



## **2007 - WATER CONSERVATION PLAN**

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## **INTRODUCTION**

The Water Conservation Plan outlines specific water conservation goals for the upcoming year, as set in the Water Conservation Program. The following sections will explain how goals are developed and the specific measure of merit for each goal.

## GOAL DEVELOPMENT AND MEASURES OF MERIT

### 1. 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 that are controlled by the citizens, commerce and industry that consume the water. As each goal is developed, it will list what customer(s) it 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 water supply sources and characteristics of the distribution system
  - Capacity of the wastewater system
  - Setting operating rates charged to customers for usage of the water
  - Resolutions, ordinances, and codes controlling usage of the water
  - Maintaining conservation programs
  - Rates of source water recharge
  - Water allocations
- A. Demand driven measures are those driven by customers who use the water. 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, public and industrial)
- C. In addition to the above factors that affect goal development, the degree of conservation sought also aids in determining the specific goals for the following year. There are three basic degrees of conservation; voluntary, mandatory, and rationing.
  - Voluntary : All or most water conservation programs selected for the year are noncompulsory. Many of the goals developed for this plan fall under this degree.
  - Mandatory: The Water Conservation programs selected for the year 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.

- Rationing: This degree of conservation will only be in effect when the City activates the Drought Contingency Plan during periods of extreme drought.

## **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 off the previous calendar year's water consumption. The audit will be conducted using a variety of reports from the Director of Utilities office and by completing the Texas Natural Resource Conservation Commissions Utility Survey (TNRCC -10218).

In general, water conservation goals should be set so that the rate 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. Quantifiable indicators of conservation goals being attained are through reductions 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; and/or
- Quantity of reused or recycled water
- Total usage

## CONSERVATION GOALS FOR 2007

This section outlines conservation goals for calendar year 2007. Those measures listed in the above section will be continued 'as is' in 2007 and will only be listed in this section. Some of the measures will be modified slightly to refine their target audience and add a quantifiable means of tracking their progress towards conservation. Those measures will be listed below.

### ***Supply Side Measures***

Water Supply Contracts (Conservation plan provisions) \*

Plumbing Code/Retrofit Program (Requirements for conservation oriented appliances) \*

Reclaimed Water (Sold to SPS, Parks Dept, and Local farmers) \*

Metering (Meter repair and replacement, Universal metering, State Law) \*

Water Waster reporting program \*

Leaky Water Main Replacement Program \*

Top 10 Reduction

Water Conservation page on the Internet

Landscape Ordinance (Revise to include Xeriscape type requirement, and adjust requirement for landscaping small areas (i.e., 2' strips of grass near parking lots))

Yearly Water Audit (For determining unaccounted-for losses)

Work with 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)

### ***Demand Side Measures***

Xeriscape<sup>®</sup> Demonstration Project \*

Education, Information and Outreach

Redesign water bill (logo is out of date and not conservation minded)

Update water use handbook

Form partnerships with Texas Ag. Ext. Agency, Nurseries, Texas Apt. Assoc., Amarillo Area Realtors, etc...

Work with area elementary schools for conservation programs (speaking engagements, and videos)

*\* indicates that the conservation measure will continue unmodified. To eliminate confusion, these measures are described in the Water Conservation Report.*

## I. SUPPLY SIDE MEASURES

B. Internet Conservation Page

1. Description of Measure

The Environmental Coordinator will work with Information Services (IS) to build a web page with water conservation tips and information. The page will be divided into sections that will target all water consumers (i.e., public, residential, commercial, and industrial). The page will also include links to various water conservation websites, and environmental agencies. If possible, 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's commitment to water conservation. The page will be updated as necessary.

a. Costs involved

No costs will be incurred by this measure, other than the employees' time to develop the page.

a. Implementation Plan

Coordinate with IS	to be determined
Begin development	to be determined
Go online	to be determined

1. Measure of Merit

Public relations efforts are among the most difficult to quantify. The standard amount of conservation for these types of programs is 5%. A reduction in the amount of residential, commercial or public consumption is an indicator of the measures effectiveness.

B. Top 10 Reduction

1. Description of Measure

This measure involves working with the Top 10 water consumers to reduce their overall consumption. This measure will target commercial, public, and industrial users with irrigation meters. Letters will be sent to the aforementioned groups explaining the various benefits of conservation and ways they can help. Another element of this plan is to check into the possibility of adding categories used for billing purposes. For example, in addition to Residential, Commercial, and Industrial, add groups for multi-family, and municipal/public (schools, local/fed./state government properties).

a. Costs involved

The only additional costs to the city for this measure will be for postage, which is 42¢ per item mailed.

a. Implementation Plan

Designate large users to target	to be determined
Write correspondence	to be determined

Mail correspondence	to be determined
Follow up with large users	to be determined
Begin discussions with Data Processing	to be determined
Advertise new categories in water bill insert	to be determined
Implement category additions	to be determined

1. Measure of Merit

Informational campaigns such as this are difficult to quantify. AWWA suggests using 3.25% as the standard savings for this type of measure.

B. Landscape Ordinance Revision

1. Description of Measure

Work with Department of Building Safety to revise 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 larger 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 intended grass.

a. Costs involved

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

a. Implementation plan

\*\*\* Subject to coordination with Planning Department \*\*\*

1. 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%.

B. Yearly Water Audit

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 Environmental 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.

