



Municipal Water Conservation Plan

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Section 1. Introduction

The City of Abilene’s Municipal Water Conservation Plan establishes long-term water use efficiency practices and a short-term drought response framework to help ensure an adequate water supply for customers under varying conditions. Efficient water use also reduces or delays the need for distribution system expansion, moderates long-term costs, and supports stewardship of Kansas water resources.

The City’s public water supply is obtained from wells (2123, 4902, 8087, 19793, 38952, 39200, 39724, 41499, 41500, 47327, 49988, 49989, 50066) drilled between 1945 and 2022. These wells draw from the Sand Springs Aquifer and the Smoky Hill River Alluvium. Treated water storage consists of three 500,000-gallon tanks (two ground-level and one elevated) and one 250,000-gallon elevated tank. This plan supports the City’s ongoing efforts to provide a dependable water supply for current and future needs.

Section 2. Long-Term Water Use Efficiency

Water Use Conservation Goals

The City of Abilene used 168 gallons per capita per day (GPCD) in 2023. This GPCD value includes:

- Water sold to residential and commercial customers
- Water provided for public services (parks, cemeteries, pools, etc.)
- Water lost through leaks in the distribution system

This GPCD value does not include municipally supplied water for industrial users who use more than 200,000 gallons per year. According to *Municipal Water Use in Kansas, 2023*, the City is located in Region 7M and had a 2023 GPCD value of 168, which is above the regional average of 98 GPCD for 2023. Based on the regional average from 2019–2023, the City establishes a long-term conservation goal of not exceeding 94 GPCD, supported by the practices described in this plan.

To ensure the City’s long-term goal is achievable and measurable, the City will use a phased approach with interim benchmarks:

- 140 GPCD by 2028
- 115 GPCD by 2032
- 94 GPCD by 2035 (achieve and maintain)

Progress toward these benchmarks will be evaluated annually as part of the Plan Revision, Monitoring, and Evaluation process. If interim benchmarks are not met, the City will determine additional conservation practices, rate structure adjustments, or operational changes necessary to maintain progress toward the long-term goal.

Water Conservation Practices

This section summarizes the City’s education practices that support long-term water conservation. Educational practices are intended to increase public awareness of water supply limitations, promote efficient water use, and build long-term conservation habits among residents of all ages. Practices are listed with target implementation dates. The City includes total water use (in gallons) and billing information on monthly customer bills and periodically provides water conservation information to local media.

Education Conservation Practices

Practice	Target Date
1. Water bills will show water used in gallons and the cost of water.	Implemented
2. Water conservation tips will be provided with monthly water bills during summer months.	Implemented
3. Provide educational materials to help customers understand and interpret their water bills.	Implemented
4. Coordinate with local schools to provide age-appropriate water conservation education, which may include classroom presentations, curriculum support materials, or participation in school events.	September 2026
5. Provide water conservation presentations or informational materials to local civic organizations, service clubs, homeowner associations, and community groups upon request.	June 2026

Management

Water meters are installed for all residential and commercial customers and for water provided free of charge to City government buildings and grounds. Customer meters are read monthly (on the 15th), and bills are mailed each month.

Leaks in the distribution system are repaired when discovered or reported. Water pressure is typically checked in response to customer complaints.

The water and sewer rate structure was adopted in February 2022 and became effective in March 2022. The City periodically reviews water rates. During a declared Water Emergency, residential water use above 10,000 gallons is charged at double the standard rate.

The City recognizes that accurate measurement and management of both source water and customer usage is essential. In addition to reactive leak repairs, the City will pursue proactive water loss control measures, which may include periodic leak detection surveys, evaluation of system pressures, review of nighttime flow data where available, and targeted inspection of high-risk infrastructure. The City will prioritize water loss reduction strategies that are cost-effective and operationally feasible.

Management Conservation Practices

Practice	Target Date
1. All source water will be metered; malfunctioning meters will be repaired or replaced.	Implemented
2. Source water meters will be tested for accuracy at least once annually; meters not meeting KDA requirements will be repaired or replaced.	Implemented
3. Service connection meters (≤ 2 inch) will be tested/replaced upon customer request and/or suspected failure; meters ≥ 4 inch will be tested annually; meters not meeting AWWA 95%–101% accuracy will be repaired or replaced.	January 2027
4. The City will evaluate rate structures designed to curb excessive use.	February 2026
5. Recommend to the City Manager a program to incorporate water-conserving landscape principles into future landscape projects, including renovations.	December 2026
6. Meters will be installed at all service connections, including separate meters for irrigation systems irrigating more than one acre.	Implemented
7. Conduct a formal water management review and leak detection/repair evaluation when (a) total system water loss exceeds 15% of total source water for a rolling four-month period, or (b) RO Plant water loss exceeds 20% for a rolling four-month period. If losses exceed 20% systemwide or 25% at the RO Plant, initiate corrective actions (e.g., targeted leak detection, pressure management review, meter testing, operational changes).	Implemented
8. Water sales will be based on measured water use.	Implemented

Regulation

The City of Abilene establishes baseline water use regulations that apply year-round, independent of any declared Water Watch, Water Warning, or Water Emergency. These regulations are intended to prevent waste of water, improve water use efficiency, and promote responsible water use consistent with industry standards and the City Code.

