

**WATER CONSERVATION
AND
DROUGHT CONTINGENCY PLAN**



APRIL 2019

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INTRODUCTION

For many years, the citizens and elected officials in the State of Texas have battled drought. During the 75th legislature, Senate Bill 1 (SB 1) was propagated, and this legislation required regional water planning groups to develop water plans to be incorporated into a State Water Plan. The goals were to provide for the orderly development, management, and conservation of water resources; to prepare for, and respond to, drought conditions, so that sufficient water will be available at a reasonable cost to ensure public health, safety, and welfare; to further economic development; and to protect the agricultural and natural resources of the entire state. As part of the Regional and State Water Plans, all communities were required to develop Water Conservation and Drought Contingency Plans. These plans must be reviewed and amended every five years. These plans, upon approval, are submitted to the Region H Planning Group, along with the Texas Commission on Environmental Quality, and the Texas Water Development Board.

The City of West University Place has prepared its updated Water Conservation and Drought Contingency Plan. This updated plan includes elements required by the regulations promulgated by the Texas Commission on Environmental Quality and the Texas Water Development Board.

The City of West University Place owns and operates a water production and distribution system including production, storage, and distribution facilities and equipment. Additionally, the City owns and operates a wastewater collection and treatment system. This system is permitted and regulated by the Texas Commission on Environmental Quality. The City employs operators licensed by the Texas Commission on Environmental Quality to operate and maintain these systems.

The system serves an area of approximately two square miles. All properties within the City limits use the water and wastewater systems. The customer base in the City consists of single-family residential, commercial, and institutional users. The institutional users consist of one public elementary school, several churches, and municipal properties. For accounting purposes,

institutional users have always been listed in our billing system as commercial and are so reflected in our Utility Profile Summary.

The City will notify the Texas Commission on Environmental Quality within five days of activation of any mandatory water restrictions under the Drought Contingency Plan.

UTILITY PROFILE SUMMARY

The City of West University Place owns and operates the system that serves the residents and businesses located within its boundaries. This includes two water wells and the purchase of treated surface water from the City of Houston. West University Place also owns and operates a wastewater collection and treatment system. All residents and commercial properties within the boundaries of the City utilize the City's wastewater system for sewerage disposal.

DRINKING WATER SYSTEM FACILITIES

- Two Pump Stations with Ground Storage
 - Wakeforest Pump Station
 - Water well – 1,500 gallons per minute (1,300 feet deep)
 - Ground storage – Two 500,000-gallon tanks
 - Elevated storage – One 500,000-gallon tank
 - Two booster pumps – 1,500 gallons per minute
 - Treated water intake point
 - Milton Street Pump Station
 - Water well – 1,500 gallons per minute (1,300 feet deep)
 - Ground storage
 - One 400,000-gallon tank
 - One 1,500,000-gallon tank
 - Booster pumps
 - Two pumps – 2,000 gallons per minute
 - One pump – 1,500 gallons per minute
 - One pump – 1,000 gallons per minute
 - Treated water intake point
- Elevated storage – Bellaire Blvd. water tower – 250,000-gallon tank
- 41 miles of distribution piping
- 357 fire hydrants

Production/Procurement

- Well water – 3,000 gallons per minute
- Surface water – 3,000 gallons per minute

Distribution

- Booster capacity – 9,500 gallons per minutes

Storage

- Ground storage – 2,900,000 gallons
- Elevated storage – 750,000 gallons

CUSTOMER DATA

Population

- The City's current population is approximately 14,800; this population is based on the 2000 Census and the 2010 Census. The City limits have been bounded since the 1940s by other municipal government corporate limits. Strict zoning regulations within the City establish most areas as Single-Family Occupancy, with some areas zoned for Commercial Occupancy.

ACTIVE CONNECTIONS

The City's water system had approximately 6,143 water meters in 2018:

- Residential
 - Domestic – 5,339
 - Irrigation only – 656
- Commercial – 101
- Institutional – 47

WATER USE DATA FOR SERVICE AREA

Water Production/Consumption

Year	Water Produced Gallons	Water Metered Gallons	Non-Metered Water Gallons
2018	791,362,000	774,976,743	16,385,257
2017	803,459,700	770,533,993	32,925,707
2016	775,503,000	742,478,845	33,024,155
2015	750,156,000	742,857,740	7,298,260
2014	754,048,000	730,829,500	23,218,500

PROJECTED WATER DEMANDS

Projected Water Supply Requirements for the Next 10 Years

- It is anticipated that water supply requirements for the next 10 years will remain constant. The City of West University Place is a landlocked city that is fully built out and, due to this, the population is not expected to increase significantly.

