FINAL PLAN

CHAPTER 7: DROUGHT RESPONSE INFORMATION, ACTIVITIES, AND RECOMMENDATIONS

Rio Grande Regional Water Plan

B&V PROJECT NO. 192863

PREPARED FOR

Rio Grande Regional Water Planning Group

5 NOVEMBER 2020

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List of Abbreviations

acft	Acre-Feet
acft/yr	Acre-Feet per Year
DCP	Drought Contingency Plan
DMI	Domestic, Municipal, and Industrial
DOR	Drought of Record
ERHWSC	East Rio Hondo Water Supply Corporation
IBWC	International Boundary Water Commission
NCRWP	North Cameron Regional Water Plant
No.	Number
PDSI	Palmer Drought Severity Index
psi	Pounds per square inch
PUB	Public Utilities Board
RWPG	Regional Water Planning Group
RWP	Regional Water Plans
SRWA	Southmost Regional Water Supply Corporation
TCEQ	Texas Commission on Environmental Quality
TWDB	Texas Water Development Board
US	United States
WAM	Water Availability Model
WCP	Water Conservation Plan
WMS	Water Management Strategy
WSOC	Water Supply Option Contracts
WTP	Water Treatment Plant
WUG	Water User Group
WWP	Wholesale Water Provider

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CHAPTER 7: DROUGHT RESPONSE INFORMATION, ACTIVITIES, AND RECOMMENDATIONS

7.1 DROUGHTS OF RECORD IN THE REGIONAL WATER PLANNING AREA

Region M relies heavily on water from the Rio Grande, managed through Amistad and Falcon Reservoirs; although, brackish and fresh groundwater provide supplemental and locally critical supplies. Response to drought varies across the region depending on the primary source of water and type of water use.

Severe drought has affected Region M in the period of record of the Water Availability Model (WAM) (1940 through 2000) as well as in the years since 2000. The drought record helps to understand the firm yield from the Amistad-Falcon Reservoir system, and if droughts after 2000 have been more severe that those encompassed by the model's period of record, the firm yield is likely to be overestimated in the WAM.

Because of the unique mechanism for fulfillment of water rights of the Rio Grande system, and the heavy reliance on that source, drought impacts Region M somewhat differently than other regions. In addition, a significant portion of the water used in Region M comes from the Mexican side of the Rio Grande watershed.

Drought and other circumstances can contribute to a water shortage, which is any situation when there is less supply of water than there is demand for water. Shortages can be the result of low rainfall, operational decisions, higher than normal temperatures, or growing populations causing increased demand. Drought preparation and response can help to mitigate the impacts of these shortages by finding ways to reduce demands and supplement supplies in response to water shortages.

The Texas Division of Emergency Management submitted recommendations from the Drought Preparedness Council to all Regional Water Planning Groups (RWPGs) on August 1, 2019. The Council advised the RWPGs to follow the Texas Water Development Board (TWDB) template for this chapter and to develop region-specific model drought contingency plans for all water use categories in the region that account for more than 10 percent of water demands in any decade over the 50 year planning horizon. These recommendations have been considered in the development of this chapter.

This chapter consolidates the existing information on current drought preparation and response activities for Region M and makes recommendations where needed.

7.1.1 Current Drought of Record

The drought of record (DOR) is the basis of the firm yield projection for each surface water supply. The DOR identifies the worst drought during the period of record, and the firm yield is the supply that can be expected from that river or system in that most severe drought scenario. The Rio Grande WAM includes hydrologic information from 1940 through 2000.

The longest duration drought modeled for both the combined reservoir system and the US portion spans the 1960s: 12/1959 through 10/1971 for the combined storage belonging to the United States and Mexico (11 years, 10 months) and 6/1961 through 10/1971 for the US portion (10 years, 4 months).

The drought spanning from July of 1992 to the end of the modeled period includes the minimum storage events for both the United States and combined systems, and the extent of the model does not include the end of the drought. The duration shown (8 years, 5 months) is shorter than the 1960s drought but is not a complete record. Refer to Figure 7-1.

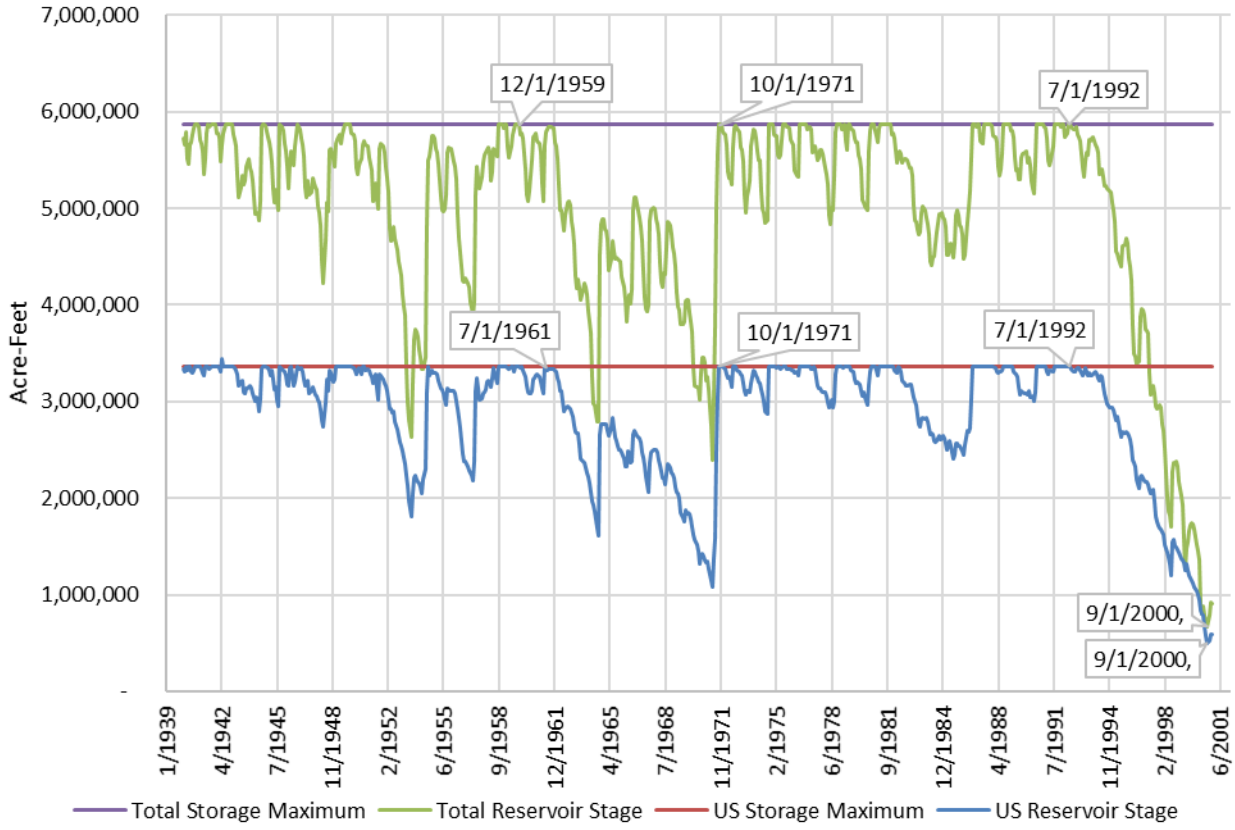

Figure 7-1 Modeled Reservoir Storage for the Amistad-Falcon System, US and Combined

The WAM takes into account inflows from both Mexican and US tributaries associated with the drought of record, volumes and locations of demands along the river, channel losses along the river, and other factors. The deliveries from Mexico are not modeled according to the 1944 treaty, which establishes 350,000 acre-feet/year to be delivered to the United States; the deliveries are modeled according to historical supplies and demands rather than assuming that the treaty obligation will be met in full each year. Firm yield decreases slightly each decade from reduced reservoir capacity due to sedimentation.

The hydrologic record in the Rio Grande WAM, including all of the drought periods discussed, is used to predict firm yield over the planning horizon, given in Table 7-1.

Table 7-1 Firm Yield Projections, Amistad-Falcon Reservoir System 2020-2070 (Acre-feet/year)

	2020	2030	2040	2050	2060	2070
Amistad-Falcon Reservoir System	1,079,381	1,079,175	1,078,968	1,078,762	1,078,555	1,078,349

Because the hydrologic data in the WAM extends only through the year 2000, more recent drought years are not considered in the determination of the DOR. The 2011 and 2016 Regional Water Plans (RWPs) recommended that the Rio Grande WAM should be regularly updated; this recommendation is the opinion of the current RWPG. Legislation passed in the 2019 session mandates and funds updating the naturalized flow records for the Rio Grande WAM through 2017, which will be available for use in development of the 2026 RWP update.

7.1.2 Potential Droughts of Record

The naturalized flow record that is used in the WAM is one way to evaluate the scale and duration of drought. That flow record extends only through 2000 in the Rio Grande WAM; severe droughts have occurred since then that are not currently evaluated in the WAM. Without a full naturalized flow record for comparison, it is difficult to know whether there has been a new DOR since 2000, but other measures and indicators of drought can be used to compare recent years with the historical record.

7.1.2.1 Drought Indices

Drought indices have been developed to assess the effects of drought through parameters, including severity, duration, and spatial extent. One of the first comprehensive efforts using precipitation and temperature for estimating a region's moisture was the Palmer Drought Severity Index (PDSI). Index values range from up to 6, indicating wetter-than-normal conditions, and as low as -6 for severe drought. The PDSI includes values across the country through 2019, which makes it a valuable addition to drought analysis. Graphs for yearly PDSI values for Texas Climate Divisions 9 and 10 (Figure 7-2) show more recent and severe droughts in the 21st century than the drought of the 1950s, but over a shorter duration for Region M (Figure 7-3 and Figure 7-4).

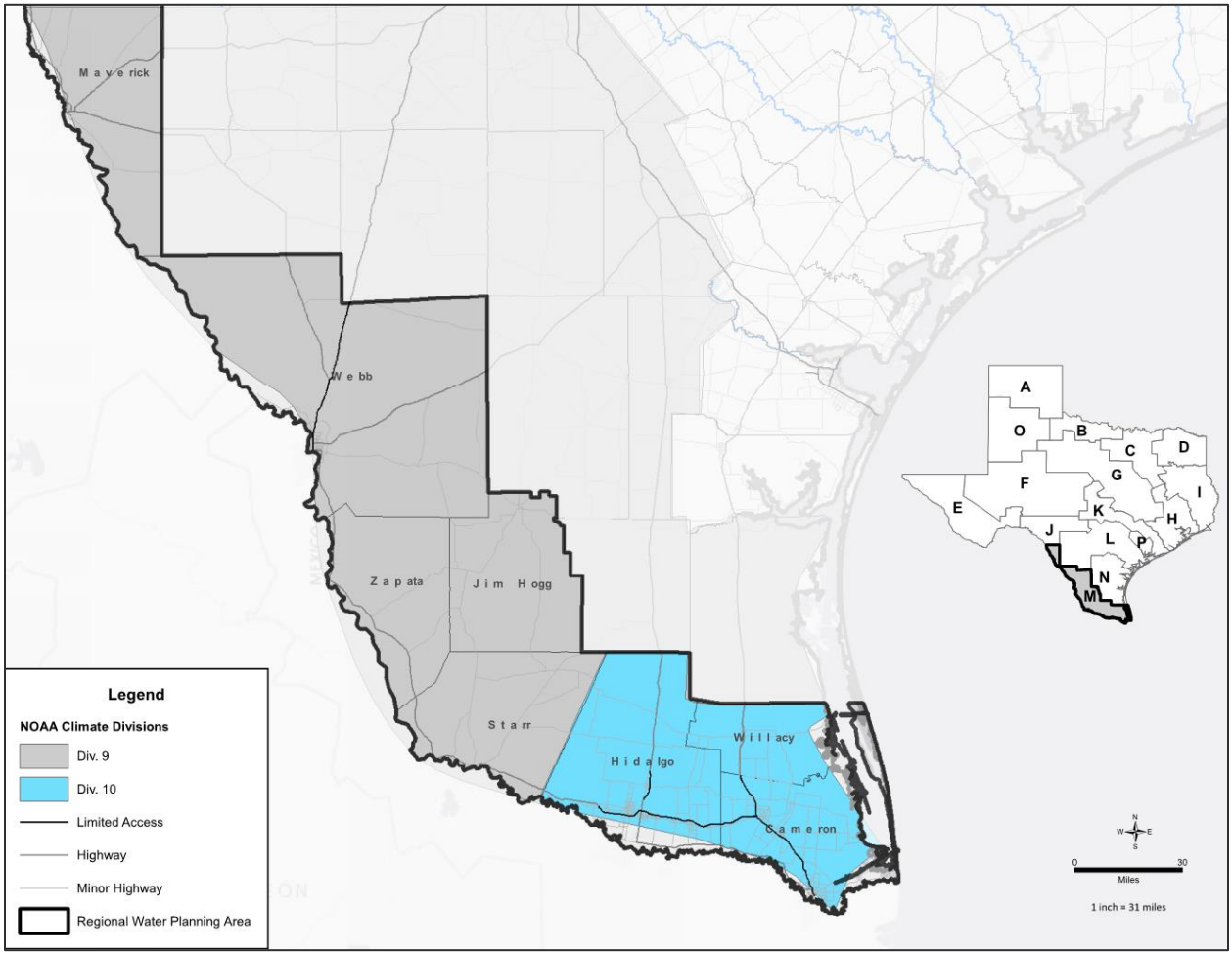

Figure 7-2 National Oceanic and Atmospheric Administration Climate Divisions 9 and 10

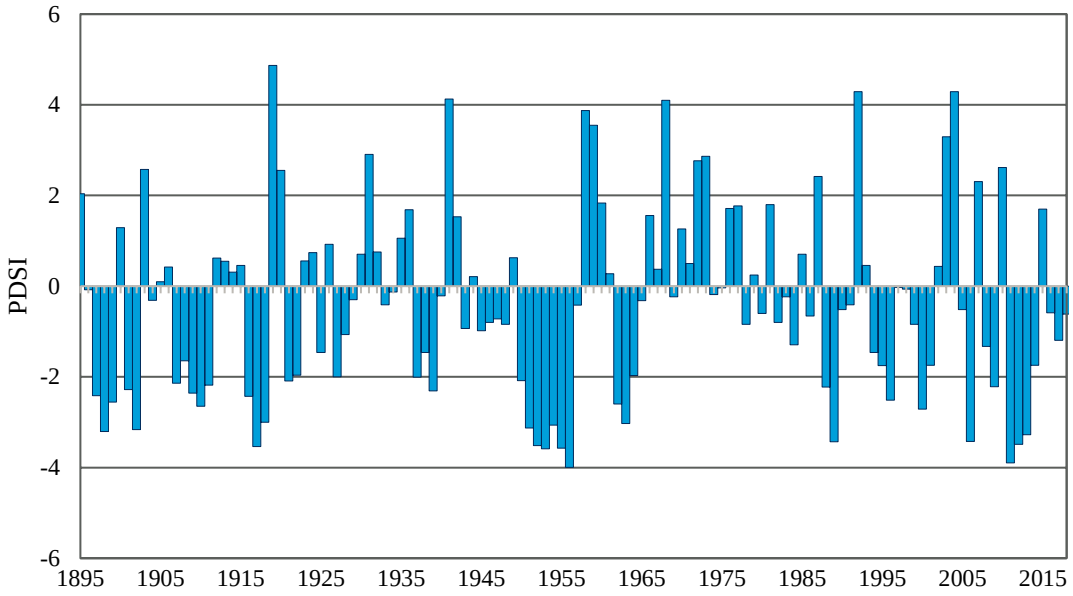

Figure 7-3 **Palmer Drought Severity Index for Division 9**

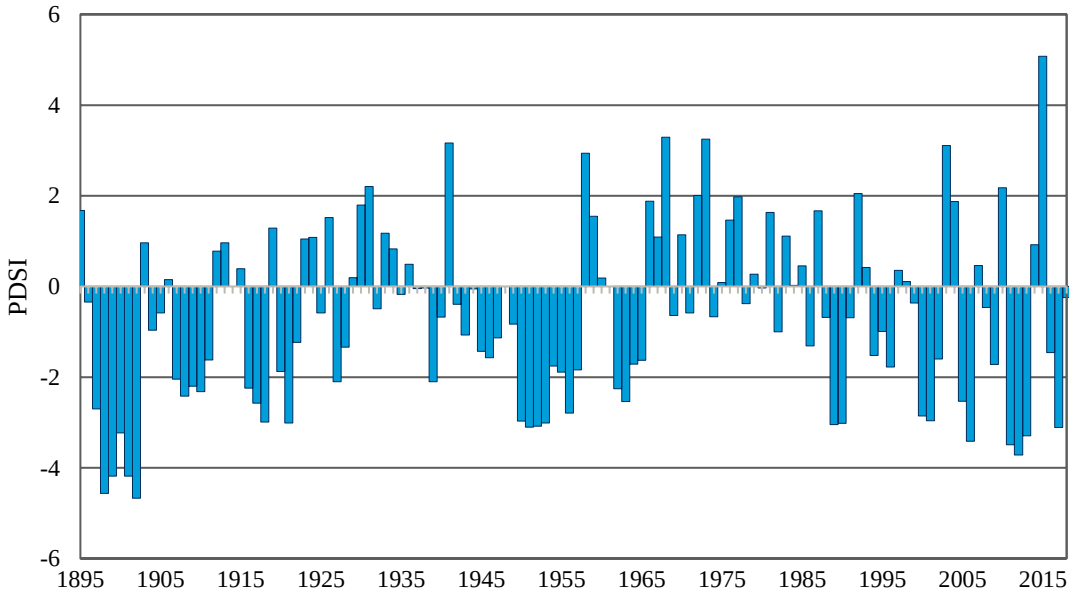

Figure 7-4 **Palmer Drought Severity Index for Division 10**

7.2 CURRENT DROUGHT PREPARATIONS AND RESPONSE

7.2.1 Overview

All water user groups (WUGs) in Region M can prepare for drought by participating in the regional planning process, which plans for long-term supplies that are reliable for the DOR. The regional planning process attempts to meet projected water demands during a drought of severity equivalent to the DOR. Statewide, there have been increased efforts in recent years to establish both long-term drought management strategies to avoid shortages and Drought Contingency Plans (DCPs) to plan for temporary water supply shortages and other water supply emergencies.

