City of Huntsville

Water and Drought Contingency Plan

2019

Contents

1. Introduction and Objectives

Water conservation is not limited to the recurring periods of Texas drought. Conserving water and avoiding water waste are important for long-term sustainability of the water supply even in times of abundant rainfall. This plan describes both the city's long-term commitment to conserving water and resources for future generations and the need to manage water demands during short-term conditions when water supplies are limited.

The City of Huntsville has adopted this Water Conservation and Drought Contingency Plan for City water customers to reduce the quantity of water used for residential and commercial purposes through implementation of efficient water use practices; to protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection; to protect and preserve public health, welfare, and safety; and to minimize the adverse impacts of water supply shortages or other water supply emergency conditions.

The Texas Commission on Environmental Quality (TCEQ) has developed guidelines and requirements governing the development of water conservation and drought contingency plans for public water suppliers. The TCEQ guidelines and requirements for water suppliers are included in Appendix B. The City of Huntsville has adopted this Water Conservation and Drought Contingency Plan pursuant to TCEQ guidelines and requirements.

The objectives of the water conservation plan are to:

- reduce water consumption;
- reduce the loss and waste of water;
- improve efficiency in the use of water; and
- extend the life of current water supplies by reducing the rate of growth in per capita demand.

The objectives of the drought contingency plan are to:

- Conserve the available water supply in times of drought and emergency;
- Maintain supplies for domestic water use, sanitation, and fire protection;
- Protect and preserve public health, welfare, and safety;
- Minimize the adverse impacts of water supply shortages and emergency water supply conditions.

2. Definitions

In the Water Conservation and Drought Contingency Plan, the following definitions apply only to City of Huntsville water customers:

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

Base per capita use: per capita water use calculated based on water consumption during the months of January, February and December.

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 Huntsville.

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

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

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-ways and medians.

Non-essential water use: water uses that are not essential or required for the protection of public health, safety, and welfare, including:

- irrigation of landscape areas, including parks, athletic fields, and golf courses, except otherwise provided under this Water Conservation and Drought Contingency Plan;
- use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle unless specifically required by a local, state or federal guideline or regulation;
- use of water to wash down any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced area;
- use of water to wash down buildings or structures for purposes other than immediate fire protection;
- flushing gutters or permitting water to run or accumulate in any gutter or street;
- use of water to fill, refill, or add to any indoor or outdoor swimming pools or Jacuzzi-type pools;
- use of water in a fountain or pond for aesthetic or scenic purposes except where necessary to support aquatic life;

- failure to repair a controllable leak within a reasonable period after having been given notice directing the repair of such leak(s); and
- use of water from hydrants for construction purposes or any other purposes other than firefighting.

Seasonal per capita use: per capita water use calculated by subtracting base per capita water use from summer per capita water use.

Summer per capita use: per capita water use calculated based on water consumption during the months of June, July and August.

3. Texas Commission on Environmental Quality Rules

3.1 Conservation Plans

The TCEQ rules governing development of the conservation plans for public water suppliers are contained in Title 30 Part 1, Chapter 288, Subchapter A, Rule §288.2 of the Texas Administrative Code, which is included in Appendix B. For the purpose of these rules, a water conservation plan is defined as:

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

3.2 Drought Contingency Plans

The TCEQ rules governing development of the conservation plans for public water suppliers are contained in Title 30 Part 1, Chapter 288, Subchapter B, Rule §288.20 of the Texas Administrative Code, which is included in Appendix B. For the purpose of these rules, a drought contingency plan is defined as:

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

4. Minimum Required Water Conservation Plan Content

The minimum requirements in the Texas Administrative Code for water conservation plans for public drinking water suppliers covered in this report are as follows:

- §288.2(a)(1)(A) - Utility Profile – Section 4.1 and Appendix C
- §288.2(a)(1)(B) - Record Management System – Section 4.2
- §288.2(a)(1)(C) - Specification of Goals - Section 4.3
- §288.2(a)(1)(D) - Accurate Metering – Section 4.3 and 4.4
- §288.2(a)(1)(E) - Universal Meter- Section 4.4
- §288.2(a)(1)(F) - Determination and Control of Unaccounted water – Section 4.7
- §288.2(a)(1)(G) - Public Education and Information Program- Section 4.8
- §288.2(a)(1)(H) - Non- Promotional water Rates Structure- Section 4.9
- §288.2(a)(1)(I) - Means of Implementation and Enforcement- Section 4.10
- §288.2(a)(1)(J) - Coordination with Regional Water Planning Group – Section 4.11

4.1 Water Utility Profile Summary

Appendix C to this conservation plan is a water utility profile for the City of Huntsville. The table below summarizes key facts from the Water Utility Profile:

Water Service Area = 49.9 square miles

Miles of Distribution Pipe = 323

Water supply Source(s): Trinity River Authority (TRA) and Catahoula Aquifer

Population:

2014 population	=	**38,548**
2018 population	=	**41,277**
2060 population (projected)	=	**46,509**

Connections:

Current Connections = **19,623**
Total Increase in connections in Last 3 Years = **373**

Water Use Information:

Year	Use (1,000 gallons)	Estimated Population	Municipal per Capita	Residential per Capita	Unaccounted Water	Peak Day/ Average Day
2014	3,043,543	38,548	216.3	55	1.98%	1.16
2015	2,896,167	40,435	196.2	55	16.24%	1.31
2016	2,828,212	40,938	189.3	53	4.21%	1.22
2017	2,717,599	41,208	180.7	52	5.05%	1.10
2018	2,755,611	41,277	182.9	51	7.03%	1.20

Treatment and Distribution System:

Design Treatment Capacity	=	**19.3 million gallons per day**
Elevated Storage Capacity	=	**2.5 million gallons**
Ground Storage Capacity	=	**5.5 million gallons**

Total Annual Wastewater Flow = **1,808 million gallons in 2018**

4.2 Record Management System

As required by TAC Title 30, Chapter 288, Subchapter A, Rule §288.2(a)(2)(B),the record management system for the city of Huntsville records water received, water pumped, water delivered, and water sold; estimates water losses; and allows for the separation of water sales and uses into residential, commercial, public/institution, and industrial categories. This information will be included and carried throughout the conservation plan.

4.3 Water Conservation Goals

While the City of Huntsville encourages conservation and appropriate use of all water resources within the region, the specific water conservation goals described in this plan apply only to City water customers. The City of Huntsville conservation goals include the following:

Sewer:

- Make additions to its sewerage collection system to provide service to previously unsewered areas and remediate inflow and infiltration.

Water:

- Provide an adequate supply of suitable water to its customers.
- Accommodate growth with no net increase in overall water consumption.
- Make additions/improvements to its water distribution system, so that all areas covered by the City's water system will have an adequate and reliable source of water now and in the future.
- Review water and sewer rates annually to assure they are adequate to meet expenses and capital improvements, as well as appropriate reserve funds.
- Maintain the city's ongoing meter replacement program.
- Customer education is also necessary if a conservation plan is to succeed in effectively reducing water use and wastewater treatment flows.
- The City has established the following five- and ten-year numerical targets and goals:

(1) 5-year target and goals

a. **Per Capita Reduction Goal -** The City of Huntsville goals are to achieve a 0.25% annual reduction in per capita consumption. Based on the average residential per capita consumption from 2014 to 2018 of 192.8 gpcd, a 0.25% annual reduction will equate to a 2025 goal of **189.5 gpcd**. This represents a one gpcd reduction per year or a savings of 14.6 million gallons per year at current population numbers.

b. **Residential Per Capita Reduction Goal -** The City of Huntsville goals are to achieve a 0.25% annual reduction in residential per capita consumption. Based on the average per capita consumption from 2014 to 2018 of 53.3 gpcd, a 0.25% annual reduction will equate to a 2025 goal of **52.6 gpcd**. This represents potential savings of approximately 3,449,126 gallons per year from 2020 to 2025.

c. **Water Loss Goal –** The benchmark for unaccounted for water, established by the Texas Commission on Environmental Quality (TCEQ) is a water loss goal of no more than 10% for the potable water distribution system. As such, the water loss goal for 2025 is to operate at a system water loss of **18.9 gpcd** or less.