WASTEWATER UTILITY SYSTEM

- Twelve Sanitary Sewer Pump Stations collect water from around the City, and pump or relay the wastewater to the Wastewater Treatment Plant.
- There are approximately 44 miles of sanitary sewer pipe with 1,021 manholes.
- There are approximately 5,600 connections to residential and commercial customers.
- There is one Wastewater Treatment Plant, rated at 2 million gallons per day, with a peak flow of 6 million gallons per day.

Wastewater flows average 50.5% of the total drinking-water production/procurement. Based on this average, there is significant evidence that there is substantial potential for savings in outdoor watering to support the reductions necessary to meet the established goals.

WATER CONSERVATION PLAN

INTRODUCTION

The City of West University Place has demonstrated a high level of concern for the protection of the environment through previous Water Conservation Plans, Storm Water Management Plans, and our Urban Forest Protection ordinance. The City continues to exercise diligence in the protection of the environment with the issuance of this revised Water Conservation and Drought Contingency Plan.

GOALS

The City has established goals for the measurement of the effectiveness of this Water Conservation and Drought Contingency Plan. The goals are in two areas: water loss reduction and municipal use of water.

- In 2018, the City metered 774,976,700 gallons of water and produced 791,362,000 gallons of water. The resulting amount of lost water came to 3 gallons per capita per day (gpcd). This is equivalent to approximately 2.1% of the water produced not being metered. This amount includes water from maintenance activities that include fire hydrant testing, water main flushing, and water storage tank maintenance. It also includes issues such as water not measured by faulty water meters, and water leaks.
- The City previously established a five-year goal (to be achieved by the end of 2019) of a water loss not to exceed 3 gpcd, and a 10-year goal (to be achieved by the end of 2024) of a water loss not to exceed 2.5 gpcd. These goals remain valid, along with a goal continuing thereafter to maintain the water loss at or below 2.5 gpcd.
- With the annual metered water of 774,976,700 gallons, the water consumption was 141.4 gpcd for 2018. Through the use of water conservation education, a conservative water rate, and the provision of tools to assist the community with water conservation efforts, the City has exceeded its goal of reducing metered water to below its 2019 goal of 145 gpcd. Further, the goal to be below 140 gpcd by the end of 2024 remains realistic, along with the goal to be below 135 gpcd by the end of the calendar year 2029.

PUBLIC INVOLVEMENT

The City of West University Place holds regular Council Meetings on the second and fourth Monday of each month at 6:30 p.m. These meetings are open to the public, and citizens are free to speak on any subject during the portion of the meeting designated for this purpose.

WATER CONSERVATION METHODS AND SCHEDULES

Water conservation methods are typically divided into two categories:

- Demand Management methods deal with water use on the downstream side of a customer's meter. Demand Management provides for education, disincentives, and/or incentives to reduce water use by the consumer. This includes usage at City facilities, such as at parks, pools, and municipal buildings.
- Supply Management methods deal with the utility's water system upstream of the customer's meter. The goal of Supply Management is to improve efficiency and reduce waste within the production, treatment, and distribution systems. Supply Management usually results in decreased costs to the utility, as water losses in the system are reduced.

During the previous plan years from 2014 through 2019, the City initiated or completed a series of activities in an effort to meet the established plan goals as specified in the previous plan:

- The City completed activation of an automated meter reading infrastructure that allows for water consumption volumes to be measured and compared to production volumes on a regular basis.
- The City runs reports weekly on failing meters, through its meter reading program, and initiates changeouts of these meters.
- The City is continuing a program to reduce water losses. This program includes regular visual inspections along the route of water mains, with extra attention paid to mains not located within residential areas (where issues with mains are most likely to be reported quickly).
- It is the policy of the City's Public Works Operations Division to repair any leak that appears to exceed 10 gallons per minute within 72 hours, and any other leak within

two weeks.

- City staff investigated the addition of electronic leak detection to the automated meter reading system and did not find it to be cost effective.
- The City has continued the distribution of educational material on water conservation through the *City Currents* newsletter, and provides the Water Conservation Plan and water conservation tips on the City's website.
- The City also participates in the Harris-Galveston Subsidence District's Regional Water Conservation Education Program, which has sponsored 3,000 students each year since 2013.

