Bistone Municipal Water Supply District

WATER CONSERVATION
AND
DROUGHT CONTINGENCY PLAN

Bistone M.W.S.D.
P.O. Box 145
Mexia, Texas 76667
Voice (254) 562-5922
Fax (254) 562-6648
bistonewater@nctv.com

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SECTION I

INTRODUCTION

Bistone Municipal Water Supply District (District) location is in Limestone County, Texas. Major highways through the area include U.S. Highway 84 and State Highways 14 and 171. Several Bistone area residents came together during the drought in the 1950's. Their goal was to develop a dependable water source for the area. Groesbeck and Wortham were involved in the original planning, hence the name Bistone. A special act (H.B. No. 899) of the Texas State Legislature, submitted by the local State representative created the District on May 31, 1957. The District's first water supply project, now known as Lake Mexia, was supported by the citizens of Mexia, but voted down by Groesbeck citizens. The Board of Directors voted to remove the City of Groesbeck from the District. The District went on to successfully complete Lake Mexia, which was the primary source of drinking water until 1982. The District's second water supply project became a reality following the passing of S.B. No 862 on May 28, 1981. This Act allowed the District to drill water wells in the Personville community. Figure 1 shows an area map for the District and the pertinent water system elements.

The District's primary responsibility is wholesale water supply. The District supplies water primarily through treated groundwater from wells in the Wilcox Formation; a secondary water source is treated surface water drawn from Lake Mexia. The District sells treated water to the City of Mexia (Mexia) via a long-term water purchase contract, which allows for delivery of 4.0 million gallons per day (MGD). The District's other wholesale customer's; located outside of the District's boundaries, include the Mexia State Supported Living Center, City of Tehuacana, and White Rock Water WSC 3 & 2 (West Lake Mexia System and in the FM 2838 and Highway 171 area), respectively. The District also serves approximately 250 retail customers along its pipeline system.

Mexia, in turn, delivers treated water through its water distribution system to Mexia's citizens and four (4) water supplies: Shiloh WSC, White Rock Water WSC 1. (Forest Glade area), 84 West WSC and the City of Wortham.

The District does have a formal water conservation program to assist in reducing the amount of water consumed and wasted by those in its service area but needs to establish quantitative targets. The City of Mexia first adopted a plan on April 21, 1998, and has maintained updates at subsequent intervals, which does address the same geographic area of the City limits, which are the District's actual boundaries. In order to institute measures to encourage reduced water consumption and plan for future emergencies, a formal water conservation and emergency water demand management plan is needed.

The long-term focus of the Plan is to "Conserve for our Future" by stretching existing and planned expansions to the water system by reducing per capita water consumption. Long-term conservation programs include conservation price and making water conservation literature available to the public to help customers reduce per capita water use by 15 percent over the next several decades.

The information herein represents the water conservation and emergency water demand management plan developed for and implemented by the District. This document has been developed, in part, in accordance with the guidelines of the Texas Commission on Environmental Quality (TCEQ), Texas Water Development Board (TWDB) and through consultation with wholesale customers, and to be in agreement with Mexia's existing plan.

A. Description of the Planning Area and Project

Figure 1 shows the water supply system area layout of the District. Figure 2 shows the official Certificate of Convenience and Necessity (CCN) map of the area. The District's CCN number is l0788. Figure 3 shows Lake Mexia's reservoir volume table as of May 1996. Figure 4 shows the distribution system schematic.

B. Utility Evaluation Data

In order to develop an effective and an efficient water conservation and drought contingency plan, the water system must be evaluated. The management plan must consider the total water supply system. The most applicable information is provided in Appendix A.

C. Program Goals

The District recognizes the importance of developing an effective water conservation and drought contingency plan. Proper planning will allow all users in the system to conserve water and ensure a supply during shortages due to system constraints or actual drought.

The table below shows recent per capita consumption and the goal of 1 percent reduction per year based on current consumption. The projected reductions are shown at 5- and 10-year increments as required by HB 2660. These targets and goals will be updated whenever the Water Conservation and Drought Contingency Plan is revised.

