REGION C WATER PLANNING GROUP

MODEL WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN FOR MUNICIPAL WATER USER GROUPS

DECEMBER 2024

Prepared for:

REGION C WATER PLANNING GROUP

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FOREWORD

This updated model water conservation and drought contingency plan for the fictional City of Poca Agua was prepared by Freese and Nichols and Plummer for the Region C Water Planning Group. It is a template for municipal water user groups to use as they develop their own water conservation and drought contingency plans. Each municipal water user group should customize the details to match its unique situation. The model plan was prepared pursuant to Texas Commission on Environmental Quality (TCEQ) rules. Some material is based on the existing water conservation plans listed in Appendix A. Water conservation and drought contingency plans for the North Texas Municipal Water District,[1,2] the City of Dallas,[3] and the Tarrant Regional Water District[4] were used extensively, along with a TCEQ model plan.[5]

Questions regarding this model water conservation and drought contingency plan should be addressed to the following:

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This model water conservation plan is based on the Texas Administrative Code in effect on December 5, 2024, and considers water conservation best management practices from the Texas Water Development Board's *Best Management Practices for Municipal Water Users*.[6] The Texas Water Development Board and the Water Conservation Advisory Council revise and add BMPs to this document as necessary, so use the most up-to-date version when developing your water conservation plan.

The most current report forms should be used when preparing the five-year water conservation implementation report[7] (Appendix D) to submit to the TCEQ and the annual water conservation report[8] (Appendix E) to submit to the TWDB.

[1] Superscript numbers match references listed in Appendix A.

CITY OF POCA AGUA

WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN

December 2024

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CITY OF POCA AGUA

Water Conservation and Drought Contingency Plan

December 2024

1. INTRODUCTION AND OBJECTIVES

Water supply has always been a key issue in the development of Texas. In recent years, the increasing population and economic development in Region C have led to growing demands for water. At the same time, local and less expensive sources of water supply are largely developed. Additional supplies to meet higher demands will be expensive and difficult to develop. Severe drought conditions in recent years have highlighted the importance of efficient use of our existing supplies to make them last as long as possible. This will delay the need for new supplies, minimize the environmental impacts associated with developing new supplies, and delay the high cost of additional water supply development.

Recognizing the need for efficient use of existing water supplies, the Texas Commission on Environmental Quality (TCEQ) has developed guidelines and requirements governing the development of water conservation and drought contingency plans for public water suppliers.[9] The TCEQ guidelines and requirements for public water suppliers are included in Appendix B. The City of Poca Agua has adopted this water conservation and drought contingency plan pursuant to TCEQ guidelines and requirements. The best management practices established by the Texas Water Development Board were also considered in the development of the water conservation measures.[6]

This model water conservation plan includes measures that are intended to result in ongoing, long-term water savings. This plan replaces a previous model plan dated August 2019. This model plan is a template for municipal water user groups to use as they develop their own water conservation and drought contingency plans. This model plan includes all of the elements required by TCEQ. Some elements of this model plan go beyond TCEQ requirements. Each municipal water user group should customize the details to match its unique situation. At a minimum, this will include:

- Completing the TCEQ water utility profile (provided in Appendix C).[10]
- Completing the TCEQ water conservation implementation report, if applicable (Appendix D).[7]
- Completing the annual water conservation report (in Appendix E).[8]
- Setting five-year and ten-year goals for per capita water use.
- Adopting ordinance(s) or regulation(s) approving the model plan.

The final adopted version should be provided to the TCEQ and the TWDB.

The objectives of the water conservation plan are:

- To reduce water consumption from the levels that would prevail without conservation efforts.
- To reduce the loss and waste of water.
- To identify the level of water reuse.
- To improve efficiency in the use of water.
- To extend the life of current water supplies by reducing the rate of growth in demand.

The objectives of the drought contingency plan are:

- To conserve the available water supply in times of drought and emergency
- To maintain supplies for domestic water use, sanitation, and fire protection
- To protect and preserve public health, welfare, and safety
- To minimize the adverse impacts of water supply shortages
- To minimize the adverse impacts of emergency water supply conditions.

2. DEFINITIONS

1. AQUATIC LIFE means a vertebrate organism dependent upon an aquatic environment to sustain its life.

2. ATHLETIC FIELD means a public sports competition field, the essential feature of which is turf grass, used primarily for organized sports practice, competition or exhibition events for schools, professional sports, or sanctioned league play.

3. COMMERCIAL FACILITY means business or industrial buildings and the associated landscaping, but does not include the fairways, greens, or tees of a golf course.

4. COMMERCIAL VEHICLE WASH FACILITY means a permanently-located business that washes vehicles or other mobile equipment with water or water-based products, including but not limited to self-service car washes, full service car washes, roll-over/in-bay style car washes, and facilities managing vehicle fleets or vehicle inventory.

5. COOL SEASON GRASSES are varieties of turf grass that grow best in cool climates primarily in northern and central regions of the U.S. Cool season grasses include perennial and annual rye grass, Kentucky blue grass and fescues.

6. CUSTOMERS include those entities to whom the City provides water on a customer basis.

7. DIRECT REUSE means reclaimed municipal wastewater that has been treated to a quality that meets or exceeds the minimum standards of the 30 Texas Administrative Code, Chapter 210 and is used for lawn irrigation, industry, or other non-potable purposes.

8. DRIP IRRIGATION is a type of micro-irrigation system that operates at low pressure and delivers water in slow, small drips to individual plants or groups of plants through a network of plastic conduits and emitters; also called trickle irrigation.

9. DROUGHT, for the purposes of this report, means an extended period of time when an area receives insufficient amounts of rainfall to replenish the water supply, causing water supply sources (in this case reservoirs) to be depleted.

10. EVAPOTRANSPIRATION (ET) represents the amount of water lost from plant material to evaporation and transpiration. The amount of ET can be estimated based on the temperature, wind, and relative humidity.

11. ET/SMART CONTROLLERS are irrigation controllers that adjust their schedule and run times based on weather (ET) data. These controllers are designed to replace the amount of water lost to evapotranspiration.

12. FOUNDATION WATERING means an application of water to the soils directly abutting (within two feet of) the foundation of a building, structure.

13. INDIRECT REUSE means the subsequent diversion, treatment, and use of reclaimed municipal wastewater that has been treated to a quality that meets or exceeds Texas Permit Discharge Elimination System (TPDES) permit requirements and has been discharged to a receiving water body. Indirect reuse is often used to meet potable water needs.

14. INSTITUTIONAL USE means the use of water by an establishment dedicated to public service, such as a school, university, church, hospital, nursing home, prison or government facility. All facilities dedicated to public service are considered institutional regardless of ownership.

15. INTERACTIVE WATER FEATURES means water sprays, dancing water jets, waterfalls, dumping buckets, shooting water cannons, inflatable pools, temporary splash toys or pools, slip-n-slides, or splash pads that are maintained for recreation.

16. IRRIGATION SYSTEM means a permanently installed, custom-made, site-specific system of delivering water generally for landscape irrigation via a system of pipes or other conduits installed below ground.

17. LANDSCAPE means any plant material on a property, including any tree, shrub, vine, herb, flower, succulent, ground cover, grass or turf species, that is growing or has been planted out of doors.

18. MULTI-FAMILY PROPERTY means a property containing five or more dwelling units.

19. MUNICIPAL USE means the use of potable water provided by a public water supplier as well as the use of treated wastewater effluent for residential, commercial, industrial, agricultural, institutional, and wholesale uses.

20. NEW LANDSCAPE means: (a) vegetation installed at the time of the construction of a residential or commercial facility; (b) installed as part of a governmental entity's capital improvement project; or (c) installed to stabilize an area disturbed by construction.

21. ORNAMENTAL FOUNTAIN means an artificially created structure (up to a certain diameter) from which a jet, stream, or flow of treated water emanates and is not typically utilized for the preservation of aquatic life.

22. RECLAIMED WATER means treated municipal wastewater that is used for direct or indirect reuse.

23. REGULATED IRRIGATION PROPERTY means any property that is greater than one acre in size or uses one million gallons of water or more for irrigation purposes in a single calendar year.

24. RESIDENTIAL GALLONS PER CAPITA PER DAY (Residential GPCD) means the total gallons sold for residential use by a public water supplier divided by the residential population served and divided by the number of days in the year.

25. REUSE is the authorized use for one or more beneficial purposes of use of water that remains unconsumed after the water is used for the original purpose of use and before that water is either disposed of or discharged or otherwise allowed to flow into a watercourse, lake, or other body of state-owned water.

26. SOAKER HOSE means a perforated or permeable garden-type hose or pipe that is laid above ground that provides irrigation at a slow and constant rate.

