

EXHIBIT 6  
WATER CONSERVATION PLAN



# WATER CONSERVATION PLAN

2019



# WATER CONSERVATION PLAN

WELLBORN SPECIAL UTILITY DISTRICT

## 1. INTRODUCTION

The Wellborn Special Utility District (SUD, a.k.a. the District), in an effort to conserve the fresh water supply of the area, will initiate a program to educate the customers of the district on reasons for water conservation and methods of water conservation.

The District’s service area’s current supply is from seven (7) water wells drawing from the Carrizo-Wilcox, Simsboro and Yequa aquifers and a surface water plant drawing from the Navasota River. Additional water is purchased from The Cities of Bryan and College Station.

The District is aware of the growing need to conserve its water supply. It is the goal of the Wellborn SUD to promote overall water conservation upon implementation of this conservation plan. Achieving this goal would, in effect, increase the capacity of the water supply facilities.

## 2. UTILITY EVALUATION

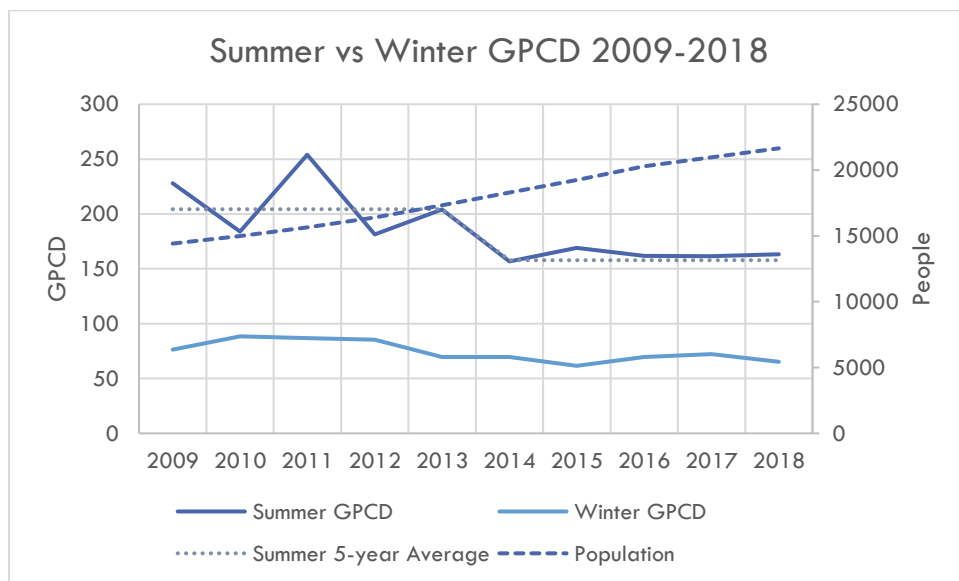
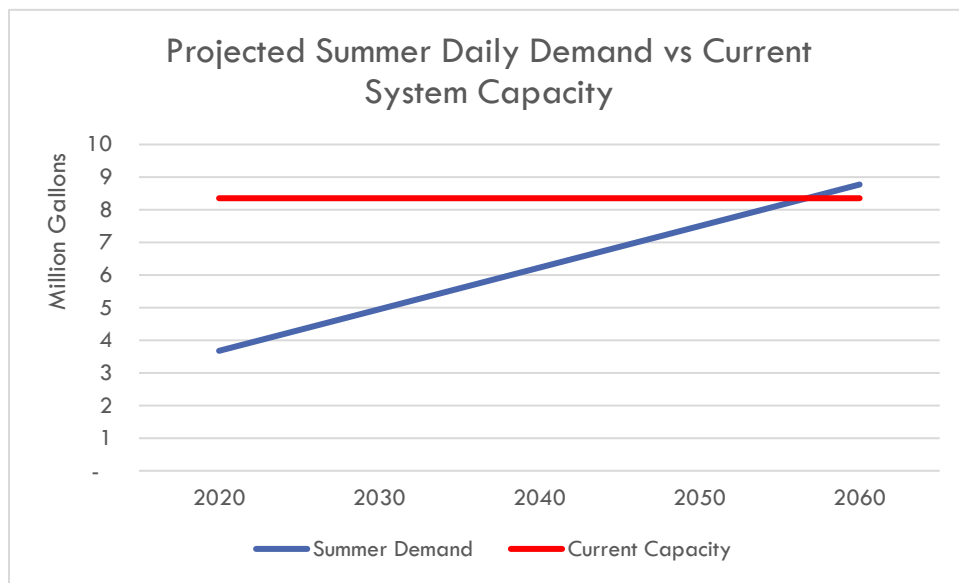
### 2.1. SERVICE AREA STATISTICS