Water Consumption Historical and Goals (GPCD)

Year	Target Total GPCD	Current Total GPCD	Target Residential GPCD	Total Residential GPCD	Target Water Loss GPCD	Current Water Loss GPCD	Adjusted Water Loss GPCD
Baseline	146	146	47	46	90	90	6
2029	145		46		86		
2034	144		45		82		

- Residential is calculated by retail population.
- Adjusted is after applying current wholesale factor percentage.

The District is committed to water conservation to avoid waste, save costs, and conserve water. To this end, the District proposes to establish the following goals for its long-term water conservation and drought contingency plan:

1. Water rate structures have been changed to an increasing block rate by Ordinance 9 on

May 21, 2001. The increasing block rate is a water conservation-oriented rate structure. Rates have increased since then but are still based on an increasing block rate structure.

2. Unaccounted-for water (raw water production compared to metered use) in the system should be reduced to a maximum of 5%. This water loss percentage should be obtained over the next 5-10 years. This goal will require decreases in per capita water consumption thus reducing water demands on the system thereby decreasing the quantity of water to be produced by the District. In 2023, the District's adjusted total water loss was 6 GPCD, as per the water loss audit.

3. Automatic read meters are in use for all water users including some District facilities.

4. Education and information should be provided on a yearly basis to all customers presenting non-wasteful uses of water and techniques that can be employed to conserve water.

D. Plan Implementation

The enclosed District Resolution Number 2024-02 herein adopts this water conservation and emergency water demand management plan and subsequent plan elements. The Resolution was adopted July 16, 2024. See Appendix B

E. Plan Coordination

The General Manager or his/her duly authorized representative has the authority to submit this report to the following groups and work with them as necessary:

1. Brazos G Regional Water Planning Group

2. Texas Commission on Environmental Quality

3. Texas Water Development Board

4. Wholesale Customers

The District intends to submit a final copy of this report to the above groups. The District shall maintain a copy of this report in its office located at 343 LCR Whiterock, Lake Mexia, Texas. This report will be available for public review during the normal business hours of the District; Monday through Friday, 8:00 a.m. – 12:00 p.m. and 1:00 p.m. – 5:00 p.m.

SECTION II

LONG-TERM WATER CONSERVATION PLAN

The four main goals associated with the long-term water conservation planning for the District involve establishing a non-wasteful water rate structure, reducing unaccounted for water to extend plant capacity and life, installing meters for all water users, and providing education and information to all customers.

The total dependable yield of the state's "conventional" ground and surface water resources is about 16 million acre-feet per year currently. If all potential reservoirs sites are developed, this yield could be increased only by an additional four to five million acre-feet. This means that Texas' conventional fresh water supplies are already 75-80 percent developed.

Water conservation can make an important contribution to meeting the state's future water needs. An example of this contribution is the Texas Water Development Board projection that with conservation, six new reservoirs costing nearly a billion dollars will not be needed during the next 50 years. Another perspective is that water conservation can provide a means for stretching existing water supplies to serve a growing population and economy.

Conservation is achieved through a variety of measures affecting behavior of end-users and the installation of more efficient equipment. To implement these measures in a cost effective and focused manner they have been organized into a number of conservation programs. This report summarizes the various programs that the District will pursue. Following the program descriptions is a section on implementation schedules for each program area. The conservation measures are organized into the following four program areas:

Water Accountability Program

Conservation Pricing

Public Education and Information Programs

Ordinances and Wholesale Customer Agreements

These long-term water conservation goals can only be achieved through adherence to the following plan elements and methods:

A. Education and Information

According to the document titled "Guidelines for Municipal Water Conservation and Emergency Water Demand Management" prepared by the TWDB (November 1991), statistics for municipal water uses in Texas indicate many areas in which water can be conserved or better utilized. Some of the facts about municipal water uses include:

* Seasonal use (primarily for landscape irrigation) averages 20-30% of the total annual municipal use.
* Single-family homes often use half of the water purchased in the summer months for exterior purposes such as lawn watering and car washing.
* Residential in-home water consumption indicates that 40% is used for toilet flushing, 35% for bathing, 14% for laundry, and 11 % for kitchen needs.

As can be seen from these water use facts, a great potential exists for reducing water consumption if the public is informed concerning water conservation practices. In fact, a municipality can employ low cost investments to educate the public on how to save water inside homes, with landscaping practices, and in recreational activities. The focus of public education, therefore, relies on proper communication.

