

Appendix D
Example
Municipal Water Conservation Plan

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Appendix D

City of Lubbock Water Conservation And Drought Contingency Plan

**Lubbock, Texas
July 2010**

City of Lubbock
Retail and Wholesale 2010 Water Use Management Plan –
Water Conservation Plan And Drought and Emergency Contingency Plan
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1.0 Introduction

The City of Lubbock (the “City”) is located in Lubbock County in the Texas Panhandle and is the eleventh largest city in the State of Texas and the largest city in West Texas. The City’s population was estimated by the City of Lubbock planning department to be 219,643 in 2010. According to the Llano Estacado (Region O) Regional Water Plan, the City’s population is expected to increase to almost 228,000 by 2020, while the City’s planning department estimates the most probable population to be 231,730 by 2020. The City is situated in a semi-arid region that requires more water per capita for landscape irrigation than in many other parts of the State. Evidence of landscape irrigation demand is apparent when comparing the average winter water usage of 135 gallons per capita per day (gpcd) to the average summer water usage of 227 gpcd. In response to this, recent City efforts on water conservation have focused on techniques to reduce the amount of water used in landscape irrigation.

This Water Use Management Plan – Water Conservation Plan and Drought and Emergency Contingency Plan pertains to the use of water by both the City’s retail and wholesale water customers, and is intended to meet the requirements of the Texas Commission on Environmental Quality (TCEQ) and the Texas Water Development Board (TWDB).

1.1 System Description

The City of Lubbock water system currently utilizes two separate water supply sources. During 2010, approximately 80% of the City’s annual water usage will be supplied from the Canadian River Municipal Water Authority (CRMWA). Lubbock is a member city of the CRMWA. Water supplied from CRMWA is a blend of surface water and groundwater. The surface water source is Lake Meredith and the ground water source is the CRMWA well field located in Roberts County. The supply capacity of this system to Lubbock is 42 million gallons per day (MGD). This blended supply is treated at the Lubbock Water Treatment Plant in Lubbock. The treatment plant is a conventional water treatment plant, and treats water for the City of Lubbock and for six other CRMWA southern division member cities: Slaton, Tahoka, O’Donnell, Lamesa, Levelland and Brownfield. CRMWA supplies the raw water to these cities.

The City provides water treatment services only to these cities. These cities reimburse Lubbock for their respective portions of the water treatment cost. CRMWA operates a 250 million gallon capacity raw water reservoir located near the treatment plant. The City owns and operates a 400 million gallon raw water storage reservoir located adjacent to the CRMWA reservoir. This reservoir is used during summertime peak water use periods to supplement the normal supply from CRMWA. Its peak supply capacity is 25 MGD.

During 2010, approximately 20% of the City’s annual water usage will be supplied from a well field located in Bailey and Lamb Counties, which is owned and operated by the City of Lubbock. This well field is commonly referred to as the Bailey County Well Field (BCWF), and is made up of 165 production wells. All ground water from this source is treated at a central location in the well field. Disinfection is the only treatment required for this source. The supply capacity of this system is 40 MGD.

The Lubbock water distribution system contains approximately 1,471 miles of pipeline mains, 12 pump stations, 12 ground storage tanks totaling 64.5 million gallons, 4 conventional elevated storage tanks totaling 4.15 million gallons, and the BCWF pipeline that functions as an unconventional elevated storage system totaling 11.0 million gallons.

The City sells water on a wholesale basis to six separate public water supply systems, the City of Shallowater, Lubbock Reese Redevelopment Authority, Lubbock County Water Control & Improvement District No. 1 (also known as Buffalo Springs Lake community), the Town of Ransom Canyon, the City of Littlefield, and the City of New Deal. The water is supplied to the City of Littlefield only for infrequent emergency use. The water supplied to the City of New Deal is water purchased from the City of Slaton by the City of New Deal and delivered through the City of Lubbock water distribution system, for which Lubbock charges only a delivery fee.

2.0 Water Conservation Plan

2.1 Introduction

The City of Lubbock provides retail water service to City residents and also provides water on a wholesale basis to six additional entities. While the City can try to directly influence the water use of its retail water users through the water conservation measures discussed in this Plan, as the six wholesale customer's retail utility systems are separate from the City's retail system, the City does not have the ability to implement most of the water conservation measures discussed in this Plan for the wholesale customers. The wholesale customers will be able to implement these measures as a part of their respective retail water supply operations.

