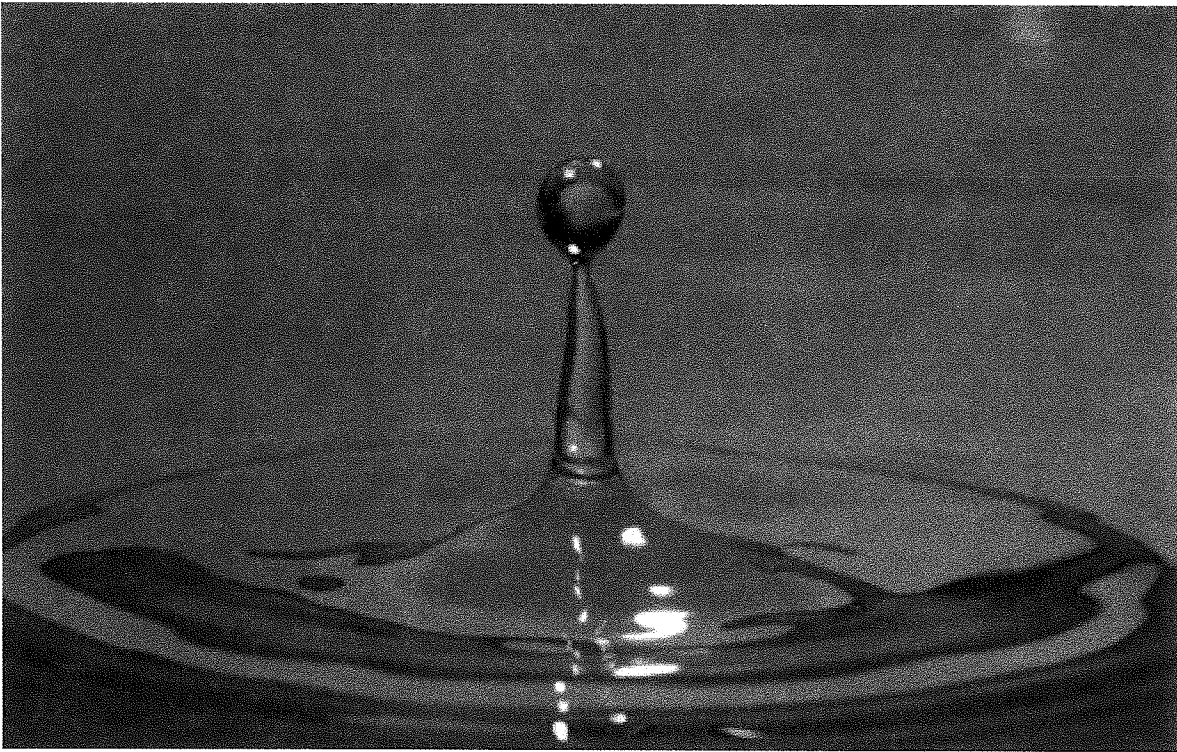


2011 Municipal Water Conservation Plan



City of Bel Aire

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Municipal Water Conservation Plan for the City of Bel Aire

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Introduction

The City of Bel Aire has undertaken a number of steps to ensure a dependable water supply for our customers since 1980. The original water supply for the City of Bel Aire was obtained from wells in the Equus Beds Aquifer. In 1988, public concerns over the taste and quality of the Equus Bed water source prompted the City of Bel Aire to enter into a twenty year contract with the City of Wichita to supply potable water. A new contract was signed with the City of Wichita in 2008, securing a continued water supply through 2028. The City of Wichita obtains water from two sources; approximately 60% is surface water extracted from Cheney Reservoir, while the remaining 40% is ground water extracted from the Equus Beds near Halstead.

The City of Bel Aire served 3,675 residents in 1990, 10 years after incorporation. Today, the City of Bel Aire's population has increased 84% to a total of 6,769 residents. Building growth has increased 26% since 2000 from 1,976 units to 2,483 units in 2010. Under the current water contract with the City of Wichita, the City of Bel Aire is not allowed to service outside the service boundary agreement. However, a provision is included that allows the City of Bel Aire to add up to 320 acres outside the service area per year with consent from the City of Wichita.