Various media exist for effectively communicating water conservation information. Some of these methods include television, radio, and newspaper announcements and advertisements; posters and public displays; exhibits at fairs, contests, and school programs; bill inserts, brochures, pamphlets, and newsletters; and speaker's programs. The vehicle by which information is distributed is dependent on the constinantly changing availability of these media types. It is also dependent on the future approaches taken by District officials in educating the public. At a minimum, the District will provide education and information to its citizens through the following vehicles:

1. Water Conservation Annual Educational & Public Awareness Activity

The District currently provides education on a regular basis through school programs. To compliment this effort, the District will provide annual water conservation education through media advertisements in the local newspaper and social media platforms. Options available to diversify this publication include:

* Invite guest authors in water related agencies (such as TRWA, TWDB, or TCEQ) to write pertinent water conservation messages.
* Present selected material from the TWDB giving water conservation strategies for residential, commercial, and industrial customers.
* Provide District water use data concerning variations in seasonal consumption, unaccounted-for water losses in the system, or yearly/monthly changes in per capita water use.

These newspaper advertisement topics will effectively reach a majority of the population with the water conservation message.

2. Water Conservation Literature for Customers

The District will always maintain water conservation materials available to customers. General water conservation brochures (such as those available through the TWDB) will be mailed to each customer on each odd calendar year. New customer packets will also be developed to deliver the water conservation message. Various types of literature are available for distribution to the current and future customers, and District specific documents can be developed as deemed appropriate and necessary by District officials.

B. Conservation-Oriented Water Rate Structures

Conservation pricing provides incentives to customers to reduce average and/or peak use. The District established an increasing block rate in 2001. This arrangement involves an increasing block rate scale for water charges where the cost per unit of water used increases for each unit purchased. Each tier of the rate structure is designed to send a price signal to consumers as their discretionary consumption of water increases. Our current residential water rates are the following:

Minimum rate - First 1,000 gallons	$20.00
Next 24,000 gallons of usage	$ 7.30 per 1,000 gallons
Next 25,000 gallons of usage	$ 7.81 per 1,000 gallons
Next 25,000 gallons of usage	$ 8.23 per 1,000 gallons
Next 25,000 gallons of usage	$ 8.65 per 1,000 gallons
All over 100,000 gallons	$ 9.07 per 1,000 gallons

Such a structure will encourage all users (single family residence, multi-family residence, commercial, and industrial) to use water wisely. The District's rates are designed to recover the cost of providing continual service to our service area; and billing for water service is based on metered water use. Both a seasonal rate and an additional high-water use tier shall be evaluated, in an effort, to reduce summertime peak usage. A rate study was performed by Nelisa Heddin Consulting during 2018-19. They determined retail rates are appropriate. The District will continue to update the rate structure as needed through regular rate studies and recommendations to and passage by the Board.

The District previously negotiated new rates with its wholesale contracts since September 2013, and updated its rates in January 2021. The wholesale rates have a minimum portion that only covers fixed operational costs and incurred debt, plus a charge per thousand gallons for all water used.

C. Universal Metering and Meter Repair and Replacement

The District maintains meters to ensure that accurate readings (meters registering at an accuracy

of no less than 95% or no higher than 105% expressed as a percentage of the full scale of the meter and performing to American Water Works Association water metering standards) are being recorded. This ensures fair and equitable billing and reduces unaccounted for water.

Unaccounted-for water is water that is supplied to the system but not sold through the customers' meters. An example of unmetered water is flushing of water distribution mains. Unaccounted for water also involves any losses to the system through faulty meter readings or distribution line leaks. These losses to the system should be calculated and reported on an annual basis. To meet this objective, the following concepts should be included in the water loss audit program:

1. Universal Metering of Customer Uses

   The District requires meters for all new connections and bills by volume of use. The District collects and tabulates metered water usage data on Residential (Single-Family, Multi-Family and Duplex), Municipal and Wholesale accounts. It is essential that all customers and water users be metered. All water users must have meters installed to reduce unaccounted for water in the system and provide more accurate water use audits. Currently, certain District facilities are not metered: both treatment plants and the office building.