2.2 Declaration of Policy, Purpose, and Intent

In order to conserve the available water supply, the City adopts the following regulations concerning water conservation through this ordinance. Water uses regulated or prohibited under this Water Conservation Plan are considered to be discretionary and are deemed to constitute a waste of water which subjects the offender(s) to penalties as defined in Section 2.16 of this Plan.

2.3 Authorization

The City Manager or his/her designee is authorized and directed to implement the applicable provisions of this plan. The City Manager or his/her designee will act as the administrator of the plan, oversee the execution and implementation of the plan, and will be responsible for keeping adequate records for program verification.

2.4 Conservation Goals

The City's water conservation goals are to: (1) provide an adequate supply of suitable treated water to meet the needs of its retail and wholesale customers; and to (2) encourage its wholesale customers to adopt and implement water conservation plans that will reduce their per capita water use rates.

The City's wholesale customer water conservation program is predicated on the fact that the implementation of conservation measures must occur largely at the local level. Due to this fact, the City's wholesale program is focused on encouraging and supporting initiatives by its wholesale customers.

TCEQ rules require that water conservation plans contain specific, quantifiable five- and ten-year goals for use in gallons per capita per day. The goals established as part of this plan are not enforceable. The gpcd calculation, as defined by TCEQ, is the total average daily amount of water diverted or pumped for treatment by potable uses divided by the population served.

In order to set a per capita goal for municipal water conservation, baseline per capita water use was determined from the average per capita water use from 2005 to 2009 as determined by the City of Lubbock. In order to determine these values, the City uses total water pumped from all sources divided by the estimated City population as determined by the City's Planning Department. This resulted in an average value reflecting both wet and dry years. The average per capita use from 2005 to 2009 was 155 gpcd with a high of 177 gpcd in 2006 and a low of 136 gpcd in 2007. This average per capita use rate is less than the target rate of 172 gpcd recommended by the Llano Estacado Regional Water Planning Group, but greater than the target rate of 140 gpcd recommended by the State of Texas Water Conservation Task Force. The Water Conservation Task Force recommends a one percent per year reduction until the target of 140 gpcd is reached; however, in light of the fact that the City of Lubbock has already achieved a significant conservation response, the goals for this plan were developed utilizing a 0.5% per year reduction in per capita water use. This results in a **per capita goal for year 2015 of 150 gpcd and a year 2020 goal of 146 gpcd**. This reflects a reduction of 0.5% per year from the current average of 155 gpcd.

This methodology is similar to that used in Lubbock's previous water conservation plan adopted in 2006. The previous plan started with an average daily usage of 190 gpcd and included goals to reduce that by approximately 5% over a five year period for a 2011 goal of 180 gpcd, by approximately 10% over a ten year period for a 2016 goal of 170 gpcd, and by approximately 15% over a 14-year period for a 2020 goal of 160 gpcd. The new goals established under this revised plan are much lower than those previously established due to starting with a lower base-year per capita value, which is based on data from recent years.

In addition to the per capita water use goal above, **the City has set a maximum water loss goal of 10% for the retail water delivery system for both 2015 and 2020. This would correspond to a loss rate of 16.2 gpcd in 2015 and 15.4 gpcd in 2020.** This goal is a benchmark established by the TCEQ for water loss.

2.5 Metering Water Diverted from the Source of Supply

The City meters the amount of raw water pumped from both the BCWF and from the CRMWA supply using meters that are maintained to record flow with an accuracy of plus or minus 5.0%. The amount of water delivered to each wholesale water customer is also metered by the City.

2.6 Universal Metering Program

Using meters that meet at least the minimum standards developed by the American Water Works Association and with a metering accuracy range of plus or minus 5.0%, the City individually meters all water usage, except that utilized for fire protection. Combined with the City's computerized billing system, the City's universal metering program has a water delivery accuracy rate of plus or minus 5%, which meets the TCEQ standards for meter accuracy. The City encourages each wholesale water customer to meter all water usage as well.

The City uses a random sampling technique to test meter accuracy and to determine when meters need to be repaired or replaced. The City randomly samples approximately 400 water meters each year. Depending on the results of this sample, additional sampling may be done to target meters of a certain age or meters located within a certain geographical portion of the City. Meters found to have an accuracy of less than plus or minus 5% are either repaired or replaced as needed.

2.7 Records Management System

The City maintains a records management system which tracks the volume of water pumped, water delivered to retail customers, water sold to wholesale customers, and the volume of water losses. The City's utility billing database allows water sales and uses to be desegregated into the volume used by residential, commercial, public and institutional, and industrial customers.

