

September 10, 2013

Mr. Frank Burluson (MC 174)
Office of Compliance and Enforcement
Central Texas Area
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-03087

VIA ELECTRONIC TRANSMISSION

Re: City of Waco's Pass -Through Plan For Use During Priority Calls in the Brazos
River Basin (2402-08)

Dear Frank:

On August 14, 2013, the City of Waco ("Waco" or "City") submitted for review by the Texas Commission on Environmental Quality ("TCEQ") a revised pass-through plan for use during priority calls in the Brazos River Basin. By letter dated September 4, 2013, you asked the City to provide additional information to demonstrate compliance with the Executive Director's July 2, 2013 Order, as affirmed and modified by the Commission. The City has revised the plan, accordingly, and its revised plan is enclosed for TCEQ's review and approval, as appropriate. For your convenience, the City has also included a redline of the document, identifying all changes made to the August 14 draft of the pass-through plan previously submitted.

Once you have had the chance to review the attached documents, please do not hesitate to contact me with any questions, comments or further discussion on these important matters.

Sincerely,


Martin C. Rochelle

ENCLOSURES

cc: Ms. Kathy Alexander
Ms. Melissa Keller
Mr. Dale Fisseler
Mr. Ricky Garrett
Ms. Jennifer Richie
Ms. Annette Jones
Mr. Jon Albright
Mr. Adam Friedman
Ms. Paige Hamilton



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City of Waco Pass-Through Plan (September 10, 2013)

Background:

The 82nd Texas Legislature passed HB 2694, which amended Chapter 11 of the Texas Water Code to allow for the suspension and adjustment of water rights by the Texas Commission on Environmental Quality (“TCEQ”) Executive Director. *See* TEX. WATER CODE §11.053. Pursuant to this legislation, TCEQ was directed to adopt rules for implementation of this authority. Accordingly, the TCEQ adopted Title 30, Chapter 36 of the Texas Administrative Code (“Chapter 36”) – “Suspension or Adjustment of Water Rights During Drought or Emergency Water Shortage” – as published in the *Texas Register* on April 12, 2012.

Pursuant to general authority included in HB 2694, and specific authority included in Chapter 36, the Executive Director may determine during a senior priority “call” period not to suspend a junior water right, based on public health, safety, and welfare concerns. *See* 30 T.A.C. §36.5(c). If the Executive Director decides not to suspend a junior water right based on public health, safety, and welfare concerns, the Executive Director may nonetheless require the junior water right holder to provide information throughout the duration of the priority call regarding efforts it has made toward obtaining alternate water sources and/or implementing conservation measures. *See* 30 T.A.C. §36.5(c)(1)-(3).

TCEQ has recently issued call orders suspending the diversion rights of junior water rights in the Brazos River Basin below Lake Possum Kingdom (“PK”), so as to protect the prior appropriations of certain downstream senior water right holders in the Basin. These recent orders suspended all water rights junior to February 14, 1942 in the Brazos River Basin below PK, but these orders also exempted from suspension certain junior water rights held for municipal, domestic and power generation purposes.

For example, on November 19, 2012, the TCEQ sent a letter to municipal, domestic and power generation water right holders in the Brazos River Basin downstream of PK, including the City of Waco (“City” or “Waco”), informing them that they were not required to cease diverting. In light of the current drought conditions in the Brazos River Basin, a priority call in the Basin is likely to occur in the foreseeable future. The City wants to ensure that a pass-through plan for Lake Waco is approved by TCEQ in order that the City might best plan for addressing its water supply needs during any period of a call that is senior to some or all of its diversion and/or storage rights. The City has various water rights for diversion and storage in the Brazos River Basin below PK, and some of these rights are relatively senior and others relatively junior to other rights in the Basin.



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Purpose:

The purpose of this pass-through plan is to address the City's rights to divert and/or store inflows to Lake Waco in the event a priority call is made in the Brazos River Basin that is senior to some or all of the City's current diversion and/or storage rights. This plan maximizes the beneficial use of water and prevents the waste of water by allowing the City to divert inflows necessary to meet its critical water use needs, and to impound inflows to Lake Waco during periods when flow at the Clifton or Bryan gages is at or above the 33rd percentile for stream flows at these gages ("33rd Percentile").¹ The 33rd Percentile has been identified by the TCEQ as a reasonable level to allow the diversion and impoundment of water. Moreover, if Dow Chemical is the senior water right making the priority call, this plan allows the City to impound inflows to Lake Waco when flow at the Rosharon gage is at or above 630 cfs, which exceeds the flow that the TCEQ has indicated is adequate to address the demand for Dow Chemical.

City of Waco Water Rights with Priority Dates:

Certificate of Adjudication 12-2315, as amended (Lake Waco):

Diversion: 39,100 acre-feet per year for municipal and industrial purposes
Priority date: January 10, 1929

Diversion: 19,100 acre-feet per year for municipal and industrial purposes
Priority date: April 16, 1958

Diversion: 900 acre-feet per year for irrigation purposes
Priority date: February 21, 1979

Storage: 104,100 acre-feet
Priority date: January 10, 1929

Bed and Bank Transfer: 7,700 acre feet per year released from Lake Waco to the Bosque River at a max rate of 12 cfs (diversion point in Fort Bend County)
Priority Date: This right is tied to priority date of the released water.

¹ As of the July 2, 2013 TCEQ Order, the 33rd Percentile flow at the Clifton gage was 9.8 cfs and the 33rd Percentile flow at the Bryan gage was 882 cfs.



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Bed and Banks Rights: 16,869 acre-feet per year released from Lake Waco to the Bosque River at max rate of 23.9 cfs (diversion point in McLennan County).

Priority date: This right is tied to the priority date of the released water.

Permit No. 5094, as amended (Lake Waco Extension):

Diversion: 20,770 acre-feet per year for municipal purposes (in addition to the original 59,100 acre-feet/year)

Priority dates²: September 12, 1986 for 20,081 acre-feet per year
January 21, 1988 for 688 acre-feet per year

Storage: 87,962 acre-feet below elevation 462 feet above mean sea level (in addition to the original 104,100 acre-feet)

Priority date: September 12, 1986

Certificate of Adjudication 12-4340 (Lake Brazos):

Diversion: 5,600 acre-feet per year for municipal and industrial purposes

Priority: June 29, 1914

Storage: 3,537 acre-feet

Priority date: January 8, 1968

Permit 5840 (Bed and Banks Authorization):

Bed and Banks Transfer: 42,344 acre-feet per year of municipal return flows from Waco Metropolitan Area Regional Sewage System (WMARSS) Wastewater Treatment Plant conveyed down the bed and banks of state streams; 42,175 acre-feet per year authorized for diversion downstream for reuse

Priority date: July 13, 2004

Total Authorizations:

Lake Waco Diversion: 79,870 acre-feet per year

Lake Waco Storage: 192,062 acre-feet

Lake Brazos Diversion: 5,600 acre-feet per year

² Priority date authorizations in Permit 12-5094 are 1 acre-foot per year less than the use authorizations.



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Lake Brazos Storage: 3,637 acre-feet

Reuse: 42,344 acre-feet per year

Methodology:

Lake Waco is operated by the United States Army Corps of Engineers (“USACE”). The City has confirmed that the USACE maintains the capability to accommodate passing necessary inflows to Lake Waco, as calculated by this pass-through plan. The structure of this plan is crafted in light of the intent of the Legislature to provide municipalities the ability to address the critical needs of its citizens in times of drought.

This pass-through plan will use daily inflows into Lake Waco, calculated using a mass balance. Data will be obtained from the USACE, U.S. Geological Survey, and other sources. Passage of daily inflows is dependent on the priority dates affected by the priority call (as described in subsequent sections of this pass-through plan) and the status of flow at the Clifton, Bryan, and Rosharon gages, as specified below.

During a priority call senior to all of the City’s water rights, or after the City has exhausted all of its diversion rights that are senior to the priority call, daily inflows to Lake Waco will be designated as potential pass-through flows, subject to the protocol identified herein, if:

- (1) The flow at the Clifton and Bryan gages is below the 33rd Percentile; and
- (2) If Dow is the source of a senior call, flow at the Rosharon gage is below 630 cfs.

A priority call may be temporarily suspended if the flow at the Clifton or Bryan gages are at or above the 33rd Percentile or, if Dow is the source of the call, flow at the Rosharon gage is at or above 630 cfs. In such event, inflows into Lake Waco will not be passed and may be diverted and used for beneficial purposes or impounded in Lake Waco.