2. Periodic Meter Testing and Replacement

   A maintenance program of meter testing and repair is essential in gathering accurate data on the water system. To ensure problems are detected on a consistent and methodical basis, all meters owned by the District will be tested according to the following schedule:

   * Master Meters - test annually.
   * Customer Meters (larger than 1 1/2") - test annually.
   * Customer Meters (smaller than 1 1/2") – replaced every 10 years. (To avoid replacing every customer meter in one year, stagger replacements should be utilized to ensure that an equal number of meters are replaced each year.)

   Monthly meter readings should also be checked versus previous readings to determine if there is a dramatic change in water use. A large variation would indicate that the meter is not operating properly and should be investigated further. Meter readers will be trained to recognize possible problems, be alert for system leaks, and report abnormal situations.

D. Monitoring and Record Management

A monthly accounting of the amount of water produced by the Bistone MWSD versus the water metered to the consumers is currently being maintained (RVS software). Unaccounted for water can be monitored and graphed by examining these records. Graphs indicate any sudden changes in water usage and assist in reducing the sources of leaks as they are located

and eliminated.

1. Leak Detection and Repair Programs

A leak detection, location, and repair program is an important part of reducing water losses in the system. Such a program will tend to finance itself from savings in water production costs to the District. These sources encompass defective meters, abandoned services; unmetered water used for other uses, inaccurate meter readings, illegal hookups, unauthorized use of blow off and air release valves, and leaks in mains and services.

Locating these leaks before they become major problems is something that the District needs to more closely address. The District can do this by resolving right-of-way access issues, beginning a mesquite and brush control program along these right-of-ways, and quarterly inspections of the approximately 25 miles of pipeline that the District owns. These steps are necessary to accomplish the reduction in water loss proposed in this plan.

E. Water-conserving Landscaping (Xeriscape)

The public education program will include landscaping and irrigation procedures, which reduce water consumption and lower water bills. The District will provide information on native or climate-adapted landscape design, efficient irrigation equipment/management to new customers and change-of-service customer accounts. The District will strive to provide an example by applying these procedures to District property wherever practical.

F. Plumbing Codes

According to the TWDB, "the single most effective method of conserving water inside the home is to replace older, inefficient plumbing fixtures with modern, efficient fixtures". A strong plumbing ordinance is, therefore, essential in meeting water conservation goals. The City of Mexia has previously adopted a plumbing ordinance. Enforcement of this ordinance will continue. Future plumbing code modifications must include the most current Texas Legislature regulations (rules as of January 1, 1992 shown in Table 1) and additional standards as appropriate. The District has also adopted a plumbing code by ordinance, but lacks the authority to enforce the plumbing code, due to District boundaries. The retail customer service agreement provided to each retail customer does provide the District some daily management tools. See Appendix C.

Table 1. Plumbing Minimum Standards

Fixture	Standard
Texas Legislature (January 1, 1992)	
Shower Heads	No more than 2.75 gpm at 80 psi
Lavatory & Sinks	No more than 2.2 gpm at 60 psi
Faucets and Aerators	
Wall-mounted,	No more than 2.0 gallons per flush

Flushometer Toilets	
All other Toilets	No more than 1.6 gallons per flush
Urinals	No more than 1.0 gallons per flush
Drinking Water Fountains	Must be self-closing

Additional Requirements	
All Hot Water Lines	Must be insulated
New Swimming Pools	Must have recirculating filtration equipment

The District should also adopt provisions to require installation of pressure reducing valves where water system pressures exceed 80 psi (pounds per square inch). This will help in reducing the potential for leaks in water lines. The District will encourage all wholesale customers to adopt plumbing ordinances that require water conservation measures.

G. Retrofit Program

Through the education and information program, plumbers and water consumers will be encouraged to retrofit old fixtures (such as plumbing fixtures, lawn watering equipment, and water-using appliances) with water saving devices. The educational process will focus on the advantages of installing water conservation devices as well as the availability of these items.

H. Recycling and Reuse

Recycling or reuse of waters is currently not practiced in Mexia. The effluent from the wastewater treatment plant is available for reuse by an entity. Although it is possible to use the treated effluent for some industrial purposes or for irrigation, the remote location of the plant discourages effluent reuse at the present time.

I. Pressure Reduction

Excessive pressures in water distribution systems and customer connections are directly related to the mechanical wear experienced on plumbing and the quantities of water lost through system leaks. With lower pressures in a system, line and valve breaks occur less frequently and less water is lost when breaks do occur.