(2) 10-year target and goals

a. **Per Capita Reduction Goal** - Based on the average per capita consumption from 2014 to 2018, 0.25% annual reduction in per capita consumption will result in a 2030 goal of **187.1 gpcd**.

b. **Residential Per Capita Reduction Goal –** Based on the average per capita consumption from 2014 to 2018 of 53.28, a 0.25% annual reduction in per capita consumption will result in a 2030 goal of **51.7 gpcd.**

c. **Water Loss Goal** – The benchmark for unaccounted for water, established by the Texas Commission on Environmental Quality (TCEQ) is a water loss goal of no more than 10% for the potable water distribution system. As such, the water loss goal for 2030 is to operate at a system water loss of **18.7 gpcd** or less.

4.4 Accurate Metering of Raw Water Supplies and Treated Deliveries

The City of Huntsville meters raw water from **seven** (**7**) water wells and treated water from TRA entering the plant. The supplied treated water delivery to the distribution system is also being metered. Each meter has an accuracy of plus or minus 5 percent. The meters are calibrated on an annual basis by City of Huntsville personnel to maintain the required accuracy and are repaired and/or replaced as needed.

4.5 Reservoir System Operations

The City of Huntsville shall comply with any reservoir system operations implemented by the TRA.

4.6 Metering of Customer and Public Uses and Meter Testing, Repair, and Replacement

Water usage for all customers of the City of Huntsville, including public and governmental users, is metered. An exception is made for new residential construction up to the time a certificate of occupancy is used. The two golf courses in the City limits, Elkins Lake and Raven's Nest, are irrigated with lake water and a private well respectively, and therefore are not impacted by the restrictions of this Plan.

4.7 Determination and Control of Unaccounted Water

Unaccounted water is the difference between water produced from wells or delivered by the TRA and metered water delivered to customers. Unaccounted water can include several categories:

- Line flushing;
- Inaccuracies in customer meters (customer meters tend to run more slowly as they age and under-report actual use);
- Losses due to water main breaks and leaks in the water distribution system;
- Theft;
- Firefighting;
- Inaccuracies of internal meters (plus or minus 5%); and
- Other unmetered uses.

The City of Huntsville will conduct an annual water audit using the outline provided by the Texas Water Development Board (TWDB). The city will conduct water audits using American Water Works Association guidelines published in Water Audits and Leak Detection (M36).

As shown in the water utility profile (Appendix C), unaccounted water for the City of Huntsville has varied from 1.98% to 16.24% in the last five years. With the measures described in this plan, it is the goal of the city of Huntsville to maintain the unaccounted water below 10% annually.

4.8 Continuing Public Education and Information Campaign

The continuing public education and information campaign on water conservation for the City of Huntsville includes the following elements:

- Promote the city's water conservation measures (presented in Sections 4, and 5).
- Include inserts on water conservation with water bills at least twice per year. Inserts may include material developed by the City of Huntsville staff and material obtained from the American Water Works Association, TWDB, TCEQ, and other sources.
- Notify local organizations, schools, and civic groups that the City of Huntsville staff members are available to make presentations on the importance of water conservation and ways to save water.
- Make the Consumer Confidence Report (CCR), water conservation brochures, and other water conservation materials available to the public.
- Make information on water conservation available online at http://www.huntsvilletx.gov and include links to the CCR and to information on water conservation on the TWDB and TCEQ websites.

4.9 Non-Promotional Water Rate Structure

CITY OF HUNTSVILLE
WATER AND WASTEWATER RATES
(*Effective October 1, 2018*)
(*First Billing November 2018*)

Water Rates

Single-Family Residential:	
First 3,000 gallons minimum monthly charge	See meter size table below
Between 3,000 – 7,000 gallons	$4.82 per 1,000 gallons
Between 7,001 – 13,000 gallons	$5.30 per 1,000 gallons
Over 13,000 gallons	$6.02 per 1,000 gallons
Jointly Metered Residential:	
First 3,000 gallons minimum monthly charge	See meter size table below
Between 3,000 – 7,000 gallons	$4.82 per 1,000 gallons
Over 7,000 gallons	$6.02 per 1,000 gallons
Commercial Metered:	
First 3,000 gallons minimum monthly charge	See meter size table below
Over 3,000 gallons	$6.02 per 1,000 gallons
Institutional Users:	
First 3,000 gallons minimum monthly charge	See meter size table below
Over 3,000 gallons	$6.50 per 1,000 gallons
Irrigation:	
First 3,000 gallons minimum monthly charge	See meter size table below

Residential between 3,000 – 7,000 gallons	$4.82 per 1,000 gallons
Residential between 7,001 – 13,000 gallons	$5.30 per 1,000 gallons
Residential all Over 13,000 gallons	$6.02 per 1,000 gallons
Commercial all Over 3,000 gallons	$6.02 per 1,000 gallons
Institutional all Over 3,000 gallons	$6.50 per 1,000 gallons

Meter Size in Inches	Minimum Monthly Single Family & Jointly Metered Residential	Minimum Monthly Commercial & Institutional	Minimum Monthly Irrigation
0.7	**$13.00**	**$15.00**	**$15.00**
1.0	**$19.00**	**$21.00**	**$21.00**
1.5	**$25.00**	**$27.00**	**$27.00**
2.0	**$41.50**	**$43.50**	**$43.50**
3.0	**$163.00**	**$165.00**	**$165.00**
4.0	**$208.00**	**$210.00**	**$210.00**
6.0	**$313.00**	**$315.00**	**$315.00**
8.0	**$433.00**	**$435.00**	**$435.00**

Wastewater Rates

Single-family residential:

First 2,000 gallons, minimum monthly charge	$13.00
All over 2,000 gallons	$4.87 per 1,000 gallons

Note: Each individually metered residential dwelling unit shall be charged a monthly wastewater service charge and a volume charge based upon the average amount of water consumed during the months of November, December, January, and February of each year, rounded to the nearest 100 gallons. Customers moving into an existing, or newly constructed, single family residential unit shall be billed for sewer at eighty percent (80%) of current monthly consumption up to a maximum monthly amount for 10,000 gallons until the winter month history is established.

Jointly Metered Residential

First 2,000 gallons, minimum monthly charge	$13.00
All over 2,000 gallons	$4.87 per 1,000 gallons

Commercial/Institutional

First 2,000 gallons, minimum monthly charge	$15.00
All over 2,000 gallons	$4.87 per 1,000 gallons

Note: Residential customers not connected to the waterworks system of the city shall be billed monthly by the city for wastewater services at a calculated rate based on the average residential water consumption of 6,800 gallons, or at a rate based on the average water consumed during the months of November, December, January and February of each fiscal year from the billing records of a special water district. Commercial customers shall be billed at a rate that is consistent with the regular wastewater charge of similar type businesses, premises or users receiving service from the city.

Note: Water rates for customers outside the city limits are calculated in the same manner as rates for customers within the city limits; however, a multiplier of 1.25 shall be applied to the cost components listed above.

