

APPENDIX J
MODEL WATER CONSERVATION
AND
DROUGHT CONTINGENCY PLANS

TEXAS ADMINISTRATIVE CODE

WATER CONSERVATION PLANS,
DROUGHT CONTINGENCY PLANS,
GUIDELINES AND REQUIREMENTS

Amended to be effective January 10, 2008

Texas Administrative Code

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| <u>TITLE 30</u> | ENVIRONMENTAL QUALITY |
| <u>PART 1</u> | TEXAS COMMISSION ON ENVIRONMENTAL QUALITY |
| <u>CHAPTER 288</u> | WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS |
| <u>SUBCHAPTER A</u> | WATER CONSERVATION PLANS |
| RULE §288.1 | Definitions |

The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise.

- (1) Agricultural or Agriculture--Any of the following activities:
 - (A) cultivating the soil to produce crops for human food, animal feed, or planting seed or for the production of fibers;
 - (B) the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or non-soil media by a nursery grower;
 - (C) raising, feeding, or keeping animals for breeding purposes or for the production of food or fiber, leather, pelts, or other tangible products having a commercial value;
 - (D) raising or keeping equine animals;
 - (E) wildlife management; and
 - (F) planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure.
- (2) Agricultural use--Any use or activity involving agriculture, including irrigation.
- (3) Best management practices--Voluntary efficiency measures that save a quantifiable amount of water, either directly or indirectly, and that can be implemented within a specific time frame.
- (4) Conservation--Those practices, techniques, and technologies that reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.
- (5) Drought contingency plan--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).
- (6) Industrial use--The use of water in processes designed to convert materials of a lower order of value into forms having greater usability and commercial value, commercial fish production, and the development of power by means other than hydroelectric, but does not include agricultural use.
- (7) Irrigation--The agricultural use of water for the irrigation of crops, trees, and

pastureland, including, but not limited to, golf courses and parks which do not receive water through a municipal distribution system.

(8) Irrigation water use efficiency--The percentage of that amount of irrigation water which is beneficially used by agriculture crops or other vegetation relative to the amount of water diverted from the source(s) of supply. Beneficial uses of water for irrigation purposes include, but are not limited to, evapotranspiration needs for vegetative maintenance and growth, salinity management, and leaching requirements associated with irrigation.

(9) Mining use--The use of water for mining processes including hydraulic use, drilling, washing sand and gravel, and oil field repressuring.

(10) Municipal per capita water use--The sum total of water diverted into a water supply system for residential, commercial, and public and institutional uses divided by actual population served.

(11) Municipal use--The use of potable water within or outside a municipality and its environs whether supplied by a person, privately owned utility, political subdivision, or other entity as well as the use of sewage effluent for certain purposes, including the use of treated water for domestic purposes, fighting fires, sprinkling streets, flushing sewers and drains, watering parks and parkways, and recreational purposes, including public and private swimming pools, the use of potable water in industrial and commercial enterprises supplied by a municipal distribution system without special construction to meet its demands, and for the watering of lawns and family gardens.

(12) Municipal use in gallons per capita per day--The total average daily amount of water diverted or pumped for treatment for potable use by a public water supply system. The calculation is made by dividing the water diverted or pumped for treatment for potable use by population served. Indirect reuse volumes shall be credited against total diversion volumes for the purpose of calculating gallons per capita per day for targets and goals.

(13) Nursery grower--A person engaged in the practice of floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or nonsoil media, who grows more than 50% of the products that the person either sells or leases, regardless of the variety sold, leased, or grown. For the purpose of this definition, grow means the actual cultivation or propagation of the product beyond the mere holding or maintaining of the item prior to sale or lease, and typically includes activities associated with the production or multiplying of stock such as the development of new plants from cuttings, grafts, plugs, or seedlings.

(14) Pollution--The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

(15) Public water supplier--An individual or entity that supplies water to the public for human consumption.

(16) Regional water planning group--A group established by the Texas Water Development Board to prepare a regional water plan under Texas Water Code, §16.053.

(17) Retail public water supplier--An individual or entity that for compensation supplies water to the public for human consumption. The term does not include an individual or

entity that supplies water to itself or its employees or tenants when that water is not resold to or used by others.

(18) Reuse--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.

(19) Water conservation plan--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).

(20) Wholesale public water supplier--An individual or entity that for compensation supplies water to another for resale to the public for human consumption. The term does not include an individual or entity that supplies water to itself or its employees or tenants as an incident of that employee service or tenancy when that water is not resold to or used by others, or an individual or entity that conveys water to another individual or entity, but does not own the right to the water which is conveyed, whether or not for a delivery fee.

Source Note: The provisions of this §288.1 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective August 15, 2002, 27 TexReg 7146; amended to be effective October 7, 2004, 29 TexReg 9384; amended to be effective January 10, 2008, 33 TexReg 193

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| <u>SUBCHAPTER A</u> | WATER CONSERVATION PLANS |
| <u>RULE §288.2</u> | Water Conservation Plans for Municipal Uses by Public Water Suppliers |

(a) A water conservation plan for municipal water use by public water suppliers must provide information in response to the following. If the plan does not provide information for each requirement, the public water supplier shall include in the plan an explanation of why the requirement is not applicable.

(1) Minimum requirements. All water conservation plans for municipal uses by public drinking water suppliers must include the following elements:

(A) a utility profile including, but not limited to, information regarding population and customer data, water use data, water supply system data, and wastewater system data;

(B) until May 1, 2005, specification of conservation goals including, but not limited to, municipal per capita water use goals, the basis for the development of such goals, and a time frame for achieving the specified goals;

(C) beginning May 1, 2005, specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use, in gallons per capita per day. The goals established by a public water supplier under this subparagraph are not enforceable;

(D) metering device(s), within an accuracy of plus or minus 5.0% in order to measure and account for the amount of water diverted from the source of supply;

(E) a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement;

(F) measures to determine and control unaccounted-for uses of water (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections; abandoned services; etc.);

(G) a program of continuing public education and information regarding water conservation;

(H) a water rate structure which is not "promotional," i.e., a rate structure which is cost-based and which does not encourage the excessive use of water;

(I) a reservoir systems operations 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; and

(J) a means of implementation and enforcement which shall be evidenced by:

(i) a copy of the ordinance, resolution, or tariff indicating official adoption of the

water conservation plan by the water supplier; and

(ii) a description of the authority by which the water supplier will implement and enforce the conservation plan; and

(K) documentation of coordination with the regional water planning groups for the service area of the public water supplier in order to ensure consistency with the appropriate approved regional water plans.

(2) Additional content requirements. Water conservation plans for municipal uses by public drinking water suppliers serving a current population of 5,000 or more and/or a projected population of 5,000 or more within the next ten years subsequent to the effective date of the plan must include the following elements:

(A) a program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted-for uses of water;

(B) a record management system to record water pumped, water deliveries, water sales, and water losses which allows for the desegregation of water sales and uses into the following user classes:

(i) residential;

(ii) commercial;

(iii) public and institutional; and

(iv) industrial;

(C) a requirement in 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 this chapter. If the customer intends to resell the water, 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 the provisions of this chapter.

(3) Additional conservation strategies. Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements in paragraphs (1) and (2) of this subsection, 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:

(A) conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;

(B) adoption of ordinances, plumbing codes, and/or rules requiring water-conserving plumbing fixtures to be installed in new structures and existing structures undergoing substantial modification or addition;

(C) a program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;

(D) reuse and/or recycling of wastewater and/or graywater;

(E) a program for pressure control and/or reduction in the distribution system and/or for customer connections;

- (F) a program and/or ordinance(s) for landscape water management;
 - (G) a method for monitoring the effectiveness and efficiency of the water conservation plan; and
 - (H) 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.
- (b) A water conservation plan prepared in accordance with 31 TAC §363.15 (relating to Required Water Conservation Plan) of the Texas Water Development Board and substantially meeting the requirements of this section and other applicable commission rules may be submitted to meet application requirements in accordance with a memorandum of understanding between the commission and the Texas Water Development Board.
- (c) Beginning May 1, 2005, a public water supplier for municipal use shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The public water supplier for municipal use shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group.

Source Note: The provisions of this §288.2 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

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| <u>SUBCHAPTER A</u> | WATER CONSERVATION PLANS |
| RULE §288.3 | Water Conservation Plans for Industrial or Mining Use |

(a) A water conservation plan for industrial or mining uses of water must provide information in response to each of the following elements. If the plan does not provide information for each requirement, the industrial or mining water user shall include in the plan an explanation of why the requirement is not applicable.

(1) a description of the use of the water in the production process, including how the water is diverted and transported from the source(s) of supply, how the water is utilized in the production process, and the estimated quantity of water consumed in the production process and therefore unavailable for reuse, discharge, or other means of disposal;

(2) until May 1, 2005, specification of conservation goals, the basis for the development of such goals, and a time frame for achieving the specified goals;

(3) beginning May 1, 2005, specific, quantified five-year and ten-year targets for water savings and the basis for the development of such goals. The goals established by industrial or mining water users under this paragraph are not enforceable;

(4) a description of the device(s) and/or method(s) within an accuracy of plus or minus 5.0% to be used in order to measure and account for the amount of water diverted from the source of supply;

(5) leak-detection, repair, and accounting for water loss in the water distribution system;

(6) application of state-of-the-art equipment and/or process modifications to improve water use efficiency; and

(7) any other water conservation practice, method, or technique which the user shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

(b) Beginning May 1, 2005, an industrial or mining water user shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The industrial or mining water user shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group.

Source Note: The provisions of this §288.3 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

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| <u>SUBCHAPTER A</u> | WATER CONSERVATION PLANS |
| <u>RULE §288.4</u> | Water Conservation Plans for Agricultural Use |

(a) A water conservation plan for agricultural use of water must provide information in response to the following subsections. If the plan does not provide information for each requirement, the agricultural water user must include in the plan an explanation of why the requirement is not applicable.