The Texas Commission on Environmental Quality (TCEQ) requires that anyone applying for a water right, irrigation districts, wholesale public water suppliers, and all retail public water suppliers serving 3,300 connections or more submit a DCP to the TCEQ. Public water suppliers serving fewer than 3,300 connections are required to have a DCP on file but are not required to submit it to TCEQ. May 1, 2019, was the most recent deadline for DCP submittals.

All the entities that are required to submit a DCP, as well as all users of 1,000 acre-feet or more domestic, municipal, or industrial (DMI) surface water rights and 10,000 acre-feet or more of irrigation surface water rights, are required to submit a Water Conservation Plan (WCP) to TCEQ and TWDB.

Because of these requirements and recent drought conditions, many communities in the Rio Grande Region have addressed drought preparedness and water conservation planning. A complete list of the DCP and WCP that have been submitted to TCEQ at this time is shown in Table 7-2.

DCPs for retail or wholesale water suppliers are required to include the following:

- Specific, quantified targets for water use reductions;
- Drought response stages;
- Triggers to begin and end each stage;
- Supply management measures;
- Demand management measures;
- Descriptions of drought indicators;
- Notification procedures;
- Enforcement procedures;
- Procedures for granting exceptions;
- Public input to the plan;
- Ongoing public education;
- Adoption of plan; and
- Coordination with the RWPG.

Utilities within Region M may have recently implemented drought contingency measures in response to drought conditions. At the time of writing this chapter, Stage 2 drought restrictions were implemented by the City of San Juan as recently as July 2020. North Alamo WSC, the City of Laredo, and Olmito WSC indicated that they have no records of activating drought contingency measures since adoption of the 2016 Regional Water Plan.

Table 7-2 Submitted Water Conservation and Drought Contingency Plans

ENTITY	WATER CONSERVATION PLAN DATE	DROUGHT CONTINGENCY PLAN DATE
Agua Special Utility District (SUD)	4/25/2019	4/25/2019
Alamo	-	3/28/2014
Bayview Irrigation District No. 11	5/6/2019	5/6/2019
Brownsville Irrigation District	5/15/2009	4/1/2014
Brownsville Public Utilities Board	4/24/2019	4/24/2019
Bruni Rural Water Supply Corporation (WSC)	1/24/2011	1/24/2011
Cameron County Irrigation District No. 2	4/24/2019	4/24/2019
Cameron County Irrigation District No. 6	-	3/14/2016
Delta Lake Irrigation District	9/19/2014	9/19/2014
Donna	-	9/1/2007
Donna Irrigation District	-	-
Eagle Pass Water Works System	9/15/2017	9/15/2017
East Rio Hondo WSC	6/25/2019	6/25/2019
Harlingen Irrigation District	5/19/2003	5/19/2003
Harlingen Waterworks System	6/15/2015	6/15/2015
Hidalgo	8/5/2019	-
Hidalgo Co. Drainage District No. 1	8/25/2014	8/25/2014
Hidalgo Co. Irrigation District No. 1	-	2/22/2007
Hidalgo Co. Irrigation District No. 2	4/18/2019	8/28/2014
Hidalgo Co. Irrigation District No. 5	4/30/2019	4/30/2019
Hidalgo Co. Irrigation District No. 6	4/30/2019	4/30/2019
Hidalgo Co. Irrigation District No. 9	-	-
Hidalgo Co. Irrigation District No. 13	-	4/22/2019
Hidalgo Water Improvement District No. 3	5/20/2019	5/20/2019
Jim Hogg County Irrigation District No. 2	3/31/2011	3/31/2011

ENTITY	WATER CONSERVATION PLAN DATE	DROUGHT CONTINGENCY PLAN DATE
La Feria Irrigation District	5/20/2019	5/20/2019
Laguna Madre Water District	3/13/2019	3/3/2019
Laredo	8/9/2019	8/9/2019
Los Fresnos	8/23/2019	8/23/2019
Lyford	-	7/24/2000
Maverick County Water Control and Improvement District No. 1	4/29/2019	4/29/2019
McAllen, McAllen Public Utility	5/29/2018	5/29/2018
Military Highway WSC	5/5/2014	5/5/2014
Mission Public Works Department	9/25/2019	9/25/2019
North Alamo WSC	9/17/2019	9/17/2019
North Cameron Regional WSC	-	9/11/2014
Olmito WSC	3/11/2019	3/11/2019
Pharr	4/22/2019	4/22/2019
Raymondville	8/28/2014	8/28/2014
Rio Grande City	5/28/2019	5/28/2019
Roma	6/17/2014	6/17/2014
San Benito	8/1/2014	8/1/2014
San Juan	8/17/2011	-
San Ygnacio Municipal Utility District	-	4/8/2014
Santa Cruz Irrigation District No. 15	5/31/2019	5/31/2019
Sharyland WSC	7/16/2019	7/16/2019
Southmost Regional Water Authority	4/24/2019	4/24/2019
Union WSC	-	11/29/2011
United Irrigation district	8/31/2015	8/31/2015
Valley Municipal Utility District No. 2	-	6/18/2013
Valley Acres Irrigation District	-	-
Weslaco	5/1/2009	5/1/2009
Zapata County Water Works	7/13/2014	5/28/2013

7.2.2 Drought Response Triggers

Drought response varies from entity to entity, primarily between groundwater and surface water sources, and those who serve customers with raw water, and those who deliver treated water. For irrigation districts, which deliver raw surface water, the response to drought is largely determined by the Rio Grande water right system. For treated water suppliers, triggers are specific to their users' demand in relation to treatment capacity, wellfield capacity, or the account balance on DMI water rights held.

7.2.2.1 Irrigation Districts

The TCEQ Rio Grande operating rules determine how the United States' share of surface water stored in Amistad and Falcon Reservoirs is apportioned among water right holders in the Region M planning area. A 225,000 acre-foot storage pool within the reservoir is replenished at the beginning of each month for DMI water right accounts. After the DMI storage pool and reservoir operating requirements are met, Class A and B water rights, used primarily for irrigation and mining, are allotted what remains on their account balances if there is sufficient water in the reservoir. In the history of the Watermaster Program, the DMI reserves have always been replenished in full, but the water available annually for Class A and B water rights is often significantly less than the annual maximum authorization of those water rights. Class A and B water rights absorb the impacts of drought on the reservoir system by having less than 100 percent reliability.

Irrigation districts deliver a significant portion of the water used in the Lower Rio Grande Valley (Cameron, Hidalgo, Willacy, and Starr Counties) and Maverick County. The majority of Rio Grande water rights are delivered by irrigation districts. Farmers pay an annual flat rate assessment that entitles them to receive irrigation water on the basis of acreage. When an irrigation district crosses its drought trigger, it goes on water allocation. This means that the district's available water is allocated to irrigation account balances as it becomes available.

Each water district has slightly different rules when on allocation; in some cases, water is allowed to be sold between farmers in their district, or farmers may consolidate their allocation on a portion of their land, leaving other areas for dry land farming. These measures allow farmers to adjust to anticipated water shortages.

A summary of the drought triggers and responses as listed by the irrigation districts that submitted DCPs at the time of writing is shown in Table 7-3.

Table 7-3 Summary of Irrigation District Drought Triggers and Responses

ENTITY	DATE		
Bayview Irrigation District	May 6, 2019	TRIGGERS:	Water assignments are initiated upon approval of the board.
		ACTIONS:	Each irrigation user shall be allocated one irrigation or 0.70 acre-feet of water each flat rate acre on which all taxes, fees, and charges have been paid. As additional water supplies become available to the district, water will be equally distributed, on a pro-rata basis, to those irrigation users whose storage balance in the district's irrigation water rights account reaches 9,000 acre-feet.
Brownsville Irrigation District	April 24, 2019	TRIGGERS:	Water assignments are initiated upon approval of the board.
		ACTIONS:	Each irrigation user shall be assigned three irrigations or 1 acre-foot of water for each acre planted in the previous year. As additional water supplies become available to the district, water will be equally distributed as described in Section 11.039 in the Texas Water Code.
Cameron County Irrigation District No. 2	April 24, 2019	TRIGGERS:	Water allocations for irrigators go into effect as determined by the board of the district.
		ACTIONS:	The total water allocated to the irrigation district by the Watermaster will be divided among flat-rate customers evenly so that no one user can irrigate more than their portion.
Delta Lake Irrigation District	Sept. 19 2014	TRIGGERS:	Upon approval of the board, water allocation will become effective when the storage balance in the district's irrigation water rights account reaches 60,000 acre-feet.
		ACTIONS:	Each irrigation user shall be allocated three irrigations or 2 acre-feet of water each flat rate acre. Additional water available to the district will be equally distributed, on a pro-rata basis, to users having an account balance of less than 1 acre-foot of water for each flat rate acre. Transfers of allotments within the district are allowed.
Harlingen Irrigation District	June 15, 2015	TRIGGERS:	Water allocations for irrigators go into effect when either (1) the storage balance in the district's irrigation water rights account has declined to one irrigation-per-acre level or (2) the board determines that there is not sufficient water to complete the traditional crop year.
		ACTIONS:	The total water allocated to the irrigation district by the Watermaster will be divided among flat-rate customers evenly so that no one user can irrigate more than their portion.

ENTITY	DATE		
Hidalgo Co. Irrigation District No. 1	Feb. 22, 2007	TRIGGERS:	When the Watermaster initiates diversions on the basis of allocations, the district's board of directors determines the total allocation available to the district and stored in the Falcon/Amistad Reservoir System is less than 2.5 acre-feet/year of the estimated active parcels of land.
		ACTIONS:	The district initiates allocation of water to active irrigation users, on a pro-rata basis, provided that no parcel receives an allocation that will result in an account balance exceeding 1.83 acre-feet per acre.
Hidalgo Co. Irrigation District No. 2	April 18, 2019	TRIGGERS:	Water allocation goes into effect when the district's total irrigation water account storage balance amounts to a maximum of irrigations for each flat rate acre in which all flat rate is paid and current, and for each net irrigable acre as shown by District records with respect to land in the International Boundary and Water Commission (IBWC) floodway.
		ACTIONS:	Additional water allocated to the district will be equally distributed to those irrigation accounts having a balance of less than three irrigations (or 2 acre-feet equivalent) based on flat rate or net floodway acreage.
Hidalgo Co. Irrigation District No. 5	April 30, 2019	TRIGGERS:	Upon approval of the board, water allocation will become effective when the water allocated to Irrigation District No. 5 for irrigation by the Rio Grande Watermaster amounts to 2-1/2 acre-feet per compliant acre or less.
		ACTIONS:	Water will be allocated on a pro-rata-per-acre basis to the compliant acreage.
Hidalgo Co. Irrigation District No. 6	April 30, 2019	TRIGGERS:	Upon approval of the board, water allocation will become effective when the water allocated to Irrigation District No. 6 for irrigation by the Rio Grande Watermaster amounts to 2-1/2 acre-feet per compliant acre or less.
		ACTIONS:	Water will be allocated on a pro-rata-per-acre basis to the compliant acreage. Transfers of allotments within (but not outside) the district, with the consent of the allotted, will be permitted.

ENTITY	DATE		
Hidalgo Co. Irrigation District No. 13	April 22, 2019	TRIGGERS:	Upon approval of the board, water allocation will go into effect when the storage balance in the district's irrigation water storage account reaches 1,600 acre-feet and/or Hidalgo County Irrigation District No. 1 notifies the district that water deliveries will be limited to less than 2,000 acre-feet/year.
		ACTIONS:	Upon initiation of water allocation, each irrigation user shall be allocated 1.33 acre-feet of water for each flat rate acre. Additional water allocated to the district will be equally distributed, on a pro rata basis, to those irrigation accounts having account balances less than one irrigation for each flat rate acre.
Hidalgo County Water Improvement District No. 3	May 20, 2019	TRIGGERS:	Upon approval of the board, water allocation will go into effect when the district's total water right from the Rio Grande Watermaster amounts to less than 1 year supply as determined by the board.
		ACTIONS:	Water is pro-rated to irrigable land on which all flat rate assessment is paid in accordance with the district's Water Allocation Program. Additional water will be equally distributed, on a pro-rata acreage basis. When the Water Allocation Program is in effect, the district will not supply out-of-district water except in accordance with policy adopted as a result of US Bureau of Reclamation WaterSMART Grant. Additionally, the district does not have issues with push water, as the majority of the water supplied is municipal and does not require irrigation push water.
La Feria Irrigation District	May 20, 2019	TRIGGERS:	Upon approval of the board, water allocation becomes effective when the storage balance in the water rights account reaches an amount less than or equal to two irrigations for each flat rate acre.
		ACTIONS:	Each user is allocated one irrigation or 1 acre-foot of water, if metered, for each flat rate acre. Transfer within the district is allowed. Transfer from outside of the district to a user in the district is allowed.
Santa Cruz Irrigation District	May 31, 2019	TRIGGERS:	Allocation will become effective, upon board approval, when the combined storage in the Amistad and Falcon Reservoirs is at or less than 80% of storage capacity for the district water balance.
		ACTIONS:	Each user is allocated three irrigations or 2 acre-feet of water for each flat rate acre for which taxes, fees, and charges have been paid. Transfer within the district is allowed. Transfer from outside of the district to a user in the district is allowed, but transfers out of the district are not allowed.

7.2.2.2 Retail Public Water Suppliers

Although some cities rely on groundwater exclusively or groundwater comprises a part of their supply, most cities in Region M rely on surface water from the Rio Grande. Because municipal water rights have priority in the Amistad-Falcon Reservoir system, these water rights have historically been considered "guaranteed" in their full authorized diversion volume.

Those entities who deliver treated water generally developed triggers that were either based on the remaining municipal water rights available to the city for that year or the capacities of their treatment plants, so that high demands on the plants trigger a conservation stage. The conditions of the reservoirs are occasionally listed among triggers in public water supply DCPs but have little bearing on the availability of municipal water. The conservation stages for cities included limitations on car washing and lawn watering, ranging from voluntary in early stages to some fines or other penalties in later stages.

A summary of the DCPs available for cities and water supply corporations at the time of writing is included as Appendix E.1, and summary tables for some of the larger systems are shown in Table 7-4 through Table 7-9.

Table 7-4 East Rio Hondo Water Supply Corporation Drought Response

EAST RIO HONDO WATER SUPPLY CORPORATION		6/25/2019
Basis of Drought	Reservoir level, irrigation district notice to disallow irrigation, water demand, system break/failure or contamination, distribution system pressure	
Drought Stage	**TRIGGERS:**	**ACTIONS:**
Stage 1	Falcon and Amistad Reservoirs reach 40% of capacity as determined by the TCEQ	Customers shall be requested to voluntarily conserve water and adhere to the prescribed restrictions on certain water uses.
Stage 2	(1) Cameron County Irrigation District No. 2 or other irrigation districts provide notice to East Rio Hondo WSC that they will disallow farm irrigation water use within 60-90 days. (2) Distribution system pressures fall below 35 pounds per square inch (psi) requirements for two consecutive days. (3) East Rio Hondo WSC consumer demand exceeds 85% of East Rio Hondo WSC plan capacity for 15 days out of any consecutive 30 day period. (4) Falcon and Amistad Reservoirs reach 15% of capacity as determined by TCEQ.	Customers shall be required to comply with the requirements and restrictions on certain nonessential water uses, such as irrigation, washing vehicles, and ornamental fountains and ponds.
Stage 3	(1) Major water line breaks, or pump or system failures occur, which cause loss of capability to provide water service. (2) Natural or man-made contamination of the water supply source(s). (3) Rapidly occurring low-pressure conditions (less than 20 psi) for any reason.	All requirements of Stage 2 shall remain in effect, except the following are prohibited: all irrigation of landscape, using water to wash any vehicle, and adding water to any type of pool.