Waste of Water

The waste of water is prohibited at all times. Waste of water includes, but is not limited to:

1. Permitting water to escape onto sidewalks, streets, roadways, or other surfaces intended for vehicle traffic, or into any gutter, ditch, or surface drain; and
2. Failure to repair a controllable leak of water due to defective plumbing or fixtures.

These prohibitions apply continuously regardless of conservation stage or drought declaration.

Outdoor Watering Time-of-Day Restriction

To reduce evaporative losses and improve irrigation efficiency, outdoor watering is prohibited daily between the hours of 9:00 a.m. and 7:00 p.m., regardless of season or drought status. Water industry standards recognize mid-day and early evening hours as the least efficient period for landscape irrigation due to higher temperatures, increased evaporation, wind drift,

and reduced soil absorption. Limiting irrigation to early morning or late evening hours improves water use efficiency and reduces unnecessary water loss.

Enforcement of the year-round water use regulations described in this section is authorized pursuant to Article 10 of the City Code, including Sections 7-1002, 7-1007, and 7-1008, as applicable.

Regulatory Actions

Action	Target Date
Require erosion control plans for all new development	Implemented
Adopt a landscape water conservation ordinance.	May 2028

Drought Response

The City of Abilene addresses short-term water supply shortages through a staged response program consistent with Article 10 of the City Code. This program includes Water Watch, Water Warning, and Water Emergency stages, each with defined triggers, goals, and actions.

The City Manager is authorized to declare and terminate a Water Watch and to request voluntary conservation measures as provided in City Code Section 7-1004. The Governing Body is authorized to declare and terminate a Water Warning or Water Emergency by resolution pursuant to City Code Section 7-1003. Mandatory conservation measures and emergency water rates may be implemented only during a declared Water Emergency, as authorized by City Code Sections 7-1005 and 7-1006.

Declarations and terminations of all drought response stages shall occur in accordance with City Code Section 7-1003, including required publication in the official City newspaper. The year-round water use regulations established in Section 2.2.3 remain in effect during all drought response stages and are supplemented, not replaced, by stage-specific conservation measures.

Stage 1: Water Watch

Goal

Increase public awareness of water conditions and maintain the integrity of the water supply system.

Triggers (any one condition)

- Water production capacity is only 10% greater than projected daily demand.
- Availability of water storage is reduced by any one water tower during summer usage only (not applicable to spring, fall, or winter).
- Water tower storage falls below 60% of maximum.

Education Actions

- Issue bi-weekly news releases and post updates on the City website describing current conditions and seasonal outlook.
- Provide bi-weekly precipitation, temperature, and well level summaries (posted at the beginning of each month).
- Share water-saving tips with water utility customers.
- Management Actions
- Repair leaks as soon as practical upon discovery.
- Suspend water tower draining or flushing.
- Suspend washing of the City fleet, hydrant flushing, and water tower draining/flushing for inspection.

Regulation Actions

The public will be asked to curtail some outdoor water use and to make efficient use of indoor water, consistent with the year-round regulations established in Section 2.2.3.

Stage 2: Water Warning

Purpose

The purpose of the Water Warning stage is to reduce water demand early through the implementation of mandatory conservation measures, required operational actions by the City, and heightened public awareness to preserve available water supplies and reduce the likelihood of a Water Emergency.

Triggers

A Water Warning may be declared when one or more of the following conditions occur:

1. The City Commission determines that drought conditions or other circumstances causing a significant water supply shortage are present and declares, by resolution, that a Water Warning exists.
2. Water production capacity is equal to projected daily demand.
3. Two water towers are out of service, regardless of season.
4. Water tower storage falls below 50 percent of maximum capacity.

Authority

Mandatory conservation measures implemented during a Water Warning shall be authorized by the City Commission and shall be set forth in the resolution declaring the Water Warning. Such measures shall remain in effect until modified or rescinded by action of the City Commission.

Education and Public Communication Actions

- The City will issue weekly public updates through local media and the City website describing current water supply conditions and outlook.
- Weekly summaries of precipitation, temperature, and well levels will be made available to the public.

- The City will clearly communicate all mandatory and recommended conservation measures, including examples of permitted and prohibited water uses.