27. SPRINKLER means an above-ground water distribution device that may be attached to a garden hose.

28. SWIMMING POOL means any structure, basin, chamber, or tank including hot tubs, containing an artificial body of water for swimming, diving, or recreational bathing, and having a depth of two (2) feet or more at any point.

29. TOTAL GALLONS PER CAPITA PER DAY (Total GPCD) means the total amount of water diverted and/or pumped for potable use divided by the total permanent population divided by the days of the year. Diversion volumes of reuse as defined in this chapter shall be credited against total diversion volumes for the purposes of calculating GPCD for targets and goals.

30. UTILITY DIRECTOR means the Utility Director of the City of Poca Agua and includes a person the Director has designated to administer or perform any task, duty, function, role, or action related to this plan or on behalf of the Utility Director.

31. WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN means this water conservation and drought contingency plan approved and adopted by the City Council of the City of Poca Agua on _____, 20__.

Abbreviations

Abbreviation	Full Nomenclature
BMPs	Best Management Practices
DCP	Drought Contingency Plan
TCEQ	Texas Commission on Environmental Quality
TWDB	Texas Water Development Board
WCAC	Water Conservation Advisory Council
WCP	Water Conservation Plan

3. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES

3.1 Conservation Plans

The TCEQ rules governing development of water conservation plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 of the Texas Administrative Code, which is included in Appendix B. For the purpose of these rules, a water conservation plan is defined as:

"A strategy or combination of strategies for reducing the volume of water withdrawn from a water supply source, for reducing the loss or waste of water, for maintaining or improving the efficiency in the use of water, for increasing the recycling and reuse of water, and for preventing the pollution of water. A water conservation plan may be a separate document identified as such or may be contained within another water management document(s)." [11]

According to TCEQ rules, water conservation plans for public water suppliers must have a certain minimum content (Section 4), must have additional content for public water suppliers that are projected to supply 5,000 or more people in the next ten years (Section 5), and may have additional optional content (Section 6).

3.2 Water Conservation Coordinator

The TCEQ rule governing designation of a Water Conservation Coordinator are contained in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.30(10)(b) of the Texas Administrative Code. According to this rule, retail public water suppliers that provide potable water to 3,300 or more connections shall designate a person as the water conservation coordinator responsible for implementing the water conservation plan.

The Water Conservation Coordinator for the City of Poca Agua is:

_____*[Name]*_____

_____*[Title]*_____

_____*[Contact Information]*_____

Should the City change its Water Conservation Coordinator, it will notify the executive administrator of the Texas Water Development Board within 90 days of the effective date of the change.

3.3 Drought Contingency Plans

The TCEQ rules governing development of drought contingency plans for public water suppliers are contained in Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.20 of the Texas Administrative Code, which is included in Appendix B. For the purpose of these rules, a drought contingency plan is defined as:

"A strategy or combination of strategies for temporary supply and demand management responses to temporary and potentially recurring water supply shortages and other water supply emergencies. A drought contingency plan may be a separate document identified as such or may be contained within another water management document(s)."[11]

The drought contingency plan for the City of Poca Agua is contained in Chapter 7 of this water conservation and drought contingency plan.

4. MINIMUM REQUIRED WATER CONSERVATION PLAN CONTENT

The minimum requirements in the Texas Administrative Code for water conservation plans for public drinking water suppliers are covered in this water conservation plan as follows:

- §288.2(a)(1)(A) – Utility Profile – Section 4.1 and Appendix C
- §288.2(a)(1)(B) – Record Management System – Section 4.2
- §288.2(a)(1)(C) – Specification of Water Conservation Goals – Section 4.3
- §288.2(a)(1)(D) – Accurate Metering – Sections 4.4 and 4.5
- §288.2(a)(1)(E) – Universal Metering – Section 4.5
- §288.2(a)(1)(F) – Determination and Control of Water Loss – Section 4.6
- §288.2(a)(1)(G) – Public Education and Information Program – Section 4.7
- §288.2(a)(1)(H) – Non-Promotional Water Rate Structure – Section 4.8
- §288.2(a)(1)(I) – Reservoir System Operation Plan – Section 4.9
- §288.2(a)(1)(J) – Means of Implementation and Enforcement – Section 4.10, Appendix F, Appendix G, and Appendix H
- §288.2(a)(1)(K) – Coordination with Regional Water Planning Group – Section 4.11 and Appendix I
- §288.2(c) – Review and Update Plan – Section 4.12

In addition to TCEQ rules regarding water conservation, this plan also incorporates elements of the Guidance and Methodology for Reporting on Water Conservation and Water Use developed by TWDB and TCEQ, in consultation with the Water Conservation Advisory Council (the "Guidance").[12] The Guidance was developed in response to a charge by the 82nd Texas Legislature to develop water use and calculation methodology and guidance for preparation of water use reports and water conservation plans in accordance with TCEQ rules.

4.1 Utility Profile

[The utility profile must include information regarding population and customer data, water use data (including total GPCD and residential GPCD), water supply system data, and wastewater system data.]

Appendix C to this water conservation plan is a water utility profile for the City of Poca Agua, based on the format recommended by the TCEQ.[10] A final water utility profile will be provided to the TCEQ.

[If the Water Conservation and Drought Contingency Plan is to be submitted to the TWDB, the utility must also fill out a Water Conservation Utility Plan Profile via the TWDB web site: http://www.twdb.texas.gov/conservation/municipal/plans/UP.asp.]

4.2 Record Management System

[This section must include a record management system which allows for the classification of water sales and uses into the most detailed level of water use data currently available to it. If possible, this includes single-family residential, multi-family residential, commercial, institutional, industrial, agricultural, and wholesale water data. Any new billing system purchased by the city must be capable of reporting these categories of water data.]

The record management system for the City of Poca Agua allows for the separation of water sales and uses into residential, commercial, public/institutional, and industrial categories. This information will be included in a TCEQ water conservation implementation report and a TWDB annual conservation report, as described in Section 6.5 below.

4.3 Specification of Water Conservation Goals

[This section must include specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in total GPCD and residential GPCD.]

Table 4.1 shows current per capita water use and per capita water use goals for the City of Poca Agua. Water use is shown in units of gallons per capita per day (gpcd). Total and residential gallons per capita per day are defined in Chapter 2.

Table 4.1 Five-Year and Ten-Year Per Capita Water Use Goals (gpcd)

Description	Current Average	Five-Year Goal	Ten-Year Goal
	gpcd	gpcd	gpcd
Current 5-Year Average Total Per Capita Use (with credit for reuse)	-	-	-
Current 5-Year Average Residential Per Capita Use	-	-	-
Water Loss (GPCD)[a]	-	-	-
Water Loss (Percentage)[b]	-	-	-
Expected Reduction due to Low-Flow Plumbing Fixtures	-	-	-
Projected Reduction Due to Elements in this Plan	-	-	-
Water Conservation Goals (with credit for reuse)	**-**	**-**	**-**

[a] Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365

[b] Water Loss Percentage = (Total Water Loss ÷Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

The City's water conservation goals include the following:

- Maintain the total and residential per capita water use in a dry year below the specified amounts in gallons per capita per day (Table 4.1).

- Implement and maintain a program of universal metering and meter replacement and repair (Section 4.5).
- Maintain water loss in the system less than ___ percent annually (Section 4.6). *[For most urban and suburban water user groups, the goal should be between 10 and 15 percent. For some rural water user groups with long distances between customers, the goal should be between 10 and 20 percent.]*
- Raise public awareness of water conservation and encourage responsible public behavior through a public education and information program, as discussed in Section 4.7.

[Note that water conservation goals below this point are based on optional water conservation plan content. Customize this section to represent the measures that you are planning to implement.

- *Decrease waste in lawn irrigation through implementation and enforcement of a landscape water management ordinance (Section 6.4).*
- *Decrease indoor water use by implementing the following programs:*
    - *Showerhead and aerator retrofit program (Section 6.2.1)*
    - *Water-efficient toilet replacement program (Section 6.2.2)*
    - *Residential customer water audit (Section 6.6)*
    - *Water-efficient clothes washer rebate program (Section 6.7).*
- *Decrease outdoor water use by implementing the following programs:*
    - *Residential customer water audit (Section 6.6)*
    - *Landscape irrigation systems rebate program (Section 6.8)*
    - *Landscape design and conversion program (Section 6.9)*
- *Decrease industrial, commercial, and institutional (ICI) water use by implementing the following programs:*
    - *General ICI rebate (Section 6.10)*
    - *ICI water audit, water waste reduction program, and site-specific water conservation program (Section 6.11)]*

4.4 Accurate Metering of Raw Water Supplies and Treated Water Deliveries

[This section must include a description of metering device(s) with an accuracy of plus or minus 5 percent that are used to measure and account for the amount of water diverted from the source of supply.]