All inflows designated as pass-through flows will be passed if the elevation of Lake Waco is above 450 feet mean sea level and Waco has exhausted all of its diversion rights that are senior to the priority call. The City will rely exclusively on previously stored water until the elevation of Lake Waco drops to or below 450 feet msl. When the elevation of Lake Waco is at or below 450 feet msl, the City will limit its diversion and use of inflows to Lake Waco to that portion of the inflows which reflect Waco’s “critical water use” need (i.e., the daily water use needed to meet Waco’s public health, safety and welfare requirements).



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The City conducted an analysis of its “critical water use” needs (i.e., daily water use required for public health, safety and welfare purposes) based on a November 2012 report by the Texas Water Development Board (“TWDB”). The City’s analysis of the data in the TWDB report is attached as Attachment 1. In 2013, the projected “critical water use” demand for Waco and its municipal customers equals 18.4 million gallons per day (“MGD”). After 2013, this amount will be adjusted to account for the City’s population growth, which is currently about 1% per year.

Accordingly, in the event of a senior call in 2013 (i.e., a call senior to the water rights the City is diverting under), after the City calculates the amount of inflows to Lake Waco to be passed downstream, the City will divert up to 18.4 MGD (or 28.5 cfs) of any such inflows for its “critical water use” needs, passing any remaining inflows downstream, pursuant to the periodic, weekly protocol described below.

By diverting inflows to Lake Waco up to but not exceeding its “critical water use” needs, the City will maintain the discretion as to how it chooses to make water available for any “non-critical water use” purposes during a priority call. As such, Waco will either implement mandatory stages of its Drought Contingency Plan so as to reduce its demands to the volume of its “critical water use” requirements, or use water lawfully stored in Lake Waco to meet such demands. The City’s Drought Contingency Plan is included as Attachment 2 to this pass-through plan. When the City uses stored water to satisfy its “non-critical water use” needs, it understands it cannot legally replenish such storage with inflows during a call that is senior to Waco’s storage priority. If the City elects to rely on diversion and use of lawfully stored water for its “non-critical water use” needs, the pass-through plan will enable the City to calculate the storage emptied by such diversions so that storage emptied by diversions junior to the priority call will not be replenished with inflows during an applicable priority call. On the other hand, the pass-through plan will account for the storage of inflows to Lake Waco during an applicable senior priority call in order to replenish storage emptied due to insufficient daily inflows to meet the City’s “critical water use” needs.

In the event the City’s ability to meet its “critical water use” needs may be impaired due to lake levels at or below 450 feet msl, the City will impound inflows while implementing a heightened stage of its Drought Contingency Plan. At elevation 440 feet msl (52,033 acre-feet of storage), the City would immediately implement Stage 6 of its Drought Contingency Plan. At this point the City would retain all inflows regardless of the priority date of the call, to maintain lake elevation at or above 440 feet msl in order to maintain the ability to provide the water needed for human health and safety, as provided for pursuant to Stage 6 of the Drought Contingency Plan. If the priority date of the call is junior to Waco’s most senior storage right (January 10, 1929), Waco will impound all inflows pursuant to its senior water right, up to elevation 450 feet msl, and the City will maintain compliance with its Drought Contingency Plan.



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Additionally, this pass-through plan addresses releases of water through Lake Waco by the USACE. USACE data indicates continuous releases of water from Lake Waco at a rate of at least 10 cfs. Accordingly, Waco's pass-through plan will account for these releases downstream.

Water released from Lake Waco storage downstream for use under bed and banks authorizations in Certificate 12-2315, as amended, would be in addition to any inflows passed from the reservoir during a senior priority call.

Lake Brazos:

The City's water rights in Lake Brazos authorize the diversion and use of up to 5,600 acre-feet of water per annum for municipal and industrial purposes. At this time, water diversions are not being made pursuant to this right, CA 12-4340. Lake Brazos operates as a pass-through reservoir. In other words, Lake Brazos is a passive structure, operated with an uncontrolled spillway that passes all inflows to it down the Brazos River. Waco will maintain this spillway to ensure it remains free from obstruction. Therefore, no action is required during a priority call. Prior to commencement of diversions from Lake Brazos for municipal use purposes, should they occur in the future, Waco will notify the Executive Director in writing and amend this pass-through plan to address such diversions.

Priority Call Senior to January 10, 1929:

A priority call senior to January 10, 1929, would be senior to all of the City's rights in Lake Waco. However, there are very few rights that are senior to the City's June 29, 1914 Lake Brazos diversion rights (COA 12-4340) of 5,600 acre-feet per year. Since Lake Brazos is downstream of the confluence of the Bosque and Brazos Rivers, the Lake Brazos right has a priority claim on inflows to Lake Waco. Therefore, the City can divert and beneficially use up to 5,600 acre-feet per year of inflow into Lake Waco regardless of a priority call that is junior to June 29, 1914 and senior to the City's January 10, 1929 water right. Once the City's Lake Brazos diversion rights have been exhausted, the City would apply the methodology described herein, diverting inflows to Lake Waco only to satisfy "critical water use" needs, including water needed to fill storage emptied by diverting water for critical water needs when inflows are insufficient to meet those needs. Irrigation use from Lake Waco may continue, but the water would come solely from water stored in Lake Waco prior to the priority call or stored during times when the flow at either the Clifton or Bryan gages is at or above the 33rd Percentile or, if Dow makes the senior call, the flow at the Rosharon gage is at or above 630 cfs.



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Priority Call Junior to January 10, 1929 but Senior to April 16, 1958:

If the priority call is junior to the City's storage of 104,100 acre-feet of water in Lake Waco and the City's right to divert 39,100 acre-feet per year from Lake Waco for municipal and industrial use, then as long as diversions are at or less than 39,100 acre-feet per year or storage is at or below 104,100 acre-feet (elevation 450 feet msl), all inflows to Lake Waco will be diverted and used for beneficial purposes or stored. If the water level in Lake Waco is above elevation 450 feet msl, then Waco may divert up to 39,100 acre-feet per year of inflows for beneficial use, but will not store inflows to Lake Waco unless (1) flow at the Clifton or Bryan gages is at or above the 33rd Percentile or (2) the flow at the Rosharon gage is at or above 630 cfs if Dow made the senior call. If annual diversions exceed 39,100 acre-feet per year and water level in Lake Waco is above elevation 450 feet msl, Waco will pass all inflows and rely on lawfully stored water for its "critical water use" demands, unless flow conditions at the Clifton or Bryan gages are at or above the 33rd Percentile or, if Dow made the senior call, the flow at the Rosharon gage is at or above 630 cfs. If annual diversions exceed 39,100 acre-feet per year and the water level in Lake Waco is at or below 450 feet msl, and daily inflows to Lake Waco are insufficient to provide Waco its critical water use demand, the City will divert water lawfully stored in Lake Waco prior to the priority call or water stored during times when the flow at either the Clifton or Bryan gages is at or above the 33rd Percentile or, if Dow made the senior call, the flow at the Rosharon gage is at or above 630 cfs. When the water level in Lake Waco is at or below 450 feet msl, storage emptied in Lake Waco for purposes of meeting critical water use demands will be refilled with any inflows to Lake Waco during the priority call. In order to limit refilling of storage only to the amount emptied for "critical water use", a calculation will be performed that determines the storage in Lake Waco had diversion for critical water use not occurred.

Diversions for irrigation use from Lake Waco may continue during a priority call, but such diversions would come solely from water lawfully stored in Lake Waco prior to the priority call or stored during times when the flow at either the Clifton or Bryan gages is at or above the 33rd Percentile or, if Dow made the senior call, the flow at the Rosharon gage is at or above 630 cfs. In order to prevent storage emptied by irrigation use from being refilled, a calculation will be performed that determines the storage in Lake Waco had the irrigation diversions not occurred. As long as the reservoir storage elevation is less than 450 feet msl, the storage emptied by municipal use could be filled with inflows.



