CITY OF ANGLETON

2009

Water Conservation

Drought Contingency Plan

Adopted: 1999

Revised: April 2005

Revised: July 2009

The water services of the City of Angleton are located within the Houston Regional Water Planning Group H.

The City of Angleton has provided a copy of this plan to the San Jacinto Water Authority, Regional Water Planning Group H in Conroe, Texas.

TABLE OF CONTENTS

INTRODUCTION

Angleton is a City of an estimated 19,000 people located some fifteen (15) miles from the mouth of the Brazos River. Angleton is a community with growing commercial enterprises.

Angleton, along with other cities, worked toward an entity to supply water not only to this City but also to the whole local area comprised of seven cities, villages, and communities. The entity is Brazosport Water Authority.

Angleton is presently being served by Brazosport Water Authority (BWA) supplying an average of 1.8 million gallons per day to the City for both health operations and fire needs. The City also has three (3) wells for emergency purposes and three (3) wells for demand with one of them being used frequently.

The continued growth of the City with its increasing demand for water, makes it apparent that an additional water plant with storage is necessary in the very near future.

Because this City is aware of the need for and the scarcity of water, a conservation plan has been adopted to further conserve this valuable resource.

UTILITIES EVALUATION

A. Population of the City — 19,000 (estimated)

B. Area of Service — 15 square miles

C. Number of Connections in service area

December 2008	6,558
December 2007	6,508
December 2006	6,456

D. Water Use Information

1. Two Year Average Annual Water Production — 716.978 gallon/year

2. Two Year Average Annual Water Production — 59.748 gallon/month

3. Monthly Water use for 2008 in gallons (million.thousand)

January	51.000
February	54.774
March	58.268
April	54.772
May	62.728
June	64.727
July	70.569
August	64.856
September	66.279
October	64.944
November	61.506
December	60.602

E. Peak Daily Use

2008	3.115
2007	2.516

F. Peak to Average Use Ration

Average Daily Summer Use ÷ Average Daily Use 2008

2.22 ÷ 1.95 = 1.14 Average Daily

One Day Peak Summer Use ÷ Average Daily

3.11 ÷ 1.95 = 1.60

G. Safe Annual Yield of Water Supply

722.613 (million. thousand gallons)

H. Major High Volume User 2008 in gallons (million.thousand)

Oaks of Angleton	121,089
Southern Tri-Star	89,509
E2 Real Estate	56,434
Angleton Manor	54,180
Angleton Danbury Hospital	53,223

I. Population and Water Use Projections

Year	Daily Avg. MGD	Daily Max MGD	Population Potential
2010	2.0	2.9	19,000
2015	2.5	3.0	21,000
2020	3.0	3.5	24,000

J. Percentage of Metered Connections – 100%

K. Water Rate Structure

Minimum and first 2,000 gallons	$11.75
2,000 to 10,000 gallons	$3.55 per thousand gallons
10,000 to 25,000 gallons	$3.80 per thousand gallons
25,000 to 50,000 gallons	$4.05 per thousand gallons
50,000 and over	$4.50 per thousand gallons

L. Applicable State/Federal or Other Regulations

TCEQ – Texas Commission on Environmental Quality

E.P.A. – Environmental Protection Agency

5 & 10 YEAR GOALS

5 Year: Based on population of 19,000, Angleton residents use approximately 100 gallons per person per day on average. The City of Angleton's goal is to reduce gallons per year by 1% or down to 90 gallons per day in five years.

10 Year: Based on estimated increase of population to 22,500 Angleton residents, our goal is to decrease usage by 1% per year or down to 90 gallons per person per day in ten years.

PUBLIC INVOLVEMENT

Normal Relations:

The City Council of the City of Angleton meets regularly on the second and fourth Tuesday of each month. These are open meetings that invite public comment and participation. City staff is also on hand to hear comments and complaints that help guide them in their daily efforts.

Brazosport Water Authority:

This entity holds monthly meetings on the fourth Tuesday of each month. These meetings also are open to the public. Angleton has one Director on the Board of the Water Authority that is appointed by the City Council. This director is one of nine.

WATER CONSERVATION PLAN

I. Education and Information

The City of Angleton, Texas will promote water conservation by informing the public of ways to conserve water. The following methods will be used to inform water users:

1) Periodic newspaper articles
2) Water Saving Brochure Handouts at the water billing office
3) Bi-Annual water saving tips on water bills
4) Phone calls (an average of 20 per month) on how to reduce high water usage & how to find leaks.
5) Periodic mail-outs of brochures on Water Saving Tips inside and outside the home.
6) Water department employees assist customers at their homes and business to help locate water leaks.