<i>POPULATION</i>	21750	
<i>SURFACE AREA</i>	157 SQ MI	
<i>NUMBER OF CONNECTIONS</i>	8559 RESIDENTIAL	91 COMMERCIAL
<i>YEALRY RATE OF NEW CONNECTIONS</i>	319 RESIDENTIAL	13 COMMERCIAL
<i>2018 PEAK DAILY DEMAND</i>	5,261,000 GALLONS	
<i>5-YEAR AVG SUMMER DAILY DEMAND</i>	3,172,410 GALLONS	
<i>5-YEAR AVG WINTER DEMAND</i>	1,321,206 GALLONS	
<i>PEAKING FACTOR (PEAK/AVG DEMAND)</i>	1.66	
<i>PEAK DAILY CAPACITY</i>	8,352,000 GALLONS	
<i>SAFE ANNUAL YIELD OF WATER SUPPLY</i>	1,500,000,000 GALLONS	

## 2.2. POPULATION AND WATER USE PROJECTIONS

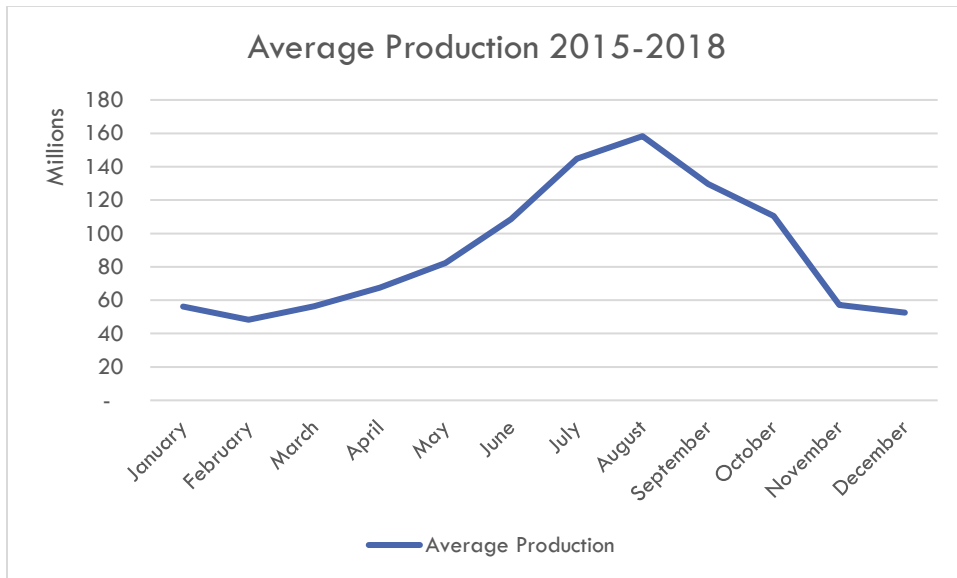
(at current 5 year average summer demand – 158 GPCD)

	EST. CONNECTIONS	EST. POPULATION	EST. DEMAND (GALLONS/DAY)
2020	9,196	23,267	2,745,493
2030	12,383	31,330	3,696,940
2040	15,570	39,393	4,648,387
2050	18,757	47,456	5,599,834
2060	21,944	55,519	6,551,281



