

Municipal Water Conservation Plan 2025



City of Bel Aire

7651 E Central Park Avenue
Bel Aire, Kansas 67226
(316) 744-2451

Municipal Water Conservation Plan for the City of Bel Aire

Table of Contents

Introduction.....	4
Municipal Water Conservation Plan.....	5
Long Term Water Use Efficiency.....	5
Water Use Conservation Goals.....	5
Figure 1 (Bel Aire Historical Water Usage).....	6
Figure 2 (2023 Water Usage).....	6
Water Conservation Practices.....	7
Education.....	7
Management.....	8
Regulation.....	10
Drought / Emergency Contingency.....	10
Stage 1: Water Watch (Voluntary Conservation).....	11
Triggers.....	11
Goals.....	11
Education Actions.....	11
Management Actions.....	11
Regulation Actions.....	11
Stage 2: Water Warning (Mandatory Restrictions).....	12
Triggers.....	12
Goals.....	12
Education Actions.....	12
Management Actions.....	12
Regulation Actions.....	12
Exceptions.....	13
Stage 3: Water Emergency, With Exceptions.....	14
Triggers.....	14
Goals.....	14
Education Actions.....	14
Management Actions.....	14
Regulation Actions.....	14
Exemptions.....	15

Stage 4: Water Emergency, No Exceptions.....	16
Triggers.....	16
Goals.....	16
Education Actions.....	16
Management Actions.....	16
Regulation Actions.....	16
Plan Revision, Monitoring and Evaluation.....	17

Introduction

The City of Bel Aire has undertaken a number of steps to ensure a dependable water supply for 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 2018, 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. The City of Bel Aire's population has increased 174% to an estimated total of 10,084 residents in 2024 (based on the most recent estimate from the US Census). Building growth increased 110% from 1,976 units in 2000 to 4140 units in 2024. 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. The two cities also agree to discuss other service expansion possibilities in the future.

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 CCUA constructed new water and wastewater treatment plants located in Park City. The plants went on-line in January 2003, providing services to both communities. Additional water rights were acquired from KGE (later Westar, now Evergy) to secure future growth. The Chisholm Creek Utility Authority receives its water from well fields in the vicinity of the CCUA facility.

Bel Aire receives its water from both CCUA and the City of Wichita, with the current demand being supplied by a combination from both sources. 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 CCUA facility and the water towers, 24 hours a day. Daily testing occurs as required by KDHE to ensure safe drinking water for customers.

The City of Bel Aire believes the Municipal Water Conservation Plan represents an additional step in providing citizens with a dependable water supply for years to come. The Municipal Water Conservation Plan (MWCP) works in conjunction with the Bel Aire Municipal Code. The code specifically identifies the actions and authority that the Bel Aire City Government uses to enact the actions identified in the MWCP. Should there be a conflict between the MWCP and the Code, the Code would take precedence.

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 metered approximately 293,024,000 gallons of water sold in 2024 or 54,454,000 fewer gallons than for year 2023. Based on the estimated US Census population of 10,084 residents for 2024, this means that the City of Bel Aire had an average of 80 gallons used per capita per day (GPCD) in 2024. It is noted that Bel Aire entered Stage 2 water restrictions starting August 5, 2024, which lasted through the remainder of the year. This GPCD figure does not include:

- a) Water distributed for free public services (parks, swimming pool, etc.)
- b) Water lost by leaks or purging of lines in the water distribution system
- c) Unaccounted water.

The GPCD figure is obtained by dividing the total gallons used throughout the system by the most recent population estimate from the US Census. It is a strict mathematical computation that includes business and residential water use; it does not mean that each resident of Bel Aire used 80.0 gallons of water per day in 2024, rather it is just an indicator to see how the City of Bel Aire's GPCD figure compares with other cities. Precipitation is a variable factor affecting irrigation and similar outdoor uses. 2024 precipitation was 37.4 inches, which was 5.2 more inches than for 2023 (32.2 inches).

According to the United States Geological Survey, Public Supply Water Use in Kansas in 2015, the City of Bel Aire is located in Region 7M of Kansas. There are eight regions in Kansas, and Region 7 includes Bel Aire and its *Equus*-Walnut planning area. The "M" designates water suppliers for populations between 500 and 9999 people. It is noted that Bel Aire's recent population estimate from the US Census indicates the City should now be identified as a 7L region for large suppliers. 7M had an average usage of 97 GPCD from 2011 – 2015 compared to Bel Aire's 114 GPCD for the same period. Bel Aire's average GPCD from 2011 – 2017 was 111 GPCD, representing a decrease in usage from 2011 – 2015, even though there has been continued residential and industrial development. Bel Aire achieved its GPCD goal of *not to exceed 100* for 2024. Bel Aire's 2025 GPCD goal is again *not to exceed 100*. The attainment of this goal relies largely upon Bel Aire and its surrounding water source areas receiving an annual rainfall of at least 35.59 inches.