In 2002, Bel Aire partnered with the City of Park City to create a regional utility system, known as the Chisholm Creek Utility Authority (CCUA). A new independent body was formed between the two cities to provide water and sewer services to both communities. The Chisholm Creek Utility Authority receives its water from well fields south of the CCUA facility.

The CCUA constructed new water and wastewater treatment plants located in Park City. They went on-line in January 2003, providing services to both communities. Additional water rights were acquired from KGE to secure future growth. Bel Aire receives its water from both CCUA and the City of Wichita, with the total average current demand capable of being supplied by either source. The City of Bel Aire maintains a 1 million gallon water tower as well as a 500,000 gallon water tower for proper storage and pressure. Chlorine levels are monitored electronically at both the plant and the water towers 24 hours a day. Weekly testing occurs as required by KDHE to ensure safe drinking water for its customers.

The City of Bel Aire believes the Municipal Water Conservation Plan represents an additional step in providing the citizens with a dependable water supply for years to come.

Municipal Water Conservation Plan

The primary objectives of the Municipal Water Conservation Plan for the City of Bel Aire are to develop long-term water conservation plans (Long-Term Water Use Efficiency Section) and short-term water emergency plans (Drought / Emergency Contingency Section) to assure the City customers have an adequate water supply to meet their needs. The efficient use of water also limits or postpones water distribution system expansion, thus limiting or postponing the resultant increase in debt, while conserving the limited water resources of the State of Kansas.

Long-Term Water Use Efficiency

Water Use Conservation Goals

The City of Bel Aire used 122 gallons per capita per day (GPCD) in 2006. This GPCD figure included:

- a) Water sold to Residential / Commercial customers;
- b) Water distributed for free public services (parks, cemeteries, swimming pools, etc.);
- c) Water lost by leaks or purging of lines in the water distribution system.

According to Figure 1 on page 4, Bel Aire's average GPCD fluctuated between 2005 and 2009. Consumption was highest in 2006 when the City consumed 122 GPCD. On the other hand, Bel Aire achieved the lowest level of consumption in 2008 at 93 GPCD. This represents a 23.77% decrease in consumption from the five-year high to the five-year low, most likely attributed to the unusually cool and wet summer experienced in the region in 2008. From 2005 to 2009, Bel Aire's GPCD experienced a negative annual growth rate of -3.09%.

According to Figure 2 on page 4, Bel Aire consumed more gallons per capita per day than Region 7M as a whole, with the exception of 2008 and 2009. For Region 7M, consumption was highest in 2006 when the region consumed 107 GPCD, while consumption was lowest in 2009 when the region consumed 94 GPCD. This represents a 12.15% decrease in consumption from the five-year high to the five-year low. From 2005 – 2009, Region 7M's GPCD experienced a negative annual growth rate of -2.19%. The region's average consumption was 101 GPCD, 3.81% lower than the City of Bel Aire's average consumption of 105 GPCD. As indicated in Figure 3 on page 5, the State of Kansas' average consumption from 2005 – 2009 was 118 GPCD. Region 7M suppliers have consistently reported GPCD in the 105-115 range. The City desires to set a water conservation goal to have GPCD within the 105-115 range within the next 5 years. The City anticipates not exceeding this range by carrying out the actions specified in this plan.

