

2017 - WATER CONSERVATION PLAN

Prepared By:

**UTILITIES DIVISION
CITY OF AMARILLO**

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AMARILLO, TEXAS 79105-1971

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INTRODUCTION:

The 2017 Water Conservation Plan outlines specific water conservation goals for the next five years by a public water supplier, as set in the Water Conservation Program. The original plan was completed in 2002 and is reviewed and updated every five years. In 2007 the Water Conservation Plan was updated by Resolution No. 10-02-07-1 and updated in 2012 by Resolution 10-9-12.2. The Water Conservation Plan contains strategies for reducing consumption of water, improving the efficiency of the use of water, increasing the recycling and reuse of water, preventing the pollution of water and contains Best Management Practices to meet identified targets and goals. The following sections will explain how goals are developed, the specific measure of merit for each goal, and minimum requirements contained in TCEQ rule Title 30, Texas Administrative Code (TAC), Chapter 288.

GOAL DEVELOPMENT AND MEASURES OF MERIT:

I. GOAL DEVELOPMENT

Water Conservation Goals are categorized by area of control: supply side and demand driven. Supply side measures are those that are within the control of the City of Amarillo and the Sources that supply the water to the City. Demand driven measures are those controlled by the consumers. As each goal is developed, it will list what customer(s) will be targeted toward, how it will be implemented, and how it will be measured for effectiveness.

A. Supply Side. Measures include those that are under control of the City of Amarillo and the sources that supply water to the City. Factors that affect supply side measures include, but are not limited to the following:

- Capacity of the City water supply sources and characteristics of the distribution system
- Capacity of the wastewater system
- Water allocations from Canadian River Municipal Water Authority (CRMWA)
- Setting operating rates charged to consumers for usage of the water
- Resolutions, ordinances and codes controlling usage of the water
- Continuous updating of conservation programs
- Rates of source water recharge
- Alternate water sources
- Implementation of Drought Contingency Plan stages as indicated in the Drought Contingency Plan

B. Demand Side. Demand Driven measures are those driven by consumers. These include, but are not limited to:

- Various demographic information, such as personal interests, age, level of education, income and housing value
- Type and purpose of consumption (indoor vs. outdoor)
- Category of usage (residential, commercial, industrial and institutional)
- Participation in Water Conservation rebate and incentive programs
- Turf and landscape changes

See additions to Supply Side and Demand Side Measures on Page 3

C. Conservation. In addition to the above factors that affect goal development, the degree of conservation sought also aids in determining the specific goals for the next five years. There are two basic types of conservation: voluntary and mandatory.

- Voluntary - All or most water conservation measures that are noncompulsory. Many of the goals developed are of this type.
- Mandatory - The water conservation measures that are compulsory. They will be complied with whether they are passive and already in place, or mandated by local government. In addition to the mandatory conservation goals selected in this plan, the City may also implement its Drought Contingency Plan when necessary.

II. MEASURES OF MERIT

The primary device for measuring attainment of goals will be through conducting a water utility audit. Audits will be conducted annually based on the previous calendar year's water consumption. The audit will be conducted using reports from the Director of Utilities office and by completing the Utility Profile & Water Conservation Plan Requirements for Municipal Water Use by Public Water Suppliers (TCEQ-10218).

In general, water conservation goals are set so that the amount of water used per year decreases or remains the same as population increases and total demand decreases relative to total consumption. A measurement of merit will be included along with each conservation goal for the current year. Indicators of conservation goals met are:

- Reduction in usage of water as measured in gallons per capita per day (GPCD) for residential, commercial and industrial users
- Unaccounted for water as a percentage of gallons produced per year (%) for the overall water supply, distribution and treatment system
- Annual peak-to-average daily use ratio
- Quantity of wastewater treated
- Quantity of reused or recycled water; and/or
- Total usage

CONSERVATION GOALS FOR THE 2017 PLAN:

This section outlines conservation goals for the 2017 Plan. Those measures listed in the above section will be continued 'as is' in the 2017 Plan. Some of the measures will be modified slightly to reach their target audience and add a quantifiable means of tracking their progress towards conservation. Those measures are:

Supply Side Measures

- Water Supply Contracts (Conservation Plan provisions)
- Added 21 wells from the Potter County Well Field (additional wells as needed)
- Added 2 wells within the Carson County Well Field (additional wells as needed)
- Plumbing Code/Retrofit Program (requirements for conservation oriented appliances)
- Reclaimed Water (sold to SPS)
- Metering (meter repair and replacement, universal metering, state law)
- Water Waster Reporting Program
- Leaky Water Main Replacement Program

- Water Conservation Website
- Landscape Ordinance Revisions
- Texas Water Development Board Water Audit (for determining water losses)
- Work with Utility Billing to track misplaced meters/unauthorized connections
- Work with Amarillo Fire Department to track water used for hydrant testing
- Pollution Prevention (Plumbing Code, Wellhead Protection, Industrial Pretreatment Program, Backflow/Cross-connection Control Program)
- Alternative Water Sources

Demand Side Measures

- Drought Tolerant or Xeriscape[®] Demonstration Project
- Continuing Public Education, Information and Outreach Efforts
- Form partnerships with Texas Agri-Life Extension Agency, Nurseries, Texas Apartment Association, Amarillo Area Realtors, etc.
- Work with community organizations and agencies concerning conservation (speaking engagements, videos, etc.)
- Gallons Per Capita Per Day (GPCD)
- Increase Outreach Efforts

I. SUPPLY SIDE MEASURES

A. Water Supply Contracts (Conservation Plan Provisions)

1. Description of Measure:
Wholesale Water Contract Provisions - Each wholesale water contract entered into, renewed or extended must contain provisions for curtailing water supplies. Wholesale water sold includes City of Canyon, Palo Duro Canyon, Fritch Highway Water Association and Amarillo MHC. The wholesale contracts will be contractual prior to the sale of any water.
2. Costs Involved:
No direct costs will be incurred by this measure, other than indirect costs that will be incurred by employees' time and minimal administrative costs.
3. Implementation Plan:
 - Record Management (water production, consumption, sales).....Ongoing
4. Measure of Merit:
Amount of water sold to Wholesale consumers is a good way to measure effectiveness.

B. Potter County Well Field

1. Description of Measure:
Largest infrastructure project ever constructed by the City and was funded through the Texas Water Development Board Water Infrastructure Fund. The project consisted of 21 production wells with total production of water at approximately 24 MGD, two ground storage tanks at 3 million gallons each, pump station, 21 miles of 12-inch to 54-inch of collection pipelines and 18.5 miles of 42-inch and 48-inch transmission pipelines.
2. Costs Involved:
The original construction cost was approximately \$72,000,000.
3. Implementation Plan:
 - Construction began in 2009.....Completed
 - Construction of additional wells.....Ongoing
4. Measure of Merit:
Determine by the amount of water produced and distributed to the City.

C. Carson County Well Field

1. Description of Measure:

The project consisted of 2 production wells with a total production of water at approximately 1.5 MGD, 3 miles of 12-inch collection pipelines.

2. Costs Involved:

The original construction cost was approximately \$2,000,000.

3. Implementation Plan:

- Construction began in 2014.....Completed
- Construction of additional wells.....Ongoing

4. Measure of Merit:

Determine by the amount of water produced and distributed to the City.

D. Plumbing Code/Retrofit Program (requirements for conservation oriented appliances)

1. Description of Measure:

- a. The City has adopted the International Plumbing Code which requires the use of water saving (Ultra Low Flow) features to be installed in new construction and in the replacement of plumbing in existing structures.
- b. Manufacturers of plumbing fixtures sold in Texas must comply with the Environmental Performance Standards for Plumbing Fixtures, which requires all plumbing fixtures such as showerheads, toilets, and faucets sold in Texas to conform to specific water use efficiency standards.
- c. In order to accelerate the replacements of older fixtures, Utilities can offer rebates and other incentives.

2. Costs Involved:

No direct costs will be incurred by this measure, other than indirect costs that will be incurred by employees' time and minimal administrative costs.

3. Implementation Plan:

- Rebates and incentives.....To Be Determined

4. Measure of Merit:

Increase in the amount of water saving plumbing fixtures and number of rebates given is a good way to measure effectiveness.