Note, precipitation data for the above-noted years and the annual average is obtained from the NOAA weather database (<https://www.ncei.noaa.gov/>). The average reflects the average over the past 30 years and is taken from a Bel Aire weather data station.

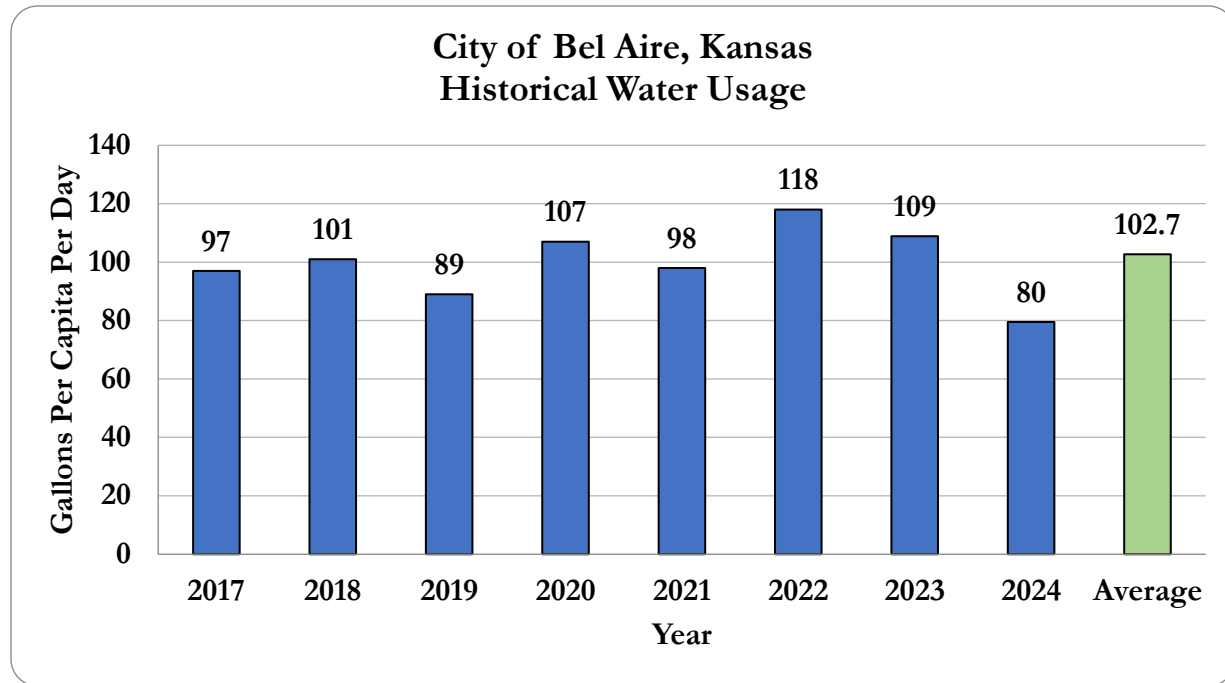


Figure 1 – Bel Aire Historical Water Usage
(Sources: Bel Aire KDHE Water Usage Reports 2017-2023 and population data)

Timeframe	Weekly Usage (gallons)	Peak Daily Demand (gallons)
August 2023	11,600,000	2,400,000
September 2023	11,300,000	2,060,000
October 2023	9,300,000	1,980,000
November 2023	3,600,000	990,000
December 2023	3,100,000	720,000
January 2024	3,400,000	870,000
February 2024	3,000,000	650,000
March 2024	3,700,000	830,000
April 2024	5,800,000	1,310,000
May 2024	6,400,000	1,490,000
June 2024	7,800,000	1,900,000
July 2024	10,800,000	2,060,000

Table 1 – 2023 -2024 Water Usage--Weekly and Peak Demand
(Sources: Bel Aire Daily Water Purchase and Usage Data, 2023-2024)

Water Conservation Practices

This subsection of the plan summarizes the current educational, managerial, and regulatory efforts that impact 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 is performing ongoing education efforts to develop the community's understanding of water issues and conservation as part of its "*Did You Know?*" information series provided in on the City's communication platforms (examples are Bel Aire's website, social media channels, and Bel Aire's NotifyMe® information notification service). As lawn irrigation is a large component of water usage, the City will work with the Utility Advisory Committee, the Bel Aire Tree Board, and other groups/agencies to provide information on landscape practices that promote water conservation.