Suggestions on ways to save on water, which may be included in public information, are listed below:

A. Bathroom

1) Take a shower instead of taking a bath. Showers with low-flow showerheads often use less water.
2) Install a low-flow showerhead, which limits the flow from the shower to less than three gallons per minute.
3) Reduce the level of the water being used in a bathtub by one or two inches if a shower is not available.
4) Do not let the water run when washing hands. Water should be turned off while washing and scrubbing and be turned on again to rinse. A cutoff valve may be installed on the faucet.
5) Turn water off when brushing teeth until it is time to rinse.
6) Shampoo hair in the shower. Shampooing in the shower takes only a little more water than is used to shampoo hair during a bath and much less than shampooing and bathing separately.

7) When shaving, fill the lavatory basin with hot water instead of letting the water run continuously.
8) Test toilets for leaks. Add a few drops of food coloring or a dye tablet to the water in the tank but do not flush the toilet. Watch to see if the coloring appears in the bowl within a few minutes. If it does, the toilet has a silent leak that needs to be repaired.
9) Use a toilet tank displacement device such as a plastic bottle that is filled with stones or water, recapped and placed in the toilet tank. These devices will reduce the volume of water in the tank but will still provide enough for flushing. (Bricks are not recommended since they will crumble and could damage the working mechanism.) Displacement devices are not recommended with new low-volume flush toilets.
10) Never use the toilet to dispose of cleansing tissues, cigarette buts or other trash. This wastes a great deal of water and also places an unnecessary load on the sewage treatment plant or septic tank.
11) When remodeling a bathroom or building a new home, install a new low-volume flush toilet that uses only 1.6 gallons per flush.
12) Install faucet aerators to reduce water consumption.

B. Kitchen

1) Scrape the dishes clean instead of rinsing them before washing. There is no need to rinse unless they are heavily soiled.
2) Never run the dishwasher without a full load. This practice will save water, energy, detergent, and money.
3) Use the garbage disposal sparingly or start a compost pile.
4) Keep a container of drinking water in the refrigerator. Running water from the tap is wasteful. Keeping cold water in a picnic jug on a kitchen counter to avoid opening the refrigerator door frequently can save both water and energy.
5) Use a small pan of cold water when cleaning vegetables, rather than letting the water run over them.

6) Always keep water conservation in mind, and think of other ways to save in the kitchen.

C. Laundry

1) Wash only a full load when using an automatic washing machine (32 to 59 gallons are required per load).
2) Whenever possible, use the lowest water level setting on the washing machine for light or partial loads.
3) Use cold water as often as possible to save energy and to conserve the hot water for uses that cold water cannot serve.

D. Appliance and Plumbing

1) Check water requirements of various models and brands when considering purchasing any new appliance. Some use less water than others.
2) Check all water line connections and faucets for leaks. A slow drip can waste as much as 170 gallons of water each day, or 5,000 gallons per month, and will add to the water bill.
3) Learn to repair faucets so that drips can be corrected promptly. It is easy to do, cost very little, and can mean a substantial savings in plumbing and water bills.
4) Check for hidden water leakage such as a leak between the water meter and the house. To check, turn off all indoor and outdoor faucets and water-using appliances. If the meter continues to run or turn, a leak probably exists and needs to be located.
5) Insulate all hot water pipes to reduce the delays (and wasted water) experienced while waiting for the water to “run hot”.
6) Be sure the water heater thermostat is not set to high. Extremely hot settings waste water and energy because the water often has to be cooled with cold water before it can be used.
7) Use a moisture meter to determine when houseplants need water. More plants die from over-watering than from being on the dry side.

