

City of Spring Valley

WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN



October 24, 2000



CMI Job No. 00-050

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INTRODUCTION

In response to recent problems with drought across the State, the 75th legislature has passed Senate Bill 1 (SB1). This legislation requires Regional Water Planning Groups to develop water plans to be incorporated into a State Water Plan. The goal is to "... provide for the orderly development, management, and conservation of water resources and preparation for and response to drought conditions, in order that sufficient water will be available at a reasonable cost to ensure public health, safety, and welfare: further economic development: and protect the agricultural and natural resources of the entire state." As part of the Regional and State Water Plans, all communities are required to develop Water Conservation and Drought Contingency Plans. This coordinated effort by all communities across Texas will ensure success in achieving the goals set by SB1. Acting in concert with other communities throughout the State, the City of Spring Valley has prepared this Water Conservation and Drought Contingency Plan.

The City of Spring Valley's water production and distribution and wastewater collection systems are owned by the City of Spring Valley. Wastewater is collected and treated by the City of Houston under contract. Under policy direction of the City Council, the City Administrator has the managing control and operation of the City's water and wastewater facilities. The City Council must approve final budgets and rates.

The system serves an area of approximately 800 acres. All residential and commercial sites use the City water and wastewater systems.

It is the goal of the City to enact a Water Conservation and Drought Contingency Plan to achieve a 10% reduction in water consumption through conservation and to protect the City from the adverse effects of drought.

UTILITY PROFILE

- Population – 3565
- Projected population in 2010 – 4593
- Connections
 - Residential – 1397
 - Commercial – 45
 - Industrial – 0
 - Public & Institutional – 10
- Total connections – 1452
- Total projected connections in 2010 – 1871

- New connections in 1999 – 8
- Monthly water production, billing, and sales (1999)

	Production (million gallons)	Billing (million gallons)	Sales (dollars)
January	15.9	13.5	\$39,470
February	16.4	13.6	\$39,816
March	19.1	15.8	\$44,786
April	27.5	18.9	\$51,782
May	28.0	19.0	\$50,123
June	18.0	16.2	\$45,897
July	22.0	17.9	\$49,579
August	36.0	32.1	\$77,365
September	35.9	32.9	\$92,979
October	26.5	20.6	\$55,797
November	22.7	21.4	\$57,527
December	16.4	12.9	\$38,245
Total	284.4	234.8	\$643,366

- Total water revenues (1998-1999 fiscal year) – \$636,494
- Total water expenditures (1998-1999 fiscal year) –\$ 631,822
- Peak daily production (1999) – 1,598,000 gallons
- Water production system
 - 1- 1300 gpm water well
 - 3 – 210,000 gallon ground storage tanks
 - 3 – 800 gpm booster pumps
 - 2 – 1250 gpm booster pumps
 - 2 – 20,000 gallon hydro-pneumatic tanks
 - One (1) interconnection to the City of Houston
- Wastewater treatment system – All wastewater is treated by the City of Houston under contract

CONSERVATION GOALS

- Per capita water use – 219 gallons per person per day
- Projected per capita water use (2010) = 197 gallons per person per day

Conservation is expected to be a long term program, with a time frame of at least ten years duration. It is expected to take ten years to obtain the full benefits of applying retrofits and replacing fixtures in the community, as well as getting the community to practice water conservation techniques.

The City will encourage all new construction or substantial modification to use water saving plumbing fixtures, e.g. low flow toilets, showerheads, and faucets. Owners of existing structures will be encouraged to retrofit with water-saving devices. High

consumption users will be identified and encouraged to retrofit with water-saving devices. The City will investigate and identify uses for recycled water for public and institutional irrigation. Owners of new construction or substantial modification will be encouraged to use xeriscape landscaping. Low flow designs will be encouraged for new irrigation systems. High consumption irrigation users will be identified and encouraged to modify their designs to reduce consumption.