(1) For an individual agricultural user other than irrigation:

(A) a description of the use of the water in the production process, including how the water is diverted and transported from the source(s) of supply, how the water is utilized in the production process, and the estimated quantity of water consumed in the production process and therefore unavailable for reuse, discharge, or other means of disposal;

(B) until May 1, 2005, specification of conservation goals, the basis for the development of such goals, and a time frame for achieving the specified goals;

(C) beginning May 1, 2005, specific, quantified five-year and ten-year targets for water savings and the basis for the development of such goals. The goals established by agricultural water users under this subparagraph are not enforceable;

(D) a description of the device(s) and/or method(s) within an accuracy of plus or minus 5.0% to be used in order to measure and account for the amount of water diverted from the source of supply;

(E) leak-detection, repair, and accounting for water loss in the water distribution system;

(F) application of state-of-the-art equipment and/or process modifications to improve water use efficiency; and

(G) any other water conservation practice, method, or technique which the user shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

(2) For an individual irrigation user:

(A) a description of the irrigation production process which shall include, but is not limited to, the type of crops and acreage of each crop to be irrigated, monthly irrigation diversions, any seasonal or annual crop rotation, and soil types of the land to be irrigated;

(B) a description of the irrigation method or system and equipment including pumps, flow rates, plans, and/or sketches of the system layout;

(C) a description of the device(s) and/or methods within an accuracy of plus or minus 5.0%, to be used in order to measure and account for the amount of water diverted from

the source of supply;

(D) until May 1, 2005, specification of conservation goals including, where appropriate, quantitative goals for irrigation water use efficiency and a pollution abatement and prevention plan;

(E) beginning May 1, 2005, specific, quantified five-year and ten-year targets for water savings including, where appropriate, quantitative goals for irrigation water use efficiency and a pollution abatement and prevention plan. The goals established by an individual irrigation water user under this subparagraph are not enforceable;

(F) water-conserving irrigation equipment and application system or method including, but not limited to, surge irrigation, low pressure sprinkler, drip irrigation, and nonleaking pipe;

(G) leak-detection, repair, and water-loss control;

(H) scheduling the timing and/or measuring the amount of water applied (for example, soil moisture monitoring);

(I) land improvements for retaining or reducing runoff, and increasing the infiltration of rain and irrigation water including, but not limited to, land leveling, furrow diking, terracing, and weed control;

(J) tailwater recovery and reuse; and

(K) any other water conservation practice, method, or technique which the user shows to be appropriate for preventing waste and achieving conservation.

(3) For a system providing agricultural water to more than one user:

(A) a system inventory for the supplier's:

(i) structural facilities including the supplier's water storage, conveyance, and delivery structures;

(ii) management practices, including the supplier's operating rules and regulations, water pricing policy, and a description of practices and/or devices used to account for water deliveries; and

(iii) a user profile including square miles of the service area, the number of customers taking delivery of water by the system, the types of crops, the types of irrigation systems, the types of drainage systems, and total acreage under irrigation, both historical and projected;

(B) until May 1, 2005, specification of water conservation goals, including maximum allowable losses for the storage and distribution system;

(C) beginning May 1, 2005, specific, quantified five-year and ten-year targets for water savings including maximum allowable losses for the storage and distribution system. The goals established by a system providing agricultural water to more than one user under this subparagraph are not enforceable;

(D) a description of the practice(s) and/or device(s) which will be utilized to measure and account for the amount of water diverted from the source(s) of supply;

(E) a monitoring and record management program of water deliveries, sales, and losses;

(F) a leak-detection, repair, and water loss control program;

(G) a program to assist customers in the development of on-farm water conservation and pollution prevention plans and/or measures;

(H) a requirement in 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 this chapter. If the customer intends to resell the water, 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 this chapter;

(I) official adoption of the water conservation plan and goals, by ordinance, rule, resolution, or tariff, indicating that the plan reflects official policy of the supplier;

(J) any other water conservation practice, method, or technique which the supplier shows to be appropriate for achieving conservation; and

(K) documentation of coordination with the regional water planning groups in order to ensure consistency with appropriate approved regional water plans.

(b) A water conservation plan prepared in accordance with the rules of the United States Department of Agriculture Natural Resource Conservation Service, the Texas State Soil and Water Conservation Board, or other federal or state agency and substantially meeting the requirements of this section and other applicable commission rules may be submitted to meet application requirements in accordance with a memorandum of understanding between the commission and that agency.

(c) Beginning May 1, 2005, an agricultural water user shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. An agricultural water user shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group.

Source Note: The provisions of this §288.4 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective August 15, 2002, 27 TexReg 7146; amended to be effective October 7, 2004, 29 TexReg 9384

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| <u>SUBCHAPTER A</u> | WATER CONSERVATION PLANS |
| RULE §288.5 | Water Conservation Plans for Wholesale Water Suppliers |

A water conservation plan for a wholesale water supplier must provide information in response to each of the following paragraphs. If the plan does not provide information for each requirement, the wholesale water supplier shall include in the plan an explanation of why the requirement is not applicable.

(1) Minimum requirements. All water conservation plans for wholesale water suppliers must include the following elements:

(A) a description of the wholesaler's service area, including population and customer data, water use data, water supply system data, and wastewater data;

(B) until May 1, 2005, specification of conservation goals including, where appropriate, target per capita water use goals for the wholesaler's service area, maximum acceptable unaccounted-for water, the basis for the development of these goals, and a time frame for achieving these goals;

(C) beginning May 1, 2005, specific, quantified five-year and ten-year targets for water savings including, where appropriate, target goals for municipal use in gallons per capita per day for the wholesaler's service area, maximum acceptable unaccounted-for water, and the basis for the development of these goals. The goals established by wholesale water suppliers under this subparagraph are not enforceable;

(D) a description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply;

(E) a monitoring and record management program for determining water deliveries, sales, and losses;

(F) a program of metering and leak detection and repair for the wholesaler's water storage, delivery, and distribution system;

(G) a requirement in every water supply contract entered into or renewed after official adoption of the water conservation plan, 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 of this chapter. 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 this chapter;

(H) a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin. The reservoir systems operations plans shall include optimization of water supplies as one of the significant goals of the plan;

(I) a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, 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; and

(J) documentation of coordination with the regional water planning groups for the service area of the wholesale water supplier in order to ensure consistency with the appropriate approved regional water plans.

(2) Additional conservation strategies. Any combination of the following strategies shall be selected by the water wholesaler, in addition to the minimum requirements of paragraph (1) of this section, if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

(A) conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;

(B) a program to assist agricultural customers in the development of conservation pollution prevention and abatement plans;

(C) a program for reuse and/or recycling of wastewater and/or graywater; and

(D) any other water conservation practice, method, or technique which the wholesaler shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

(3) Review and update requirements. Beginning May 1, 2005, the wholesale water supplier shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. A wholesale water supplier shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group.

Source Note: The provisions of this §288.5 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

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SUBCHAPTER A WATER CONSERVATION PLANS

RULE §288.6 **Water Conservation Plans for Any Other Purpose or Use**

A water conservation plan for any other purpose or use not covered in this subchapter shall provide information where applicable about those practices, techniques, and technologies that will be used to reduce the consumption of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water.

Source Note: The provisions of this §288.6 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective April 27, 2000, 25 TexReg 3544

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SUBCHAPTER A WATER CONSERVATION PLANS

RULE §288.7 Plans Submitted with a Water Right Application for New or Additional State Water

(a) A water conservation plan submitted with an application for a new or additional appropriation of water must include data and information which:

- (1) supports the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan;
- (2) evaluates conservation as an alternative to the proposed appropriation; and
- (3) evaluates any other feasible alternative to new water development including, but not limited to, waste prevention, recycling and reuse, water transfer and marketing, regionalization, and optimum water management practices and procedures.

(b) It shall be the burden of proof of the applicant to demonstrate that no feasible alternative to the proposed appropriation exists and that the requested amount of appropriation is necessary and reasonable for the proposed use.

Source Note: The provisions of this §288.7 adopted to be effective May 3, 1993, 18 TexReg 2558.

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| <u>SUBCHAPTER B</u> | DROUGHT CONTINGENCY PLANS |
| RULE §288.20 | Drought Contingency Plans for Municipal Uses by Public Water Suppliers |

(a) A drought contingency plan for a retail public water supplier, where applicable, must include the following minimum elements.

(1) Minimum requirements. Drought contingency plans must include the following minimum elements.

(A) Preparation of the plan shall include provisions to actively inform the public and affirmatively provide opportunity for public input. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the public and providing written notice to the public concerning the proposed plan and meeting.

(B) Provisions shall be made for a program of continuing public education and information regarding the drought contingency plan.

(C) The drought contingency plan must document coordination with the regional water planning groups for the service area of the retail public water supplier to ensure consistency with the appropriate approved regional water plans.

(D) The drought contingency plan must include a description of the information to be monitored by the water supplier, and specific criteria for the initiation and termination of drought response stages, accompanied by an explanation of the rationale or basis for such triggering criteria.

(E) The drought contingency plan must include drought or emergency response stages providing for the implementation of measures in response to at least the following situations:

- (i) reduction in available water supply up to a repeat of the drought of record;
- (ii) water production or distribution system limitations;
- (iii) supply source contamination; or
- (iv) system outage due to the failure or damage of major water system components (e.g., pumps).

(F) The drought contingency plan must include specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. The goals established by the entity under this subparagraph are not enforceable.

(G) The drought contingency plan must include the specific water supply or water demand management measures to be implemented during each stage of the plan

including, but not limited to, the following:

(i) curtailment of non-essential water uses; and

(ii) utilization of alternative water sources and/or alternative delivery mechanisms with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).

(H) The drought contingency plan must include the procedures to be followed for the initiation or termination of each drought response stage, including procedures for notification of the public.

(I) The drought contingency plan must include procedures for granting variances to the plan.

(J) The drought contingency plan must include procedures for the enforcement of mandatory water use restrictions, including specification of penalties (e.g., fines, water rate surcharges, discontinuation of service) for violations of such restrictions.

(2) Privately-owned water utilities. Privately-owned water utilities shall prepare a drought contingency plan in accordance with this section and incorporate such plan into their tariff.

(3) Wholesale water customers. Any water supplier that receives all or a portion of its water supply from another water supplier shall consult with that supplier and shall include in the drought contingency plan appropriate provisions for responding to reductions in that water supply.

(b) A wholesale or retail water supplier shall notify the executive director within five business days of the implementation of any mandatory provisions of the drought contingency plan.

(c) The retail public water supplier shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as the adoption or revision of the regional water plan.

Source Note: The provisions of this §288.20 adopted to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

Texas Administrative Code

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|----------------------------|--|
| <u>TITLE 30</u> | ENVIRONMENTAL QUALITY |
| <u>PART 1</u> | TEXAS COMMISSION ON ENVIRONMENTAL QUALITY |
| <u>CHAPTER 288</u> | WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS |
| <u>SUBCHAPTER B</u> | DROUGHT CONTINGENCY PLANS |
| RULE §288.21 | Drought Contingency Plans for Irrigation Use |

(a) A drought contingency plan for an irrigation use, where applicable, must include the following minimum elements.

(1) Minimum requirements. Drought contingency plans for irrigation water suppliers must include policies and procedures for the equitable and efficient allocation of water on a pro rata basis during times of shortage in accordance with Texas Water Code, §11.039. Such plans shall include the following elements as a minimum.