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

a. Implementation Plan

Coordinate with AFD	to be determined
Coordinate with Utilities Billing	to be determined
Begin tracking theft/fire hydrant usage	to be determined

1. Measure of Merit

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

B. Pollution Prevention

1. Description of Measure

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 Environmental Coordinator would work with the TNRCC, the City's Storm water inspector, Wastewater Supervisor, Public Works, Potter County Local Emergency Planning Committee, and the Panhandle Regional Planning Committee to set up the event. This measure would target residential water customers, and would only be available to residents of the City of Amarillo.

a. Costs involved  
 The average cost for a household hazardous waste collection event in 1997 was \$34,059. 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.

a. Implementation plan

Begin planning	to be determined
Actual event	to be determined

1. Measure of Merit

Although not a true conservation measure, this program's effectiveness would be measured by the quantity of household hazardous wastes collected and disposed

of or recycled.

## I. DEMAND SIDE MEASURES

### B. Education, Information and Outreach

#### 1. Redesign Water Bill

The current logo on the water bills sent out by the City is outdated, and does not encourage conservation. The phrase "Water at your service" implies that water is available unconditionally; also, the AWWA who originally distributed the design no longer supports it. Utility billing has almost one year's supply of Willy Water bills to be sent out. This measure would target all water consumers in the city.

##### a. Costs involved

Dependent upon what method is used to design a new logo. One suggestion is to hold a contest and outsource the final design to a professional.

##### a. Implementation plan

Work on designing logo (outsource)	Completed 2008
Work with Data Processing or Billing for Cons. Info.	Completed 2008
Implement new logo on bill	Completed 2008

#### 1. Update Handbook for Using Water Efficiently in the Texas Panhandle

This measure would update the Handbook for appearance, and information.

##### a. Costs involved

Costs would be dependant on what source was used to update the handbook, and the amount of handbooks that were printed.

##### a. Implementation plan

Begin RFP process	target date 2010
Assign contract	target date 2010
Begin printing and distribution	target date 2010

#### 1. Increase outreach efforts

This measure consists of forming partnerships with local conservation oriented agencies, such as Master Gardeners, Texas Ag. 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 customers reduce water usage.

##### a. Costs involved

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

- b. Implementation plan
  - Begin group outreach to be determined
  - Order Auditing equipment to be determined
  - Advertise residential audit program to be determined
  - Begin residential audits to be determined

1. Elementary school conservation program

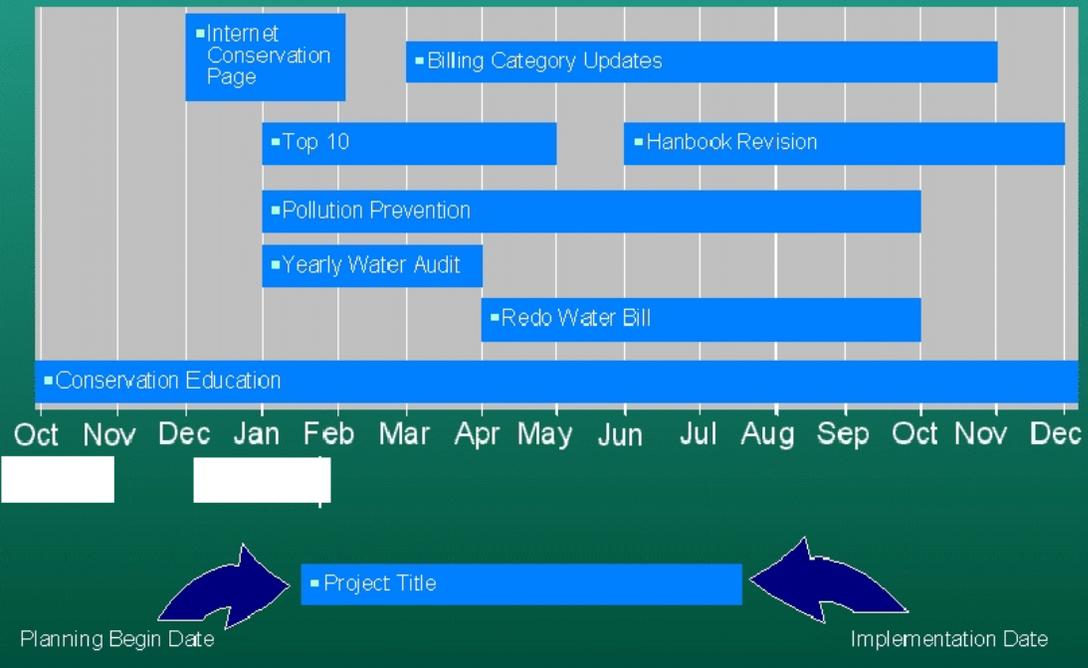
Children in grades 3 - 6 are among the age group that is most influenced by public campaigns, such as water conservation. This measure will target children in those age groups, who will currently spread the word to residential users, but in the future will carry conservation mindedness into the commercial and industrial consumer areas. Elements of this program include speaking to elementary school students, working with 4-H groups, and purchasing videos for loan to schools for conservation education programs.

- a. Costs involved
  - Videos for loan to schools will cost in the neighborhood of \$150.00/video.
- b. Implementation plan
  - Begin speaking at schools to be determined
  - Research/purchase videos to be determined
  - Advertise video checkout program to be determined

B. Measure of Merit

For elements of the above measures, the best estimate for effectiveness is a 5% decrease (per element) in the amount of water usage per capita for residential and commercial consumers.

# Conservation Measure Implementation Timeline



## I. TIMELINE SUMMARY