Table 7-5 Brownsville Public Utilities Board Drought Response

BROWNSVILLE PUBLIC UTILITIES BOARD		4/24/2019
Basis of Drought	Time of year, reservoir level, system break/failure or contamination, water demand/water treatment plant (WTP) capacity, projected water demand	
Drought Stage	**TRIGGERS:**	**ACTIONS:**
Stage 1	Automatically initiated on May 1 of each year and for any of the following: (1) Rio Grande Watermaster advises that a water shortage is possible because of low levels in Amistad and Falcon reservoirs. (2) Level of US' water in Amistad and Falcon reservoirs reaches 51%. (3) Line break, pump, or system failure may result in unprecedented loss of capability to provide service. (4) Peak demand on the distribution system and/or treatment plants is nearing capacity limits.	Customers shall be requested to voluntarily conserve water and adhere to the prescribed restrictions on certain water uses.
Stage 2	(1) Level of US' water in Amistad and Falcon reservoirs reaches 25%. (2) Analyses of water supply and demand indicate that the annual water allotment may be exhausted. (3) Line break or pump, or system failure will result in unprecedented loss of capability to provide service. (4) Peak demands on the distribution system and/or treatment plants are nearing capacity levels. (5) Contamination of the water supply and/or transmission system may result in unprecedented loss of capability to provide service.	Customers shall only be allowed to irrigate and wash vehicles following a certain schedule, golf courses shall follow restrictions in their approved water management plans, restaurants may only serve water to customers upon request, and the following are prohibited unless necessary for public health and safety: washing hard-surfaced areas, washing buildings or structures, using water for dust control, flushing gutters, and failing to repair controllable leaks within a reasonable period of time.
Stage 3	(1) Level of US' water in Amistad and Falcon reservoirs reaches 15%. (2) Analyses of water supply and demand the annual water allotment will be exhausted. (3) Major line break, or pump or system failure may result in unprecedented loss of capability to provide service. (4) Peak demand on the distribution system and/or treatment plants has exceeded capacity levels for three days. (5) Contamination of the water supply and/or transmission system will result in unprecedented loss of capability to provide service. (6) The inability to maintain or replenish adequate volumes of water in storage to provide for public health and safety.	All requirements of Stage 2 shall remain in effect, and in addition, the schedule irrigation and vehicle washing will be further restricted, the use of water from hydrants is only allowed when necessary to maintain public health, safety, and/or welfare, and the following are prohibited: refilling outdoor pools (with some exceptions), operation of outdoor fountains or ponds without recirculation systems unless required to maintain aquatic life, hydrant and sewer flushing except for emergencies, and use of water from or pumping water into resacas.
Stage 4	(1) Major line breaks, or pump or system failures occur which cause unprecedented loss of capability to provide water service, or (2) contamination of water supply and/or transmission system	All requirements of Stage 3 shall remain in effect, and in addition, the following are prohibited: all landscaping watering, use of water for construction purposes under special permit, adding water to swimming pools, adding water to any outdoor or indoor fountain or pond, except to maintain aquatic life.

Table 7-6 City of Laredo Drought Response

CITY OF LAREDO		8/9/2019
Basis of Drought:	Water demand/WTP capacity, reservoir level	
Drought Stage	**TRIGGERS:**	**ACTIONS:**
Stage 1	(1) WTP flow is less than 85% capacity for 5 consecutive days. (2) Amistad Reservoir level reaches 51% capacity.	Customers are asked to voluntarily reduce their water usage and the following are prohibited: allowing irrigation water to run off into a gutter, ditch, drain, or street and failure to repair a controllable leak.
Stage 2	(1) WTP flow is at 85% capacity for 3 consecutive days. (2) Amistad Reservoir level reaches 25% capacity.	All requirements for Stage 1 remain in effect, and the following are only allowed during certain scheduled times: irrigation with sprinkler systems, washing of vehicles, adding water to pools, irrigating parks/plazas/squares. The following are prohibited: operating any ornamental fountain or similar structure without a recycling system and washing paved areas, except to alleviate immediate fire hazards.
Stage 3	(1) WTP flow is at 90% capacity for 1 day. (2) Amistad Reservoir level reaches 20% capacity.	All requirements for Stage 2 remain in effect, except the schedules to use water for certain activities are even stricter, and irrigating athletic fields is also held to a certain schedule. No bulk water sales will be made by the city when the water will be transported outside of the city except for domestic/residential/livestock use. Fire hydrant water sales shall cease.
Stage 4	(1) WTP flow is at 95% capacity for 1 day. (2) Amistad Reservoir level is less than 20% capacity.	All requirements for Stage 3 remain in effect, and no applications for new or expanded water service connections will be approved without permission from the utilities director, water delivered to nonessential industrial and commercial customers will be reduced, and a maximum monthly water use allocation may be established for residential customers. The following are prohibited: irrigation, washing vehicles, adding water to pools.

Table 7-7 McAllen Public Utility Drought Response

MCALLEN PUBLIC UTILITY		12/12/2013
Basis of Drought:	WTP capacity being used, reservoir levels, system outages or failures	
Drought Stage	**TRIGGERS:**	**ACTIONS:**
Stage 1	In effect at all times.	Customers asked to voluntarily limit water use to an amount absolutely necessary for health, business, and irrigation.
Stage 2	(1) Demand reaches or exceeds 85% of capacity for 3 consecutive days. (2) Amistad-Falcon reservoirs reach 40% capacity. (3) Including, but not limited to, system outage, equipment failure, or supply contamination.	The following are restricted: irrigation, but drip method or hand-held buckets permitted at any time; washing motor vehicles, except commercial carwashes or service stations; washing or sprinkling foundations; adding water to swimming pools; operation of fountains or ponds, except with a recycling system; irrigation for golf courses, except those using wastewater effluent; hydrants restricted to firefighting and necessary activities. The following are absolutely prohibited: allowing irrigation water to run off into gutter, ditch, or rain; failure to repair controllable leaks; washing paved surfaces.
Stage 3	(1) Demand reaches or exceeds 90% of capacity for 3 consecutive days. (2) Amistad-Falcon reservoirs reach 25% capacity. (3) Including, but not limited to, system outage, equipment failure, or supply contamination.	All Stage 2 restrictions except further restrictions on means and schedule for irrigation, except by drip or hand-held buckets; watering of golf fairways is prohibited unless with wastewater effluent, reused water, or well water; customers to pay a water surcharge.
Stage 4	(1) Demand reaches or exceeds 95% of capacity for 3 consecutive days. (2) Amistad-Falcon reservoirs reach 20% capacity. (3) Including, but not limited to, system outage, equipment failure, or supply contamination.	All Stage 2 and 3 restrictions except further restrictions on means and schedule for irrigation; washing of motor vehicles not occurring on commercial carwashes and not in the immediate interest of public health and safety is prohibited; carwashes in the interest of public health and safety limited to 50% of monthly average; commercial nurseries, sod farmers, etc., limited to means and schedule restrictions; adding water to pools, except to maintain structural integrity, is prohibited; operation of fountains prohibited; customers to pay a water surcharge.
Stage 5	(1) Demand reaches or exceeds 100% of capacity. (2) Amistad-Falcon reservoirs reach 15% capacity. (3) Including, but not limited to, system outage, equipment failure, or supply contamination.	All Stage 2, 3, and 4 restrictions except no applications for new, additional, or expanded water connections, lines, etc., are allowed except as approved by the public utility board; water allocations to nonessential customers reduced as established by the public utility board; maximum monthly water allocation for residential customers established with revised rate schedules and penalties by the public utility board; irrigation permitted only by handheld hoses, handheld faucet filled buckets; drip irrigation on set schedule; customers to pay a water surcharge.

Table 7-8 Southmost Regional Water Authority Drought Response

SOUTHMOST REGIONAL WATER AUTHORITY		4/24/2019
Basis of Drought	Time of year, reservoir levels, system malfunction or failure, contamination of water	
Drought Stage	**TRIGGERS:**	**ACTIONS:**
Stage 1	Automatically initiated from May 1 to Sept. 30 of each year or if one or more of the following occur: (1) Watermaster advises the Brownsville public utility board that a water shortage is possible. (2) Level of Amistad and Falcon reservoirs reach 51% or 1.66 million acre-feet. (3) Line breaks or system failures cause loss of service. (4) WTP is nearing capacity levels.	Customers asked to voluntarily conserve water and adhere to the following restrictions: restrict means and/or schedule of irrigation of landscaped areas; minimize or discontinue use of nonessential purposes; and reduce fire hydrant and sewer line flushing.
Stage 2	(1) Levels of Amistad and Falcon reservoirs reach 25% or 834,600 acre-feet. (2) Line breaks or system failures cause loss of service. (3) Demands on Brownsville public utility board distribution and/or WTPs near capacity levels. (4) Contamination of water supply or distribution system causes loss of service.	All Stage 1 restrictions in effect and any or all of the following restrictions: means and schedule of landscape irrigation restricted further; means and schedule of washing motor vehicles, boasts, planes, etc., restricted; water use for golf courses based on water management plan; restaurants prohibited from serving water unless requested; all nonessential uses prohibited.
Stage 3	(1) Levels of Amistad and Falcon reservoirs reach 15% or 504,600 acre-feet. (2) Line breaks or system failures cause loss of service. (3) Demands on Southmost Regional Water Authority distribution and/or WTP exceed capacity for 3 days. (4) Contamination of water supply or distribution system causes loss of service. (5) Inability to maintain or replenish water in storage for public health and safety.	All Stage 1 and 2 restrictions and any or all of the following: means and schedule of landscape irrigation and residential car washing restricted further; water from hydrants limited to firefighting or other activities necessary to maintain public health and safety or for construction under special permit; filling swimming pools prohibited; operation of fountain or pond prohibited except for aquatic life; hydrant and sewer line flushing permitted only for emergency; use of water for scenic and recreational ponds and lakes prohibited.
Stage 4	(1) Line breaks or system failures cause loss of service. (2) Contamination of water supply and/or distribution system.	All Stage 1, 2, and 3 restrictions remain in effect and any or all of the following: all landscape watering is prohibited; use of water for construction under special permit prohibited; washing of motor vehicles, boats, planes, etc., prohibited; filling of pools to a maintenance level is prohibited; water for maintenance level of fountains or ponds except to support aquatic life is prohibited. Water rationing can be initiated with any or all of Stage 4 restrictions.

Table 7-9 City of Weslaco Drought Response

CITY OF WESLACO		5/1/2009
Basis of Drought:	Reservoir level, projected water demand, system break/failure	
Drought Stage	**TRIGGERS:**	**ACTIONS:**
Stage 1	(1) Levels of US waters in Amistad and Falcon reservoirs reach 51%. (2) Water demand projections for the year suggest available water rights may be used at 95%.	Request customers to voluntarily reduce water usage.
Stage 2	(1) Levels of US water in Amistad and Falcon reservoirs reach 25%. (2) A condition causes systemwide problems so the normal level of water service may be diminished for a period of time. (3) Water demand projections for the year suggest available water rights may be used at 98%.	The means and/or schedule for the following will be restricted: watering of grass and vegetation, washing of vehicles, adding water to pools, and irrigating golf courses. The following are prohibited: allowing water to run off into gutters or streets, washing of buildings, trailers, railroad cars, failure to maintain defective home plumbing, use of hydrants except for firefighting, ornamental fountain without recirculation, use of water to wash down hard surfaced area, and use of water for dust control.
Stage 3	(1) Levels of US water in Amistad and Flacon reservoirs reach 15%. (2) A condition related to extraordinary circumstances severely and immediately diminish the ability to deliver a normal level of water. (3) Water demand projections for the year suggest available water rights may be used at 100%.	The following are prohibited: new service connections to the water system if another water source is already used, serving restaurant customers water when they do not ask for it, use of water for scenic and recreational ponds or lakes, use of water for pools, use of water to put new agricultural land into production, use of water for new planting or landscaping, and acceptance of applications for new or extended water service connections without approval by the city. Industrial and commercial users must implement an individual curtailment plan, and residential customers will receive a maximum monthly usage amount.

7.3 EXISTING AND POTENTIAL EMERGENCY INTERCONNECTS

7.3.1 Information Collection Methodology

In accordance with Texas Administrative Code (31 TAC 357.42(d)), the RWPG has collected high-level information on existing interconnects. Most water users in Region M are located along the Rio Grande or along canals that convey Rio Grande water. In a sense, the region is highly interconnected.

The distribution system for raw Rio Grande water includes the reservoir system and the 27 Irrigation districts, many of which are either interconnected or have high potential to be connected. The RWPG has reached out through representatives of the Lower Rio Grande Valley Water District Managers Association to the district managers for information about interconnects between raw water systems.

Municipal utilities supplying treated water to retail customers are becoming more interconnected across the region. To evaluate current connections between systems, the Region M Planning Group appointed a member to evaluate information about existing interconnects.

7.3.2 Local Drought Contingency Plans with Emergency Interconnects

Although utilization of emergency interconnects was not included in the DCPs that were reviewed, Table 7-10 shows the known interconnections between public water supply systems and whether the connections are used for regular service or only in emergencies. Detailed information about these interconnections was submitted securely to the Executive Administrator of the TWDB.

Table 7-10 Emergency Interconnections Between Public Water Supply Systems

PUBLIC WATER SUPPLY SYSTEM	INTERCONNECTS	TYPE OF CONNECTION
Agua SUD	La Joya	One-way emergency interconnect
	Peñitas, Palmview, Sullivan City, Mission	All within Agua SUD service area
East Rio Hondo WSC	Harlingen WW	Connection for regular service with capacity to increase in emergencies
	City of Los Fresnos	Connection for regular service
	Olmito WSC	Connection for regular service with capacity to increase in emergencies
	North Cameron Regional	Connection for regular service
	Combes	Emergency Interconnect
Harlingen Water Works (WW)	City of La Feria	Emergency Interconnect
	City of Combes	5 Connections for regular service
	City of Primera	2 Connections for regular service
	City of San Benito	Emergency Interconnect
	City of Palm Valley	2 Connections for regular service
	East Rio Hondo WSC	Connection for regular service
	Military Highway WSC	Connection for regular service

PUBLIC WATER SUPPLY SYSTEM	INTERCONNECTS	TYPE OF CONNECTION
City of McAllen	Edinburg	Used only during times of high demand
	Pharr	Used only during times of high demand
	Mission	Used only during times of high demand
	Hidalgo	Used only during times of high demand
	Hidalgo Co. Irrigation District No. 2, Hidalgo Co. Irrigation District No. 3, United Irrigation District	McAllen receives raw water from these districts
Military Highway WSC	Harlingen WW (see above)	
	Los Indios, Progreso, San Juan	Military Highway serves these entities
North Alamo WSC	City of Mercedes	Emergency interconnect
	Sebastian Municipal Utility District (MUD)	Emergency interconnect
	City of Lyford	Emergency interconnect
	City of Raymondville	Emergency interconnect
	City of Edcouch	Emergency interconnect
	City of Elsa	Emergency interconnect
	City of La Villa	Emergency interconnect
	City of Donna	Connection for regular service
	City of Edinburg	2 Connections for regular service
	Military Highway WSC	Connection for regular service
	Quiet Village Utilities	Connection for regular service
	Port Mansfield PUB	Connection for regular service
	Delta Lake ID, Donna Irrigation District, Hidalgo Co. Irrigation District No. 2, Hidalgo Co. Irrigation District No. 1, East Rio Hondo WSC	North Alamo WSC receives raw water from these districts
Olmito WSC	Los Fresnos	Two-Way emergency interconnect
	Valley MUD No. 2	Two-Way emergency interconnect
Zapata County Waterworks	Zapata Co. Water Control & Improvement District No. 16	Connection for regular service
Brownsville PUB	El Jardin WSC	Connection for regular service
Laguna Madre Water District	Laguna Vista, Port Isabel, South Padre Island	Connection for regular service

PUBLIC WATER SUPPLY SYSTEM	INTERCONNECTS	TYPE OF CONNECTION
Valley MUD No. 2	Military Highway WSC	Emergency interconnect
	Olmito WSC	Emergency interconnect
	Southmost Regional Water Authority	Connection for regular service
	Rancho Viejo	Connection for regular service
Rio Grande City	Rio WSC	Connection for regular service
City of Roma	Escobares	Connection for regular service
Weslaco	Mercedes	Emergency interconnect

7.4 EMERGENCY RESPONSES TO LOCAL DROUGHT CONDITIONS OR LOSS OF MUNICIPAL SUPPLY

Municipal WUGs that are of concern for emergency drought response are identified as those that have a population of 7,500 or less and have a sole source of water, even if that water is provided by a wholesale water provider, or in the case of the Rio Grande region, if those entities receive waters from the Rio Grande from multiple irrigation districts. For purposes of this evaluation, entities evaluated for emergency responses to local drought conditions or loss of municipal supply were assumed to have 180 days or less of remaining supply. Additionally, all "county-other" WUGs are considered.