2.8 Measures to Control Unaccounted-For Uses of Water

The City takes the appropriate steps to monitor and audit its water system for water loss in an effort to conserve water, manages the replacement of old water lines that are prone to leaks and breaks, investigates customer complaints of low pressure and possible leaks, visually inspects suspected leaks, and tracks water delivery to customers to determine illegal connections and abandoned service lines.

2.9 Program for Achieving Water Conservation Goals

The City has established goals, objectives and programs that support a standard for water use. The City's Water Conservation Program is comprised of five main strategies in the following order of priority: (1) administrative water conservation efforts, (2) water use standards, (3) public education and information, (4) enforcement, and (5) structural changes.

The City will evaluate and implement certain administrative changes to programs, policies, and rules that support water conservation efforts. In 1992, the City moved from a declining block rate to a uniform block rate. In 2007, the City passed a revised water rate ordinance with an inclining block rate structure. Other administrative changes may include the continued review and revision of city codes to determine their affect on the use of water and active enforcement of rules, codes, and regulations affecting water use.

In an effort to manage annual and maximum daily water use, the Water Conservation Program establishes the following water use standards for outdoor landscape irrigation:

1. Landscape irrigation is allowed to occur only between the hours of 6:00 p.m. to 10:00 a.m. from April 1st through September 30th.
2. Summer irrigation should provide a maximum of 1.5 inches per zone per week.
3. Winter irrigation may occur only when temperatures are above 35°F so as not to cause a freezing hazard and should provide a maximum of 1.0 inch per zone per month for dormant grasses (i.e. Bermuda) and 1.0 inch per zone every two weeks for cool season grasses (i.e. Fescue).
4. Irrigation should occur without water runoff. This may be accomplished by correctly cycling the sprinkler system and allowing time for the water to soak into the landscape between irrigation events.

The City will support programs to educate the public regarding water conservation activities that support its goals. This includes educating the general public on the need for and practices of water conservation through public service announcements, participation in home and garden shows, coordination efforts with the Chamber of Commerce, West Texas Home Builders Association and Lubbock Apartment Association, and supporting water conservation efforts in the local education system.

Structural changes that have been and may be adopted by the City are those programs that result in a physical modification of water use devices or practices, such as landscape design and maintenance, rain and freeze sensors on automatic irrigation systems, plumbing retrofit or rehabilitation programs, controlling water loss, and by reusing treated wastewater and stormwater.

In regards to the City's wholesale water customers, their retail utility systems are separate from the City's retail water system; therefore, the City does not have the ability to implement most of the water conservation items discussed above. The City encourages its wholesale customers to implement these or other appropriate water conservation measures as a part of their respective retail water supply operations.

2.10 Water Rate Structure

The City of Lubbock has adopted a water rate structure which is non-promotional (see City Code of Ordinance Chapter 28-53).

2.11 Reservoir Operations Plan

This requirement is not applicable to the City of Lubbock at this time. The City only owns and operates one water supply reservoir, Lake Alan Henry, which is located on the South Fork of the Double Mountain Fork of the Brazos River.

2.12 Coordination with Regional Planning Groups

The water service area of the City of Lubbock is located within Llano Estacado Regional Planning Area (Region O) and the City has provided a copy of this Plan to the Llano Estacado Regional Water Planning Group to ensure consistency with the regional water plan.

2.13 Leak Detection/Repair and Water Loss Accounting Program

The City routinely monitors the water storage, delivery, and distribution system components for leaks. Waterline leaks are detected by utility personnel while reading meters, maintaining their water and wastewater systems, and while performing other routine surveillance programs. Any reported leaks are repaired in a timely manner. The wholesale water customers are responsible for managing their ongoing leak detections, location, and repair programs.

At a minimum, the City will conduct a water audit using the methodology outlined by the TWDB every five years in accordance with current TWDB rules. Water audits may be conducted on a more frequent basis if the City deems that action to be appropriate.

2.14 Water Supply Contracts

It is a mandatory requirement for the City to require wholesale customers with any new or amended contracts or successor contracts to develop a water conservation plan. Minimum plan requirements for municipal wholesale customers entering or renewing City contracts include:

- A completed TCEQ utility profile;
- Specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use, in gallons per capita per day.
- Metering devices having accuracy within plus or minus 5 percent in order to measure and account for the amount of water diverted from the supply source;
- A program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement;
- Measures to determine and control unaccounted-for uses of water (for example, periodic visual inspections along distribution lines, annual or monthly audit of the water system to determine illegal connections, abandoned services, etc.);
- A program of continuing public education and information regarding water conservation;
- A water rate structure which is not “promotional,” meaning a rate structure which is cost-based and which does not encourage the excessive use of water;
- A reservoir systems operation plan, if applicable, providing for the coordinated operation of reservoirs owned by the utility within a common watershed or river basin in order to optimize available water supplies;
- A means of implementation and enforcement of conservation practices, as evidenced by either: 1) a copy of the ordinance, resolution, or tariff, indicating official adoption of the water conservation plan by the customer; or 2) a description of the authority by which the customer will implement and enforce the water conservation plan; and
- Documentation of coordination with the regional water planning groups for the service area of the customer in order to ensure consistency with the appropriate regional water plans.