E. Reclaimed Water (sold to Southwester Public Services (SPS))

1. Description of Measure:

This measure includes the recycling and reuse of wastewater effluent.

2. Costs Involved:

No direct costs will be incurred by this measure, other than indirect costs that will be incurred by employees' time and minimal administrative costs.

3. Implementation Plan:

- Record Management (water production, consumption, sales, etc.).....Ongoing

4. Measure of Merit:

Amount of water sold to SPS is a good measure of effectiveness.

F. Metering (meter repair, testing and replacement, universal metering, state law)

1. Description of Measure:

- a. This measure includes a program for universal metering for customers water usage, for meter testing and repair, and for periodic meter change out program.
- b. Meter accuracy-Water meters can be damaged and deteriorate with age, thus producing inaccurate readings. Inaccurate readings will give misleading information regarding water usage, make leak detection difficult, and result in lost revenue for the system.

2. Costs Involved:
Replacement of meters, testing and repairs.
3. Implementation Plan:
 - Record Management (water production, consumption, sales, etc.).....Ongoing
 - Replacements, testing and calibration, etc.....Ongoing
 - Water meters are scheduled for replacement when they reach a life span of 20 to 25 years
 - Water meters ranging from 5/8" to 2" that are pulled for various reasons are bench tested for accuracy before they go back out into the system
 - Water meters that fail the AWWA standards accuracy test will either be repaired or removed from service
 - Water meters of 3" and larger are tested at the request of a customer or if the meter usage has a history of declining water usage
4. Measure of Merit:
Decrease in the amount of water loss is a good measure of effectiveness. Meter repair and replacement will be documented (meter number, size, make, model, etc.)

G. Water Waster Reporting Program

1. Description of Measure:
This measure provides citizens an option for reporting water wasters by calling a direct number or sending an email to (waterwasters@amarillo.gov). The complaint will be investigated and someone from the City will make contact with the customer to resolve the issue.
 - Aimed at increasing conservation...things like broken sprinkler, etc.
2. Costs Involved:
No direct costs will be incurred by this measure, other than indirect costs that will be incurred by employees' time and minimal administrative costs.
3. Implementation Plan:
 - Record Management (water production, consumption, sales, etc.).....Ongoing
 - Work with customer to get problem fixed.....Ongoing
 - City of Amarillo personnel will respond to all water wasting calls to verify that the customer is wasting water, if they find that the customer is wasting water they are notified and/or left a door tag. If the calls about wasting water continues and the Customer continues wasting water, a letter is then sent for the Director of Utilities office notifying them of the issue. Customers that have plumbing leaks on the property and are not making efforts to make repairs are turned over to the Public Health Department and /or Building Safety.
4. Measure of Merit
Determine by the number of calls and email received by the City. A decrease in the amount of water loss through unaccounted uses is an indicator of this measures effectiveness.

H. Leaky Water Main Replacement Program

1. Description of Measure:
 - a. This measure includes a description of the program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted-for uses of water.
 - Condition Assessment - Active assessment and monitoring of infrastructure condition is the most proactive way to maintain a system and increase asset life.
 - The leak detection programs encompass both simple active leakage detection ground surveys and advanced water loss control with district metered areas and pressure management. Through the use of pressure management and other tools, the program has significantly reduced the number of breaks and leaks.