WUGs that meet these criteria are shown in Table 7-11, with the 2010 census population and current suppliers. Most of these districts rely exclusively on water from the Rio Grande system and have no secondary source available to them (the districts that provide Rio Grande surface water are listed as the "Current Supply"). Those that indicate their sole supply is groundwater are generally geographically constrained and limited to local groundwater supplies.

Table 7-11 WUGs Identified for Emergency Drought Response Evaluation

COUNTY	ENTITY	CENSUS POPULATION 2010	CURRENT SUPPLY (1)	CURRENT SUPPLY (2)
Cameron	County-Other	44,311	Surface Water (various)	Groundwater (various)
Cameron	La Feria	7,302	La Feria Irrigation District 3	La Feria (emergency)
Cameron	Laguna Vista	3,117	Laguna Madre Water District	limited non-potable reuse available
Cameron	Olmito WSC	3,361	Cameron Co. Irrigation District No. 6	
Cameron	Palm Valley	1,304	Harlingen Irrigation District No. 1	
Cameron	Primera	4,036	Harlingen Irrigation District No. 1	North Alamo WSC

COUNTY	ENTITY	CENSUS POPULATION 2010	CURRENT SUPPLY (1)	CURRENT SUPPLY (2)

COUNTY	ENTITY	CENSUS POPULATION 2010	CURRENT SUPPLY (1)	CURRENT SUPPLY (2)
Willacy	Lyford	2,611	Delta Lake Irrigation District	North Alamo WSC emergency interconnect
Willacy	Port Mansfield Public Utility District	277	North Alamo WSC	North Alamo WSC emergency interconnect
Willacy	Sebastian MUD	1,834	La Feria	North Alamo WSC emergency interconnect
Zapata	County-Other	2,321	Surface water (various)	Groundwater (various)
Zapata	San Ygnacio MUD	835	Self-supplied surface water	
Zapata	Siesta Shores Water Control & Improvement District	1,373	Siesta Shores Water Control & Improvement District	

7.4.1.1 Sole Source: Surface Water

Entities that depend entirely on surface water in Region M are very common. If shortages occur as a result of having insufficient water rights to meet demand or to deliver water, there is a water market and provisions that allow for entities to purchase water. Special provisions enable purchase of emergency water. It is recommended that all WUGs procure sufficient water rights or long-term contracts to meet projected demands when feasible. Additionally, access to off-channel storage reservoirs or additional sources of water (groundwater, reuse, etc.) for sole-source utilities may provide increased resilience.

Interconnections

Interconnections between utilities build greater resilience by providing utilities an alternate source of treated water if either system is damaged or fails. Entities that experience push-water requirements when irrigation deliveries are curtailed may also benefit from both raw and treated water interconnects, which could allow districts and utilities to coordinate and consolidate deliveries in a limited number of canals.

Water Quality

Any emergency that impacts the quality of the water in the Rio Grande has the potential to cause significant harm to the region. Because contamination could be released from either the US or Mexican side of the river, there is an additional level of uncertainty regarding potential contaminants. In the past, there have been releases into Rio Grande tributaries that were identified only by a widespread fish kill. No emergency response plan is currently in place to handle the release of contaminants into the Rio Grande.

A release in April of 2014 on the Rio Salado (a Rio Grande tributary in Mexico) was identified by the Mexican counterpart to the International Boundary and Water Commission (IBWC), the Comisión Internacional de Límites y Aguas, which reported that a release had occurred, but the quantity and the material were unknown.[1] Later information showed that the release was on April 8, but the notification was not until April 30.

TCEQ conducted testing on the Rio Grande upstream and downstream of the inflows from the Rio Salado, which took 5 days to analyze. In this case, the results of broad-spectrum pollutant analysis showed that there were no contaminants that could endanger human health, and other contaminants of concern such as heavy metals were beneath federal and state limits for drinking water. However, this incident drew attention to the lack of emergency plan for the region.

Regular water quality testing and reporting is already in place in some locations to alert farmers of high total dissolved solids in the river. This type of system could be expanded upon to provide regular reports of water quality to utility managers and agencies such as IBWC and TCEQ. This kind of water quality analysis is complicated by the fact that the potential contaminants are not known in many cases. Understanding the timing of contaminant transport through the system could allow entities to pump enough water to fill reservoirs before the contaminant has reached that location. However, the success of this approach is contingent on timely information about releases. At a minimum, information must be communicated to utilities and to the public in an accurate and timely manner so that safe drinking water can be provided immediately.

Recommendations

Long-term recommendations for entities that rely solely on surface water include expansion of alternate water supplies, including fresh and brackish groundwater where available. Emergency recommendations are listed in Table 7-12.

Table 7-12 Recommended Emergency Water Shortage Responses: Surface Water Dependent WUGs

EMERGENCY SHORTAGE	RESPONSES
Insufficient Surface Water Rights	• Purchase surface water. • Highest stage drought restrictions. • Long term: purchase DMI water rights.
Water Treatment Plant Failure	• Interconnects with other systems. • Truck in water. • Highest stage drought restrictions. • Long term: facility improvements, system evaluation, and phased improvement plan.

[1] Taylor, Steve. "Darling: Fish Kill Highlights Need For Rio Grande Emergency Plan" Rio Grande Guardian, March 14, 2014. http://riograndeguardian.com/darling-fish-kill-highlights-need-for-rio-grande-emergency-plan/, accessed April 6, 2015.

EMERGENCY SHORTAGE	RESPONSES
Rio Grande Contamination	• Immediate testing. • Pumping and storage of safe water to any existing storage facilities. • Interconnects with systems that have alternate supplies. • Truck in water. • Emergency communication with boil water or other guidance to customers. • Highest stage drought restrictions. • Long term: emergency response plan including communications, provision of safe water to critical facilities, etc.

7.4.1.2 Sole Source: Groundwater

Utilities that depend exclusively on groundwater tend to be isolated from other sources and other cities. For instance, Hebbronville is over 30 miles from the nearest city, Falfurrias. For entities that are dependent on groundwater, the entities are encouraged to actively monitor water levels in wells, especially in high-demand periods. Water levels can be used to trigger drought responses, and to guide expansion of wellfields or deepening of wells. Additionally, groundwater quality may be an indicator of decreasing availability from a well or wellfield.

Emergency responses for entities that rely solely on groundwater are shown in Table 7-13.

Table 7-13 Recommended Emergency Water Shortage Responses: Groundwater Dependent WUGs

EMERGENCY SHORTAGE	RESPONSES
Insufficient Well Production	• Highest stage drought restrictions. • Deepen wells (if possible). • Interconnects with other systems (if possible). • Truck in water. • Long term: facility improvements, system evaluation, and phased improvement plan.
Water Treatment Plant Failure	• Highest stage drought restrictions. • Interconnects with other systems (if possible). • Truck in water. • Long term: facility improvements, system evaluation, and phased improvement plan.
Groundwater Quality	• Immediate testing. • Highest stage drought restrictions. • Additional emergency treatment (if possible). • Interconnects with other systems (if possible). • Truck in water. • Long term: supply or treatment facility improvements, system evaluation, and phased improvement plan.

7.5 REGION-SPECIFIC DROUGHT RESPONSE RECOMMENDATIONS AND MODEL DROUGHT CONTINGENCY PLANS

The drought response recommendations made for each water source in the following subsections should be considered in the development of drought response preparations. The TCEQ has prepared model DCPs for wholesale and retail water suppliers to provide guidance and suggestions to entities regarding the preparation of DCPs. Not all items in the model will apply to every system's situation, but the overall model can be used as a starting point for most entities. The LRGVRWP suggests that the TCEQ model DCPs be used for entities wishing to develop a new DCP. The TECQ model DCPs and WCPs are included for all WUG types in Appendix E.2. The TCEQ model DCPs can be found on TCEQ's website: (https://www.tceq.texas.gov/permitting/water_rights/wr_technical-resources/contingency.html)

7.5.1 Amistad-Falcon Reservoir System Drought Response Recommendations

Water supplies from the Amistad-Falcon reservoir system are managed with a unique operating and water rights system, which reserves a significant portion of the reservoir to effectively guarantee DMI water rights and fills irrigation and mining water right accounts as water is available to that storage pool.

This system ensures that, even in the worst recorded drought, a WUG may divert its full annual authorized diversion each year. If a WUG has sufficient water rights to meet its needs, and a reasonable means of delivering the water from the diversion point to the point of need, there should be no issues getting that water in a year similar to the DOR.

Water shortages among municipal WUGs can result from a range of scenarios (discussed in Subsection 7.2.2) including insufficient water rights, issues with water rights account budgeting, delivery issues, and water treatment or storage issues. The primary impact of drought on municipal utilities that rely on the Amistad-Falcon reservoir system is an increase in demands, and not a reduction of supplies.

7.5.1.1 DMI Water Rights Holders

Cities and industrial users in Region M experience drought under the following scenarios, described in Table 7-14 with recommendations specific to each.

Table 7-14 Municipal Shortage Scenarios and Recommendations

SHORTAGE SCENARIO AND TRIGGERS	RECOMMENDED RESPONSES
Insufficient water rights to meet demand. An entity may have sufficient treatment capacity to meet its demands but have insufficient water rights to meet drought year demands. Triggers should be based on useable balance calculations and monthly/weekly demand projections. When the balance of water available for the remainder of the year does not exceed the demand projections by a reasonable margin, severe drought response should be implemented. When the projected demands exceed the balance of water, critical drought response should be implemented.	**Best Practices:** Use of water rights should be managed carefully, and cities should track their useable balance over the year compared with seasonal/monthly demand projections. This will allow a city to implement conservation measures early in the year to stay within its water budget. It is recommended that any city that projects a shortage should purchase water rights when feasible. **Severe Conditions:** Request voluntary municipal and industrial conservation, limit unnecessary municipal usage, consider billing rate incentives for conservation in severe drought periods, and purchase water as it is available. **Critical Conditions:** Implement mandatory municipal and industrial water use restrictions, restrict nonessential municipal water use, consider billing rate incentives for conservation in critical drought periods, and purchase water as it is available.
Water treatment plant capacity. Municipal utilities with sufficient water rights may experience a shortage if, during their peak demand months, the capacity of the WTP is not sufficient to meet permit requirements. Triggers should be based on daily treatment volumes and TCEQ WTP capacity rules. When 85% capacity is reached for three consecutive days, severe drought response should be implemented. When 95% capacity is reached, critical drought response should be implemented.	**Best Practices:** Conservation programs can reduce demands on the WTP. The long-term solution is expansion of WTPs' capacity and interconnections with other facilities. **Severe Conditions:** Request voluntary municipal and industrial conservation, limit unnecessary municipal usage, consider billing rate incentives for conservation in severe drought periods, and utilize emergency interconnects. **Critical Conditions:** Implement mandatory municipal and industrial water use restrictions, restrict nonessential municipal water use, consider billing rate incentives for conservation in critical drought periods, and utilize emergency interconnects.
Push water. Even with sufficient water rights to meet demands and to cover normal delivery losses, some municipalities, especially those who receive surface water from irrigation districts that serve mostly irrigation water users, may need additional water to meet minimum operational requirements in the district conveyance system if irrigation water is curtailed. Triggers should be based on (1) the requirement of irrigation water to deliver DMI water in a given district, (2) the useable balance available to irrigators in the district, and whether those irrigators are on allocation, and (3) the storage capacity available to the utility. Severe drought restrictions should be implemented if stored water is at or within a small margin of the projected demands before the next feasible delivery from the district. Critical drought restrictions should be implemented if water in storage is less than the projected demands before the next feasible delivery from the district.	**Best Practices:** First, utilities should have a clear communication plan in place with the irrigation district that alerts the city when irrigation water users may be put on allocation. This may include a drought trigger associated with Amistad/Falcon reservoir storage levels and the useable balance of irrigation accounts in the district. Second, utilities should evaluate their current conveyance methods to see if there are alternate canals or districts that may be able to serve their systems in the case of a push water shortage. Third, where possible, entities should increase their raw water storage to allow for more time between deliveries that need to be timed to coincide with irrigation deliveries. Last, interconnections and emergency agreements with other utilities and other sources are recommended. **Severe Conditions:** Request voluntary municipal and industrial conservation, limit unnecessary municipal usage, consider billing rate incentives for conservation in severe drought periods, utilize emergency interconnects, and identify water that may be available for purchase as push water. **Critical Conditions:** Implement mandatory municipal and industrial water use restrictions, restrict nonessential municipal water use, consider billing rate incentives for conservation in critical drought periods, utilize emergency interconnects, and identify water that may be available for purchase as push water.

7.5.1.2 Irrigation and Mining Water Rights Holders

Farmers can respond to drought through planning, crop selection, highly efficient operations, and on-farm demand reduction strategies (such as narrow border citrus and drip irrigation). Farmers and irrigation districts should maintain useable balance calculations and monitor reservoir levels to facilitate planning. Selection of crops, in conjunction with available demand reduction strategies, can allow farmers to maximize their yield in years of drought. Crop selection tools that take current costs and market values into account have been made available to farmers in the High Plains and could be updated with information specific to the region.

Cooperation with the irrigation districts to increase the operational and conveyance efficiency could yield a significant amount of water to farmers. This is discussed as a water management strategy in Chapter 5.

Mining water use, including oil and gas drilling, can be decreased by close controls of leaks and spills, on-site reuse, and new technology or approaches that require less water. Because mining water rights are subject to the same decrease in reliability in drought years, mining water users are highly encouraged to identify and implement water conservation measures. Both irrigation and mining water demand can be scaled according to available water, and alternate sources, such as reuse or groundwater, may be used when surface water is scarce.

7.5.2 Groundwater Supply Drought Response Recommendations

Many users in Region M rely on groundwater as their main source of supply. The aquifers and subsections of aquifers within Region M exhibit a broad range of drought response characteristics, which require specific drought triggers and responses to be developed for each situation. In general, groundwater wells may be impacted by increased pumping in the area and by decreasing recharge resulting from drought. Insufficient groundwater or groundwater of acceptable quality may result in a shortage.

For general drought preparedness, wells should regularly be monitored for changing water levels and changes in quality. If required, additional temporary treatment may need to be implemented to meet drinking water standards. It is important to understand what temporary treatment options may be used in the case of a shortage. Additional wells and emergency rehabilitation or deepening of existing wells can help to increase supplies in a shortage.

Under severe conditions, established when supplies may be insufficient to meet demands within 60 days or decrease in well productivity or quality, it is recommended that city utility managers request voluntary municipal and industrial conservation, limit unnecessary municipal usage, consider billing rate incentives for conservation in severe drought periods, and utilize any available emergency interconnects.

Under critical conditions, established when demands are expected to exceed supplies within 30 days, it is recommended that city utility managers implement mandatory municipal and industrial water use restrictions, restrict nonessential municipal water use, consider billing rate incentives for conservation in critical drought periods, and utilize emergency interconnects. In the most extreme cases, trucking in water may be the best alternative to meet immediate needs.

7.6 DROUGHT MANAGEMENT WATER MANAGEMENT STRATEGIES

Drought water management strategies (WMS), such as voluntary or mandatory drought water restrictions, are those which are intended to be implemented only in times of drought. While conservation as a whole may be implemented as a long-term strategy, the ability of a WUG to reduce demands in times of severe water shortage can enable reliable delivery of water at levels that maintain near-term health and safety.

It has been demonstrated across the state that municipal WUGs that focus on reducing discretionary outdoor water use first in response to drought and avoid water use reductions in the commercial and manufacturing use sectors, may find drought management to be economically viable and cost-competitive with other WMS. Drought WMS may be economically viable as an interim strategy to meet near-term needs through demand reduction until such time as economically viable long-term water supplies can be developed. For planning purposes, it is important that a utility understand the amount of demand reduction that can be expected when drought restrictions are put in place.

All WMS are discussed in more detail in Chapter 5.

7.6.1 Drought Management WMS Considered

The drought management WMS that were considered for Region M included conservation strategies intended to reduce demand or reduce losses and the development of new supplies, which is intended to make the region more resilient to drought. Drought management WMS that were evaluated for all possible WUGs include the following:

- Municipal Drought Management. Water demand reductions, by voluntary or mandatory restrictions, were considered for all municipal WUGs with needs in drought years.
- On-Farm Irrigation Conservation. This strategy is categorized as water management practices, land management systems, and on-farm water delivery systems. However, farming practices considered as drought management WMS include water budgeting, fallowing and consolidating available water supplies, crop selection for low water use, and dry year option contracts.

7.6.2 Recommended Drought Management WMS and Triggers

7.6.2.1 Municipal Drought Management WMS

Water demand reductions, by voluntary or mandatory restrictions, were recommended for all municipal WUGs with needs. The RWP is representative of the worst historical drought conditions, and municipal water utilities in Region M and across the state have successfully integrated water demand reduction into their DCPs as a way to respond to drought. Subsection 7.2.2.2 includes examples of drought triggers and responses from municipal water utilities in Region M.

The RWPG has determined that 5 percent demand reduction is an attainable demand reduction for any utility with needs in a drought year. This reduction has been applied to all municipal WUGs with needs.