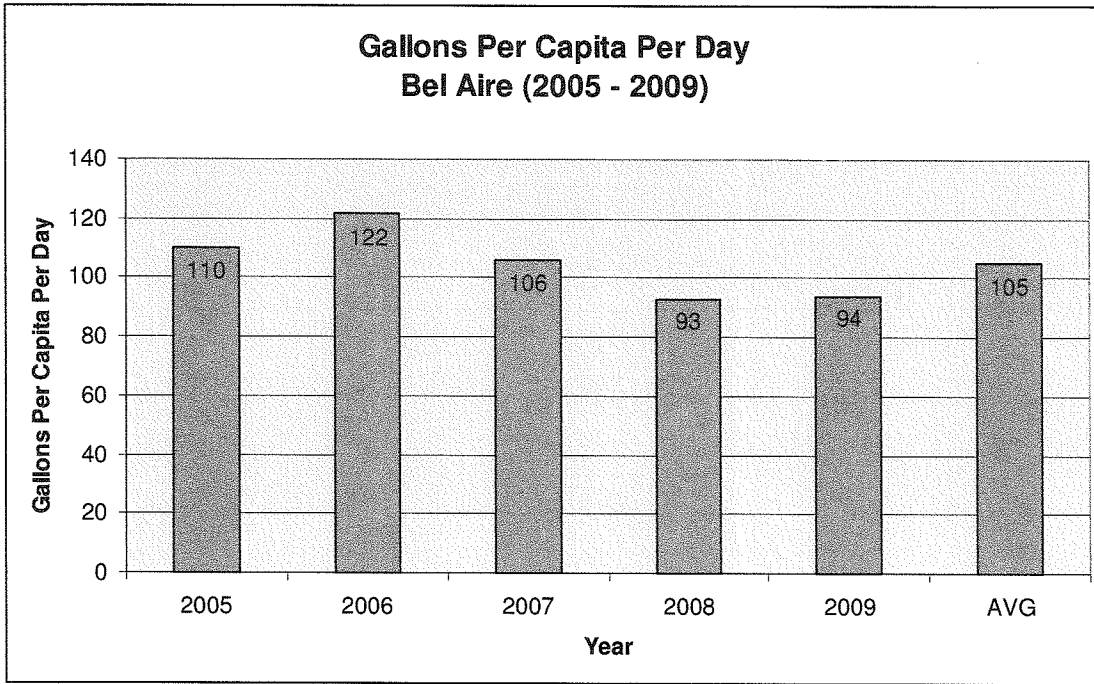


Figure 1 - Gallons Per Capita Per Day
Source: Kansas Department of Agriculture, Division of Water Resources

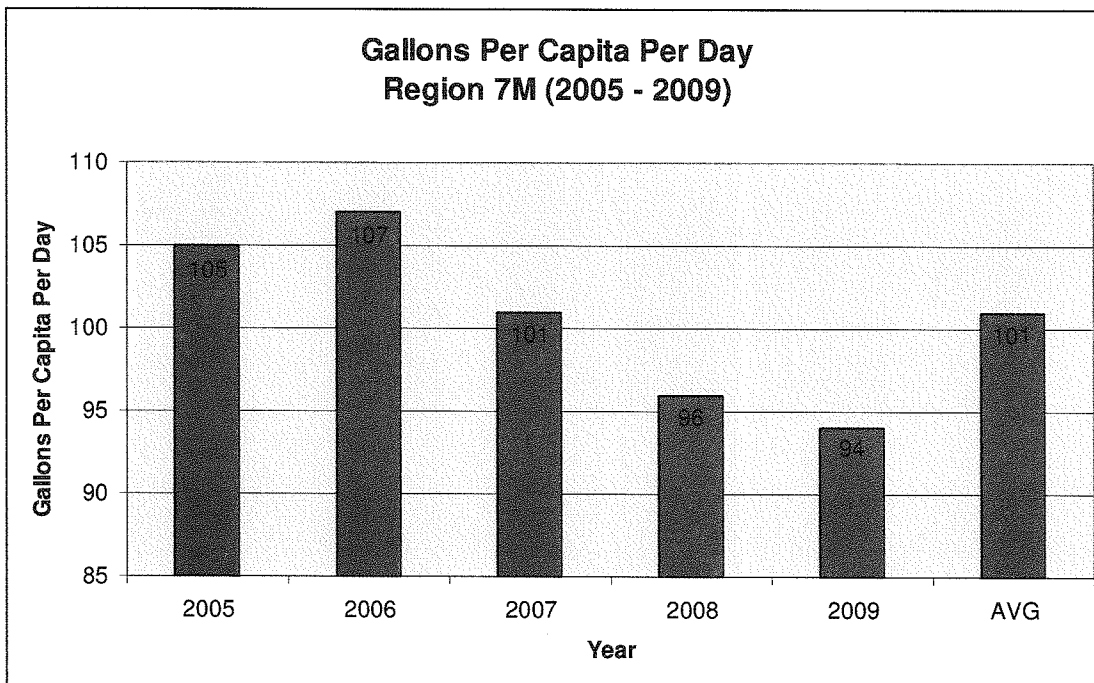


Figure 2 - Gallons Per Capita Per Day for Region 7M
Source: Kansas Department of Agriculture, Division of Water Resources