(A) Preparation of the plan shall include provisions to actively inform and to affirmatively provide opportunity for users of water from the irrigation system to provide input into the preparation of the plan and to remain informed of the plan. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the water users and providing written notice to the water users concerning the proposed plan and meeting.

(B) The drought contingency plan must document coordination with the regional water planning groups to ensure consistency with the appropriate approved regional water plans.

(C) The drought contingency plan must include water supply criteria and other considerations for determining when to initiate or terminate water allocation procedures, accompanied by an explanation of the rationale or basis for such triggering criteria.

(D) The drought contingency plan must include specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. The goals established by the entity under this subparagraph are not enforceable.

(E) The drought contingency plan must include methods for determining the allocation of irrigation supplies to individual users.

(F) The drought contingency plan must include a description of the information to be monitored by the water supplier and the procedures to be followed for the initiation or termination of water allocation policies.

(G) The drought contingency plan must include procedures for use accounting during the implementation of water allocation policies.

(H) The drought contingency plan must include policies and procedures, if any, for the transfer of water allocations among individual users within the water supply system or to users outside the water supply system.

(1) The drought contingency plan must include procedures for the enforcement of water allocation policies, including specification of penalties for violations of such policies and for wasteful or excessive use of water.

(2) Wholesale water customers. Any irrigation water supplier that receives all or a portion of its water supply from another water supplier shall consult with that supplier and shall include in the drought contingency plan, appropriate provisions for responding to reductions in that water supply.

(3) Protection of public water supplies. Any irrigation water supplier that also provides or delivers water to a public water supplier(s) shall consult with that public water supplier(s) and shall include in the plan, mutually agreeable and appropriate provisions to ensure an uninterrupted supply of water necessary for essential uses relating to public health and safety. Nothing in this provision shall be construed as requiring the irrigation water supplier to transfer irrigation water supplies to non-irrigation use on a compulsory basis or without just compensation.

(b) Irrigation water users shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as adoption or revision of the regional water plan.

Source Note: The provisions of this §288.21 adopted to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

Texas Administrative Code

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| <u>TITLE 30</u> | ENVIRONMENTAL QUALITY |
| <u>PART 1</u> | TEXAS COMMISSION ON ENVIRONMENTAL QUALITY |
| <u>CHAPTER 288</u> | WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS |
| <u>SUBCHAPTER B</u> | DROUGHT CONTINGENCY PLANS |
| <u>RULE §288.22</u> | Drought Contingency Plans for Wholesale Water Suppliers |

(a) A drought contingency plan for a wholesale water supplier must include the following minimum elements.

(1) Preparation of the plan shall include provisions to actively inform the public and to affirmatively provide opportunity for user input in the preparation of the plan and for informing wholesale customers about the plan. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the public and providing written notice to the public concerning the proposed plan and meeting.

(2) The drought contingency plan must document coordination with the regional water planning groups for the service area of the wholesale public water supplier to ensure consistency with the appropriate approved regional water plans.

(3) The drought contingency plan must include a description of the information to be monitored by the water supplier and specific criteria for the initiation and termination of drought response stages, accompanied by an explanation of the rationale or basis for such triggering criteria.

(4) The drought contingency plan must include a minimum of three drought or emergency response stages providing for the implementation of measures in response to water supply conditions during a repeat of the drought-of-record.

(5) The drought contingency plan must include the procedures to be followed for the initiation or termination of drought response stages, including procedures for notification of wholesale customers regarding the initiation or termination of drought response stages.

(6) The drought contingency plan must include specific, quantified targets for water use reductions to be achieved during periods of water shortage and drought. The entity preparing the plan shall establish the targets. The goals established by the entity under this paragraph are not enforceable.

(7) The drought contingency plan must include the specific water supply or water demand management measures to be implemented during each stage of the plan including, but not limited to, the following:

(A) pro rata curtailment of water deliveries to or diversions by wholesale water customers as provided in Texas Water Code, §11.039; and

(B) utilization of alternative water sources with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary use of

a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).

(8) The drought contingency plan must include a provision in every wholesale water contract entered into or renewed after adoption of the plan, including contract extensions, that in case of a shortage of water resulting from drought, the water to be distributed shall be divided in accordance with Texas Water Code, §11.039.

(9) The drought contingency plan must include procedures for granting variances to the plan.

(10) The drought contingency plan must include procedures for the enforcement of any mandatory water use restrictions including specification of penalties (e.g., liquidated damages, water rate surcharges, discontinuation of service) for violations of such restrictions.

(b) The wholesale public water supplier shall notify the executive director within five business days of the implementation of any mandatory provisions of the drought contingency plan.

(c) The wholesale public water supplier shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as adoption or revision of the regional water plan.

Source Note: The provisions of this §288.22 adopted to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

Texas Administrative Code

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| <u>TITLE 30</u> | ENVIRONMENTAL QUALITY |
| <u>PART 1</u> | TEXAS COMMISSION ON ENVIRONMENTAL QUALITY |
| <u>CHAPTER 288</u> | WATER CONSERVATION PLANS, DROUGHT CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS |
| <u>SUBCHAPTER C</u> | REQUIRED SUBMITTALS |
| RULE §288.30 | Required Submittals |

In addition to the water conservation and drought contingency plans required to be submitted with an application under §295.9 of this title (relating to Water Conservation and Drought Contingency Plans), water conservation and drought contingency plans are required as follows.

(1) Water conservation plans for municipal, industrial, and other non-irrigation uses. The holder of an existing permit, certified filing, or certificate of adjudication for the appropriation of surface water in the amount of 1,000 acre-feet a year or more for municipal, industrial, and other non-irrigation uses shall develop, submit, and implement a water conservation plan meeting the requirements of Subchapter A of this chapter (relating to Water Conservation Plans). The water conservation plan must be submitted to the executive director not later than May 1, 2005. Thereafter, the next revision of the water conservation plan for municipal, industrial, and other non-irrigation uses must be submitted not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. Any revised plans must be submitted to the executive director within 90 days of adoption. The revised plans must include implementation reports. The requirement for a water conservation plan under this section must not result in the need for an amendment to an existing permit, certified filing, or certificate of adjudication.

(2) Implementation report for municipal, industrial, and other non-irrigation uses. The implementation report must include:

- (A) the list of dates and descriptions of the conservation measures implemented;
- (B) data about whether or not targets in the plans are being met;
- (C) the actual amount of water saved; and
- (D) if the targets are not being met, an explanation as to why any of the targets are not being met, including any progress on that particular target.

(3) Water conservation plans for irrigation uses. The holder of an existing permit, certified filing, or certificate of adjudication for the appropriation of surface water in the amount of 10,000 acre-feet a year or more for irrigation uses shall develop, submit, and implement a water conservation plan meeting the requirements of Subchapter A of this chapter. The water conservation plan must be submitted to the executive director not later than May 1, 2005. Thereafter, the next revision of the water conservation plan for

irrigation uses must be submitted not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. Any revised plans must be submitted to the executive director within 90 days of adoption. The revised plans must include implementation reports. The requirement for a water conservation plan under this section must not result in the need for an amendment to an existing permit, certified filing, or certificate of adjudication.

(4) Implementation report for irrigation uses. The implementation report must include:

(A) the list of dates and descriptions of the conservation measures implemented;

(B) data about whether or not targets in the plans are being met;

(C) the actual amount of water saved; and

(D) if the targets are not being met, an explanation as to why any of the targets are not being met, including any progress on that particular target.

(5) Drought contingency plans for retail public water suppliers. Retail public water suppliers shall submit a drought contingency plan meeting the requirements of Subchapter B of this chapter (relating to Drought Contingency Plans) to the executive director after adoption by its governing body. The retail public water system shall provide a copy of the plan to the regional water planning group for each region within which the water system operates. These drought contingency plans must be submitted as follows.

(A) For retail public water suppliers providing water service to 3,300 or more connections, the drought contingency plan must be submitted to the executive director not later than May 1, 2005. Thereafter, the retail public water suppliers providing water service to 3,300 or more connections shall submit the next revision of the plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. Any revised plans must be submitted to the executive director within 90 days of adoption by the community water system. Any new retail public water suppliers providing water service to 3,300 or more connections shall prepare and adopt a drought contingency plan within 180 days of commencement of operation, and submit the plan to the executive director within 90 days of adoption.

(B) For all the retail public water suppliers, the drought contingency plan must be prepared and adopted not later than May 1, 2005 and must be available for inspection by the executive director upon request. Thereafter, the retail public water suppliers shall prepare and adopt the next revision of the plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. Any new retail public water supplier providing water service to less than 3,300 connections shall prepare and adopt a drought contingency plan within 180 days of commencement of operation, and shall make the plan available for inspection by the executive director upon request.

(6) Drought contingency plans for wholesale public water suppliers. Wholesale public water suppliers shall submit a drought contingency plan meeting the requirements of Subchapter B of this chapter to the executive director not later than May 1, 2005, after adoption of the drought contingency plan by the governing body of the water supplier. Thereafter, the wholesale public water suppliers shall submit the next revision of the plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. Any new or revised plans must be submitted to the executive director within 90 days of adoption by the governing body of the wholesale public water supplier. Wholesale public water suppliers shall also provide a copy of the drought contingency plan to the regional water planning group for each region within

which the wholesale water supplier operates.

(7) Drought contingency plans for irrigation districts. Irrigation districts shall submit a drought contingency plan meeting the requirements of Subchapter B of this chapter to the executive director not later than May 1, 2005, after adoption by the governing body of the irrigation district. Thereafter, the irrigation districts shall submit the next revision of the plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. Any new or revised plans must be submitted to the executive director within 90 days of adoption by the governing body of the irrigation district. Irrigation districts shall also provide a copy of the plan to the regional water planning group for each region within which the irrigation district operates.

(8) Additional submissions with a water right application for state water. A water conservation plan or drought contingency plan required to be submitted with an application in accordance with §295.9 of this title must also be subject to review and approval by the commission.

(9) Existing permits. The holder of an existing permit, certified filing, or certificate of adjudication shall not be subject to enforcement actions nor shall the permit, certified filing, or certificate of adjudication be subject to cancellation, either in part or in whole, based on the nonattainment of goals contained within a water conservation plan submitted with an application in accordance with §295.9 of this title or by the holder of an existing permit, certified filing, or certificate of adjudication in accordance with the requirements of this section.

(10) Submissions to the executive administrator of the Texas Water Development Board.

(A) Water conservation plans for retail public water suppliers. For retail public water suppliers providing water service to 3,300 or more connections, a water conservation plan meeting the minimum requirements of Subchapter A of this chapter and using appropriate best management practices must be developed, implemented, and submitted to the executive administrator of the Texas Water Development Board not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. Any revised plans must be submitted to the executive administrator within 90 days of adoption by the community water system. Any new retail public water suppliers providing water service to 3,300 or more connections shall prepare and adopt a water conservation plan within 180 days of commencement of operation, and submit the plan to the executive administrator of the Texas Water Development Board within 90 days of adoption.