7.6.2.2 On-Farm Irrigation Conservation

The recommended WMS for on-farm conservation are divided into three categories: water management practices, land management systems, and on-farm water delivery systems. However, farming practices considered as drought management WMS could include water budgeting, fallowing and consolidating available water supplies, crop selection for low water use, and dry year option contracts, which are not specifically included in the on-farm conservation WMS.

Farmers and irrigation districts should maintain useable balance calculations and monitor reservoir levels to facilitate planning. Selection of crops, in conjunction with available demand reduction strategies, can allow farmers to maximize their yield in years of drought. Crop selection tools that take current costs and market values into account have been made available to farmers in the High Plains and could be updated with information specific to the region. Triggers may need to be specific to the irrigation district or the farmer, depending on specific water needs, but should be tied to reservoir levels and water right account balances.

These practices are common and represent the region's response to unmet needs for irrigated agriculture in previous RWPs. An estimated 10 percent reduction in irrigation water demand is applied to all irrigation WUGs with needs.

7.6.3 Drought Management WMS Not Recommended

An approach to water marketing known as "dry year option contracts" or "water supply option contracts" (WSOC) may reduce the impact on agricultural production while providing drought supplies for other uses. This concept involves temporary transfers of irrigation water to provide secure water supplies to non-agricultural users during droughts. This option would transfer water to other users when needed while preserving the water for agriculture during normal water supply situations. In Texas, WSOC is a practice in the Edwards Aquifer area to provide water for endangered species and San Antonio water users during drought.

The Lower Rio Grande Valley and Region M have some unique institutional, hydrologic, and economic conditions that would need to be addressed to provide seller and buyer incentives to enter into a WSOC. Unlike many other areas of the Western United States, water rights are held by the irrigation districts rather than farmers. Given this and the generally low price of agricultural water, farmers have little incentive to conserve water except in drought and lack the ability to sell water conserved by more efficient irrigation methods or fallowing land such as for WSOC payments. While the potential exists for irrigation districts to enter into a WSOC with another user, irrigation districts would need to work with farmers and pass through exercise payments to make WSOCs feasible from the farmer's point of view. In addition, with the generally low cost of irrigation district water, the purchase of this water may be the lowest cost to urban providers and other users compared to alternative sources such as desalination or reuse.

Urban demand has the highest priority in drought conditions, and therefore, urban communities may feel little need to have WSOCs unless there is concern about the agricultural community and/or irrigation district welfare. This strategy would require significant legislative changes and is not recommended at this time.

7.7 OTHER CONSIDERATIONS AND RECOMMENDATIONS

7.7.1 Relevant Recommendations from Drought Preparedness Council

In a letter addressed to all the RWPGs of Texas dated August 1, 2019, the Drought Preparedness Council recommended developing region-specific model DCPs for all water use categories that account for more than 10 percent of water demands in any decade over the 50 year planning horizon. As detailed in the TWDB (refer to Table 7-15), irrigation and municipal WUG water use categories for Region M accounted for more than 10 percent of water demands in all projected decades. Therefore, model DCPs have been developed for irrigation and municipal WUG water use categories and are discussed in Subsection 7.2.2.

Table 7-15 2021 WUG Water Demand Project Data and Drought Contingency Plan Selection Criteria by WUG Water User Category (TWDB 2019)

WUG WATER USE CATEGORY	MODEL DROUGHT CONTINGENCY PLAN	2020	2030	2040	2050	2060	2070
PROJECTED DEMANDS (ACRE FEET./YEAR)							
IRRIGATION	**YES**	1,426,960	1,381,152	1,335,343	1,289,533	1,243,724	1,197,914
LIVESTOCK	NO	4,748	4,748	4,748	4,748	4,748	4,748
MANUFACTURING	NO	4,305	5,055	5,055	5,055	5,055	5,055
MINING	NO	17,051	16,480	14,952	12,823	10,458	10,361
MUNICIPAL	**YES**	315,689	373,896	433,312	494,887	558,022	620,040
STEAM ELECTRIC POWER	NO	15,240	15,240	15,240	15,240	15,240	15,240
PROJECTED DEMANDS (%)							
IRRIGATION	**YES**	80%	77%	74%	71%	68%	65%
LIVESTOCK	NO	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
MANUFACTURING	NO	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%
MINING	NO	1.0%	0.9%	0.8%	0.7%	0.6%	0.6%
MUNICIPAL	**YES**	18%	21%	24%	27%	30%	34%
STEAM ELECTRIC POWER	NO	0.9%	0.8%	0.8%	0.8%	0.8%	0.8%

7.7.2 Other Drought Management Measures

Livestock water supplies are from both groundwater and surface water in Region M. In a drought scenario, it is important that windmill pumps that fill stock ponds and tanks be used only when needed, rather than allowed to run at all times. Agricultural and livestock demands may be significantly increased in severe drought, which can impact groundwater supplies. In addition to careful management of water

supplies, drought relief programs may be pursued to assist with livestock demands in a severe drought, including the emergency Haying and Grazing Program.

7.7.3 Recommendations Regarding the Drought Preparedness Council and State Drought Preparedness Plan

The 2019 Texas Legislature and Governor Abbott greatly expanded the TWDB's role in flood planning and financing. In addition to existing flood programs, the TWDB will be administering new state and regional flood planning process with flood planning regions based on river basins. The regional flood planning process will be developed and initial regional flood planning groups formed by mid-2020; the first regional flood plans will be due in 2023, and the first state flood plan will be due September 1, 2024.

The legislature has allocated funds to collect flood-related data, support river and coastal modeling capabilities, distribute critical flood information, and create a new flood funding program to be administered by the TWDB. The funding program will be designed to make the implementation of drainage and flood projects more affordable for Texas communities and to meet immediate needs for funding. The funding will become available in 2020.

7.7.4 Recommendations Regarding Counteractive Variations in Drought Response Strategies

Unnecessary or counterproductive variations in drought response strategies may impede drought response efforts. Counterproductive examples include entities having different stages, triggers, and responses that may have been counterproductive to the efforts of drought response and negatively impact local resources. Furthermore, municipalities have drought triggers that are set on varying reservoir levels, and if they have municipal water rights, these water rights are not affected by reservoir levels. Setting drought response stages or triggers with respect to the budgeting of water rights rather than reservoir levels could prove to be more beneficial for drought response strategies for entities in the region. In addition, if an entity enacts a drought response faster than other entities, the action complicated connections. Entity coordination of drought response triggers could mitigate some counteractive variations in drought response strategies. Lastly, a measure to assist in mitigating the counterproductive measures associated with push water would be for entities to coordinate the timing of the utilization of push water to decrease excess water used in distribution canals.

Appendix E: Drought Response Plans and Recommendations

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Agua Special Utility District, 4/25/2019		
BASIS OF DROUGHT	Reservoir level, water demand/WTP and pump capacity, emergency situation	
	TRIGGERS:	**ACTIONS:**
Stage 1	a) US waters of the Amistad and Falcon reservoirs is equal to or less than 40% storage capacity, b) any of the WTP are operating at or above 65% total daily capacity for 3 consecutive days, c) water system pumps are operating at or above 65% total daily capacity for 3 consecutive days	Customers are required to follow a certain schedule in order to: irrigate landscapes, wash vehicles, add water to pools, and irrigate golf courses/parks/greenbelt. The following are prohibited: operating ornamental fountains unless required to support aquatic life or if recirculation is used, use of water from hydrants or flush valves unless required to maintain public health, safety, and welfare, washing down hard-surfaced areas or structures, use of water for dust control, permitting water to run into any gutter or street, failure to repair controllable leaks within a reasonable period of time, any waste of water.
Stage 2	a) US waters of the Amistad and Falcon reservoirs is equal to or less than 30% storage capacity, b) any of the WTPs are operating at or above 75% total daily capacity for 3 consecutive days, c) water system pumps are operating at or above 75% total daily capacity for 3 consecutive days	Customers are required to follow a certain schedule in order to: irrigate landscapes in a hand-help watering manner, wash vehicles, and add water to pools. The following are prohibited: irrigating landscapes with a sprinkler, irrigating gold courses/parks/greenbelt, operating ornamental fountains unless required to support aquatic life or if recirculation is used, use of water from hydrants or flush valves unless required to maintain public health, safety, and welfare, washing down hard-surfaced areas or structures, use of water for dust control, permitting water to run into any gutter or street, failure to repair controllable leaks within a reasonable period of time, any waste of water.
Stage 3	a) US waters of the Amistad and Falcon reservoirs is equal to or less than 25% storage capacity, b) any of the WTPs are operating at or above 85% total daily capacity for 3 consecutive days, c) water system pumps are operating at or above 75% total daily capacity for 3 consecutive days	Customers are required to follow a stricter schedule in order to irrigate landscapes in a hand-help watering manner. The following are prohibited: washing vehicles, adding water to pools, irrigating landscapes with a sprinkler, irrigating gold courses/parks/greenbelt, operating ornamental fountains unless required to support aquatic life or if recirculation is used, use of water from hydrants or flush valves unless required to maintain public health, safety, and welfare, washing down hard-surfaced areas or structures, use of water for dust control, permitting water to run into any gutter or street, failure to repair controllable leaks within a reasonable period of time, any waste of water. No applications for any new or expanded water service connections will be approved.

Stage 4	a) US waters of the Amistad and Falcon reservoirs is equal to or less than 20% storage capacity, b) any of the WTPs are operating at or above 90% total daily capacity for 24 consecutive hours, c) water system pumps are operating at or above 90% total daily capacity for 24 consecutive hours, d) an immediate reduction in water use is required to protect the public health and safety and/or integrity of the water system	The following are prohibited: irrigation of landscaped area, all outdoor use of water, washing vehicles, adding water to pools, irrigating gold courses/parks/greenbelt, operating ornamental fountains unless required to support aquatic life or if recirculation is used, use of water from hydrants or flush valves unless required to maintain public health, safety, and welfare, washing down hard-surfaced areas or structures, use of water for dust control, permitting water to run into any gutter or street, failure to repair controllable leaks within a reasonable period of time, any waste of water. No applications for any new or expanded water service connections will be approved.
	City of Alamo, 3/28/2014	
BASIS OF DROUGHT	Time of year, water demand/WTP capacity, system break/failure or contamination	
	TRIGGERS:	**ACTIONS:**
Stage 1	Initiated automatically May 1 through Sept. 30 each year	a) customers requested to voluntarily limit landscape irrigation to certain days and times. b) all operations of the city of Alamo will adhere to restrictions in Stage 2. c) customers requested to practice water conservation and minimize or discontinue water use for non-essential purposes.
Stage 2	Daily water use equals or exceeds 85% of treatment capacity for 7 consecutive days	a)City to reduce flushing of water mains. b) required schedule and/or means restricted for the following: landscape irrigation, washing motor vehicles, filling pools, irrigation of golf courses unless using alternate water source. c) the following are prohibited: operation of fountains or ponds except to support aquatic life or with recirculation system; use of hydrants except for fire fighting, construction with special permit, and other necessary activities; serving water in restaurants except when requested; all non-essential uses and failure to repair controllable leak(s)
Stage 3	Daily water use equals or exceeds 95% of treatment capacity for 7 consecutive days and/or reservoir levels continually recede on a daily basis and remain below 74% of capacity for 48 consecutive hours, and/or water pressure below 20 psi occurs in distribution system.	City to reduce or discontinue flushing of water mains and irrigation of public landscaped areas, as well as use alternative supply sources. All requirements from Stage 2 except: schedule and means further restricted for landscape irrigation, watering of golf courses prohibited unless using alternate water source, use of hydrants for construction with special permit to be discontinued.

Stage 4	Daily water use equals or exceeds 120% of treatment capacity for 3 consecutive days and/or the reservoir levels continually recede on a daily basis and remain below 50% capacity for 24 consecutive hours, and/or water pressure bellow 20 psi occurs in distribution system and the City Manager determines such conditions are a hazard to public health and safety.	City to reduce or discontinue flushing of water mains and irrigation of public landscaped areas, as well as use alternative supply sources. All requirements from Stage 2 and 3 except: schedule and means further restricted for landscape irrigation and washing of motor vehicles; use of water for swimming pools prohibited; no applications for new, additional, or expanded water connections, meters, lines, etc. shall be approved.
Stage 5	1. Major water lines break, or pump or system failures occur, which cause unprecedented loss of capability to provide water service; or 2. Natural or man-made contamination of the water supply source(s).	City to discontinue flushing of water mains, fire hydrants, and irrigation of public landscaped areas. All requirements from Stages 2, 3, and 4 except: irrigation of landscaped areas and use of water to wash motor vehicles is absolutely prohibited. Stage 6 - Water allocation according to water allocation plan.
Brownsville Public Utilities Board, 4/24/2019		
BASIS OF DROUGHT	Time of year, reservoir level, system break/failure or contamination, water demand/WTP capacity, projected water demand	
	TRIGGERS:	**ACTIONS:**
Stage 1	Automatically initiated on May 1 of each year and for any of the following: a) TCEQ Rio Grande Watermaster advises that a water shortage is possible due to low levels in Amistad and Falcon reservoirs, b) level of US' water in Amistad and Falcon reservoirs reaches 51%, c) line break, pump, or system failure may result in unprecedented loss of capability to provide service, or d) peak demand on the distribution system and/or treatment plants is nearing capacity limits	Customers shall be requested to voluntarily conserve water and adhere to the prescribed restrictions on certain water uses.

Stage 2	a) Level of US' water in Amistad and Falcon reservoirs reaches 25%, b) analyses of water supply and demand indicate that the annual water allotment may be exhausted, c) line break or pump, or system failure will result in unprecedented loss of capability to provide service, d) peak demands on the distribution system and/or treatment plants are nearing capacity levels, or e) contamination of the water supply and/or transmission system may result in unprecedented loss of capability to provide service	Customers shall only be allowed to irrigate and wash vehicles following a certain schedule, golf courses shall follow restrictions in their approved water management plans, restaurants may only serve water to customers upon request, and the following are prohibited unless necessary for public health and safety: washing hard-surfaced areas, washing buildings or structures, using water for dust control, flushing gutters, and failing to repair controllable leaks within a reasonable period of time
Stage 3	a) Level of US' water in Amistad and Falcon reservoirs reaches 15%, b) analyses of water supply and demand the annual water allotment will be exhausted, c) major line break, or pump or system failure may result in unprecedented loss of capability to provide service, d) peak demand on the distribution system and/or treatment plants has exceeded capacity levels for three days, e) contamination of the water supply and/or transmission system will result in unprecedented loss of capability to provide service, or f) the inability to maintain or replenish adequate volumes of water in storage to provide for public health and safety	All requirements of Stage 2 shall remain in effect and in addition the schedule irrigation and vehicle washing will be further restricted, the use of water from hydrants is only allowed when necessary to maintain public health, safety, and/or welfare, and the following are prohibited: refilling outdoor pools (with some exceptions), operation of outdoor fountains or ponds without recirculation systems unless required to maintain aquatic life, hydrant and sewer flushing except for emergencies, and use of water from or pumping water into resacas.
Stage 4	a) Major line breaks, or pump or system failures occur which cause unprecedented loss of capability to provide water service, or b) contamination of water supply and/or transmission system	All requirements of Stage 3 shall remain in effect and in addition the following are prohibited: all landscaping watering, use of water for construction purposes under special permit, adding water to swimming pools, adding water to any outdoor or indoor fountain or pond, except to maintain aquatic life
	City of Donna 9/1/2007	
BASIS OF DROUGHT	Water treatment plant operations, line breaks or system failure	
	TRIGGERS:	**ACTIONS:**
Stage 1	Total daily water demand equals or exceeds 82.2 percent of the system's safe operating capacity for 3 consecutive days.	a) customers requested to voluntarily limit landscape irrigation to certain days and times. b) all operations of the city of Alamo will adhere to restrictions in Stage 2. c) customers requested to practice water conservation and minimize or discontinue non-essential water use.

