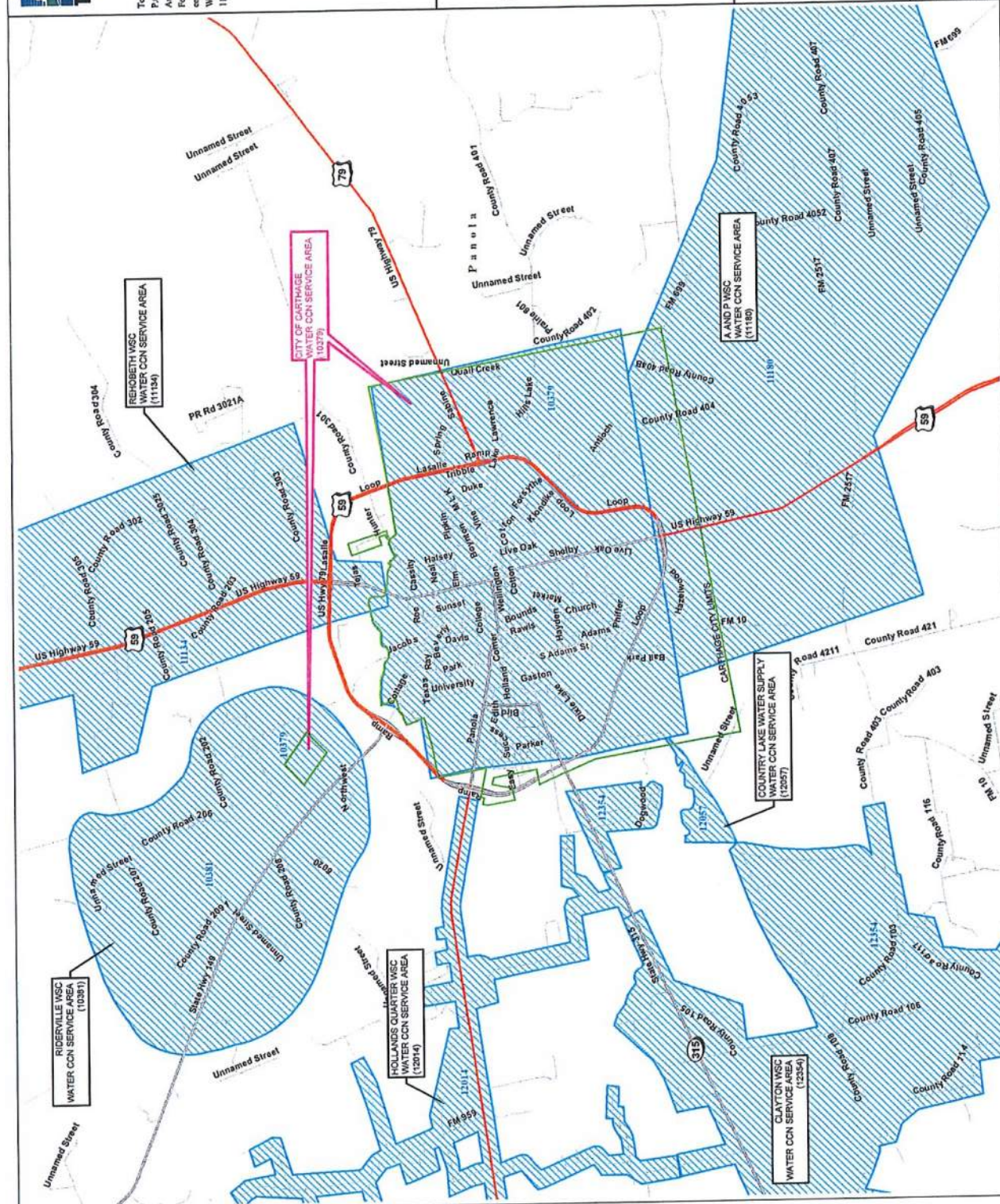


Legend

- Water CCN Facility Line
- Sewer CCN Facility Line
- Senate - Districts
- House - Districts
- TCEQ Service Region Boundary
- County Boundary
- Sewer CCN Service Area
- Water CCN Service Area
- City Boundary
- CCN Overlay Key
- Sewer-Water CCN Service Area



Disclaimer:
 This map was generated by the Integrated Water Utilities
 Database (IWD) from the Texas Commission on
 Environmental Quality. No claims are made to the
 accuracy or completeness of the data or to its suitability
 for a particular use.



ATTACHMENT 2

WASTEWATER TREATMENT PROCESS

ATTACHMENT No. 2

TREATMENT PROCESS

Treatment

The City of Carthage's Hoggs Bayou WWTP utilizes an extended aeration activated sludge process. Wastewater entering the facility is first routed through a mechanical bar screen. The screened flow is then sent to the facility's influent lift station where it is pumped to a splitter box. At the splitter box, the pH of the untreated wastewater flow is adjusted utilizing hydrated lime to facilitate the nitrification process that occurs in the plant's aeration basins. From the plant's splitter box, flow is diverted into one of the plant's two (2) aeration basins. Following aeration, the wastewater flow is diverted to one of the plant's two (2) clarifiers where sludge is settled out. Flow is then routed over the weirs of the plant's clarifiers, into a chlorination basin for disinfection. Following chlorination and de-chlorination processes, the treated flow travels down a cascade aeration system into a 24-inch discharge pipe. The treated effluent is then discharged into Hoggs Bayou.

Sludge Processing

Sludge settled from the plant's two (2) clarifiers is routed to a sludge pump station. From the sludge pump station, sludge is sent to either the splitter box at the head of the aeration basins (return activated sludge - RAS) or to the plant's aerobic digester (waste activated sludge - WAS). Sludge routed to the splitter box enters back into the treatment process as discussed in the paragraph above. Sludge pumped to the aerobic digester is further treated prior to disposal. Decant water from the aerobic digester is returned to the head of the plant and digested sludge, taken from the bottom of the digester, is disposed of by sub-surface land application or routed to the plant's belt filter press for dewatering prior to disposal. Following dewatering of sludge at the facility's belt filter press, sludge is stored on-site in a roll-off dumpster until it is hauled off for disposal at a landfill.

APPENDIX C

UTILITY PROFILE: TCEQ FORM 20162 WHOLESALE



Texas Commission on Environmental Quality

Water Availability Division

MC-160, P.O. Box 13087 Austin, Texas 78711-3087

Telephone (512) 239-4691, FAX (512) 239-2214

Utility Profile and Water Conservation Plan Requirements for Wholesale Public Water Suppliers

This form is provided to assist wholesale public water suppliers in water conservation plan development. If you need assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Water users can find best management practices (BMPs) at the Texas Water Development Board's website <http://www.twdb.texas.gov/conservation/BMPs/index.asp>. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name: City of Carthage

Address: P.O. Box 400, Carthage, TX 75633

Telephone Number: (903) 693-3868 Fax: (903) 693-3882

Water Right No.(s): TX1830001

Regional Water Planning Group: Group I (East Texas)

Person responsible for implementing conservation program: Stephen K. Williams Phone: (903) 693-3868

Form Completed By: Blake Bogenschutz

Title: Design Engineer

Signature: _____ Date: 04/05/2019

A water conservation plan for wholesale public water suppliers must include the following requirements (as detailed in 30 TAC Section 288.5). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

Utility Profile

I. WHOLESALE SERVICE AREA POPULATION AND CUSTOMER DATA

A. Population and Service Area Data:

1. Service area size (in square miles):

(Please attach a copy of service-area map)

52.5

2. Current population of service area:

5629

3. Current population served for:

a. Water 5629

b. Wastewater 0

4. Population served for previous five years:

<i>Year</i>	<i>Population</i>
2014	5,629
2015	5,629
2016	5,629
2017	5,629
2018	5,629

5. Projected population for service area in the following decades:

<i>Year</i>	<i>Population</i>
2020	5,635
2030	5,691
2040	5,748
2050	5,805
2060	5,863

6. List source or method for the calculation of current and projected population size.

Texas Water Development Board and TCEQ DWW.