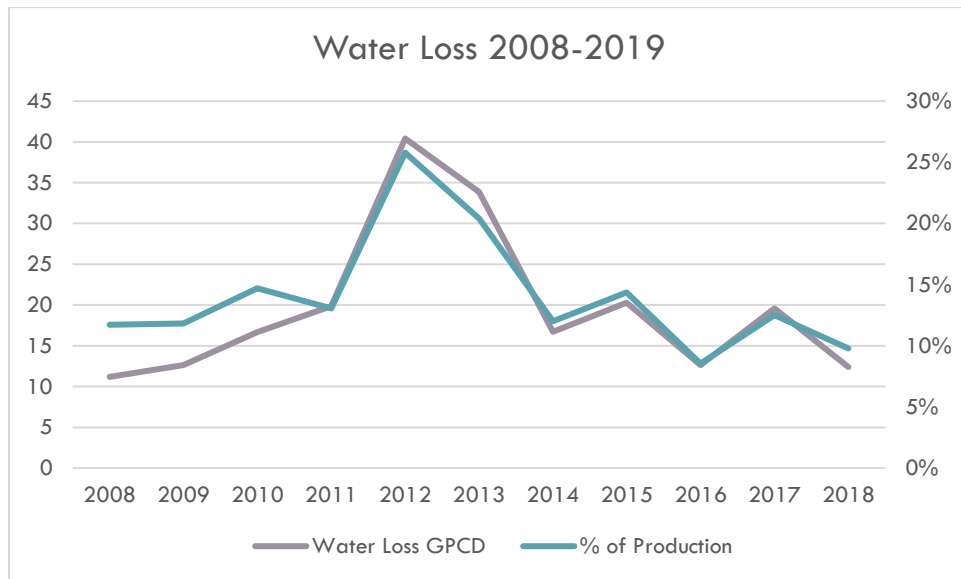
### 2.3. MONTHLY WATER PRODUCTION

	2018	2017	2016	2015	Avg
JANUARY	56,742,000	68,719,000	51,691,000	47,458,000	56,152,500
FEBRUARY	48,467,000	48,752,000	57,466,000	38,436,000	48,280,250
MARCH	58,729,000	69,242,000	55,378,000	42,308,000	56,414,250
APRIL	65,628,000	88,006,000	73,261,000	42,843,000	67,434,500
MAY	88,670,000	104,238,000	92,969,000	43,157,000	82,258,500
JUNE	139,187,000	108,140,000	118,282,000	68,626,000	108,558,750
JULY	130,043,000	159,559,000	162,393,000	126,936,666	144,732,917
AUGUST	154,608,000	154,694,000	141,270,000	182,597,000	158,292,250
SEPTEMBER	101,754,000	138,462,000	125,447,000	152,551,000	129,553,500
OCTOBER	67,553,000	129,372,000	105,423,000	139,838,000	110,546,500
NOVEMBER	47,567,000	74,713,000	52,503,000	53,803,000	57,146,500
DECEMBER	41,892,000	56,311,000	57,477,000	54,254,000	52,483,500
TOTAL	1,000,842,018	1,200,208,000	1,093,560,000	992,807,666	1,071,853,917