Water conservation plan must include the following additional elements if the customer serves, or plans to serve in the next 10 years, a population of 5,000 or greater:

- A program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted-for uses of water;
- A record management system to record water pumped, water deliveries, water sales, and water losses which allows for the desegregation of water sales and uses into the following user classes: residential, commercial, public and institutional, and industrial; and
- For wholesale water customers, that they include a requirement that every wholesale water supply contract entered into or renewed after official adoption of the customer's water conservation plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable TCEQ requirements.

Other measures that the customer could adopt to meet the stated conservation goals might include but are not limited to:

- Measurement and control of excessive pressure in the distribution system;
- Ordinances to promote efficiency and avoid water waste;
- Plumbing fixture replacement and retrofit programs;
- Other beneficial reuse of water such as grey water and rainwater harvesting systems; and
- Other measures as may be applicable.

All customer plans must be reviewed and approved by City Council before water sales contracts are signed.

2.15 Revisions to the Water Conservation Plan

The City shall review and update, as appropriate, the Water Conservation Plan at least every five (5) years, based on, in part, an assessment of the previous five- and ten-year goals, new or updated information such as the adoption or revision of the regional water plan, or changes in laws or regulations.

2.16 Penalties for Non-Compliance with the Water Conservation Plan

Any water customer or other user of the City's water supply that violates this Water Conservation Plan shall be guilty of a misdemeanor and subject to a penalty and fine as set forth in Section 1-4 of the Code of Ordinances of the City of Lubbock for each day of non-compliance. In addition, (i) service shall be discontinued to those customers who do not pay their water bills until all required payments are made; and (ii) new water service taps will be provided to new construction and new construction will be approved only if such construction conforms to adopted ordinances.

2.17 Severability

It is hereby to be the intention of the City of Lubbock that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable and, if any phrase, clause, sentence, paragraph or section shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall

not affect any of the remaining phrases, clauses, sentences, paragraphs, or sections of this Plan.

3.0 Drought and Emergency Contingency Plan

3.1 Introduction

- A number of situations may limit the City’s ability to deliver a sufficient amount of water to meet the demands of all customers. In those instances, the City will take steps to ensure that water is available for essential life and safety needs. This Drought and Emergency Contingency Plan (the Plan) is designed to address the following situations. Reduction in available water supply up to a repeat of the drought of record;
- Water production or distribution limitations (peak water supply);
- Supply source contamination; and/or
- System outages.

There are four stages to address drought and emergency conditions. Each stage has triggers for initiation, for restrictions on water use to assist in reaching water use reduction goals, and has provisions for rescinding the stage once the conditions that caused the drought or emergency have ceased to exist. The stages are defined as:

- Stage 1 – Mild Water Shortage Conditions
- Stage 2 – Moderate Water Shortage Conditions
- Stage 3 – Severe Water Shortage Conditions
- Stage 4 – Emergency Water Shortage Conditions

3.2 Declaration of Policy, Purpose, and Intent

In order to conserve the available water supply and/or to protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the City adopts the following regulations and restrictions on the delivery and consumption of water through Ordinance No. XXXXX.

Water uses regulated or prohibited under this Drought and Emergency Contingency Plan are considered to be non-essential and continuation of such uses during times of water shortage or other emergency water supply conditions are deemed to constitute a waste of water which subjects the offender(s) to penalties as defined in Section 3.13 of this Plan.

3.3 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 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.

3.4 Public Involvement

Opportunity for the public and for the wholesale water customers to provide input into the preparation of the Plan was provided by the City by means of scheduling and providing public notice of a public meeting to accept input on the Plan held on July 8, 2010. The Plan was adopted under the open meetings requirement of the TCEQ during the July 22, 2010 City Council meeting.

3.5 Public and Wholesale Customer Education

The City will periodically provide the public and wholesale customers 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 to the public. The City will periodically provide the public and wholesale customers 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 to the public by means necessary to educate and provide information to the public, including but not limited to, public service announcements, newspaper notices, utility bill inserts, and educational presentations. This information will be provided to the wholesale customers by providing them with a copy of this Plan.