The following percentage reductions are used for estimating projected consumption:

Costing and pricing (10% increase)	3% reduction
Conservation practices	2% reduction
Retrofits (toilets, showerheads, faucets)	2% reduction
Outdoor irrigation reduction	2% reduction
<u>Fixture replacements</u>	<u>1% reduction</u>
Total	10% reduction

The basis for estimates of savings are the USEPA Water Conservation Guidelines, Appendix B.

The City will monitor monthly the efficiency and effectiveness of the Water Conservation Plan by comparing with previous consumption patterns. The success of the Water Conservation Plan can thus be gauged, and any necessary changes made.

METERING

The City uses production meters on its well and emergency supply lines to measure the amount of water supplied. These meters are checked for accuracy and calibrated once a year to within plus-or-minus 5.0% accuracy. In addition the water operators monitor daily production for unusual changes in apparent usage. Any unusual change will trigger a meter test by volumetric means.

The City measures 100% of the water used, and has a policy that all connections will be metered. A portable meter is available for metering water use from fire hydrants. Other water uses, such as major water line leaks and fire fighting, are estimated. Meter readings are monitored each month for abnormally high or low usage, with high usage indicating a possible customer leak and low usage indicating a possible inaccurate meter. Both situations are investigated by City staff. All meters are subjected to the following regular testing and/or repair schedule:

- Production meters – once a year
- Service meters 2 inch or larger – once every three years
- Service meters less than 2 inch – once every five years

Meters indicating a possible inaccuracy are tested and/or repaired. Subsequent to repair, meters failing an accuracy requirement of plus-or-minus 5.0 per cent are replaced.

WATER LOSS

Distribution crews periodically inspect the distribution system for leaks. They look for suspicious water flow in streets and storm sewers. They respond immediately to reports of leaks and effect repairs in a timely fashion. Meter readers inspect for illegal connections as part of their meter reading duties. Distribution crews abandon services properly and promptly to prevent illegal usage. The Building Inspection Department notifies the Water Distribution Department promptly of vacant properties so that service can be disconnected and prevent illegal usage.

Monthly comparisons are made of water production and usage to identify and correct discrepancies. Customers with abnormally high usage are identified and investigated for onsite leaks or illegal connections.

PUBLIC EDUCATION AND INFORMATION

A program of education will be instituted to inform the public of issues regarding Water Conservation and Drought Contingency. A packet of information will be made available to the public, which will include:

- The reasons Water Conservation and Drought Contingency planning must be practiced
- Suggestions for how the public may conserve water in their daily activities
- The availability of low consumption appliances and fixtures
- How to retrofit existing fixtures with water saving devices
- Use of xeriscape landscaping and water saving irrigation
- Trigger Conditions and Drought Response Measures to Drought Stages
- Implementation and Enforcement of Drought Response Measures

This packet will be made available to new residents of the City. Selected excerpts will be used as bill stuffers and mailouts quarterly during the first year of the program. Thereafter a semi-annual distribution will be timed to correspond with the peak summer and winter demand periods. Select City personnel will give talks to area groups concerning Water Conservation and Drought Contingency. News articles will be placed in local media, with the initial article explaining the new Water Conservation and Drought Contingency programs. City personnel will be trained in advising and educating customers on Water Conservation and Drought Contingency issues.

The public is to be notified of discussion and possible action on the Water Conservation and Drought Contingency Plan at its regularly scheduled meeting of October 17, 2000. The public will have an opportunity for comments and questions at this meeting. Suggestions by the public at this meeting will be taken under advisement.

Information as listed in Appendix B and sources as listed in Appendix A will be the basis for public education.

RATE STRUCTURE

The city of Spring Valley has a water rate structure that is cost-based and does not promote excessive use of water. The wastewater rates are based on water consumption. Customers pay both water and wastewater charges for the water they consume, which promotes conservation.

