

RESOLUTION NO. 8-2005

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ABILENE, TEXAS, AFFIRMING THE CITY'S WATER MANAGEMENT PLAN AS UPDATED AND AMENDED, APPROVING NEW AMENDMENTS TO THE PLAN AND ESTABLISHING AN EFFECTIVE DATE.**

**WHEREAS**, the City of Abilene ("City") has practiced effective water conservation efforts since the early 1980's; and,

**WHEREAS**, the City officially adopted a water conservation plan called the "City of Abilene Water Management Plan" (WMP) on June 12, 1986, presented an update to the City Council in September 1996, and last amended the WMP in April 2001; and,

**WHEREAS**, the WMP provides for the orderly development, management, conservation and protection of Abilene's water resources; and,

**WHEREAS**, the Texas Commission on Environmental Quality (TCEQ) requires certain data be a part of WMP plans; and,

**WHEREAS**, the City now desires to amend the WMP to include and update the TCEQ required data as well as affirm the original WMP as updated and amended through 2001; now, therefore,


**BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ABILENE, TEXAS:**


PART 1: That the City of Abilene officially affirms the June 12, 1986 adoption of the WMP with the 1996 update and 2001 amendments; and

PART 2: That the document labeled "Water Conservation Plan Summary" attached as Exhibit A, incorporating current utility data and addressing current requirements of the TCEQ for acceptable water conservation plans, is hereby adopted to supplement Part VII of the City's WMP, entitled "Water Conservation: Demand Management Practices: Regulation" and is hereby incorporated into the WMP.

ADOPTED and EFFECTIVE this 24th day of March, A.D., 2005.

ATTEST:

  
Jo Moore  
City Secretary

  
Norm Archibald  
Mayor

APPROVED:

  
Sharon Hicks  
City Attorney

## **Exhibit A**

### **City of Abilene Water Conservation Plan Summary**

#### **Section I: Declaration of Policy, Purpose and Intent**

The purpose of the Water Conservation Plan (the Plan) is to: promote the wise and responsible use of water by implementing structural programs that result in quantifiable water conservation results; develop, maintain, and enforce water conservation policies and ordinances; and support public education programs that educate customers about water and wastewater facilities operations, water quantity and quality, water conservation and non-point source protection.

#### **Section II: Utility Profile**

##### **Population**

Abilene's population in the year 2005 as determined by the Texas Water Development Board Region G Planning Group was estimated to be 120,334, and is projected to be 124,607 by the year 2010. Abilene supplies treated water to wholesale purchasers who in turn resell that water to their system users. Total population of wholesale users in the year 2005 was estimated to be 34,938, and is projected to reach 35,413 persons by the year 2010.

##### **Customer Data and Water Use Data**

Abilene's water customers consist of a mixture of residential, commercial, industrial, wholesale, institutional and irrigation users. City of Abilene residential customers are supplied through approximately 34,000 connections with approximately 400 connections added each year. Abilene serves approximately 4,700 commercial connections with a net average gain of approximately three new commercial connections added each year.

##### **Water Supply System Data**

###### **Water Sources**

Raw surface water is supplied to Abilene's treatment works from several sources. The City of Abilene owns and holds surface water rights to 30,650 acre feet per year (ac-ft/yr) from Lake Fort Phantom Hill, of which 25,650 ac-ft/yr are for municipal purposes, 4,000 ac-ft/yr are for industrial purposes, and 1,000 ac-ft/yr are for irrigation. Hubbard Creek Reservoir, owned and operated by the West Central Texas Municipal Water District provides by contract up to 25,500 ac-ft/yr (of the safe yield of Hubbard Creek Reservoir, depending on the lake level) of raw surface water for use by the City. Abilene may utilize by contract up to 16.54% of the safe yield of Lake O.H. Ivie, not to exceed 15,001 ac-ft/yr. The City owns and is allocated use of 1,675 ac-ft/yr of water for municipal

purposes from Lake Abilene.

Lake Kirby, also owned by Abilene, can be used for irrigation purposes and for storage/diversion of reclaimed water also used for irrigation purposes. The Clear Fork Diversion owned and operated by Abilene allows excess water, not to exceed 30,000 ac-ft/yr, from the Clear Fork of the Brazos River to be stored in and diverted from Lake Fort Phantom. The City's Deadman Creek Diversion serves to allow 3,000 ac-ft/yr through a diversion channel into Lake Fort Phantom Hill.

### **Water Treatment**

A pump station located on the eastern bank of Lake Ft. Phantom pumps water from Lake Ft. Phantom to the Northeast Treatment Plant and the Grimes Treatment Plant. A delivery system consisting of two parallel pipelines can provide up to 30 million gallons per day (MGD) from Hubbard Creek Reservoir to the Ft. Phantom delivery system. Water flows through a 21-mile long gravity pipeline from Lake Abilene to the small Abilene Treatment Plant (currently not in use) located near Buffalo Gap Road and FM 707. A pump station on the banks of the Clear Fork of the Brazos River, near Lake Ft. Phantom allows up to 1,995 ac-ft/day to be diverted into Lake Ft. Phantom under selected volume and quality conditions.

