

Appendix D

Example Municipal Water Conservation Plan

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Appendix D

City of Lubbock

Water Conservation And Drought Contingency Plan

Lubbock, Texas

May 2005

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Water Conservation Plan for the City Of Lubbock

Section I: Declaration of Policy, Purpose and Intent

The purpose of the Water Conservation Plan (the Plan) is to promote the wise and responsible use of water by (1) implementing structural programs that result in quantifiable water conservation results, (2) developing, maintaining, and enforcing water conservation policies and ordinances, and (3) supporting public education programs that educate customers about water and wastewater facilities operations, water quantity and quality, water conservation and non-point source protection.

Section II: Utility Profile

Population. The City of Lubbock (Lubbock) is the eleventh largest city in the State of Texas and the largest city in West Texas. Lubbock's population in 2000 was 199,564. It is projected to be 215,447 by 2010.

Customer Data and Water Use Data. Lubbock's water customers are predominately characterized as residential (85%), small commercial (10%) and municipal (4%). Other customer user classes include industrial, schools, wholesale, and irrigation.

Water Supply System Data. Lubbock's primary source of water is the Canadian River Municipal Water Authority (CRMWA) which delivers raw water from its Lake Meredith reservoir, located on the Canadian River about 50 miles north of Amarillo, and the Williams Groundwater Well Field in Roberts County. Typically, CRMWA provides approximately 80 percent of Lubbock's water supply needs, with the balance being supplied by well water from the city-owned Sandhills Well Field located primarily in Bailey County.

Surface water is treated at the Lubbock Water Treatment Plant (the Plant). The Plant's capacity is 61.4 million gallons daily with a hydraulic peak capacity of 75 million gallons. Water treatment components include disinfection, coagulation, taste and odor control, flocculation, sedimentation, filtration and, as necessary, post-disinfection. Lubbock's ground water supply requires minimal treatment (chlorine) before introduction into the distribution system.

The Plant has a 1,200 acre-feet open storage reservoir, which permits storage of raw water during non-peak periods, and 8.5 million gallons clear well storage for treated water. In addition, thirteen ground storage reservoirs and five elevated steel storage tanks provide storage capacity of 66,700,000 gallons. The water distribution system extends throughout Lubbock and is designed for expansion. Present pumping capacity is 106 million gallons a day.

Long Term Water Supply Source. The Lake Alan Henry reservoir is located about 65 miles southeast of Lubbock and was planned and constructed to meet long-term water supply needs. It is estimated that the Lake Alan Henry reservoir will provide Lubbock with a water supply of 20.1 million gallons daily.

Wastewater System Data. Lubbock's wastewater treatment system provides for the collection, treatment, and disposal of wastewater. Wastewater is delivered to the Southeast Water Reclamation Plant (SEWRP) through 900 miles of collection lines and 21 lift stations. The SEWRP treats approximately 7.3 billion gallons of wastewater each year (20,000,000 gallons per day). Wastewater treatment components include

one bio tower process and two activated sludge processes. The SEWRP has an average daily flow design capacity of 31.5 million gallons. Treated effluent is reused by agricultural irrigation on Lubbock's land application sites and as industrial cooling water. It is also disposed of by discharge in the North Fork of the Double Mountain Fork of the Brazos River at FM 400. Sludge is disposed of in Lubbock's municipal landfill.

Section III: Water Conservation Goals

Lubbock's average daily water usage of approximately 190 gallons per capita per day (gpcd) is slightly higher than the state average of 150 gpcd. Lubbock is situated in an arid region that requires more water per capita for landscape irrigation than many parts of the State. Evidence of landscape irrigation demand is apparent when comparing the winter per capita usage of *139 gal/day* to the summer per capita usage of *184 gal/day*. Water conservation goals are as follows:

- Reduce annual per capita water use to 170 gallons per person per day (10 percent) by the year 2010.
- Reduce annual per capita water use to 150 gallons per person per day (20 percent) by the year 2020.