The City of Poca Agua meters all raw water diversions from Poca Agua Reservoir and meters all treated water deliveries to the distribution system from the water treatment plant. Each meter has an accuracy of plus or minus 2 percent. The meters are calibrated on a semiannual basis by City of Poca Agua personnel to maintain the required accuracy and are repaired and/or replaced as needed.

4.5 Metering of Customer and Public Uses and Meter Testing, Repair, and Replacement

[This section must include a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement.]

Water usage for all customers of the City of Poca Agua, including public and governmental users, is metered. *[If there are unmetered users, describe the current metering situation and outline any plans to achieve universal metering.]*

As part of this water conservation plan, the City of Poca Agua will implement a meter replacement program that will replace every meter on a 15-year cycle. Initial efforts will focus on the oldest meters in the system.

In addition, meters registering any unusual or questionable readings will be tested and repaired to restore full functionality.

4.6 Determination and Control of Water Loss

[This section must include measures to determine and control water loss (e.g., periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections and abandoned services; etc. Texas Water Code Chapter 16.0121 requires retail public utilities that provide potable water to more than 3,300 connections or receive financial assistance from the TWDB to perform and file with the TWDB an annual water audit computing the utility's most recent annual system water loss. Other retail public utilities that provide potable water must perform and file water audits every five years. A water audit shall account for the various components of system water loss, including loss from distribution lines, inaccuracies in meters or accounting practices, and theft.

Texas Water Code Chapter 16.0121 also requires that water audits be completed by a person trained to conduct water loss auditing. Information about the TWDB's water loss auditor training program can be found at http://www.twdb.texas.gov/conservation/municipal/waterloss/auditor_training.asp.]

The City of Poca Agua will conduct an annual water audit using the TWDB's water audit worksheet. This audit will be conducted by a person who has completed the TWDB's water audit training. Total water loss is the volume of raw water drawn from Poca Agua Reservoir minus metered deliveries to customers minus other water authorized for use but not sold (e.g., authorized but unmetered uses such as firefighting and line flushing).

The TWDB water audit worksheet divides total water losses into apparent losses and real losses:

- Apparent water loss is water which is used by customers but for which the utility is not compensated. Reducing apparent losses increases the city's utility revenue but does not reduce water usage. Apparent water losses include:
  - Inaccuracies in customer meters (customer meters tend to run more slowly as they age and under-report actual use).
  - Unauthorized consumption.
  - Systematic data handling errors.
- Real water loss is water which is physically lost from the water system before it can be used by customers. Identifying and preventing real losses decreases a utility's costs and decreases water usage. Real water losses include:
  - Reported leaks.
  - Unreported leaks.
  - Storage overflow.

To meet the water loss targets established in Table 4.1, the City has implemented the water loss control strategies described in Section 5.1. As shown in Appendix C, total water loss for the City of Poca Agua has varied from ___ percent to ___ percent in the last five years. With the measures described in this plan, the City of Poca Agua intends to maintain the total water loss below ___ percent in ____ *[target year]* and subsequent years. If total water loss exceeds this goal, the City of Poca Agua will implement a more intensive audit to determine the source(s) of water loss and will implement more intensive strategies to reduce the water loss.

4.7 Continuing Public Education and Information Campaign

[This section must include a program of continuing public education and information regarding water conservation.]

The continuing public education and information campaign on water conservation for the City of Poca Agua includes the following elements:

- Promote the City's water conservation measures (presented in Chapters 4, 5, and 6).
- Include inserts on water conservation with water bills at least twice per year. Inserts will include material developed by City of Poca Agua staff and material obtained from the TWDB, the TCEQ, and other sources.
- Encourage local media coverage of water conservation issues and the importance of water conservation.

- Notify local organizations, schools, and civic groups that City of Poca Agua staff members are available to make presentations on the importance of water conservation and ways to save water.
- Promote the Texas Smartscape web site (www.txsmartscape.com).
- Make water conservation brochures and other water conservation materials available to the public at the City of Poca Agua Utility Department and other public places.
- Make information on water conservation available online at www.ci.pocaagua.tx.us, including links to the *Texas Smartscape* website and to information on water conservation on the TWDB and TCEQ web sites.
- Utilize the Water My Yard website and encourage customers to sign-up to receive weekly watering advice.

4.8 Non-Promotional Water Rate Structure

[This section must include a water rate structure that is not "promotional," i.e., a rate structure which is cost-based and which does not encourage excessive use of water.]

With the intent of encouraging water conservation and discouraging waste and excessive use of water, the City of Poca Agua has adopted an increasing block rate water structure where the unit price of water increases with increasing water use. Current water rates are shown in Tables 4.2 and 4.3.

Table 4.2 Monthly Customer Charges

Meter Size (in)	Total Charge	Meter Size (in)	Total Charge
5/8	$____	2	$____
3/4	$____	3	$____
1	$____	4	$____
1 1/4	$____	6	$____
1 1/2	$____		

Table 4.3 Volume Unit Charges

Water User	Type/Volume	Volume Unit Charge ($/1,000 gal)
Single-Family	0-2,000 gallons	$____
	2,001-9,000 gallons	$____
	9,001-15,000 gallons	$____
	More than 15,000 gallons	$____
Multi-Family		$____
Commercial		$____
Large Volume/Industrial		$____
Golf Courses		$____

[An increasing block rate structure, where the unit cost increases as water usage increases, is recommended. The price difference between blocks is very important in influencing water usage. Prices between blocks should increase at least 25 percent; for maximum effectiveness, consider a price increase between blocks of at least 50 percent.[6]

Also consider peak and off-peak rates and/or a second block for non-residential uses to encourage water conservation. Rates for a second block should be 1.25 to 2.0 times the rates for the first block.]

4.9 Reservoir System Operation Plan

[This section must include a reservoir system operation plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin in order to optimize available water supplies. Attach a copy of the reservoir system operation plan if available.]

The City of Poca Agua has the following rights to divert water from Poca Agua Reservoir:

- Up to 8,000 ac-ft/yr based on the natural yield of the reservoir
- Up to 2,000 ac-ft/yr based on the reclaimed water discharge from the City's North Wastewater Treatment Plant

Poca Agua Reservoir is not operated in coordination with any other raw water supply sources; therefore, no additional yield can be gained through system operation.

4.10 Implementation and Enforcement of the Water Conservation Plan

[This section must include a means of implementation and enforcement of the plan. This shall be evidenced by a copy of the ordinance, resolution, or tariff indicating official

adoption of the water conservation plan by the water supplier and a description of the authority by which the water supplier will implement and enforce the conservation plan.]

Appendix F contains a copy of the resolution of the City of Poca Agua City Council adopting this water conservation and drought contingency plan. The resolution designates responsible officials to implement and enforce the water conservation and drought contingency plan. Appendix G, the landscape water management ordinance for the City of Poca Agua, also includes information about enforcement. Appendix H includes a copy of an adopted ordinance related to illegal connections and water theft.

4.11 Coordination with Regional Water Planning Group

[This section must include documentation of coordination with the Regional Water Planning Group(s) for the service area of the public water supplier in order to insure consistency with the appropriate approved regional water plan(s).]

Appendix I includes a copy of a letter sent to the Chair of the Region C Water Planning Group with this water conservation and drought contingency plan.

4.12 Review and Update of Water Conservation Plan

As required by TCEQ rules, the City of Poca Agua will review this water conservation plan every five years, beginning in _____ *[five years from date of plan]*. The plan will be updated as appropriate based on new or updated information. As the plan is reviewed and subsequently updated, a copy of the revised water conservation plan will be submitted to the TCEQ, the TWDB, and the RCWPG for their records.

5. ADDITIONAL REQUIRED WATER CONSERVATION PLAN CONTENT

[Chapter 5 does not apply if you are not projected to supply a population of 5,000 people or more in the next ten years.]

The Texas Administrative Code also includes additional requirements for water conservation plans for public drinking water suppliers that serve a population of 5,000 people or more and/or a projected population of 5,000 people or more within the next ten years:

- §288.2(a)(2)(A) – Leak Detection, Repair, and Water Loss Accounting – Sections 4.6 and 5.1
- §288.2(a)(2)(B) – Requirement for Water Conservation Plans by Wholesale Customers – Section 5.2

5.1 Leak Detection and Repair and Pressure Control

[If you are projected to supply 5,000 people or more in the next ten years, this section must include a program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control water loss. Water loss accounting is also discussed in Sections 4.6 and 6.5.]