3.6 Coordination with Regional Water Planning Groups

The water service area of the City of Lubbock is located within the Llano Estacado Regional Water Planning Area (Region O). The City has provided a copy of this Plan to the Llano Estacado Regional Water Planning Group to ensure consistency with the approved regional water plan.

3.7 Application

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

3.8 Triggering 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. Public notification of the initiation or termination of drought response stages will be made by publication in a newspaper of general circulation, public service announcements, and/or signs posted in public places. Wholesale customer notification of

the initiation or termination of drought response stages will be made by email, mail, or telephone.

The triggering criteria below are based on an evaluation of the historical water system capacities and customer use patterns, and consider the impact of drought, emergencies, and high use upon capacities and patterns.

Stage 1. Mild Water Shortage Conditions

Requirements for initiation – Stage 1 of the Plan shall be implemented if any of the following conditions arise:

- Daily water use exceeds 80% of the City’s maximum daily supply capacity for ten consecutive days;
- Water supply available from all sources is only sufficient to meet projected needs; or
- Water availability is adequate but lake levels, reservoir capacities, or groundwater supplies are low enough that some concern exists for future water supplies if the drought or emergency condition continues.

Requirement for termination – Stage 1 restrictions may be rescinded when all initiation conditions have ceased to exist as determined by the City Manager or his/her designee.

Stage 2 – Moderate Water Shortage Conditions

Requirements for initiation – Stage 2 of the Plan shall be implemented if any of the following conditions arise:

- Daily water use exceeds 90% of the City’s maximum daily supply capacity for ten consecutive days;
- Water supply available from all sources are reduced, but are greater than 90% of projected needs; or
- Water availability from lakes and groundwater is below normal and may continue to decline and cause moderate concern for both current and future water supplies or water supplies have been reduced due to failure of a portion of the water supply system.

Requirement for termination – Stage 2 restrictions may be rescinded when all initiation conditions have ceased to exist as determined by the City Manager or his/her designee. When Stage 2 is terminated, Stage 1 automatically becomes effective.

Stage 3 – Severe Water Shortage Conditions

Requirements for initiation – Stage 3 of the Plan shall be implemented if any of the following conditions arise:

- Daily water use exceeds 100% of the City’s maximum daily supply capacity for five consecutive days;
- Water supply available from all sources are reduced to 90% or less of projected needs; or
- Water availability from lakes and groundwater is well below normal, may continue to decline, and additional reductions in current or future water supplies are evident or water supplies have been reduced due to failure of a portion of the water supply system.

Requirement for termination – Stage 3 restrictions may be rescinded when all initiation conditions have ceased to exist as determined by the City Manager or his/her designee. When Stage 3 is terminated, Stage 2 automatically becomes effective.

Stage 4 - Emergency Water Shortage Conditions

Requirements for initiation – Stage 4 of the Plan shall be implemented if any of the following conditions arise:

- Daily water use exceeds 105% of the City’s maximum daily supply capacity for five consecutive days;
- Water supply available from all sources are reduced to less than 70% of projected needs;
- There has been a failure in a major water supply source or system, such as the failure of a dam, storage reservoir, pumping system, transmission pipeline, water treatment facility, major power failure, or natural disaster that causes a severe and prolonged limit on the ability of the water supply system to meet the water supply demands; or
- The source water supply has been contaminated.

Requirement for termination – Stage 4 restrictions may be rescinded when all initiation conditions have ceased to exist as determined by the City Manager or his/her designee. When Stage 4 is terminated, Stage 3 automatically becomes effective.

3.9 Drought Response Stages

The City Manager, or his/her designee, shall monitor water supply and/or demand conditions and, in accordance with the triggering criteria set forth in Section 3.8, shall determine that mild, moderate, or severe water shortage conditions exist or that an emergency condition exists and shall implement the following actions. The City shall notify the

Executive Director of the TCEQ within five business days of the implementation of any mandatory provisions of the Plan.

Stage 1 – Mild Water Shortage Conditions

Target: Reduce water use to less than 90% of the City’s maximum daily supply capacity.

Best Management Practices for Supply Management:

- The City may reduce or discontinue the flushing of water mains as well as utilize reclaimed water for non-potable purposes where practicable.
- Wholesale customers are required in specific contract provisions to implement these measures as well as any other measures specified in the wholesale supply contract to better manage a limited water supply. Contract provisions requiring wholesale customers to implement mandatory drought restrictions consistent with the City of Lubbock will be added into any new contract or contract revision.