The City of Bel Aire will also participate in any educational campaigns that the City of Wichita publicizes for water conservation.

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, including the promotion to use soil moisture monitoring systems and/or smart controllers for lawn sprinkler control	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's usage	Ongoing
4. Water conservation articles, tips and issues will be discussed on a regular basis with information published on Bel Aire's communication platforms	Ongoing
5. Local schools and teachers will be encouraged to become involved in water conservation with information provided by the City and to utilize the educational resources of Wichita's W.A.T.E.R Center at 101 East Pawnee	Ongoing
6. Make available information on water conserving landscape practices through publications, utility billing inserts, or other appropriate means. Bel Aire's communication platforms will be used as required.	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, and customers are billed for their usage between meter readings. Accuracy checks can be triggered by customer request. Meters found to produce measurements outside of acceptable parameters are repaired or replaced. Water leaks from the City public water distribution systems are repaired when customers report significant leaks in water mains or when City personnel locate such leaks. System-wide water pressure is monitored 24 hours per day, 7 days per week, and localized checks are done if customers are concerned that their water pressure is too low. In 2015, all outdated residential meters within the City were replaced with new, radio-read meters. Meter maintenance and pressure monitoring allow the City to better track water usage and discover leaks.

The City of Bel Aire charges customers a base rate as well as a consumption rate per 1,000 gallons used. There are six tiers of consumption rates forming a progressive rate structure that increases the rate per 1,000 gallons used as the consumption tier increases. This rate structure is in place to encourage conservation and is in line with the requirements of the Wholesale Water Sales Agreement between Bel Aire and the City of Wichita. The City of Bel Aire realizes that greater emphasis must be placed on maintaining accurate measurement of water use in total at customer meters, which is now within 10% of total water produced. Bel Aire is developing a water-use records system that would allow the City to more effectively and efficiently manage its public water distribution system.

Management Conservation Practices to be Taken	Implementation
1. All source water (CCUA or Wichita) will have meters installed and the meters will be repaired or replaced in a commercially reasonable timeframe when malfunctions occur	In Development with the CCUA Technical Advisory Committee (TAC)
2. Meters for source water will be tested for accuracy annually and when meter readings become suspect. Meters will be repaired or replaced if they fail to meet industry standards.	Current Operating Policy
3. Meters at each individual service connection will be repaired or replaced if they are not within industry standards	Current Operating Policy
4. All meters for source water will be read monthly. Meters at individual service connections will be read once a month or more as determined necessary	Current Operating Policy
5. The City will implement a residential leak detection and repair program.	Current Operating Policy
6. Water charges will be based on the amount of water used (per 1,000 gallons of metered consumption)	Current Operating Policy
7. A water rate structure designed to curb excessive use of water will continue	Current Operating Policy
8. Develop and implement a program to incorporate water conserving landscape principles into future City landscape development projects, including renovation of existing landscape	In development
9. Develop and implement an irrigation management program for City irrigated grounds	Current Operating Policy
10. 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 the municipal (city) codes and ordinances. Municipal codes and ordinances are available at: <http://www.belaireks.gov>.

A Wholesale Water Sales Agreement with the City of Wichita requires Bel Aire to enforce various stages of water emergency to match the stages imposed by Wichita upon itself. Those stages are defined in the following sections. The service agreement between the City of Bel Aire and the Chisholm Creek Utility Authority makes supply water subject to availability and capacity restrictions of the CCUA facility. The City will pursue further regulatory action as circumstances dictate.

Regulation Action to be Taken	Implementation
1. All new or renovated construction will install toilets that use no more than 1.6 gallons per flush or less and low flow showerheads that use 2.5 gallons per minute or less	Enforced through city codes
2. All new or renovated permanent swimming pool installations will include an integrated pool cover	Recommend to City Council
3. Other appropriate regulation actions	As Circumstances Dictate

Drought / Emergency Contingency

The City of Bel Aire's water supply depends upon the combined ability of the City of Wichita and the Chisholm Creek Utility Authority (either being a "Provider") to supply and/or distribute water to Bel Aire. 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 more stringently controls water use than the previous stage as water supply conditions deteriorate. These progressive stages can be triggered by local conditions, in which case, the City Manager is authorized by ordinance to implement the appropriate conservation measures as set out below.

These progressive stages can also be triggered by area-wide conditions identified by the City of Wichita. In such instances, Bel Aire is contractually obligated to implement and enforce the drought response measures. The provisions below are consistent with the more localized triggers of the Chisholm Creek Utility Authority.