Utility Billing Division:	**(936) 291-5431**	**Water Maintenance:**	**(936) 294-5700**
After Hours Water Emergencies:	**(936) 294-8700**		

***City of Huntsville, TX Water and Wastewater Rates Effective October 2018*

4.10 Implementation and Enforcement of the Water Conservation Plan

Appendix E contains a copy of the ordinance of the City of Huntsville adopting the Water Conservation and Drought Contingency Plan. The ordinance designates responsible officials to implement and enforce the Water Conservation and Drought Contingency Plan. A copy of this plan will be submitted to the TCEQ.

4.11 Coordination with Regional Water Planning Group

A letter will be sent to the Chair of the Region H Water Planning Group with a copy of this Water Conservation and Drought Contingency Plan as well as a copy of the approved city ordinance.

5. Additional Required Water Conservation Plan Content

Title 30 of the Texas Administration Code also includes additional requirements for water conservation plans for public drinking suppliers that serve a population of 5,000 people or more and/or a projected population of 5,000 people or more within the next ten years:

- §288.2(a)(2)(A) – Leak Detection, Repair, and Water Loss Accounting
- §288.2(a)(2)(B) – Requirement that Wholesale Customers Develop and Implement a Water Conservation Plan

5.1 Leak Detection and Repair; Pressure Control

Measures to control unaccounted water are part of the routine of the City of Huntsville. Meter readers watch for and report signs of illegal connections so they can be addressed quickly. Crews look for and report evidence of leaks in the water distribution system. Maintenance crews respond quickly to repair leaks reported by the public and city personnel. Areas of water distribution system where numerous leaks and line breaks occur are targeted for replacement as funds are available.

5.2 Requirement that Wholesale Customers Develop and Implement a Water Conservation Plan

A requirement shall be included 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.

6. Drought Contingency Plan

6.1 Introduction

This document is a drought contingency plan, intended to be available for adoption by the City of Huntsville and its customers. This plan addresses all of the current Texas Commission on Environmental Quality requirements for a drought contingency plan. The purpose of this drought contingency plan is as follows:

- To conserve the available water supply in times of drought and emergency
- To maintain supplies for domestic water use, sanitation, and fire protection
- To protect and preserve public health, welfare, and safety
- To minimize the adverse impacts of water supply shortages
- To minimize the adverse impacts of emergency water supply conditions

The City of Huntsville supplies treated water to its customers and the following provisions of the drought contingency plan apply only to those customers. In order to adopt this plan, the City of Huntsville city council will need to adopt ordinance(s) or regulation(s) implementing the plan, including the determination of fines and enforcement procedures.

6.2 Texas Commission on Environmental Quality Rules

The TCEQ rules governing development of drought contingency plans for retail public water suppliers are contained in Title 30, Part1, Chapter 288, Subchapter B, Rule §288.20 of the Texas Administrative Code, which is included in Appendix A. For the purpose of these rules, a drought contingency plan is defined as "a strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies."

6.3 State Requirements for Drought Contingency Plans

TCEQ's minimum requirements for drought contingency plans are addressed in the following subsections of this report:

- §288.20(a)(1)(A) – Provisions to Inform the Public and Provide Opportunity for Public Input Section 6.4
- §288.20(a)(1)(B) – Provisions for Continuing Public Education and Information – Section 6.5
- §288.20(a)(1)(C) – Coordination with Regional Water Planning Group – Section 7.4.1.2
- §288.20(a)(1)(D) – Criteria for Initiation and Termination of Drought Stages – Section 6.6
- §288.20(a)(1)(E) – Drought and Emergency Response Stages – Section 7
- §288.20(a)(1)(F) – Specific, Quantified Targets for Water Use Reduction – Section 7.1
- §288.20(a)(1)(G) – Water Supply and Demand Management Measures for Each Stage – Section 7
- §288.20(a)(1)(H) – Procedures for Initiation and Termination of Drought Stages – Section 6.6.1.2
- §288.20(a)(1)(I) – Procedures for Granting Variances – Section 7.4
- §288.20(a)(1)(J) – Procedures for Enforcement of Mandatory Restrictions – Section 7.4.1
- §288.20(b) – Notification of Implementation of Mandatory Measures – Section 7
- §288.20(c) – Review and Update of Plan– Section 7.4.1.5

6.4 Provisions to Inform the Public and Opportunity for Public Input

The City of Huntsville council meets on select Tuesdays at 6:00 p.m. A meeting agenda is posted in accordance with the State law, listing items to be acted upon by the council. Meetings are open to the public, and the public is given an opportunity to speak and voice their views and opinions. Council meetings are attended by representatives of local newspapers and radio stations. The news media sources provide excellent distribution of events and subjects.

6.5 Provision for Continuing Public Education and Information Education

The City of Huntsville will inform its customers of various recommended methods to reduce water consumption by mailing brochures with monthly water bills, making available copies of "Homeowner's Guide to Water Use and Water Conservation," and will use resource materials made available by the Texas Water Development Board and other agencies and organizations.

6.6 Initiation and Termination of Drought Response Stages

6.6.1.1 Initiation of Drought Response Stages

The City Manager or his/her designee may order the implementation of a drought response stage or water emergency when one or more of the trigger conditions for that stage is met. The following actions will be taken when a drought stage is initiated:

- The public will be notified through local media and message boards
- If any mandatory provisions of the drought contingency plan are activated, the City of Huntsville will notify the Executive Director of the Texas Commission on Environmental Quality within 5 business days.

For other trigger conditions, the city manager or his/her designee may decide not to order the implementation of a drought response stage or water emergency even though one or more of the trigger criteria for the stage are met. Factors that could influence such a decision include, but are not limited to, the time of year, weather conditions, the anticipation of replenished water supplies, or the anticipation that facilities will become available to meet needs.

6.6.1.2 Termination of Drought Stages

The city manager or his/her designee may order the termination of a drought response stage or water emergency when the conditions for termination are met or at his discretion. The following actions will be taken when a drought stage is terminated:

- The public will be notified through local media.
- When any mandatory provisions of the drought contingency plan that have been activated are terminated, the city will notify the Executive Director of the TCEQ within 5 business days.

The city manager or his/her designee may decide not to order the termination of a drought response stage or water emergency even though the conditions for termination of the stage are met. Factors that could influence such a decision include, but are not limited to, the time of year, weather conditions, or the anticipation of potential changed conditions that warrant the continuation of the drought stage.

7. Drought and Emergency Response Stages

At any time during the year, due to weather conditions or as requested by the TRA, the City may request voluntary drought contingency efforts aimed at delaying the need for more stringent drought management requirements.

7.1 Stage 1, Peak Day Water Use Management

7.1.1 Triggering and Termination Conditions for Stage 1, Peak Day

7.1.2 Stage 1- Peak Day Water Use Management

Average daily consumption ranged from 8.33 MGD in 2014 to 7.44 MGD in 2017. Peak daily consumption ranged from 8.15 MGD in 2017 to 10.38 MGD in 2015. Increased consumption on the peak day is attributed primarily to outdoor irrigation.

Requirements for initiation

Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses defined in Section 2 of this Plan, when:

(a) Average daily water consumption exceeds 80% of firm production capacity for a period of five (5) consecutive days; or

(b) Weather conditions are considered to be in drought as determined by the National Integrated Drought Information System (NIDIS); or

(c) As required by the Trinity River Authority (TRA).

7.1.3 Stage 1 Triggers- Water Shortage Conditions Terminate When

Requirements for termination

Stage 1 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period described below.

(a) Average daily water consumption falls below 80% of firm production capacity for a period of 10 consecutive days;

(b) Weather conditions are not considered to be in drought as determined by the National Integrated Drought Information System (NIDIS); and

(c) TRA no longer requires implementation of Stage 1.

7.1.4 Goal for Use Reduction and Actions Available Under Stage 1

Target: Reduce daily demand for the City of Huntsville water system to less than 80% of firm production capacity.