It is essential that an updated water distribution system model be maintained to examine impacts of new lines to the existing variations in pressures. At such time that pressures exceed 80 psi in certain portions of the District, installation of pressure-reducing valves (PRV's) will be warranted to reduce the potential for increases in unaccounted-for water through system leaks.

J. Means of Implementation and Enforcement

The General Manager or his/her duly appointed representative will act as the Administrator of the Water Conservation and Drought Contingency Plan. The Administrator will

oversee the execution and implementation of all elements of the plan and be responsible to oversee the keeping of adequate records for program verification.

The District's is committed to implementing a successful Water Conservation and Drought Contingency Plan that will meet with District goals and conform to Regional and statewide water plans and applicable regulations and statutes.

Each of the conservation programs that have been outlined in this plan has an implementation schedule and objectives for successful implementation. The initial schedules and objectives are listed below. As the plan is implemented and adjusted from year-to-year, these may be modified. Annual reporting measures will serve as indicators of the success of the programs.

1. The District Accountability Program was first implemented by the District in 1991.
2. The District shall reconfirm or update the Water Accountability Program annually as needed.
3. The District maintains an active distribution system-auditing program.
4. The District shall repair identified leaks whenever cost-effective.

As a means of implementing and enforcing this plan, all plan elements discussed in this document were adopted by Resolution of the District's Board of Directors' (see attached Resolution in Appendix B).

K. Periodic Reviews and Evaluations

The District shall perform a periodic review and provide an annual report describing the implementation, status, and quantitative effectiveness of the water conservation program. This annual report is due May 1st annually. The General Manager will undertake the task of completing this annual report.

L. Contracts with Other Entities

As part of the 2014 Water Conservation Planning Process, contracts with the City of Mexia, Mexia State Supported Living Center, City of Coolidge/Tehuacana and White Rock Water WSC have been reviewed to determine conformance with water conservation goals of the plan. The District will require, through contractual agreements, that any political subdivision or utility contracting with the District in the future for treated water, adopt a water conservation plan acceptable to the TWDB and TCEQ.

Communication will be maintained with wholesale customers to ensure that the District's retail and wholesale customers are being treated in an equitable fashion and for optimum implementation of the Plan. The District will offer wholesale customers the opportunity to cosponsor conservation education and information activities.

M. Public Education and Information Program

The District's Public Education and Information Program promotes water conservation and water conservation related benefits. The Program includes providing speakers to employees, community groups and the media; using paid and public service advertising; offering public information to promote water conservation practices; and coordinating with other government agencies, industry groups, public interest groups, and the media.

The program also includes a school education program to promote water conservation and water conservation related benefits. Opportunities for learning are designed with Texas state educational goals in mind. Eventually curriculum material shall be available which relates water conservation themes to local water issues, and to all grade levels.

The District faces conservation challenges on two fronts. In the near term, summertime peaking is the greatest challenge to the District ability to distribute water cost effectively. Electrical consumption from pumping water is 10% of our total budget. Minimizing peak power usage is an additional incentive to water conservation.

The second challenge for the District is the long-term effort to reduce per capita demand in order to ensure that the District's water supply stretches for the longest period possible. The District is blessed with a water resource that is the result of farsighted planning by the District's founding fathers. Enabling this resource to stretch far into the future is the most cost-effective means of ensuring the longevity of our supply. It is also the most cost-effective water supply project available, as all alternative supplies will be more expensive than the existing Lake and well water.

It is worth noting that water conservation education goes hand in hand with watershed protection, water quality and water supply. Numerous opportunities are expected to merge education efforts focused on water conservation with those focused on storm water, wetlands, water treatment and other topics. The staff will look for opportunities to expand education and distribute information on these interdisciplinary themes.

N. Conserve for Our Future

As a regional water supplier, the District has a responsibility to provide water supply for retail and wholesale customers for the next 20 years. As part of state water planning, Region G, the District is projected to have enough water supply for its needs for the next 20 years. Prudent supply planning will include conservation as an integrated part of water resource planning. Water conservation is the least expensive means of expanding our supply. A successful water conservation program will ensure that the District can continue to look forward to adequate supplies of freshwater in the future. By conserving now, the water needs of our community, the region and the environment on which we depend can be protected.