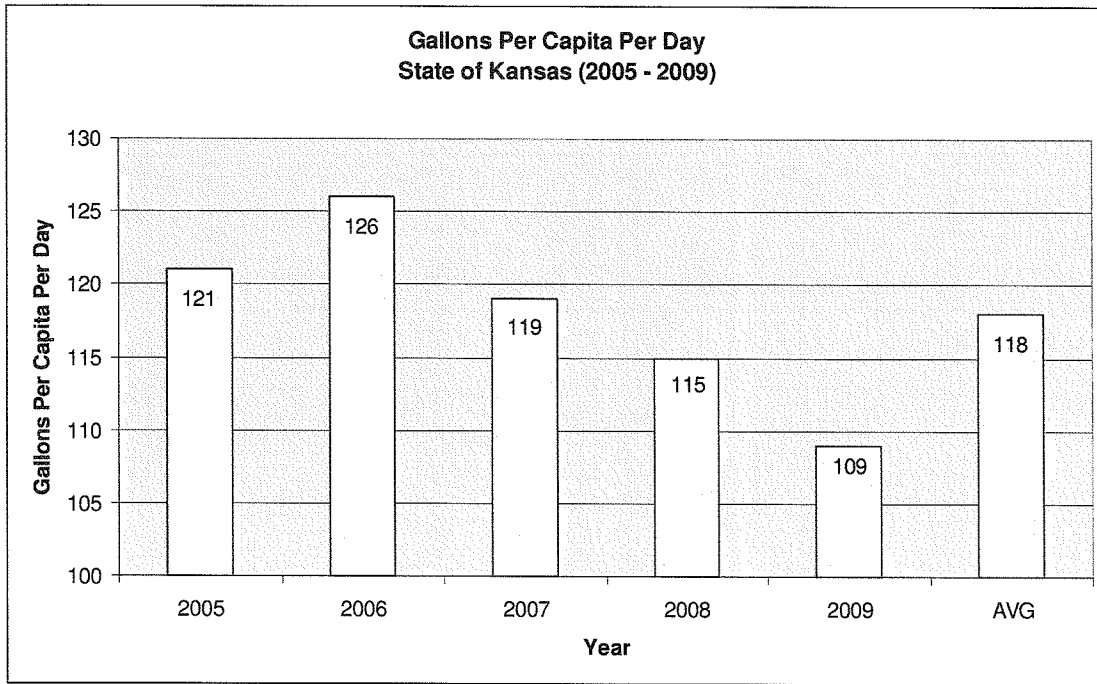


Figure 3 - Gallons Per Capita Per Day for the State of Kansas
 Source: Kansas Department of Agriculture, Division of Water Resources