Measures to control water loss are part of the routine operations of the City of Poca Agua. Meter readers watch for and report signs of illegal connections so they can be addressed quickly. Crews and personnel look for and report evidence of leaks in the water distribution system. Maintenance crews respond quickly to repair leaks reported by the public and city personnel. The City of Poca Agua spends $_____ per year to repair and replace water distribution lines and uses ___ *[number]* distribution line maintenance crews. Areas of the water distribution system in which numerous leaks and line breaks occur are targeted for replacement as funds are available.

To reduce real water losses, the City of Poca Agua will maintain a proactive water loss program. As part of this program, the City will implement the following actions:

[No actions have been specified here. Customize this section to fit your situation. Potential actions include:[9]

- *Reduce repair time on leaks since long-running small to medium size leaks can be the greatest percentage of annual leakage;*
- *Conduct regular inspections and soundings of all water main fittings and connections;*
- *Install temporary leak noise detectors and loggers;*
- *Conduct a large/transmission main leak detection program;*
- *Meter individual pressure zones;*

- *Establish district metering areas and measure daily, weekly, or monthly flows with portable or permanently installed metering equipment;*
- *Conduct continuous or intermittent night-flow measurements;*
- *Control pressure to just above the utility's standard-of-service level, taking into account fire requirements, outdoor seasonal demand, and requisite tank filling;;*
- *Operate pressure zones based on topography;*
- *Limit surges in pressure; and*
- *Reduce pressure seasonally and/or where feasible to reduce losses from background leaks.]*

5.2 Requirement for Water Conservation Plans by Wholesale Customers

[If you are projected to supply 5,000 people or more in the next ten years, this section must include a requirement that every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in TAC Title 30, Part 1, Chapter 288. If the customer intends to resell the water, then the contract between the initial supplier and 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 applicable provisions of TAC Title 30, Part 1, Chapter 288.]

At this time, the City of Poca Agua is not a wholesale water provider. After adoption of this plan, each contract for the wholesale sale of water by the City of Poca Agua will include a requirement that the wholesale customer develop and implement a water conservation plan meeting the requirements of Title 30, Part 1, Chapter 288 of the Texas Administrative Code. This requirement will also extend to each successive wholesale customer in the resale of the water.

6. OPTIONAL WATER CONSERVATION PLAN CONTENT

[Any combination of the following optional strategies shall be selected by the water supplier, in addition to the requirements of Chapter 4 and Chapter 5, if they are necessary to achieve the stated water conservation goals of the plan. The commission may require that any of the following strategies be implemented by the water supplier if the commission determines that the strategy is necessary to achieve the goals of the water conservation plan.]

TCEQ rules also list optional (not required) conservation strategies, which may be adopted by suppliers to achieve the stated goals of the plan. The following optional strategies are listed in the rules and included in this plan:

- §288.2(a)(3)(A) – Conservation-Oriented Water Rates – Section 4.8
- §288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures – Section 6.1
- §288.2(a)(3)(C) – Programs for the Replacement or Retrofit of Water-Conserving Plumbing Fixtures in Existing Structures – Section 6.2
- §288.2(a)(3)(D) – Reuse and Recycling of Wastewater – Section 6.3
- §288.2(a)(3)(E) – Pressure Control and/or Reduction – Section 5.1
- §288.2(a)(3)(F) – Landscape Water Management Ordinance – Section 6.4 and Appendix G
- §288.2(a)(3)(G) – Monitoring Method – Section 6.5 and Appendix E
- §288.2(a)(3)(H) – Other Conservation Methods – Sections 6.6 through 6.11

[The final optional water conservation strategy listed in the TCEQ rules is "any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan." Several more optional conservation methods have been listed below to assist you in conservation planning.]

In addition, the City of Poca Agua will also pursue the following optional water conservation strategies that exceed those suggested in the rules:

- Residential Customer Water Audit – Section 6.6
- Water-Efficient Clothes Washer Rebate Program – Section 6.7
- Landscape Irrigation System Rebate Program – Section 6.8
- Landscape Design and Conversion Program – Section 6.9
- General ICI Rebate Program – Section 6.10

- ICI Water Audit, Water Waste Reduction Program, and Site-Specific Water Conservation Program – Section 6.11

6.1 Ordinances, Plumbing Codes, or Rules on Water-Conserving Fixtures

[OPTIONAL STRATEGY: If you have a plumbing ordinance that requires water-conserving fixtures, please describe the ordinance here and include a copy in an appendix.]

The State of Texas has required water-conserving fixtures in new construction and renovations since 1992. Current state standards call for flows of no more than 2.2 gallons per minute (gpm) for faucets, 2.5 gpm for showerheads, and 1.28 gallons per flush for toilets. These state standards assure that all new construction and renovations in the City of Poca Agua will use water-conserving fixtures.

Federal rules require that all newly manufactured front-loading clothes washers use 4.5 gallons of water per cubic foot per cycle or less and that all newly manufactured top-loading clothes washers use 6.5 gallons per cubic foot per cycle or less. These standards are expected to assure that new clothes washers in the City of Poca Agua will be water-efficient.

Federal rules require that all residential dishwashers manufactured on or after May 30, 2013, must achieve water consumption of 5 gallons per cycle or less. This standard is expected to assure that new dishwashers in the City of Poca Agua will be water-efficient.

6.2 Programs for the Replacement or Retrofit of Water-Conserving Plumbing Fixtures in Existing Structures

[OPTIONAL STRATEGY: If you are planning programs to implement the replacement or retrofit of water-conservation plumbing fixtures in existing structure, please describe these programs below. Such programs might include distribution of free fixtures, vouchers for discounted fixtures, rebates on fixtures, etc.]

6.2.1 Showerhead and Faucet Aerator Retrofit Program

As discussed previously, state and federal plumbing standards require water-efficient plumbing fixtures for new construction and remodel projects. However, there are still a significant number of water-inefficient plumbing fixtures in use in the City of Poca Agua. Under this program, the City will provide free retrofit kits to City residents for their installation. High quality, low flow plumbing devices to be distributed under this program include: showerheads (2.0 gpm or less), kitchen faucet aerators (2.2 gpm or less), and bathroom faucet aerators (1.5 gpm or less). The showerhead and faucet aerator retrofit program is targeted toward single- and multi-family homes constructed before 1992 that have not been retrofitted with water-efficient plumbing fixtures.

The projected reduction in per capita use from a showerhead and faucet aerator retrofit program is ___ gpcd in _____ *[five years from date of plan]* and ___ gpcd in _____ *[ten years from date of plan]*.

6.2.2 Water-Efficient Toilet Replacement Program

As discussed previously, state and federal plumbing standards require water-efficient toilets for new construction and remodel projects. However, there are still a significant number of water-inefficient toilets in use in the City of Poca Agua. Under this program, the City will provide free water-efficient toilets (1.28 gallons per flush) to City residents, along with a $____ rebate for installation. The City of Poca Agua is targeting single- and multi-family residential customers with homes constructed before 1992 that have not been retrofitted with water-efficient toilets.

The projected reduction in per capita use from the water-efficient toilet replacement program is ___ gpcd in _____ *[five years from date of plan]* and ___ gpcd in _____ *[ten years from date of plan]*.

6.3 Reuse and Recycling of Wastewater

[OPTIONAL STRATEGY: If you are planning to reuse or recycle wastewater, please describe this program below.]

The City of Poca Agua operates two wastewater treatment plants: the North Wastewater Treatment Plant (WWTP) and the South WWTP. The North WWTP discharges approximately 2,000 ac-ft/yr of reclaimed water to Poca Agua Creek upstream of Poca Agua Reservoir, where it is mixed with ambient water. Based on its water right, the City of Poca Agua withdraws up to 2,000 ac-ft/yr of this reclaimed water from Poca Agua Reservoir for water treatment and potable use. This reuse project provides approximately 20 percent of the City's total water supply.

The South WWTP discharges approximately 3,000 ac-ft/yr of reclaimed water to Poca Agua Creek downstream of Poca Agua Reservoir. Reclaimed water discharged from the South WWTP is used to satisfy downstream water rights and to maintain instream flows.

6.4 Water Waste Prohibition

[OPTIONAL STRATEGY: If you have an ordinance that prohibits water waste, please describe the ordinance below and attach a copy of the ordinance.]

As part of the development of this water conservation plan, the City of Poca Agua adopted a landscape water management ordinance (Appendix G). This ordinance is intended to minimize waste in landscape irrigation. The ordinance includes the following elements:

- Prohibition of outdoor watering with hose-end sprinklers or irrigation systems from 10:00 a.m. to 6:00 p.m. every day of the year. The following exceptions are allowed at any hour:
    - Watering with hand-held hoses, soaker hoses, or dispensers.

- Foundations may be watered with a drip irrigation system, soaker hose or a hand-held hose equipped with a positive shutoff nozzle.