- o The City's Water Department repairs water main breaks as soon as they are identified. Due to the area being semi-desert climate and soil type water leaks typical surface within a few hours.
 - o The city has been proactive in replacing 2" water mains with 6" lines due the condition of the pipe.
 - o The City has been utilizing contractors to replace about 1-2 miles each year and in 2015 the City added staffing to focus just on main replacement.
- b. This measure includes regular on-site testing a sonic leak-detection survey, or another acceptable method for detecting leaks along water distribution mains, valves, services, and meters.
2. Costs Involved:
The cost of water leakage can be measured in terms of the City operating costs associated with water supply, treatment and delivery. Necessary repairs of larger leaks can be costly, but it also can produce substantial savings in water and expenditures over life of the water main.
3. Implementation Plan:
- Record Management (water production, consumption, sales, etc.).....Ongoing
 - o Failure Date
 - o GPS Coordinates
 - o Unique Pipe Asset ID (e.g. from GIS)
 - o Classification of failure using standardized terminology
 - o Pipe attributes
 - Replacement of old and deteriorated mains.....Ongoing
 - Testing.....Ongoing
 - Water Loss Audit.....Yearly
 - Billing Analysis - A statistically valid subset of data records is analyzed and any issues, such as meter reading and usage anomalies and billing exceptions, are recorded, audited and remedies implemented.....Ongoing
4. Measure of Merit
A decrease in the amount of water loss through unaccounted uses is an indicator of this measures effectiveness.
- I. Water Conservation Website (<http://water.amarillo.gov>)
1. Description of Measure:
The Director of Utilities Office will work with Information Technology to update the Water Conservation web page with water conservation tips and information. The page will be divided into sections that will target all water consumers (i.e., residential, commercial, industrial and institutional). It will also include links to various water conservation websites and environmental agencies. The page would also include a copy of this plan, the Drought Contingency Plan, Consumer Confidence Report, and any other documents that would demonstrate to the public the City of Amarillo's commitment to water conservation. The Water Conservation web page will be updated as necessary.
2. Costs Involved:
No direct costs will be incurred by this measure, other than indirect cost that will incur by the employees' time to update the page.
3. Implementation Plan:
- Coordinate with Information Technology.....Ongoing
4. Measure of Merit:
A reduction in the amount of residential, commercial, industrial or institutional consumption is usually an indicator of the measures effectiveness.

J. Landscape Ordinance Revisions

1. Description of Measure:

Work with Department of Building Safety to revise the City ordinances regarding landscaping requirements. This measure would target all new commercial and industrial development in the City. One suggested change would be to add provisions and/or a requirement to use native vegetation for landscaping. This provision would lessen the need for irrigation by using plants that naturally thrive in this climate. The other suggested change would be to require any area covered with vegetation that requires irrigation to be greater than 3 ft. width. This change would prevent developers from using a 2 ft. wide or smaller stretch of curb, which is not easily irrigated, to fulfill their landscaping requirements. Often times, when irrigation systems are used on those small stretches of landscaped areas, they waste water by watering the curb and street more than they water the grass, as intended.

2. Costs Involved:

There should be no additional costs to the City by implementing this measure.

3. Implementation Plan:

- Multi Department team discussion.....Ongoing

4. Measure of Merit:

This conservation measure is difficult to quantify. A reasonable estimate for measuring its effectiveness is an overall reduction in commercial usage by 3.25%.

K. Texas Water Development Board Water Audit (for determining water losses)

1. Description of Measure:

This measure would be conducted on a yearly basis just as it has been, but with slight modifications. One modification would be the Director of Utilities Office Coordinator working with Utility Billing to track the number of misplaced meters recovered and unauthorized connections discovered on a monthly basis. The other modification would be to work with the Amarillo Fire Department to track the number of fire hydrants tested monthly, how long they were drained, etc. These measures would be targeted toward public users and those that are illegally obtaining water usage from the City.

2. Costs Involved:

There should be no additional costs to the City for implementing this measure.

3. Implementation Plan:

- Coordinate with Amarillo Fire Department.....Ongoing
- Coordinate with Utilities Billing.....Ongoing
- Begin tracking theft/fire hydrant usage.....Ongoing

4. Measure of Merit:

A decrease in the amount of water loss through unaccounted uses is an indicator of this measures effectiveness.

L. Work with Utility Billing to track misplaced meters/unauthorized connections

1. Description of Measure:

This measure coordinates with Utility Billing to locate and find misplaced meters and illegal water connections.

2. Costs Involved:

No direct costs will be incurred by this measure, other than indirect costs that will be incurred by employees' time and minimal administrative costs.

3. Implementation Plan:

- Record Management (water production, consumption, sales, etc.).....Ongoing

4. Measure of Merit:

A decrease in the amount of water loss through unauthorized uses is an indicator of this measures effectiveness.

M. Work with Amarillo Fire Department to track water used for hydrant testing

1. Description of Measure:

This measure will work with the City Fire Department to track water usage and fire hydrant testing on a regular basis.

2. Costs Involved:

No direct costs will be incurred by this measure, other than indirect cost that will incur by the employees' time.