(B) Water conservation plans. Each entity that is required to submit a water conservation plan to the commission shall submit a copy of the plan to the executive administrator of the Texas Water Development Board not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group.

(C) Annual reports. Each entity that is required to submit a water conservation plan to the Texas Water Development Board or the commission, shall file a report not later than May 1, 2010, and annually thereafter to the executive administrator of the Texas Water Development Board on the entity's progress in implementing the plan.

(D) Violations of the Texas Water Development Board's rules. The water conservation plans and annual reports shall comply with the minimum requirements established in the Texas Water Development Board's rules. The Texas Water Development Board shall

notify the commission if the Texas Water Development Board determines that an entity has not complied with the Texas Water Development Board rules relating to the minimum requirements for water conservation plans or submission of plans or annual reports. The commission shall take appropriate enforcement action upon receipt of notice from the Texas Water Development Board.

Source Note: The provisions of this §288.30 adopted to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384; amended to be effective January 10, 2008, 33 TexReg 193

MODEL WATER CONSERVATION PLANS

Water Conservation Plan for [Entity]

Date

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APPENDICES

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Water Conservation Plan for [Entity]

1. OBJECTIVES

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 plans for public water suppliers.

The objectives of this water conservation plan are as follows:

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

The water conservation plan presented in this document is a model water conservation plan intended for adoption by wholesale or retail public water suppliers in Region I. This model plan includes all of the elements required by TCEQ. In order to adopt this plan, each water supplier will need to do the following:

- Complete the water utility profile.
- Set specific and quantifiable five- and ten-year goals for per capita water use.
- Adopt ordinance(s) or regulation(s) approving the model plan.

2 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES

2.1 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 water¹.” The

¹ Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter A, Rules 288.1 and 288.2, and Subchapter B, Rule 288.20, downloaded from [http://info.sos.state.tx.us/pls/pub/readtac\\$ext.viewtac](http://info.sos.state.tx.us/pls/pub/readtac$ext.viewtac), January 2010.

elements in the TCEQ water conservation rules covered in this conservation plan are listed below.

Minimum Conservation Plan Requirements

The minimum requirements in the Texas Administrative Code for Water Conservation Plans for Public Water Suppliers are covered in this report as follows:

- 288.2(a)(1)(A) – Utility Profile – Section 3 and Appendix C
- 288.2(a)(1)(B) – Specification of Goals – Section 4
- 288.2(a)(1)(C) – Specification of Goals for water loss and municipal use – Section 4
- 288.2(a)(1)(D) – Accurate Metering – Section 5.1
- 288.2(a)(1)(E) – Universal Metering – Section 5.1
- 288.2(a)(1)(F) – Determination and Control of Unaccounted Water – Section 5.3
- 288.2(a)(1)(G) – Public Education and Information Program – Section 6
- 288.2(a)(1)(H) – Non-Promotional Water Rate Structure – Section 7
- 288.2(a)(1)(I) – Reservoir System Operation Plan – Section 8.2
- 288.2(a)(1)(J) – Means of Implementation and Enforcement – Section 9
- 288.2(a)(1)(K) – Coordination with Regional Water Planning Group – Section 8.5

Conservation Additional Requirements (Population over 5,000)

The Texas Administrative Code includes additional requirements for water conservation plans for cities with a population over 5,000:

- 288.2(a)(2)(A) – Leak Detection, Repair, and Water Loss Accounting – Sections 5.3, 5.4, and 5.5
- 288.2(a)(2)(B) – Record Management System – Section 5.2
- 288.2(a)(2)(C) – Requirement for Water Conservation Plans by Wholesale Customers – Section 8.4

Additional Conservation Strategies

TCEQ rules also list additional optional but not required conservation strategies, which may be adopted by suppliers. The following optional strategies are included in this plan:

- 288.2(a)(3)(A) – Conservation Oriented Water Rates – Section 7
- 288.2(a)(3)(B) – Ordinances, Plumbing Codes or Rules on Water-Conserving Fixtures – Section 8.1
- 288.2(a)(3)(F) – Considerations for Landscape Water Management Regulations – Section 8.3
- 288.2(a)(3)(G) – Monitoring Method – Section 5.5

3. WATER UTILITY PROFILE

Appendix C to this water conservation plan is a sample water utility profile based on the format recommended by the TCEQ.

[Water supplier is to complete the utility profile and provide information on the public water supply system and customers if appropriate for this section.]

4. SPECIFICATION OF WATER CONSERVATION GOALS

[Current TCEQ rules require the adoption of specific water conservation goals for a water conservation plan. As part of plan adoption, each water supplier will develop 5-year and 10-year goals for per capita municipal use, following TCEQ procedures described in the water utility profile (Appendix C).]

The goals for this water conservation plan include the following:

- Strive to attain the per capita municipal water use below the specified amount in gallons per capita per day shown on the completed Table C-1 using a 5-year rolling average calculation. (See 5-year and 10-year goals in Appendix C)
- Conduct water audits as required by the TCEQ and maintain unaccounted for water to *[insert amount]* percent of the total water used through existing and new maintenance programs.
- Raise public awareness of water conservation and encourage responsible public behavior by a public education and information program, as discussed in Section 6.

5. METERING, WATER USE RECORDS, CONTROL OF UNACCOUNTED WATER, AND LEAK DETECTION AND REPAIR

One of the key elements in water conservation is careful tracking of water use and control of losses through illegal diversions and leaks. Careful metering of water deliveries and water use, detection and repair of leaks in the distribution system and regular monitoring of unaccounted water are important in controlling losses. *[Water suppliers serving a population of 5,000 people or more or a having a projected population of greater than 5,000 people or more within the next ten years must include the following elements in their water conservation plans:]*

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

All customers of wholesale or retail public water suppliers, including public and governmental users, should be metered. In many cases, water suppliers already meter all of their water users. For those water suppliers who do not currently meter all of their water

uses, these entities will implement a program to meter all water uses within the next five years.

Most water suppliers test and replace their customer meters on a regular basis. All customer meters should be replaced on a 15-year cycle. Those who do not currently have a meter testing and replacement program will implement such a program over the next five years.

5.2 Record Management System

As required by TAC Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2(a)(2)(B), the record management system allows for the separation of water sales and uses into residential, commercial, public/institutional, and industrial categories. This information will be included in an annual water conservation report, as described in Section 5.5 below.

For those entities whose record management systems do not currently allow for the separation of water sales as described above, they will move to implement such a system within the next five years.

5.3 Determination and Control of Unaccounted Water

Unaccounted water is the difference between water delivered to customers and metered deliveries to customers plus authorized but unmetered uses. (Authorized but unmetered uses would include use for fire fighting, releases for flushing of lines, and uses associated with new construction.) Unaccounted water can include several categories:

- Inaccuracies in customer meters. (Customer meters tend to run more slowly as they age and under-report actual use.)
- Accounts which are being used but have not yet been added to the billing system.
- Losses due to water main breaks and leaks in the water distribution system.
- Losses due to illegal connections and theft. (Included in Appendix H.)
- Other.

Measures to control unaccounted water are part of the routine operations of water suppliers. Water audits are useful methods of accounting for water usage within a system. Water audits will be conducted by water suppliers in order to decrease water loss. Maintenance crews and personnel will look for and report evidence of leaks in the water distribution system. The leak detection and repair program is described in Section 5.5 below. Meter readers are asked to watch for and report signs of illegal connections, so they can be addressed quickly. Unaccounted water calculated as part of the utility profile and is included in Appendix C.

5.4 Leak Detection and Repair

City crews and personnel will look for and report evidence of leaks in the water distribution system. Areas of the water distribution system in which numerous leaks and line breaks occur are targeted for replacement as funds are available.

5.5 Monitoring of Effectiveness and Efficiency - Annual Water Conservation Report

[Appendix D is a sample form that can be used in the development of an annual water conservation report for water suppliers.]

An annual conservation report will be completed by *[insert date]* of the following year and will be used to monitor the effectiveness and efficiency of the water conservation program and to plan conservation-related activities for the next year. This report records the water use by category, per capita municipal use, and unaccounted water for the current year and compares them to historical values.

6. CONTINUING PUBLIC EDUCATION AND INFORMATION CAMPAIGN

The continuing public education and information campaign on water conservation includes the following elements: *[Water provider is to select the appropriate measures for its system.]*

- Insert water conservation information with water bills. Inserts will include material developed by the *[water supplier]* 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.
- Make the *Texas Smartscape CD*, water conservation brochures, and other water conservation materials available to the public.
- Make information on water conservation available on its website (if any) and include links to the *Texas Smartscape* website and to information on water conservation on the TWDB and TCEQ web sites.
- Provide water conservation materials to schools and utilize existing age-appropriate education programs available through the TCEQ and TWDB.
- Support the State-initiated Water Conservation Awareness and Education Campaign.

7. WATER RATE STRUCTURE

[If a water supplier has a decreasing block rate structure, it is recommended that a flat rate or increasing rate structure be adopted.]

An increasing block rate water structure that is intended to encourage water conservation and discourage excessive use and waste of water will be adopted upon completion of the next rate study or within five years. An example water rate structure is as follows:

Residential Rates

1. Monthly minimum charge. This can (but does not have to) include up to 2,000 gallons water use with no additional charge.
2. Base charge per 1,000 gallons up to the approximate average residential use.
3. 2nd tier (from the average to 2 times the approximate average) at 1.25 to 2.0 times the base charge.
4. 3rd tier (above 2 times the approximate average) at 1.25 to 2.0 times the 2nd tier.
5. The residential rate can also include a lower tier for basic household use up to 4,000 gallons per month or so.

Commercial/Industrial Rates

Commercial/industrial rates should include at least 2 tiers, with rates for the 2nd tier at 1.25 to 2.0 times the first tier.

[If a water supplier has an increasing rate structure, state the current rate structure as follows.]

The [water supplier] has adopted an increasing block rate water structure that is intended to encourage water conservation and discourage excessive use and waste of water. The water rate structure adopted on *[insert date]* is as follows:

Residential Rates

[To be completed by the supplier]

Commercial/Industrial Rates

[To be completed by the supplier]

8. OTHER WATER CONSERVATION MEASURES

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

The State of Texas has required water-conserving fixtures in new construction and renovations since 1992. The state standards call for flows of no more than 2.5 gallons per minute (gpm) for faucets, 3.0 gpm for showerheads, and 1.6 gallons per flush for toilets. Similar standards are now required nationally under federal law. These state and federal standards assure that all new construction and renovations will use water-conserving fixtures. In addition, federal standards governing clothes washing machines will require all washers produced by 2007 to meet higher efficiency standards, which may include lower

water use machines. The potential savings from these fixtures can be significant, but historically have been difficult to measure independently from other factors.