B. Customer Data

List (or attach) the names of all wholesale customers, amount of annual contract, and amount of annual use for each customer for the previous year:

<i>Wholesale Customer</i>	<i>Contracted Amount (Acre-feet)</i>	<i>Previous Year Amount of Water Delivered (acre-feet)</i>
Rehobeth WSC	560.07	82.32
Hollands Quarters WSC	560.07	38.86
Clayton WSC	336.04	48.10

Riderville WSC	280.04	47.51
A&P WSC	112.01	26.42
Country Lakes WSC	-	8.17
Rock Hill WSC	56.01	0.34

II. WATER USE DATA FOR SERVICE AREA

A. Water Delivery

Indicate if the water provided under wholesale contracts is treated or raw water and the annual amounts for the previous five years (in acre feet):

<i>Year</i>	<i>Treated Water</i>	<i>Raw Water</i>
2014	248.07	0
2015	272.39	0
2016	236.13	0
2017	232.05	0
2018	251.73	0
Totals	1,240.37	0

B. Water Accounting Data

1. Total amount of water diverted at the point of diversion(s) for the previous five years (in acre-feet) for all water uses:

<i>Year</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>
<i>Month</i>					
January	20.10	22.63	17.95	18.76	19.84
February	16.60	20.00	22.20	15.97	16.52
March	17.80	21.50	19.19	18.44	18.49
April	17.57	19.80	17.56	17.18	17.95
May	19.24	19.84	18.83	19.58	23.04
June	20.11	21.14	19.10	20.71	24.86
July	24.68	28.32	23.73	20.99	24.02
August	26.17	30.06	20.52	21.62	27.26
September	25.08	24.89	20.16	20.79	23.98
October	22.10	24.59	21.25	21.40	18.91

November	19.14	19.75	18.04	18.91	18.63
December	19.48	19.86	17.59	17.70	18.24
Totals	248.07	272.39	236.13	232.05	251.73

2. Wholesale population served and total amount of water diverted for **municipal use** for the previous five years (in acre-feet):

<i>Year</i>	<i>Total Population Served</i>	<i>Total Annual Water Diverted for Municipal Use</i>
2014	5,629	248.07
2015	5,629	272.39
2016	5,629	236.13
2017	5,629	232.05
2018	5,629	251.73

C. Projected Water Demands

If applicable, project and attach water supply demands for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirements from such growth.

III. WATER SUPPLY SYSTEM DATA

A. Projected Water Demands

List all current water supply sources and the amounts authorized (in acre feet) with each.

<i>Water Type</i>	<i>Source</i>	<i>Amount Authorized</i>
Surface Water	Panola County Fresh Water District	36.83 acre-feet/day
Groundwater		
Other		

B. Treatment and Distribution System (if providing treated water)

1. Design daily capacity of system (MGD):

8.0

2. Storage capacity (MGD):

a. Elevated 1.25

b. Ground 2.75

3. Please attach a description of the water system. Include the number of treatment plants, wells, and storage tanks

1 water treatment plant, 2 water wells, 3 elevated storage tanks, and 1 ground storage tank.

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

1. Design capacity of wastewater treatment plant(s) (MGD):

N/A

2. Briefly describe the wastewater system(s) of the area serviced by the wholesale public water supplier. Describe how treated wastewater is disposed. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and the receiving stream if wastewater is discharged.

N/A

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: N/A%
2. Monthly volume treated for previous five years (in 1,000 gallons):

<i>Year</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>
<i>Month</i>					
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
October	0	0	0	0	0
November	0	0	0	0	0
December	0	0	0	0	0
Totals	0	0	0	0	0

Water Conservation Plan

In addition to the description of the wholesaler's service area (profile from above), a water conservation plan for a wholesale public water supplier must include, at a minimum, additional information as required by Title 30, Texas Administrative Code, Chapter 288.5. Note: If the water conservation plan does not provide information for each requirement an explanation must be included as to why the requirement is not applicable.

C. Specific, Quantified 5 & 10-Year Targets

The water conservation plan must include specific, quantified 5-year and 10-year targets for water savings including, where appropriate, target goals for municipal use in gallons per capita per day for the wholesaler's service area, maximum acceptable water loss, and the basis for the development of these goals. Note that the goals established by a wholesale water supplier under this subparagraph are not enforceable. These goals must be updated during the 5-year review and submittal.

D. Measuring and Accounting for Diversions

The water conservation plan must include a description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply.

E. Record Management Program

The water conservation plan must include a monitoring and record management program for determining water deliveries, sales, and losses.

F. Metering/Leak-Detection and Repair Program

The water conservation plan must include a program of metering and leak detection and repair for the wholesaler's water storage, delivery, and distribution system.

G. Contract Requirements for Successive Customer Conservation

The water conservation plan must include a requirement in every water supply contract entered into or renewed after official adoption of the water conservation plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of Title 30 TAC Chapter 288. If the customer intends to resell the water, then the contract between the initial supplier and 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 the provisions of this chapter.

H. Reservoir Systems Operations Plan

The water conservation plan must include a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin. The reservoir systems operations plan shall include optimization of water supplies as one of the significant goals of the plan.

I. Enforcement Procedure and Official Adoption

The water conservation plan must include a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan.

J. Coordination with the Regional Water Planning Group(s)

The water conservation plan must include documentation of coordination with the regional water planning groups for the service area of the wholesale water supplier in order to ensure consistency with the appropriate approved regional water plans.

Example statement to be included within the water conservation plan:

The service area of the _____ (name of water supplier) is located within the _____ (name of regional water planning area or areas) and _____ (name of water supplier) has provided a copy of this water conservation plan to the _____ (name of regional water planning group or groups).

K. Plan Review and Update

A wholesale water supplier shall review and update its water conservation plan, as appropriate based on an assessment of previous 5-year and 10-year targets and any other new or updated information. A wholesale water supplier shall review and update the next revision of its water conservation plan no later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. The revised plan must also include an implementation report.

V. ADDITIONAL CONSERVATION STRATEGIES

Any combination of the following strategies shall be selected by the water wholesaler, in addition to the minimum requirements of 30 TAC §288.5(1), if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

1. Conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;
2. A program to assist agricultural customers in the development of conservation, pollution prevention and abatement plans;
3. A program for reuse and/or recycling of wastewater and/or graywater;
4. Any other water conservation practice, method, or technique which the wholesaler shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

V. WATER CONSERVATION PLANS SUBMITTED WITH A WATER RIGHT APPLICATION FOR NEW OR ADDITIONAL STATE WATER

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan;
2. evaluates conservation as an alternative to the proposed appropriation; and
3. evaluates any other feasible alternative to new water development including, but not limited to, waste prevention, recycling and reuse, water transfer and marketing, regionalization, and optimum water management practices and procedures.

Additionally, it shall be the burden of proof of the applicant to demonstrate that no feasible alternative to the proposed appropriation exists and that the requested amount of appropriation is necessary and reasonable for the proposed use.

APPENDIX D

UTILITY PROFILE: TWDB FORM 1965

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

Fill out this form as completely as possible.
If a field does not apply to your entity, leave it blank.