The City of West University Place provides for a continuing process of maintaining and/or reducing water consumption levels through good stewardship and conservation, and has planned the following activities to assist customers and further reduce usage at City facilities:

- Provide a continuing meter testing program for Water System Production meters on a yearly testing cycle
- Provide a continuing meter testing program of customers' meters to identify meter failures and inaccuracies. The City will also test a set of meters from each size group of meters and from differing manufacturer production batches in order to attempt to predict failures and inaccuracies.

In September 2019, the City will provide for an increased notification of customers with high or unusual usage trends in order to assist in the early detection of leaks and potential irrigation system issues.

In June 2019, the City will increase educational efforts to inform customers of the Customer Connect Meter Monitoring portal, which provides for email alerts and hourly usage-volume notifications on customers' water meters.

The City will also be:

- Continuing a program to educate customers who have the highest monthly flows of consumption levels and to provide conservation tips
- Annually creating and making available water production vs. water metered information in a report that will be issued to all residents via the City's web page
- Continuing to annually review the water rates and water rate structure to maintain sufficient income to support the ongoing maintenance and improvements to the Water System while ensuring that the rate is not promoting the inefficient use of water. The City currently has an increasing block structure that meets this standard:
 - Base Monthly Charge, which is based on the size of the water meter
 - Water Usage, which is billed on an increasing tiered block structure, with the first tier at 3,000 gallons and increasing rates for water used in 6,000-gallon increments up to 15,000 gallons – up to the fourth tier for every thousand gallons above 15,000 gallons

IMPLEMENTATION/ENFORCEMENT

The City of West University Place is a municipal government based on a Home Rule Charter operating in a City Manager/Council format. The City has the legal authority to create ordinances and to enforce them with civil or criminal penalties.

The City maintains a full-time Police Department and a full-time Code Enforcement Officer. These shall be responsible for enforcement of the plan where it calls for penalties for violations.

The City shall pass an ordinance to adopt the Water Conservation and Drought Contingency Plan and shall cause that ordinance to become part of the Code of Ordinances for the City of West University Place in order to assess fines in an amount not to exceed \$500 per day and to terminate water service in the event of a violation of the mandatory water use restrictions.

The Public Works Department will oversee the initiation of the Water Conservation and Drought Contingency Plan, along with the documentation and reporting required for the plan. This includes the creation and submission of annual reports to the Texas Commission on Environmental Quality and the Texas Water Development Board as required by rule.

Any violation of the mandatory provisions of the Water Conservation and Drought Contingency Plan may result in a penalty and/or interruption of water service. The City Manager is empowered to enforce the mandatory provisions of the plan, and may interrupt water service based upon repeated violations. Penalties shall be paid before water service is restored. Violations will be reported by all City personnel to the City Manager or his delegate.

Variances to the mandatory restrictions may be granted by action of the City Council, and shall be requested in the writing of a letter to the City Manager, which will be delivered by certified mail, or hand-delivered with an added letter of receipt to be signed by an appropriately designated city employee. The letter must be received no later than the close of business on the Tuesday immediately preceding the Monday of the scheduled City Council Meeting, where the request will be heard and acted upon by the City Council and recorded in the meeting minutes. This time frame will allow for the action to be reviewed and posted on the City Council Meeting Agenda as required by law. The City Manager or his delegate shall allow for requests

that have the potential for immediate human health effects to be granted on a temporary basis pending action by the City Council.

NEGLIGENT WASTE OF WATER

A retail public water customer in the City violates this section if the customer fails to repair a leak which causes water to flow through any portion of a public right-of-way 72 hours after written, telephonic, or in-person notice of the leak has been provided to the customer by the City's Public Works Department. Each day a violation exists constitutes a separate violation.

A customer may be fined up to \$500 per violation of this section, and the customer's water service may be terminated without further notice.

A leak which causes water to flow through the public right-of-way necessarily constitutes a hazard to public health, safety, and welfare. Accordingly, the City, through the City Manager or his designee, may cause termination of service to the customer immediately following the City's discovery of such a hazardous leak. The City must provide notice of termination to the customer as soon as is reasonably possible, but such notice is not required to precede termination.