E. Out-Of-Door Use

1) Water only when needed. Look at the grass, feel the soil, or use a soil moisture meter to determine when to water.
2) Do not over-water. Soil can absorb only so much moisture, and the rest simply runs off. A timer will help, and either a kitchen timer or an alarm clock will do. One and half inches of water applied once a week in the summer will keep most Texas grasses alive and healthy.
3) Water lawns early in the morning during the hotter summer months. Otherwise, much of the water used on the lawn can simply evaporate between the sprinkler and the grass.
4) To avoid excessive evaporation, use a sprinkler that produces large drops of water rather than a fine mist. Sprinklers that send droplets out on a low angle, also help control evaporation.
5) Set the automatic sprinkler systems to provide thorough, but infrequent watering. Pressure regulation devices should be set to design specifications. Rain shut off devices can prevent watering in the rain.
6) Use drip irrigation systems for bedded plants, trees, shrubs, or turn on soaker hoses upside down so the holes are on the bottom. This will help avoid evaporation.
7) Water slowly for better absorption, and never water on windy days.
8) Position sprinklers and hoses so they will not be watering the streets or sidewalks.
9) Condition the soil with mulch or compost before planting grass or flowerbeds so that water will soak in rather than run off.
10) Fertilize lawns at least twice a year for root stimulation, but do not over-fertilize. Grass with a good root system makes a better use of less water and is more drought tolerant.
11) Do not scalp lawns when mowing during hot weather. Taller grass holds moisture better. Grass should be cut fairly often, so that only ½ to ¾ inch is trimmed off.

12) Use a watering can or hand water with the hose in small areas of the lawn that need more frequent watering.
13) Use water-wise plants. Learn what types of grass, shrubbery, or plants do best in which parts of the lawn, and then plant accordingly. Choose plants that have low water requirements, are drought tolerant, and are adapted to the area where they are to be planted.
14) Consider decorating some areas of the lawn with wood chips, rocks, gravel, or other materials now available that require no water at all.
15) Do not "sweep" walks and driveways with the hose. Use a broom or rake instead.
16) When washing the car, use a bucket of soapy water and turn on the hose only for rinsing.

II. Plumbing Codes

The City of Angleton operates under the Southern Standard Plumbing Code that was adopted in 1997 for commercial and 2000 International Plumbing Code for residential. The City has always been quite severe in its interpretation of the rules and will continue to be. Persons who do not follow these codes are refused service.

III. Retrofit Program

An information program informs customers of the advantages of installing new water saving devices and of replacing devices that do not conserve. In addition, the rate structure will encourage conservation.

IV. Water Rate Structure

The City of Angleton has a graduated rate structure (see page 5), which encourages conservation.

V. Metering

The City of Angleton has 100% metering for all utility customers. The computer-billing program identifies high and low averages. The utility department checks these items monthly. Where highs and lows are apparent, the utility department rereads meters. Also, customers can request a reread of their meter. Dead meters are routinely replaced.

VI. Leak Detection and Repair

Leak detection has never been a problem. The public is the best informant available. In addition, City employees such as police, inspectors, etc. are constantly on the look-out for leaks. Pumping and tank levels are under constant monitoring by the City of Angleton's Computer System. The system will alert operators when a large leak occurs or if levels or pressures drop suddenly (SCADA Computer System). Leaks are repaired as soon as they occur or are reported, with the larger leaks having priority.

VII. Implementation and Enforcement

The Conservation Plan will be enforced as follows:

A) People requesting new service taps are required to meet code requirements. The City has adequate inspection staff to oversee this requirement.

B) Customers who do not pay their bill are routinely cut off from service.

C) Customers with excessively high bills are routinely called to discuss their situation and are mailed Water Conservation Brochures.

D) Customers are assisted in locating water leaks in their homes and in their yards.

VIII. Conservation Plan Monthly Report

The Water Department will file a monthly report with the City Manager and City Council containing the following information of use and maintenance:

1) Total Monthly Pumpage and Total Monthly Gallons Sold
2) Percent of Accountable Water
3) Monthly Leak Repair Report
4) Monthly Meter Change Out

An Annual Report will be filed with all the above listed for the year.

DROUGHT CONTINGENCY PLAN

I. Trigger Conditions

The following trigger conditions indicate when drought contingency measures will be put into effect. Trigger conditions will be set for mild, moderate, and severe.