CONTACT INFORMATION

Name of Utility: City of Carthage

Public Water Supply Identification Number (PWS ID): TX1830001

Certificate of Convenience and Necessity (CCN) Number: 10379

Surface Water Right ID Number: _____

Wastewater ID Number: TX0032361

Completed By: Blake Bogenschutz Title: Design Engineer

Address: 6781 Oak Hill Blvd. City: Tyler Zip Code: 75703

Email: bbogenschutz@ksaeng.com Telephone Number: (903) 581-8141

Date: 04/04/2019

Regional Water Planning Group: 1 [Map](#)

Groundwater Conservation District: 65 [Map](#)

Check all that apply:

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

Section I: Utility Data

A. Population and Service Area Data

1. Current service area size in square miles: 10
 (Attach or email a copy of the service area map.)

2. Provide 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 Service
2014	6,779	5,629	6,779
2015	6,882	5,629	6,882
2016	6,882	5,629	6,882
2017	6,756	5,629	6,756
2018	6,828	5,629	6,828

3. Provide the 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 Service
2020	6,925	5,167	6,925
2030	7,066	5,219	7,066
2040	7,152	5,271	7,152
2050	7,232	5,324	7,232
2060	7,292	5,377	7,292

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

Texas Water Development Board and TCEQ DWW.

B. System Input

Provide system input data for the previous five years.

Total System Input = Self-supplied + Imported – Exported

Year	Self-supplied Water in Gallons	Purchased/Imported Water in Gallons	Exported Water in Gallons	Total System Input	Total GPCD
2014	0	849,289,000	0	849,289,000	343
2015	0	881,913,000	0	881,913,000	351
2016	0	814,033,000	0	814,033,000	324
2017	0	862,160,000	0	862,160,000	350
2018		914,979,000	0	914,979,000	367
Historic 5-year Average	0	864,474,800	0	864,474,800	347

C. Water Supply System (Attach description of water system)

1. Designed daily capacity of system _____ 8,000,000 gallons per day.
2. Storage Capacity:
 Elevated _____ 1,250,000 gallons
 Ground _____ 2,750,000 gallons
3. List all current water supply sources in gallons.

Water Supply Source	Source Type*	Total Gallons
Lake Murvaul	Surface	12,000,000
	Choose One	
	Choose One	
	Choose One	
	Choose One	
	Choose One	

*Select one of the following source types: *Surface water, Groundwater, or Contract*

4. If surface water is a source type, do you recycle backwash to the head of the plant?
 Yes _____ estimated gallons per day
 No

D. Projected Demands

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

Year	Population	Water Demands (gallons)
2019	6,877	921,518,000
2020	6,925	927,950,000
2021	6,935	929,290,000
2022	6,946	930,764,000
2023	6,958	932,372,000
2024	6,971	934,114,000
2025	6,985	935,990,000
2026	7,000	938,000,000
2027	7,015	940,010,000
2028	7,031	942,154,000

2. Describe sources of data and how projected water demands were determined. Attach additional sheets if necessary.

Texas Water Development Board population a projections were used for decade year and the years between were determined through interpolation.

E. High Volume Customers

- List the annual water use, in gallons, for the five highest volume **RETAIL customers**. Select one of the following water use categories to describe the customer; choose Residential, Industrial, Commercial, Institutional, or Agricultural.

Retail Customer	Water Use Category*	Annual Water Use	Treated or Raw
Carthage Poultry Plant	Industrial	343,669,880	Treated
	Choose One		Choose One
	Choose One		Choose One
	Choose One		Choose One
	Choose One		Choose One

*For definitions on recommended customer categories for classifying customer water use, refer to the online [Guidance and Methodology for Reporting on Water Conservation and Water Use](#).

- If applicable, list the annual water use for the five highest volume **WHOLESALE customers**. Select one of the following water use categories to describe the customer; choose Municipal, Industrial, Commercial, Institutional, or Agricultural.

Wholesale Customer	Water Use Category*	Annual Water Use	Treated or Raw
Rehobeth WSC	Municipal	25,781,325	Treated
Hollands Quarters WSC	Municipal	16,632,750	Treated
Riderville WSC	Municipal	16,221,275	Treated
Clayton WSC	Municipal	10,276,950	Treated
A&P WSC	Municipal	10,001,750	Treated

*For definitions on recommended customer categories for classifying customer water use, refer to the online [Guidance and Methodology for Reporting on Water Conservation and Water Use](#).

F. Utility Data Comment Section

Provide additional comments about utility data below.

Section II: System Data

A. Retail Connections

- List the active retail connections by major water use category.

Water Use Category*	Active Retail Connections			
	Metered	Unmetered	Total Connections	Percent of Total Connections
Residential – Single Family	3,216		3,216	79%
Residential – Multi-family (units)	21		21	1%
Industrial	5		5	0%
Commercial	698	27	725	18%
Institutional	81		81	2%
Agricultural	0		0	0%
TOTAL	4,021	27	4,048	

*For definitions on recommended customer categories for classifying customer water use, refer to the online [Guidance and Methodology for Reporting on Water Conservation and Water Use](#).

- List the net number of new retail connections by water use category for the previous five years.

Water Use Category*	Net Number of New Retail Connections				
	2014	2015	2016	2017	2018
Residential – Single Family	-256	216	0	437	-39
Residential – Multi-family (units)	-2	0	-6	6	-5
Industrial	0	0	0	0	0
Commercial	-108	88	15	34	-13
Institutional	4	12	2	4	-2
Agricultural	0	0	0	0	0
TOTAL	-362	316	11	481	-59

*For definitions on recommended customer categories for classifying customer water use, refer to the online [Guidance and Methodology for Reporting on Water Conservation and Water Use](#).

B. Accounting Data

For the previous five years, enter the number of gallons of RETAIL water provided in each major water use category.

Water Use Category*	Total Gallons of Retail Water				
	2014	2015	2016	2017	2018
Residential - Single Family	191,536,351	189,489,800	162,773,000	160,043,300	179,855,700
Residential – Multi-family	4,280,100	6,825,900	4,274,700	8,146,600	8,203,700
Industrial	350,513,000	356,434,000	335,292,300	351,320,400	341,605,000
Commercial	146,618,633	154,048,175	184,437,000	101,433,600	100,775,180
Institutional	11,982,200	23,321,200	23,058,800	25,395,700	21,844,700
Agricultural	0	0	0	0	0
TOTAL	704,930,284	730,119,075	709,835,800	646,339,600	652,284,280

*For definitions on recommended customer categories for classifying customer water use, refer to the online [Guidance and Methodology for Reporting on Water Conservation and Water Use](#).

C. Residential Water Use

For the previous five years, enter the residential GPCD for single family and multi-family units.

Water Use Category*	Residential GPCD				
	2014	2015	2016	2017	2018
Residential - Single Family	101	92	79	67	77
Residential – Multi-family	45	72	59	57	71

D. Annual and Seasonal Water Use

1. For the previous five years, enter the gallons of treated water provided to RETAIL customers.

Month	Total Gallons of Treated Retail Water				
	2014	2015	2016	2017	2018
January	68,813,000	73,272,000	61,876,000	69,706,000	72,107,000
February	56,816,000	64,760,000	76,526,000	59,332,000	60,032,000
March	60,938,000	69,616,000	66,170,000	68,524,000	67,190,000
April	60,144,000	64,107,000	60,549,000	63,822,000	65,237,000
May	65,854,000	64,223,000	64,918,000	72,741,000	83,761,000
June	68,848,000	68,451,000	65,858,000	76,951,000	90,349,000
July	84,508,000	91,696,000	81,822,000	78,001,000	87,306,000
August	89,594,000	97,313,000	70,747,000	80,340,000	99,074,000
September	85,863,000	80,598,000	69,495,000	77,226,000	87,170,000
October	75,672,000	79,628,000	73,272,000	79,521,000	68,732,000
November	65,532,000	63,948,000	62,176,000	70,246,000	67,718,000
December	66,707,000	64,301,000	60,624,000	65,750,000	66,303,000
TOTAL	849,289,000	881,913,000	814,033,000	862,160,000	914,979,000

2. For the previous five years, enter the gallons of raw water provided to RETAIL customers.

Month	Total Gallons of Raw Retail Water				
	2014	2015	2016	2017	2018
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
October	0	0	0	0	0
November	0	0	0	0	0
December	0	0	0	0	0
TOTAL	0	0	0	0	0

3. Summary of seasonal and annual water use.

Water Use	Seasonal and Annual Water Use					Average in Gallons
	2014	2015	2016	2017	2018	
Summer Retail (Treated + Raw)	242,950,000	257,460,000	218,427,000	235,292,000	276,729,000	246,171,600 5yr Average
TOTAL Retail (Treated + Raw)	849,289,000	881,913,000	814,033,000	862,160,000	914,979,000	864,474,800 5yr Average

E. Water Loss

Provide Water Loss data for the previous five years.