Stage 1: Water Watch (Voluntary Conservation)

Triggers

This Water Watch Stage is triggered by any one of the following conditions:

1. Provider (City of Wichita) issues Stage 1: Voluntary Conservation
2. Provider (Chisholm Creek Utility Authority) issues Stage 1

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 frequent updates on the City's communication platforms describing present conditions and indicating the water supply outlook. The updates will include water watch status and 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 monitors 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 (Mandatory Restrictions)

Triggers

The Water Warning Stage is triggered by any one of the following conditions:

1. Provider (City of Wichita) issues Stage 2: Mandatory Restrictions.
2. Provider (Chisholm Creek Utility Authority) issues Stage 2.

Goals

The goals for this stage are to reduce peak demand by 20% and to reduce overall weekly consumption by 10%, based on the peak and average consumption from the most recent year for which drought restrictions were not in place. For the year 2025, this would be for water consumption between August 2023 through July 2024; see Table 1 for these usages.

Education Actions

1. The City will make monthly updates of present conditions and water supply outlook to the City's communication platforms. More frequent updates would be made available if warranted.
2. The City will provide information on water conservation to citizens through the City's communication platforms.
3. The City will communicate any essential information through its Alert and Notification system

Management Actions

1. The City water supply level is 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 implement water conservation measures, including operations of fountains, watering of City grounds and parks, filling of swimming pools and washing of vehicles
4. The City Manager will direct Code Enforcement staff to enforce water conservation policies. The City Manager may direct city police to assist Code Enforcement staff to enforce water conservation policies.
5. If a leak is found in a customer's line, water service may be turned off while repairs are being made

Regulation Actions

1. A four zone watering system will be imposed on City residents. All outdoor lawn and landscape irrigation is restricted to one time per week and must occur between 8:00pm to 10:00am. A map of Bel Aire's Four Zone Watering System (see Figure 2).
 - a. Days chosen for irrigation should avoid weekend times (Saturday through Sunday)
 - b. Irrigation systems that use well water and naturally-fed ponds are exempt from this requirement, however these users are encouraged to voluntarily reduce irrigation as all water sources are indirectly related and subject to the same drought concerns.

- c. If well water or pond water sources are used for irrigation, a sign, visible to the public, must be placed at the site where irrigation is taking place.
2. Outdoor water use, including lawn watering and car washing will be restricted to starting at 8:00 pm and ending at 10:00 am.
3. Waste of water, as defined by the Water Drought/ Emergency Ordinance will be prohibited