(a) Best Management Practices for Reducing Demand Include:

(1) The City may reduce or discontinue the flushing of water mains.

(b) Water Use Restrictions for Reducing Demand Include:

(1) Landscape irrigation for all customers is prohibited between the hours of 7:00 AM to 7:00 PM. Watering with handheld hose or drip irrigation shall be allowed at any time.

(2) Even numbered single-family residential addresses are permitted to irrigate on Tuesdays, Thursdays and Saturdays.

(3) Odd numbered single-family residential addresses are permitted to irrigate on Wednesdays, Fridays and Sundays.

(4) Multi-family residential, commercial, institutional and public water customers are permitted to irrigate on Mondays, Wednesdays and Fridays.

7.2 Stage 2, Peak Day Water Use Management

7.2.1 Stage 2 Triggers- Moderate Water Shortage Conditions Occur When

Requirements for initiation
Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses defined in Section 2 of this Plan when:

(a) Average daily water consumption exceeds 90% of firm production capacity for a period of five (5) consecutive days; or

(b) Weather conditions indicate moderate drought will continue; or

(c) Storage capacity (water level) is not being maintained at 75% of available storage capacity; or

(d) As required by TRA

7.2.2 Stage 2 Triggers- Moderate Water Shortage Conditions are Terminated When

Requirements for termination
Stage 2 of the Plan may be rescinded when:

(a) Average daily water consumption falls below 80% of firm production capacity for 10 consecutive days;

(b) Weather conditions indicate mild drought conditions have ceased to exist;

(c) Storage capacity (water level) is being maintained at 75% of available storage capacity; and

(d) TRA no longer requires implementation of Stage 2.

7.2.3 Stage 2 Goals for Use Reduction and Actions Available Under Moderate Water Conditions

Target: Reduce daily demand for the City of Huntsville water system to less than 80% of firm production capacity.

(a) Best Management Practices for Reducing Demand Include:

(1) The City will discontinue the routine flushing of water mains, limiting the practice for the purpose of maintaining water quality.

(b) Water Use Restrictions for Reducing Demand Include:

(1) Landscape irrigation for all customers is prohibited between the hours of 7:00 AM to 7:00 PM.

(2) Even numbered single-family residential addresses are permitted to irrigate on Tuesdays and Saturdays.

(3) Odd numbered single-family residential addresses are permitted to irrigate on Wednesdays and Sundays.

(4) Multi-family residential, commercial, institutional and public water customers are permitted to irrigate on Mondays & Fridays.

(5) Water use associated with such tasks as: washing house windows, sidings, eaves and roof with a hose without the use of a cutoff valve and bucket; washing driveways, streets, curbs and gutters; washing vehicles with a hose without cutoff valve and bucket; unattended hose end watering of landscape shrubs and grass; and draining and filling swimming pools is prohibited.

(6) All aesthetic water use is prohibited.

7.3 Stage 3, Peak Day Water Use Management

7.3.1 Stage 3 Triggers- Severe Water Shortage Conditions Occur When

Requirements for initiation
Customers shall be required to comply with the requirements and restrictions on certain non- essential water uses for Stage 3 of this Plan when:

(a) Average daily water consumption will not enable storage levels to be maintained; or

(b) Water system demand exceeds available high service pump capacity; or

(c) Required by TRA; or

(d) The water system is contaminated either accidentally or intentionally. Condition is reached immediately upon detection; or

(e) The water system fails from acts of God (tornadoes, hurricanes) or man. Condition is reached immediately upon detection.

7.3.2 Stage 3 Trigger- Severe Water Shortage Conditions Terminate When

Requirements for termination
Stage 3 of the Plan may be rescinded when:

(a) Average daily water consumption will enable storage levels to be maintained;

(b) Water system demand ceases to exceed available high service pump capacity; and

(c) TRA no longer requires implementation of Stage 3; and

(c) The water system is decontaminated; and

(d) The water system is restored after acts of God (tornadoes, hurricanes) or man.

7.3.3 Stage 3 Goals for Use Reduction and Action Available Under Severe Water Shortage Conditions:

Target: Achieve a 50% reduction in the City of Huntsville daily water demand.

(a) Best Management Practices for Reducing Demand Include:

(1) The City will discontinue the flushing of water mains.

(2) The City will discontinue the irrigation of public landscaped areas.

(3) The City will reduce system pressure where possible to conserve water.

(b) Water Use Restrictions for Reducing Demand Include:

(1) All outdoor water use is prohibited, except for that required for the protection of public health, safety, and welfare.

(2) The City may prioritize or curtail water service in accordance to the following sequence:

(i) Recreational
(ii) Residential
(iii) Commercial
(iv) Industrial
(v) Schools
(vi) Hospitals

(3) The permitting and prioritization of water service shall not apply to raw clarified water provided under a contract with Tenaska Energy for the purpose of electrical power production.

7.4 Procedures for Granting Variances to the Plan

A. The city manager or his/her designee may grant temporary variances for existing water uses otherwise prohibited under this drought contingency plan if one or more of the following conditions are met:

- Failure to grant such a variance would cause an emergency condition adversely affecting health, sanitation, or fire safety for the public or the person requesting the variance.
- Compliance with this Plan cannot be accomplished due to technical or other limitations.
- Alternative methods that achieve the same level of reduction in water use can be implemented.

B. Variances shall be granted or denied at the discretion of the city manager or his designee. All petitions for variances should be in writing and should include the following information:

- Name and address of the petitioner(s).
- Purpose of water use.
- Specific provisions from which relief is requested.
- Detailed statement of the adverse effect of the provision from which relief is requested.
- Description of the relief requested.
- Period of time for which the variance is sought.
- Alternative measures that will be taken to reduce water use.
- Other pertinent information.

C. Persons using raw water for irrigation, whether from a customer owned and operated well or purchased raw water, must apply for a variance. The city manager may grant a raw water variance under the following conditions:

1. The property passes a cross-connection and backflow protection inspection as required by Section 12.26 Chapter 12 of the City of Huntsville Code of Ordinances; and

2. The Property owner erects and maintains a sign that clearly indicates that irrigation is with raw water.

7.4.1 Procedure Enforcing Mandatory Restrictions

Mandatory water use restrictions may be imposed in Stage 1, Stage 2, and Stage 3. These mandatory water restrictions will be enforced by Notices of Violation and penalties as follows:

- On the first violation, customers will be given a written notice of violation of the mandatory water use restriction.
- On the second and subsequent violations, citations may be issued to customers.
- After two violations have occurred, the City of Huntsville may install a flow restrictor in the line to limit the amount of water that may pass through the meter in a 24-hour period.
- After three violations have occurred, the City of Huntsville may terminate water service to the customer.
- Services discontinued under such circumstances shall be restored only upon drought conditions lessening to a point when restrictions are lifted as outlined in Section 7.3.2 "Stage 3 Trigger - Severe Water Shortage Conditions Terminate When".

7.4.1.2 Coordination with Regional Water Planning Groups

The planning area consists of the City of Huntsville and its extraterritorial jurisdiction which contains 112.8 square miles. Huntsville is the county seat of Walker County and has a population of approximately 41,277. This area is located within the Region H water planning area, and the City of Huntsville has provided a copy of this plan to the Region H Water Planning Group.

7.4.1.3 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 Director of Public Works or his/her designee shall have the authority to initiate or terminate drought or other water supply emergency response measures as described.