Section IV: Metering Devices

It is Lubbock's policy to purchase meters that meet at least the minimum standards developed by the American Water Works Association.

Section V: Universal Metering

It is Lubbock's policy to individually meter all water usage, except for fire protection, including all new construction within the city limits. Combined with an aggressive leak detection and repair program and a computerized billing system, Lubbock's universal metering program has resulted in a water delivery accuracy rate well above the national standard of 90 percent. Lubbock's meter replacement and repair schedule is as follows:

<u>Meter Type</u>	<u>Replacement/Rehab Period</u>
Master Meter	Meters are tested at least annually and replaced as necessary
Two-inch and larger	Meters are tested at least annually and replaced as necessary
One-inch and smaller	Meters are tested at least every 10 years and replaced as necessary

Section VI: Measures to Determine and Control Unaccounted-for Uses of Water

It is Lubbock's policy to investigate customer complaints of low pressure and possible leaks, to visually inspect suspected leaks and to track water delivery to customers. Lubbock utilizes a record management system which tracks water pumped, water delivered, water sales and water losses. This information is used to evaluate the integrity of the water distribution system.

Section VII: Water Conservation Program

The City of Lubbock water conservation program is comprised of three main strategies in the following order of priority: (1) structural changes to water use, (2) administrative water conservation efforts, and (3) public education efforts. It is the intent of the water conservation plan to focus efforts in that order.

Structural Changes. Structural changes are those programs that result in a physical modification of water use devices or practices; such as, plumbing retrofit or rehab programs. It is the intent that these programs result in definable and quantifiable water conservation amounts. Structural programs are, but not limited to, the following:

1. Plumbing retrofit programs. The City of Lubbock will support plumbing retrofit programs to replace higher water using devices, such as, toilets, faucets, urinals, etc.
2. Rebate programs. Lubbock will support programs to provide financial incentives to replace higher water using devices with lower water using devices. These programs may include, but not be limited to, residential dishwashing and clothes washing machine replacement, commercial clothes washing machine replacement, restaurant prewash valve replacement, replacement of landscape irrigation systems with drip or subsurface systems, and reduction in the amount of water consuming landscape.
3. Rehabilitation programs. Lubbock will support the rehabilitation of its own water supply, storage and distribution system to minimize water loss due to leaks. Lubbock will support and encourage rehabilitation of private water systems to minimize water loss and water waste. Lubbock will actively engage its customers in this effort by providing free water audits.
4. Reclaimed water programs. Lubbock will support the expanded and continued use of reclaimed water for a substitute for potable water use.

Administrative Changes. Administrative changes are programs, policies, and rules that support water conservation efforts. Lubbock’s administrative program may include, but is not limited to, the following:

1. Development and implementation of water conserving water rates. This may include, but not be limited to, seasonal rates, excessive use charges, or increasing block rates.
2. Implementation of plumbing codes that are more stringent on water conservation than the City adopted plumbing code.
3. Review and revision of all city codes that could affect the use of water.
4. Active enforcement of rules, codes, and regulations on water conservation.

Education. Lubbock will support programs to educate the public on the wise use of water. Major components of the education program include, but are not limited to, the following:

1. Presentation of water conservation issues in the Kindergarten through 12th grade public and private education system.
2. Education of the general public on the need for and practices of water conservation through public service announcements, participation in home and garden shows, etc.

Section VIII: Water Rate Structure

In 1992, Lubbock implemented a uniform, non-declining rate structure, with each additional 1,000 gallons costing no less per unit than the prior unit.

Section IX: Means of Implementation and Enforcement

Enforcement. The Plan will be enforced by (1) providing service taps only to customers complying with adopted ordinances, (2) maintaining a non-declining rate structure, (3) discontinuing service to those customers who do not pay their water bills until payment is made, and (4) certifying only new construction that conforms to adopted ordinances.