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Priority Call Junior to April 16, 1958 but Senior to February 21, 1979:

If the priority call is junior to the City's right to store up to 104,100 acre-feet in Lake Waco and junior to its right to divert up to 58,200 acre-feet per year for municipal and industrial purposes, then as long as diversions are at or less than 58,200 acre-feet per year or storage is at or below 104,100 acre-feet (elevation 450 feet msl), all inflows to Lake Waco will be diverted and used for beneficial purposes, or stored. If the water level in Lake Waco is above 450 feet msl, then Waco may divert up to 58,200 acre-feet per year of inflows for beneficial use, but will not store inflows to Lake Waco unless flow at the Clifton or Bryan gages is at or above the 33rd Percentile or, if Dow made the senior call, the flow at the Rosharon gage is at or above 630 cfs. If annual diversions exceed 58,200 ac-ft/yr and storage in Lake Waco is above elevation 450 feet msl, Waco will pass all inflows and rely on lawfully stored water for its "critical water use" demands, unless flow conditions at the Clifton or Bryan gages are at or above the 33rd Percentile or, if Dow made the senior call, the flow at the Rosharon gage is at or above 630 cfs. If annual diversions exceed 39,100 acre-feet per year and the water level in Lake Waco is at or below 450 feet msl, and daily inflows to Lake Waco are insufficient to provide Waco its critical water use demand, the City will divert water lawfully stored in Lake Waco prior to the priority call or water stored during times when the flow at either the Clifton or Bryan gages is at or above the 33rd Percentile or, if Dow made the senior call, the flow at the Rosharon gage is at or above 630 cfs. When the water level in Lake Waco is at or below 450 feet msl, storage emptied in Lake Waco for purposes of meeting critical water use demands during the priority call will be refilled with any inflows to Lake Waco during the priority call. In order to limit refilling of storage only to the amount emptied for critical water use, a calculation will be performed that determines the storage in Lake Waco had diversion for critical water use not occurred.

Diversions for irrigation use from Lake Waco may continue, but such diversions would come solely from water stored in Lake Waco prior to the current priority call or stored during times when the flow at either the Clifton or Bryan gages is at or above the 33rd Percentile or, if Dow made the senior call, the flow at the Rosharon gage is at or above 630 cfs. As long as the reservoir storage elevation is less than elevation 450 feet msl, the storage emptied by municipal use could be filled with inflows.

Priority Call Junior to February 21, 1979 but Senior to September 12, 1986:

If the priority call is junior to the City's right to store up to 104,100 acre-feet in Lake Waco and its right to divert up to 58,200 acre-feet per year for municipal and industrial purposes and 900 acre-feet per year for irrigation purposes, then as long as diversions are at or less than 58,200 acre-feet per year for municipal or industrial use and at or less than 900 acre-feet per year for irrigation use, or storage is at or below 104,100 acre-feet (elevation 450 feet msl), all inflows to Lake Waco will be diverted and used for beneficial purposes, or stored. If the storage in Lake



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Waco is above elevation 450 feet msl, then Waco may divert up to 58,200 acre-feet per year of inflows for municipal or industrial use and up to 900 acre-feet per year for irrigation use, but will not store inflows to Lake Waco unless flow at the Clifton or Bryan gages is at or above the 33rd Percentile or, if Dow made the senior call, the flow at the Rosharon gage is at or above 630 cfs. If annual diversions exceed 58,200 acre-feet per year for municipal and industrial use and 900 acre-feet per year for irrigation use, and storage in Lake Waco is above elevation 450 feet msl, Waco will pass all inflows and rely on lawfully stored water for its “critical water use” demands, unless flow conditions at the Clifton or Bryan gages are at or above the 33rd Percentile or, if Dow made the senior call, the flow at the Rosharon gage is at or above 630 cfs. Critical water use demands include flows needed to fill storage emptied by meeting critical water use demands previously during the current priority call if the storage in Lake Waco is below 450 feet msl.

Diversions for irrigation use in excess of 900 acre-feet per year from Lake Waco may continue, but such diversions would come solely from water stored in Lake Waco prior to the current priority call or stored during times when the flow at either the Clifton or Bryan gages is at or above the 33rd Percentile or, if Dow made the senior call, the flow at the Rosharon gage is at or above 630 cfs. As long as the reservoir storage elevation is less than 450 feet msl, the storage emptied by municipal use could be filled with inflows.

Priority Call Junior to September 12, 1985 but Senior to January 21, 1988:

If the priority call is junior to the City’s right to store up to 192,062 acre-feet in Lake Waco and the right to divert up to 58,200 acre-feet per year for municipal and industrial purposes, the right to divert an additional 20,081 acre-feet per year for municipal purposes, and the right to divert up to 900 acre-feet per year for irrigation purposes, then all inflows could be diverted and beneficially used to meet up to a combined demand of 79,181 acre-feet per year from the reservoir, and all storage could be refilled.

Priority Call Junior to January 21, 1988:

This priority call would be junior to all of the City’s Lake Waco water rights and no pass-through would be required.



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Implementation of Pass-Through Plan:

During any period of a senior call to Lake Waco's rights, inflows to Lake Waco will be passed according to this plan. Such inflows will be calculated for a one-week period and the average daily flow over that period will be released on the Friday of the subsequent week. The one-week average of inflows to be passed will be recalculated every week until the senior call is rescinded. The City will take the following steps to determine the volume of water to be passed for each one-week calculation period:

1. Calculate total inflow to Lake Waco for each one-week period based on calculated daily inflows.
 - a. Determine total inflow to Lake Waco during the time that the flow at either the Clifton or Bryan gages is at or above the 33rd Percentile.
 - b. When the pending priority call is made by Dow Chemical, the City will determine the total inflow to Lake Waco for each one-week period based on calculated daily inflows during the time that the flow at the Clifton or Bryan gages is at or above the 33rd percentile, or the flow at the Rosharon gage is at or above 630 cfs.
 - c. Inflows calculated under a. and b., if any, will be subtracted from the total inflows into Lake Waco during the week to determine potential inflows for pass-through.
 - d. Inflows occurring when the conditions of a. and b. above are satisfied will not be passed, but will be diverted and used for beneficial purposes or impounded in Lake Waco.
2. Determine the portion of the remaining inflows required to be passed downstream based on the priority of the call. The procedure for such a determination depends on the priority date of the call and is described above.
3. Deduct from inflows to be passed those inflows necessary for the City's "critical water use" requirements, i.e, lake level at or below 450 feet msl so inflows are retained to meet critical water use requirements or replenish water used to meet critical water use requirements.
4. To account for the USACE's operation of the Lake Waco dam and its release of water downstream, the City will be credited 138.6 acre feet (19.8 acre feet per day for one week) towards the amount of inflows to be passed, calculated by following Steps 1 – 3.



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5. The City will request the USACE to release the total volume required to be passed, which has been calculated based on the above steps. This volume will be released from Lake Waco on the Friday of each successive week.
6. If the total volume of water released by the USACE for a one-week period is greater than or less than the total amount of inflows required to be passed pursuant to this plan, Waco will apply the surplus or deficit to the very next one-week accounting and release protocol.

ATTACHMENT 1

TO

CITY OF WACO PASS-THROUGH PLAN

TO: Martin Rochelle and Adam Friedman, Lloyd Gosselink

FROM: Jon Albright

SUBJECT: Analysis of Essential Water Use – City of Waco

DATE: April 29, 2013

PROJECT: Waco Pass-Through Plan – LGB13130

1. During recent priority calls, the Texas Commission on Environmental Quality (TCEQ) has not shut off municipal and steam-electric power users in order to protect human health and safety. For municipal water users, by far the largest “non-essential” water use (i.e. water that is not needed to protect human health and safety) is outdoor watering. This memorandum presents an analysis of outdoor water use for the City of Waco and its customers and presents a method that could be used in development of the City’s response to future priority calls.
2. The City of Waco obtains most of its water from Lake Waco. Major customers include the cities of Bellmead, Beverly Hills, Hewitt, Lacy Lakeview, West, and Woodway. Table 1 shows the estimated population of these cities from 2007 to 2011 (2011 is the latest available estimate for these cities). The total current population of these cities is approximately 170,000 people. The area is growing about 1% per year. Based on data from regional planning, the City of Waco provides all of the water for Beverly Hills and Lacy Lakeview. The other cities have their own supplies in addition to supplies from Waco. According to the 2004 Waco water conservation plan, these wholesale municipal customers account for approximately 10% of total water use. A little over 35% of the water use by the City of Waco was residential. Commercial use was the next highest, accounting for almost 32% of total use. Irrigation customers accounted for a little over 8% of the total¹.