DROUGHT CONTINGENCY PLAN

SECTION 1 – DECLARATION OF POLICY, PURPOSE, AND INTENT

In cases of extreme drought, periods of abnormally high usage, system contamination, or extended reduction in the ability to supply water due to equipment failure, temporary restrictions will be instituted to limit non-essential water usage. The purpose of the Drought Contingency Plan is to encourage – and, under emergency conditions, require – customer conservation in order to maintain supply, storage, or pressure.

SECTION 2 – PUBLIC INVOLVEMENT

An opportunity for the public to provide input into the preparation of the Plan was provided by posting a notice of the City Council Meeting scheduled to approve an ordinance adopting the Drought Contingency Plan:

Date: April 8, 2019

Time: 6:30 p.m.

Place: 3800 University Blvd.

West University Place, Texas, 77005

Municipal Building Council Chambers

SECTION 3 – PUBLIC EDUCATION

The City of West University Place 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, along with the drought response measures to be implemented in each stage.

Information on the Drought Contingency Plan will be provided by a press release and a News Flash notice (an email to subscribers of general City information) advising of the availability of the Plan on the City's website or from the Utility Billing Office. Additional information will be provided at various sponsored events throughout the City.

SECTION 4 – COORDINATION WITH REGIONAL WATER PLANNING GROUPS

The service area of the City of West University Place is located within Regional Water Planning Group H, and a copy of this Plan and all updates are mailed to this planning group.

SECTION 5 – SYSTEM SUPPLY STRATEGY

The water system for the City of West University Place is supplied with a combination of well water and surface water. The well water is supplied by water wells owned and operated by the system, and this water can safely supply our annual daily average. The surface water supply is through a purchase agreement with the City of Houston, Texas, and this water can safely supply our daily annual average. With limitations on either of these supplies during peak pumping seasons, it may be necessary to implement water usage restrictions. The City of West University Place has two pump stations, either of which can pump well water, surface water, or a combination of both. Either pump station can safely supply the daily average flow, but may require usage restrictions in the event of equipment outages during peak water pumping seasons.

SECTION 6 – RESPONSE STAGES

The City will communicate Stage 1 concepts each year. If supply or demand triggers are met, the City will initiate the appropriate elevated stage of restrictions. The City shall notify the Texas Commission on Environmental Quality any time that Stage 3 or Stage 4 is initiated with regard to the rule for notification when mandatory restrictions are activated.

STAGE 1 – ANNUAL DROUGHT AND CONSERVATION AWARENESS CAMPAIGN

Utility Measures

A public announcement will be issued every spring to increase customer awareness of water conservation and to encourage the most efficient use of water. This announcement will include information on obtaining an electronic or paper copy of this Plan. A copy of the current public announcement on water conservation awareness shall be kept on file, and shall be made available for inspection by the Texas Commission on Environmental Quality and posted on the conservation page of the City's website.

Voluntary Water Conservation

Water customers are encouraged to practice water conservation.

STAGE 2 – VOLUNTARY WATER USE RESTRICTIONS

Stage 2 is designed to encourage customers to conserve water during periods when water supplies are unusually limited. Stage 2 will begin when there are:

Supply-Based Triggers

- The City of Houston initiates voluntary water restrictions

Demand- or Capacity-Based Triggers

- Total daily demand exceeds 65% of safe pumping capacity for three consecutive days

Upon initiation and terminal of Stage 2, all customers will be notified by:

- Placing a notice on the City's website
- Issuing a press release to radio, television, and newspapers
- Sending a notice to all telephone customers and registered users in the area through the City's reverse 911 telephone notice system

Conservation Goal for Stage 2

The goal for this stage is to reduce the overall daily consumption to below 60% of the safe pumping capacity.

Requirements for Termination

Stage 2 of the Plan may end when all of the conditions listed as triggering events have ceased to exist for a period of 10 consecutive days, AND when the Conservation Goal for Stage 2 has been achieved for a period of 10 consecutive days.

Utility Measures

- This includes visually inspecting lines and repairing leaks on a daily basis.

Voluntary Water Use Restrictions

- Voluntary restricted hours:

- Outside watering will be allowed daily, and customers will be encouraged to water only during the hours between 10 p.m. and 5 a.m.

STAGE 3 – MODERATE WATER USE RESTRICTIONS

Stage 3 is designed to take affirmative steps to control the use of water in response to a period of significant water shortage. Stage 3 will begin when there are:

Supply-Based Triggers

- Equipment outage reduces well capacity by 50%
- Purchased water intake is limited to less than 75% of the standard draw rate
- Distribution system equipment outage reduces the pumping capacity to less than 75% of the standard capacity
- Water contamination results in temporary losses of a safe water source

Demand- or Capacity-Based Triggers

- Total daily demand exceeds 70% of pumping capacity for three consecutive days.