Stage 2	Total daily water demand equals or exceeds 86.6 percent of the system's safe operating capacity for 3 consecutive days.	City shall reduce flushing of water mains. a) schedule and/or means of the following are restricted: landscape irrigation, washing of motor vehicles, use of water for pools, golf course irrigation. b) The following are prohibited: use of water for fountains or ponds, except to support aquatic life; use of hydrants, except for fire fighting, construction with special permit, and necessary activities; serving water in restaurants unless requested; all non-essential uses.
Stage 3	Total daily water demand equals or exceeds 91.1 percent of the system's safe operating capacity for 3 consecutive days.	City shall discontinue flushing of water mains and inspect water distribution system, tanks, and treatment plants to locate leaks and make repairs. All requirements of Stage 2 in effect except: Further restrictions on schedule and means of landscape irrigation, watering of golf courses prohibited unless using alternate water source, use of hydrants for construction with special permit discontinued.
Stage 4	Total daily water demand equals or exceeds 95.5 percent of the system's safe operating capacity for 3 consecutive days.	City shall actively pursue the detection, repair, and correction of leaks by means of watering, analysis of water system and billing data, use of leak detection equipment, or use of control devices. All requirements of Stage 3 in effect except: further restrictions on schedule and means of landscape irrigation and washing motor vehicles; water for pools prohibited; water for fountains prohibited except for aquatic life; and no applications for new, additional, or expanded water service connections, lines, etc. shall be allowed.
Stage 5	a) Major water line breaks or pump or system failures occur, causing unprecedented loss of capability to provide water service, or b) Natural of man-made contamination of water supply source(s), or c) unavailability of water supply, unavailability of alternate sources of water, or drought of record conditions which cause unprecedented loss of capability to provide water service	All requirements of stage 4 remain in effect except: landscape irrigation and use of water to wash motor vehicles is absolutely prohibited.
	Eagle Pass Water Works System, 9/15/2017	
BASIS OF DROUGHT	Water demand, distribution system pressure, system break/failure or contamination	
	TRIGGERS:	**ACTIONS:**
Stage 1	a) Daily Water demand exceeds 85% of the rated plant capacity for three consecutive days, or b) distribution pressure remains below 45 psi for more than six consecutive days	Customers shall be requested to voluntarily conserve water and adhere to the prescribed restrictions on certain water uses.

Stage 2	a) Daily water demand exceeds 90% of the rated plant capacity for three consecutive days, or b) distribution pressure remains below 43 psi for more than six consecutive days	Customers are required to follow an irrigation schedule and the following are prohibited unless necessary for public health and safety: waste of water, car, window, or pavement washing without the use of a bucket, street washing, fire hydrant flushing, filling swimming pools, athletic field watering
Stage 3	a) Daily water demand exceeds 95% of the rated plant capacity for three consecutive days, b) distribution system pressure remains below 40 psi for more than six consecutive days, c) contamination of the supply sources, or d) system outage due to the failure or damage of major water system components	All requirements of Stage 2 shall remain in effect and in addition all outdoor water use is banned and limits will be set on water use by both commercial and resident users
	East Rio Hondo Water Supply Corporation 6/25/2019	
BASIS OF DROUGHT	Reservoir level, irrigation district notice to disallow irrigation, water demand, system break/failure or contamination, distribution system pressure	
	TRIGGERS:	**ACTIONS:**
Stage 1	Falcon and Amistad Reservoirs reach 40% of capacity as determined by the TCEQ	Customers shall be requested to voluntarily conserve water and adhere to the prescribed restrictions on certain water uses.
Stage 2	a) Cameron County Irrigation District No. 2 or other IDs provide notice to ERHWSC that they will disallow farm irrigation water use within 60-90 days, b) distribution system pressures fall below 35 psi requirements for two consecutive days, c) ERHWSC consumer demand exceeds 85% of ERHWSC plan capacity for 15 days out of any consecutive 30 day period, or d) Falcon and Amistad Reservoirs reach 15% of capacity as determined by TCEQ.	Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses, such as irrigation, washing vehicles, and ornamental fountains and ponds.
Stage 3	a) Major water line breaks, or pump or system failures occur, which cause loss of capability to provide water service, b) natural or man-made contamination of the water supply source(s), c) rapidly occurring low- pressure conditions (less than 20 psi) due to any reason.	All requirements of Stage 2 shall remain in effect, except the following are prohibited: all irrigation of landscape, using water to wash any vehicle, and adding water to any type of pool.
	Harlingen Waterworks System 6/15/2015	
BASIS OF DROUGHT	City reservoir levels, flowrate in the Rio Grande, Palmer Drought Severity Index, WTP demands, and system breaks or failures	
	TRIGGERS:	**ACTIONS:**

Stage 1	When three or more of the following criteria are met: 1) City reservoir levels = 43' MFR & 40' DTW and falling, 2) Rio Grande River flows = 13.0 cm/s, 3) PDSI = moderate drought (-2.0 to -2.9), 4) Water demand = 70% of WTP Capacity (26.2 MGD)	Customers are requested to voluntarily conserve water by limiting the irrigation od landscaped areas and minimize waster use for non-essential purposes. All operations of Harlingen Waterworks System shall adhere to water restrictions prescribed for Stage 2.
Stage 2	When three or more of the following criteria are met: 1) City reservoir levels = 42' MFR & 39' DTW and falling, 2) Rio Grande River flows = 12.0 cm/s, 3) PDSI = severe drought (-3.0 to -3.9), 4) Water demand = 80% of WTP Capacity (26.2 MGD)	Irrigation of landscape not by use of a hand-held hose, bucket, or drip irrigation shall be on a schedule based on location. Automobile washing not at a commercial facility will be limited to the irrigation schedule and will only be permitted with a hand-held bucket or hose with shut off nozzle. Use of water from fire hydrants will only be allowed for fire fighting or activities to maintain public health, safety, and welfare without a special permit. Golf course irrigation will only be allowed between 11pm and 6am.
Stage 3	When three or more of the following criteria are met: 1) City reservoir levels = 41' MFR & 38' DTW and falling, 2) Rio Grande River flows = 11.0 cm/s, 3) PDSI = extreme drought (-4.0 or less), 4) Water demand = 90% of WTP Capacity (26.2 MGD)	The schedule for landscape irrigation is limited further. Use of water to fill pools is only allowed on watering days. Operation of ornamental fountains will only be allowed if they are necessary to sustain aquatic life or equipped with recirculation system. Only greens and tees on golf courses may be watered. Restaurants may only serve water to their customers when it is requested. The following are prohibited: wash down of sidewalks, walkways, driveways, parking lots, tennis courts, or other hard surfaces; wash down of buildings or structures; use of water for dust control; flushing gutters or permitting water to accumulate in a gutter or street; failure to repair a controllable leak within a reasonable period of time
Stage 4	All four of the criteria of Stage 3 are met; a major pipeline breaks or pump system failure occurs which causes unprecedented loss of capacity to provide water service; or contamination of the water supply	The following are prohibited: all outdoor use of water (including irrigation) except for the direct need to protect the health, safety, and welfare of the public; washing automobiles; filling pools; operation of ornamental fountains unless necessary to sustain aquatic life. The General Manager is authorized to deny any new or expanded water connections, pipeline extensions, etc.

Laguna Madre Water District, 3/3/2019

BASIS OF DROUGHT	Storage in Amistad-Falcon Reservoir system, water use compared with system capacity, utility's amount of water in storage, treatment or delivery failures, high demand periods like holidays.	
	TRIGGERS:	**ACTIONS:**
Stage 1	Voluntary conservation is the first stage. It is always in effect unless a higher stage is required and enacted.	Voluntary Water Use Restrictions: 1. Recommend that all landscape areas be irrigated on a twice per week or less schedule and that such irrigation occur from midnight through 7 am or other schedules as determined from the General manager; 2. Recommend water customers to discontinue water use for non- essential purposes such as washing any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard surface areas

Stage 2	1. When the level of U.S. water stored in Amistad and Falcon Reservoirs reaches 51% or 1,660,000 AF (or below). When the level of water is above this amount, this phase is terminated. 2. Average daily water use is approaching 90% of system capacity, 3.Net storage in District's raw water reservoirs are at 75% and is continually decreasing on a daily basis such that a more serious problem may develop, 4.The availability of raw water is low. 5. The availability of water rights based on quarterly capacity: 1st - 20%, 2nd-40%, 3rd-70%. 6. The capacity to transport and/or treat raw water has been affected. 7. The distribution capacity to customers is approaching a maximum. 8. The reservoir III level at WTP #2 is at 7 feet and dropping.	1. Landscape irrigation will be permitted from 7 pm through 7 am and on designated water days. 2. Use of water to wash any motor vehicle, trucks, trailers, boats, airplanes, and other mobile equipment will be prohibited except of the landscape water days described above. 3. Water use for non-essential purposes is prohibited.
Stage 3	1. During peak demand days such as Texas Week, Easter, Memorial Day, and Labor Day. 2. When the level of US water stored in Amistad and Falcon Reservoirs reaches 25% or 834,600 AF (or below). When the level of water is above this amount, this phase may be terminated. 3. Net storage in District's raw water reservoirs is at 50% and is continually decreasing on a daily basis such that a more serious problem may develop. 4. The availability of raw water is low. 5. The availability of water rights based on quarterly capacity: 1st-22%, 2nd-46%, 3rd-81%	1. During Spring Break (Texas Week) landscape irrigation will be restricted from 9am the Friday before the actual date of Spring Break through Monday at 9am. Peak demands on other Holidays falling on a Tuesday, Wednesday, or Thursday will have restrictions beginning at 9am a day before the holiday and ending a day after at 9am. Holidays falling on Friday thru Monday will have restrictions beginning on Friday 9am and end on Monday at 9am. 2. Landscape irrigation will be permitted on designated water days. Landscape irrigation with a hand-held garden hose, soaker hose, hand-held bucket or water can, no more than 5 gallons capacity or drip irrigation. Landscape irrigation time will be 7pm to 7am. 3. Commercial nurseries and other similar establishments will have these water restrictions: hand-held buckets or water cans from 7pm - 7am, drip or sprinkler irrigation systems from 7pm-7am. 4. Water use for non-essential purposes is prohibited. 5. Permitting or maintaining defective plumbing in a home or business is prohibited. 6. Operation of any outdoor ornamental fountain or pond for aesthetic or scenic purposes is prohibited, except where necessary to support aquatic life or where such fountain or ponds are equipped with a water recirculation system. 7. Landscape irrigation variances are available but customers need to apply by mail. Facsimile, or email their name, address where the new landscape is to be installed, and the date of installation

Stage 4	1. When the level of US water stored in Amistad and Falcon Reservoirs reaches 15% or 504,600 AF (or below). 2. When a condition related to unexpected circumstances, such as a major problem on the water system due to natural disaster or unanticipated restriction on the raw water delivery system that immediately diminishes the LMWD's ability to deliver a normal water level. 3. Net storage in district's raw water reservoirs is at 25% and is continually decreasing on a daily basis such that a more serious problem may develop. 4. water demand is exceeding the system's capacity on a regular basis. 5. Rio Grande River level is so low that the River Pumps cannot pump the daily raw water demand. 6. All raw water is being pumped from District's Storage Reservoirs and all replenishment of raw Water Reservoirs has stopped. 7. The availability of water rights based on quarterly capacity: 1st-24%, 2nd-50%, 3rd-89%. 8. Contamination of the water supply and/or transmission and distribution system due to hurricanes, freezes and/or other natural disasters or man- made cause may result in extraordinary loss of capability to provide service. 9. The alternative water source for the LMWD is to purchase "water" from another system or from a retail entity.	1. Water use for non-essential purposes is prohibited, including landscape water irrigation, washing of mobile vehicles, watering of golf courses, use of fountains. 2. The use of fire hydrants for any purpose other than fire fighting is prohibited. The water District's General Manager may permit the use of metered fire hydrant water to clear or clean sanitary or storm sewers. 3. The use of water by golf courses for landscape irrigation is prohibited except: areas designated as tees and greens, between 7pm and 7am on designated days. 4. Industrial customers are required to implement an individual water conservation plans. The plans are subject to approval by the Water District's General manager and/or his designee. 5. If the customer already has a water connection, a new water service connection is prohibited. 6. Restaurants will be prohibited from serving water to customers except when requested by customers. 7. The use of water for the expansion of commercial nursery facilities is prohibited. 8. No applications for new, additional, expanded, or increased-in-size water service connections, meters, service lines, or other water service facilities shall be allowed, approved, or installed except as directed by the water District's General Manager. 9. Maximum amounts of monthly water usage and surcharges may be implemented during the emergency as directed by the LMWD's General Manager with approval of the water district's Board of Directors. 10. The water Districts General Manager is authorized to take any actions deemed necessary to meet conditions resulting from the emergency. 11. Violation of this policy is subject to any or all of the following: $200 fine, disconnection of service. 12. Imposing of surcharges fee would be initiated.
	City of Laredo, 8/7/2019	
BASIS OF DROUGHT	Water demand/WTP capacity, reservoir level	
	TRIGGERS:	**ACTIONS:**
Stage 1	a) WTP flow is less than 85% capacity for 5 consecutive days, b) Amistad reservoir level reaches 51% capacity	Customer are asked to voluntarily reduce their water usage and the following are prohibited: allowing irrigation water to run off into a gutter, ditch, drain, street and failure to repair a controllable leak

Stage 2	a) WTP flow is at 85% capacity for 3 consecutive days, b) Amistad reservoir level reaches 25% capacity	All requirements for stage 1 remain in effect and the following are only allowed during certain scheduled times: irrigation with sprinkler systems, washing of vehicles, adding water to pools, irrigating parks/plazas/squares. The following are prohibited: operating any ornamental fountain or similar structure without a recycling system and washing paved areas, except to alleviate immediate fire hazards.
Stage 3	a) WTP flow is at 90% capacity for 1 day, b) Amistad reservoir level reaches 20% capacity	All requirements for stage 2 remain in effect, except the schedules to use water for certain activities are even stricter and irrigating athletic fields is also held to a certain schedule. No bulk water sales will be made by the City when the water will be transported outside of the City except for domestic/residential/livestock use. Fire hydrant water sales shall cease.
Stage 4	a) WTP flow is at 95% capacity for 1 day, b) Amistad reservoir level is less than 20% capacity	All requirements for stage 3 remain in effect and no applications for new or expanded water service connections will be approved with permission from the Utilities Director, water delivered to non-essential industrial and commercial customers will be reduced, and a maximum monthly water use allocation may be established for residential customers. The following are prohibited: irrigation, washing vehicles, adding water to pools.
	City of Lyford, 7/24/2000	
BASIS OF DROUGHT	Reservoir Levels, WTP Capacity	
	TRIGGERS:	**ACTIONS:**
Stage 1	Falcon and Amistad conservation level between 51% and 26% or flow capacity at 90% for 5 consecutive days. Cumulative reduction goal is 5%.	Customers are requested to voluntarily limit the amount of water used to that amount absolutely necessary for health, business, and irrigation. The following uses are prohibited: Allowing irrigation water to run off into a gutter, ditch, or drain: and failure to repair a controllable leak.

Stage 2	Falcon and Amistad conservation level between 25% and 20% or flow capacity at 95% for 5 consecutive days. Cumulative reduction goal is 10%.	All elements of Stage 1 remain in effect except that: 1. Irrigation utilizing hose-end sprinkler systems for lawns, gardens, landscaped areas, trees, shrubs, and other plants is prohibited except during designated hours of 6am to 8am and 8pm to 11pm. Customers with an address east of Hwy 77 are only allowed to water between designated hours on M, W, F. Customers with an address west of Hwy 77 are only allowed to water between designated hours on T, Thr, Sat. Exception: commercial nurseries, sod farmers, and similar establishments are exempt but requested to curtail all nonessential water use. 2. The washing of mobile vehicles and equipment is prohibited except on designated hours between 6am and 8 am and 8pm to 11pm on same days designated above. Exception: washing can be done on premises of a commercial carwash or service station and for cleaning of garbage trucks and vehicles to transport food and perishables. 3. The refilling or adding to residential swimming and/or wading pools is prohibited except on designated hours between 8pm to 8am on designated days above. 4. The operation of any ornamental fountain or other structure making similar use of water is prohibited except for those with a recycling system. 5. The use of water for irrigation of parks, plazas, and squares is prohibited except between 8pm to 8am. the irrigation of golf course fairway areas is absolutely prohibited. 6. Essential and utility Use: Fire fighting-no restrictions; medical use by care facilities -no restrictions; Utility-reduction of average system pressure to 60 psi recommended, leak detection and system repairs recommended, stabilizing and equalizing system pressure recommended
Stage 3	Falcon and Amistad conservation level between 20% and 15% or flow capacity at 95% for 5 consecutive days. Cumulative reduction goal is 15%.	All elements of Stage 2 shall remain in effect except that: 1. irrigation utilizing hose-end sprinklers or automatic sprinkler systems for lawns, gardens, landscaped areas, trees, shrubs, and other plants is prohibited except during designated hours of 6am to 8am and 8pm to 11pm. Customers east of Whey 77 on M and F, and west of HWY 77 T and Sat. Irrigation by hand-held hoses or drip irrigation systems are exempt. 2. Irrigation using hose-end sprinklers or automatic sprinkler systems for athletic fields is prohibited except during designated house between 8pm to 8am. 3. The watering of golf fairway areas is prohibited unless done with treated wastewater, reused water, or well water. 4. A water use surcharge of $10 shall be levied against all customers that use over 8,000 gallons per month.