Table 1: Recent Population Data for the City of Waco and Major Customers

Year	Waco	Bellmead	Beverly Hills	Hewitt	Lacy-Lakeview	West	Woodway	Total
2007	120,487	9,358	2,058	13,257	6,050	2,770	8,799	162,779
2008	120,577	9,403	2,068	13,320	6,120	2,803	8,851	163,142
2009	123,949	9,525	2,094	13,707	6,227	2,826	8,851	167,179
2010	124,805	9,901	1,995	13,549	6,489	2,807	8,452	167,998
2011	126,697	10,061	2,026	13,767	6,593	2,849	8,587	170,580

Data are from the Texas State Data Center² and the U.S. Census Bureau³

¹ City of Waco 2005 Water Conservation and Drought Contingency Plan

² Texas State Data Center, Texas Population Estimates Program, available on-line at <http://txsdc.utsa.edu/Data/TPEPP/Estimates/Index.aspx>

³ U.S. Census Bureau, 2011 Population Estimates, available on-line at <http://www.census.gov/popest/data/cities/totals/2011/SUB-EST2011-states.html>



3. According to a recent study by the Texas Water Development Board (TWDB), from 2004 to 2008 an average of 35 percent of the annual water use by the City of Waco was for outdoor watering⁴. This value was based on an analysis of water use during the lowest winter month, which is generally assumed to be indicative of water use without outdoor watering. A corollary to this finding is that 65 percent of the water use was for indoor residential use, commercial facilities, and other purposes. Table 2 shows the annual water use from 2007 to 2012 as provided by the city. Figure 1 compares the monthly water use, the average annual water use and 65 percent of the average annual water use for the same period. Note that the 65 percent of annual data series is slightly less than the minimum monthly use for every year in this figure except 2011, which was an abnormally hot and dry year. This result implies that a value between 18 and 19 MGD is a conservative indicator of current water use other than outdoor watering for the City of Waco.

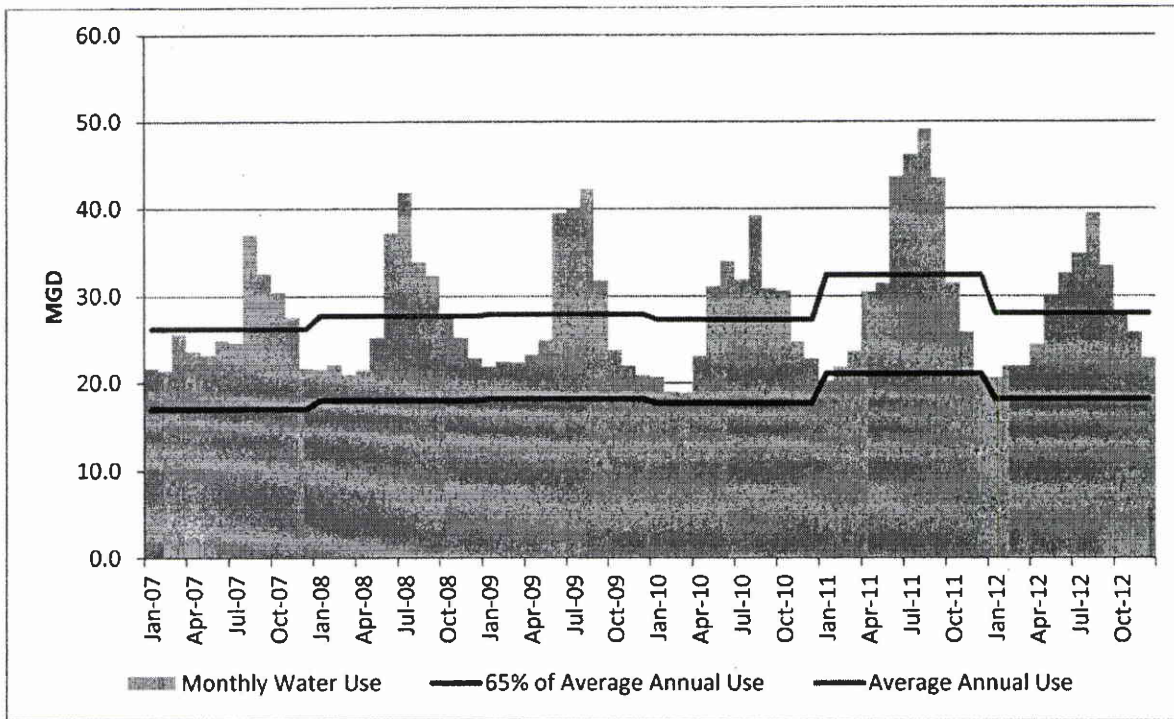
Table 2: 2007 to 2012 Water Use – City of Waco

Year	Total Annual Use (MG)	Total Annual Use (MGD)	Estimated Outdoor Water Use (MGD)	Other Water Use (MGD)
2007	9,566	26.2	9.2	17.0
2008	10,141	27.7	9.7	18.0
2009	10,192	27.9	9.8	18.2
2010	9,962	27.3	9.6	17.7
2011	11,819	32.4	11.3	21.0
2012	10,252	28.0	9.8	18.2
<i>Average</i>	<i>10,322</i>	<i>28.3</i>	<i>9.9</i>	<i>18.4</i>

Data provided by the city of Waco. Includes sales to wholesale customers

⁴ Hermitte, Sam M and Mace, Robert E.: The Grass is Always Greener...Outdoor Residential Water Use in Texas, Technical Note 12-01, prepared for the Texas Water Development Board, November 2012.

Figure 1: Comparison of Monthly Water Use to Annual Water Use and Estimated Non-Outdoor Water Use

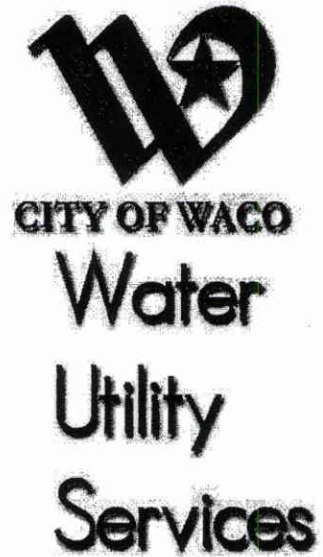
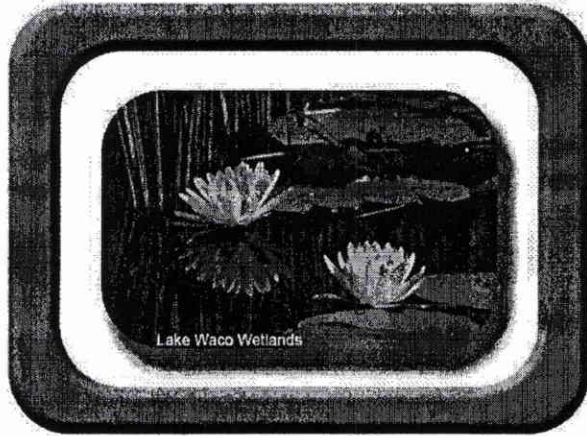


- The average non-outdoor use of 18.4 MGD (28.5 cfs) appears to be a reasonable estimate of the minimum amount of water use if the City of Waco and its customers limited water use to only essential uses during 2013. This value is less than the minimum monthly use during recent years. Given the relatively large amount of commercial use in the city, it is doubtful if additional savings could be achieved by eliminating other types of use. After 2013, it would be reasonable to increase this amount to account for population increase in the area, which has averaged about 1 percent per year over the last decade.

ATTACHMENT 2

TO

CITY OF WACO PASS-THROUGH PLAN



Post Office Box 2570 Waco, TX 76702-2570
CCN #: 10039
PWS #: 1550008

Drought Contingency Plan

2009

CITY OF WACO WATER UTILITY SERVICES DROUGHT CONTINGENCY PLAN

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Section I: Declaration of Policy, Purpose, and Intent

In order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard to domestic water use, to sanitation and fire protection, and to protect and preserve public health, welfare, and safety to minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the City of Waco hereby adopts the following regulations and restrictions on the delivery and consumption of water through Ordinance No. 2009 – 221. A copy is attached as appendix A.

Water uses regulated or prohibited under this Drought Contingency Plan (the Plan) are considered to be non-essential and continuation of such uses during times of water shortage or other emergency water supply condition are deemed to constitute a waste of water which subjects the offender(s) to penalties as defined in Section IX of this plan.