- Limit landscape watering with hose-end sprinklers or irrigation systems at each service address to no more than two days per week, with education that less than twice per week is usually adequate. *[Describe mandatory watering schedule.]*

  The following exceptions are allowed on any day:

  - A landscape associated with new construction may be watered as necessary for 30 days from the installation of the new landscape features.
  - Watering with hose-end sprinklers or irrigation systems that are controlled by a registered and properly functioning ET/smart irrigation controller.
  - Watering of a landscape may be provided by hand-held hose with shutoff nozzle, use of dedicated irrigation drip zones, and/or soaker hose provided no runoff occurs.
  - Watering of a landscape using alternative sources of water supply only for irrigation, provided proper signage is employed. If the alternative supply source is a well, proper proof of well registration with your local water supplier (i.e. city, Water Supply Corporation) is required. Other sources of water supply may not include imported treated water.
  - Foundations may be watered with a drip irrigation system, soaker hose or a hand-held hose equipped with a positive shutoff nozzle.
  - Golf courses may water greens and tee boxes.

  [Mandatory/voluntary limits on the number of irrigation days per week and associated watering schedules should be coordinated with the drought response measures in Chapter 7. If such limits are a permanent water conservation measure, as in this model plan, then they are not available for drought response, since they are always in effect. If neither mandatory nor voluntary limits are a permanent water conservation measure, then they are available for drought response.]

- Requirement that all new irrigation systems include rain and freeze sensors and/or ET/smart controllers capable of multiple programming. Rain and freeze sensors and/or ET/smart controllers must be maintained to function properly.
- Requirement that all new irrigation systems be in compliance with state design and installation regulations (Texas Administrative Code Title 30, Part 1, Chapter 344).
- Requirement that the owner of a regulated irrigation property to obtain an evaluation of any permanently installed irrigation system on a periodic basis. The irrigation evaluation shall be conducted by an licensed irrigator in the state of Texas and be submitted to the city.
- Prohibition of designs and installations that spray directly onto impervious surfaces such as sidewalks and roads or onto other non-irrigated areas.
- Prohibition of use of poorly maintained irrigation systems that waste water.
- Prohibition of outdoor watering during precipitation or freeze events.

- Require rain and freeze sensors and/or ET or Smart controllers on all new irrigation systems. Rain and freeze sensors and/or ET or Smart controllers must be maintained to function properly.
- Prohibit overseeding, sodding, sprigging, broadcasting or plugging with cool season grasses or watering cool season grasses, except for golf courses and athletic fields.
- Require that irrigation systems be inspected at the same time as initial backflow preventer inspection.
- Requirement that all new irrigation systems be in compliance with state design and installation regulations (Texas Administrative Code Title 30, Chapter 344).
- Require the owner of a regulated irrigation property to obtain an evaluation of any permanently installed irrigation system on a periodic basis. The irrigation evaluation shall be conducted by a licensed irrigator in the State of Texas.
- Prohibit the use of potable water to fill or refill residential, amenity, and any other natural or manmade ponds. A pond is considered to be a still body of water with a surface area of 500 square feet or more.
- Non–commercial car washing can be done only when using a water hose with a shut-off nozzle.
- Hotels and motels shall offer a linen reuse water conservation option to customers.
- Restaurants, bars, and other commercial food or beverage establishments may not provide drinking water to customers unless a specific request is made by the customer for drinking water.
- Enforcement of the ordinance by a system of warnings followed by fines for continued or repeat violations.

6.5 Monitoring of Effectiveness and Efficiency - Conservation Reports

[OPTIONAL STRATEGY: If you are planning to monitor the effectiveness and efficiency of the water conservation plan, please describe how you will do so. Entities that are required to submit a water conservation plan must also submit a water conservation implementation report with the plan (30 TAC 288.30(2). This report includes statistics from the previous five-year implementation period. The TCEQ has provided a template on its web site.[6]

The TWDB also requires entities that serve 3,300 connections or more, that hold a surface water right, or that are applying for or receiving more than $500,000 in financial assistance from the TWDB to file an annual water conservation report with the TWDB by May 1 each year. This report includes statistics from the previous year. The TWDB has provided a template on its web site.[7]]

6.5.1 Five-Year Water Conservation Implementation Report

The City of Poca Agua has completed a water conservation implementation report form (Appendix D) to accompany this plan.[7] The city will use this report to monitor the effectiveness and efficiency of the water conservation program and to plan conservation-

related activities. In this report, the city has documented water use accounting, system data, per-capita water use and water loss, water conservation programs and activities, and estimated water savings for previous five years. In addition, the city has compared current per capita water use to the targets and goals established in this plan (Section 4.3).

6.5.2 Annual Water Conservation Report

The City of Poca Agua will also file an annual conservation report with the TWDB (Appendix E).[8] This form will be filed by May 1 for the preceding calendar year and will be used by the City of Poca Agua to monitor the effectiveness and efficiency of the water conservation program and to plan conservation-related activities for the next year. The form records water use accounting, system data, per-capita water use and water loss, water conservation programs and activities, and estimated water savings for the year and compares progress to the targets and goals established in this plan (Section 4.3).

[The remainder of Chapter 6 includes "other" optional water conservation strategies that are not specifically enumerated in the TCEQ rules.]

6.6 Residential Customer Water Audit

[OPTIONAL STRATEGY: If you are planning a program to provide audits of residential water use, please describe the program below.]

The City of Poca Agua will conduct water audits for single- and multi-family residential customers. The four main purposes are: to educate customers about conservative water use habits and replacement of inefficient toilets, clothes washers, and dishwashers; to install water-efficient showerheads and faucet aerators; to identify (and possibly repair) leaks; and to optimize irrigation water usage. The City's auditor will review the current watering schedule and recommend any appropriate changes to the watering schedule, will inspect the irrigation system operation, and will recommend any equipment repairs or changes to increase the efficiency of the irrigation system.

The projected reduction in per capita use from the customer indoor water audit program is ___ gpcd in _____ *[five years from date of plan]* and ___ gpcd in _____ *[ten years from date of plan]*.

6.7 Water-Efficient Clothes Washer Rebate Program

[OPTIONAL STRATEGY: If you are planning a program to encourage the use of water-efficient clothes washers, please describe the program below. Such programs generally include rebates on the purchase of water-efficient clothes washers. In addition, since water-efficient clothes washers are also energy efficient, water utilities can sometimes partner with energy providers in offering rebates.]

New, high-efficiency clothes washers use up to 40 percent less water than older, traditional clothes washers. Under this program, the City of Poca Agua will provide a $_____ rebate

toward the purchase of residential clothes washers with a water efficiency factor (gallons per load divided by tub size in cubic feet) of 4.5 or less. In addition, the City of Poca Agua will provide a $_____ rebate toward the purchase of commercial clothes washers with a water efficiency factor (gallons per load divided by tub size in cubic feet) of 5.5 or less.

The projected reduction in per capita use from the water-efficient clothes washer rebate program is ___ gpcd in _____ *[five years from date of plan]* and ___ gpcd in _____ *[ten years from date of plan]*.

6.8 Landscape Irrigation System Rebate Program

[OPTIONAL STRATEGY: If you are planning a program to encourage the use of water-efficient landscape irrigation equipment, please describe the program below.]

The City of Poca Agua will offer a rebate to residential and industrial, commercial, and institutional (ICI) customers to improve the efficiency of their existing irrigation system. By improving the efficiency of irrigation system, outdoor water usage can be reduced while maintaining a healthy landscape. Irrigation system equipment that could qualify for a rebate includes: ET/smart irrigation controllers, low-precipitation-rate irrigation heads, drip irrigation equipment, pressure regulators, soil moisture sensors, and rain sensors.

The City of Poca Agua will offer the following rebates, with a total not to exceed $____:

- $____ rebate on a new ET/smart irrigation controller
- $____ rebate on a pressure reducing valve
- $____ rebate on a rain shut-off device
- Other equipment such as irrigation heads and valves are eligible.

The projected reduction in per capita use from the landscape irrigation system rebate program is ___ gpcd in _____ *[five years from date of plan]* and ___ gpcd in _____ *[ten years from date of plan]*.

6.9 Landscape Design and Conversion Program

[OPTIONAL STRATEGY: If you are planning a program to encourage the use of water-wise landscaping, please describe the program below.]

The City of Poca Agua will provide a rebate of $____ per square foot (up to 800 square feet) to residential and ICI customers that convert existing high-water-use landscaping to water wise landscaping. In addition, the City of Poca Agua encourages new construction to follow water wise landscaping principles on all or part of the property.

The seven principles of water wise landscaping include:

- Planning and design,
- Soil analysis and improvement,
- Appropriate plant selection,
- Practical turf areas,
- Efficient irrigation,
- Use of mulches, and
- Appropriate maintenance.