Water Loss GPCD = [Total Water Loss in Gallons ÷ Permanent Population Served] ÷ 365

Water Loss Percentage = [Total Water Loss ÷ Total System Input] x 100

Year	Total Water Loss in Gallons	Water Loss in GPCD	Water Loss as a Percentage
2014	54,226,212	22	6%
2015	60,433,197	24	7%
2016	18,590,395	7	2%
2017	16,344,129	7	2%
2018		0	0%
5-year average	29,918,787	12	3%

F. Peak Water Use

Provide the 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)
2014	2,005,093	2,485,511	1.24
2015	2,016,765	2,605,477	1.29
2016	1,999,276	2,375,477	1.19
2017	1,826,136	1,995,542	1.09
2018	1,845,162	2,364,992	1.28

G. Summary of Historic Water Use

Water Use Category	Historic 5-year Average	Percent of Connections	Percent of Water Use
Residential SF	176,739,630	79%	0%
Residential MF	6,346,200	1%	0%
Industrial	347,032,940	0%	0%
Commercial	137,462,518	18%	0%
Institutional	21,120,520	2%	0%
Agricultural	0	0%	0%

H. System Data Comment Section

Provide additional comments about system data below.

2018 Water Loss Audit not complete yet.

Section III: Wastewater System Data

If you do not provide wastewater system services then you have completed the Utility Profile. Save and Print this form to submit with your Plan. Continue with the [Water Conservation Plan Checklist](#) to complete your Water Conservation Plan.

A. Wastewater System Data (Attach a description of your wastewater system.)

1. Design capacity of wastewater treatment plant(s): 3,600,000
gallons per day.
2. List the active wastewater connections by major water use category.

Water Use Category*	Active Wastewater Connections			
	Metered	Unmetered	Total Connections	Percent of Total Connections
Municipal	0	2,393	2,393	84%
Industrial	1	4	5	0%
Commercial	1	376	377	13%
Institutional	0	81	81	3%
Agricultural	0	0	0	0%
TOTAL	2	2,854	2,856	

2. What percent of water is serviced by the wastewater system? 99%
3. For the previous five years, enter the number of gallons of wastewater that was treated by the utility.

Month	Total Gallons of Treated Wastewater				
	2014	2015	2016	2017	2018
January	60,000,000	92,703,000	70,746,000	57,625,000	66,066,000
February	52,257,000	71,310,000	58,433,000	51,370,000	72,470,000
March	63,006,000	100,906,000	81,617,000	58,696,000	101,415,000
April	68,078,000	78,647,000	75,927,000	56,875,000	92,827,000
May	60,823,000	78,887,000	80,076,000	58,435,000	68,797,000
June	63,809,000	64,541,000	70,094,000	62,555,000	57,554,000
July	63,679,000	62,554,000	54,500,000	56,011,000	65,554,000
August	68,352,000	60,788,000	61,054,000	78,646,000	64,166,000
September	65,186,000	53,835,000	53,531,000	62,790,000	64,746,000
October	61,785,000	58,575,000	51,836,000	58,642,000	66,982,000
November	61,501,000	68,551,000	49,827,000	54,204,000	74,069,000
December	61,298,000	71,670,000	56,286,000	60,676,000	92,378,000
TOTAL	749,774,000	862,967,000	763,927,000	716,525,000	887,024,000

4. Can treated wastewater be substituted for potable water?
 Yes No

B. Reuse Data

1. Provide data on the types of recycling and reuse activities implemented during the current reporting period.

Type of Reuse	Total Annual Volume (in gallons)
On-site irrigation	0
Plant wash down	0
Chlorination/de-chlorination	0
Industrial	0
Landscape irrigation (parks, golf courses)	0
Agricultural	0
Discharge to surface water	0
Evaporation pond	0
Other	0
TOTAL	0

C. Wastewater System Data Comment

Provide additional comments about wastewater system data below.

You have completed the Utility Profile. Save and Print this form to submit with your Plan. Continue with the [Water Conservation Plan Checklist](#) to complete your Water Conservation Plan.

APPENDIX E

ORDINANCE FOR WATER CONSERVATION PLAN ADOPTION

ORDINANCE NO. 1994-03

AN ORDINANCE ADOPTING A COPY OF CARTHAGE
WATER CONSERVATION/AND DROUGHT
CONTINGENCY PLAN; PROVIDING A PENALTY OF
NOT LESS THAN \$10 PER DAY NOR MORE THAN
\$200 PER DAY FOR EACH DAY OF NON-
COMPLIANCE AND/OR DISCONNECTION OF WATER
SERVICES TO SUCH USERS BY THE CITY; A
PUBLIC NEED OF AN EMERGENCY NATURE FOR
THE ADOPTION HEREOF ON ONE READING;
PROVIDING FOR PUBLICATION AND ORDAINING
OTHER MATTERS RELATED TO THE FOREGOING.

BE IT ORDAINED BY THE CITY OF CARTHAGE, TEXAS:

WHEREAS, the City Commission has determined there is an urgent need in the best public interest of the City of Carthage, Texas to adopt a Water Conservation Plan and Drought Contingency Plan, and the City Commission further determines that such public need is of an emergency nature and the legal requirement of two required separate readings of the subject ordinance be dispensed with and waived; and,

WHEREAS, the City Commission of the City now desires to evidence its approval of the Water Conservation/Drought Contingency Plan and adopt such plan as an official policy of the City;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF CARTHAGE, TEXAS:

SECTION I: Approval of the Plan: The City Commission hereby approves and adopts as the City's Water Conservation Plan, the Water Conservation/Drought Contingency Plan attached hereto as Exhibit "A" to be included in full as a part of this Ordinance as if recited verbatim herein. The

City commits to implement the program according to the procedures set forth in the adopted plan.

SECTION II: The City shall report to the Texas Water Development Board annually on the implementation and effectiveness of the plan in accordance with the outline set forth in the plan.

SECTION III: In regards to implementation and enforcement of the Conservation/Drought Contingency Plan the City Manager is designated as the official responsible for implementation and enforcement, the following guidelines are adopted:

1. Mild Drought occurs when:

- (a) Average daily water consumption reaches 90% of production capacity.
- (b) Consumption (90%) has existed for a period of three days.
- (c) Weather conditions are to be considered in drought classification determination. Predicated long, cold, or dry periods are to be considered in impact analysis.

2. Moderate Drought conditions are reached when:

- (a) Average daily water consumption reaches 100% of rated production capacity for three day period.
- (b) Weather conditions indicate mild drought will exist five days or more.

- (c) One Ground Storage Tank or one Clear Well is taken out of service during mild drought.
- (d) Storage capacity (water level) is not being maintained during period of 100% rated production period.
- (e) Existence of any preceding conditions listed above for a duration of 36 hours.