7.4.1.4 Application

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

7.4.1.5 Review and Update of Drought Contingency Plan

As required by Texas Commission on Environmental Quality rules, the City of Huntsville will review this drought contingency plan every five years, with the next update due on May 1, 2024. The plan will be updated as appropriate based on new or updated information. As the plan is reviewed and subsequently updated, a copy of the revised Drought Contingency Plan will be submitted to the Texas Commission on Environmental Quality and the Region H Water Planning Group (RHWPG) for their records.

APPENDIX A
LIST OF REFERENCES

(1) City of Huntsville Water Utility Departments: "City of Huntsville Water Conservation Plan," adopted by the City Council, Huntsville, 2019.

(2) Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter A, Rule 288.1 and 288.2, and Subchapter B, Rule 288.20, accessed online at http://info.sos.state.tx.us/pls/pub/readtac$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=288

(3) Texas Commission on Environmental Quality: Water Utility Profile," accessed online at http://www.tceq.state.tx.us/permitting/water_rights/conserve.html

(4) Texas Water Development Board: Water Demand Projections, 2016 Regional Water Plan Data," accessed online at https://www.twdb.state.tx.us/waterplanning/rwp/plans/index.asp

(5) "Water Conservation Best Management Practices Guide," Water Conservation Implementation Task Force, Texas Water Development Board Report 362; accessed online at https://www.twdb.texas.gov/conservation/BMPs/index.asp

(6) City of Huntsville ordinance, accessed online at www.huntsvilletx.gov

(7) Texas Commission on Environmental Quality: Model drought Contingency Plan," accessed online at http://www.tceq.texas.gov/permitting/water_rights/contingency.html

(8) Region H Water Planning Group: "Draft Model Water Conservation and Drought Contingency Plan for Municipal Water Users Groups," accessed online at http://regionhwater.org/downloads/documents/06_Chapter_6_000.pdf

(9) "Water Conservation Implementation Task Force Report to the 79th Legislature," accessed online at https://www.twdb.texas.gov/conservation/resources/doc/WCITF_Leg_Report.pdf

(10) City of Huntsville Water and Wastewater Rates Effective October 1, 2018 accessed online at https://www.huntsvilletx.gov/documentcenter/view/11535

The following water conservation and drought contingency plans and related documents were reviewed in the development of this plan.

(1) City of Nacogdoches Water Conservation and Drought Contingency Plan, accessed online at https://tx-nacogdoches.civicplus.com/DocumentCenter/View/39

(2) City of Brenham Water Conservation and Drought Contingency Plan, accessed online at https://www.cityofbrenham.org/Departments/Public%20Utilities/Drought%20Contingency%20Plan.pdf

(3) City of Bryan Water Conservation and Drought Contingency Plan, accessed online at https://docs.bryantx.gov/water/ConservationPlan.pdf

(4) City of Lufkin Water Conservation and Drought Contingency Plan, accessed online at http://cityoflufkin.com/pw/pdfs/DroughtContgPlan4.pdf

(5) City of Lake Jackson Water Conservation and Drought Contingency Plan, accessed online at https://brazoriacountytx.gov/home/showdocument?id=453

(6) City San Marcos Water Conservation and Drought Contingency Plan, accessed online at http://www.crystalclearsud.org/drought-contingency

APPENDIX B

Texas Administrative Code Title 30 Part I Chapter 288 Subchapter A Rule §288.1

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER A	WATER CONSERVATION PLANS
RULE §288.1	**Definitions**

The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise.

(1) Agricultural or Agriculture--Any of the following activities:

(A) cultivating the soil to produce crops for human food, animal feed, or planting seed or for the production of fibers;
the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or non-soil media by a nursery grower;(C) raising, feeding, or keeping animals for breeding purposes or for the production of food or fiber, leather, pelts, or other tangible products having a commercial value;
(D) raising or keeping equine animals;
(E) wildlife management; and
(F) planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure

(2) Agricultural use--Any use or activity involving agriculture, including irrigation.

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

(4) Conservation--Those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses. Texas Commission on Environmental Quality Page 2 Chapter 288 -Water Conservation Plans, Drought Contingency Plans, Guidelines and Requirements

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

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

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

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

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

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

(11) Mining use--The use of water for mining processes including hydraulic use, drilling, washing sand and gravel, and oil field repressuring.

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

(13) Nursery grower--A person engaged in the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or nonsoil media, who grows more than 50% of the products that the person either sells or leases, regardless of the variety sold, leased, or grown. For the purpose of Texas Commission on Environmental Quality Page 3 Chapter 288 -Water Conservation Plans, Drought Contingency Plans, Guidelines and Requirements. This definition, grow means the actual cultivation or propagation of the product beyond the mere holding or maintaining of the item prior to sale or lease, and typically includes activities associated with the production or multiplying of stock such as the development of new plants from cuttings, grafts, plugs, or seedlings.

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

(15) Public water supplier--An individual or entity that supplies water to the public for human consumption.

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

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

(18) Regional water planning group--A group established by the Texas Water Development Board to prepare a regional water plan under Texas Water Code, §16.053.

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

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

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

(22) Total gallons per capita per day (GPCD)--The total amount of water diverted and/or pumped for potable use divided by the total permanent population divided by the days of the year. Diversion volumes of reuse as defined in this chapter Texas Commission on Environmental Quality Page 4 Chapter 288 -Water Conservation Plans, Drought Contingency Plans, Guidelines and Requirements shall be credited against total diversion volumes for the purposes of calculating GPCD for targets and goals.

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

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

(25) Wholesale use--Water sold from one entity or public water supplier to other retail water purveyors for resale to individual customers.

Texas Administrative Code Title 30 Part I Chapter 288 Subchapter A Rule §288.2

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER A	WATER CONSERVATION PLANS
RULE §288.2	**Water Conservation Plans for Municipal Uses by Public Water Suppliers**

(a) A water conservation plan for municipal water use by public water suppliers must provide information in response to the following. If the plan does not provide information for each requirement, the public water supplier shall include in the plan an explanation of why the requirement is not applicable.

(1) Minimum requirements. All water conservation plans for municipal uses by public water suppliers must include the following elements:

(A) a utility profile in accordance with the Texas Water Use Methodology, including, but not limited to, information regarding population and customer data, water use data (including total gallons per capita per day (GPCD) and residential GPCD), water supply system data, and wastewater system data;

(B) a record management system which allows for the classification of water sales and uses into the most detailed level of water use data currently available to it, including, if possible, the sectors listed in clauses (i) - (vi) of this subparagraph.

(i) Any new billing system purchased by a public water supplier must be capable of reporting detailed water use data as described in clauses (i) - (vi) of this subparagraph; residential;
   a. Single family
   b. Multi-family

(ii) commercial;

(iii) (iii) institutional;

(iv) (iv) industrial;

(v) Agricultural

(vi) Wholesale

(C) specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in total GPCD and residential GPCD. The goals established by a public water supplier under this subparagraph are not enforceable;

(D) 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;

(E) a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement;

(F) 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.);

(G) a program of continuing public education and information regarding water conservation;

(H) 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;

(I) 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; and

(J) a means of implementation and enforcement which shall be evidenced by:

(i) a copy of the ordinance, resolution, or tariff indicating official adoption of the water conservation plan by the water supplier; and

(ii) a description of the authority by which the water supplier will implement and enforce the conservation plan; and

(K) 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.

(2) Additional content requirements. Water conservation plans for municipal uses by public drinking water suppliers serving a current population of 5,000 or more and/or a projected population of 5,000 or more within the next ten years subsequent to the effective date of the plan must include the following elements:

(A) a program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system;

(B) 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.