Customers must agree to refund the rebate to the City if water use does not decline after installation of water wise landscaping or if water use returns to previous levels within five years.

The projected reduction in per capita use from the landscape design and conversion program is ___ gpcd in _____ *[five years from date of plan]* and ___ gpcd in _____ *[ten years from date of plan]*.

6.10 General ICI Rebate Program

[OPTIONAL STRATEGY: If you are planning a general rebate program to encourage ICI water conservation, please describe the program below.]

The City of Poca Agua will encourage its industrial, commercial, and institutional (ICI) customers to convert to water-saving equipment and practices by rebating a portion of the acquisition and installation cost of new water-saving equipment. Examples of equipment changes that might be eligible for a rebate are:

- Replacement of single-pass cooling systems with recirculating or air-cooling systems.

- Reuse of high quality rinse water for landscape irrigation or for wash cycles in laundry equipment.

- Improvements in cleaning processes.

- Installation of water-savings equipment in a car wash.

The City will rebate the lesser of the following:

- Half the purchase price of the equipment (up to $_____) or

- $____ for each gallon per day saved up to _____ gallons and then $____ per gallon saved per day for the next _____ gallons up to a maximum rebate of up to $_____.

The projected reduction in per capita use from the general ICI rebate program is ___ gpcd in _____ *[five years from date of plan]* and ___ gpcd in _____ *[ten years from date of plan]*.

6.11 ICI Water Audit, Water Waste Reduction Program, and Site-Specific Water Conservation Program

[OPTIONAL STRATEGY: If you are planning a program to assist ICI water users in performing on-site water audits, identifying water waste, and developing a site-specific water conservation program, please describe the program below.]

The City of Poca Agua realizes that its ICI customers use water for a wide variety of purposes and have a wide variety of usage patterns. As such, the most feasible water conservation strategies for an individual ICI customer may be highly site-specific. The ICI water audit, water waste reduction program, and site-specific water conservation program is a strategy intended to serve as a way to identify, evaluate, and implement water conservation for individual ICI customers.

With the assistance of the customer, an ICI water audit will:

- Accurately measure all water entering the facility
- Inventory and calculate all on-site water uses
- Identify any unused water sources or waste streams available
- Calculate water related costs
- Identify potential water conservation measures within a facility

Potential water efficiency measures may include water waste reduction and/or best management practices. ICI water-wasting activities may include wasteful irrigation practices and scheduling, single-pass cooling, non-recycling decorative fountains, discharge of process water, inefficient use of water softeners, and wash and rinse processes. In addition to water waste reduction, ICI best management practices may include sub-metering, cooling tower audits, cooling system audits, rinsing/cleaning, boiler and steam systems, water treatment, refrigeration, management and employee programs, landscape, and alternative sources and reuse of process water.

The projected reduction in per capita use from the ICI water audit, water waste reduction program, and site-specific water conservation program is ___ gpcd in _____ *[five years from date of plan]* and ___ gpcd in _____ *[ten years from date of plan]*.

7. DROUGHT CONTINGENCY PLAN

7.1 Introduction

The purpose of this drought contingency plan is as follows:

- To conserve the available water supply in times of drought, water supply shortage, and emergency
- To maintain supplies for domestic water use, sanitation, and fire protection
- To protect and preserve public health, welfare, and safety
- To minimize the adverse impacts of water supply shortages
- To minimize the adverse impacts of emergency water supply conditions.

In the absence of drought response measures, demand tends to increase during a drought due to increased demand for irrigation. The severity of a drought depends on the degree of depletion of supplies and on the relationship of demand to available supplies.

A water supply shortage can be the result of drought or the result of conditions which may render all or some portion of the water supply unavailable. These conditions can include but are not limited to the presence of invasive species, contamination of the water supply, or infrastructure failure.

7.2 State Requirements for Drought Contingency Plans

This drought contingency plan is consistent with Texas Commission on Environmental Quality (TCEQ) guidelines and requirements for the development of drought contingency plans by public drinking water suppliers, contained in Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.20 of the Texas Administrative Code. This rule is included in Appendix B.

TCEQ's minimum requirements for drought contingency plans are addressed in the following subsections of this report:

- 288.20(a)(1)(A) – Provisions to Inform the Public and Provide Opportunity for Public Input – Section 7.3
- 288.20(a)(1)(B) – Provisions for Continuing Public Education and Information – Section 7.4
- 288.20(a)(1)(C) – Coordination with the Regional Water Planning Group – Section 7.10
- 288.20(a)(1)(D) – Criteria for Initiation and Termination of Drought Stages – Section 7.6
- 288.20(a)(1)(E) – Drought and Emergency Response Stages – Section 7.6
- 288.20(a)(1)(F) – Specific, Quantified Targets for Water Use Reductions – Section 7.6
- 288.20(a)(1)(G) – Specific Water Supply and Demand Management Measures for Each Stage – Section 7.6
- 288.20(a)(1)(H) – Procedures for Initiation and Termination of Drought Stages – Section 7.5

- 288.20(a)(1)(I) - Procedures for Granting Variances – Section 7.7
- 288.20(a)(1)(J) - Procedures for Enforcement of Mandatory Restrictions – Section 7.9
- 288.20(a)(3) – Consultation with Wholesale Supplier – Not applicable
- 288.20(b) – Notification of Implementation of Mandatory Measures – Section 7.5
- 288.20(c) – Review and Update of Plan – Section 7.11

[If you receive water from a wholesale supplier, you must include in your plan appropriate provisions for responding to reductions in the wholesale water supply.]

7.3 Provisions to Inform the Public and Opportunity for Public Input

The City of Poca Agua provided opportunity for public input in the development of this drought contingency plan by the following means:

- Providing written notice of the proposed plan and the opportunity to comment on the plan by newspaper, posted notice, and notice on City of Poca Agua's web site, www.ci.pocaagua.tx.us.
- Making the draft plan available on City of Poca Agua's web site, www.ci.pocaagua.tx.us.
- Providing the draft plan to anyone requesting a copy.
- Holding a public meeting at the City of Poca Agua City Hall at _____ *[time]* on _____ *[date]*.

7.4 Provisions for Continuing Public Education and Information

The City of Poca Agua will inform and educate the public about its drought contingency plan by the following means:

- Preparing a bulletin describing the plan and making it available at city hall and other appropriate locations.
- Including summary information about the drought contingency plan and making the plan available on the City of Poca Agua's web site, www.ci.pocaagua.tx.us.
- Notifying local organizations, schools, and civic groups that City of Poca Agua staff members are available to make presentations on the drought contingency plan (usually in conjunction with presentations on water conservation programs).
- Public service announcements on radio, television, and cable channels.
- Newspaper articles and announcements.
- Press releases, media alerts, and social media.

At any time that the drought contingency plan is activated or the drought stage changes, the City of Poca Agua will notify local media of the issues, the drought response stage, and the specific actions required of the public. The information will also be publicized on the City of Poca Agua web site, www.ci.pocaagua.tx.us. Billing inserts will also be used as appropriate.

7.5 Initiation and Termination of Drought Response Stages

The Utility Director or his/her official designee may order the implementation of a drought response stage or water emergency for all or part of the service area when one or more of the trigger conditions for that stage is met, as described in Section 7.6. The following actions will be taken when a drought stage is initiated or terminated:

- Wholesale customers (none at present) will be notified by telephone with a follow-up letter or email.
- The following individuals and entities will be notified directly:
    - Mayor and City Council members
    - City and/or County Emergency Management Coordinators
    - County Judge and Commissioners
    - Critical water users (e.g., hospitals)
    - Park superintendents and public facilities managers
- The public will be notified through local media.
- If any mandatory provisions of the drought contingency plan are activated or terminated, the City of Poca Agua will notify the Executive Director of the TCEQ within 5 business days.

For other trigger conditions, the Utility Director or his/her designee may decide not to order the initiation or termination of a drought response stage or water emergency even though one or more of the trigger criteria for the stage are met. Factors that could influence such a decision include, but are not limited to, the time of the year, weather conditions, the anticipation of replenished/diminished water supplies, or the anticipation of a change in the facilities available to meet needs.

7.6 Drought and Emergency Response Stages

Triggering and termination conditions, goals for water use reductions, and available response actions are described for each drought and emergency response stage in the following sections.