The City's Water Treatment System consists of three treatment plants having the maximum treatment capacity of 51 MGD and combined treated water storage of 11.95 million gallons (MG). Upon completion of improvements currently under construction, the Northeast Water Treatment Plant on East Lake Road will have a capacity of 25 MGD and treats raw water drawn from Lake Ft. Phantom and Hubbard Creek Reservoir. The Grimes Water Treatment Plant on East Highway 80 has a treatment capacity of 20 MGD and treats water drawn from Lake Ft. Phantom and Hubbard Creek Reservoir. The Hargesheimer Water Treatment Plant located on Highway 83/84 near Tuscola has a micro-filtration capacity of 8.95 MGD, and a reverse osmosis/ blended capacity of 6.0 MGD, and treats raw water drawn from Lake O.H. Ivie. At these plants, raw water undergoes complete treatment including coagulation, sedimentation, filtration, and disinfection.

### **Water Distribution**

The City of Abilene's water distribution system provides economical and compatible facilities that are capable of furnishing sufficient water at suitable pressures to both Abilene retail and wholesale purchasers. The system consists of nearly 750 miles of underground water mains, five pumping stations, three ground storage tanks, six elevated storage tanks, over 12,000 valves, over 2,700 fire hydrants, and over 38,000 meters.

After the water is processed at the treatment plants, it is pumped into the distribution system and stored in ground and elevated storage tanks with a combined volume of 39.55 million gallons. The distribution network is laid out in a continuous looped system to circulate water and maintain constant system pressure. Pumping stations are located strategically throughout the system to pump water, maintain uniform pressure and

maintain storage tank levels.

Treated water from the Abilene treatment plants enters the wholesalers' systems through metered interconnections. Production capacity of the wholesale purchaser's systems amount to 13.4 MGD. Ground storage capacity within the wholesalers' systems is approximately 4.3 million gallons while total elevated storage volume is approximately 3.3 million gallons.

## **Wastewater System Data**

### **Wastewater Collection**

Abilene's wastewater collection system consists of a network of approximately 550 miles of sewer lines, 10 lift stations, and 5,100 manholes serving the cities of Abilene and Tye. Sewage flows by gravity, aided when necessary by lift stations, through the collection system into the Buck Creek Pump Station, which has a rated pumping capacity of approximately 24 MGD. An emergency storage basin at this facility has a capacity of approximately 23 million gallons. Sewage is metered at Buck Creek and then pumped five miles to the wastewater treatment plant. Wastewater collected is treated at the City of Abilene's Hamby Wastewater Treatment Plant.

Treated sewage undergoes full biological treatment that includes grit removal, sedimentation, activated sludge process, filtration, chlorine disinfection, and disinfectant removal. Wastewater quality is protected against industrial pollution through an Industrial Pre-Treatment program. Industrial users are required to treat wastewater to specific standards before it is released into the municipal sanitary sewer system. Irrigators in and around the City reuse some of the treated effluent, while the remainder is discharged to Deadman Creek by way of Free Water Creek. Sewage biosolids are disposed of in a sludge disposal unit.

### **Wastewater Treatment**

When wastewater reaches the Hamby treatment facilities northwest of town, it undergoes full biological treatment that includes grit removal, sedimentation, activated sludge process, filtration, chlorine disinfection, and disinfectant removal. The Hamby plant's rated treatment capacity is 22 MGD. Wastewater quality is protected against industrial pollution through an Industrial Pre-Treatment program. Industrial users are required to treat wastewater to specific standards before it is released into the municipal sanitary sewer system. Irrigators in and around the city reuse some of the treated effluent, while the remainder is discharged to the designated receiving stream. Sewage biosolids are disposed of in a sludge disposal unit.

## **Section III: Water Conservation Goals**

Water users located within the City of Abilene's Certificate of Convenience and Necessity (CCN) coverage area currently use approximately 166 gallons of treated water

per capita per day (gpcd). The 5-year goal for water use reduction by City of Abilene users is to reduce per capita use by 2 gallons per day per user to 164 gpcd by the end of 2010. The 10-year goal is to reduce per capita use by 4 gallons per day per user from present levels to 162 gpcd by the end of 2015. These goals are set in accordance with Region G Planning Group projections.

Wholesale water users served by the City of Abilene, located outside the City of Abilene's CCN coverage area, currently use approximately 83 gpcd of treated water supplied by Abilene. The 5 and 10-year goals for wholesale users supplied by the City of Abilene is to reduce per capita use by 1 gallon per day per user to 82 gpcd by the end of 2010 and 2015. These goals are set in accordance with Region G Planning Group projections.