Section X: Coordination with Regional Planning Group

The service area of Lubbock is located within the Llano Estacado Regional Planning Area and Lubbock has provided a copy of this Plan to the Llano Estacado Regional Planning Group.

Section XI: Additional Water Contract Requirements

Wholesale Water Supply Contracts. It is Lubbock's policy to include in every wholesale water supply contract entered into or renewed after official adoption of the Plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using applicable elements in 30 TAC 288, Subchapter A. If the wholesale customer intends to resell the water, then the contract between Lubbock and the wholesale customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with 30 TAC 288, Subchapter A.

Section XII: Revisions to the Water Conservation Plan

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

Section XIII: Severability

It is hereby to be the intention 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 judgement or decree of any court of competent jurisdiction, such unconstitutionality shall not effect any of the remaining phrases, clauses, sentences, paragraphs or sections of this Plan, since the same would not have been enacted by Lubbock without the incorporation into this Plan of any such unconstitutional phrase, clause, sentence, paragraph or section.

**Drought Contingency Plan
for the
City Of Lubbock**

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 for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the City of Lubbock (Lubbock) hereby adopts the following regulations and restrictions on the delivery and consumption of water.

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 conditions are deemed to constitute a waste of water which subjects the offender(s) to penalties as defined in Section XII of this Plan.

Section II: Public Involvement

Opportunity for the public to provide input into the preparation of the Plan was provided by Lubbock by posting the draft Plan on the Internet, City Hall in the Public Information Office, and by posting notice of a public meeting held March 23, 2004 in the City of Lubbock City Council Chambers.

Section III: Public Education

The City of Lubbock 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 water use restrictions to be implemented in each stage. This information will be provided by means, including but not limited to, public service announcements, newspaper notice, utility bill inserts, and educational presentations.

Section IV: Coordination with Regional Water Planning Groups

The service area of Lubbock is located within the Llano Estacado Regional Planning Area and Lubbock has provided a copy of this Plan to the Llano Estacado Regional Planning Group.

Section V: Authorization

The City Manager (the 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 Manager or his/her designee shall have the authority to initiate or terminate water shortage or other water supply emergency response measures as described in this Plan.

Section VI: Application

The provisions of this Plan shall apply to all persons, customers, and property utilizing water provided by Lubbock. 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.

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.

Customer: any individual, corporation, partnership, association, and any other legal entity utilizing water provided by Lubbock.

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.

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, and rights-of-way and medians.

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

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

Section VIII: Requirements for Initiation and Termination of Water Shortage Conditions and Implementation of Water Use Restrictions

After official determination by the Manager, or his or her designee, that the public water supply is or will be limited, or that demand is or is projected to exceed supply, the Manager will declare and classify the water shortage condition using the requirements for initiation identified in Drought Contingency Plan Attachment A. The Manager, or his or her designee, will monitor the water supply on a daily basis and, according to the requirements for initialization for each stage, shall determine that mild, chronic, or acute/emergency water shortage conditions exist. Upon public notice the Manager, or his or her designee, will implement the appropriate water use restrictions found in Drought Contingency Plan Attachment A.

Section IX: Wholesale Water Customers

It is Lubbock's policy to include in every wholesale water supply contract entered into or renewed after official adoption of the Plan, and including any contract extension, that each successive wholesale customer develop and implement a drought contingency program or mechanisms for responding to reductions in water supply. If the wholesale customer intends to resell the water, then the contract between Lubbock and the wholesale customer must provide that the contract for the resale of the water must include mechanisms for responding to reductions in water supply.

Section X: Public Notification

Informing the Public. Public service radio and television announcements and/or news print notifications will be made giving customers details of the expected condition, promoting public participation, and advising customers of the possible penalties as appropriate. The local newspaper will be utilized for long-range information distribution.