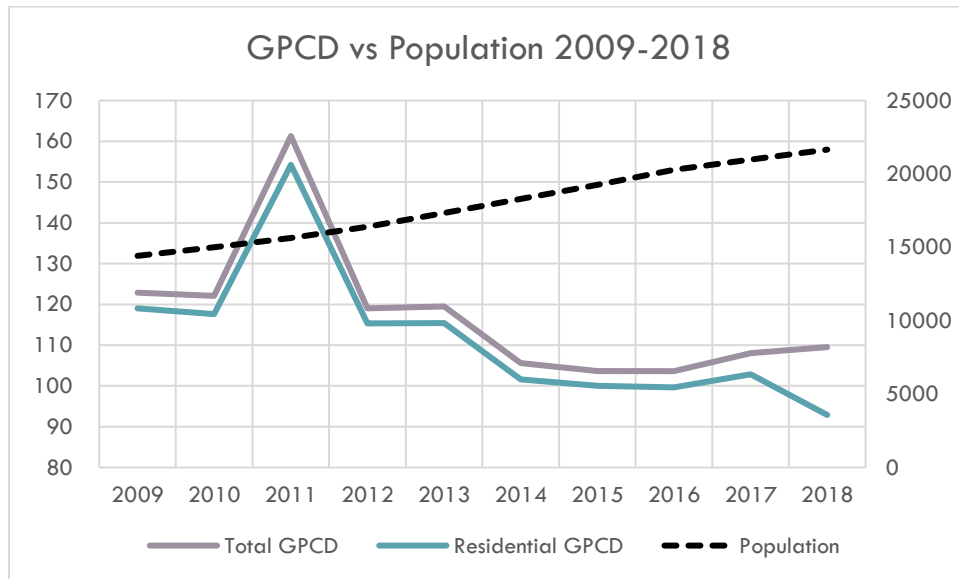
## 2.4. WATER LOSS

	PRODUCED	USED	LOSS	EST. POPULATION	GPCD
2018	1,000,840,000	902,929,665	97,910,335	21,654	12
2017	1,200,208,200	1,050,249,469	149,958,731	20,971	20
2016	1,093,560,200	1,000,115,797	93,444,403	20,280	13
2015	992,807,666	850,329,862	142,477,804	19,253	20
2014	928,829,280	817,231,466	111,597,814	18,305	17
2013	1,050,744,000	214,283,551	214,283,551	17,328	34
2012	937,734,337	695,945,956	241,788,381	16,389	40
2011	867,443,100	754,156,100	113,287,100	15,635	20
2010	621,284,755	529,966,712	91,318,043	14,998	17
2009	563,512,200	496,956,200	66,556,000	14,418	13
2008	468,640,450	413,709,100	54,931,350	13,455	11



## 2.5. WATER USE

	Residential	Commercial	Population	Res. GPCD	Total GPCD
2018	734,124,900	902,929,665	21654	93	110
2017	787,212,600	1,050,249,469	20971	103	108
2016	737,413,400	1,000,115,797	20280	100	104
2015	703,009,600	850,329,862	19253	100	104
2014	678,755,800	817,231,466	18305	102	106
2013	729,850,100	214,283,551	17328	115	119
2012	690,055,300	695,945,956	16389	115	119
2011	880,103,100	754,156,100	15635	154	161
2010	644,041,800	529,966,712	14998	118	122
2009	626,245,500	496,956,200	14418	119	123



### 3. CONSERVATION METHODS

The conservation plan consists of the following components. The schedule of implementation of each component of the program (if applicable) is included within the description of the component.

---

#### 3.1. EDUCATION AND INFORMATION PROGRAM

Wellborn SUD will promote water conservation by informing the public of ways to conserve water. The following methods will be used to inform the water users and will be conducted each year. The schedule of implementation of each component of the program (if applicable) is included within the description of the component.

---

#### 3.2. WEBSITE

Water conservation tips and outdoor and lawn watering conservation tips will be included on the District website.

---

#### 3.3. ANNUAL MAIL OUTS

One (1) direct mail-out will be made each year during the peak use periods (May to September). Mail-outs will contain information on the general program, drought contingency restrictions, indoor water conservation tips, outdoor and lawn watering conservation tips, plumbing recommendations and information about retrofit devices for existing plumbing.

---

#### 3.4. NEW CUSTOMERS

All printed information will be provided to all new customers at the time they sign up for service.

---

#### 3.5. BVWATERSMART PROGRAM

New and existing customers will be encouraged to participate in the local BVWatersmart Program at [bvwatersmart.org](http://bvwatersmart.org).

---

#### 3.6. SUMMER IRRIGATION RESTRICTIONS

In 2018 the District amended its drought contingency plan to include "Stage 0", which implements mandatory irrigation restrictions starting June 1<sup>st</sup> and ending September 30<sup>th</sup> of every year. Customers are limited to three days of landscape irrigation per week and encouraged to limit themselves to two days.



---

### 3.7. WATER RATE STRUCTURE

A water rate structure which encourages water conservation has been implemented. The rate structure includes increasing block rate and a minimum monthly charge which varies by meter size:

	RESIDENTIAL	1"	1.5"	2"	3"
<i>MINIMUM CHARGE</i>	\$26.00	\$52.00	\$130.00	\$208.00	\$468.00
<i>1-2,000 GALLONS</i>	\$3.30 PER 1000 GALLONS				
<i>2,001-10,000 GALLONS</i>	\$3.60 PER 1000 GALLONS				
<i>10,001-20,000 GALLONS</i>	\$4.05 PER 1000 GALLONS				
<i>20,001-30,000 GALLONS</i>	\$4.55 PER 1000 GALLONS				
<i>30,001-40,000 GALLONS</i>	\$5.70 PER 1000 GALLONS				
<i>40,001-50,000 GALLONS</i>	\$6.40 PER 1000 GALLONS				
<i>50,001- + GALLONS</i>	\$7.10 PER 1000 GALLONS				

---

### 3.8. PLUMBING CODE REQUIREMENTS

The Board of Directors of Wellborn SUD adopted a Resolution on July 18, 1995 which requires new customers to install plumbing fixtures that will aid in water conservation. A copy of this Resolution with the plumbing codes is provided in Appendix C

---

### 3.9. WATER LOSS PREVENTION PROGRAM

---

#### 3.9.1. METERING

The District currently meters 100% of the water used. All meters are of modern design and construction and are highly accurate. The meters are capable of limited range radio communication for remote data collection, and meter software is fully integrated with the District's digital billing system. The District has a policy of testing all meters which appear to have abnormally high or low water usage. Additionally, periodic testing or replacement is performed on a schedule which depends on the type of meter.