8.2 Reservoir System Operation Plan

[Insert description of reservoir system operation plan if public supplier has such a plan.]

or

The [water supplier] purchases water from [name] and does not have surface water supplies for which to implement a reservoir system operation plan.

8.3 Considerations for Landscape Water Management Regulations (Optional)

[The water supplier may choose to adopt landscape water management regulations as part of the development of this water conservation plan. These regulations are intended to minimize waste in landscape irrigation. The proposed regulations might include the following elements:

- *Require that all new irrigation systems be in compliance with state design and installation regulations (TAC Title 30, Part 1, Chapter 344).*
- *Prohibit irrigation systems that spray directly onto impervious surfaces or onto other non-irrigated areas. (Wind driven water drift will be taken into consideration.)*
- *Prohibit use of poorly maintained sprinkler systems that waste water.*
- *Prohibit outdoor watering during any form of precipitation.*
- *Enforce the regulations by a system of warnings followed by fines for continued or repeat violations.*
- *Implement other measures to encourage off-peak water use.]*

8.4 Requirement for Water Conservation Plans by Wholesale Customers

[Required for cities with populations over 5,000.]

Every contract for the wholesale sale of water by customers that is entered into, renewed, or extended after the adoption of this water conservation and drought contingency plan will include a requirement that the wholesale customer and any wholesale customers of that wholesale customer develop and implement a water conservation plan meeting the requirements of Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.2 of the Texas Administrative Code. The requirement will also extend to each successive wholesale customer in the resale of the water.

8.5 Coordination with Regional Water Planning Group

In accordance with TCEQ regulations, a copy of this adopted water conservation plan will be sent to the Panhandle water planning group.

9. IMPLEMENTATION AND ENFORCEMENT OF THE WATER CONSERVATION PLAN

A copy of [an ordinance, order, or resolution] adopted by the [City Council or governing board] regarding this water conservation plan is attached to and made part of this plan. The [ordinance, order, or resolution] designates responsible officials to implement and enforce the water conservation plan.

DRAFT

Water Conservation Plan for [Industrial Entity]

Date

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1. Objectives
2. Description of Water Use
3. Specification of Water Conservation Goals
4. Metering of Industrial and Mining Water Users
5. Control of Unaccounted Water and Leak Detection and Repair
6. Improving, Modifying, and Auditing Processes and Equipment
7. Implementation and Modifications to Water Conservation Plan

APPENDICES

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| Appendix A | List of References |
| Appendix B | Texas Commission on Environmental Quality Rules on Water Conservation Plans for Industrial or Mining Use |
| Appendix C | Sample Implementation Report |

Water Conservation Plan for [Industrial Entity]

1. Objectives

The Texas Commission on Environmental Quality has developed guidelines and requirements governing the development of water conservation plans for industrial or mining use. The purpose of this water conservation plan is to:

- To reduce water consumption from the levels that would exist without conservation efforts.
- To reduce the loss and waste of water.
- To encourage improvement of processes that inefficiently consume water.
- To extend the life of current supplies by reducing the rate of growth in demand.
- To document the level of recycling and reuse in the water supply.

This water conservation plan is intended to serve as a guide to [entity]. The following plan includes all conservation measures required by TCEQ.

2. Description of Water Use

The TCEQ requires that each mining or industrial water user must document how water is used in the production process.

- *[Entity provides information including:]*
 - *How water flows to and through their systems*
 - *What purpose water serves in the production process*
 - *How much water is consumed in the production process and not available for reuse*
 - *Means of discharging water used in industrial processes]*

3. Specification of Water Conservation Goals

The TCEQ regulations require that each industrial and mining user adopt quantifiable water conservation goals in their water conservation plan. *[Entity]* has specified a five-year and ten-year target for water savings. *[Include quantifiable water savings targets and the details of the basis for the development of these goals.]*

The goals for this water conservation plan include the following:

- *[Name goals.] Potential goals are:*
 - *Meter water use to decrease water loss through leaks*
 - *Regularly inspect systems for leaks and promptly repair in order to control unaccounted water*
 - *Improve, modify, or audit processes in order to increase efficient water use*

4. Metering of Industrial and Mining Water Users

[Entity]'s water use is metered at [description of location]. Submetering is a good strategy for some industrial water users. Processes or equipment that consume large quantities of water could be usefully submetered. Submetering is an effective way to account for all water use by process, subprocess, or piece of equipment in a facility. *[Identify processes and/or equipment that are currently submetered.]*

5. Control of Unaccounted Water and Leak Detection and Repair

Careful metering of water use, detection, and repair of leaks in the distribution system and regular monitoring of unaccounted water are important in controlling losses.

Unaccounted water is the difference between water delivered to a system and water delivered to a system plus authorized but unmetered uses. Authorized but unmetered uses includes water for fire fighting, releases for flushing of lines, and water used during new construction. Unaccounted water can be attributed to several things including:

- Inaccuracies in meters. Older meters tend to run slowly and therefore under-report actual use.
- Loss due to leaks and main breaks in the system.
- Illegal connections to a system.
- [Other].

In order to control unaccounted water, persons in industry are asked to watch for and report water main breaks and leaks. Broken and leaking lines should be replaced or repaired in a timely manner. Meter readers are asked to report signs of illegal connections so they can be quickly assessed.

[Entity] will implement and maintain a water loss program. This program will serve to reduce losses due to leakage. The measures of the water loss program include *[select applicable measure]*:

- Conducting regular inspections of water main fittings and connections.
- Installing leak noise detectors and loggers.
- Using a leakage modeling program.
- Metering individual pressure zones
- Controlling pressure just above the minimum standard-of-service level
- Limiting surges in pressure.
- [Other]

6. Improving, Modifying, and Auditing Processes and Equipment

[Entity] can increase water efficiency by improving, modifying, and auditing facility processes and equipment. Water can be conserved through the following measures *[select appropriate measure]*:

- Implementing a Water Waste Reduction Program
- Optimizing the water-use efficiency of cooling systems (other than cooling towers)
- Reducing water loss in cooling towers

Water Waste Reduction Programs cause [Entity] personnel to be more aware of wasteful activities. Measures resulting from a Water Waste Reduction Program include:

- Install water saving devices on equipment.
- Replace current equipment with more water-efficient equipment.
- Recycle water within a process.
- Change to waterless equipment or process.

7. Implementation and Modifications to Water Conservation Plan

Upon implementation of this water conservation plan, [Entity] is required by the TCEQ to update the plan at least every five years. New goals will be based on previous five-year and ten-year goals and any new information.

An implementation report will be prepared by the [date] of each year following the adoption of this plan. A sample report is included in Appendix C. This report includes:

- The list of dates and descriptions of conservation measures implemented
- Amount of water saved
- Data about whether or not targets in the plan are met
- If targets are not met, an explanation as to why the target was not met and a discussion of the progress to meet the target.

APPENDIX A

List of References

Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter B, Rule 288.3, downloaded from [http://info.sos.state.tx.us/pls/pub/readtac\\$ext.viewtac](http://info.sos.state.tx.us/pls/pub/readtac$ext.viewtac), January 2010.

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Appendix B
Texas Commission on Environmental Quality Rules

Texas Administrative Code

TITLE 30 ENVIRONMENTAL QUALITY
PART 1 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288 WATER CONSERVATION PLANS, DROUGHT CONTINGENCY
PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER A WATER CONSERVATION PLANS
RULE §288.3 Water Conservation Plans for Industrial or Mining Use

(a) A water conservation plan for industrial or mining uses of water must provide information in response to each of the following elements. If the plan does not provide information for each requirement, the industrial or mining water user shall include in the plan an explanation of why the requirement is not applicable.

(1) a description of the use of the water in the production process, including how the water is diverted and transported from the source(s) of supply, how the water is utilized in the production process, and the estimated quantity of water consumed in the production process and therefore unavailable for reuse, discharge, or other means of disposal;

(2) until May 1, 2005, specification of conservation goals, the basis for the development of such goals, and a time frame for achieving the specified goals;

(3) beginning May 1, 2005, specific, quantified five-year and ten-year targets for water savings and the basis for the development of such goals. The goals established by industrial or mining water users under this paragraph are not enforceable;

(4) a description of the device(s) and/or method(s) within an accuracy of plus or minus 5.0% to be used in order to measure and account for the amount of water diverted from the source of supply;

(5) leak-detection, repair, and accounting for water loss in the water distribution system;

(6) application of state-of-the-art equipment and/or process modifications to improve water use efficiency; and

(7) any other water conservation practice, method, or technique which the user shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

(b) Beginning May 1, 2005, an industrial or mining water user shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The industrial or mining water user shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group.

Source Note: The provisions of this §288.3 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 9384

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APPENDIX C
INDUSTRIAL USER WATER CONSERVATION REPORT
Due: {Date} of every year

Entity Reporting: _____
Filled Out By: _____
Date Completed: _____
Year Covered: _____
Industry _____

Recorded Supplies and Process Uses by Month (in Acre-feet):

| Month | Self-Supplied Water | Other Supplies | Industrial Processes Water Use | | | | | Total |
|-----------|---------------------|----------------|--------------------------------|-----------|-----------|-----------|-----------|-------|
| | | | Process A | Process B | Process C | Process D | Process E | |
| January | | | | | | | | |
| February | | | | | | | | |
| March | | | | | | | | |
| April | | | | | | | | |
| May | | | | | | | | |
| June | | | | | | | | |
| July | | | | | | | | |
| August | | | | | | | | |
| September | | | | | | | | |
| October | | | | | | | | |
| November | | | | | | | | |
| December | | | | | | | | |

| | | | | | | | | | |
|--------------|--|--|--|--|--|--|--|--|--|
| TOTAL | | | | | | | | | |
|--------------|--|--|--|--|--|--|--|--|--|

| | |
|---------------------------------------|-------|
| Unaccounted Water (Acre-feet): | |
| Self Supplies (total) | above |
| Other Supplies (total) | above |
| Total Supplies | above |
| Total Water use | above |
| Difference in Supplies and Water use | |
| % Unaccounted Water | |
| Goal for % Unaccounted Water | |

| | | | |
|-----------------------------------|---------------|---------------|-----------------|
| Water Efficiency (Percent) | | | |
| | Design | Actual | Efficien |
| Process | Use | Use | cy |
| Process A | | | |
| Process B | | | |
| Process C | | | |
| Process D | | | |

| | |
|--|-------------------------|
| CONSERVATION MEASURES IMPLEMENTED | |
| Measure | Date Implemented |
| | |
| | |

| | | | | | | | | |
|---|--|--|--|--|--|--|--|--|
| | | | | | | | | |
| AMOUNT OF WATER SAVED (per Industrial Process) | | | | | | | | |
| | | | | | | | | |

| Year | Total Water Supplied | Efficiency (%) | Efficiency Improvement (%) | Water saved (acre-feet) | Unaccounted water (%) | Reduction in Unaccounted water (%) | Water saved (acre-feet) | Total Saved (acre-feet) |
|------|----------------------|----------------|----------------------------|-------------------------|-----------------------|------------------------------------|-------------------------|-------------------------|
| 2000 | | | | | | | | |
| 2001 | | | | | | | | |
| 2002 | | | | | | | | |
| 2003 | | | | | | | | |
| 2004 | | | | | | | | |
| 2005 | | | | | | | | |
| 2006 | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Unusual Circumstances (use additional sheets if necessary):

| |
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|--|

Progress in Implementation of Conservation Plan (use additional sheets if necessary):

| |
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| |
|--|

Conservation measures planned for next year (use additional sheets if necessary):

| |
|--|
| |
|--|

[Empty rectangular box for input]