(3) Additional conservation strategies. Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements in paragraphs (1) and (2) of this subsection, if they are necessary to achieve the stated water conservation goals of the plan. The commission may require that any of the following strategies be implemented by the water supplier if the commission determines that the strategy is necessary to achieve the goals of the water conservation plan:

(A) 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;

(B) 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;

(C) a program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;

(D) reuse and/or recycling of wastewater and/or gray water;

(E) a program for pressure control and/or reduction in the distribution system and/or for customer connections;

(F) a program and/or ordinance(s) for landscape water management;

(G) a method for monitoring the effectiveness and efficiency of the water conservation plan; and

(H) 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.

(b) A water conservation plan prepared in accordance with 31 TAC §363.15 (relating to Required Water Conservation Plan) of the Texas Water Development Board and substantially meeting the requirements of this section and other applicable commission rules may be submitted to meet application requirements in accordance with a memorandum of understanding between the commission and the Texas Water Development Board.

(c) 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 every five years to coincide with the regional water planning group.

Texas Administrative Code Title 30 Part I Chapter 288 Subchapter B Rule §288.20

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288	WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER B	DROUGHT CONTINGENCY PLANS
RULE §288.20	**Drought Contingency Plans for Municipal Uses by Public Water Suppliers**

(a) A drought contingency plan for a retail public water supplier, where applicable, must include the following minimum elements.

(1) Minimum requirements. Drought contingency plans must include the following minimum elements.

(A) Preparation of the plan shall include provisions to actively inform the public and affirmatively provide opportunity for public input. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the public and providing written notice to the public concerning the proposed plan and meeting.

(B) Provisions shall be made for a program of continuing public education and information regarding the drought contingency plan.

(C) The drought contingency plan must document coordination with the regional water planning groups for the service area of the retail public water supplier to ensure consistency with the appropriate approved regional water plans.

(D) The drought contingency plan must include a description of the information to be monitored by the water supplier, and specific criteria for the initiation and termination of drought response stages, accompanied by an explanation of the rationale or basis for such triggering criteria.

(E) The drought contingency plan must include drought or emergency response stages providing for the implementation of measures in response to at least the following situations:

(i) Reduction in available water supply up to a repeat of the drought of record;
(ii) Water production or distribution system limitations;
(iii) Supply source contamination; or
(iv) System outage due to the failure or damage of major water system components (e.g., pumps).

(F) The drought contingency plan must include specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. The goals established by the entity under this subparagraph are not enforceable.

(G) The drought contingency plan must include the specific water supply or water demand management measures to be implemented during each stage of the plan including, but not limited to, the following:

(i) Curtailment of non-essential water uses; and

(ii) Utilization of alternative water sources and/or alternative delivery mechanisms with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).

(H) The drought contingency plan must include the procedures to be followed for the initiation or termination of each drought response stage, including procedures for notification of the public.

(I) The drought contingency plan must include procedures for granting variances to the plan.

(J) The drought contingency plan must include procedures for the enforcement of mandatory water use restrictions, including specification of penalties (e.g., fines, water rate surcharges, discontinuation of service) for violations of such restrictions.

(2) Privately-owned water utilities. Privately-owned water utilities shall prepare a drought contingency plan in accordance with this section and incorporate such plan into their tariff.

(3) Wholesale water customers. Any water supplier that receives all or a portion of its water supply from another water supplier shall consult with that supplier and shall include in the drought contingency plan appropriate provisions for responding to reductions in that water supply.

(b) A wholesale or retail water supplier shall notify the executive director within five business days of the implementation of any mandatory provisions of the drought contingency plan.

(c) The retail public water supplier shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as the adoption or revision of the regional water plan.

APPENDIX C

UTILITY PROFILE DATA

Name of Utility: **City of Huntsville PWS ID 2360001**

Address & Zip: **596 Palm Street, Huntsville, TX 77340**

Telephone Number: **936-291-5970**

Fax Number: **936-291-7259**

Form Completed by: **Melissa Brewer**

Title: **Water and Energy Efficiency Services Scientist, Alan Plummer Associates, Inc.**

Signature:

Date: **March 21, 2019**

Name and phone number of person/department responsible for implementing a water conservation program:

Name: **City Manager or his/her designee**

Name: **James W. Ferguson, Water Superintendent, 936-294-5762**

Name:

Name:

I. Customer Data

A. Population and Service Area Data

1. A service area map is attached
2. Service area size (square miles): 49.9
3. Current population of service area: 41,277
4. Current population serviced by utility
   Water: 41,277
   Wastewater: 39,213
5. Miles of water distribution pipeline: 323

6. Population served by utility for previous five years:

Year	Census Population
2014	38,548
2015	40,435
2016	40,938
2017	41,208
2018	41,277

7. Projected population service area in the following decades:

Year	Population
2030	42,746
2040	44,157
2050	45,480
2060	46,509
2070	47,342

8. List source(s)/ method(s) for the calculation of current and projected population:

An annual growth rate of 1.0% was calculated and was used to project future population estimates. Multiplying these population estimates by the anticipated per capita consumption, based on a 0.25% annual reduction, provided the estimated average daily usage for Huntsville through 2070.

The calculated numbers assume Huntsville will continue the growth trend it has followed for the past 55 years for the next 45, through 2060. The science of predicting population growth is by no means exact, changes in the economy, such as the addition of a new prison unit, or the continued expansion of Sam Houston State University could cause the projections to be less accurate, as well as a down turn in local economy.

B. Active Connections

1. Current number of active connections by user type.

Treated Water Users	**Metered**	**Non-Metered**	**Total**
Residential	8,342	0	8,342
Multi-family	9,749	0	9,749
Commercial	1,199	0	1,199
Industrial	5	0	5
Institutional	328	0	328
Public	0	0	0
Other (Elkins Lake)	0	0	0
Other (Tenaska)	0	0	0
Total	**19,623**	**0**	**19,623**

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

Year	2016	2017	2018
Residential	93	120	104
Commercial	13	21	22
Industrial	0	0	0
Public	0	0	0
Other	0	0	0
Total	**106**	**141**	**126**

C. High Volume Customers

Customer	Use (1,000 gal/yr)	Treated/Raw
Texas Department of Criminal Justice (T.D.C.J.)	1,211,306	Treated
Tenaska	1,146,288	Raw
Sam Houston State University (SHSU)	157,086	Treated
C150 1300 Smither Drive	18,800	Treated
Arbors Apartments	18,193	Treated

II. Water Use Data for Service Area

A. Water Accounting Data

1. Amount of water use for previous five years (in 1,000 gal):
   Treated Water from Production Reports

HUNTSVILLE					
Year	2014	2015	2016	2017	2018
January	238,857	236,297	201,481	243,763	217,496
February	217,428	209,666	198,429	196,827	186,708
March	234,584	219,405	214,892	206,773	214,970
April	245,769	213,257	225,585	206,346	205,293
May	260,324	216,348	225,464	229,953	253,673
June	244,288	223,721	218,899	223,454	243,916
July	278,271	285,490	293,858	252,941	281,213
August	300,599	321,750	275,411	245,307	278,524
September	275,466	284,386	263,544	245,197	234,098
October	277,113	270,450	264,942	245,811	231,159
November	236,730	214,129	228,550	217,877	211,863
December	234,114	201,268	217,157	203,350	196,698
TOTAL	3,043,543	2,896,167	2,828,212	2,717,599	2,755,611

**Source: City of Huntsville Monthly Water Production Reports 2014 to 2018*

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

   The figure above is determined from multiple meters at different points. We receive treated water from the TRA mag meter that delivers straight to the Palm Street plant. The Palm Street old pump station has a Venturi meter that pumps into the distribution. The new pump station has a mag meter that measures pumpage into the distribution system, and the Spring Lake plant has a badger meter. The numbers are figured by adding the daily pumpage from Palm Street total wells, Spring Lake total wells, and total prison(s).