- **Production meters** – All water produced by the wells, the surface water treatment plant, and the interconnects with the cities is metered and recorded electronically and manually. Production meters are tested annually for accuracy.
- **Commercial meters** – All meters larger than 1" are tested annually for accuracy.
- **Retail meters** – All meters 1" and smaller are replaced every 10 years.

---

#### 3.9.2. MONTHLY AUDITING

Production and sales numbers are tabulated monthly and reported to the Board of Directors. Any unusual or unexpected changes in these numbers will be investigated and any leaks or illegal connections found as a result will be remediated as soon as possible.

---

### 3.9.3. BILLING SYSTEM

The District will maintain a digital billing system which is capable of high or abnormal usage alerts. Additionally, customer usage ranking reports will be generated periodically to identify excessive residential or commercial use.

---

## 3.10. LEAK DETECTION PROGRAM

Broken water mains can result in millions of gallons of wasted water. Early detection, location, and isolation of leaks is critical to preventing unnecessary water loss. The District will reduce both the number of leaks and the time it takes to locate and isolate them using multiple strategies, outlined below:

---

### 3.10.1. 24 HOUR REPAIR TEAM

The District will maintain an adequate distribution maintenance staff which is available to locate and repair leaks on a 24-hour basis.

---

### 3.10.2. SCADA SYSTEM ALERTS

The District has installed and will maintain a modern Supervisory Control and Data Acquisition (SCADA) system. This allows management and maintenance personnel to monitor system performance and storage levels on a 24-hour basis from the office via desktop or in the field via a mobile application. Additionally, the SCADA system incorporates a fully customizable alert system which contacts essential personnel by phone call or electronically if there are changes in the system which indicate a leak or other problem.

---

### 3.10.3. GIS

The District is in the process of developing a detailed Geographic Information System (GIS) which, when completed, will assist repair personnel in locating and isolating leaks, and will facilitate system performance analysis which could identify unstable portions of infrastructure before leaks occur.

---

### 3.10.4. VISUAL INSPECTIONS

Distribution and production personnel will perform visual inspections of the system during meter reading routes, maintenance calls, and other field activities. Any visible leaks or evidence of leaks will be reported and investigated as soon as possible to minimize water loss.

---

### 3.10.5. INFRASTRUCTURE AND PROCEDURAL IMPROVEMENTS

Portions of the system are susceptible to breakage due to changes in pressure when certain system components are taken on or off line. This has historically been the cause of large-volume leaks. The District is in the process of identifying these problems and installing improved infrastructure such as pressure reducing valves to reduce the occurrence of large leaks. Management has also implemented a policy requiring developers to install valves on all sides of new tie-ins to the system. This allows greater flexibility in re-routing water during leak repairs and system maintenance.

## 4. GOALS

	5-YR AVERAGE	BASELINE	5-YR GOAL	10-YR GOAL
TOTAL GPCD	106	106	104	102
RESIDENTIAL GPCD	99	99	97	95
WATER LOSS (GPCD)	16.3	16.3	16.0	15.7
WATER LOSS (%)	11%	11%	10.5%	10%

### 4.1. BASELINE

Per capita water use and water loss have been basically steady for the last five years. For this reason, the 5 year average will be used as the baseline.

### 4.2. FIVE- AND TEN-YEAR TARGETS

Savings as high as 14 GPCD were recorded in 2018 (see section 2.5). These were most likely accomplished by the new rate structure and mandatory summer watering restrictions. However, over time average savings may be reduced due to fluctuations in weather, population growth, and customer participation. As summarized in the table above, the District establishes the goal of a 2% reduction in all metrics in 5 years, and 4% in all metrics in 10 years.