3. Severe Drought Classification is reached when:

- (a) Average daily water consumption reaches 110% of production capacity for a 24 hour period.
- (b) Average daily water consumption will not enable storage levels to be maintained.
- (c) System demand exceeds available high service pump capacity.
- (d) Any two conditions listed in Moderate Drought Classification occurs for a 24 hour period.
- (e) Water system is contaminated either accidentally or intentionally. Severe condition is reached immediately upon detection.
- (f) Water system fails -- from acts of God (tornados, hurricanes) or man. Severe condition is reached immediately upon detection.

In the event severe classification conditions persist (Item 3 above) for an extended period of time, the City may ration water usage and/or terminate service to selected

users of the system in accordance with the following sequence:

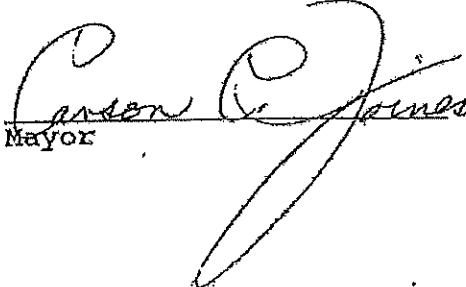
- (1) Recreational Users
- (2) Residential Users
- (3) Commercial Users
- (4) Industrial Users
- (5) School Users
- (6) Hospitals, Public Health and Safety Facilities

SECTION IV: Users of City water except for the City, that do not comply with Section III of this Ordinance shall be subject to a penalty and fine of not less than \$10.00 per day nor more than \$200.00 per day for each day of non-compliance and/or disconnection or discontinuance of water services to such users by the City.

SECTION V: The City Commission finds and declares that a sufficient written notice of the date, hour, place and subject of this meeting of the City Commission was posted at a designated place convenient to the public at the City Hall for the time required by the law preceding this meeting and that such place of posting was readily accessible at all times to the general public; that all of the foregoing was done as required by the law; and that this meeting has been open to the public as required by law at all times during which this Ordinance and the subject matter thereof has been discussed, considered and formally acted upon.

The City Commission further rectifies, approves and confirms such written notice and the contents and posting thereof.

PASSED AND APPROVED this 27th day of January, 1994.



Mayor

ATTEST:



City Secretary (Acting)

ORDINANCE NO. 1994-04

AN ORDINANCE AMENDING THE PLUMBING CODE OF THE CITY OF CARTHAGE, TEXAS BY ADOPTING APPENDIX J (WATER CONSERVATION) OF THE STANDARD PLUMBING CODE, 1985 EDITION COMPILED AND PUBLISHED BY THE SOUTHERN BUILDING CODE CONGRESS INTERNATIONAL, INC., AS AMENDED BY THIS ORDINANCE; PROVIDING A PENALTY NOT TO EXCEED \$200.00 FOR EACH VIOLATION THEREOF; PROVIDING FOR PUBLICATION AND ORDAINING OTHER MATTERS RELATED TO THE FOREGOING.

BE IT ORDAINED BY THE CITY OF CARTHAGE:

SECTION I: The Plumbing Code of the City of Carthage, Texas is hereby amended by adopting Appendix J (Water Conservation) of the Standard Plumbing Code, 1985 Edition published by the Southern Building Code Congress International, Inc.

SECTION II: That Appendix J of Standard Plumbing Code, 1985 Edition published by the Southern Building Code Congress International, Inc. adopted by Section I of this Ordinance is hereby amended to add the following paragraphs:

J107 - Swimming Pool

"All new swimming pools installed in the City of Carthage after the effective date of this Ordinance shall be equipped with recirculating filtration equipment."

J108 - Hot Water Pipe

All above ground hot water piping shall be insulated in FSK Jacket or Armaflex Jacket.

SECTION III: That any violation of the provisions of the said Appendix J of the Standard Plumbing Code adopted

pursuant to the Section I of this Ordinance shall be punishable by a fine not to exceed \$200.00 upon conviction.

SECTION IV: That the Mayor of the City of Carthage, Texas is hereby authorized and directed to cause a true and correct copy of the caption of this Ordinance to be published in a newspaper having general circulation in the City of Carthage, Panola County, Texas and as an amendment to be published in the Plumbing Code of the City of Carthage, Texas.

SECTION V: That the Elective Council of the City of Carthage hereby determines that there is an urgent need in the best public interest of the City of Carthage, Texas to adopt this Ordinance and that such public need is of an emergency nature and the legal requirement of two separate readings of this Ordinance is hereby dispensed with and waived.

PASSED AND APPROVED THIS 27th day of January, 1994.

Carson C. Jones
Mayor

ATTEST:

Bianca Simford
City Secretary (Acting)

APPENDIX J WATER CONSERVATION

J101 — GENERAL

Automatic flushing devices of the siphonic design shall not be used to operate urinals.

J102 — WATER CLOSETS

Water closets, either flush tank or flushometer operated, shall be designed, manufactured and installed to be operable and adequate flushed with no more than 4.0 gal per flushing cycle when tested in accordance with applicable standards.

J103 — URINALS

Urinals shall be designed, manufactured, and installed to be operable and adequate flushed with no more than 1.5 gal of water per flush.

J104 — LAVATORY FACILITIES

J104.1—PUBLIC FACILITIES

Faucets for public lavatories shall be equipped with outlet devices which limit the flow of water to a maximum of 0.5 gpm or be equipped with self-closing valves that limit the delivery to a maximum of 0.25 gallons of hot water for recirculating systems and to a maximum of 0.5 gallons for non-recirculating systems.

EXCEPTION: Separate lavatories for physically handicapped persons shall not be equipped with self-closing valves.

J104.2—PRIVATE FACILITIES

Faucets for private lavatories shall be designed, manufactured and installed to deliver water at a flow rate not to exceed 3.0 gpm when tested in accordance with applicable standards.

J105 — SHOWER HEADS

Showerheads shall be designed, manufactured, and installed to deliver water at a rate not to exceed 3.0 gpm when tested in accordance with applicable standards.

J106 — SINK FAUCETS

Sink faucets shall be designed, manufactured, and installed to deliver water at a rate not to exceed 3.0 gpm when tested in accordance with applicable standards.

ORDINANCE NO. 1994-05

AN ORDINANCE ADOPTING A COPY OF CARTHAGE WATER CONSERVATION/AND DROUGHT CONTINGENCY PLAN; PROVIDING A PENALTY OF NOT LESS THAN \$10 PER DAY NOR MORE THAN \$200 PER DAY FOR EACH DAY OF NON-COMPLIANCE AND/OR DISCONNECTION OF WATER SERVICES TO SUCH USERS BY THE CITY;

BE IT ORDAINED BY THE CITY OF CARTHAGE, TEXAS:

WHEREAS, the City Commission has determined there is an urgent need in the best public interest of the City of Carthage, Texas to adopt a Water Conservation Plan and Drought Contingency Plan;

WHEREAS, the City Commission of the City now desires to evidence its approval of the Water Conservation/Drought Contingency Plan and adopt such plan as an official policy of the City;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF CARTHAGE, TEXAS:

SECTION I: Approval of the Plan: The City Commission hereby approves and adopts as the City's Water Conservation Plan, the Water Conservation/Drought Contingency Plan attached hereto as Exhibit "A" to be included in full as a part of this Ordinance as if recited verbatim herein. The City commits to implement the program according to the procedures set forth in the adopted plan.

SECTION II: The City shall report to the Texas Water Development Board annually on the implementation and effectiveness of the plan in accordance with the outline set forth in the plan.