Other (use additional sheets if necessary):

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Water Conservation Plan for [Irrigation District]

Date

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1. Objectives
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3. Specification of Water Conservation Goals
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5. Irrigation Scheduling and Volumetric Measuring of Irrigation Water Use
6. Methods of Land Improvement
7. Improvements to Irrigation Equipment
8. Implementation of Water Conservation Plan

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| Appendix A | List of References |
| Appendix B | Texas Commission on Environmental Quality Rules on Water Conservation Plans for Irrigation Use |
| Appendix C | Sample Implementation Report |

Water Conservation Plan for [Irrigation District]

1. Objectives

The Texas Commission on Environmental Quality has developed guidelines and requirements governing the development of water conservation plans for irrigation use. The purpose of this water conservation plan is to:

- To reduce water consumption from the levels that would exist without conservation efforts.
- To reduce the loss and waste of water.
- To encourage improvement of processes that inefficiently consume water.
- To extend the life of current supplies by reducing the rate of growth in demand.

This water conservation plan is intended to serve as a guide to [irrigation district]. The following plan includes all conservation measures required by TCEQ.

2. Description of Water Use

[The TCEQ requires that each irrigation user must document how water is used in the irrigation production process.

- *Irrigation users will provide information including:*
 - *Type of crops.*
 - *Acreage of each crop to be irrigated.*
 - *Monthly irrigation diversions.*
 - *Details of seasonal or annual crop rotation.*
 - *Soil types of the land to be irrigated.*
 - *Description of the irrigation method including flow rates, plans, and sketches of the system layout.*
 - *Details of equipment used in the process within an accuracy of +/- 5 %.*

3. Specification of Water Conservation Goals

[The Irrigation District must specify a five-year and ten-year target for water savings and detail the basis for the development of these goals. These goals will include targets for water use efficiency and a pollution abatement and prevention plan.]

The TCEQ regulations require that each irrigation user adopt quantifiable water conservation goals in their water conservation plan. The [Irrigation District] has adopted goals related to improving water efficiency of its delivery system. The [Irrigation District] will strive to increase water efficiency per irrigated acre by [insert amount] percent within 5 years and [insert amount] percent within 10 years.

[Alternate goal] The *[Irrigation District]* will maintain the water efficiency per irrigated acre of *[insert amount]* percent within 5 years and *[insert amount]* percent within 10 years.

The goals for this water conservation plan will be achieved through the following:
[select applicable measures and/or include additional measures.]

- Regular inspections of systems for controllable operation losses or leaks
- Coordination of irrigation deliveries with customers
- Schedule the timing or measure the amount of water applied.
- Improve or modify irrigation processes in order to increase efficient water use.
- Employ water-conserving irrigation equipment or improve existing equipment.
- Implement methods of land improvement that reduce runoff and increase rain infiltration to the soil.
- Establish a tailwater recovery and reuse program.

4. Control of Unaccounted Water and Leak Detection and Repair

Detection and repair of leaks in an irrigation system is important in controlling losses. Unaccounted water is the difference between water delivered to a system and water delivered to a system plus authorized but unmetered uses. Unaccounted water in the irrigation system can be attributed to several things including:

- Inaccuracies in meters.
- Loss due to leaks in the conveyance system.
- Operational losses
- Illegal connections to a system.
- Other.

To help control unaccounted water, *[irrigation district]* will monitor supply deliveries, conduct water audits and adjust operations to minimize losses if applicable. Broken water lines will be replaced or repaired in a timely manner.

5. Irrigation Scheduling and Volumetric Measuring of Irrigation Water Use

Volumetric Measuring

Measuring the volume of water being used to irrigate a crop is useful because it provides *[irrigation district]* with information needed to evaluate the efficiency of an irrigation system. With this information, *[irrigation district]* and customers can better manage their crops. Irrigation water users will employ a method of measuring how much irrigation water is used in their system.

The following methods may be used to directly measure amounts of irrigation water being used *[select appropriate methods]*:

- Propeller meters
- Orifice, venture or differential pressure meters

- Ultrasonic
- Stage Discharge Rating Tables
- Area/Point Velocity Measurements

Indirect methods that may be used to measure irrigation water quantities include:

- Measurement of time of irrigation and size of irrigation delivery system
- Measurement of end-pressure in a sprinkler irrigation system
- Measurement of energy used by a pump supplying water to an irrigation system
- Change in the elevation of groundwater supply wells

Irrigation Scheduling

Coordination of irrigation schedules of customers can reduce losses associated with conveying irrigation water. The *[irrigation district]* will implement an irrigation schedule for deliveries to customers to best meet the customers' water needs and minimize conveyance losses.

6. Methods of Land Improvement

To reduce the amount of water required for irrigation, the following land improvement practices are encouraged for customers of the *[irrigation district]*:

- Creation of furrow dikes
- Crop residue management and conservation tillage
- Land leveling
- Contour farming

7. Improvements to Irrigation Equipment

The *[irrigation district]* encourages customers to utilize efficient irrigation equipment, including:

- Installation of a drip/micro-irrigation system
- Installation of gated and flexible pipe for field water distribution systems
- Replacement of on-farm irrigation ditches with pipelines
- Lining of on-farm irrigation ditches
- Installation of low pressure center pivot sprinkler irrigation systems

8. Implementation of Water Conservation Plan

Upon implementation of this water conservation plan, *[irrigation district]* is required by the TCEQ to update the plan at least every five years. Goals for irrigation use will be re-evaluated based on previous five-year and ten-year goals and any new information.

An implementation report will be prepared by the [date] of each year following the adoption of this plan. A sample report is included in Appendix C. This report includes:

- The list of dates and descriptions of conservation measures implemented
- Amount of water saved
- Data about whether or not targets in the plan are met
- If targets are not met, an explanation as to why the target was not met and a discussion of the progress to meet the target.

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Appendix A
List of References

Title 30 of the Texas Administrative Code, Part 1, Chapter 3, Subchapter A, Rules 3.2 and Chapter 288, Subchapter A, Rule 288.4, downloaded from [http://info.sos.state.tx.us/pls/pub/readtac\\$ext.viewtac](http://info.sos.state.tx.us/pls/pub/readtac$ext.viewtac), January 2010.

Water Conservation Implementation Task Force, *Draft Best Management Practices*, April 19, 2004.

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Texas Administrative Code

**TITLE 30 ENVIRONMENTAL QUALITY
PART 1 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288 WATER CONSERVATION PLANS, DROUGHT
CONTINGENCY PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER A WATER CONSERVATION PLANS
RULE §288.4 Water Conservation Plans for Agricultural Use**

(a) A water conservation plan for agricultural use of water shall provide information, where applicable, in response to the following subsections.

(1) For an individual agricultural user other than irrigation:

(A) a description of the use of the water in the production process, including how the water is diverted and transported from the source(s) of supply, how the water is utilized in the production process, and the estimated quantity of water consumed in the production process and therefore unavailable for reuse, discharge, or other means of disposal;

(B) specification of conservation goals, the basis for the development of such goals, and a time frame for achieving the specified goals;

(C) a description of the device(s) and/or method(s) within an accuracy of plus or minus 5.0% to be used in order to measure and account for the amount of water diverted from the source of supply;

(D) leak-detection, repair, and accounting for water loss in the water distribution system;

(E) application of state-of-the-art equipment and/or process modifications to improve water use efficiency; and

(F) any other water conservation practice, method, or technique which the user shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

(2) For an individual irrigation user:

(A) a description of the irrigation production process which shall include, but is not limited to, the type of crops and acreage of each crop to be irrigated, monthly irrigation diversions, any seasonal or annual crop rotation, and soil types of the land to be irrigated;

(B) a description of the irrigation method or system and equipment including pumps, flow rates, plans, and/or sketches of the system layout;

(C) a description of the device(s) and/or methods within an accuracy of plus or minus 5.0%, to be used in order to measure and account for the amount of water diverted from the source of supply;

(D) specification of conservation goals including, where appropriate, quantitative goals for irrigation water use efficiency and a pollution abatement and prevention plan;

(E) water-conserving irrigation equipment and application system or method including, but not limited to, surge irrigation, low pressure sprinkler, drip irrigation, and nonleaking pipe;

(F) leak-detection, repair, and water-loss control;

(G) scheduling the timing and/or measuring the amount of water applied (for example, soil moisture monitoring);

(H) land improvements for retaining or reducing runoff, and increasing the infiltration of rain and irrigation water including, but not limited to, land leveling, furrow diking, terracing, and weed control;

(I) tailwater recovery and reuse; and

(J) any other water conservation practice, method, or technique which the user shows to be appropriate for preventing waste and achieving conservation.

(3) For a system providing agricultural water to more than one user:

(A) a system inventory for the supplier's:

(i) structural facilities including the supplier's water storage, conveyance, and delivery structures;

(ii) management practices, including the supplier's operating rules and regulations, water pricing policy, and a description of practices and/or devices used to account for water deliveries; and

(iii) a user profile including square miles of the service area, the number of customers taking delivery of water by the system, the types of crops, the types of irrigation systems, the types of drainage systems, and total acreage under irrigation, both historical and projected;

(B) specification of water conservation goals, including maximum allowable losses for the storage and distribution system;

(C) a description of the practice(s) and/or device(s) which will be utilized to measure and account for the amount of water diverted from the source(s) of supply;

(D) a monitoring and record management program of water deliveries, sales, and losses;

(E) a leak-detection, repair, and water loss control program;

(F) a program to assist customers in the development of on-farm water conservation and pollution prevention plans and/or measures;

(G) a requirement in 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 this chapter; 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 this chapter;

(H) official adoption of the water conservation plan and goals, by ordinance, rule, resolution, or tariff, indicating that the plan reflects official policy of the supplier;

(I) any other water conservation practice, method, or technique which the supplier shows to be appropriate for achieving conservation; and

(J) documentation of coordination with the Regional Water Planning Groups in order to insure consistency with the appropriate approved regional water plans.