In addition to specific measures that can be adopted to conserve water in the home, in businesses, and in public facilities, an education effort will be promoted to help customers understand the long-term benefits of measures like:

* Rainwater harvesting
* Add an additional rate tier for residential customers on high end users
* Composting
* Conservation awards
* Xeriscape (low-water use) landscaping

The District will also focus on outdoor water use activities. Educational activities will be targeted to several different audiences: professional irrigators, large landscape managers, and residential customers. Educational messages will be delivered in several different ways. We anticipate delivering written materials, multimedia releases, special events and educational forums.

The District will provide written materials in the form of:

- Brochures
- Newsletter articles
- Media releases
- Public service announcements
- Social media campaigns

These will be distributed to the customers, the local media, and to nonprofit local organizations such as neighborhood associations, and civic improvement organizations that they may educate their members as well.

SECTION III

DROUGHT CONTINGENCY PLAN

While the water conservation planning elements implement permanent water use efficiency procedures, it does not provide for emergency circumstances that can arise. Examples of such circumstances include; droughts, contamination of water supply(s); disasters which destroy all or part of the water system; or major failures of treatment works, transmission mains, storage, or distribution. It is, therefore, critical that an emergency plan be developed before such circumstances occur. This will require a cooperative effort between the District, its water wholesale customers (City of Mexia, Mexia State Supported Living Center, City of Tehuacana, White Rock Water SUD) and its retail customers.

Drought water demand management involves various key concepts, which must be outlined, in order to ensure an effective plan is available for distributing water in times of shortage. The goal of the drought contingency plan is to quickly reduce the amount of water used by the District's customers in response to a drought and keep the demand as low as possible. To achieve this goal, the plan involves major elements, which include:

- Trigger Conditions and Response Measures
- Initiation Procedures
- Termination Procedures and Notification
- Actions Means of Implementation
- Information and Education

Collectively, these elements form a plan that can effectively address temporary emergency conditions with predetermined methods and techniques. While this plan cannot cover every possible situation, it does provide a framework by which drought contingency management can be quickly implemented by the District.

A. Trigger Conditions and Response Measures

The Bistone MWSD supplies treated water to the following entities under water purchase contracts. The following list names each entity.

Entity
City of Mexia
Mexia State Supported Living Center
City of Coolidge
City of Tehuacana*
White Rock Water WSC

- Currently the City of Tehuacana contract is a portion of Coolidge's contract. Should the City of Coolidge obtain the right to purchase water from Bistone again, then the City of Tehuacana will become Coolidge's customer.

Bistone supplies water to the District customers primarily through wells. A backup-secondary water source is available from treated surface water drawn from Lake Mexia.

These two potential supply sources provide redundancy for the District to ensure water is delivered in case one or the other systems fail. In spite of this redundancy, the District must be prepared to respond to any emergency water supply situation. It must also be prepared to respond to other emergency conditions occurring in the District's system.

Three (3) threshold levels have been identified for triggering various responses to water supply emergencies. These trigger conditions and corresponding emergency response measures are presented in Table 2.

There is a fourth trigger of our drought contingency plan. The Texas Commission on Environmental Control can instruct us to limit water available to our customers due to drought.

B. Initiation Procedures

The District, through the General Manager or his/her duly appointed representative, will order the initiation of public notification when trigger conditions occur in the system resulting in the need to implement drought contingency plan response measures. Communication of the water demand condition will be distributed to the public via notices in one or more of the following ways:

- Posted at the Mexia City Hall, the Post Office, Limestone County Courthouse, Tehuacana City Hall, Mexia State Supported Living Center Administration Building.
- Posting notice on websites of Bistone MWSD, City of Mexia, Limestone County Texas Courthouse, White Rock Water SUD
- Circulated to local newspaper and radio stations, social media.
- Mailed to all major water customers through paper and/or electronic means (email).

C. Termination of Water Shortage and Notification Procedures

The termination of current present drought stage will occur upon the return of system operations to below the current phase trigger levels for a minimum of five (5) consecutive days. Or a correction of problem resulting in continuation of a lesser phase condition.