SECTION III: In regards to implementation and enforcement of the Conservation/Drought Contingency Plan the City Manager is designated as the official responsible for implementation and

enforcement, the following guidelines are adopted:

1. Mild Drought occurs when:

- (a) Average daily water consumption reaches 90% of production capacity.
- (b) Consumption (90%) has existed for a period of three days.
- (c) Weather conditions are to be considered in drought classification determination. Predicated long, cold, or dry periods are to be considered in impact analysis.

2. Moderate Drought conditions are reached when:

- (a) Average daily water consumption reaches 100% of rated production capacity for three day period.
- (b) Weather conditions indicate mild drought will exist five days or more.
- (c) One Ground Storage Tank or one Clear Well is taken out of service during mild drought.
- (d) Storage capacity (water level) is not being maintained during period of 100% rated production period.
- (e) Existence of any preceding conditions listed above for a duration of 36 hours.

3. Severe Drought Classification is reached when:

- (a) Average daily water consumption reaches 110% of production capacity for a 24 hour period.
- (b) Average daily water consumption will not enable storage levels to be maintained.

- (c) System demand exceeds available high service pump capacity.
- (d) Any two conditions listed in Moderate Drought Classification occurs for a 24 hour period.
- (e) Water system is contaminated either accidentally or intentionally. Severe condition is reached immediately upon detection.
- (f) Water system fails -- from acts of God (tornados, hurricanes) or man. Severe condition is reached immediately upon detection.

In the event severe classification conditions persist (Item 3 above) for an extended period of time, the City may ration water usage and/or terminate service to selected users of the system in accordance with the following sequence:

- (1) Recreational Users
- (2) Residential Users
- (3) Commercial Users
- (4) Industrial Users
- (5) School Users
- (6) Hospitals, Public Health and Safety Facilities

SECTION IV: Users of City water except for the City, that do not comply with Section III of this Ordinance shall be subject to a penalty and fine of not less than \$10.00 per day nor more than \$200.00 per day for each day of noncompliance and/or disconnection or discontinuance of water services to such users by the City.

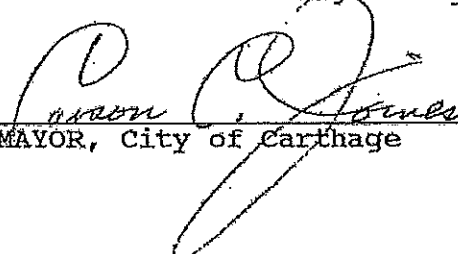
This ordinance replaces the ordinance heretofore passed on an emergency basis.

The City Commission further rectifies, approves and confirms such written notice and the content and posting thereof.

PASSED AND ADOPTED for the First Reading this 14th day of February, 1994.

PASSED AND ADOPTED for the Second Reading this 21st day of March, 1994.

PASSED AND ADOPTED for the Third Reading this 11th day of April, 1994.



MAYOR, City of Carthage

ATTEST:

BY Jayce Whithead
City Secretary

-ORDINANCE NO. 2002-06

AN ORDINANCE ADOPTING THE CITY OF CARTHAGE WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN; PROVIDING A PENALTY OF NOT LESS THAN \$10 PER DAY NOR MORE THAN \$200 PER DAY FOR EACH DAY OF NON-COMPLIANCE AND/OR DISCONNECTION OF WATER SERVICES TO SUCH USERS BY THE CITY;

BE IT ORDAINED BY THE CITY OF CARTHAGE, TEXAS:

WHEREAS, the City Commission has determined there is an urgent need in the best public interest of the City of Carthage, Texas to adopt a Water Conservation Plan and Drought Contingency Plan;

WHEREAS, the City Commission of the City now desires to evidence its approval of the Water Conservation and Drought Contingency Plan and adopt such plan as an official policy of the City;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF CARTHAGE, TEXAS:

SECTION I: Approval of the Plan: The City Commission hereby approves and adopts as the City's Water Conservation Plan, the Water Conservation and Drought Contingency Plan attached hereto as Exhibit "A" to be included in full as a part of this Ordinance as if recited verbatim herein. The City commits to implement the program according to the procedures set forth in the adopted plan.

SECTION II: The City shall report to the Texas Water Development Board annually on the implementation and effectiveness of the plan in accordance with the outline set forth in the plan.

SECTION III: In regards to implementation and enforcement of the Water Conservation and Drought Contingency Plan the City Manager is designated as the official responsible for implementation and enforcement of the procedures set forth in the adopted plan.

SECTION IV: Users of City water except for the City, that do not comply with Section III of this Ordinance shall be subject to a penalty and fine of not less than \$10.00 per day nor more than \$200.00 per day for each day of noncompliance and/or disconnection or discontinuance of water services to such users by the City. Wholesale water customers may be provided water in a pro rata water allocation in accordance with Texas Water Code Section 11.039.

This ordinance replaces the ordinance heretofore passed.

APPENDIX F

DROUGHT CONTINGENCY PLAN

CITY OF CARTHAGE, TEXAS

**DROUGHT CONTINGENCY
PLAN**

APRIL 2019

PREPARED BY:



TBPE FIRM REGISTRATION NO. F-1356

6781 Oak Hill Blvd.
Tyler, Texas 75703
(903) 581-8141
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DROUGHT CONTINGENCY PLAN

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DROUGHT CONTINGENCY PLAN

I. DECLARATION OF POLICY, PURPOSE, AND INTENT

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

- Reduce average per capita water consumption by 5% over the next 5 years.
- Reduce average per capita water consumption by 10% over the next 10 years.

II. PUBLIC INVOLVEMENT

The City will provide the opportunity for users to review, comment, and provide input in preparing the Plan through public notice. The City Manager will post a notice to the public at Carthage City Hall, 812 W. Panola, Carthage, Texas 75633. The notice will include the place(s), date(s), and time(s) where the Plan may be viewed and describe the method by which users may provide their comments and inputs.

III. PUBLIC EDUCATION

The public will be made aware of conservation and water shortage conditions by information and data transfer through the City's annual program. During periods of drought curtailment, Stage 1 condition establishes an information center, an information person, and utilize the most effective methods developed for information dissemination on a daily basis.

Close observation of the information program should develop the most effective ways to communicate with customers. Posting notices, newspaper articles, radio coverage, and direct mail to customers may be used.

IV. COORDINATION WITH REGIONAL WATER PLANNING GROUPS

The water service area of the City of Carthage is located within the Regional Planning Group I (East Texas) of the Texas Water Development Board. A copy of the plan will be provided to Regional Planning Group I to ensure consistency with the regional water plan.

V. AUTHORIZATION

The City Manager, or his/her designee is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The City Manager, or his/her designee shall have the authority to initiate or terminate water shortage or other water supply emergency response measures as described in this Plan.

Adoption of this Plan, Drought Contingency Ordinance, and modification of Plumbing Code Ordinance will enable the City to Implement and carry out enforcement of enacted ordinances to make the Plan effective and workable. The City Manager can add, delete, and amend rules, regulations, and implementation as needed, and shall advise City commission of such amendments at its next regular or called meeting.

VI: APPLICATION

The provisions of this Plan shall apply to all persons, customers, and property utilizing water provided by the City of Carthage. The terms person and customer as used in the Plan include individuals, corporations, partnerships, associations, and all other legal entities.

VII. DEFINITIONS

For the purposes of this Plan, the following definitions shall apply:

Aesthetic water use: water use for ornamental or decorative purposes such as fountains, reflecting pools, and water gardens.

Commercial and institutional water use: water use which is integral to the operations of commercial and non-profit establishments and governmental entities such as retail establishments, hotels and motels, restaurants, and office buildings.

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 supply is conserved and made available for future or alternative uses.

Customer: any person, company, or organization using water supplied by the City of Carthage.