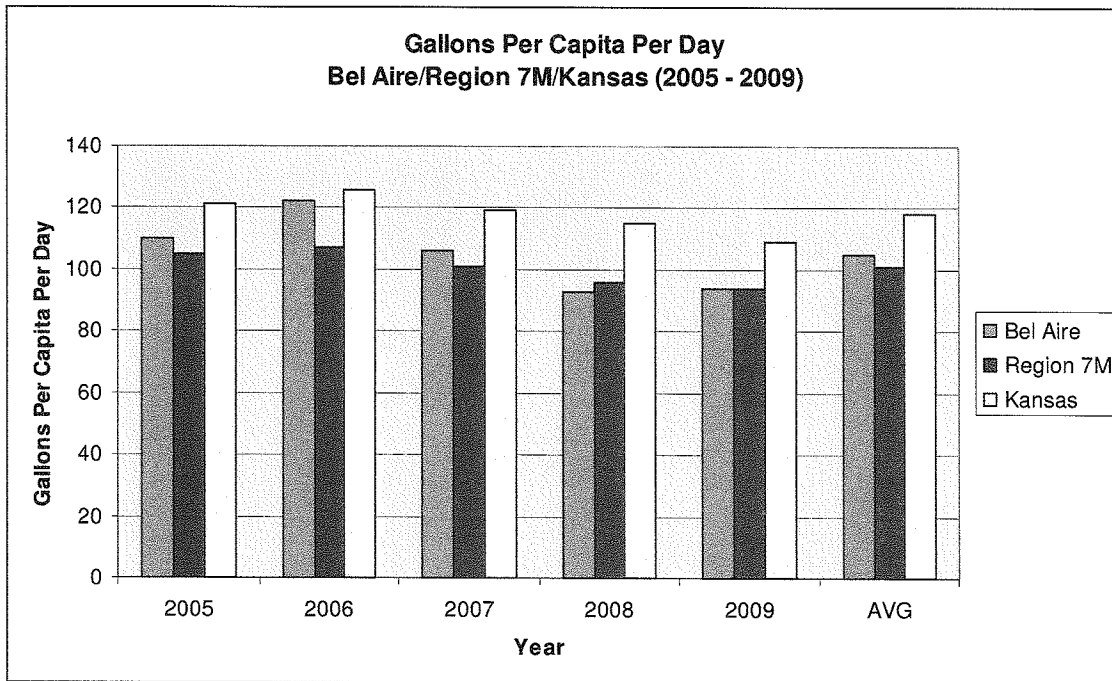


Figure 4 - Gallons Per Capita Per Day Direct Comparison between the City of Bel Aire/Region 7M/State of Kansas

Source: Kansas Department of Agriculture, Division of Water Resources

Water Conservation Practices

This subsection of the plan summarizes the current education, management, and regulatory efforts that relate to the long-term conservation of water in the City. Specific practices that will be undertaken to conserve water are listed and a target date to begin each practice is also indicated.

Education

The City water bills show the total number of gallons of water used during the billing period, along with the dollar amount of the bill; however, water conservation tips are not normally provided with the water bills. The City should perform ongoing education efforts to develop the community's understanding of water issues and conservation. Efforts could include water conservation pamphlets, media releases, public events and exhibitions, civic presentations, and promotion of landscapes capable of thriving on small water usage.

The City has chosen the following conservation practices and target dates for the Education Component of the Long-Term Water Use Efficiency Section of our Water Conservation Plan.

Education Conservation Practices	Target Date
1. Water Conservation Plan copies available to public	Ongoing
2. Provide information to the general public about lawn water needs on a regular basis during summer months	Ongoing
3. Utility bills will show the amount of water used in gallons and the cost of the water for the current billing period and previous year	Ongoing
4. Water conservation articles, tips and issues will be discussed each month during the summer through local cable Channel 7 and in The Breeze newspaper	Ongoing
5. Local schools and teachers will be encouraged to become involved in water conservation with information provided by the City	Ongoing
6. Make available information on water conserving landscape practices through publications, local news media, seminars, or other appropriate means.	Local Channel 7 & City website – ongoing

Management

The City of Bel Aire maintains a water meter for each water customer. The water meters are read on a monthly basis, on or about the tenth (10th) of each month, except during the event of inclement weather. Water meters are installed for all Residential / Commercial customers. Customer meters are scheduled for an accuracy check and possible repair or replacement upon receiving a request to do so from the customer.

The City of Bel Aire reads each customer's water meter monthly, and bills customers accordingly. Water leaks from the City public water distribution systems are repaired when customers report significant leaks in water mains or when located by City personnel. Water pressure is not checked unless customers are concerned that their water pressure is too low.

The contract with the City of Wichita allows Bel Aire to purchase potable water in bulk. Wichita treats Bel Aire as a wholesale commercial customer and Bel Aire is subject to water regulations that Wichita places on its wholesale commercial users. Chisholm Creek Utility Authority bills are based on a take or pay system. As a partner, Bel Aire is responsible for 50% of debt service and 50% of operational costs. The City of Bel Aire charges customers a base rate as well as a consumption rate per 1,000 gallons used. Consumption rates are based on a progressive rate structure that increases as consumption increases.