## 5. PLAN EVALUATION

### 5.1. METHODS OF TRACKING EFFECTIVENESS

#### 5.1.1. RECORDS

The District will continue to keep records of water production and consumption. In addition, production and consumption numbers will be entered into a new dedicated database designed to track the effectiveness of this conservation plan. This database will be maintained by the Assistant General Manager and will be updated monthly if possible.

A separate database will be established which will be designed to track and analyze water main leaks. This database will be used in conjunction with the GIS (once it is completed) to identify areas of the system in need of improvements to reduce water loss. This database will include details for each leak, including location, pipe size, pipe material, possible cause, and an estimation of the volume lost during the location and isolation period.

#### 5.1.2. ANNUAL REVIEW

Management will review the records compiled in these databases annually. The numbers gathered over the previous year will be used to evaluate the effectiveness of the overall conservation plan in the following ways:

- Population estimates based on new connections to the system will be compared to the projections included in this plan.
- Water-use, production, and loss numbers will be compared to historic averages and projected goals, and any inconsistencies will be investigated.
- Progress toward the 5- and 10-year goals will be measured.

The information gathered in this review will be used to generate the annual report (section 5.2) and to recommend amendments to the overall conservation plan.

## 5.2. CONSERVATION PLAN ANNUAL REPORT

The District will file an annual report with the Executive Administrator which addresses the progress and effectiveness of this Water Conservation Plan. The report will address:

- Implementation progress and status
- Public response
- Effectiveness of the water conservation program in reducing water use.

The District shall maintain an approved water conservation program in effect until all financial obligations to the State have been discharged and shall report annually to the executive administrator on the implementation and status of required water conservation programs for three years after the date of loan closing. If the executive administrator determines that the water conservation plan is not in compliance with the approved water conservation plan, the political subdivision shall continue to supply annual reports beyond the three years until the executive administrator determines that deficiencies in the plan have been resolved.

## 6. IMPLEMENTATION AND ENFORCEMENT

### 6.1. IMPLEMENTATION

This water conservation plan was adopted by a resolution of the Board of Directors of Wellborn Special Utility District (Appendix B). The General Manager of the district is responsible for implementation.

### 6.2. ENFORCEMENT

This Water Conservation Plan will be enforced by the following methods:

---

#### 6.2.1. NEW SERVICE REQUIREMENTS

New service taps will not be given to customers who do not meet the requirements of the water conservation plumbing fixtures.

---

#### 6.2.2. ENFORCEMENT OF WATER RATES

The water rate structure will be enforced: customers who do not pay their water bill will be assigned late fees and ultimately have their service discontinued.

## 7. APPENDIX A

### 7.1. INFORMATION FOR DISTRIBUTION

The following suggestions on ways to save water will be included in the public information:

#### **Bathroom**

- *Take a shower instead of filling the tub and taking a bath. Showers usually use less water than tub baths.*
- *Install a low-flow shower head which restricts the quantity of flow at 60 psi to no more than 1.8 gallons per minute.*
- *Take short showers and install a cutoff valve or turn the water off while soaping and back on again only to rinse.*
- *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.*
- *Reduce the level of the water being used in a bath tub by one or two inches if a shower is not available.*
- *Turn water off when brushing teeth until it is time to rinse.*
- *Do not let the water run when washing hands. Wet hands thoroughly, turn off water while soaping and scrubbing, and turn water on again to rinse. A cutoff valve may also be installed on the faucet.*
- *Shampoo hair while in the shower. Shampooing in the shower takes only a little more water than is used to shampoo hair while in the bath and takes much less time than shampooing and bathing separately.*
- *Use the basin to hold hot water when shaving instead of letting the faucet run continuously.*
- *Test toilets for leaks. To test for a leak, add a few drops of food coloring to the water in the tank. The toilet should not be flushed during this test. If the customer sees the coloring appear in the bowl within a few minutes, the fixture needs adjustment or repair.*
- *Use a toilet displacement device. A one-gallon plastic milk bottle can be filled with stones or with tap water, recapped and placed in the toilet tank. This will reduce the amount of water in the tank but still provide enough flushing action. (Bricks -which some people use for this purpose- are not recommended since they crumble eventually and could cause damage to the working mechanisms, necessitating a call to the plumber.) Displacement devices should never be used with the new low-volume flush toilets.*
- *Install faucet aerators to reduce water consumption.*
- *Never use the toilet to dispose of cleansing tissues, cigarette butts or other trash. This can waste a great deal of water and places an unnecessary load on the sewage treatment plant.*
- *Install a new low-volume flush toilet that uses 1.6 gallons or less per flush when building a new home or remodeling a bathroom.*