A. Mild Drought

1) Average Daily Water use is approaching (2.9MGD) system capacity.
2) Goal: Reduction of MGD ½%

B. Moderate Drought

1) Average Daily Water use occasionally reaches (3.0MGD) system capacity.
2) Net storage in raw water reservoirs and water well pumping levels are continually decreasing on a daily basis such that a more serious problem may develop.
3) Goal: Reduction of MGD 1%

C. Severe Drought

1) The imminent or actual failure of a major component of system, which would cause an immediate health or safety hazard.
2) Water demand is exceeding the system's capacity (3.5) on a regular basis.
3) Brazos River flow is so low that the river pumps cannot pump the daily raw water demand.
4) All raw water is being pumped from Storage Reservoirs and all replenishment of Raw Water Reservoirs has stopped.
5) All emergency water wells pumping levels have drastically dropped where there is little or no pumpage from one or more well.
6) Emergency water shortage condition exists when there is a natural or man-made contamination of the water supply source and or when there is a failure of water delivery from Brazosport Water Authority.
7) Goal: Reduction of MGD 1 ½%

II. Drought Contingency Measures

The City of Angleton has a plan in its Rules and Regulations in which water ban will be partially or totally restricted as necessitated by emergency.

Step I

A Step I curtailment is one where the City Manager can restrict the use of water for outdoor sprinkling, watering of lawns, shrubs, driveways and automobiles to certain hours/days. Said restrictions will remain in effect until it is deemed the emergency conditions no longer exist.

Step II

A Step II curtailment is one where the City Manager will ban the use of water totally for outdoor sprinkling, watering of lawns, shrubs, driveways, and washing automobiles. Said restrictions will remain in effect until emergency conditions no long exist and the ban is lifted.

A) The curtailment will be effective upon the City Manager's giving notice of curtailment by posting of a notice of curtailment and notifying the news media of the curtailment.

B) The curtailment will be terminated upon the City Manager giving notice of termination as is done for the institution of the curtailment.

C) The City Manager can amend, add, or delete any of these Rules and Regulations and shall notify the City Council at its regular meeting of said amendments, additions or deletions.

D) Any violation of the Rules and Regulations adopted by the City Council shall carry a penalty of a fine of not less than $200 nor more than $500.

In addition to the existing Drought Contingency Plan, the City will enact the following Drought Contingency measures:

A) Mild Drought Contingency Measures.

(i) Inform public by giving notice of a mild drought to the

communities within the district by the posting of the notice and notifying news media of the mild drought.

(ii) Included in the information to the public will be the recommendation that water users look for ways to conserve water.

(iii) Public will be advised of the trigger condition situation daily.

B.) Moderate Drought Contingency Measures

(i) Public will be informed as mentioned above

(ii) The Step I curtailment will be enacted.

(iii) Public will be advised of the trigger conditions daily.

C.) Major Drought Contingency Measures

(i) Public will be informed as mentioned above.

(ii) Step II curtailment will be enacted.

(iii) Certain industrial and commercial water users, which are not essential to the health and safety of the community, will be prohibited form water use.

(iv) Public will be advised of the trigger conditions daily.

III. Variances

The City Manager, or his/her designee, may grant, in writing, a temporary variance for water use prohibited under this plan if it is determined that failure to grant a variance would cause an emergency condition affecting the health, sanitation, or fire protection for the public or the person requesting the variance and if one or both of the following conditions are met:

A) Compliance with this plan that cannot be accomplished during the duration of the water shortage or other condition for which the plan is in effect.

B) Alternative methods can be implanted which will achieve the same level of reduction in water use.

Person(s) requesting an exemption shall file a petition for variance with the City of Angleton within 5 days after the drought measures or a drought response state has been initiated. All petitions for variances shall be reviewed by the City Manager or his/her designee, and shall include the following:

A) Name and address of the petitioner(s)
B) Purpose of water uses
C) Specific provision(s) of the plan from which the petitioner is requesting relief.
D) Detailed statement as to how the specific provision would adversely affect the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this plan.
E) Description of the relief requested.
F) Period of time for which the variance is sought
G) 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.
H) Other pertinent information.

Variance granted by the City of Angleton shall be subject to the following conditions, unless waived or modified by the City Administrator or his/her designee:

A) Variances granted shall include a timetable for compliance.
B) Variances granted shall expire when the plan is no longer in effect.

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

IV. Information and Education

Once trigger conditions and emergency measures have been established, the public will be informed of the conditions and measures to be taken. The process for notifying the public includes:

A) Posting the Notice of Drought conditions
B) General circulation to newspapers
C) Notifying local radio and TV stations
D) Direct mailing and/or hand delivering to customers explaining need for and provisions of the Drought Contingency Plan

V. Termination Notification

Termination of the Drought measures will take place when the trigger conditions which initiated the drought measures have subsided and an emergency situation no longer exists. The public will be informed of the termination of the drought measures in the manner that they were informed of at the initiation of the drought measures.