The City of Bel Aire realizes that greater emphasis must be placed on maintaining accurate measurement of water use in total at customer meters, and that a water-use records system must be maintained, that can be used to effectively and efficiently manage the City public water distribution system.

Management Conservation Practices to be Taken	Target Date
1. All source water will have meters installed and the meters will be repaired or replaced within two weeks when malfunctions occur	Current Operating Policy
2. Meters for source water will be tested for accuracy at least once every three years. Meters will be replaced if they fail to meet industry standards	Current Operating Policy
3. Meters will be installed at all residential service connections and at all other service connections whose annual water may exceed 300,000 gallons, including municipally operated irrigation systems that irrigate more than one acre of turf	Current Operating Policy
4. Meters at each individual service connection will be replaced or tested for accuracy on a ongoing basis. Meters will be replaced if they are not within industry standards	Current Operating Policy
5. All meters for source water will be read monthly. Meters at individual service connections will be read at least once a month or more as determined necessary	Current Operating Policy
6. The City will implement a water management review, which will result in specified change in water management practices or implementation of a leak detection and repair program or plan, whenever the amount of unsold water (amount of water provided free for public service, used for treatment purposes, water loss, etc.) exceeds 10% of total source water	Current Operating Policy
7. Water charges will be based on the amount of water used (per 1,000 gallons of metered consumption)	Current Operating Policy
8. A water rate structure designed to curb excessive use of water will continue	Current Operating Policy
9. Develop and implement a program to incorporate water	Ongoing

conserving landscape principals into future City landscape development projects, including renovation of existing landscape	
10. Develop and implement an irrigation management program for City irrigated grounds	Current Operating Policy
11. Encourage the recycling of wastewater for selected industrial or irrigation purposes	Current Operating Policy

Regulation

The City of Bel Aire currently regulates water conservation through an adopted Water Policy (2002), Water Drought / Emergency Ordinance (No. 387, 2003), the enforced Plumbing Code, and regulations imposed by the City of Wichita. A Wholesale Water Sales Agreement with the City of Wichita requires Bel Aire to enforce any restrictive measures when such measures are placed on wholesale commercial customers served by Wichita. The service agreement between the City of Bel Aire and the Chisholm Creek Utility Authority allows Bel Aire to act independently of regulations, subject to availability and capacity restrictions of the CCUA facility. The City will pursue further corrective action as circumstance dictate.

Regulation Action to be Taken	Target Date
1. All new or renovated construction will install toilets that use 1.6 gallons per flush or less and low flow showerheads that use 2.5 gallons per minute or less.	Enforced through Plumbing Code
2. Other appropriate regulation actions	As Circumstances Dictate

Drought / Emergency Contingency

The City of Bel Aire will address any short-term water shortage problems through a series of stages based on conditions of supply and demand with accompanying triggers, goals and actions. Each stage is more stringent in water use than the previous stage as water supply conditions deteriorate. The City Manager is authorized by ordinance (No.387) to implement the appropriate conservation measures.

STAGE 1: WATER WATCH

Triggers

Currently, the City of Bel Aire is governed by water restrictions imposed by the City of Wichita and the Chisholm Creek Utility Authority's ability to supply water to Bel Aire. The Water Watch Stage is triggered by any one of the following conditions:

1. The City storage has fallen below 70% capacity and has a slower than normal recovery rate
2. Demand for one day is in excess of 1.6 million gallons per day (mgd)
3. Provider of purchased water has issued a Stage 1 Water Watch

Goals

The goals of this stage are to heighten awareness of the public on water conditions and to maintain the integrity of the water supply system

Education Actions

The City will make occasional news releases on Channel 7, The Breeze, and other media outlets describing present conditions and indicating the water supply outlook. Notification will be broadcast on Channel 7 indicating water watch status and will include water conservation information.

Management Actions

1. Leaks will be repaired as soon as detected; work will be completed within 48 hours of detection or as soon as possible depending on severity of the leak
2. The City will monitor its use of water and will curtail activities such as hydrant flushing and street cleaning

Regulation Actions

Regulations in Stage 1 will be advisory. The public will be asked to curtail outdoor water use and to make efficient use of indoor water, i.e. wash full loads, take short showers, don't let faucets run, etc.