#### **Kitchen**

- *Use a pan of water (or place a stopper in the sink) for rinsing pots & pans and cooking, rather than turning on the water faucet each time a rinse is needed.*

- 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.
- Use the sink disposal sparingly, and never use it for just a few scraps.
- 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 the kitchen counter, to avoid opening the refrigerator door frequently.
- Use a small pan of cold water when cleaning vegetables rather than letting the faucet run continuously.
- 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 more nutritious since vitamins and minerals are not poured down the drain with the extra cooking water.
- Use a pan of water for rinsing when hand-washing dishes, instead of running the faucet continuously.
- Always keep water conservation in mind and think of other ways to save in the kitchen. Small kitchen savings from not making too much coffee or letting ice cubes melt in a sink can add up in a year's time.

### **Laundry**

- Wash only a full load when using an automatic washing machine (32 to 59 gallons are required per load).
- Use the lower water level setting on the washing machine for light loads whenever possible.
- Use cold water as often as possible to save energy and to conserve the hot water for uses which cold water cannot serve. (This is also better for clothing made of today's synthetic fabrics.)
- Appliances and Plumbing
- Check water requirements of various models and brands when considering purchasing any new appliance that uses water. Some use less than others.
- Check all water line connections and faucets for leaks. If the cost of water is \$7.10 per 1,000 gallons, one could be paying a large bill for water that simply goes down the drain because of leaks. A slow drip can waste as much as 170 gallons of water EACH DAY (5,000 gallons per month) and can add as much as \$35.50 per month to the water bill.
- Learn to replace faucet washers so that drips can be corrected promptly. It is easy to do, cost very little and can represent a substantial amount saved in plumbing and water bills.
- Check for water leakage that the customer may be entirely 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 checked. If it continues to run or turn, a leak probably exists and needs to be located.
- Insulate all hot water pipes to avoid the delays experienced waiting for the water to "run hot".
- Be sure the thermostat on the hot water heater is not set too high. Extremely hot settings waste water and energy because the water often must be cooled with cold water before it can be used.
- Use a moisture meter to determine when house plants need water. More plants die from over-watering than from being on the dry side.

### **Outdoor Water Uses**

- Water lawns early in the morning during the hotter summer months. Most of the water used on the lawn can simply evaporate between the sprinkler and the grass.

- *Use a sprinkler that produces large drops of water, rather than a fine mist, to reduce evaporation.*
- *Turn soaker hoses so the holes are on the bottom to reduce evaporation.*
- *Water slowly for better absorption, and never water in high winds.*
- *Do not water streets, sidewalks or driveways. They will never grow a thing.*
- *Condition the soil with compost before planting grass or flower beds so that water will soak in rather than run off.*
- *Fertilize lawn at least twice a year for root stimulation. Grass with a good root system makes better use of less water.*
- *Learn to know when grass needs watering. If it has turned a dull grey-green or if footprints remain visible, it is time to water.*
- *Do not water too frequently. Too much water can overload the soil so that air cannot get to the roots and can encourage plant diseases.*
- *Do not over-water. Soil can absorb only so much moisture and the rest simply runs off. A timer will help - either a kitchen timer or an alarm clock will do. An inch of water applied every 5 to 7 days will keep most Texas grasses alive and healthy.*
- *Operate automatic sprinkler systems only when the demand on the District's water supply is lowest: between 4 and 6 AM.*
- *Do not "scalp" lawns when mowing during hot weather. Taller grass holds moisture better. Instead, grass should be cut often, so that only 1/2 to 3/4 inch is trimmed off each time. A better-looking lawn will result.*
- *Use a watering can, or hand water with the hose, in small areas of the lawn that need more frequent watering: those near walks, driveways or in especially hot, sunny spots.*
- *Learn which types of grass, shrubbery and plants do best in the area, in which parts of the lawn, and then plant accordingly. If one has a heavily shaded yard, no amount of water will make roses bloom.*
- *Consider decorating areas of the lawn with rocks, gravel, wood chips or other materials that require no water at all.*
- *Do not use water and a hose to "sweep" walks and driveways. Use a broom or rake instead.*
- *When washing the car, use a bucket of soapy water and use the hose only for rinsing*