Residential rates

- Water rate:
 - \$12.00 for the first 3,000 gallons
 - \$2.25 for each additional 1,000 gallons
- Sewer rate:
 - \$13.00 monthly fixed fee
 - \$2.71 for each 1,000 gallons

Commercial rates

- Water rate:
 - \$15.00 for the first 3,000 gallons
 - \$2.75 for each additional 1,000 gallons
- Wastewater rate:
 - \$13.00 monthly fixed fee
 - \$3.96 for each 1,000 gallons

ORDINANCE NO. _____

AN ORDINANCE FINDING AND DETERMINING THAT THE WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN FOR THE CITY OF SPRING VALLEY, TEXAS, A COPY OF WHICH IS ATTACHED HERETO AND MARKED EXHIBIT "A", HAS BEEN PREPARED IN ACCORDANCE WITH ALL APPLICABLE LAWS, RULES, REGULATIONS, STANDARDS AND GUIDELINES PROMULGATED BY APPROPRIATE AUTHORITY, AND FURTHER, THAT SUCH PLAN IS ADEQUATE TO PROVIDE AN EFFECTIVE MEANS FOR WATER CONSERVATION AND DROUGHT CONTINGENCY WITHIN THE CITY LIMITS OF THE CITY OF SPRING VALLEY, ADOPTING THE SAME AS THE OFFICIAL WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN FOR THE CITY OF SPRING VALLEY, TEXAS, AND REQUIRING ADHERENCE TO ALL REQUIREMENTS, CONDITIONS AND PROCEDURES SPECIFIED THEREBY.

WHEREAS, heretofore previously, the City of Spring Valley has undertaken such studies and surveys as were necessary to determine appropriate facts upon which to base and develop a Water Conservation and Drought Contingency plan for the City of Spring Valley; and

WHEREAS, as a result of such preliminary work, a Water Conservation and Drought Contingency plan has been prepared, which fairly represents a sound policy for the City of Spring Valley; NOW, THEREFORE,

BE IT ORDAINED BY THE CITY COUNCIL
OF THE CITY OF SPRING VALLEY, TEXAS:

1. That the City Council of the City of Spring Valley hereby finds and determines that the Water Conservation and Drought Contingency plan, a copy of which is attached hereto and marked Exhibit "A", has been prepared in accordance with all applicable laws, rules, regulations, standards and guidelines promulgated by appropriate authority.
2. That the City Council of the City of Spring Valley further finds and determines that the said Water Conservation and Drought Contingency plan is adequate to provide an effective means for water conservation and drought management within the city limits of the City of Spring Valley.
3. That the Water Conservation and Drought Contingency plan, a copy of which is attached hereto and marked Exhibit "A", is hereby adopted as the official Water Conservation and Drought Contingency Plan for the City of Spring Valley, Texas.
4. Further, that all of the requirements, conditions and procedures specified in the attached Water Conservation and Drought Contingency Plan for the City of Spring Valley shall be adhered to by all persons affected thereby, including but not limited to all residents, citizens and inhabitants of the City of Spring Valley.
5. Penalty. Any person, firm, partnership, association, corporation, company, or organization of any kind who or which intentionally, knowingly, recklessly, or with criminal negligence violates any of the provisions of this Ordinance shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined in an amount not to exceed \$500. Each day during which such violation shall exist or occur shall constitute a separate offense. The owner or owners of any property or premises and any agent, contractor, builder, architect, person, or corporation who shall assist in the commission of such offense shall be guilty of a separate offense, and upon conviction thereof, shall be punished as above provided.
6. Severability. In the event any section, paragraph, subdivision, clause, phrase, provision, sentence, or part of this Ordinance or the application of the same to any person or circumstances shall for any reason be adjudged invalid or held unconstitutional by a court of competent jurisdiction, it shall not affect, impair, or invalidate this Ordinance as a whole or any part or provision hereof other than the part declared to be invalid or unconstitutional; and the City Council of the City

of Spring Valley, Texas, declares that it would have passed each and every part of the same notwithstanding the omission of any such part thus declared to be invalid or unconstitutional, or whether there be one or more parts.

7. Repealer. All ordinances or parts of ordinances inconsistent or in conflict herewith are, to the extent of such inconsistency or conflict, hereby repealed.

PASSED and APPROVED this, the _____ day of _____, 2000.