7.6.1 Stage 1, Water Watch

7.6.1.1 TRIGGERING AND TERMINATION CONDITIONS FOR STAGE 1, WATER WATCH

- The water level in Poca Agua Reservoir has fallen below elevation 484.0 feet msl.
- Demand exceeds 95% of the amount that can be delivered to customers for three consecutive days.
- Water demand for all or part of the delivery system approaches delivery capacity because delivery capacity is inadequate.
- Supply source is interrupted or unavailable due to invasive species, equipment failure or other cause.
- Water supply system is unable to deliver water due to the failure or damage of major water system components.
- Water demand is projected to approach the limit of the permitted supply.

[The following are examples of other potential triggering criteria that may be used in one or more successive stages of a drought contingency plan. Select one or more of these if appropriate to your system, or devise additional triggering criteria tailored to your system [10]

1. *Annually, beginning on May 1 through September 30.*
2. *When the water supply available to the City of Poca Agua is equal to or less than _____ (acre-feet, percentage of storage, etc.).*
3. *When, pursuant to requirements specified in the (name of water supplier) wholesale water purchase contract with (name of wholesale water supplier), notification is received requesting initiation of Stage 1 of the Drought Contingency Plan.*
4. *When flows in the (name of stream or river) are equal to or less than ____ cubic feet per second.*
5. *When the static water level in the (name of water supplier) well(s) is equal to or less than ____ feet above mean sea level.*
6. *When the specific capacity of the (name of water supplier) well(s) is equal to or less than ___ percent of the well's original specific capacity.*

7. *When total daily water demand equals or exceeds ____ million gallons for ___ consecutive days or ____ million gallons on a single day (e.g., based on the "safe" operating capacity of water supply facilities).*
8. *Continually falling treated water reservoir levels which do not refill above ___ percent overnight (e.g., based on an evaluation of minimum treated water storage required to avoid system outage).]*

Stage 1 can be terminated when the water level in Poca Agua Reservoir rises above 488.0 feet msl or when the circumstances that caused the initiation of Stage 1 no longer prevail.

7.6.1.2 GOAL FOR USE REDUCTIONS AND RESPONSE ACTIONS AVAILABLE UNDER STAGE 1, WATER WATCH

The goal for water use reduction under Stage 1, Water Watch, is a ____ percent reduction of the use that would have occurred in the absence of drought contingency measures. If circumstances warrant, the Utility Director or his/her designee can set a goal for greater or lesser water use reduction. The purpose of actions under State 1, Water Watch is to raise public awareness of potential drought problems. The Utility Director or his/her designee can order the implementation of any of the actions listed below, as deemed necessary. Measures labeled "**Requires Notification to TCEQ**" impose mandatory requirements on retail and wholesale customers. The City of Poca Agua staff must notify TCEQ within five business days if these measures are implemented.

- Continue water conservation measures, as described in Chapters 4, 5, and 6.
- Notify wholesale customers of actions being taken in the City of Poca Agua and require implementation of similar procedures.
- Initiate engineering studies to evaluate alternative actions that can be implemented if conditions worsen.
- Request voluntary reductions in water use by the public and by wholesale customers. Accelerate public education efforts on ways to reduce water use.
- Review the problems that caused the initiation of Stage 1.
- Intensify efforts on leak detection and repair.
- Identify and encourage voluntary reduction measures by high-volume water users through water use audits.
- Reduce non-essential city government water use not supplied from treated wastewater effluent. (Examples include street cleaning, vehicle washing, operation of ornamental fountains, etc.)
- Reduce city government water use for landscape irrigation.

- **Requires Notification to TCEQ** – Remind customers of mandatory maximum two-days-per-week landscape watering schedule and limited watering hours, as described in Section 6.4, and intensify enforcement.

  [Mandatory/voluntary limits on the number of irrigation days per week and associated watering schedules should be coordinated with the water conservation measures in Section 6.4. If such limits are a permanent water conservation measure, as in this model plan, then they are not available for drought response, since they are always in effect. If neither mandatory nor voluntary limits are a permanent water conservation measure, then they are available for drought response.]

- Encourage customers to follow a voluntary maximum one-day-per-week landscape watering schedule.
- Discourage planting of new landscapes, including lawns, hydro-seeding, and sod.
- Encourage reduction in frequency in draining and refilling of swimming pools.
- **Requires Notification to TCEQ** – Prohibit recreational water usage, including the use of faucets, hoses or hydrants, which results in water run-off or other prohibited waste of water.
- **Requires Notification to TCEQ** – Initiate a rate surcharge for all water use over a certain level.
- **Requires Notification to TCEQ** – Parks, golf courses, and Athletic Fields using potable water for landscape watering are required to meet the same reduction goals and measures outlined in this stage. As an exception, golf course greens and tee boxes which may be hand watered as needed.
- Reduce city government water use for landscape irrigation.
- **Requires Notification to TCEQ** – Restrict washing of any motor vehicle, motorbike, boat, trailer, airplane or other vehicle to the use of a hand-held bucket or a hand-held hose equipped with a positive shut-off nozzle for quick rinses. Vehicle washing may be done at any time on the immediate premises of a commercial vehicle wash facility or commercial service station. Companies with an automated on-site vehicle washing facility may wash vehicles at any time.

7.6.2 Stage 2, Water Warning

7.6.2.1 TRIGGERING CONDITIONS FOR STAGE 2, WATER WARNING

- The water level in Poca Agua Reservoir has fallen below elevation 479.5 feet msl.
- Demand exceeds 95% of the amount that can be delivered to customers for 3 consecutive days.
- Water demand for all or part of the delivery system equals delivery capacity because delivery capacity is inadequate.
- Supply source is interrupted or unavailable due to invasive species, equipment failure or other cause.

- Water supply system is unable to deliver water due to the failure or damage of major water system components.
- Water demand is projected to approach the limit of the permitted supply.

[If applicable select one or more of the additional triggering criteria discussed in Section 7.6.1.1, or devise additional triggering criteria tailored to your system.]

Stage 2 can terminate when the water level in Poca Agua Reservoir rises above elevation 480.5 feet msl or when the circumstances that caused the initiation of Stage 2 no longer prevail. Stage 1 becomes operative on termination of Stage 2.

7.6.2.2 GOAL FOR USE REDUCTION AND RESPONSE ACTIONS AVAILABLE UNDER STAGE 2, WATER WARNING

The goal for water use reduction under Stage 2, Water Warning is a ____ percent reduction of the use that would have occurred in the absence of drought contingency measures. If circumstances warrant, the Utility Director or his/her designee can set a goal for greater or lesser water use reduction. The Utility Director or his/her designee can order the implementation of any of the actions listed below, as deemed necessary. Measures described as "requires notification to TCEQ" impose mandatory requirements on retail and wholesale customers. The City of Poca Agua staff must notify TCEQ within five business days if these measures are implemented.

- Continue or initiate any actions available under the Water Conservation Plan and Stage 1.
- Notify wholesale customers of actions being taken in the City of Poca Agua and require them to implement similar procedures.
- Further accelerate public education efforts on ways to reduce water use.
- Implement viable alternative water supply strategies.
- Initiate engineering studies to evaluate alternatives should conditions worsen.
- Encourage further reduction in frequency in draining and refilling of swimming pools.
- **Requires Notification to TCEQ** – Limit landscape watering with hose-end sprinklers or irrigation systems at each service address to no more than one day per week. The following exceptions are allowed:
    - A landscape associated with new construction may be watered on any day as necessary for 30 days from the installation of the new landscape features.
    - Foundations Watering (within two feet), new plantings (first year) of shrubs, and trees (within a ten-foot radius of the trunk) may be watered for up to two hours on any day with a drip irrigation system, soaker hose or a hand-held hose equipped with a positive shutoff nozzle, provided no runoff occurs.
    - Public athletic fields used for competition may be watered twice per week.

  - Watering of a landscape using alternative sources of water supply only for irrigation is allowed on any day, provided proper signage is employed. However, irrigation using alternative sources of supply is subject to all other restrictions applicable to this stage. If the alternative supply source is a well, proper proof of well registration with the City is required. Other sources of water supply may not include imported treated water.
  - Watering with a Drip Irrigation system is allowed on any day. Drip Irrigation systems are, however, subject to all other restrictions applicable under this stage.
  - Watering with hose-end sprinklers or irrigation systems that are controlled by a registered and properly functioning ET/smart irrigation controller is allowed on any day.
- Strongly discourage planting of new landscapes, including lawns, hydro-seeding, and sod.
- **Requires Notification to TCEQ** – Prohibit overseeding, sodding, sprigging, broadcasting or plugging with or watering, except for golf courses and athletic fields.
- **Requires Notification to TCEQ** – Institute a mandated reduction in water deliveries to wholesale customers. Such a reduction will be distributed as required by Texas Water Code Section §11.039.
- **Requires Notification to TCEQ** – Initiate a rate surcharge for all water use over a certain level.
- **Requires Notification to TCEQ** – Parks and golf courses using potable water for landscape watering are required to meet the same reduction goals and measures outlined in this stage. Exception for golf course greens and tee boxes, which may be hand watered as needed.
- **Requires Notification to TCEQ** – Halt non-essential city government water use. (Examples include street cleaning, vehicle washing, operation of ornamental fountains, etc.)
- Review every potential wholesale customer contract. Assess the current and future water delivery capacity of the City of Poca Agua to for the proposed contract terms to ensure the sustainability of deliveries to existing customers.