Initiation Procedure. Public service radio and television announcements will be made that a water shortage condition has been declared. The announcement will detail the conditions and actions to be taken by customers. The public will be kept informed for the duration of the emergency. The local newspaper will be utilized for long-range information distribution.

Termination Procedure. Public service radio and television announcements will be made that a water shortage condition has been rescinded and reclassified as appropriate.

Section XI: Variances

The Manager, or his/her designee, may, in writing, grant a temporary variance for existing water uses otherwise prohibited under this 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 the 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 ordinance shall file a petition for variance with the Manager after the Plan or a particular water shortage condition response stage has been invoked. All petitions for variances shall be reviewed by the Manager, or his/her designee, and shall include the following:

1. Name and address of the petitioner(s).
2. Purpose of water use.
3. Specific provision(s) of the Plan from which the petitioner is requesting relief.
4. Detailed statement as to how the specific provision of the 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 water use restrictions or other measures the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date.
8. Other pertinent information.

Variations granted by Lubbock shall be subject to the following conditions, unless waived or modified by the Manager or his/her designee:

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

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

Section XII: Enforcement

Water customers and other users of Lubbock's water that do not comply with this ordinance shall be 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; and/or disconnection; or discontinuance by Lubbock of water service to such water customers and other users.

Section XIII: Revisions to the Drought Contingency Plan

The Manager or his/her designee shall review and update, as appropriate, the Plan at least every five (5) years, based on new or updated information, such as the adoption or revision of the regional water plan or changes in law or regulation.

Section XIV: Severability

It is hereby declared to be the intention 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 judgement or decree of any court of competent jurisdiction, such unconstitutionality shall not effect any of the remaining phrases, clauses, sentences, paragraphs or sections of this Plan, since the same would have been enacted by the governing body of Lubbock without the incorporation into this Plan of any such unconstitutional phrase, clause, sentence, paragraph or section.

City of Lubbock
Drought Contingency Plan
Attachment A
Description of Water Shortage Conditions and Water Use Restrictions

Stage 1 Mild Water Shortage Conditions

Requirements for Initiation – Any one of the following requirements is sufficient for initiation of the water use restrictions:

1. Water demand is approaching the maximum safe demand of the water supply system;
2. Supply lake levels are low enough to cause concern for future water supply;
3. Water supplies are adequate but water levels, reservoir capacities, or groundwater supplies are low enough that there is a real possibility that the supply situation may degrade if the drought or emergency condition continues.

Water Use Restrictions

1. City water customers will be asked to voluntarily refrain from or significantly limit water uses defined as aesthetic, domestic, landscape irrigation, and other nonessential uses. The City Manager of the City of Lubbock (the Manager) will make suggestions on ways to limit such uses.
2. The objective of these water use restrictions is a 5 percent reduction in annual average demand and a 10 percent reduction in peak day demand.
3. All City of Lubbock operations will adhere to the water use restrictions established by the Manager.
4. The City of Lubbock will request that all customers and other users of city water practice water conservation measures.
5. The Manager may implement additional water use restrictions as necessary.

Conditions for Termination

Stage 1 water restrictions may be rescinded when all initiation conditions have ceased to exist as determined by the Manager.

Stage 2 Chronic Water Shortage Conditions

Requirements for Initiation – Any one of the following requirements is sufficient for initiation of the water use restrictions:

1. Water demand reaches the maximum safe demand of the water supply system; or
2. Supply levels from lakes, wells, and/or groundwater are low enough and continue to decline to cause concern for future water supply; or have been reduced due to mechanical failure or other means.