Mayor, City of Spring Valley, Texas

ATTEST:

City Secretary

REGIONAL WATER PLANNING

Region H is the Regional Water Planning Group for the Houston-Galveston area. As part of its planning and management goals, Region H is required to submit its Regional Plan to be incorporated into the State Water Plan. Region H is also working with the Harris-Galveston Subsidence District to alleviate subsidence by promoting conversion from groundwater sources to surface water sources.

The population projection for 2010 is taken from the Region H projection. The plans to convert from groundwater to surface water are consistent with Region H and the Harris-Galveston Subsidence District planning to reduce groundwater pumping. This Water Conservation and Drought Contingency Plan is consistent with the goal of Region H in the conservation of water resources and preparation for and response to drought conditions.

The City is in Area 3 as designated by the Harris-Galveston Subsidence District. In coordination with the Subsidence District, the City will submit a plan by January 1, 2003 outlining the methods the City will take to reduce groundwater usage to less than 20% of total consumption. Tentative plans call for making three connections to the City of Houston to obtain surface water, thus meeting the Subsidence District requirement.

The City will submit a copy of this Water Conservation and Drought Contingency Plan to Region H upon adoption of this Plan by the City.

DROUGHT CONTINGENCY 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 conditions.

- A. Mild Drought
 1. Average Daily Water Usage reaches 1.3 million gallons per day (70% of plant capacity) for three consecutive days.
 2. Consideration will be given to weather conditions, time of year, and customer complaints of low water pressure.
- B. Moderate Drought
 1. Average Daily Water Usage reaches 1.5 million gallons per day (80% of plant capacity) for three consecutive days.
 2. Water pressures drop below 40 psi in the distribution system as measured by the pressure gauges in the system.
- C. Severe Drought
 1. The imminent or actual failure of a major component of the system which would cause a reduction in production capacity.
 2. Average Daily Water Usage reaches 1.6 million gallons per day (85% of plant capacity) for two consecutive days.
 3. Water Usage meets or exceeds 1300 gallons per minute (100% of plant capacity) for a period of 5 consecutive hours.
 4. Contamination of the supply source, water well, or storage tanks.
 5. Water pressures drop below 30 psi in the distribution system as measured by the pressure gauges in the system.

These Drought Stages reflect a response to the 1996 drought, the Drought of Record. The following Drought Contingency Measures respond to stages that preceded the 1996 occurrences of the water well running continuously for a period of more than twenty-four hours, and the water level in the ground storage tanks dropping to the low level alarm. These Drought Stages address the production limitations as well as the conditions of pressure and delivery in the distribution system.

DROUGHT CONTINGENCY MEASURES

The City may impose the following Curtailments as a response to Drought Trigger Conditions.

- Step I Curtailment

The City may restrict the use of water for outdoor sprinkling, watering of lawns and shrubs, and washing driveways and automobiles to certain areas of the city by days and to certain hours. Said restrictions will remain in effect until the City lifts the restrictions. The Curtailment shall include the following:

- Inform the public through the news media that a trigger condition has been reached, and that they should look for ways to voluntarily reduce water use. Specific voluntary steps which can be taken will be provided to the public by the City.
- Notify major commercial water users of the situation and request voluntary water use restrictions.
- The following mandatory lawn watering schedule shall be implemented. Customers with even numbered addresses may water on even numbered days of the month. Customers with odd numbered addresses may water on odd days of the month. Watering shall occur only between the hours of 8:00 pm to 6:00 am.
- During winter months, request water users to insulate pipes rather than running water to prevent freezing.