Section II: Public Involvement

Opportunity for the public to provide input into the preparation of the Plan was provided by the City of Waco by means of a public meeting and by publishing the Plan on the Water Utility Services website (www.wacowater.com). A public notice was provided regarding a public meeting, which was held to accept input on the Plan. Additionally, citizens were invited to send comments electronically after viewing the Plan online.

Section III: Public Education

The City of Waco will periodically provide the public with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by means of public events, press releases and/or utility bill inserts.

Section IV: Coordination with Regional Water Planning Groups

The service area of the City of Waco is located within the Brazos G Regional Water Planning Group. The City of Waco has provided a copy of this Plan to the Brazos G Regional Water Planning Group.

Section 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 drought or other water supply emergency response measures as described in this Plan.

Section VI: Application

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

Section 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 Waco.

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.

Mean Sea Level (msl): the level of the ocean’s surface, especially the level halfway between high and low tide, used as a standard in reckoning land elevation or sea depths.

Non-essential water use: water uses that are neither 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.

Section VIII: Criteria for Initiation and Termination of Drought Response Stages

The City Manager or his/her designee shall monitor water supply and/or demand conditions on a daily basis and shall determine when conditions warrant initiation or termination of each stage of the Plan, that is, when the specified triggers are reached.

Criteria triggering the implementation of various stages of the Drought Contingency Plan, include, but are not limited to, the following:

1. General, geographical, or weather related condition or emergency, including but not limited to drought conditions resulting in a decrease in the Lake Waco reservoir level
2. Water system failures/emergencies (i.e., pressure zone deficiencies, chemical spills, broken water mains, power outages, electrical failures, failures of storage tanks or other equipment, treatment plant breakdown, and water contamination)
3. An inability to recover approximately ninety (90) percent of water stored in all Storage facilities within a defined period
4. A catastrophic decrease in the Lake Waco reservoir level and/or delivery capabilities resulting in an inability, presently or in the immediate future, to recover resources sufficient to provide services necessary for the public health and welfare

The level of the Lake Waco reservoir shall be determined based on the official reading by the U.S. Army Corps of Engineers and stated as an elevation above mean sea level (msl).

Triggering Stages

Generally. Upon the occurrence of an emergency, the City Manager may exercise his or her discretion to request special voluntary water restrictions and/or to initiate Stages 1 - 6 mandatory restrictions.

Stage 1 Triggers - Water Watch (Voluntary Reductions)

By May 1 of each year, the city will forecast water supply and potential water demands for May 1 through September 30 of that year. At this stage, citizens are encouraged to practice good water management techniques inside and outside the home, including such practices as cutting back on lawn sprinkler times and developing landscapes that require less water. Criminal penalties do not apply to voluntary reductions during the Water Watch stage.

Stage 2 Triggers – MILD Water Shortage

1. Criteria for implementation of Stage 2 – A decrease in the Lake Waco reservoir level to 452 msl (at which the reservoir is at about 60% of its capacity). Upon recommendation of the City Manager, Stage 2 response procedures shall become effective.
2. Criteria for termination - Stage 2 shall be terminated at the discretion of the City Manager.

Stage 2 Responses

Mandatory restrictions – Upon implementation by the city, the following restrictions shall apply unless specifically exempted:

1. The city shall limit use of water for municipal purposes to those activities necessary to maintain the public health, safety and welfare and any computer-controlled irrigation systems that incorporate evapotranspiration data in setting irrigation run times.
2. The city shall monitor “excessive watering” and issue notifications to customers. “Excessive watering” occurs where run-off extends for a distance greater than ten (10) feet from the customer’s property or where there is washing or hosing down of buildings, sidewalks, driveways, patios, porches, parking surfaces or other paved surfaces. Criminal penalties do not apply during Stage 2 restrictions.

Stage 3 Triggers – MODERATE Water Shortage

1. Criteria for implementation of Stage 3 – A decrease in the Lake Waco reservoir level to 450 msl (at which the reservoir is at about 55% of its capacity) or inability to recover approximately ninety (90) percent of water

stored in all storage facilities within a twenty-four (24) hour period. Upon recommendation of the City Manager, Stage 3 response procedures shall become effective.

2. Criteria for termination - Stage 3 shall be terminated at the discretion of the City Manager.

Stage 3 Responses

Mandatory restrictions – Upon implementation by the city, the following restrictions shall apply unless specifically exempted:

1. All landscape and other outdoor water usage at each service address shall be limited to two days a week based on the last digit in the meter service address or the type of connection.

Last Digit Address Residential:	Allowed Landscape Water Days
Odd	Tuesday and Saturday
Even	Wednesday and Sunday
All Non-Residential accounts	Monday and Friday

Thursday – No Watering, Storage Recovery day

2. Apartments, office building complexes, or other properties containing multiple addresses, will be identified by the lowest physical street address number. Where there are no numbers, a number will be assigned by the Building Official.

Stage 4 Triggers – SEVERE Water Shortage

1. Criteria for implementation of Stage 4 – A decrease in the Lake Waco reservoir level to 446 msl (at which the reservoir is at about 45% of its capacity) or inability to recover approximately ninety (90) percent of water stored in all storage facilities within a thirty (30) hour period. Upon recommendation of the City Manager, Stage 4 procedures shall become effective.
2. Criteria for Termination – Stage 4 shall be terminated at the discretion of the City Manager.

Stage 4 Responses

Mandatory restrictions – Upon implementation by the city, the following restrictions shall apply unless specifically exempted:

1. All landscape and outdoor water usage at each service address shall continue the allowed landscape water days schedule identified in Stage 3;

however, landscape and outdoor water usage is prohibited from 5:00 A.M. to 9:00 A.M. and from 4:00 P.M. to 7:00 P.M.

2. Newly constructed swimming pools, Jacuzzis, spas, ornamental ponds, and fountains may be filled once.
3. Watering of newly installed landscaping is exempt from Stage 4 restrictions for no more than one (1) month from the date of planting. After the first month, the landscape water day's schedule and hourly restrictions must be followed.
4. Excessive water run-off from any landscaped area onto streets, alleys, or parking lots is prohibited. Run-off is excessive when it extends for a distance greater than ten (10) feet from the customer's property.
5. Washing or hosing down of buildings, sidewalks, driveways, patios, porches, parking areas, or other paved surfaces is prohibited.
6. Refilling after draining private swimming pools, Jacuzzis, spas, ornamental ponds, and fountains is prohibited. Refilling shall mean to replace more than twenty-five (25) percent of the facility's water capacity.
7. Washing or rinsing vehicles on owner's premises must follow the landscape water days schedule as set out above. A hand-held hose equipped with a positive shut-off nozzle and/or hand-held bucket must be used. (This includes boats, trailers, and other mobile vehicles and equipment.)

Exceptions:

(a) Commercial landscape nurseries are exempt from Stage 4 restrictions, but all such nurseries shall cease using water to clean pavement and sidewalk areas except for health and safety reasons.

(b) Commercial full-service or self-service car wash facilities, including those at service stations and automobile dealership facilities, shall cease using water to clean pavement and sidewalk areas except for health and safety reasons and are exempt from Stage 4 restrictions if they meet one or more of the following conditions:

- (i) Commercial car wash facilities using conveyORIZED, touchless, and / or rollover in-bay technology if they reuse a minimum of fifty percent of water from previous vehicle rinses in subsequent washes.
- (ii) Commercial car wash facilities using reverse osmosis to produce water rinse with a lower mineral content if they incorporate the

unused concentrate in subsequent vehicle washes.

- (iii) Self-service spray wands used that emit no more than three gallons of water per minute.

(c) Drip irrigation systems and soaker hoses are exempt from Stage 4 restrictions; however, upon the implementation of Stage 4 restrictions, Stage 3 day and hour restrictions shall apply to such water usage.

(d) Golf course landscape watering is exempt from Stage 4 restrictions so long as golf course irrigation systems are operated with a computer controlled irrigation system that incorporates evapotranspiration data in setting irrigation run times.

Stage 5 Triggers – CRITICAL Water Shortage

1. Criteria for implementation of Stage 5 – A decrease in the Lake Waco reservoir level to 445 msl (at which the reservoir is at about 40% of its capacity) or inability to recover approximately ninety (90) percent in all storage facilities within a forty-eight (48) hour period. Upon recommendation of the City Manager, Stage 5 procedures shall become effective.
2. Criteria for termination - Stage 5 shall be terminated at the discretion of the City Manager.