Mandatory Conservation Measures

During a declared Water Warning, and in addition to the year-round water use regulations established in Section 2.2.3, the following mandatory conservation measures may be implemented as specified in the Water Warning resolution:

- Irrigation of lawns and landscaped areas is limited to no more than two (2) days per week per property.
- Use of water for decorative fountains, ornamental water features, and similar aesthetic purposes is prohibited, except where water is fully recirculated.
- Washing of vehicles, driveways, sidewalks, parking areas, and building exteriors is prohibited, except at commercial facilities that recycle water or where required for public health or safety.
- Filling or refilling of swimming pools, hot tubs, and similar recreational water features is prohibited, except for initial filling of newly constructed pools or where necessary to maintain structural integrity.
- 5. Such other reasonable restrictions on water use as are determined by the Governing Body to be necessary to protect the public water supply or ensure the availability of water for essential uses.

Management Actions

Upon declaration of a Water Warning, the following actions shall be implemented by the City:

- Suspension of non-essential municipal water uses, including washing of City vehicles, routine hydrant flushing, and water tower draining or flushing for inspection, except where required for public health or safety.
- Daily monitoring of water supply conditions, storage levels, and system demand.
- Prompt repair of identified leaks in the City’s water distribution system.
- Operational adjustments to well pumping and system operations as necessary to reduce stress on water sources.

Preparation for Escalation

If water supply conditions continue to deteriorate during a Water Warning, the City Commission may consider declaration of a Water Emergency and implementation of additional conservation measures as authorized by City Code.

Stage 3: Water Emergency

Goal

Reduce peak daily water consumption by 50 percent.

Triggers (any one condition)

1. The Governing Body declares a Water Emergency by resolution due to a shortage of water needed for essential uses and imposes mandatory restrictions during the emergency period.
2. Production capacity is less than projected daily demand.
3. Three or more water towers are out of service, regardless of season.

4. Water tower storage falls below 35% of maximum.
5. Blend ratio is outside 10% of nominal set points. For purposes of this plan, the nominal blend ratio refers to the standard operational proportion of water supplied from the City's well fields and treatment sources under normal operating conditions as established by the Public Works Department.
6. Water table falls to historic lows (reference: 2012 water table level).

Authority

Mandatory conservation measures implemented during a Water Emergency shall be authorized by the City Commission and shall be set forth in the resolution declaring the Water Emergency. Such measures shall remain in effect until modified or rescinded by action of the City Commission.

Education Actions

- Issue news releases as needed and post updates on the City website describing conditions and outlook.
- Provide weekly precipitation, temperature, and well level summaries.
- Hold public meetings as needed regarding emergency status and additional actions.
- Provide water conservation articles to local media and post on the City website.
- Provide water-saving tips (online and printed copies available at City Hall).

Mandatory Conservation Measures

During a declared Water Emergency, and in addition to the year-round water use regulations established in Section 2.2.3, the following mandatory conservation measures may be implemented as specified in the Water Emergency resolution:

- Suspension of New Water Connections, with exceptions are allowed for fire hydrants, and connections required under agreements approved prior to the declaration.
- Restrictions on Water Use. The City may impose restrictions on water use across one or more types of uses, in whole or in part, as necessary to protect the public water supply.
- Water Rationing based on reasonable formulas
- Suspension of Non-Essential Municipal Water Use
- Adoption of Emergency Water Rates pursuant to City Code Section 7-1006
- Extension of Restrictions to Private Wells with approval from the Kansas Department of Agriculture – Division of Water Resources, mandatory restrictions may be extended to private wells within City limits if necessary to protect the public water supply.
- Such other reasonable restrictions on water use as are determined by the Governing Body to be necessary to protect the public water supply or ensure the availability of water for essential uses.

Management Actions

- Monitor City water supplies daily.
- Repair leaks as soon as possible upon detection.

- Reduce well pumping to decrease drawdown and maintain water levels over well screens.
- Consider adjusting the blend ratio to minimize strain on the two well fields.
- Initiate coordination for emergency water supplies, which may include temporary interconnections with neighboring public water suppliers, emergency hauling, use of alternate permitted sources, and coordination with KDA-DWR, KWO, and other state or federal agencies as appropriate.

4. Plan Revision, Monitoring, and Evaluation

The City will review monthly totals for water production, residential/commercial sales, water provided free of charge, and unaccounted-for water. Identified issues will be addressed as soon as possible.

In addition to GPCD, the City will track supplemental performance indicators, including:

1. Total system water loss as a percentage of water produced
2. Peak daily water demand during the summer season
3. Seasonal trends in residential water use

These indicators will be used to evaluate the effectiveness of conservation practices and to inform plan updates.

The City's Municipal Water Conservation Plan will be reviewed each April and more frequently during drought or other shortage conditions. If conservation goals are not met, the City will evaluate the prior year's data and the effectiveness of plan practices.