3. Metered amount of water (in 1,000 gallons) delivered (sold) as recorded by the following account types:
   Note: The amount of water sold may reflect water pumped in a previous month.

HUNTSVILLE SOLD WATER IN kGAL					
	2014	**2015**	**2016**	**2017**	**2018**
Single Family Metered	494,849	514,878	503,598	492,990	481,331
Multifamily Metered	273,501	297,939	293,939	292,124	291,369
Commercial Metered	219,103	244,227	247,223	242,960	233,872
Industrial/Mining Metered	2,331	1,121	1,901	1,733	2,290
Institutional Metered	1,460,065	1,486,530	1,533,394	1,399,880	1,393,737
Agricultural Metered	19,702	40,499	0	0	0
Raw Water Metered	788,765	1,280,711	1,209,044	994,305	1,109,049
TOTAL GALLONS SOLD	**3,258,316,100**	**3,865,904,600**	**3,789,099,400**	**3,423,991,600**	**3,511,647,200**

***** *Source: TWDB Worksheet for Water Usage Survey 2014 to 2018*

4. List previous five years records for annual peak-to-average daily use ratio:

   (The percentages are based on the master meters readings and billed water consumption not in correlation with the monthly billing cycles)

Year	Amount of Unaccounted for Water	% Unaccounted for Water Use
2014	75,568,567	1.98%
2015	770,228,601	16.24%
2016	195,685,336	4.21%
2017	217,396,323	5.05%
2018	271,994,604	7.03%

** Source: TWDB Water Loss Audits Reporting Forms 2014 to 2018*

5. List previous five years records for annual peak-to-average daily use ratio

Year	Average MGD	Peak MGD	Ratio
2014	8.33	9.70	1.16
2015	7.93	10.38	1.31
2016	7.75	9.48	1.22
2017	7.45	8.16	1.10
2018	7.55	9.07	1.20

6. Total per capita water use for previous five years:

Year	Population	Total Pumpage (1,000 gal)	Industrial Sales (1,000 gal)	Wholesale Sales (1,000 gal)	In-City Municipal Use (1,000 gal)	Municipal per Capita Use (gpcd)	Total per Capita Use (gpcd)
2014	38,548	3,043,543	2,331	788,765	0	0	216.3
2015	40,435	2,896,167	1,121	1,280,711	0	0	196.2
2016	40,938	2,828,212	1,901	1,209,044	0	0	189.3
2017	41,208	2,717,599	1,733	994,305	0	0	180.7
2018	41,277	2,755,611	2,290	1,109,049	0	0	182.9

**Source: City of Huntsville Monthly Water Production Reports 2014 to 2018*

7. Seasonal water use for previous five years (in gallons per capita per day)

Year	Population	Base per Capita Use (gpcd)	Summer per Capita Use (gpcd)	Seasonal Use (gpcd)
2014	38,548	216.3	237.3	21.0
2015	40,435	196.2	228.3	32.1
2016	40,938	189.3	213.9	24.6
2017	41,208	180.7	194.6	13.9
2018	41,277	182.9	216.3	33.4

**Source: City of Huntsville Monthly Water Production Reports 2014 to 2018*

B. Projected Water Demands

Provide water supply requirements for at least the next ten years using population trends, historical water use, and economic growth, etc. Indicate sources of data and how projected water demands were determined.

Year	Projected Average Demand (MGD)	Source of Data	Groundwater Option Events	Conventional Surface Water Events
2018	7.55 (Actual)	2018 Production Numbers	24” Radial	24” Radial and 30” Redundancy
2020	8.4	Estimate	Phase 4 Ground Water	
2030	8.6	Estimate	Phase 5 Ground Water	
2040	9.0	Estimate		Storage/High Service Pumps
2050	9.5	Estimate	Expand TRA - 22 MGD 30” Redundancy	TRA Expansion-32 MGD
2060	10.0	Estimate		

III. Water Supply System

A. Water Supply Sources

List all current water supply sources and the amounts available with each:

Type	Source	Amount Available (MGD)
Surface Water	Trinity River Authority	16 MGD
Groundwater	Catahoula Aquifer	3.3 MGD (Safe Yield)
Contracts	Trinity River Authority	20 MGD
Other		

B. Treatment and Distribution System

Design daily capacity	Storage capacity: Elevated	Storage capacity: Ground
19.3 Million Gallons	2.5 Million Gallons	5.5 Million Gallons

** Source: City of Huntsville Water System Capacity Study, Crestpo, 2011*

The City of Huntsville receives its water from both surface and groundwater sources. Surface water comes to the City as treated potable water that is delivered through a 30 inch pipe from the Trinity River Authority. Groundwater is provided from the City's Palm Street Water Plant and Spring Lake Plant.

Water at the Palm Street Plant is produced from five (5) wells that are owned and operated by the city. This facility includes five (5) million gallons of ground storage capacity and 2.5 million gallons of elevated storage capacity. The facility is supported by two (2) booster stations, which are capable of pumping at a combined rate of 13,000 gallons per minute (gpm) or 18.72 million gallons per day (mgd) with a firm capacity of 11,250 gpm or 16.2 mgd.

Water at the Spring Lake Plant is produced from two wells that are owned and operated by the City. This facility includes 500,000 gallons of ground storage capacity. The facility is supported by one (1) booster station capable of pumping at a rate of 2,000 gpm or 2.88 mgd with a firm capacity of 1.44 mgd.

Total pumping capacity from both water plants is 15,000 gpm or 21.6 mgd with a firm capacity of 12,250 gpm or 17.64 mgd. The total storage capacity is 8.0 million gallons, consisting of 2.5 million gallons of elevated storage capacity and 5.5 million gallons of ground storage capacity.

Miles of Water Distribution	Miles of Wastewater Mains	Fire Hydrants	MG Elevated Storage tank Capacity	MG Ground Storage Capacity	Wastewater Lift Stations
323	261	1,325	2.5	5.5	26

IV. Wastewater Utility System

A. Wastewater System Data

1. Design capacity of wastewater treatment plant(s): **8.25 Million Gallons Per Day**
2. Is treated effluent used for:

Use	Yes/No	Gallons per Month
On-Site Irrigation?	No	
Off-Site Irrigation?	No	
Plant Wash-down?	Yes	40,000
Chlorination/De-chlorination?	Yes	50,000

3. Briefly describe the wastewater system(s) of the area serviced by water utility. Describe how treated wastewater is disposed of. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and, if wastewater is discharged, the receiving stream. Please provide a sketch or map which locates the plants and discharge points or disposal sites.

Treatment Plant Name	TCEQ Number	Operator	Owner	Discharge	Activated Sludge Process
N.B. Davidson WWTP	TPDES# 10781-002	Javier Ruiz	City of Huntsville	Unnamed tributary; thence to Persimmon Creek	1.6 MGD
A.J. Brown WWTP	TPDES# 10781-003	Seth Flowers	City of Huntsville	Parker Creek	4.15 MGD
Robinson Creek WWTP	TPDES# 10781-004	Jeremy McBee	City of Huntsville	Robinson Creek	2.5 MGD