Stage 5 Responses

Mandatory restrictions – Upon implementation by the city, the following restrictions shall apply unless specifically exempted:

1. The water supply is at the point of a severe water shortage. All landscape and outdoor water usage at each service address shall continue according to the landscape water days schedule identified below; however, landscape and outdoor water usage is prohibited from 5:00 A.M. to 9:00 A.M. and from 4:00 P.M. to 7:00 P.M.

Last Digit Address:	Allowed Landscape Water Day
0, 1	Monday
2, 3	Tuesday
4, 5	Wednesday
6, 7	Thursday
8, 9	Friday
Saturday and Sunday – No Watering, Storage Recovery days	

2. Apartments, office building complexes, or other property containing multiple addresses will be identified by the lowest physical address number. Where there are no numbers, a number will be assigned by the Building Official.

3. Existing swimming pools, hot tubs, spas, ornamental ponds and fountains may be replenished with a hand-held hose to maintain operational purposes only.
4. Permitting of new swimming pools, hot tubs, spas, ornamental ponds or fountain construction is **prohibited**, except that those previously permitted or under construction at the time Stage 5 restrictions are initiated may complete construction and may be filled one time only.
5. Filling occurs when an amount of water equal to at least seventy-five (75) percent of the water capacity is placed in the structure or facility.
6. Excessive water run-off from any landscaped area onto streets, alleys, or parking lots is prohibited. Run-off is excessive when it extends for a distance greater than ten (10) feet from the customer's property.
7. Washing or hosing down of buildings, sidewalks, driveways, patios, porches, parking areas, or other paved surfaces is prohibited.
8. Commercial landscape nurseries are subject to Stage 5 and must apply for any variance. Alternative irrigations schedules may be approved under a variance if the variance meets all of the requirements of Section 26-99 Variances.

Stage 6 Triggers – EMERGENCY Water Shortage

1. Requirements for implementation of Stage 6 – A decrease in the Lake Waco reservoir level to 440 msl (at which the reservoir is at about 30% of its capacity) or determination by the City Manager that the existence of catastrophically decreasing Lake reservoir levels and/or delivery capabilities with an inability to recover to provide services necessary for public health, safety, and welfare.
2. Criteria for termination – Stage 6 shall be terminated at the discretion of the City Manager.

Stage 6 Responses

Mandatory restrictions – Upon implementation by the city, the following restrictions shall apply unless specifically exempted:

1. Any and all outdoor/landscaping water usage is prohibited until the emergency is alleviated. This applies to all metered water users using the city's public water supply and includes all residential (single or multi-family), commercial (car wash, nurseries, business), recreational (public/private golf courses, parks, athletic fields), religious, health care, school and municipal entities.

2. Use of water for municipal purposes shall be limited to only those activities necessary to maintain the public health, safety and welfare, as determined by the city.
3. Use of water from fire hydrants is prohibited except for fire fighting and related activities.

Section IX: Enforcement

1. No person shall intentionally, knowingly, or recklessly or with criminal negligence allow the use of water from the city for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this Division or in an amount in excess of that permitted by the drought response stage in effect at the time pursuant to action taken by the city, in accordance with provisions of this Division.
2. Any person, including a person classified as a water customer of the city, in apparent control of the property where a violation occurs or originates shall be presumed to be the violator, and proof that the violation occurred on the person's property shall constitute a rebuttable presumption that the person in apparent control of the property committed the violation, but any such person shall have the right to show that he/she did not commit the violation. Parents shall be presumed to be responsible for violations of their minor children, but any such parent may be excused if he/she proves that he/she had previously directed the child not to use the water as it was used in violation of this plan and that the parent could not have reasonably known of the violation. Proof that the notices required under Section 26-94 have been given shall constitute a rebuttal presumption that the person has knowledge of and/or is aware of the declaration of a drought or emergency contingency stage, but such presumption may be rebutted by evidence that the person was out of city at the time of the declaration and could not reasonably have become aware of the declaration since returning to the city.
3. Any person who violates this Division is guilty of a misdemeanor and upon conviction shall be punished by a fine as provided in Section 1-14, General Penalty. Each day that one or more of the provisions in this plan is violated shall constitute a separate offense.
4. If a person is observed violating a Stage 4 or greater, including but not limited to vehicle washing, landscape watering, or construction water use, for a second time, the city shall, upon due notice to the customer, be authorized to discontinue water service to the premises where such

violations occur.

5. If a person is convicted of three (3) or more distinct violations of this Division, the city shall, upon due notice to the customer, be authorized to discontinue water service to the premises where such violations occur.
6. Services discontinued under such circumstances shall be restored only upon payment of reconnection charge established by city policy and any other costs incurred by the city in discontinuing service. In addition, suitable assurance must be given to the city that the same action shall not be repeated while the plan is in effect.
7. The City is entitled to pursue all other criminal and civil remedies to which it is entitled under statutes or other ordinances. Compliance with this Division may also be sought through injunctive relief in the district court.

Section X: Variances

1. A customer may file an application for a variance from this plan for the property receiving water service with the City Manager. The City Manager may determine the proper information and require that the applicant provide such information to evaluate the variance request.
2. The City Manager may grant a variance from the Plan upon his/her determination that special circumstances exist that upon strict enforcement of the plan will adversely affect the health, sanitation, or fire protection for the public or the applicant.
3. Variances granted under this section will expire upon escalation of the plan to the next higher phase or termination of the plan.

APPENDIX A

City of Waco Ordinance No. 2009 – 221

DIVISION 2. WATER CONSERVATION AND DROUGHT/EMERGENCY CONTINGENCY PLAN

Sec. 26-91. Declaration of policy.

(a) Emergencies such as drought or other uncontrollable circumstances can disrupt the normal availability of the city's water supply. Even if an adequate water supply exists, the supply could become contaminated, or a disaster could destroy the supply. The purpose of a drought and emergency contingency plan is to establish the city's policy in the event of shortages or delivery restrictions on the city's water supply, or in the case of equipment failure or similar emergency situations.

(b) In making decisions under this division concerning the allocation of water between conflicting interests, highest priority will be given to allocation necessary to support human life and health; i.e., the minimum amount of water necessary for drinking, prevention of disease, and the like. Second highest priority will be given to allocations that will result in the least loss of employment to persons whose income is essential to their families.

(c) The city manager is hereby authorized and directed to implement the applicable provisions of this article upon his/her determination that such implementation is necessary to protect the public welfare and safety.

(Ord. No. 2005-263, § 2, 4-19-05)

Sec. 26-92. Definitions.

The following words and phrases shall have the following meanings:

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

Commercial and institutional water use shall mean 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 shall mean 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 shall mean any person, company, or organization using water supplied by the City of Waco.

Division shall mean Division 2 of Article IV of Chapter 26 of this Code.

Domestic water use shall mean 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 address shall mean street addresses, box numbers, or rural postal route numbers ending in 0, 2, 4, 6, or 8 and locations without addresses.

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

Landscape irrigation use shall mean 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.

Mean sea level (msl) shall mean the level of the ocean's surface, especially the level halfway between high and low tide, used as a standard in reckoning land elevation or sea depths.

Non-essential water use shall mean water uses that are neither essential nor required for the protection of public, health, safety, and welfare, including:

- (1) Irrigation of landscape areas, including parks, athletic fields, and golf courses, except otherwise provided under this plan;
- (2) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle;
- (3) Use of water to wash down any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;
- (4) Use of water to wash down buildings or structures for purposes other than immediate fire protection;
- (5) Flushing gutters or permitting water to run or accumulate in any gutter or street;
- (6) Use of water to fill, refill, or add to any indoor or outdoor swimming pools or Jacuzzi-type pools;
- (7) Use of water in a fountain or pond for aesthetic or scenic purposes except where necessary to support aquatic life;
- (8) Failure to repair a controllable leak(s) within a reasonable period after having been given notice directing the repair of such leak(s); and
- (9) Use of water from hydrants for construction purposes or any other purposes other than fire fighting.

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

Plan shall mean the 2005 Water Conservation and Drought Contingency Plan, which shall be the water conservation and drought/emergency contingency plan for the city, as adopted above or hereinafter amended.

User shall mean any person connected to the city's water system, including owners and/or occupants of any premises connected to the city's system and wholesale customers.

Water shall mean water taken from any city potable water supply or treated water distribution system.