Water Use Restrictions for Reducing Demand:

- Landscape irrigation is restricted to two days per week. The City Manager or his/her designee may, after notice to the citizens of the City of Lubbock, designate irrigation schedules.
- Irrigation shall provide a maximum of 1.5 inches per zone per week.
- Irrigation shall occur without significant water runoff, which can be accomplished by correctly cycling the sprinkler system and allowing time for the water to soak into the landscape between irrigation events.
- All City of Lubbock operations shall adhere to the water use restrictions.
- Hand watering for landscape irrigation purposes is allowed on a daily basis regardless of the time of year.
- New plant material may be irrigated on a more frequent basis until the new plant material is established.
- The City Manager, or his/her designee, will contact wholesale water customers to discuss water supply and/or demand conditions and will request that wholesale water customers initiate voluntary measures to reduce water use (i.e., implement Stage 1 of the customer’s drought contingency plan).

Stage 2 – Moderate Water Shortage Conditions

Target: Reduce water use to less than 80% of the City’s maximum daily supply capacity.

Best Management Practices for Supply Management:

- The City will reduce or discontinue the flushing of water mains as well as utilize reclaimed water for non-potable purposes where practicable.
- Wholesale customers are required in specific contract provisions to implement these measures as well as any other measures specified in the wholesale supply contract to better manage a limited water supply. Contract provisions requiring

wholesale customers to implement mandatory drought restrictions consistent with the City of Lubbock will be added into any new contract or contract revision.

Water Use Restrictions for Reducing Demand:

- Landscape irrigation is restricted to one day per week. The City Manager, or his/her designee, after notice to the citizens of the City of Lubbock, may designate an irrigation watering schedule.
- Irrigation shall provide a maximum of 1.5 inches per zone per week.
- Irrigation shall occur without significant water runoff, which can be accomplished by correctly cycling the sprinkler system and allowing time for the water to soak into the landscape between irrigation events.
- Water customers will refrain from or significantly limit aesthetic and non-essential water use. Water shall not be used to wash down hard surfaced areas, including, without limitation, sidewalks, parking lots, gutters, and patios. Water shall not be used for dust control. However, water may be used for road construction or to clean surfaces for painting. Pools and Jacuzzi type pools may not be drained and refilled.
- All City of Lubbock operations shall adhere to the water use restrictions.
- Hand watering for landscape irrigation purposes is allowed on a daily basis regardless of the time of year.
- New plant material may be irrigated on a more frequent basis until then new plant material is established.
- The City Manager, or his/her designee, will request wholesale water customers to initiate mandatory measures to reduce non-essential water use (i.e., implement Stage 2 of the customer's drought contingency plan).

Stage 3 – Severe Water Shortage Conditions

Target: Reduce water use to less than 70% of the City's maximum daily supply capacity.

Best Management Practices for Supply Management:

- The City will reduce or discontinue the flushing of water mains as well as utilize reclaimed water for non-potable purposes where practicable.
- Wholesale customers are required in specific contract provisions to implement these measures as well as any other measures specified in the wholesale supply contract to better manage a limited water supply. Contract provisions requiring wholesale customers to implement mandatory drought restrictions consistent with the City of Lubbock will be added into any new contract or contract revision.

Water Use Restrictions for Reducing Demand:

- Irrigation shall occur without significant water runoff, which can be accomplished by correctly cycling the sprinkler system and allowing time for the water to soak into the landscape between irrigation events.
- Landscape irrigation shall not occur more than one day per month and not for more than 1.5 inches per zone. The City Manager, or his/her designee, may designate the irrigation schedule.

- Use of water from fire hydrants shall be limited to fire fighting or other related activities necessary to maintain public health, safety, and welfare. Under the direction of the City Manager, use of water from fire hydrants for construction purposes may be allowed by permit.
- All City of Lubbock operations shall adhere to the water use restrictions.
- Hand watering for landscape irrigation purposes is allowed on a daily basis regardless of the time of year.
- The City Manager, or his/her designee, will contact wholesale water customers to discuss water supply and/or demand conditions and will request that wholesale water customers initiate additional mandatory measures to reduce non-essential water use (i.e., implement Stage 3 of the customer's drought contingency plan).

Stage 4 - Emergency Water Shortage Conditions

Target: Reduce water use to less than 50% of the City's maximum daily supply capacity.