Upon the District's determination that the drought condition has subsided (through the General Manager or his/her duly appointed representative), the public will be informed of the termination of the response measures in the same manner that the initiation notice was distributed.

D. Means of Implementation

By May 1 of each year, the District will forecast water supply and potential water demands for May 1 through September 30 of that year. At this point, citizens are encouraged to practice good water management techniques inside and outside the

home, including such practices as cutting back on lawn sprinkler times and developing landscapes that require less water. The District may seek voluntary reductions from water use by citizens.

When, in the opinion of the General Manager, an emergency exists for immediate preservation of the public safety, the General Manager may implement the requirements of a drought contingency plan (stages Mild, Moderate, or Severe mandatory restrictions) for a period not to exceed sixty (60) days. Thereafter, the Board may extend the stage for up to ninety (90) days. Criminal penalties do not apply during the time of voluntary conservation.

The drought contingency plan elements have been implemented through the passage of a resolution by the Board of Directors of Bistone Municipal Water Supply District. By passage of this resolution and subsequent adoption of this plan, the General Manager or his/her duly authorize representative has the authority to begin immediate implementation of contingency measures when a trigger condition is reached.

E. Information and Education

The public will be informed of the drought contingency as outlined in this plan after adoption. This information will be distributed to the customers through; 1) newspaper articles and 2) education and information process as part of the Water Conservation Plan.

Figure 3 is the volume table for Lake Mexia, 2008 survey, indicating storage in acre-feet. It is used in the trigger conditions column.

Table 2. Trigger Conditions and Response Measures

LEVEL	TRIGGER CONDITIONS	RESPONSE MEASURES
Mild	Goal: achieve a voluntary 5 percent reduction in total water use.	
	1. Average daily water consumption reaches 90% of contractual supply for three consecutive days.	1. Inform public and major water users (including WSC'S) of trigger condition through the news media and encourage them to voluntarily reduce water usage.
	2. System storage tanks cannot be replenished for two consecutive days.	2. Activate an information center and discuss the situation in the local news media daily.
	3. Water level in Lake Mexia drops	3. Implement voluntary daily

	below 445.40 feet above mean sea level (MSL) indicating available storage is 2,159 acre-feet; AND Wilcox Formation level reaches 266 feet MSL measured at Observation (test) Well at Kennedy Site A.	lawn watering schedule where even/odd numbered street addresses water on even/odd days between the hours of 6:00-8:00 a.m. and 8:00-10:00 p.m.
Moderate	Goal: achieve a voluntary 10 percent reduction in total water use.	
	1.Average daily water consumption reaches 100% of contractual supply for three consecutive days.	1. Continue implementation of all relevant actions in preceding stage.
	2. System storage tanks cannot be replenished for four consecutive days.	2. Prohibit nonessential use such as street washing, water hydrant flushing, filling pools, athletic field watering, and single use splash pad/water features.
	3. Water level in Lake Mexia drops below 443.50 feet above mean sea level (MSL) indicating available storage is 1,195 acre-feet, AND Wilcox Formation level reaches 256 feet MSL measured at Observation Well, Kennedy Site A.	3. Limit residential car washing, window washing, and pavement washing unless a bucket is used. 4. Impose mandatory lawn watering schedule. 5. Assess fines to water Wasters as defined by a Violation of the Published response measure.
Severe	Goal: achieve a voluntary 15 percent reduction in total water use.	
	l. Average daily water consumption reaches 110% of Contractual supply for three Consecutive days.	1. Maintain pertinent preceding stage actions.
	2. Failure of storage tanks or other major system component which reduce the availability of water to less than 50% of the average daily usage or causes health or	2. Forbid ALL outside water use except for public health protection or limited livestock watering.

	Hazard.	
	3. Water level in Lake Mexia drops below 441.00 feet above mean sea level (MSL) indicating available storage is 471 acre-feet, AND Wilcox Formation level reaches 246 feet MSL measured at Observation Well, Kennedy Site A.	3. Restrict each customer's consumption to a determined percentage of the prior non-emergency months metered usage allowing a sufficient quantity for public health continuation. 4. Consider adoption of an emergency ordinance to implement water rationing or surcharges for excessive water users. 5. Require WSC's to partially fill tanks during the hours of 10:00 p.m – 6:00 a.m. (as applicable). 6. Institute pro-rate water allocation to all wholesale customers; stop all lawn irrigation pumping from Lake Mexia, allowing only 1 day pumping for lawn irrigation every 5th day.