B. Wastewater Data for Service Area

1. Percent of water service area served by wastewater system: 95%

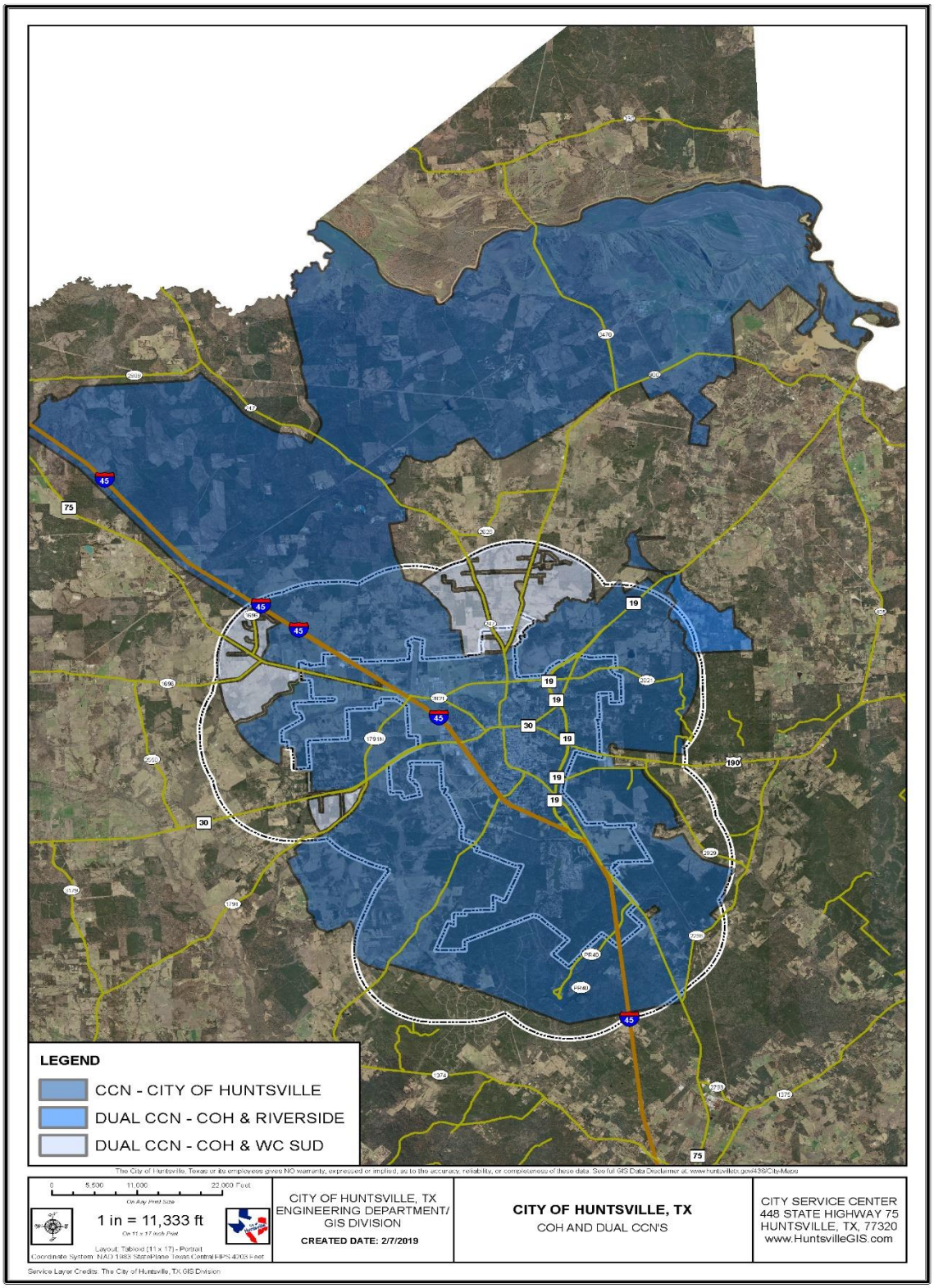
2. Monthly wastewater volume for previous three years (in 1,000 gallons):

Year	2016	2017	2018
January	132,540	154,420	140,470
February	121,590	140,100	146,590
March	147,890	141,030	161,220
April	155,810	138,390	142,600
May	175,270	136,480	137,410
June	168,010	141,100	137,370
July	140,380	134,970	137,070
August	161,990	181,430	135,570
September	144,640	148,730	144,470
October	141,970	144,040	167,990
November	131,340	134,220	170,891
December	146,730	134,550	186,940
Total	**1,768,160**	**1,729,460**	**1,808,591**

** Source: City of Huntsville, Wastewater Production Report, 2014 to 2019*

APPENDIX D

CITY OF HUNTSVILLE SERVICE AREA MAP


LEGEND
CCN - CITY OF HUNTSVILLE
DUAL CCN - COH & RIVERSIDE
DUAL CCN - COH & WC SUD
1 in = 11,333 ft
CITY OF HUNTSVILLE, TX
ENGINEERING DEPARTMENT/
GIS DIVISION
CREATED DATE: 2/7/2019
CITY OF HUNTSVILLE, TX
COH AND DUAL CCN'S
CITY SERVICE CENTER
448 STATE HIGHWAY 75
HUNTSVILLE, TX, 77320
www.HuntsvilleGIS.com

APPENDIX G

COUNCIL APPROVED CONSERVATION PLAN

ORDINANCE NO. 2019-22

AN ORDINANCE OF THE CITY OF HUNTSVILLE, TEXAS, ADOPTING A WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN; ESTABLISHING CRITERIA FOR THE INITIATION AND TERMINATION OF DROUGHT RESPONSE STAGES; ESTABLISHING RESTRICTIONS ON CERTAIN WATER USES; ESTABLISHING PENALTIES FOR VIOLATION OF THE PLANS; PROVIDING A SEVERABILITY CLAUSE; AND DECLARING AN EFFECTIVE DATE.

WHEREAS, the City of Huntsville, Texas recognizes that the amount of water available to the City and its water utility customers is limited and subject to depletion during periods of extended drought; and

WHEREAS, the City recognizes that natural limitations due to drought conditions and other acts of God cannot guarantee an uninterrupted water supply for all purposes; and

WHEREAS, Section 11.1272 of the Texas Water Code and applicable rules of the Texas Commission on Environmental Quality require all public water supply systems in Texas to prepare water conservation and drought contingency plans; and

WHEREAS, as authorized under law, and in the best interests of the citizens of Huntsville, Texas, the City Council deems it expedient and necessary to establish certain rules and policies for the orderly and efficient management of limited water supplies during the drought and other water supply emergencies;

NOW, THEREFORE, BE IT HEREBY ORDAINED BY THE CITY COUNCIL OF THE CITY OF HUNTSVILLE, TEXAS, that:

Section 1. That the City of Huntsville, Texas Water Conservation and Drought Contingency Plan attached hereto as Exhibit "A" and made a part hereto for all purposes be, and the same are hereby, adopted as the official policies of the City and referenced in the Code of Ordinances, Sections 46-49 and 46-50.

Section 2. Any person, corporation, partnership, association or other entity violating the drought contingency measure or water conservation measure implemented by the City of Huntsville pursuant to the City of Huntsville, Texas Water Conservation and Drought Contingency Plan shall be subject to the general penalty provisions set out in Section 1-11 of the Code of Ordinances of the City of Huntsville, Texas, and a separate offense shall be deemed committed upon each and every day that any drought contingency measure is violated.

Section 3. All ordinances that are in conflict with the provisions of this Ordinance are, and that same are hereby, repealed and all other ordinances of the City not in conflict with the provisions of this Ordinance shall remain in full force and effect.

Section 4. Should any paragraph, sentence, clause, phrase or section of this Ordinance be adjudged or held to be unconstitutional, illegal or invalid, the same shall not affect the validity of this Ordinance as a whole or any part or provision thereof, other than the part so declared to be invalid, illegal or unconstitutional.

Section 6. This ordinance shall take effect immediately after its passage.

PASSED AND APPROVED on this the 16th day of April 2019.

THE CITY OF HUNTSVILLE, TEXAS

Andy Brauninger, Mayor

ATTEST:

Brenda Poe, City Secretary

APPROVED AS TO FORM:

Leonard Schneider, City Attorney