3. Implementation Plan:

- Record Management (water production, consumption, sales, etc.)..... Ongoing
- Begin tracking theft/fire hydrant usage..... Ongoing
- Coordinate with Amarillo Fire Department..... Ongoing

4. Measure of Merit

A decrease in the amount of water loss through unaccounted uses is an indicator of this measure's effectiveness.

N. Pollution Prevention (Plumbing Code, Wellhead Protection Program, Industrial Pretreatment Program, Backflow/Cross-connection Control Program)

1. Description of Measure:

a. To reduce the amount of household hazardous waste, which is a major source of groundwater contamination, host a "Household Hazardous Waste" disposal day. For this measure, the Director of Utilities Office Coordinator would work with the TCEQ, the City's Stormwater inspector, Wastewater Supervisor, Public Works, Potter County Local Emergency Planning Committee, and the Panhandle Regional Planning Committee (PRPC) to set up the event. This measure would target residential water consumers, and would only be available to residents of the City of Amarillo.

b. TCEQ defines a Wellhead Protection Program (WHPP) as a program that is designed to protect the quality of a water system's ground water source by monitoring and minimizing the impact of the activities in the source recharge area as well as the portion of the aquifer that supplies the system.

2. Costs Involved:

To offset this high cost, funds would be solicited from the TCEQ and PRPC (our regional Council of Government), who offer grants for these functions. Additional costs may be incurred for advertising.

3. Implementation Plan:

- Reports done by the City Environmental Lab..... Ongoing
- Coordinate with Water Treatment Plant on Wellhead Protection Program..... Ongoing
- Cross Connection Program (Customer Service Inspection)..... Ongoing

4. Measure of Merit:

This program's effectiveness would be measured by the quantity of household hazardous wastes collected and disposed of or recycled.

O. Alternative Water Sources

1. Description of Measure:

a. The City of Amarillo obtains water from several sources including CRMWA and City owned well fields. The City also provides reclaimed water for industry. Each of these alternative water sources operates independently of each other.

b. Replacements for Carson County Well Field which would extend life of investment in the Well Field, ensures continued firm delivery rates and can be used to balance against Potter County Well Field.

c. Continued redevelopment of SW/Palo Duro Field which would extend life of investment in Well Field, increase delivery rates and serves against peak day demands.

2. Costs Involved:
Cost for new wells and appurtenances.
3. Implementation Plan:
 - Bid process..... Ongoing
 - Engineering and design..... Ongoing
 - Construction process and timeline..... Ongoing
4. Measure of Merit:
Increase in the amount of water produced from the wells is a good indicator of effectiveness.

P. Rainwater Harvesting Incentive Program

1. Description of Measure:

The City of Amarillo Water Utility Department offers a financial incentive to encourage the use of rainwater as a supplement to municipal water for irrigation use. The Financial incentive will be in the form of a one-time credit on your City of Amarillo utility bill.

a. Rain Barrel Harvesting:

- Applicant must receive 100% of its potable water from the Amarillo Water Utility.
- The rain barrel must have a capacity of at least 45 gallons.
- Galvanized tanks are NOT eligible due to their short lifespan.
- Residents must provide proof of purchase in the form of an invoice or sales receipt, or a receipt from the installer.
- Residents must provide a photograph of the installed rain barrel(s) at the residence.
- Residents must submit a completed Rain Barrel Rebate Application to the City of Amarillo no later than 120 days from purchase or installation.
- Applications can be obtained by calling (806) 378-3075 or by visiting our website at water.amarillo.gov.

b. Large System Water Harvesting:

- Applicant must receive 100% of its potable water from the Amarillo Water Utility.
- Life expectancy of the system should be a minimum of 10 years.
- Galvanized tanks are NOT eligible due to their short lifespan. However, metal tanks with liners may be approved on a case-by-case basis; tank specifications must be submitted.
- Tanks that are not UV resistant must be painted or enclosed.
- The applicant agrees to have the system inspected by City staff, photographed, and the use of the photograph in promotional materials.