Upon initiation and termination of Stage 3, all customers will be notified by:

- Placing a notice on the City's website
- Issuing a press release to radio, television, and newspapers
- Sending a notice to all telephone customers and registered users in the area through the City's reverse 911 telephone notice system

Conservation Goal for Stage 3

The goal for this stage is to reduce the overall daily consumption to below 65% of the safe pumping capacity.

Requirements for Termination

Stage 3 of the Plan may end when all of the conditions listed as triggering events have ceased to exist for a period of 15 consecutive days AND when the Conservation Goal for Stage 3 has been achieved for 15 days. Upon termination of Stage 3, Stage 2 may be effective.

Utility Measures

- This includes visually inspecting lines and repairing leaks on a daily basis.

- Water line flushing is prohibited, except for dead-end mains or for identified water-quality control issues.

Mandatory Water Use Restrictions (Stage 3)

The following water use restrictions shall apply to all customers:

- Outside watering is allowed daily, but only during the hours between 10 p.m. and 5 a.m.
- Watering of plants and landscaping shall be allowed with a handheld water hose (no hose sprinklers or laying hose on the ground) between the hours of 7 p.m. and 10 a.m.
- Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane, or other vehicle is prohibited, except between the hours of 7 p.m. and 10 a.m. Such washing, when allowed, shall be done with a bucket or a handheld hose equipped with a passive shutoff valve for quick rinses. Further, such washing may be exempted from these regulations if the health, safety, and welfare of the public are contingent upon frequent vehicle cleansing, such as garbage trucks and vehicles used to transport food and perishables.
- Use of water to fill, refill, or add to any indoor or outdoor swimming pools, wading pools, or Jacuzzi-type pools are prohibited, except between the hours of midnight and 5 a.m.
- Operation of any ornamental fountain or pond for aesthetic or scenic purposes is prohibited, except when necessary to support aquatic life or when such fountains or ponds are equipped with a recirculation system. Refilling, if allowed, would be governed the same as with pools.
- Use of water from hydrants or flush valves shall be limited only to use of water that is necessary for maintaining public health, safety, and welfare.
- Use of water for the irrigation of parks and greenbelt areas is prohibited, except between the hours of 8 p.m. and 5 a.m. This irrigation shall only occur on Monday night/Tuesday morning, Wednesday night/Thursday morning, and Saturday night/Sunday morning. Parks Department personnel will establish a watering schedule to cause park irrigation to be staggered so that all customers do not run their water simultaneously.

- The following non-commercial uses of water are defined as non-essential and are prohibited:
 - Wash down of any sidewalks, walkways, driveways, parking areas, tennis courts, or other hard-surfaced areas
 - Use of water to wash down buildings or structures for purposes other than immediate fire protection
 - Use of water for dust control
 - Flushing gutters or permitting water to run or accumulate in any gutter or street

Customers shall cause any leaks to be repaired within 72 hours after having been given notice directing the repair of such leak.

STAGE 4 – CRITICAL WATER USE RESTRICTIONS

Stage 4 is designed to take significant steps toward controlling the use of water in response to periods of critical water shortage. Stage 4 will begin when there are:

Supply-Based Triggers

- Supply contamination
- Equipment outage reduces well capacity by 50%, and purchased water intake is limited to less than 75% of standard average draw rates
- Equipment outage reduces production/distribution capacity to below 60% of normal total production/distribution

Demand- or Capacity-Based Triggers

- Total daily demand as 80% of safe pumping capacity for three consecutive days
- Production or distribution limitations
- System contamination or equipment outage

Upon initiation and terminal of Stage 4, all customers will be notified by:

- Placing a notice on the City's website
- Issuing a press release to radio, television, and newspapers
- Sending a notice to all telephone customers and registered users in the area through the City's reverse 911 telephone notice system

Conservation Goal for Stage 4

The goal for this stage is to reduce the overall daily consumption to below 70% of the safe pumping capacity.

Requirements for Termination

Stage 4 of the Plan may end when all of the conditions listed as triggering events have ceased to exist for a period of 15 consecutive days AND when the Conservation Goal for Stage 4 has been achieved for 15 days. Upon termination of Stage 4, Stage 3 or Stage 2 may become effective.