Domestic water use: water use for personal needs or for household or sanitary purposes such as drinking, bathing, heating, cooking, sanitation, or for cleaning a residence, business, industry, or institution.

Even number address: street addresses, box numbers, or rural postal route numbers ending in 0, 2, 4, 6, or 8 and locations without addresses.

Industrial water use: the use of water in processes designed to convert materials of lower value into forms having greater usability and value.

Landscape irrigation use: water used for the irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, golf courses, parks, and rights-of-way and medians.

Non-essential water use: water uses that are not essential nor required for the protection of public, health, safety, and welfare, including:

- (a) irrigation of landscape areas, including parks, athletic fields, and golf courses, except otherwise provided under this Plan;
- (b) use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle;
- (c) use of water to wash down any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;
- (d) use of water to wash down buildings or structures for purposes other than immediate fire protection;
- (e) flushing gutters or permitting water to run or accumulate in any gutter or street;
- (f) use of water to fill, refill, or add to any indoor or outdoor swimming pools or Jacuzzi-type pools;
- (g) use of water in a fountain or pond for aesthetic or scenic purposes except where necessary to support aquatic life;
- (h) failure to repair a controllable leak(s) within a reasonable period after having been given notice directing the repair of such leak(s); and
- (i) use of water from hydrants for construction purposes or any other purposes other than fire fighting.

Odd numbered address: street addresses, box numbers, or rural postal route numbers ending in 1, 3, 5, 7, or 9.

VIII. CRITERIA FOR INITIATION AND TERMINATION OF DROUGHT RESPONSE STAGES

The Texas Water Development Board suggests three levels or conditions for determining degree of urgency for initiation of Drought Contingency Plan. These five levels of water shortage conditions are as follows and relate to the City of Carthage system. Treated water is supplied from the City's 8.0 MGD water treatment plant with raw water obtained from Lake Murvaul.

Stage 1 Trigger - Mild Water Shortage Conditions:

Required for initiation:

- a. Average daily water consumption reaches 90% of the water treatment plant's production capacity for three consecutive days.
- b. Water level in Lake Murvaul is declining at a rate that could disrupt water supply in the future.
- c. Weather conditions are considered in drought classification determination. Predicted long, cold, or dry periods are to be considered in impact analysis.

Required for termination:

- a. Mild water shortage conditions may be terminated when no Stage 1 triggering criteria have occurred for a period of 9 consecutive days.

Stage 2 Trigger - Moderate Water Shortage Conditions:

Required for initiation:

- a. Average daily water consumption reaches 100% of the water treatment plant's production capacity for three consecutive days.
- b. Water levels in Lake Murvaul continue to decline or are declining at a rate that makes supply problems imminent.
- c. Weather conditions indicate mild drought will exist for five or more consecutive days.

Required for termination:

- a. Stage 2 moderate water shortage conditions may be reduced to Stage 1 mild water shortage conditions when no Stage 2 triggering criteria have occurred for a period of 7 consecutive days.

Stage 3 Trigger - Severe Water Shortage Conditions:

Required for initiation:

- a. Average daily water consumption reaches 110% of the water treatment plant's production capacity for three consecutive days.
- b. Water storage levels are drained daily and recover only during overnight periods of low demand.
- c. Lake Murvaul water levels have declined to the point where any additional loss of water will expose an intake point to the atmosphere.
- d. Lake Murvaul water levels have declined to the point where water withdraw is impeded.
- e. A clear well at the water treatment plant is taken out of service during a mild or moderate water shortage period.

Required for termination:

- a. Stage 3 severe water shortage conditions may be reduced to Stage 2 moderate water shortage conditions when no Stage 3 triggering criteria have occurred for a period of 5 consecutive days.

Stage 4 Trigger - Critical Water Shortage Conditions:

Required for initiation:

- a. Average daily water consumption reaches 115% of the water treatment plant's production capacity for any one day.

- b. Water storage levels do not fully recover even during overnight periods of low demand.
- c. Lake Murvaul water levels have declined to the point where water withdraw is impeded due to exposed water inlets on the intake structure.
- d. System demand exceeds available high service pump capacity.

Required for termination:

- a. Stage 4 critical water shortage conditions may be reduced to Stage 3 severe water shortage conditions when no Stage 4 triggering criteria have occurred for a period of 3 consecutive days.

Stage 5 Trigger - Emergency Water Shortage Conditions:

Required for initiation:

- a. Average daily water consumption reaches 120% of the water treatment plant's production capacity for any one day.
- b. Lake Murvaul water levels have declined to the point where water withdraw is impeded or equipment could be damaged by normal operation of water supply system facilities and equipment due to water supply deficiency.
- c. Water system is contaminated, either accidentally or intentionally. Severe condition is reached immediately upon detection.
- d. Water system fails -- from acts of God (tornados, hurricanes) or man. Severe condition is reached immediately upon detection.

Required for termination:

- a. Stage 5 emergency water shortage conditions may be reduced to Stage 4 critical water shortage conditions when no Stage 5 triggering criteria have occurred for a period of 1 day.

IX. DROUGHT RESPONSE STAGES

The City Manager, or his/her designee, shall monitor water supply and/or demand conditions on a daily basis and, in accordance with the triggering criteria set forth in Section VIII of this Plan, shall determine that a mild, moderate, severe, critical, or emergency water shortage condition exists and shall implement the following notification procedures:

Notification of the Public:

The City Manager or his/ her designee may notify the public by means of:

- Publication in a newspaper of general circulation
- Public service announcements
- Signs posted in public places

Additional Notification:

The City Manager or his/ her designee may notify directly, or cause to be notified directly, the following individuals and entities:

- Mayor
- Chairman and members of the City Council
- Fire Chief
- County Judge & Commissioner
- Public Works Director
- TCEQ
- Major water users
- Critical water users

Stage 1 Response - Mild Water Shortage Conditions

The objective for water use reduction is a 5 percent reduction of the average daily water consumption during mild water shortage conditions. Stage 1 actions listed under water shortage conditions measures would be followed to inform wholesale water users.

Stage 1 measures are related to mild water shortage conditions and will initiate the following listed actions.

- a. Develop Information Center and designate information person.
- b. Advise public of condition and publicize availability of information from Center.
- c. Encourage voluntary reduction of water use.
- d. Contact commercial and industrial users and explain necessity for initiation of strict conservation methods.
- e. Implementation of system oversight and adjustments as required to meet changing conditions.

- f. Contact wholesale water customers to discuss water supply and/or demand conditions and will request that wholesale water customers initiate voluntary measures to reduce water use (for example, implement Stage I of the customer's drought contingency plan).
- g. Contact and coordinate with Panola County Fresh Water Supply District to monitor water levels in Lake Murvaul.

Stage 2 Response - Moderate Water Shortage Conditions

The objective for water use reduction is a 10 percent reduction of the average daily water consumption during moderate water shortage conditions. Stage 2 actions listed under moderate water shortage conditions would be followed to guide the wholesale water users to achieve the targeted water use reduction.

Stage 2 curtailments shall be initiated by the City Manager or his/her designee, identifying moderate water shortage conditions. Listed actions are compulsory on users and are intended to prohibit most non-essential water use.