(b) A water conservation plan prepared in accordance with the rules of the United States Department of Agriculture Natural Resource Conservation Service, the State Soil and Water Conservation Board, or other federal or state agency and substantially meeting the requirements of this section and other applicable commission rules may be submitted to meet application requirements pursuant to a memorandum of understanding between the commission and that agency.

Source Note: The provisions of this §288.4 adopted to be effective May 3, 1993, 18 TexReg 2558; amended to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective August 15, 2002, 27 TexReg 7146

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APPENDIX C
IRRIGATION DISTRICT WATER CONSERVATION REPORT
Due: {Date} of every year

Entity Reporting: _____
Filled Out By: _____
Date Completed: _____
Year Covered: _____
of Acres Irrigated _____

Recorded Supplies and Sales by Month (in Acre-feet):

| Month | Self-Supplied Water | Other Supplies | Deliveries by Crop Type | | | | | Total |
|--------------|---------------------|----------------|-------------------------|--------|--------|--------|--------|-------|
| | | | Crop A | Crop B | Crop C | Crop D | Crop E | |
| January | | | | | | | | |
| February | | | | | | | | |
| March | | | | | | | | |
| April | | | | | | | | |
| May | | | | | | | | |
| June | | | | | | | | |
| July | | | | | | | | |
| August | | | | | | | | |
| September | | | | | | | | |
| October | | | | | | | | |
| November | | | | | | | | |
| December | | | | | | | | |
| TOTAL | | | | | | | | |

| | |
|---------------------------------------|-------|
| Water Efficiency (Acre-feet): | |
| Self Supplies (total) | above |
| Other Supplies (total) | above |
| Total Supplies | above |
| Total Deliveries | above |
| Difference in Supplies and Deliveries | |
| % Efficient | |
| Goal for % Efficient | |

| | |
|--|-------------------------|
| CONSERVATION MEASURES IMPLEMENTED | |
| Measure | Date Implemented |
| | |

| | | | | | | | | |
|------------------------------|------------------|------------|------------------------|-------------------------|--|--|--|--|
| AMOUNT OF WATER SAVED | | | | | | | | |
| | | | | | | | | |
| Year | Total Deliveries | Efficiency | Efficiency Improvement | Water saved (acre-feet) | | | | |
| 2000 | | | | | | | | |
| 2001 | | | | | | | | |

| | | | | | | | | |
|------|--|--|--|--|--|--|--|--|
| 2002 | | | | | | | | |
| 2003 | | | | | | | | |
| 2004 | | | | | | | | |
| 2005 | | | | | | | | |
| 2006 | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Unusual Circumstances (use additional sheets if necessary):

Progress in Implementation of Conservation Plan (use additional sheets if necessary):

Empty rectangular box for notes or information.

Conservation measures planned for next year (use additional sheets if necessary):

Empty rectangular box for conservation measures planned for next year.

Other (use additional sheets if necessary):



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MODEL DROUGHT CONTINGENCY PLANS

Drought Contingency Plan for [Public Water Supplier]

Date

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7. Drought and Emergency Response Stages
8. Penalty for Violation of Water Use Restriction
9. Review and Update of Drought Contingency Plan

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| APPENDIX A | List of References |
| APPENDIX B | Texas Commission on Environmental Quality Rules on Drought Contingency Plans |

Drought Contingency Plan for [Public Water Supplier]

1. Objectives

This drought contingency plan (the Plan) is intended for use by [municipal water supplier]. The plan includes all current TCEQ requirements for a drought contingency plan.

This drought contingency plan serves to:

- Conserve available water supplies during times of drought and emergency.
- Minimize adverse impacts of water supply shortages.
- Minimize the adverse impacts of emergency water supply conditions.
- Preserve public health, welfare, and safety.

2. Texas Commission on Environmental Quality Rules

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.

3. Provisions to Inform the Public and Opportunity for Public Input

[Public water supplier] will give customers the opportunity to provide public input into the preparation of the plan by one of the following methods:

- Holding a public meeting.
- Providing written notice of the proposed plan and the opportunity to comment on the plan by newspaper or posted notice.

4. Public Education

[Public water supplier] will notify the public about the drought contingency plan, including changes in Stage and drought measures to be implemented, by one or more of the following methods:

- Prepare a description of the Plan and make it available to customers at appropriate locations.
- Include utility bill inserts that detail the Plan
- Provide radio announcements that inform customers of stages to be initiated or terminated and drought measures to be taken
- Include an ad in a newspaper of general circulation to inform customers of stages to be initiated or terminated and drought measures to be taken

5. Coordination with the Panhandle Water Planning Group

This drought contingency plan will be sent to the Chair of the Panhandle Water Planning Group in order to ensure consistency with the Panhandle Regional Water Plan. If any changes are made to the drought contingency plan, a copy of the newly adopted plan will be sent to the Regional Water Planning Group.

6. Initiation and Termination of Drought Response Stages

The designated official will order the implementation of a drought response stage when one or more of the trigger conditions for that stage exist. Official designees may also order the termination of a drought response stage when the termination criteria are met or at their own discretion.

If any mandatory provisions have been implemented or terminated, the water supplier is required to notify the Executive Director of the TCEQ within 5 business days.

7. Goals for Reduction in Water Use

TCEQ requires that each public water supplier develop quantifiable goals for water use reduction for each stage of the drought contingency plan. These goals are outlined below.

[To be developed by each supplier. An example is provided.]

- Stage 1, Mild
 - 0 to 2 percent reduction in use that would have occurred in the absence of drought contingency measures.
- Stage 2, Moderate
 - 2 to 6 percent reduction in use that would have occurred in the absence of drought contingency measures
- Stage 3, Severe
 - 6 to 10 percent reduction in use that would have occurred in the absence of drought contingency measures
- Stage 4, Emergency
 - 10 to 14 percent reduction in use that would have occurred in the absence of drought contingency measures

8. Drought and Emergency Response Stages

Stage 1, Mild

Trigger Conditions for Stage 1, Mild

- A wholesale water supplier that provides all or part of [public water supplier]'s supply has initiated Stage 1, Mild
- [To be otherwise completed by public water supplier]

- Potential triggers are:
 - When [public water supplier]’s available water supply is equal or less than [amount in ac-ft, percent of storage, etc.].
 - When total daily demand equals [number] million gallons for [number] consecutive days or [number] million gallons on a single day.
 - When the water level in [public water supplier]’s well(s) is equal or less than [number] feet above/below mean sea level.
 - When flows in the [name of river or stream segment] are equal to or less than [number] cubic feet per second.

Stage 1 will end when the circumstances that caused the initiation of Stage 1 no longer exist.

Goals for Use Reduction and Actions Available Under Stage 1, Mild

[Public water supplier] will reduce water use by [goal]. [Public water supplier] may order the implementation of any of the strategies listed below in order to decrease water use:

- Request voluntary reductions in water use.
- Review the problems that caused the initiation of Stage 1.
- Intensify leak detection and repair efforts

Stage 2, Moderate

Trigger Conditions for Stage 2, Moderate

- A wholesale water supplier that provides all or part of [public water supplier]’s supply has initiated Stage 2, Moderate
- [To be otherwise completed by public water supplier]
 - Potential triggers are:
 - When [public water supplier]’s available water supply is equal or less than [amount in ac-ft, percent of storage, etc.].
 - When total daily demand equals [number] million gallons for [number] consecutive days or [number] million gallons on a single day.
 - When the water level in [public water supplier]’s well(s) is equal or less than [number] feet above/below mean sea level.
 - When flows in the [name of river or stream segment] are equal to or less than [number] cubic feet per second.

Stage 2 will end when the circumstances that caused the initiation of Stage 2 no longer exist.

Goals for Use Reduction and Actions Available Under Stage 2, Moderate

[Public water supplier] will reduce water use by [goal]. [Public water supplier] may order the implementation of any of the strategies listed below in order to decrease water use:

- Request voluntary reductions in water use.
- Halt non-essential city government use
- Review the problems that caused the initiation of Stage 2.
- Intensify leak detection and repair efforts
- Implement mandatory restrictions on time of day outdoor water use in the summer.

Stage 3, Severe

Trigger Conditions for Stage 3, Severe

- A wholesale water supplier that provides all or part of [public water supplier]'s supply has initiated Stage 3, Severe
- [To be otherwise completed by public water supplier]
 - Potential triggers are:
 - When [public water supplier]'s available water supply is equal or less than [amount in ac-ft, percent of storage, etc.].
 - When total daily demand equals [number] million gallons for [number] consecutive days or [number] million gallons on a single day.
 - When the water level in [public water supplier]'s well(s) is equal or less than [number] feet above/below mean sea level.
 - When flows in the [name of river or stream segment] are equal to or less than [number] cubic feet per second.

Stage 3 will end when the circumstances that caused the initiation of Stage 3 no longer exist.

Goals for Use Reduction and Actions Available Under Stage 3, Severe

[Public water supplier] will reduce water use by [goal]. [Public water supplier] may order the implementation of any of the strategies listed below in order to decrease water use:

- Request voluntary reductions in water use.
- Require mandatory reductions in water use
- Halt non-essential city government use
- Review the problems that caused the initiation of Stage 3.
- Intensify leak detection and repair efforts
- Implement mandatory restrictions on time of day outdoor water use in the summer.
- Limit outdoor watering to specific weekdays.
- Create and implement a landscape ordinance.

Stage 4, Emergency

Trigger Conditions for Stage 4, Emergency

- A wholesale water supplier that provides all or part of [public water supplier]'s supply has initiated Stage 4, Emergency
- [To be otherwise completed by public water supplier]
 - Potential triggers are:
 - When [public water supplier]'s demand exceeds the amount that can be delivered to customers.
 - When [public water supplier]'s source becomes contaminated
 - [Public water supplier]'s system is unable to deliver water due to the failure or damage of major water system components.

Stage 4 will end when the circumstances that caused the initiation of Stage 4 no longer exist.

Goals for Use Reduction and Actions Available Under Stage 4, Emergency

[Public water supplier] will reduce water use by [goal]. [Public water supplier] may order the implementation of any of the strategies listed below in order to decrease water use:

- Require mandatory reductions in water use
- Halt non-essential city government use
- Review the problems that caused the initiation of Stage 4.
- Intensify leak detection and repair efforts
- Implement mandatory restrictions on time of day outdoor water use in the summer.
- Limit outdoor watering to specific weekdays.
- Create and implement a landscape ordinance.
- Prohibit washing of vehicles except as necessary for health, sanitation, or safety reasons.
- Prohibit commercial and residential landscape watering
- Prohibit golf course watering except for greens and tee boxes
- Prohibit filling of private pools.
- Initiate a rate surcharge for all water use over [amount in gallons per month].