Stage 4	Falcon and Amistad conservation level between 15% and 10% or flow capacity at 100% for 3 consecutive days. Cumulative reduction goal is 25%.	All elements of Stage 3 remain in effect except that: 1. irrigation utilizing hose-end sprinklers or automatic sprinkler systems for lawns, gardens, landscaped areas, trees, shrubs, and other plants is prohibited except during designated hours of 6am to 8am and 8pm to 11pm. Customers east of Whey 77 on Wednesdays, and west of HWY 77 only on Saturdays. Irrigation by hand-held hoses or drip irrigation systems are exempt. 2. Washing of mobile vehicles not occurring on the premises of commercial carwashes and service stations, and not in the immediate interest of public health shall be prohibited except between the hours of 6am-8am and 8pm to 11pm and only on the owner's premises. Customers East of HWY 77 are allowed to on Wednesdays, customers west of HWY 77 are allowed to on Saturdays. 3. Commercial car washes and service stations in the immediate interest of public health, safety and welfare shall be limited to five (5%) percent of their monthly average usage based on the last twelve billing periods for each of such customer. After such usage, the Mayor or his designee shall enforce this subsection by terminating water service. 4. Commercial nurseries, sod farmers, and similar establishments shall water only on designated days between 10pm and 5am and shall use only hand-held hoses, drip irrigation systems or hand- held buckets. 5. The filling, refilling or adding of water, except to maintain the structural integrity of a pool, to swimming and/or wading pools is prohibited. 6. The operation of any ornamental fountain with or without recirculating features is prohibited. 7. Irrigation for athletic fields is prohibited except between the hour of 8pm to 8am with same designated days as other customers. 8. A water surcharge of $15 shall be levied against all customers that use over 8,000 gallons per month.

Stage 5	Falcon and Amistad conservation level at 10% or less or flow capacity at 100% for 3 consecutive days. Cumulative reduction goal is 35%.	All elements of Stage 4 shall remain in effect in Stage 5 except that: 1. No applications for new, additional, further expanded, or increased-in-size water service connections, meters, service lines, pipeline extensions, mains, or other water service facilities of any kind shall be allowed, approved or installed except as approved by the City Council. 2. All allocations of water use to non-essential Industrial and Commercial customers shall be reduced to amounts as established by the Mayor, his designee or the Water Advisory Council. 3. The maximum monthly water use allocation for residential customers my be established with revised rate schedules and penalties by the City Council upon recommendation by the Mayor, his designee or the Water Advisory Council. 4. Irrigation by hose-end sprinklers or automatic sprinkler systems is prohibited.. Irrigation by hand-held hoses or drip irrigation systems is allowed between 6am to 8am and 8pm to 11pm for customers east of HWY 77 on Wednesdays and customers west of HWY 77 on Saturdays. 5. The washing of mobile vehicles not occurring on the premises of commercial car washes and service stations and not in the immediate interest of the public health, safety, and welfare is prohibited. 6. Irrigation for athletic fields is prohibited. 6. A water use surcharge of $20 shall be levied against all customers that use over 8,000 gallons per month.
	City of McAllen McAllen Public Utility, 5/29/2018	
BASIS OF DROUGHT		
	TRIGGERS:	**ACTIONS:**
Stage 1	In effect at all times	Customers asked to voluntarily limit water use to an amount absolutely necessary for health, business, and irrigation.
Stage 2	1. Demand reaches or exceeds 85% of capacity for 3 consecutive days 2. Amistad-Falcon reservoirs reach 40% capacity 3. Including but not limited to: system outage, equipment failure, or supply contamination	The means and/or schedule of the following is restricted: Irrigation, but drip method or hand-held buckets permitted at any time; washing motor vehicles, except commercial carwashes or service stations; washing or sprinkling foundations; adding water to swimming pools; operation of fountains or ponds, except with a recycling system; irrigation for golf courses, except those using wastewater effluent; hydrants restricted to fire fighting and necessary activities. The following are absolutely prohibited: allowing irrigation water to run off into gutter, ditch, or rain; failure to repair controllable leaks; washing paved surfaces.
Stage 3	1. Demand reaches or exceeds 90% of capacity for 3 consecutive days 2. Amistad-Falcon reservoirs reach 25% capacity 3. Including but not limited to: system outage, equipment failure, or supply contamination	All stage 2 restrictions except: further restrictions on means and schedule for irrigation, except by drip or hand-held buckets; watering of golf fairways is prohibited unless with wastewater effluent, reused water, or well water; customers to pay a water surcharge.

Stage 4	1. Demand reaches or exceeds 95% of capacity for 3 consecutive days 2. Amistad-Falcon reservoirs reach 20% capacity 3. Including but not limited to: system outage, equipment failure, or supply contamination	All stage 2 and 3 restrictions except: further restrictions on means and schedule for irrigation; washing of motor vehicles not occurring on commercial carwashes and not in the immediate interest of public health and safety is prohibited; carwashes in the interest of public health and safety limited to 50% of monthly average; commercial nurseries, sod farmers, etc. limited to means and schedule restrictions; adding water to pools, except to maintain structural integrity, is prohibited; operation of fountains prohibited; customers to pay a water surcharge.
Stage 5	1. Demand reaches or exceeds 100% of capacity 2. Amistad-Falcon reservoirs reach 15% capacity 3. Including but not limited to: system outage, equipment failure, or supply contamination	All stage 2, 3, and 4 restrictions except: no applications for new, additional, or expanded water connections, lines, etc. are allowed except as approved by PUB; water allocations to non-essential customers reduced as established by the PUB; max monthly water allocation for residential customers established with revised rate schedules and penalties by the PUB; irrigation permitted only by handheld hoses, handheld faucet filled buckets; drip irrigation on set schedule; customers to pay a water surcharge.
	Military Highway Water Supply Corporation 5/5/2014	
BASIS OF DROUGHT	Seasonal, water demands, low rainfall, system failure or water line breaks	
	TRIGGERS:	**ACTIONS:**
Stage 1	Automatically initiated annually from May 1 through October 31 of each year.	Military Highway WSC will reduce or discontinue flushing of water mains and activate use of alternative supply source(s). Customers are asked to voluntarily limit irrigation of landscaped areas to certain days and times. All operations of Military Highway WSC shall voluntarily adhere to Stage 2 water restrictions. Customers are asked to voluntarily practice water conservation and to minimize or discontinue water use for non-essential purposes.
Stage 2	a) Consumption of 80% of daily max supply for 3 consecutive days. b) Supply is reduced to only 20% greater than the average consumption for the previous month. c) Extended period (at least 8 weeks) of low rainfall and daily use is 20% above the use for the same period during the previous year.	Military Highway WSC will discontinue flushing of water mains and irrigation of landscaped areas. The means and/or schedule for the following is restricted: irrigation of landscaped areas; washing of motor vehicles, boats, cars, etc.; use of water to fill swimming pool; irrigation of golf courses; operation of fountains or ponds except when necessary to support aquatic life; use of water for hydrants limited to fire fighting or activities to maintain public health, safety and welfare, and construction with special permit; and restaurants are prohibited from serving water except when requested. The following are non-essential and prohibited: wash down sidewalks, driveways, parking lots; use of water to wash down buildings or structures; use of water for dust control; flushing gutters; and failure to repair a controllable leak(s).
Stage 3	a) Consumption of 90% of supply for 3 consecutive days. b) Water level in any water storage tanks cannot be replenished for 3 consecutive days.	Military Highway WSC will discontinue flushing of water mains and irrigation of landscaped areas. All requirements for Stage 2 restrictions remain in effect except: the means and schedule for irrigation of landscaped areas is further restricted, watering of golf courses is prohibited, and the use of water for construction purposes from fire hydrants under special permit is to be discontinued

Stage 4	a) Failure of major system component or an event which reduces the minimum residual pressure in the system below 20 psi for 24 hours or longer. b) Consumption of 95% or more of max supply for 3 consecutive days. c) Consumption of 100% of max supply at water storage levels in system drop during one 24-hour period. d) Natural or man-made contamination of water supply source(s) e) Declaration of a state of disaster due to drought conditions in a county or counties served by the Corporation. f) Reduction of wholesale water supply due to drought conditions. g) Other unforeseen events which could cause imminent health or safety risks to public.	Military Highway WSC will discontinue flushing of water mains and irrigation of landscaped areas. All requirements for Stage 2 and 3 remain in effect except: the means and schedule for irrigation of landscaped areas is further restricted; use of water to wash motor vehicles, boats, airplanes, etc. is prohibited and schedules for commercial car washes are restricted; adding water to swimming pools is prohibited; operation of fountains or ponds is prohibited except where necessary to support aquatic life; and no applications for new, additional, or expanded water service connections, meters, mains, etc. of any kind shall be allowed or approved.
Stage 5	a)Major water line breaks, or pump or system failures occur, which case unprecedented loss of capability to provide water service. b) Natural or man-made contamination of the water supply source(s).	Military Highway WSC will use an alternative supply source(s). All requirements of State 2, 3, and 4 restrictions remain in effect except: irrigation of landscaped areas is prohibited, of water to wash any motor vehicle, boat, plane, etc. is prohibited. In the event water shortage conditions threaten public health, safety , and welfare, the GM is authorized to ration water according to a set water allocation plan.
	City of Mission, 9/25/2019	
BASIS OF DROUGHT	Water demand and reservoir level	
	TRIGGERS:	**ACTIONS:**
Stage 1	Always in effect unless a more stringent plan is required	Requests customers to voluntarily conserve water using beset management practices to meet 10 percent reduction in daily water demand. Requested voluntary restrictions include irrigation planning and City operations to operate with water use restrictions from Stage 2.
Stage 2	a) Total daily water demand meets or exceeds 21.0 MG for five consecutive days or 22.0 MG on a single day, and b) reservoir levels do not refill above 65% in a 24-hour period	Customers are required to limit irrigation of landscaped areas with hose-end springlers or automatic systems to 3 days; the washing of any vehicle is designated for morning or evenings on irrigation days or may be performed at any time at a commercial car wash. Filling or refilling pools of any type is prohibited outside of designated watering days; operation of ornamental fountains or ponds is prohibited when not necessary to support aquatic life. Restaurants are prohibited from serving water to patrons except upon request. Non-essential uses of water are prohibited
Stage 3	a) Total daily water demand meets or exceeds 22.0 MG for five consecutive days or 23.0 MG on a signle day, and b) reservoir levels do not refill above 55% in a 24-hour period	Irrigation schedules further restricted to two days per week.

Stage 4	a) Total daily water demand equals or exceeds 23.0 MG for five consecutive days or 24.0 MG on a single day, and b) reservoir levels do not refills above 45% in a 24-hour period	Irrigation schedules further restricted to one day per week and to non-hose-end or automatic sprinkler systems. Vehicle washing on private properties is prohibited. Refilling or filling of pools is prohibited. Finally, the approval for any new, additional, or larger water service connections shall be postponed.
Stage 5	Major water line breaks or pump system failures, contamination of water supply sources, or as determined by the City Manager or their designee	Irrigation of landscaped areas prohibited. All vehicle washing prohibited.
	North Alamo Water Supply Corporation, 9/17/2019	
BASIS OF DROUGHT	Reservoir level, system failure	
	TRIGGERS:	**ACTIONS:**
Stage 1	Level in Amistad and Falcon Reservoirs reaches 49% of capacity	All customers are asked to check their plumbing fixtures and facilities to ensure that they are working properly and no water is being wasted. Industrial, wholesale, and certain other customers are asked required to develop and submit a Water Rationing Plan within 60 days.
Stage 2	Level in Amistad and Falcon Reservoirs reaches 40% of capacity	All WSC owned facilities will be placed on mandatory conservation practices. All customers will be asked to comply with a voluntary watering schedule based on their location.
Stage 3	Level in Amistad and Falcon Reservoirs reaches 23% of capacity	The voluntary lawn watering provisions from Stage 2 will become mandatory. Allowing water to run off yards, plants, or vegetation into gutters or streets will be prohibited. Non commercial washing of vehicles must be done with a hand0held hose or bucket between 6am and 9am or 7pm and 9pm. Commercial washing of any vehicle will only be allowed on commercial washing facilities. Industrial and wholesale customers are required to implement their Water Rationing Plans. The following are prohibited: exterior washing of structures; use of water to wash down sidewalks, driveways, or hard surfaces; continued use of defective plumbing; use of fire hydrants for purposes other than fire fighting; use of water for dust control.
Stage 4	Level in Amistad and Falcon Reservoirs reaches 13% of capacity or in response to 1. supply source contamination, 2. water production or distribution system limitation, 3. system outage due to failure or damage of major water system components	All nonessential water use not necessary to maintain public health, safety and welfare is prohibited. A pro rata curtailment of deliveries of wholesale water will occur. No application for new or expanded water connections, pipeline extensions, etc. will be allowed except as approved by the Review Committee. The maximum amount of water usage for customers and surcharges may be revised.
	North Cameron Regional Water Supply Corporation 9/11/2014	
BASIS OF DROUGHT	Ground storage tank levels	
	TRIGGERS:	**ACTIONS:**
Stage 1	North Cameron Regional Water Plant (NCRWP) ground storage tank falls below 50% capacity.	Request wholesale water customers initiate voluntary measure to reduce water use.

Stage 2	NCRWP ground storage tank capacity falls to 25% capacity.	a) Discuss water supply/demand conditions with customers and request they initiate measures to reduce water use b) Implement pro rata curtailment of water diversions and/or deliveries to add 50,000 gallons per day to storage tank
Stage 3	NCRWP ground storage tank capacity fall to 10% capacity.	a) Increase water blend ratios if possible, not exceeding 1000 ppm TDS b) Discuss water supply/demand conditions with customers and request they initiate measures to reduce water use and utilize alternative water supplies c) Implement pro rata curtailment of water diversions and/or deliveries to add 75,000 gallons per day to storage tank
Stage 4	NCRWP has no production capacity.	a) Notify customers of the need to switch to alternate water supplies b) If appropriate, notify member, county, and/or state emergency response officials c) Undertake necessary actions, including repairs and/or clean-up as needed. d) Prepare post-event assessment report on incident and critique of emergency response procedures
	Olmito WSC, 3/7/2019	
BASIS OF DROUGHT	Reservoir level	
	TRIGGERS:	**ACTIONS:**
Stage 1	Level of US waters in Amistad and Falcon Reservoirs reaches 51% of capacity	Request customers to voluntarily reduce water usage
Stage 2	Level of Amistad and Falcon Reservoirs reaches 25% of capacity	Customers are required to limit irrigation of landscaped areas with hose-end sprinklers or automatic systems to twice per week at certain times, and the washing of any vehicle is prohibited outside of certain times on watering days, and must be performed at commercial car washing locations or be performed by hand-held bucket or hand-held hose. Additionally, filling or refilling pools is prohibited outside of certain times on watering days; operation of ornamental fountains or ponds is prohibited when not necessary to support aquatic life; irrigation of golf courses limited; and non-essential uses of water are prohibited.
Stage 3	Level in Amistad and Falcon Reservoirs reaches 15% of capacity	Irrigation schedules further restricted; watering of golf course tees prohibited unless watered by source other than Olmito WSC.
Stage 4	Level in Amistad and Falcon Reservoirs reaches 15% of capacity	Irrigation schedules further restricted; washing of motor vehicles or other vehicles limited to commercial locations with more restricted hours than previous stages; new connections will not be made, and the approval for new additions is postponed.