F. Drought Shortage Conditions

Whenever emergency water shortage conditions exist as defined as severe stage in Table 2: Trigger Conditions and Response Measures, the General Manager shall:

1. Assess the severity of the problem and identify the actions needed and time required to solve the problem.

2. Inform the utility director or other responsible official of each wholesale water Customer by telephone or in person and suggest actions, as appropriate, to alleviate problems (e. g. notification of the public to reduce water use until service is restored).

3. If appropriate, notify city, county, and/or state emergency response officials for assistance.

4. Undertake necessary actions, including repair and/or clean up as needed.

5. Prepare a post-event assessment report on the incident and critique of drought response procedures and actions.

G. Pro-Rata Water Allocation

In the event that the triggering criteria specified in Table 2 of the Plan for Severe Water Shortage Conditions have been met, the General Manager is hereby authorized to initiate Allocation of water supplies on a pro rata basis in accordance with Texas Water Code Section 11.039 and according to the following water allocation policies and procedures:

1. A wholesale customer's monthly allocation shall be a percentage of the customer's water baseline. The percentage will be set by resolution of the Board of Directors based on the General Manager's assessment of the severity of the water shortage condition and the need to curtail water diversions and/or deliveries and may be adjusted periodically by resolution of the Board of Directors as conditions warrant. Once pro rata allocation is in effect, water diversions by or deliveries to each wholesale customer shall be limited to the allocation established for each month.

Or

2. During any period of time when, in the judgment of the District, there is a critical shortage of water in the sources of supply available to District, which makes it impracticable or inadvisable for District to deliver to the City and Contracting Parties; if any, with which it has water supply contracts the full amount of water required to be delivered hereunder, the water deemed available by the District from its sources of supply, shall be rationed to such City and Contracting Parties during each month of such period of time as follows:

    b. There shall be calculated for the City and each of the Contracting Parties the total amount of water from all sources actually consumed by such City and Contracting Parties and the customers of its waterworks system during the immediately preceding month; and
    c. From such total amount of water thus calculated for the City and each Contracting Party there shall be deducted the amount of such water which was obtained during said immediately preceding month from any source of water supply owned by the City and such Contracting Party and not under control of District; and
    d. District's available water shall be prorated ratably between such City and Contracting Parties in proportion to the aforesaid resulting amounts for the City and each Contracting Party.

H. Future Wholesale Contracts

The District shall include a provision in every wholesale water contract entered into or renewed, including contract extensions, after adoption of this Plan that in case of shortage of water resulting from drought, the water to be distributed shall be divided in accordance with Texas Water Code 11.039.

I. Variances

The General Manager or his/her duly appointed representative may, in writing, grant a temporary variance to the pro rata water allocation policies provided by this Plan if it is determined that failure to grant such variance would cause an emergency condition adversely affecting the public health, or welfare, or safety and if one or more of the following conditions are met:

a. Compliance with this Plan cannot be technically accomplished during the duration of the water shortage or other condition for which the Plan in effect.
b. Alternative methods can be implemented which will achieve the same level of reduction in water use.

Persons requesting an exemption from the provisions of this plan shall file a petition for variance with the General Manager or his/her duly appointed representative with 5 days after pro rata allocation has been invoked. All petitions for variances shall l be reviewed by the Board of Directors of Bistone Municipal Water Supply District, and shall include the following:

a. Name and address of the petitioner(s).
b. Detailed statement with supporting data and information as to how the pro rata allocation of water under the policies and procedures established in the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Resolution.
c. Description of the relief requested.
d. Period of time for which the variance is sought.
e. Alternative measurers the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date.
f. Other pertinent information.

Variances granted by the Board or Directors, Bistone Municipal Water Supply District shall be subject to the following conditions, unless waived or modified by the Board of Directors or its designee:

1. Variances granted shall include a timetable for compliance.
2. Variances granted shall expire when the Plan is no longer in effect, unless the Petitioner has failed to meet specified requirements.

No variance shall be retroactive or otherwise justify any violation of this Plan occurring prior to the issuance of the variance.

APPENDIX A

UTILITY EVALUATION DATA