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- Step II Curtailment

The City will ban the use of water for outdoor sprinkling, watering of lawns and shrubs, and washing driveways and automobiles. Said restrictions will remain in effect until the City lifts the restrictions. The Curtailment shall include the following:

- Continue implementation of all relevant actions in preceding phase.
- Car washing, window washing, and driveway washing will be prohibited except when a bucket is used.
- The following water uses, not essential for public health or safety, are prohibited:
 - Street washing
 - Water hydrant flushing
 - Filling swimming pools
 - Golf course watering
 - Athletic field watering
 - Lawn and shrub watering

The Curtailments will be effective upon the City's giving Notice of Curtailment to the customers within the City, the posting of a Notice of Curtailment and notifying the news media of Curtailment. The Curtailments will be terminated upon the City

giving Notice of Termination. The City Council may amend, add, or delete any of these Rules and Regulations and shall notify the City Administrator at its regular meeting of said amendments, additions, or deletions. Any violation of the Curtailments adopted by the City shall carry a penalty and possible interruption of water service. The City Council may grant variances on a case-by-case basis on advice of the City Administrator. The Executive Director of the Texas Natural Resource Conservation Commission will be notified within five business days of implementation of either Step I or Step II Curtailment.

The following measures will be a response to Drought Contingency Trigger Conditions:

A. Mild Drought Contingency Measures

- Inform the customers within the City of a Mild Drought by the posting of a Notice of Mild Drought Condition and notifying the news media of a Mild Drought Condition.
- Included in the information to the public will be the recommendation that water users look for ways to conserve water.
- The public will be advised of the Mild Drought situation daily.

B. Moderate Drought Contingency Measures

- The Public will be informed of a Moderate Drought as above.
- The Step I Curtailment will be enacted by the City.
- The public will be advised of the Moderate Drought situation daily.

C. Severe Drought Contingency Measures

- The Public will be informed of a Severe Drought as above.
- The Step II Curtailment will be enacted by the City.
- The public will be advised of the Severe Drought situation daily.

In addition, the City may respond to a Moderate or Severe Drought situation with the following measures:

- The City may at its discretion operate one or more of the emergency interconnects to maintain pressure in the Distribution System.
- The City may prohibit certain industrial and commercial water users, not essential to the health and safety of the community, from using water.

Termination of the Drought Contingency Measures will take place when the Trigger Conditions which initiated the drought measures have subsided and a recurrence of those Trigger Conditions is unlikely to occur. The City will determine when Termination is appropriate. The public will be informed of the Termination of the Drought Contingency Measures in the same manner that they were informed of the initiation of the Drought Contingency Measures.

The Drought Contingency Plan will be reviewed at least every five years, or upon receipt of updated information concerning the water system, or upon revision of the Regional Water Plan of the Region H Regional Water Planning Group.

IMPLEMENTATION AND ENFORCEMENT

Any violation of the mandatory provisions of the Drought Contingency Plan may result in a penalty and/or interruption of water service. The City Administrator is empowered to enforce the mandatory provisions 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 Administrator.

APPENDIX A

WATER CONSERVATION & DROUGHT MANAGEMENT INFORMATION SOURCES

Texas Water Development Board
P.O. Box 13231
1700 N. Congress Ave.
Austin Tx 78711-3231
(512) 463 7847 voice
(512) 475 2053 fax
www.twdb.state.tx.us

Texas Natural Resource Conservation Commission
P.O. Box 13087
Austin Tx 78711-3087
(512) 239 1000
www.tnrcc.state.tx.us

Water Resource Center
U.S. EPA
Mail Code RC-4100
401 M Street, S.W.
Washington, D.C. 20460
Telephone: (202) 260-7786
Fax: (202) 260-0386
Internet: 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

PUBLIC INFORMATION SUGGESTIONS

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

A. Bathroom

1. Take a shower instead of filling the tub and taking a bath. Showers usually use less water than tub baths.
2. Install a low-flow shower head which restricts the quantity of flow at 60 psi to no more than 3.0 gallons per minute.
3. Take short showers and install a cutoff valve or turn the water off while soaping and back on again only to rinse.
4. Do not use hot water when cold 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.
5. Reduce the level of the water being used in a bath tub by one or two inches if a shower is not available.
6. Turn water off when brushing teeth until it is time to rinse.
7. Do not let water run when washing hands. Instead, hands should be wet, and water should be turned off while soaping and scrubbing and turned on again to rinse. A cutoff valve may also be installed on the faucet.
8. 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.
9. Hold hot water in the basin when shaving instead of letting the faucet continue to run.
10. 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.
11. Use a toilet tank displacement device. A one-gallon plastic milk bottle can be filled with stones or with water, 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 crumble eventually and could damage the working mechanism.) Displacement devices should never be used with new low-volume flush toilets.
12. Install faucet aerators to reduce water consumption.
13. Never use the toilet to dispose of cleaning tissues, cigarette butts, or other trash. This can waste a great deal of water and also places an unnecessary load on the wastewater treatment plant.