Water Use Restrictions

1. Stage 1 restrictions remain in effect.
2. Landscape irrigation will be restricted as follows:
 - a. From 6:00 pm to 10:00 am on designated days,

- b. Designated water days for residential customers are as follows:
 - i. Sunday for even numbered addresses,
 - ii. Saturday for odd numbered addresses,
 - c. Designated water days for commercial, industrial and institutional customers are as follows:
 - i. Tuesday
 - d. Designated water day for users other than those designated above is Wednesday.
 - e. Designated water days for City Parks, Educational facilities are as follows:
 - i. Facilities north of 34th Street and west of Indiana Ave.: Monday
 - ii. Facilities north of 34th Street and east of Indiana Ave.: Tuesday
 - iii. Facilities south of 34th Street and east of Indiana Ave.: Wednesday
 - iv. Facilities south of 34th Street and west of Indiana Ave.: Thursday
3. Use of city water to wash any motorized vehicle, motorbike, boat, trailer, airplane, motor home, camper, or other vehicle is prohibited except under the following conditions:
 - a. During the hours from 6:00 pm to 10:00 am and using prescribed water use practices,
 - b. Prescribed vehicle water use practices are using a hand-held bucket and hand-held hose with an automatic shutoff nozzle.
 - c. Commercial vehicle washing operations may occur anytime provided the facility uses water recirculation,
 - d. Washing of vehicles to protect the health, safety and welfare of the public; such as, emergency vehicles, garbage trucks, food transport vehicles, etc., are exempt from these restrictions.
 4. Recreational use of water is not allowed except on designated water use days (as defined in item 2) where water levels in existing recreational facilities may be maintained. Recreational water use includes, but is not limited to, swimming pools, Jacuzzi's, hot tubs, wading pools, and fountains.
 5. Operation of an ornamental fountain or pond for aesthetic or scenic purposes is prohibited except where necessary to support aquatic life or where such fountain or ponds are equipped with a recirculation system.
 6. Use of water from fire hydrants shall be limited to fire fighting or other related activities necessary to maintain public health, safety and welfare. Use of water from fire hydrants for construction purposes is allowed under permit by the City of Lubbock.
 7. All restaurants are prohibited from serving water to patrons except upon request,
 8. Hotels and motels are required to implement water conserving measures. Such measures include, but are not limited to, the following:
 - a. Changing sheets only when requested by the guest,
 - b. Replacing towels and wash clothes only when requested by the guest.
 9. Nonessential use of water is prohibited. Examples of nonessential water uses are as follows:
 - a. Washing down sidewalks, driveways or other impervious areas, except where necessary to remove contaminants from chemical spills,
 - b. Washing down buildings or structures for purposes other than fire fighting,
 - c. Flushing gutters or allowing water to accumulate or flow down any gutter or street,
 - d. Failure to repair a leak within five (5) calendar days after having been made aware of the leak.
 10. The City of Lubbock may reduce water system pressure to conserve water.
 11. The Manager may implement additional water use restrictions as necessary.

Conditions for Termination

Stage 2 water restrictions may be rescinded when all initiation conditions have ceased to exist as determined by the Manager. When Stage 2 is terminated, Stage 1 automatically becomes in effect.

Stage 3 Acute or Emergency Water Shortage Conditions

Requirements for Initiation – Any one of the following requirements is sufficient for initiation of the water use restrictions:

1. Water demand has exceeded the maximum safe supply capability of the water supply or distribution system;
2. Supply lake or groundwater levels are low enough to result in the potential inability to provide further supply;
3. There has been a failure in a major water supply or transmission component; such as, a pumping system, supply line, transmission or distribution pipeline, or storage reservoir, that causes a severe limit on the ability of the water system to meet the demand.

Water Use Restrictions

1. All Stage 2 water restrictions remain in effect.
2. All outdoor water use is prohibited except where necessary to protect the health, safety, and welfare of the public.
3. No new landscape material may be installed.
4. Operation of ornamental fountains or ponds is prohibited except where necessary to preserve aquatic life.
5. The Manager may implement additional water use restrictions as necessary.

Conditions for Termination

Stage 3 water restrictions may be rescinded when all initiation conditions have ceased to exist as determined by the Manager. Upon cessation of Stage 3, Stage 2 water use restrictions become effective.

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