Round Cistern Capacity (Gallons)			
Height	6-Foot Diameter	12-Foot Diameter	18-Foot Diameter
6	1,269	5,076	11,421
8	1,692	6,768	15,227
10	2,115	8,460	19,034
12	2,538	10,152	22,841
14	2,961	11,844	26,648
16	3,384	13,535	30,455
18	3,807	15,227	34,262
20	4,230	16,919	38,069

2. Costs Involved:

No direct costs will be incurred by this measure, other than indirect costs that will be incurred by employees' time and minimal administrative costs.

3. Implementation Plan:

- Rebates and incentives To Be Determined

4. Measure of Merit:

- Rain Barrel Harvesting
 - Residents will receive a credit of half the cost up to \$20 on the City of Amarillo Utility bill for a one barrel installation.
 - Residents will receive a credit of half the cost up to \$40 on the City of Amarillo Utility bill for a two barrel or more installation.
- Large System Water Harvesting
 - Successful applicants will receive a credit on their City of Amarillo utility bill. Credits are for a minimum of \$45 for a 300 gallon system up to a maximum of \$500 based on a combination of 15 cents per gallon of tank storage capacity plus half of the cost of specific components (pad materials up to \$100, pump, pump switch up to \$100, and first flush parts up to \$35) for a complete, operational system.

Q. Rain/Freeze Sensor Rebate Program

1. Description of Measure:

- a. The City of Amarillo Water Utility Department offers a financial incentive to encourage the of rain/freeze sensor for municipal water for irrigation use. The Financial incentive will be in the form of a one-time credit on your City of Amarillo utility bill.

LAWN TALK
Make every drop count. Water your lawn the right way. Don't water your sidewalk or driveway - they won't grow no matter how much water you give them.

5 Basic Steps For a Healthy Lawn

Don't Water When it Rains or Freezes
Use a rain/freeze sensor on your automatic irrigation.

Water Deeply & Water Less Often
If your lawn springs back when you step on it, it doesn't need water.

Mow High & Mow Often
Try to keep your grass 1 1/2 to 3 inches long. This encourages a stronger root system and reduces evaporation.

Use Mulch in Flower Beds
Helps retain moisture and control weeds.

Fertilize Only As Needed
Apply sparingly and follow the package directions carefully.

QUALIFYING RAIN/FREEZE SENSOR LIST

Brand Name	Model
Hunter	Rain Click (Rain only)
Hunter	Freeze Click (Rain only)
Hunter	Rain/Freeze Click (Combination)
Hunter	Wireless Rain Click (Rain only)
Hunter	Mini-Weather Station (Combination)
Hunter	Wireless Rain/Freeze Sensor (Combination)
Hunter	Solar Sync (Combination)
Irriflow Systems	RFS500 (Rain only)
Irriflow Systems	RFS1000 (Rain only)
Irriflow Systems	RFS1000 (Combination)
Glen-Hilton Products	Mini Click Rain/Freeze Sensor (Combination)
Fluorion	Rain-Tip (Rain only)
Orbit	Rain Sensor (Rain only)
Orbit	Wireless Rain/Freeze Sensor (Combination)
Orbit	Wireless Rain/Freeze Sensor-Solar Powered (Combination)
R&D Engineering	Wireless Rain/Freeze Sensor (Combination)
Toro Rain/Freeze Sensor	TRFS5 (Combination)
Toro Rain/Freeze Sensor	RainSwitch (Rain only)
Weathermatic	Rain/Freeze Sensor (Combination)
Weather-Master	Rain/Freeze Sensor (Combination)

*Or other device approved by the Building Safety Department

REBATE PROGRAM INSTRUCTIONS

*Customers can obtain a voucher valid for 90 days to receive a rebate. Vouchers are available through the Utility Billing Dept, pick up at 509 SE 7th Ave. or call 870-378-4241

1. Select, purchase and install the qualifying rain/freeze sensor.
2. Complete rebate application form.
3. Enclose copy of original invoice or sales receipt showing date of installation and cost of the device.
4. Mail completed rebate application and receipt/invoice to:
City of Amarillo - Aft. Rain/Freeze Rebate, P.O. Box 100, Amarillo, TX 79105-1071 or
Bring the completed application and receipt/invoice to:
City of Amarillo - Utility Billing Dept. 509 SE 7th Ave. Room 102
5. Receive credit on water bill.

RAIN/FREEZE SENSOR REBATE PROGRAM

Water Right!
It's time to change the way we water...