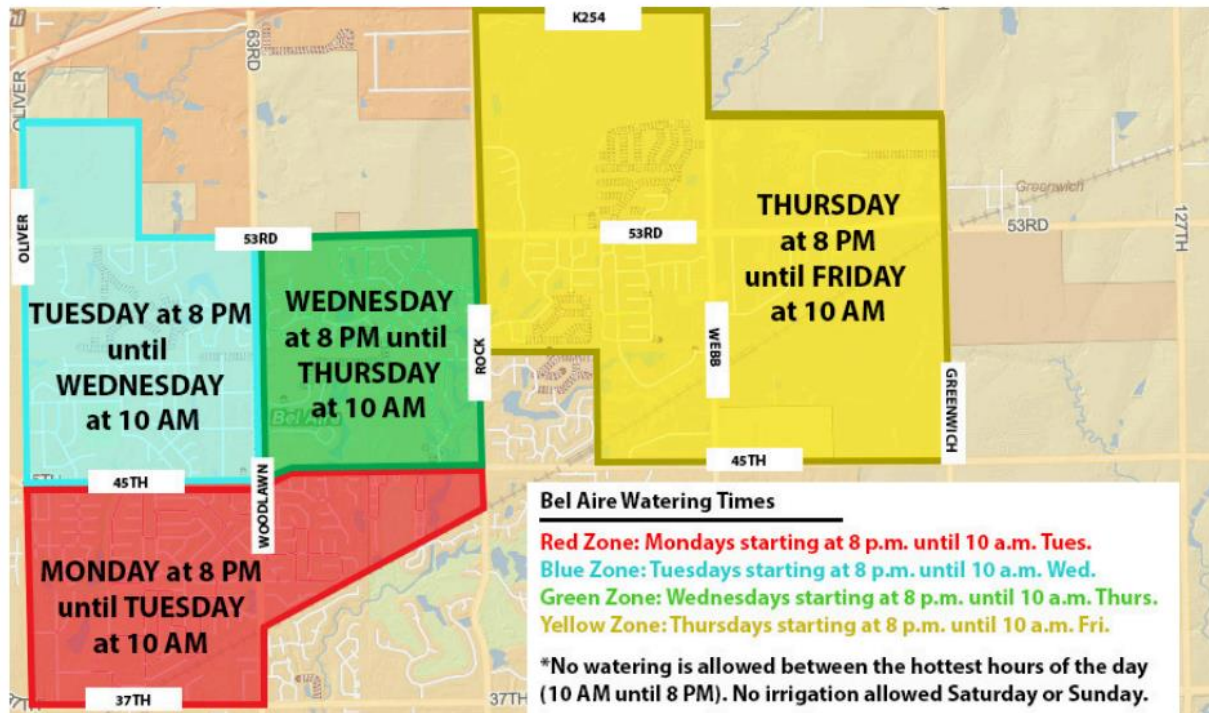


Figure 2 – Bel Aire Four-Zone Watering System

Exemptions

Gardens utilizing drip irrigation or hand watering shall be Stage 2 exempt.

Businesses that generate their core economic activity from usage of outdoor water shall be Stage 2 exempt. Such businesses include, but are not limited to, golf courses, car washes, nurseries, sod suppliers, and others identified by the City Manager.

Persons using water from a well or a naturally-fed pond for any class of outdoor water use as defined in this chapter shall be exempt. To qualify for this exemption, persons using water from a well or pond shall display a sign with the words “well water” or “pond water” (as appropriate) upon it in a location that is readily visible to the general public. The practice of using well or pond water to gain an exemption on outer water usage, is not recommended, however. While water from a water provider is not directly used, well and pond water does still reduce the raw water available to the water suppliers to supply the City. Then, overall water savings goals remain difficult to attain.

Stage 3: Water Emergency, With Exemptions

Triggers

The Water Emergency Stage is triggered by any one of the following conditions:

1. Emergency conditions related to repairs or water quality control
2. Provider (City of Wichita) issues Stage 3: Irrigation Bans
3. Provider (Chisholm Creek Utility Authority) issues Stage 3.

Goals

The goals of this stage are to reduce peak demands by 50% and to reduce overall weekly consumption by 25%, based on the peak and average consumption from the most recent year for which drought restrictions were not in place. For the year 2025, this would be for water consumption between August 2023 through July 2024; see Table 1 for these usages.

Education Actions

1. The City will make daily updates describing present conditions and indicating the water supply outlook for the next day. Updates will be made through the City's communication platforms.
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.
3. The City will communicate any essential information through its Alert and Notification system.

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 will direct Code Enforcement staff to enforce water conservation policies. The City Manager may direct city police to assist Code Enforcement staff to enforce water conservation policies.
5. If a leak is found in a customer's line, water service will be turned off until repairs are made

Regulation Actions

1. Outdoor water use is banned for water customers that do not have an exemption
 - a. Exemptions are listed in the following section.
2. Swimming pools may remain open, but refilling is banned. The City Manager will make decisions regarding indoor pools regulated by constant fill water treatment systems based on circumstances surrounding the emergency event.
3. Waste of water, as defined by the Water Drought/ Emergency Ordinance, will be prohibited

Exemptions

Businesses that generate their core economic activity from usage of outdoor water shall be Stage 3 exempt. Such businesses include, but are not limited to, golf courses, car washes, nurseries, sod suppliers, and others identified by the City Manager.

Stage 4: Water Emergency, No Exemptions

Triggers

The Water Emergency Stage is triggered by any one of the following conditions:

1. Emergency conditions related to repairs or water quality control
2. Provider (City of Wichita) issues Stage 4: Water Emergency, No Exceptions
3. Provider (Chisholm Creek Utility Authority) issues Stage 3: Water Emergency

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 updates describing present conditions and indicating the water supply outlook for the next day. Updates will be made through the City's communication platforms.
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.
3. The City will communicate any essential information through its Alert and Notification system.

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 will direct Code Enforcement staff to enforce water conservation policies. The City Manager may direct city police to assist Code Enforcement staff to enforce water conservation policies.
5. If a leak is found in a customer's line, water service will be turned off until repairs are made

Regulation Actions

1. Outdoor water use is banned for all water customers (with no exceptions)
2. Waste of water, as defined by the Water Drought/ Emergency Ordinance, will be prohibited

Plan Revision, Monitoring & Evaluation

The City of Bel Aire has 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 are 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 _____ day of _____, 2025 by the Bel Aire City Council.

Jim Benage, Mayor

ATTEST:

Approved as to Form:

Melissa Krehbiel, City Clerk

Maria A. Schrock, City Attorney