9. Penalty for Violation of Water Use Restriction

Mandatory restrictions are required by TCEQ regulation to have a penalty. These restrictions will be strictly enforced with the following penalties:

- Potential penalties
 - Written warning that they have violated the mandatory water use restriction.
 - Issue a citation. Minimum and maximum fines are established by ordinance.
 - Discontinue water service to the user.

10. Review and Update of Drought Contingency Plan

This drought contingency plan will be updated at least every 5 years as required by TCEQ regulations.

APPENDIX A

List of References

Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter B, Rule 288.20, downloaded from [http://info.sos.state.tx.us/pls/pub/readtac\\$ext.viewtac](http://info.sos.state.tx.us/pls/pub/readtac$ext.viewtac), January 10, 2010.

APPENDIX B
Texas Commission on Environmental Quality Rules on Drought Contingency Plans

Texas Administrative Code

TITLE 30 ENVIRONMENTAL QUALITY
PART 1 TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 288 WATER CONSERVATION PLANS, DROUGHT CONTINGENCY
PLANS, GUIDELINES AND REQUIREMENTS
SUBCHAPTER B DROUGHT CONTINGENCY PLANS
RULE §288.20 Drought Contingency Plans for Municipal Uses by Public Water
Suppliers

(a) A drought contingency plan for a retail public water supplier, where applicable, shall provide information in response to each of the following.

(1) Minimum requirements. Drought contingency plans shall include the following minimum elements.

(A) Preparation of the plan shall include provisions to actively inform the public and affirmatively provide opportunity for public input. Such acts may include, but are not limited to, having a public meeting at a time and location convenient to the public and providing written notice to the public concerning the proposed plan and meeting.

(B) Provisions shall be made for a program of continuing public education and information regarding the drought contingency plan.

(C) The drought contingency plan must document coordination with the Regional Water Planning Groups for the service area of the retail public water supplier to insure consistency with the appropriate approved regional water plans.

(D) The drought contingency plan shall include a description of the information to be monitored by the water supplier, and specific criteria for the initiation and termination of drought response stages, accompanied by an explanation of the rationale or basis for such triggering criteria.

(E) The drought contingency plan must include drought or emergency response stages providing for the implementation of measures in response to at least the following situations:

- (i) reduction in available water supply up to a repeat of the drought of record;
- (ii) water production or distribution system limitations;
- (iii) supply source contamination; or

(iv) system outage due to the failure or damage of major water system components (e.g., pumps).

(F) The drought contingency plan must include the specific water supply or water demand management measures to be implemented during each stage of the plan including, but not limited to, the following:

(i) curtailment of non-essential water uses; and

(ii) utilization of alternative water sources and/or alternative delivery mechanisms with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).

(G) The drought contingency plan must include the procedures to be followed for the initiation or termination of each drought response stage, including procedures for notification of the public.

(H) The drought contingency plan must include the procedures to be followed for the initiation or termination of each drought response stage, including procedures for notification of the public.

(I) The drought contingency plan must include procedures for granting variances to the plan.

(J) The drought contingency plan must include procedures for the enforcement of any mandatory water use restrictions, including specification of penalties (e.g., fines, water rate surcharges, discontinuation of service) for violations of such restrictions.

(2) Privately-owned water utilities. Privately-owned water utilities shall prepare a drought contingency plan in accordance with this section and shall incorporate such plan into their tariff.

(3) Wholesale water customers. Any water supplier that receives all or a portion of its water supply from another water supplier shall consult with that supplier and shall include in the drought contingency plan appropriate provisions for responding to reductions in that water supply.

(b) A wholesale or retail water supplier shall notify the executive director within five business days of the implementation of any mandatory provisions of the drought contingency plan.

(c) The retail public water supplier shall review and update, as appropriate, the drought contingency plan, at least every five years, based on new or updated information, such as the adoption or revision of the regional water plan.

Model Drought Contingency Plan for [Irrigation District]

Date

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DRAFT

Drought Contingency Plan for [Irrigation District]

1. Objectives

This drought contingency plan is intended for use by [irrigation district]. The plan includes all current TCEQ requirements for a drought contingency plan.

This drought contingency plan serves to:

- Conserve available water supplies during times of drought and emergency.
- Minimize adverse impacts of water supply shortages.
- Minimize the adverse impacts of emergency water supply conditions.

2. Texas Commission on Environmental Quality Rules

The TCEQ rules governing development of drought contingency plans for irrigation districts are contained in Title 30, Part 1, Chapter 288, Subchapter B, Rule 288.21 of the Texas Administrative Code.

3. Provisions to Inform the Public and Opportunity for Public Input

[Irrigation district] will give customers the opportunity to provide public input into the preparation of the plan by one of the following methods:

- Holding a public meeting.
- Providing written notice of the proposed plan and the opportunity to comment on the plan by newspaper or posted notice.

4. Coordination with the Panhandle Water Planning Group

This drought contingency plan will be sent to the Chair of the Panhandle Water Planning Group in order to ensure consistency with the Panhandle Regional Water Plan.

5. Initiation and Termination of Drought Response Stages

Official designees order the implementation of a drought response stage when one or more of the trigger conditions for that stage are met. Official designees may also order the termination of a drought response stage when the termination criteria are met or at their own discretion. The official designee for the [irrigation district] is:

Name
Title
Contact Information

If any mandatory provisions have been implemented or terminated, [irrigation district] is required to notify the Executive Director of the TCEQ within 5 business days.

6. Goals for Reduction in Water Use

TCEQ requires that each irrigation water user develop goals for water use reduction for each stage of the drought contingency plan. [Entity]'s goals are independently developed and given below.

7. Drought and Emergency Response Stages

Stage 1, Mild

Trigger Conditions for Stage 1, Mild

- A wholesale water supplier that provides all or part of an irrigation user's supply has initiated Stage 1, Mild
- *[Select appropriate other triggers]*
 - When [irrigation district]'s available water supply is equal or less than [amount in ac-ft, percent of storage, etc.].
 - When total daily demand equals [number] million gallons for [number] consecutive days or [number] million gallons on a single day.
 - When the water level in [irrigation district]'s well(s) is equal or less than [number] feet above/below mean sea level.
 - When flows in the [name of river or stream segment] are equal to or less than [number] cubic feet per second.

Goals for Use Reduction and Actions Available Under Stage 1, Mild

[Entity]'s will reduce water use by [goal]. Irrigation water suppliers may order the implementation of any of the strategies listed below in order to reduce water use:

- Request voluntary reductions in water use.
- Review the problems that caused the initiation of Stage 1.

Stage 1 is intended to raise awareness of potential drought problems. Stage 1 will end when the circumstances that caused the initiation of Stage 1 no longer exist.

Stage 2, Moderate

Trigger Conditions for Stage 2, Moderate

- A wholesale water supplier that provides all or part of an irrigation user's supply has initiated Stage 2, Moderate
- *[Select appropriate other triggers]*
 - When [irrigation district]'s available water supply is equal or less than [amount in ac-ft, percent of storage, etc.].
 - When total daily demand equals [number] million gallons for [number] consecutive days or [number] million gallons on a single day.
 - When the water level in [irrigation district]'s well(s) is equal or less than [number] feet above/below mean sea level.

- When flows in the [name of river or stream segment] are equal to or less than [number] cubic feet per second.

Goals for Use Reduction and Actions Available Under Stage 2, Moderate

[Entity]'s will reduce water use by [goal]. Irrigation water suppliers may order the implementation of any of the strategies listed below in order to reduce water use:

- Request voluntary reductions in water use.
- Review the problems that caused the initiation of Stage 2.
- Intensify leak detection and repair efforts.
- Other.

Stage 2 will end when the circumstances that caused the initiation of Stage 2 no longer exist.

Stage 3, Severe

Trigger Conditions for Stage 3, Severe

- A wholesale water supplier that provides all or part of an irrigation user's supply has initiated Stage 3, Severe
- *[Select appropriate other triggers]*
 - When [irrigation district]'s available water supply is equal or less than [amount in ac-ft, percent of storage, etc.].
 - When total daily demand equals [number] million gallons for [number] consecutive days or [number] million gallons on a single day.
 - When the water level in [irrigation district]'s well(s) is equal or less than [number] feet above/below mean sea level.
 - When flows in the [name of river or stream segment] are equal to or less than [number] cubic feet per second.

Goals for Use Reduction and Actions Available Under Stage 3, Severe

[Entity]'s will reduce water use by [goal]. Irrigation water suppliers may order the implementation of any of the strategies listed below in order to reduce water use:

- Request voluntary reductions in water use.
- Review the problems that caused the initiation of Stage 3.
- Intensify leak detection and repair efforts.
- Implement mandatory watering days and/or times.
- Other.

Stage 3 will end when the circumstances that caused the initiation of Stage 3 no longer exist.

Stage 4, Emergency

Trigger Conditions for Stage 4, Emergency

- A wholesale water supplier that provides all or part of an irrigation user's supply has initiated Stage 4, Emergency
- *[Select appropriate other triggers]*
 - When [irrigation district]'s available water supply is equal or less than [amount in ac-ft, percent of storage, etc.].
 - When total daily demand equals [number] million gallons for [number] consecutive days or [number] million gallons on a single day.
 - When the water level in [irrigation district]'s well(s) is equal or less than [number] feet above/below mean sea level.
 - When flows in the [name of river or stream segment] are equal to or less than [number] cubic feet per second.

Goals for Use Reduction and Actions Available Under Stage 4, Emergency

[Entity]'s will reduce water use by [goal]. Irrigation water suppliers may order the implementation of any of the strategies listed below in order to reduce water use:

- Review the problems that caused the initiation of Stage 4.
- Intensify leak detection and repair efforts.
- Implement mandatory watering days and/or times.
- Implement mandatory reductions in water deliveries.
- Other.

Stage 4 will end when the circumstances that caused the initiation of Stage 4 no longer exist.

8. Penalty for Violation of Water Use Restriction

Mandatory water use restrictions are implemented in Stages [1, 2, 3, or 4]. These restrictions will be strictly enforced with the following penalties:

- Potential penalties include:
 - Written warning that they have violated the mandatory water use restriction.
 - Issue a citation. Minimum and maximum fines are established by ordinance or other order.
 - Discontinue water service to the user.

9. Review and Update of Drought Contingency Plan

This drought contingency plan will be updated at least every 5 years as required by TCEQ regulations.