Best Management Practices for Supply Management:

- The City will discontinue the flushing of water mains, discontinue the irrigation of public landscaped areas, and will utilize reclaimed water for non-potable purposes where practicable.
- In addition, in the event of a large-scale system failure or if the source water supply is contaminated, the City may truck in additional fresh water supplies as appropriate.
- Wholesale customers are required in specific contract provisions to implement these measures as well as any other measures specified in the wholesale supply contract to better manage a limited water supply. Contract provisions requiring wholesale customers to implement mandatory drought restrictions consistent with the City of Lubbock will be added into any new contract or contract revision.

Water Use Restrictions for Reducing Demand:

- All aesthetic and non-essential water use, including landscape irrigation use, is prohibited except where necessary to protect the health, safety, and welfare of the public. No new landscape material may be installed.
- All City of Lubbock operations will adhere to the water use restrictions.
- The City of Lubbock may reduce water system pressure to conserve water.
- All wholesale water customers will be encouraged to implement Stage 4 of their drought contingency plans.

In addition, whenever emergency water shortage conditions exist as defined in Section 3.8 of the Plan, the City Manager, or his/her designee(s), shall:

- Assess the severity of the problem and identify the actions needed and the time required to solve the problem;
- Inform the utility director or other responsible official of each wholesale water customer by telephone, email, or in person and suggest actions, as appropriate to alleviate problems (i.e., notification of the public to reduce water use until service is restored);

- If appropriate, notify city, county, and/or state emergency response officials for assistance;
- Undertake necessary actions, including repairs and/or clean-up as needed; and
- Prepare a post-event assessment report on the incident and critique of emergency response procedures and actions.

3.10 Coordination with the Canadian River Municipal Water Authority

The City of Lubbock is a wholesale water customer of the Canadian River Municipal Water Authority (CRMWA), and as such must coordinate any drought responses with CRMWA. The City of Lubbock will periodically consult with CRMWA concerning supplies available to the City and at the request of CRMWA enact additional drought conservation measures if so directed by CRMWA.

3.11 Revisions to the Drought and Emergency Contingency Plan

The City shall review and update, as appropriate, the Drought and Emergency Contingency Plan at least every five (5) years based, in part, on new or updated information, such as the adoption or revision of the regional water plan.

3.12 Pro Rata Water Allocation

In the event that the triggering criteria specified in Section 3.8 of the Plan for Stage 4 – Emergency Water Shortage Conditions have been met, the City Manager, or his/her designee, is hereby authorized to initiate allocation of water supplies on a pro rata basis in accordance with Texas Water Code Section 11.039. A provision shall be included in every wholesale water contract entered into or renewed after adoption of the plan, including contract extensions, that in case of a shortage of water resulting from drought, the water to be distributed shall be divided in accordance with Texas Water Code Section 11.039.

3.13 Enforcement

Any water customer or other user of the City's water supply who violates the Drought and Emergency Contingency Plan shall be guilty of a misdemeanor and subject to a penalty and fine as set forth in Section 1-4 of the Code of Ordinances of the City of Lubbock for each day of non-compliance. In addition, in the event (i) the failure to comply with this ordinance creates an imminent threat to public health, safety, or welfare; or (ii) the subject person is convicted of three or more distinct violations (as opposed to consecutive multiple day events of the same violation) within a one (1) year period, the City, after ten (10) days notice and opportunity to cure the violation, may discontinue water service until such time as the user shall be in compliance with this ordinance and, in the case of disconnection due to an imminent health, safety, or welfare threat, pay the required charges and fees for re-connection or, in the case of disconnection due to three or more distinct violations within a one (1) year period, pay the required charges and fees for re-connections and provide suitable assurance to the City Manager that the same action will not be repeated while the subject stage of the Drought and Emergency Contingency Plan is in effect.

Any person in apparent control of the property where a violation occurs or originates shall be presumed to be the violator and proof thereof shall constitute a rebuttable presumption that the person in apparent control of such property committed the violation.

3.14 Variances

The City of Lubbock Water Board of Appeals, as established in Section 28-44 of the Code of Ordinances of the City of Lubbock, may grant, in writing, a temporary variance for existing water uses otherwise prohibited under the Drought and Emergency Contingency Plan if it is determined that failure to grant such variance would cause an emergency condition adversely affecting the health, sanitation, or fire protection for the public or the person requesting such variance and if one or more of the following conditions are met:

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

Persons requesting an exemption from the provisions of this Plan shall file a petition for variance with the Water Board of Appeals. All petitions for variances shall be reviewed by the Water Board of Appeals and shall include, in addition to the information provided in Section 28-44 of the Code of Ordinances of the City of Lubbock, the following:

- (1) Name and address of the petitioner;
- (2) Purpose of water use;
- (3) Specific provision(s) of this Plan from which the petitioner is requesting relief;
- (4) Detailed statement with supporting data and information as to how the specific provision(s) of this Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Ordinance;
- (5) Description of the relief requested;
- (6) Period of time for which the variance is sought;
- (7) Alternative measures the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date; and
- (8) Other pertinent information.