14. Install a new low-volume toilet that uses 1.6 gallons or less per flush when building a new home or remodeling a bathroom.

B. Kitchen

1. Use a pan of water (or place a stopper in the sink) for rinsing pots and pans and cooking implements when cooking rather than turning on the water faucet each time a rinse is needed.
2. Never run the dishwasher without a full load. In addition to saving water, expensive detergent will last longer and a significant energy saving will appear on the utility bill.
3. Use the sink disposal sparingly, and never use it for just a few scraps.
4. 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.
5. Use a small pan of cold water when cleaning vegetables rather than letting the faucet run.
6. 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.
7. Use a pan of water for rinsing when hand washing dishes rather than running the faucet.
8. 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 over a year's time.

C. Laundry

1. Wash only a full load when using an automatic washing machine (32 to 59 gallons are required per load).
2. Use the lowest water level setting on the washing machine for light loads whenever possible.
3. 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.)

D. Appliances and Plumbing

1. Check water requirements of various models and brands when considering purchasing any new appliance that uses water. Some use less water than others.
2. 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 \$10.00 per month to the water bill.
3. Learn to replace washers so that drips can be corrected promptly. It is easy to do, costs very little, and can represent a substantial amount saved in plumbing and water bills.

4. Check for water leakage 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, a leak probably exists and needs to be located.
5. Insulate all hot water pipes to avoid the delays (and wasted water) experienced while waiting for the water to turn hot.
6. Be sure the hot 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.
7. Use a moisture meter to determine when house plants need water. More plants die from over-watering than from being on the dry side.

E. Out-of-Doors Use

1. Water lawns between the hours of 8:00 pm to 6:00 am during the hotter summer months. Much of the water used on the lawn can simply evaporate between the sprinkler and the grass.
2. Use a sprinkler that produces large drops of water, rather than a fine mist, to avoid evaporation.
3. Turn soaker hoses so the holes are on the bottom to avoid evaporation.
4. Water slowly for better absorption, and never water in high winds.
5. Forget about watering the streets, walks, and driveways. They will never grow a thing.
6. Condition the soil with compost before planting grass or flower beds so that water will soak in rather than run off.
7. Fertilize lawns at least twice a year for root stimulation. Grass with a good root system makes better use of less water.
8. Learn to know when grass needs watering. If it has turned a dull gray-green or if footprints remain visible, it is time to water.
9. 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.
10. 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. An inch and one-half of water applied once a week will keep most Texas grasses alive and healthy.
11. Operate automatic sprinkler systems only when the demand on the town's water supply is lowest. Set the system to operate between four and six am.
12. Do not scalp lawns when mowing during hot weather. Taller grass holds moisture better. Rather, grass should be cut fairly often, so that only $\frac{1}{2}$ to $\frac{3}{4}$ inch is trimmed off. A better looking lawn will result.
13. Use a watering can or hand water with the hose in small areas of the lawn that need more frequent watering (those near walks or driveways or in especially hot, sunny spots).

14. Learn what types of grass, shrubbery, and plants do best in the area and 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. In especially dry sections of the state, attractive arrangements of plants that are adapted to arid or semi-arid climates should be chosen.
15. Consider decorating areas of the lawn with rocks, gravel, wood chips, or other materials now available that require no water at all.
16. Do not "sweep" walks and driveways with the hose. Use a broom or rake instead.
17. Use a bucket of soapy water and use the hose only for rinsing when washing the car.