7.6.3 Stage 3, Water Emergency

7.6.3.1 TRIGGERING CONDITIONS FOR STAGE 3, WATER EMERGENCY

- The water level in Poca Agua Reservoir has fallen below elevation 475.0 feet msl.
- Demand exceeds the amount that can be delivered to customers.
- Water demand for all or part of the delivery system exceeds delivery capacity because the delivery capacity is inadequate.

- Supply source is interrupted or unavailable due to contamination, invasive species, equipment failure, or other cause.
- Water supply system unable to deliver water due to the failure or damage of major water system components.
- Water demand is projected to approach or exceed the limit of the permitted supply.
- Part of the system has a shortage in supply or damage to equipment.

[If applicable select one or more of the additional triggering criteria discussed in Section 7.6.1.1, or devise additional triggering criteria tailored to your system.]

Stage 3 can terminate when the water level in Poca Agua Reservoir rises above elevation 476.0 feet msl or when the circumstances that caused the initiation of Stage 3 no longer prevail. Stage 2 becomes operative on termination of Stage 3.

7.6.3.2 GOAL FOR USE REDUCTION AND RESPONSE ACTIONS AVAILABLE UNDER STAGE 3, WATER EMERGENCY

The goal for water use reduction under Stage 3, Water Emergency is a reduction of ____ percent of the use that would have occurred in the absence of drought contingency measures. If circumstances warrant, the Utility Director or his/her designee can set a goal for greater or lesser water use reduction.

The Utility Director or his/her designee can order the implementation of any of the actions listed below, as deemed necessary. Measures described as "requires notification to TCEQ" impose mandatory requirements on retail and wholesale customers. The City of Poca Agua staff must notify TCEQ within five business days if these measures are implemented.

- Continue or initiate any actions available under the Water Conservation Plan and Stages 1 and 2.
- Notify wholesale customers of actions being taken in the City of Poca Agua and require them to implement similar procedures.
- Implement additional viable alternative water supply strategies.
- **Requires Notification to TCEQ** – Initiate mandatory water use restrictions as follows:
    - Prohibit hosing of paved areas, buildings, or windows, except by variance and performance by a professional service using high-efficiency equipment.
    - Prohibit operation of ornamental fountains or ponds that use potable water except where supporting aquatic life or water quality.
    - Prohibit using water in such a manner as to allow runoff or other waste.
- **Requires Notification to TCEQ** – Prohibit new sod, overseeding, sodding, sprigging, broadcasting or plugging with or watering.
- **Requires Notification to TCEQ** – Prohibit the use of potable water for irrigation of New Landscape.

- **Requires Notification to TCEQ** – Prohibit all commercial and residential landscape watering. The following exceptions are allowed:
    - Foundations (within two feet) and trees (within a ten-foot radius of the trunk) may be watered for one day per week for up to two hours with a soaker hose, a hand-held hose equipped with a positive shutoff nozzle, or a dedicated zone using a drip irrigation system. Drip Irrigation systems are <u>not</u> exempt from this requirement.
- **Requires Notification to TCEQ** – Prohibit washing of vehicles except at a Commercial Vehicle Wash Facility.
- **Requires Notification to TCEQ** – Prohibit landscape watering of parks, golf courses, and Athletic Fields with potable water. Exception for golf course greens and tee boxes that may be hand watered as needed. Variances may be granted under special circumstances..
- **Requires Notification to TCEQ** – Prohibit the filling, draining and refilling of existing swimming pools, wading pools, Jacuzzi and hot tubs except to maintain structural integrity, proper operation and maintenance or alleviate a public safety risk. Existing pools may add water to replace losses from normal use and evaporation. Permitting of new swimming pools, wading pools, water features, Jacuzzi and hot tubs is prohibited.
- **Requires Notification to TCEQ** – Prohibit the operation of interactive water features such as water sprays, dancing water jets, waterfalls, dumping buckets, shooting water cannons, inflatable pools, temporary splash toys or pools, slip-n-slides, or splash pads that are maintained for recreation.
- **Requires Notification to TCEQ** – Require all commercial water users to reduce water use by a percentage established by the Utility Director or his/her designee.
- **Requires Notification to TCEQ** – Institute a mandated reduction in water deliveries to wholesale customers. Such a reduction will be distributed as required by Texas Water Code Section §11.039.
- **Requires Notification to TCEQ** – Initiate a rate surcharge over normal rates for all water use or for water use over a certain level.

  [It may be desirable to provide a detailed surcharge structure, with more customer types and escalating surcharges for excessive use. An example is provided in the TCEQ's model drought contingency plan for retail public water suppliers[5] in the section entitled "Stage 6 Response – Water Allocation."]
- No application for new, additional, expanded, or increased-in-size water service connections, meters, service lines, pipeline extensions, mains, or water service facilities of any kind shall be approved, and time limits for approval of such applications are hereby suspended for such time as this drought response stage or a higher-numbered stage shall be in effect.
- No new wholesale customer contracts will be entertained unless there is an emergency situation. Review every potential wholesale customer contract. Assess the current and future water delivery capacity of the City of Poca Agua to for the

proposed contract terms to ensure the sustainability of deliveries to existing customers.

7.7 Procedure for Curtailment of Water Supplies

Any mandatory reduction of deliveries from the City of Poca Agua to wholesale customers shall be distributed as required by Texas Water Code Section11.039. In addition, every wholesale water supply contract entered into or renewed after adoption of this Water Conservation and Drought Contingency Plan, including contract extensions, shall include a provision that water will be distributed in accordance with Texas Water Code Section 11.039 in case of a water shortage resulting from drought or water emergency.

7.8 Procedure for Granting Variances to the Plan

The Utility Director or his/her designee may grant temporary variances for existing water uses otherwise prohibited under this drought contingency plan if one or more of the following conditions is met:

- Granting of a variance must not cause an immediate significant reduction in the city's water supply.
- Failure to grant such a variance would cause an emergency condition adversely affecting health, sanitation, or fire safety for the public or the person or entity requesting the variance.
- The health, safety, or welfare of other persons will not be adversely affected by granting of the variance.
- Compliance with this plan cannot be accomplished due to technical or other limitations.
- Alternative methods that achieve the same level of reduction in water use can be implemented.
- All variances are only in effect during the Drought Plan Stage for which the variance was issued.

Variances shall be granted or denied at the discretion of the Utility Director or his/her designee. All petitions for variances should be in writing and should include the following information:

- Name and address of the petitioner(s)
- Purpose of water use
- Specific provisions from which relief is requested
- Detailed statement of the adverse effect of the provision from which relief is requested
- Description of the relief requested

- Period of time for which the variance is sought
- Alternative measures that will be taken to reduce water use
- Other pertinent information.

Variances granted by the City of Poca Agua shall be subject to the following conditions, unless waived or modified by the Utility Director or his/her designee:

- Variances granted shall include a timetable for compliance.
- 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. The Director may revoke a variance granted when the Director determines that the conditions are not being met or are no longer applicable.

7.9 Procedure for Enforcement of Mandatory Restrictions

Permanent, mandatory water use restrictions are imposed in the water conservation plan, and additional mandatory water use restrictions may be imposed in the drought stages. These mandatory water use restrictions will be enforced by warnings and penalties as follows:

- On the first violation, customers will be given a written warning that they have violated the mandatory water use restriction.
- On the second and subsequent violations, citations may be issued to customers, with fines not less than $___ and not to exceed $_____ per incident.
- After two violations have occurred, the City of Poca Agua may install a flow restrictor in the line to limit the amount of water that may pass through the meter in a 24-hour period.
- After three violations have occurred, the City of Poca Agua may cut off water service to the customer.

7.10 Coordination with the Regional Water Planning Group

The City of Poca Agua is located within the Region C water planning area. Appendix I includes a copy of a letter sent to the Chair of the Region C Water Planning Group (RCWPG) with this water conservation and drought contingency plan.

7.11 Review and Update of Drought Contingency Plan

As required by TCEQ rules, the City of Poca Agua will review this drought contingency plan every five years, beginning in _____ *[five years from date of plan]*. The plan will be updated as appropriate based on new or updated information. As the plan is reviewed and

subsequently updated, a copy of the revised drought contingency plan will be submitted to the TCEQ and the RCWPG for their records.