(Ord. No. 2005-263, § 2, 4-19-05; Ord. No. 2009-221, § 1, 4-21-09)

Sec. 26-93. Plan adoption and application.

- (a) By this division, the city approves and adopts the 2005 Water Conservation and Drought Contingency Plan for the City of Waco, Texas. A copy of the Plan adopted by this section is attached to Ord. No. 2005-263 as Exhibit "A" and shall be on file with the director of utilities and city secretary and available for inspection.
- (b) It shall be the responsibility of the city manager or his/her designee to review the plan and the provisions within this division at least every five years and make recommendations for any needed changes.
- (c) The provisions of the plan and this division shall apply to persons, customers, and property served by the city wherever situated, including customers such as water supply corporations, municipal corporations, and any others that receive water from the city on a contract basis.

(d) Nothing in the plan or this division shall be interpreted to limit the authority of the mayor, the city council, or the city manager to seek emergency relief under the provisions of any state or federal disaster relief regulations.

(Ord. No. 2005-263, § 2, 4-19-05)

Sec. 26-94. Implementation order and notification.

(a) The plan and this division are effective on a year-round basis.

(b) When, in the opinion of the city manager, an emergency exists for the immediate preservation of the public safety, he or she may implement a drought or emergency contingency stage as provided below.

(c) The city manager may upgrade or downgrade the stage of an emergency. The city manager may declare any mandatory restrictions stage specified herein to be effective for a period not to exceed 60 days. Thereafter, the city council may extend the duration of the particular stage for additional periods of time not to exceed 90 days each.

(d) Notification. When trigger conditions and potential emergency contingency measures appear to be necessary, the public will be notified about water conservation methods through the news media and the city's TV access channel. If a trigger condition is reached, the public will be kept informed of the status of the emergency condition through all available news media.

When a trigger condition has been reached, the city manager will order the initiation of a public notification process. This process will include the following items:

(1) A notice of emergency condition will be posted at the city hall, library, post office, major super-markets and shopping centers.

(2) The notice will be distributed to TCEQ, local newspapers, radio and TV stations, and the city's TV access channel.

(e) Termination of the emergency measures will take place when the trigger conditions have subsided for a period of no less than two weeks, if the city manager concludes that the emergency is unlikely to resume. The city will inform the public of the termination.

(Ord. No. 2005-263, § 2, 4-19-05)

Sec. 26-95. Notice of violation.

(a) The city may serve a person or user in violation of this division with a written notice stating the nature of the violation and giving a time limit for compliance. This notice may be in the form of a door hanger.

(b) Any employee of the city, police officer, or other person designated by the city manager, may issue a citation to a person he/she reasonably believes to be in violation of this division. The citation shall be prepared in duplicate and shall contain the name and address of the alleged violator, if known, the offense charged, and shall direct him/her to appear in the municipal court on the date shown on the citation for which the date shall not be less than ten days the citation was issued. The alleged violator shall be served a copy of the citation. Service of the citation shall be complete upon delivery of the citation to the alleged violator, to an agent or employee of a violator, or to a person over 14 years of age who is a member of the violator's immediate family or is a resident of the violator's residence. The alleged violator shall appear in municipal court to enter a plea of guilty or not guilty for the violation of this plan. If the alleged violator fails to appear in municipal court, a warrant for his/her arrest may be issued. A summons to appear may

be issued in lieu of an arrest warrant. These cases shall be expedited and given preferential setting in municipal court before all other cases.
(Ord. No. 2005-263, § 2, 4-19-05)

Sec. 26-96. Violations and penalty.

- (a) No person shall intentionally, knowingly, or recklessly or with criminal negligence allow the use of water from the city for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this division or in an amount in excess of that permitted by the drought response stage in effect at the time pursuant to action taken by the city, in accordance with provisions of this division.
- (b) Any person, including a person classified as a water customer of the city, in apparent control of the property where a violation occurs or originates shall be presumed to be the violator, and proof that the violation occurred on the person's property shall constitute a rebuttable presumption that the person in apparent control of the property committed the violation, but any such person shall have the right to show that he/she did not commit the violation. Parents shall be presumed to be responsible for violations of their minor children, but any such parent may be excused if he/she proves that he/she had previously directed the child not to use the water as it was used in violation of this plan and that the parent could not have reasonably known of the violation. Proof that the notices required under section 26-94 have been given shall constitute a rebuttal presumption that the person has knowledge of and/or is aware of the declaration of a drought or emergency contingency stage, but such presumption may be rebutted by evidence that the person was out of city at the time of the declaration and could not reasonably have become aware of the declaration since returning to the city.
- (c) Any person who violates this division is guilty of a misdemeanor and upon conviction shall be punished by a fine as provided in section 1-14. Each day that one or more of the provisions in this plan is violated shall constitute a separate offense.
- (d) If a person is observed violating a stage 2, level 2 or greater, including but not limited to vehicle washing, landscape watering, or construction water use, for a second time, the city shall, upon due notice to the customer, be authorized to discontinue water service to the premises where such violations occur.
- (e) If a person is convicted of three or more distinct violations of this division, the city shall, upon due notice to the customer, be authorized to discontinue water service to the premises where such violations occur.
- (f) Services discontinued under such circumstances shall be restored only upon payment of reconnection charge established by city policy and any other costs incurred by the city in discontinuing service. In addition, suitable assurance must be given to the city that the same action shall not be repeated while the plan is in effect.
- (g) The city is entitled to pursue all other criminal and civil remedies to which it is entitled under statutes or other ordinances. Compliance with this division may also be sought through injunctive relief in the district court.

(Ord. No. 2005-263, § 2, 4-19-05; Ord. No. 2007-221, § 1, 4-3-07)

Sec. 26-97. Triggering criteria.

- (a) The city manager or his/her designee shall monitor water supply and/or demand conditions on a daily basis and shall determine when conditions warrant initiation or termination of each stage of the plan, that is, when the specified triggers are reached.
- (b) Criteria triggering the implementation of various stages of the water conservation plan include, but are not limited to, the following:
 - (1) General, geographical, or weather related condition or emergency, including but not limited to drought conditions resulting in a decrease in the Lake Waco reservoir level;
 - (2) Water system failures/emergencies (i.e., pressure zone deficiencies, chemical spills, broken water mains, power outages, electrical failures, failures of storage tanks or other equipment, treatment plant breakdown, and water contamination);
 - (3) An inability to recover approximately 90 percent of water stored in all storage facilities within a 24-hour period;
 - (4) A catastrophic decrease in the lake reservoir level and/or delivery capabilities resulting in an inability, presently or in the immediate future, to recover resources sufficient to provide services necessary for the public health and welfare.
- (c) The level of the Lake Waco reservoir shall be determined based on the official reading by the U.S. Army Corps of Engineers and stated as an elevation above mean sea level (msl). (Ord. No. 2005-263, § 2, 4-19-05; Ord. No. 2007-221, § 1, 4-3-07; Ord. No. 2009-221, § 1, 4-21-09)

Sec. 26-98. Drought or emergency contingency stages.

- (a) *Generally.* Upon the occurrence of an emergency, the city manager may exercise his or her discretion to request special voluntary water restrictions and/or to initiate stages 1--5 mandatory restrictions.
- (b) *Stage 1 triggers--Water watch (voluntary reductions).* By May 1 of each year, the city will forecast water supply and potential water demands for May 1 through September 30 of that year. At this stage, citizens are encouraged to practice good water management techniques inside and outside the home, including such practices as cutting back on lawn sprinkler times and developing landscapes that require less water. Criminal penalties do not apply to voluntary reductions during the water watch stage.
- (c) *Stage 2 triggers--Mild water shortage.*
 - (1) *Criteria for implementation of stage 2.* A decrease in the Lake Waco reservoir level to 452 msl (at which the reservoir is at about 60 percent of its capacity). Upon recommendation of the city manager, stage 2 procedures shall become effective.
 - (2) *Criteria for termination.* Stage 2 shall be terminated at the discretion of the city manager.
 - (3) *Stage 2 responses: Mandatory restrictions.* Upon implementation by the city, the following restrictions shall apply unless specifically exempted:
 - a. The city shall limit use of water for municipal purposes to those activities necessary to maintain the public health, safety and welfare and any computer-controlled irrigation systems that incorporate evapotranspiration data in setting irrigation run times.
 - b. The city shall monitor "excessive watering" and issue notifications to customers. "Excessive watering" occurs where run-off extends for a distance greater than ten feet from the customer's property or where there is washing or hosing down of buildings, sidewalks, driveways, patios, porches, parking surfaces or other paved surfaces. Criminal penalties do not apply during stage 2 restrictions.