Operational Measures

The utility shall visually inspect right of ways and repair leaks on a daily basis. Water line flushing is prohibited, except for specific identified water quality issues and only between the hours of 9 p.m. and 3 a.m. Police and Code Enforcement personnel will be asked to maintain vigilance for violations of the water restrictions.

Mandatory Water Use Restrictions (Stage 4)

- This includes Stage 3 mandatory water-use reductions, along with the following more-restrictive prohibitions.
- ALL OUTDOOR USE OF WATER IS PROHIBITED.
- Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane, or other vehicle is absolutely prohibited.

APPENDIX A – WATER CONSERVATION AND DROUGHT MANAGEMENT INFORMATION SOURCES

Texas Water Development Board

P.O. Box 13231

1700 N. Congress Ave.

Austin, TX 78711-3231

(512) 463-7847 voicemail

www.twdb.texas.gov

Texas Commission on Environmental Quality

P.O. Box 13087

Austin, TX 78711-3087

(512) 239-1000

www.tceq.texas.gov

U.S. Environmental Protection Agency – Water Resource Center

U.S. Environmental Protection Agency (EPA)

Mail Code RC-4100

401 M Street, SW

Washington, D.C. 20460

(202) 260-7786

Email: waterpubs@epamail.epa.gov

www.epa.gov/ow

American Water Works Association

6666 West Quincy Ave.

Denver, CO 80235

(303) 794-7711

www.awwa.org

APPENDIX B – WATER CONSERVATION TIPS

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

Bathroom

- a) Take a shower instead of filling the tub and taking a bath. Shower baths usually use less water than tub baths.
- b) Install a low-flow shower head, which restricts the quantity of flow at 60 psi to no more than 3 gallons per minute.
- c) Take short showers and install a cutoff valve, or turn the water off while soaping and then turn it back on again only to rinse.
- d) Do not use hot water when cold water will do. Water and energy can be saved by washing hands with soap and cold water; hot water should only be added when hands are especially dirty.
- e) Reduce the level of the water being used in a bathtub by one inch or two inches if a shower is not available.
- f) Turn water off when brushing teeth until it is time to rinse.
- g) Do not let water run when washing hands. Instead, hands should be wet, and water should be turned off while soaping and scrubbing, and then turned on again to rinse. A cutoff valve may also be installed on the faucet.
- h) 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 takes much less water than shampooing and bathing separately.
- i) Hold hot water in the basin when shaving, instead of letting the faucet continue to run.
- j) Test toilets for leaks. To test for a leak, a few drops of food coloring can be added to the water in the tank. The toilet should not be flushed. The customer can then watch to see if the coloring appears in the bowl within a few minutes. If it does, the fixture needs adjustment or repair.
- k) Use a toilet tank displacement device. A 1.0-gallon plastic milk bottle can be filled with stones or with water, and then recapped and placed in the toilet tank. This will reduce the amount of water in the tank, but still provide enough for flushing. (Bricks, which

some people use for this purpose, are not recommended, since they can crumble and damage working mechanisms. Do not use displacement devices on low-volume flush toilets.)

- l) Install faucet aerators to reduce water consumption.
- m) Never use the toilet to dispose of cleaning tissues, cigarette butts, or other trash. This practice can waste a great deal of water, and it also places an unnecessary load on the wastewater treatment plant.
- n) When building a new home or remodeling a bathroom, install a new low-volume toilet that uses 1.6 gallons or less per flush.

Kitchen

- a) Use a pan of water (or place a stopper in the sink) for rinsing pots, pans, and cooking implements when cooking, rather than turning on the water faucet each time a rinse is needed.
- b) Never run the dishwasher without a full load. In addition to saving water, expensive detergent will last longer and a significant energy savings will appear on the utility bill.
- c) Use the sink disposal sparingly, and never use it for just a few scraps.
- d) Keep a container of drinking water in the refrigerator. Running water from the tap until it is cool is wasteful. Better still, both water and energy can be saved by keeping cold water in a picnic jug on a kitchen counter to avoid opening the refrigerator door frequently.
- e) Use a small pan of cold water when cleaning vegetables, rather than letting the faucet run.
- f) Use only a little water in the pot and put a lid on it for cooking most food. Not only does this method save water, but food is also more nutritious when cooking this way, since vitamins and minerals are not poured down the drain with the extra cooking water.
- g) Use a pan of water for rinsing dishes when washing them by hand, rather than running the faucet.
- h) Always keep water conservation in mind, and think of other ways to save in the kitchen. Small kitchen savings (such as from not making too much coffee or from not letting ice cubes melt in a sink) can add up over a year's time.