- a. Irrigation of all public landscaped areas including parks and fields shall be discontinued.
- b. Outdoor residential use of water will be permitted on alternate days. Even number addresses on even days of the month and odd number addresses on odd number days. Outdoor residential uses consist of washing vehicles, motorcycles, boats, trailers, landscape sprinkler systems and irrigation, recreational use of sprinklers, outside showers (in parks) and waterslides.
- c. No ornamental fountain or ponds used for aesthetic or scenic purposes shall be operated unless equipped with recirculation system.
- d. The City Manager will monitor system function and establish hours for outside water use, depending upon System performance.
- e. Information Center and publicity elements shall keep public advised of curtailment status.
- f. Commercial and industrial users will be visited to develop and initiate specific criteria for water conservation as determined by the City Manager.
- g. Weekly contact will be made with wholesale water customers to discuss water supply and/or demand conditions and the possibility of pro rata curtailment of water diversion and/or deliveries. Wholesale customers will be required to initiate mandatory measures to reduce non-essential water use (for example, initiate Stage 2 of the customer's drought contingency plan). Also, the City will initiate preparations for the implementation of pro rata curtailment of water diversions and/or deliveries by preparing a monthly water usage allocation baseline for each wholesale customer.

- h. Fire hydrants shall not be used except for fire-fighting activities.
- i. Continued coordination with Panola County Fresh Water Supply District to evaluate water levels in Lake Murvaul.

Stage 3 Response - Severe Water Shortage Conditions

The objective for water use reduction is a 15 percent reduction of the average daily water consumption during severe water shortage conditions.

Stage 3 curtailment shall be initiated upon existence of severe conditions as determined by the City Manager.

- a. All requirements of Stage 2 shall remain in effect during Stage 3 except as modified below.
- b. No water shall be used for street washing, filling pools and jacuzzis, watering athletic fields and courses, and dust control. The use of hose-end sprinklers is prohibited.
- c. Water uses by commercial and industrial entities may be controlled to the extent determined by the City Manager.
- d. Contact wholesale water customers to discuss water supply and/or demand conditions and will request that wholesale water customers initiate additional mandatory measures to reduce non-essential water use. Pro rata curtailment of water diversions and/or deliveries for each wholesale customer will be initiated. Discussions and suggestions will be made with each wholesale customer to alleviate problems.
- e. Initiate development and implementation of alternative engineering to reduce water usage or acquire and develop additional water sources.
- f. On-going coordination with Panola County Fresh Water Supply District to closely monitor water levels in Lake Murvaul.

Businesses requiring water as a basic function of the business, such as nurseries, commercial car wash, laundromats, high pressure water cleaning, etc., will obtain written permission from the City Manager for intended water use.

The System Priority for water service shall be made on the following basis:

- | | | |
|-------------|---------------|-----------------|
| 1. Hospital | 3. Industrial | 5. Residential |
| 2. Schools | 4. Commercial | 6. Recreational |

Stage 4 Response - Critical Water Shortage Conditions

The objective for water use reduction is a 20 percent reduction of the average daily water consumption during critical water shortage conditions.

Stage 4 curtailment shall be initiated upon existence of critical conditions as determined by the City Manager.

- a. All requirements of Stage 2 and 3 shall remain in effect during Stage 4 except as modified below.
- b. Washing of motor vehicles, motorcycles, boats, trailers, airplanes, and other vehicles shall be prohibited.
- c. Continued development and implementation of alternative engineering to reduce water usage or acquire and develop additional water sources.
- d. On-going coordination with Panola County Fresh Water Supply District to closely monitor water levels in Lake Murvaul.

Stage 5 Response - Emergency Water Shortage Conditions

The objective for water use reduction is a 25 percent reduction of the average daily water consumption during emergency water shortage conditions.

Stage 5 curtailment shall be initiated upon existence of emergency conditions as determined by the City Manager.

- a. All requirements of Stages 2, 3, and 4 shall remain in effect during Stage 5 except as modified below.
- b. All non-essential water uses shall be prohibited. No water shall be used for landscaping or vehicles washing.
- c. Only those water usages which are required to protect the public health and safety will be allowed as determined by the City Manager.
- d. City Manager shall implement any or all alternative supply sources available and will implement the usage of reclaimed water for non-potable purposes where possible.
- e. Pro rata water allocation shall be implemented by the City Manager as described below.

Pro Rata Water Allocation

In the event that the triggering criteria specified in Section VIII of the plan for Stage 5 – Emergency Water Shortage Conditions have been met, the City Manager is hereby authorized to initiate allocation of water supplies on a pro rata basis in accordance with Texas Water Code Section §11.039. Each wholesale contract entered into or renewed after adoption of the Plan, including contract extensions, shall include provisions for pro rata water allocation during periods of water shortage and that the water will be distributed in accordance with the Texas Water Code, Section §11.039.

X. Enforcement

During any period when pro rata allocation of available water supplies is in effect, wholesale customers shall pay the following surcharges on excess water diversions and/or deliveries:

- 1.25 times the normal water charge for water diversions and/or deliveries in excess of the monthly allocation up through 5 percent above the monthly allocation.
- 1.5 times the normal water charge for water diversions and/or deliveries in excess of the monthly allocation from 5 percent through 10 percent above the monthly allocation.
- 1.75 times the normal water charge for water diversions and/or deliveries in excess of the monthly allocation from 10 percent through 15 percent above the monthly allocation.
- 2.0 times the normal water charge for water diversions and/or deliveries more than 15 percent above the monthly allocation.

The above surcharges shall be cumulative.

When a moderate, severe, critical, or emergency water shortage condition is in effect, no person shall knowingly or intentionally violate the water use restrictions described in the Plan. Any person who violates the Plan during these water shortage conditions is guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than \$100.00 and not more than \$2,500.00. Each day that a violation is committed shall constitute a separate offense.

When any person or entity is convicted of three or more separate violations of this Plan, the City Manager may authorize the discontinuation of water service to the premises where such violations occurred. Services may be restored upon suitable assurance given to the City Manager that additional violations will not occur while the Plan is in effect and payment of a \$100.00 reconnection charge.

XI. Variances

The City Manager, or their designee, may, in writing, grant a temporary variance to the pro rata water allocation policies provided by this Plan if it is determined that failure to grant such variance would cause an emergency condition adversely affecting the public health, welfare, or safety and if one or more of the following conditions are met:

- Compliance with this Plan cannot be technically accomplished during the duration of the water supply shortage or other condition for which the Plan is in effect.
- Alternative methods can be implemented which will achieve the same level of reduction in water use.

Persons requesting an exemption from the provisions of this Plan shall file a petition for variance with the City Manager within 5 days after the pro rata allocation has been invoked. All petitions for variance shall be reviewed by the City of Carthage and shall include the following:

- Name and address of the petitioner(s).
- Detailed statement with supporting data and information as to how the pro rata allocation of water under the policies and procedures established in the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Ordinance.
- Description of the relief requested.
- Period of time for which the variance is sought.
- Alternative measures the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date.
- Other pertinent information.

Variances granted by the City of Carthage shall be subject to the following conditions, unless waived or modified by the City of Carthage.

- Variances granted shall include a timetable for compliance.
- Variances granted shall expire when the Plan is no longer in effect, unless the petitioner has failed to meet specified requirements.

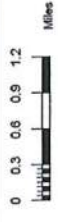
No variance shall be retroactive or otherwise justify any violation of this Plan occurring prior to the issuance of the variance.

EXHIBIT 1:
EXISTING WATER SYSTEM



Texas Commission on Environmental Quality
 P.O. Box 13087
 Austin, Texas 78711-3087
 For more information
 concerning this map, please contact the
 Water Supply Division at (512) 239-4691.
 11/20/2012

The Selected Area of Interest



Legend

- Water CCN Facility Line
- Sewer CCN Facility Line
- Senate - Districts
- House - Districts
- TCEQ Service Region Boundary
- County Boundary
- Sewer CCN Service Area
- Water CCN Service Area
- City Boundary
- CCN Overlay Key
- Sewer-Water CCN Service Area



Disclaimer: This map was generated by the Integrated Water Utilities Database (IWUD) from the Texas Commission on Environmental Quality. No claims are made to the accuracy or completeness of the data or to its suitability for a particular use.