#### **Section IV: Metering Devices**

It is Abilene's policy to purchase meters that meet at least the minimum standards developed by the American Water Works Association. All metering devices used to meter water diverted from the source of supply are accurate to within plus or minus 5% to measure and account for water diverted from the source of supply. All service connections in the distribution system are metered. Aged meters are systematically replaced to assure reliability of meter performance. The wholesale water purchasers are responsible for metering device installation, maintenance and calibration for meters located within their service areas.

#### **Section V: Universal Metering**

It is Abilene's policy to individually meter all water usage, except for fire protection, including all new construction within the City's CCN coverage area. Combined with an aggressive leak detection and repair program, electronic data collection devices, and a computerized billing system, Abilene's universal metering program has resulted in a water delivery accuracy rate well within industry operating standards.

#### **Section VI: Measures to Determine and Control Unaccounted-For Uses of Water**

The record management system utilized by the City of Abilene segregates water sales and users into user classes of residential, commercial, public/institutional, and industrial. It is Abilene's policy to investigate customer complaints of low pressure and possible leaks. Abilene visually inspects suspected leaks and makes quick and timely repairs to those leaks when detected. Abilene utilizes a record management system which records water pumped, water delivered, water sales and water losses to track water transmission, distribution, and delivery to customers. This information is used to evaluate the integrity of the water delivery system from source to end user to control and minimize unaccounted-for uses of water.

## **Section VII: Water Conservation Program**

The City of Abilene's Water Conservation Program utilizes Supply Management Methods and Demand Management Methods to work towards optimizing use of Abilene's water resources.

Supply Management Program Elements consist of:

- Coordinated use of water supplies to ensure the City withdraws water from its water supply reservoirs in a manner that ensures maximum dependable yield and efficiency of operation.
- Watershed management to ensure diversion channels to Lake Ft. Phantom are clean, relatively straight, and obstruction-free to increase captured water flow while minimizing flooding potential in populated areas.
- Metering all service connections to ensure maximum return for delivered water while minimizing unaccounted-for water loss.
- Leak detection and repair to minimize unaccounted-for water loss.
- Treated wastewater reuse and recycling to lessen the demand for raw water used to produce potable water, and for raw water pumping for irrigation uses.

Demand Management Program Elements consist of:

- Water pricing as a mechanism for encouraging water customers to conserve.
- Regulations for conserving water via the Water Conservation Plan and Drought Contingency Plan adopted by the City.
- Plumbing Code for the City of Abilene requires maximum standard plumbing fixture capacities not be exceeded. Abilene supports a Low-Income Housing Retrofit Program and City Building Retrofit program to determine the feasibility of retrofitting fixtures in selected structures.
- Continuing education programs to increase public awareness of supply, treatment and conveyance systems in Abilene, to increase public awareness of the benefits and need for conservation, and to make information about practical cost-effective methods and technologies to achieve conservation readily available.

## **Section VIII: Non-Promotional Water Rate Structure**

In 1984, the City of Abilene adopted a non-promotional, inverted rate structure. Under this rate structure the billing rate increases as individual water consumption increases. This rate structure promotes conservation and shifts the cost of supplying water to those consumers using it most.

## **Section IX: Means of Implementation and Enforcement**

The Plan will be enforced within the Abilene CCN coverage area by (1) providing service taps only to customers complying with adopted ordinances, (2) maintaining a non-declining rate structure, (3) discontinuing service to those customers who do not pay their

water bills until payment is made, and (4) certifying only new construction that conforms to adopted ordinances.

Wholesale customers will receive written notification of Plan adoption. Adoption of this Plan by City of Abilene in accordance with 30 Texas Administrative Code (TAC) §288.5 obligates wholesale customers as defined in 30 TAC §288.1 to implement water conservation measures.

### **Section X: Coordination with Regional Planning Group**

The service area of Abilene is located within the Region G Planning Area. Abilene has provided a copy of this Plan to the Region G Planning Group.

### **Section XI: Additional Water Contract Requirements**

#### **Wholesale Water Supply Contracts**

It is Abilene's policy to include in every wholesale water supply contract entered into or renewed after official adoption of the Plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using applicable elements in 30 TAC 288, Subchapter A. If the wholesale customer intends to resell the water, then the contract between Abilene and the wholesale customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with 30 TAC 288, Subchapter A.

### **Section XII: Revisions to the Water Conservation Plan**

The City of Abilene shall review and update, as appropriate, the Plan, based on new or updated information, such as the adoption or revision of the Regional Water Plan, in 2009 and every five (5) years thereafter.

### **Section XIII: Severability**

It is hereby to be the intention of Abilene that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable and if, any phrase, clause, sentence, paragraph or section shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not effect any of the remaining phrases, clauses, sentences, paragraphs or sections of this Plan, since the same would not have been enacted by Abilene without the incorporation into this Plan of any such unconstitutional phrase, clause, sentence, paragraph or section.