Laundry

- a) Wash only a full load when using a washing machine (32 to 59 gallons are required per load).
- b) Use the lowest water level setting on the washing machine for light loads whenever possible.
- c) Use cold water as often as possible to save energy and to conserve the hot water for uses that cold water cannot serve. Cold water is also better for clothing made of today's synthetic fabrics.

Appliances and Plumbing

- a) Check water requirements of various appliance models and brands when considering purchasing any new appliance that uses water, as some appliances use less water than others.
- b) Check all water connections and faucets for leaks. A slow drip can waste as much as 170 gallons of water EACH DAY, and can add as much as \$10 per month to the water bill.
- c) Learn to replace washers so that drips can be corrected promptly. This is easy to do; additionally, it costs very little, and can represent a substantial amount of savings in plumbing and water bills.
- d) Check for water leakage that you may be unaware of, such as a leak between the water meter and the house. To check, all indoor and outdoor faucets should be turned off, and the water meter should be checked if it continues to run or turn, as this means a leak probably exists and needs to be located.
- e) Insulate all hot water pipes to avoid the delays (and wasted water) experienced while waiting for the water to turn hot.
- f) Be sure that the water heater thermostat is not set too high. Extremely hot settings waste water and energy because the water often has to be cooled with cold water before it can be used.
- g) Use a moisture meter to determine when house plants need water. More plants die from overwatering than from being on the dry side.

Outdoor Use

- a) Water lawns between the hours of 8 p.m. to 6 a.m. during the hotter summer months. Much of the water used on the lawn can simply evaporate between the sprinkler and the grass.
- b) Use a sprinkler that produces large drops of water, rather than a fine mist, to avoid evaporation.
- c) Turn soaker hoses so that the holes are on the bottom in order to avoid evaporation.
- d) Water slowly for better absorption, and never water in high winds.
- e) Forget about watering the streets, walks, and driveways. They will never grow a thing.
- f) Condition the soil with compost before planting grass or flower beds, so that water will soak in rather than run off.
- g) Fertilize lawns at least twice a year for root stimulation. Grass with a good root system makes better use of less water.
- h) Learn to know when grass needs watering. If it has turned a dull gray green or if footprints remain visible, then it is time to water.
- i) Do not water too frequently. Too much water can overload the soil, so the air cannot get to the roots and can encourage plant diseases.
- j) Do not overwater. Soil can absorb only so much moisture, and the rest will simply run off. A timer will help, and either a kitchen timer or an alarm clock will do. Approximately 1.5 inches of water applied once a week will keep most Texas grasses alive and healthy.
- k) Operate automatic sprinkler systems only when the demand on the town's water supply is at its lowest, and set the system to operate between 8 p.m. and 5 a.m.
- l) Do not scalp lawns when mowing during hot weather. Taller grass holds moisture better. Rather, grass should be cut fairly often, so that only 1 inch to 2 inches of grass is trimmed off. A healthier and better-looking lawn will result.
- m) Use a watering can or hand water with the hose in small areas of the lawn that need frequent watering (areas near walks, driveways, or in especially hot, sunny spots).
- n) Learn what types of grass, shrubbery, and plants do best in the area and in which parts of the lawn, and then plant accordingly. In a heavily shaded yard, no amount of water will make roses bloom. In especially dry sections of the state, attractive arrangements of

plants that are adapted to arid or semi-arid climates should be chosen.

- o) Consider decorating areas of the lawn with rocks, gravel, wood chips, or other materials that require no water at all.
- p) Do not “sweep” walks and driveways with the hose. Use a broom or a rake instead.
- q) Use a bucket of soapy water, and use the hose only for rinsing when washing the car.

Monitor your water usage on the Internet with West University Place’s “Customer Connect” portal:

- a) Have your last water bill available for required information (account number and last billed dollar amount).
- b) Go to: www.westutx.gov
- c) Hover over “Quick Links” and click on the “Customer Connect” link.
- d) From the Customer Connect portal, click on “Register” at the bottom of the page to get started. It is simple and easy to monitor your water usage from this site.