(d) *Stage 3--Moderate water shortage.*

(1) *Criteria for implementation of stage 3.* A decrease in the Lake Waco reservoir level to 450 msl (at which the reservoir is at about 55 percent of its capacity) or inability to recover approximately 90 percent in all storage facilities within a 48-hour period. Upon recommendation of the city manager, stage 3 procedures shall become effective.

(2) *Criteria for termination - Stage 3 shall be terminated at the discretion of the City Manager.*

(3) *Stage 3 responses: Mandatory restrictions.* Upon implementation by the city, the following restrictions shall apply unless specifically exempted:

a. All landscape and other outdoor water usage and each service address shall be limited to two days a week based on the last digit of the meter service address or the type of connection.

TABLE INSET:

Last Digit Address Residential	Allowed Landscape Water Days
Odd	Tuesday and Saturday
Even	Wednesday and Sunday
All non-residential accounts	Monday and Friday
Thursday	No watering, storage recovery day

Apartments, office building complexes, or other property containing multiple addresses will be identified by the lowest physical address number. Where there are no numbers, a number will be assigned by the Building Official.

(e) *Stage 4 triggers--Severe water shortage.*

(1) *Criteria for implementation of stage 4.* A decrease in the Lake Waco reservoir level to 446 msl (at which the reservoir is at about 45 percent of its capacity) or inability to recover approximately 90 percent of water stored in all storage facilities within a 30-hour period. Upon recommendation of the city manager, stage 4 procedures shall become effective.

(2) *Criteria for termination.* Stage 4 shall be terminated at the discretion of the city manager.

(3) *Stage 4 responses--Mandatory restrictions.* Upon implementation by the city, the following restrictions shall apply unless specifically exempted:

a. All landscape and outdoor water usage at each service address shall continue the allowed landscape water days schedule identified in stage 3; however, landscape and outdoor water usage is prohibited from 5:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m.

b. Newly constructed swimming pools, Jacuzzis, spas, ornamental ponds, and fountains may be filled once.

c. Watering of newly installed landscaping is exempt from Stage 3 restrictions for no more than one month from the date of planting. After the first month, the landscape water day's schedule and hourly restrictions must be followed.

d. Excessive water run-off from any landscaped area onto streets, alleys, or parking lots is prohibited. Run-off is excessive when it extends for a distance greater than ten feet from the customer's property.

e. Washing or hosing down of buildings, sidewalks, driveways, patios, porches, parking areas, or other paved surfaces is prohibited.

f. Refilling after draining private swimming pools, Jacuzzis, spas, ornamental ponds, and fountains is prohibited. Refilling shall mean to replace more than 25 percent of the facility's water capacity.

g. Washing or rinsing vehicles on owner's premises must follow the landscape water days schedule as set out above. A hand-held hose equipped with a positive shut-off nozzle and/or hand-held bucket must be used. (This includes boats, trailers, and other mobile vehicles and equipment.)

(4) *Exceptions:*

a. Commercial landscape nurseries are exempt from stage 4 restrictions, but all such nurseries shall cease using water to clean pavement and sidewalk areas except for health and safety reasons.

b. Commercial full-service or self-service car wash facilities, including those at service stations and automobile dealership facilities, shall cease using water to clean pavement and sidewalk areas except for health and safety reasons and are exempt from stage 4 restrictions if they meet one or more of the following conditions:

1. Commercial car wash facilities using conveyerized, touchless, and/or rollover in-bay technology if they reuse a minimum of 50 percent of water from previous vehicle rinses in subsequent washes.

2. Commercial car wash facilities using reverse osmosis to produce water rinse with a lower mineral content if they incorporate the unused concentrate in subsequent vehicle washes.

3. Self-service spray wands used that emit no more than three gallons of water per minute.

c. Drip irrigation systems and soaker hoses are exempt from stage 3 restrictions; however, upon the implementation of stage 4 restrictions, stage 3 day and hour restrictions shall apply to such water usage.

d. Golf course landscape watering is exempt from stage 4 restrictions so long as golf course irrigation systems are operated with a computer controlled irrigation system that incorporates evapotranspiration data in setting irrigation run times.

(f) *Stage 5 triggers--Critical water shortage.*

(1) *Criteria for implementation of stage 5.* A decrease in the Lake Waco reservoir level to 445 msl (at which the reservoir is at about 40 percent of its capacity) or inability to recover approximately 90 percent in all storage facilities within a 48-hour period. Upon recommendation of the city manager, stage 5 procedures shall become effective.

(2) *Criteria for termination.* Stage 5 shall be terminated at the discretion of the city manager.

(3) *Stage 5 responses: Mandatory restrictions.* Upon implementation by the city, the following restrictions shall apply unless specifically exempted:

a. The water supply is at the point of a severe water shortage. All landscape and outdoor water usage at each service address shall continue according to the landscape water days schedule identified below; however, landscape and outdoor water usage is prohibited from 5:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m.

TABLE INSET:

Last Digit Address	Allowed Landscape Water Day
0, 1	Monday
2, 3	Tuesday

4, 5	Wednesday
6, 7	Thursday
8, 9	Friday
Saturday and Sunday	No watering, storage recovery days

- b. Apartments, office building complexes, or other property containing multiple addresses will be identified by the lowest physical address number. Where there are no numbers, a number will be assigned by the building official.
- c. Existing swimming pools, hot tubs, spas, ornamental ponds and fountains may be replenished with a hand-held hose to maintain operational purposes only.
- d. Permitting of new swimming pools, hot tubs, spas, ornamental ponds or fountain construction is prohibited, except that those previously permitted or under construction at the time stage 5 restrictions are initiated may complete construction and may be filled one time only.
- e. Filling occurs when an amount of water equal to at least 75 percent of the water capacity is placed in the structure or facility.
- f. Excessive water run-off from any landscaped area onto streets, alleys, or parking lots is prohibited. Run-off is excessive when it extends for a distance greater than ten feet from the customer's property.
- g. Washing or hosing down of buildings, sidewalks, driveways, patios, porches, parking areas, or other paved surfaces is prohibited.
- h. Commercial landscape nurseries are subject to stage 5 and must apply for any variance. Alternative irrigations schedules may be approved under a variance if the variance meets all of the requirements of section 26-99 Variances.
- (g) *Stage 6 triggers--Emergency water shortage.*
 - (1) *Requirements for implementation of stage 6.* A decrease in the Lake Waco reservoir level to 440 msl (at which the reservoir is at about 30 percent of its capacity) or determination by the city manager that the existence of catastrophically decreasing lake reservoir levels and/or delivery capabilities with an inability to recover to provide services necessary for public health, safety, and welfare.
 - (2) *Criteria for termination.* Stage 6 shall be terminated at the discretion of the city manager.
 - (3) *Stage 6 responses: Mandatory restrictions.* Upon implementation by the city, the following restrictions shall apply unless specifically exempted:
 - a. Any and all outdoor/landscaping water usage is prohibited until the emergency is alleviated. This applies to all metered water users using the city's public water supply and includes all residential (single or multi-family), commercial (car wash, nurseries, business), recreational (public/private golf courses, parks, athletic fields), religious, health care, school and municipal entities.
 - b. Use of water for municipal purposes shall be limited to only those activities necessary to maintain the public health, safety and welfare, as determined by the city.
 - c. Use of water from fire hydrants is prohibited except for fire fighting and related activities. (Ord. No. 2005-263, § 2, 4-19-05; Ord. No. 2007-221, § 1, 4-3-07; Ord. No. 2009-221, § 1, 4-21-09)

Sec. 26-99. Variances.

- (a) A customer may file an application for a variance from this plan for the property receiving water service with the city manager. The city manager may determine the proper information and require that the applicant provide such information to evaluate the variance request.
 - (b) The city manager may grant a variance from the plan upon his/her determination that special circumstances exist that upon strict enforcement of the plan will adversely affect the health, sanitation, or fire protection for the public or the applicant.
 - (c) Variances granted under this section will expire upon escalation of the plan to the next higher phase or termination of the plan.
- (Ord. No. 2005-263, § 2, 4-19-05; Ord. No. 2009-221, § 1, 4-21-09)