Reduce Your Use. Every Drop Counts.

2. Costs Involved:

No direct costs will be incurred by this measure, other than indirect costs that will be incurred by employees' time and minimal administrative costs.

3. Implementation Plan:

- Rebates and incentives To Be Determined
 - Select, purchase and install the qualifying rain/freeze sensor.

- Complete rebate application form.
- Enclose copy of original invoice or sales receipt showing date of installation and cost of the device
- Mail completed rebate application and receipt/invoice to:

City of Amarillo,
 Attn: Rain/Freeze Rebate
 P.O. Box 100
 Amarillo, TX 79105-1971 or

Bring the completed application and receipt/invoice to:

City of Amarillo - Utility Billing Dept
 509 SE 7th Ave, Room 102
 Amarillo, TX 79105-1971

4. Measure of Merit:

A decrease in the amount of water use through unaccounted uses is an indicator of this measure's effectiveness.

II. DEMAND SIDE MEASURES

A. Drought Tolerant or Xeriscape® Demonstration Project

1. Description of Measure:

This measure conserves water through the use of “Water Wise” plant materials in landscape settings.

Martin Road



City Hall



2. Costs Involved:

No direct costs will be incurred by this measure, other than indirect costs that will be incurred by employees' time and minimal administrative costs.

3. Implementation Plan:

- Water Wise Handouts distributed by Parks Department.....Ongoing

Water Wise Landscapes

Recommended Plant Material

Achillea	Agastache	Artemisia
Butterfly Bush	Century Plant	Chocolate Flower
Cone Flower	Cotoneaster	Dianthus
Golden Rod	Gray Santolina	Indian Blanket
Korean Hyssop	Liriope	Mexican Hat
Penstemon	Pink Evening Primrose	Red Hot Poker
Russian Sage	Salvia	Sedum
Texas Red Yucca	Three Leaf Sumac	Verbena

Goal: Conserve water through use of "Water Wise" plant materials in landscape settings.

Objectives:

- ❖ Conserve Water
- ❖ Landscape Appeal
- ❖ Good Color For All Seasons
- ❖ Use Of Native Plants And Trees
- ❖ Visual Impact (Color & Depth)

Water Wise Grasses & Trees

Grasses	Trees
Bermuda (Turf)	Hackberry
Buffalo (Turf)	Pinion Pine
Gramma (Range Land)	Juniper
Blue Stem (Range Land)	Desert Willow
Pampas Grass	Western Soapberry
Feather Reed Grass	American Elm
Zebra Grass	Honey Mesquite
Indian Grass	Golden Rain Tree
Switch Grass	Cedar Elm
	Honey Locust
	Red Oak
	Chinese Pistache

* Since October 2002 the City of Amarillo Parks and Recreation Department has been on a voluntary water conservation program for the water used in our parks. Since that time the Parks and Recreation Department has saved 958,324,200 gallons of water.

4. Measure of Merit:

An increase in the amount of residential, commercial, industrial or institutional drought tolerant landscaping is usually an indicator of the measures of effectiveness.

B. Continuing Public Education, Information and Outreach Efforts

1. Description of Measure:

- Insert water conservation information and tips with water bills at least once per year. Inserts will include material developed by City staff using material obtained from the TWDB, TCEQ, ground water districts and other sources that pertain to water conservation in general, and specific to landscape irrigation conservation, and including protection of pipes from freezing.
- Recruit local media in providing coverage of water conservation issues and the importance of water conservation.
- Develop water conservation guide and other water conservation materials available to the public at utility offices or other public places.
- Develop youth outreach program and establish an advisory committee.

2. Costs Involved:

Varies and dependent upon what method.