STAGE 2: WATER WARNING

Triggers

Currently, the City of Bel Aire is governed by water restrictions imposed by the City of Wichita and the Chisholm Creek Utility Authority's ability to supply water to Bel Aire. The Water Warning Stage is triggered by any one of the following conditions:

1. The City storage has fallen below 60% capacity and has a slower than normal recovery rate
2. Demand for one day is in excess of 1.8 million gallons per day (mgd)
3. Provider of purchased water has issued a Stage 2 Water Warning

Goals

The goals for this stage are to reduce peak demand by 20% and to reduce overall weekly consumption by 10%.

Education Actions

1. The City will make weekly news releases for media outlets and post information at City sites describing present conditions and indicating the water supply outlook for the upcoming week
2. Water conservation articles will be provided to The Breeze and information will be shown on Channel 7, the City website, and at other City sites.

Management Actions

1. The City water supply will be monitored 24 hours a day
2. Leaks will be repaired within 24 hours of detection; outside contractors may be used to make repairs if needed
3. The City will curtail its water usage, including operations of fountains, watering of City grounds, filling of swimming pools and washing of vehicles
4. The City Manager may direct city police to enforce water conservation policies that could include citations

Regulation Actions

1. An odd / even watering system will be imposed on City residents. Residents with odd numbered addresses will water on odd days; even addresses will water on even days
2. Outdoor water use, including lawn watering and car washing will be restricted to before 5:00 a.m. and after 11:00 p.m.
3. Refilling of swimming pools will not be allowed
4. Waste of water, as defined by the Water Drought/ Emergency Ordinance (Section 2, Item C) will be prohibited

STAGE 3: WATER EMERGENCY

Triggers

Currently, the City of Bel Aire is governed by water restrictions imposed by the City of Wichita and the Chisholm Creek Utility Authority's ability to supply water to Bel Aire. The Water Emergency Stage is triggered by any one of the following conditions:

1. The City storage has fallen below 50% capacity and will not recover
2. Demand for one day is in excess of 2.0 million gallons per day (mgd)
3. Provider of purchased water has issued a Stage 3 Water Emergency
4. Emergency conditions related to repairs or water quality

Goals

The goals of this stage are to reduce peak demands by 50% and to reduce overall weekly consumption by 25%

Education Actions

1. The City will make daily news releases to media outlets and at City sites describing present conditions and indicating the water supply outlook for the next day
2. The City will hold public meetings to discuss the emergency, the status of the City water supply and further actions which need to be taken

Management Actions

1. The City water supplies and storage will be monitored 24 hours a day
2. Leaks will be repaired as soon as possible and damaged line will be taken out of service until repairs can be made or until an outside contractor can make necessary repairs

3. The City will seek additional emergency supplies from other users, the state or federal government
4. The City Manager may direct the police to enforce water conservation policies that could include citations

Regulation Actions

1. Outdoor water use will be banned
2. Waste of water, as defined by the Water Drought/ Emergency Ordinance (Section 2, Item C), will be prohibited

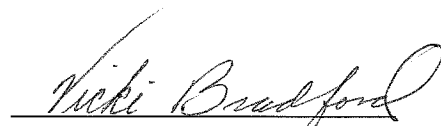
<h2>Plan Revision, Monitoring & Evaluation</h2>
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The City of Bel Aire will establish a monthly management practice of reviewing monthly totals for water production, residential/commercial sales, water provided free-of-charge, and “unaccounted for water.” Problems noted during the monthly review will be solved as soon as possible.

The City of Bel Aire Municipal Water Conservation Plan will be reviewed during the month of March each year and on a more frequent basis during drought or other water shortage conditions. If the water conservation GPCD goals for the previous year are not met, the City will review data collected from the previous year in relationship to the status and effectiveness of the conservation practices that are outlined in our plan and will provide a status report to the Kansas Water Office which will also include any additional water conservation practices that may need to be taken in order for the City to achieve and maintain its water use conservation GPCD goals.

Adopted this 5th day of July 2011 by the Bel Aire City Council.


Harold Smith, Mayor


Vicki Bradford, City Clerk