Variances granted by the Water Board of Appeals shall be subject to the following conditions, unless waived or modified by the Water Board of Appeals.

- (1) Variances granted shall include a timetable for compliance.
- (2) Variances granted shall expire on the earlier to occur of (i) the scheduled expiration; (ii) when the Drought and Emergency Contingency Plan is no longer in effect; and (iii) the date upon which the petitioner has failed to meet specified requirements.

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

3.15 Severability

It is hereby declared to be the intention of the City that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable and, if any phrase, clause, sentence, paragraph, or section of this Plan shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such declaration shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and sections of this Plan.

4.0 Irrigation Water Conservation Plan

The City of Lubbock owns Water Right No. 3985 in order to land apply sewage effluent from the City's wastewater treatment plant. The permit allows the City to use up to 18,430 acre-feet per year to irrigate 10,000 acres of land. The TCEQ requires a holder of an irrigation right greater than 10,000 acre-feet/year to develop an irrigation water conservation plan. This system is designed for inefficiency in order to ensure that the greatest volume of wastewater possible can be disposed of through this method. Consequently, a water conservation plan is not applicable in this circumstance.

The City currently has two land application sites. The Lubbock Land Application Site, located east of the City, encompasses 6,000 acres with 2,500 acres irrigated by center pivot systems. The Hancock Land Application Site, located southeast of the City, encompasses 4,000 acres with 2,500 acres irrigated by center pivot systems. Effluent from the Southeast Water Reclamation Plant is used to irrigate crops such as wheat, joe wheat, bermuda, and rye. A 412 million gallon storage reservoir allows the site to store and distribute treated effluent to 31 center pivot sprinkler systems as needed. Irrigation practices are designed to prevent contamination of surface and groundwater in the area.

The City's current and future goals for this system are to be able to dispose of the total wastewater volume necessary through this system and to not implement any water conserving devices or practices for this system. The City monitors the delivery system for any leaks by visually inspecting the system on a regular basis, and all leaks are repaired in a timely manner.

5.0 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.

Annual water supply: the amount of water available to the City of Lubbock within a given year. Normally measured in billions of gallons or acre-feet.

Average winter consumption: the amount of water used by a customer on average during the winter months of December, January, and February.

Conservation: those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve 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 use.

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, except as provided under the definition of “Non-essential Water Use” below.

Drought: an extended period of time of below normal precipitation (rainfall, snow, etc.).

Drought of record: extended period of time of below normal precipitation (rainfall, snow, etc) that exceeds the length of time and impact on water supplies of previous droughts. The drought of record is used to help determine the estimated yield of reservoirs.

Hand watering: the irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, golf course greens, tees, fairways, parks, athletic fields, street or alley rights-of-way and medians through the use of manual water devices supplied by a water hose and actively attended to by a person.

Increasing block rate: a water rate structure that has a rate that increases as more water is consumed.

Landscape irrigation or 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 course greens, tees, and fairways, parks, athletic fields, street or alley rights-of-way and medians.

Maximum daily supply: the amount of water available to the City of Lubbock during a given day. The amount may be limited due to the water transmission line size, water pump size, the number of operating wells, the amount of raw and treated water storage, the water rights owned by the City and other related factors.

Non-essential water use: water uses that are neither essential nor required for the protection of public health, safety, and welfare, including without limitation:

- (a) landscape irrigation;
- (b) use of water to wash any motor vehicle, motorbike, boat, trailer, airplane, or other vehicle of any kind;
- (c) use of water to spray or wash down any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;
- (d) use of water to spray or 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 hot tubs;
- (g) use of water in a fountain or pond for aesthetic or scenic purposes except where necessary to support aquatic and avian life; and
- (h) failure to repair a leak(s) within a reasonable period of time after having been given notice directing the repair of such leak(s).

Per capita water use: a measure of water use for a city or other entity, expressed in gallons per capita per day (gpcd). The measure compares water use to the number of citizens in the area. The measure does not reflect the amount used on average by a citizen.

Water Loss: measured as the volume of water metered into the water distribution system minus the volume billed for a given time period.