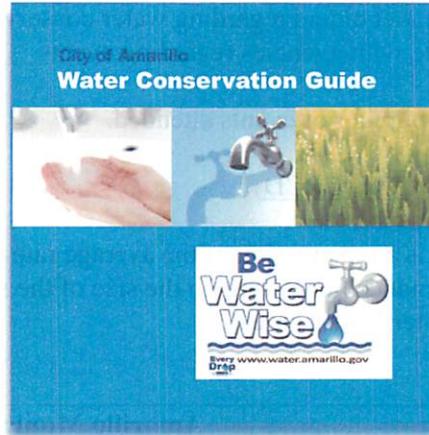
3. Implementation Plan:

- Contact stake holder regarding water conservation.....Ongoing
- Printing and distribution of conservation materials.....Ongoing
- Press releases.....Ongoing

- TV and radio public service announcements Ongoing
 - Plant tours Ongoing
 - Displays and presentations Ongoing
 - Provide conservation tips with bill once per year Ongoing
4. Measure of Merit:
Number of events attended, number of guides distributed will be documented.

C. Update water conservation guide

1. Description of Measure:
This measure would update the water conservation guide for appearance and information.



2. Costs Involved:
Costs would be dependent on what source was used to update the guide and the amount of guides printed.
3. Implementation Plan:
- Update guide Ongoing
 - Printing and distribution Ongoing
4. Measure of Merit:
Determine by the number of guides distributed.

D. Form partnerships with Texas Agri-Life Extension Agency, Nurseries, Texas Apartment Association, Amarillo Area Realtors, etc.

1. Description of Measure:
Increase water conservation efforts by teaming up and partnering with different agencies and associations for public awareness.
2. Costs Involved:
No direct costs will be incurred by this measure, other than indirect costs that will be incurred by employees' time and minimal administrative costs.
3. Implementation Plan:
- Contact stakeholders regarding water conservation Ongoing
 - Coordinate with agencies regarding events Ongoing
4. Measure of Merit:
Determine by the number of partnerships obtained.

E. Presentations to community organizations and agencies concerning conservation (speaking engagements, and videos)

1. Description of Measure:

The City can use a variety of methods to distribute information and educate the public on water conservation. Some outreach methods include operating booths at public events, attending workshops, printed and video materials, Amarillo 101 and coordination with civic organizations.

2. Costs Involved:

No direct costs will be incurred by this measure, other than indirect costs that will be incurred by employees' time and minimal administrative costs.

3. Implementation Plan:

- Contact stakeholders regarding water conservation Ongoing
- Coordinate with agencies regarding events Ongoing

4. Measure of Merit:

Determine by the number of events attended.

F. Gallons Per Capita Per Day (GPCD)

1. Description of Measure:

a. This measure is an expression of the average rate of residential, commercial and industrial water user demands depending on the size of the system.

b. Goals and Water Loss Target.

Description	Amarillo Municipal Water System 5-Year and 10-Year Targets and Goals for water savings			
	Current Average (Historic 5 Year Avg.)	Baseline	5-Year Goal	10-Year Goal
Total GPCD	221	221	200	195
Residential (GPCD)	106	106	100	95
Water Loss Goals (GPCD)	6	6	5	5
Water Loss Goals (percentage only)	3%	3%	2.50%	2.56%

2. Costs Involved:

No direct costs will be incurred by this measure, other than indirect costs that will be incurred by employees' time and minimal administrative costs.

3. Implementation Plan:

- Track water utility's progress Ongoing
- Set performance targets and benchmark Ongoing
- Collect data by connection type To Be Determined
- Account for all water supplies Ongoing

4. Measure of Merit:

A reduction in the amount of residential, commercial, industrial or institutional consumption is usually an indicator of the measures effectiveness.

G. Increase Outreach Efforts

1. Description of Measure:

This measure consists of forming partnerships with local conservation oriented agencies, such as Master Gardeners, Texas Agri-Life Extension Service, Panhandle Groundwater Conservation District, Amarillo Apartment Association, and Amarillo Realtors Association. Specific goals would be to increase amount of speaking engagements, write 'guest' columns for the newspaper, solicit public service announcements on local radio stations and begin residential water audit program to help residential consumers reduce water usage.

2. Costs Involved:

The only costs involved in this plan involve purchasing water measuring equipment for use in residential auditing.

3. Implementation Plan:

- Begin group outreach.....Ongoing
- Order auditing equipment.....To Be Determined
- Advertise residential audit program.....To Be Determined
- Begin residential audits.....To Be Determined

4. Measure of Merit:

A reduction in the amount of residential, commercial, industrial or institutional consumption is usually an indicator of the measures effectiveness.

III. TIMELINE SUMMARY