Stage 5	Major water line breaks or pump system failures occur, which cause unprecedented loss of capability to provide water service, or as determined by the following: a) Olmito WSC Board of Directors b) County Emergency Management Coordinator(s) c) County Judge & Commissioners d) Texas Commission on Environmental Quality	Irrigation of landscaped areas prohibited. All vehicle washing prohibited.
	City of Pharr, 4/22/2019	
BASIS OF DROUGHT	Demand, treated water reservoir levels, raw water supplies, line break or system failure	
	TRIGGERS:	**ACTIONS:**
Stage 1	Total daily water demand equals or exceeds 15.0 MGD for 5 consecutive days	The public is asked to voluntarily follow certain schedules for landscape irrigation and vehicle washing and to stop using ornamental water features.
Stage 2	Total daily water demand equals or exceeds 18.0 MGD for 3 consecutive days	The public is required to follow a certain schedule for landscape irrigation and vehicle washing. The following is prohibited: use of ornamental water features without recirculation, washing down paved areas, failure to repair a leak in a timely manner
Stage 3	Treated water reservoir levels do not refill above 75% overnight	The requirements for stage 2 are still in effect, except that the schedule to irrigate landscape and wash vehicles is stricter.
Stage 4	a) Water supply available from Hidalgo Irrigation District No. 2 is equal to or less than 5,000 acre-feet b) Notification is received from Hidalgo Irrigation District No. 2 pursuant to requirements in water purchase contract with distract requesting initiation of Stage 4 Drought Contingency Plan	Further restrictions on irrigation scheduling; irrigation on golf courses more strictly regulated. Vehicle washing limited to certain times and only at commercial locations; filling of pools or other water bodies prohibited.
Stage 5	a) Major water line breaks or pump or system failures occur, causing unprecedented loss of capability to provide water service b) Natural of man-made contamination of water supply source(s)	Irrigation of landscaped areas prohibited. All vehicle washing prohibited.
	Raymondville, 8/28/2014	
BASIS OF DROUGHT	Demand levels, service disruption or failure	
	TRIGGERS:	**ACTIONS:**

Stage 1	1.Water demand reaches 90% of firm production capacity; or 2. A disruption due to equipment or distribution system failure that would limit the capacity of the water system below 85% of capacity during high demand periods.	Goal: Achieve a voluntary 35% reduction in daily water use per capita. Voluntary water use restrictions include: a) Water customers are requested to voluntarily limit the irrigation of landscaped areas to Sundays and Thursdays for customers with a street address ending in an even number (0, 2, 4, 6 or 8), and Saturdays and Wednesdays for water customers with a street address ending in an odd number (1, 3, 5, 7 or 9), and to irrigate landscapes only between the hours of midnight and 10:00 a.m. and 8:00 pm to midnight on designated watering days. (b) All operations of the City shall adhere to water use restrictions prescribed for Stage 2 of the Plan. (c) Water customers are requested to practice water conservation and to minimize or discontinue water use for non-essential purposes.
Stage 2	1. Water demand reaches 95% of firm production capacity; or 2. A disruption due to equipment or distribution system failure that would limit the capacity of the water system below 75% of capacity during high demand periods.	Goal: achieve 40% reduction in daily water use per capita. Restrictions include: (a) Irrigation of landscaped areas with hose-end sprinklers or automatic irrigation systems shall be limited to Sundays and Thursdays for customers with a street address ending in an even number, and Saturdays and Wednesdays for water customers with a street address ending in an odd number, and irrigation of landscaped areas is further limited to the hours of 12:00 midnight until 10:00 a.m. and between 8:00 p.m. and 12:00 midnight on designated watering days. However, irrigation of landscaped areas is permitted at anytime if it is by means of a hand-held hose, a faucet filled bucket or watering can of five (5) gallons or less, or drip irrigation system. (b) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is prohibited except on designated watering days between the hours of 12:00 midnight and 10:00 a.m. and between 8:00 p.m. and 12:00 midnight. Such washing, when allowed, shall be done with a hand-held bucket or a hand- held hose equipped with a positive shutoff nozzle for quick rises. Vehicle washing may be done at any time on the immediate premises of a commercial car wash or commercial service station. Further, such washing may be exempted from these regulations if the health, safety, and welfare of the public are contingent upon frequent vehicle cleansing, such as garbage trucks and vehicles used to transport food and perishables. (c) Use of water to fill, refill, or add to any indoor or outdoor swimming pools, wading pools, or Jacuzzi-type pools is prohibited except on designated watering days between the hours of 12:00 midnight and 10:00 a.m. and between 8 p.m. and 12:00 midnight.

Stage 3	1. Water demand reaches 100% of firm production capacity; or 2. A disruption due to equipment or distribution system failure that would limit the capacity of the water system below 70% of capacity during high demand periods.	Goal: achieve 50% reduction in daily water use per capita. Restrictions include all requirements from Stage 2 except: (a) Irrigation of landscaped areas shall be limited to designate watering days between the hours of 12:00 midnight and 10:00 a.m. and between 8 p.m. and 12:00 midnight and shall be by means of hand-held hoses, hand-held buckets, drip irrigation, or permanently installed automatic sprinkler system only. The use of hose-end sprinklers is prohibited at all times. (b) The watering of golf course tees is prohibited unless the golf course utilizes a water source other than that provided by the City. (c) The use of water for construction purposes from designated fire hydrants under special permit is to be discontinued.
Stage 4	In the event of an extended period of the severe condition or any natural catastrophic situations that interrupt or have the potential to interrupt the City's potable water supply, the City is authorized to take all reasonable measures as deemed necessary to provide for the public's safety.	Goal: achieve a 60% reduction in daily water use per capita. Restrictions include all requirements of Stage 2 and 3 except: (a) Irrigation of landscaped areas shall be limited to designated watering days between the hours of 6:00 a.m. and 10:00 a.m. and between 8:00 p.m. and 12:00 midnight and shall be by means of hand-held hoses, hand-held buckets, or drip irrigation only. The use of hose-end sprinklers or permanently installed automatic sprinkler systems are prohibited at all times. (b) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle not occurring on the premises of a commercial car wash and commercial service stations and not in the immediate interest of public health, safety, and welfare is prohibited. Further, such vehicle washing at commercial car washes and commercial service stations shall occur only between the hours of 6:00 a.m. and 10:00 a.m. and between 6:00 p.m. and 10 p.m. (c) The filling, refilling, or adding of water to swimming pools, wading pools, and Jacuzzi-type pools is prohibited. (d) Operation of any ornamental fountain or pond for aesthetic or scenic purposes is prohibited except where necessary to support aquatic life or where such fountains or ponds are equipped with a recirculation system. (e) No application for new, additional, expanded, or increased-in-size water service connections, meters, service lines, pipeline extensions, mains, or water service facilities of any kind shall be approved, and time limits for approval of such applications are hereby suspended for such time as this drought response stage or a higher-numbered stage shall be in effect.

Stage 5	Customers shall be required to comply with the requirements and restrictions for Stage 5 of this Plan when Board President, or his/her designee, determines that a water supply emergency exists based on: 1. Major water line breaks, or pump or system failures occur, which cause unprecedented loss of capability to provide water service; or, 2. Natural or man-made contamination of the water supply source(s).	Goal: achieve a 60% reduction in daily use per capita. Restrictions include all requirements from Stages 2, 3, and 4 except: (a) Irrigation of landscaped areas is absolutely prohibited. (b) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is absolutely prohibited.
	Rio Grande City, 5/1/2014	
BASIS OF DROUGHT		
	TRIGGERS:	**ACTIONS:**
Stage 1	Amistad-Falcon Reservoirs reach 50% conservation levels or City's system demand is at 7.48 MGD.	Customers requested to voluntarily limited water use to the amount absolutely necessary for health, business, and irrigation.
Stage 2	Amistad-Falcon Reservoirs reach 40% conservation levels or City's system demand is at 7.7 MGD.	schedule restrictions apply to the following: irrigation of outdoors vegetation; washing motor vehicles; washing or sprinkling foundations; water for swimming pools; water for fountains or structures prohibited except with recycling system; water for hydrants limited to firefighting and necessary activities. The following are prohibited: allowing irrigation water to run off; failure to repair controllable leaks; washing paved surfaces. No bulk water sales if transported by truck.
Stage 3	Amistad-Falcon Reservoirs reach 25% conservation levels or City's system demand is at 7.92 MGD.	Restrictions from Stage 2 except: it shall be unlawful to irrigate outdoor vegetation other than on schedule, except drip or hand-held bucket permitted; water surcharge for residential, irrigation-metered, and commercial and industrial metered customers.
Stage 4	Amistad-Falcon Reservoirs reach 20% conservation levels or City's system demand is at 8.14 MGD.	Restrictions from Stage 3 except: commercial carwashes and service station limited to 50% of monthly average; schedule restrictions for irrigation, nurseries, washing of vehicles, sod farms and only with hand- held hoses, buckets, or drip irrigation; filling pools prohibited except to maintain structural integrity; operation of fountains prohibited; increased surcharge for customers.
Stage 5	Amistad-Falcon Reservoirs reach 15% conservation levels, City's system demand is at 8.36 MGD, or in response to emergency conditions.	Restrictions from Stage 4 except: no applications for new, additional, or expanded water connections, meters, lines, etc. are allowed except as approved by the PUB; All non-essential customer amounts reduced as established by the PUB; Max monthly allocation for residential customers established with revised rate schedules and penalties on recommendation by the PUB; Washing of vehicles not necessary for public safety and health prohibited; increased surcharge for customers.
	City of Roma, 6/1/2014	

BASIS OF DROUGHT	Water demand/WTP capacity, reservoir level, system break/failure	
	TRIGGERS:	**ACTIONS:**
Stage 1	a) Average daily water use reaches 90% of WTP capacity for 5 consecutive days, b) Falcon and Amistad conservation level is between 26% and 51%	Users are requested to voluntarily limit water usage and the following are prohibited: allowing irrigation water to run off into a gutter/ditch/drain and failure to repair a controllable leak
Stage 2	a) Average daily water use reaches 95% WTP capacity for 5 consecutive days, b) Falcon and Amistad conservation level is between 20% and 25%	All requirements for stage 1 remain in effect and users are required to follow a certain schedule irrigation of landscapes/parks/plazas/squares/athletic fields, and vehicle washing. The following is prohibited: use of ornamental water features without recirculation, washing down paved areas unless it's a fire hazard, irrigating golf course fairway. No bulk water sales will be allowed when water will be transported by a truck or vehicle outside of City limits.
Stage 3	a) Average daily water use reaches 100% WTP capacity for 5 consecutive days, b) Falcon and Amistad conservation level is between 15% and 20%	All requirements of stage 2 remain in effect except the schedule for irrigation is stricter.
Stage 4	a) Average daily water use reaches 100% WTP capacity for 5 consecutive days, b) Falcon and Amistad conservation level is between 10% and 15%	All requirements of stage 3 remain in effect except the schedules for irrigation and vehicle washing are even stricter. The following are prohibited: adding water to a pool unless required to maintain structural integrity and operation of any ornamental fountain or similar structure.
Stage 5	a) Average daily water use reaches 100% WTP capacity for 5 consecutive days, b) Falcon and Amistad conservation level is less than 10%, c) the imminent or immediate failure of a major component of the system causes an immediate health or safety hazard, water levels in the distribution system storage tanks drop to levels such that service pumps cannot pump daily water d[illegible]	All requirements of stage 4 remain in effect and any application for new or expanded water service connection will not be allowed unless approved by City Council, allocations of water to non-essential industrial and commercial customers will be reduced, and maximum monthly water use allocations for residential customers may be established. The following are prohibited: irrigation by sprinkler systems, irrigation of athletic fields, and vehicle washing not at commercial locations except as required for public health, safety, or welfare.
	City of San Benito, 8/1/2014	
BASIS OF DROUGHT	Reservoir level and water treatment capacity.	
	TRIGGERS:	**ACTIONS:**
Stage 1	Falcon and Amistad US storage level is 51% of capacity, or upon request from Cameron County Irrigation District #2 as applied to customers within the city with lawn watering contracts.	Users are requested to voluntarily limit water usage and the following are prohibited: allowing irrigation water to run off into a gutter/ditch/drain and failure to repair a controllable leak

Stage 2	Falcon and Amistad US storage level is 25% of capacity, or upon request from Cameron County Irrigation District #2 as applied to customers within the city with lawn watering contracts. Or the City Manager may implement Stage 2 at his discretion if the water treatment plant reaches 95% of capacity.	City Manager notifies, by public announcement and publication, customers of the water system of mandatory conservation and limitation of use. All municipal operations are placed on mandatory conservation. Lawn watering is not allowed between 10:00 am and 6:00 pm. Grass, trees, shrubbery, annual, biennial or perennial vines, gardens, and other similar vegetation may be watered with a hand-held hose equipped with a positive shut-off nozzle or a hand-held bucket or water can no larger than 5 gallons in capacity. Drip irrigation and sprinkler systems are allowed. Car, trailer, and boat washing are limited to 5-gallon buckets or hand-held hose between 6:00 pm and 9:00 pm. Wasting of water as a result of defective plumbing is prohibited. Hydrants may only be used for fire-fighting. Ornamental fountains or artificial waterfalls where water is not reused or recirculated are prohibited. Washing sidewalks, driveways, parking lots, tennis courts, and buildings is prohibited. Water may only be used for dust control for health hazards. Swimming pools and jacuzzis are not permitted to use water except where required to maintain structural integrity. The city may not use water to place new agricultural land into service. Rate surcharges are put into place.
Stage 3	Falcon and Amistad US storage level is 10% of capacity, or upon request from Cameron County Irrigation District #2 as applied to customers within the city with lawn watering contracts. Or the City Manager may implement Stage 2 at his discretion if the water treatment plant reaches 95% of capacity.	All requirements of stage 2 remain in effect, plus water allowed to run off of yards, plants or vegetation into gutters is prohibited. Rates are increased for high-volume users.
Stage 4	Falcon and Amistad US storage level is 15% of capacity, or upon request from Cameron County Irrigation District #2 as applied to customers within the city with lawn watering contracts. Or the City Manager may implement Stage 2 at his discretion if the water treatment plant reaches 95% of capacity.	All nonessential water use not necessary to maintain public health, safety and welfare is prohibited. Plant watering, car washing, and fountains as described above are prohibited. No new or expanded water service connections, services or facilities may be approved. Residential use may be capped and surcharges associated by the City Commission. The City Manager may take any other actions necessary.
	San Juan 8/19/2011	
BASIS OF DROUGHT	Irrigation allocations by Watermaster halted, water demands,	
	TRIGGERS:	**ACTIONS:**
Stage 1	Always in effect unless a more stringent plan is required	Users are requested to voluntarily limit the amount of water used to that amount absolutely necessary for health, business, and irrigation.

Stage 2	Agricultural use of irrigation water is discontinued and/or when the demand on the City's system is at 3.7 MGD for a three consecutive day period	Public is required to limit landscape irrigation with hose-end sprinklers automatic irrigation systems to certain days based on location and only between 8am and 8pm (excludes hand-held hose or drip irrigation). Car washing is limited to the same days as irrigation. Public must discontinue use of ornamental water features unless provisions are made for recirculation of water.
Stage 3	Service or deliver water storage in Falcon and Amistad Reservoirs is reduced by 50% by the Watermaster and/or demand on the City's system is at 4.1 MGD for a three consecutive day period	Public is required to limit landscape irrigation with hand-held hose or drip irrigation systems to certain days of the week based on location and only between 8am and 8pm. Car washing is only allowed at residences on irrigations days and with hoses with flow control devices. Public must discontinue use of ornamental water features unless provisions are made for recirculation of water.
Stage 4	Municipal allocations are reduced to 75% of full amounts by the Watermaster and/or demand on the City's system is at 4.5 MGD for three consecutive days	All elements of Stage 3 remain in effect except that: 1. irrigation of vegetation is only allowed between 12am to 10 am and 8pm to 12 am, 2. automobiles may only be washed at non-commercial facilities on irrigation days and on the owner of the vehicle's property, 3. commercial nurseries, sod farmers, and similar shall only water between 10pm and 5am and shall use only hand-held hoses, drip irrigation, or buckets, 4. residential/domestic meter customers shall pay an additional 75% surcharge for any water used over 10,000 gallons per month.
Stage 5	Municipal allocations are reduced to 80% of full amounts by the Watermaster and/or demand on the City's system is at 4.8 MGD for three consecutive days	All elements of Stage 4 remain in effect except that: 1. no applications for new or increased water connections, pipeline extensions, etc. shall be allowed, except as approved by the City Commission on recommendation by the Public Utilities Director, 2. maximum monthly water use allocation for residential customers may be established with revised rate schedules and penalties, 3. irrigation is only permitted by hand-held hose, bucket, or drip irrigation between 6am to 8am once every 10 days.
	San Ygnacio Municipal Utility District, 4/1/2014	
BASIS OF DROUGHT	Reservoir level, water demand, system break/failure	
	TRIGGERS:	**ACTIONS:**
Stage 1	a) Falcon lake level drops below 270 ft., b) daily demand exceeds 60% of supply capacity for 3 consecutive days	Wholesale water users will be requested to voluntarily reduce water use
Stage 2	a) Falcon lake level drops below 265 ft., b) daily demand exceeds 65% of supply capacity for 3 consecutive days	Wholesale water customers will be requested to initiate mandatory measures to reduce non-essential water use and preparations for implementing pro rata curtailment of water deliveries will be made.
Stage 3	a) Falcon lake level drops below 360 ft., b) daily demand exceeds 70% of supply capacity for 3 consecutive days	Wholesale water customers will be requested to initiate additional mandatory measures to reduce non-essential water use and pro rata curtailment of water deliveries will be implemented.
Stage 4	Major water line breaks or pump system failure occurs, which cause unprecedented loss of capability to provide water service	Inform wholesale water customers of the problem and take necessary actions to resolve it.
	Union Water Supply Corporation 7/26/2011	

BASIS OF DROUGHT	Falcon reservoir level and/or demand	
	TRIGGERS:	**ACTIONS:**
Stage 1	Always in effect between April 1st and September 30th of every year.	Customers are asked to voluntarily limit water use by the following measures: 1. only irrigate between 6pm and 10am, 2. irrigate on certain days, based on address, 3. prevent significant run off from lawn irrigation, 4. wash vehicles only on same days as lawn watering, 5. minimize use of potable water for washing sidewalks, drives, and dust control
Stage 2	Implemented when: 1. drought conditions are officially declared for the County, 2. water levels in Falcon Reservoir drop below 80% of conservation levels, 3. daily water consumption exceeds 90% of daily supply capacity for ten consecutive days	Customers will be required to implement the following measures: 1. only irrigate between 6pm and 10am, 2. irrigate on certain days, based on address, 3. prevent significant run off from lawn irrigation, 4. wash vehicles only on same days as lawn watering, 5. do not use of potable water for washing sidewalks, drives, and dust control
Stage 3	Implemented when: 1. extreme drought conditions are officially declared for the County, 2. water levels in Falcon Reservoir drop below 70% of conservation levels, 3. raw water supply drop to 10% below projected needs, 4. daily water consumption exceeds 100% of daily supply capacity for ten consecutive days	Customers will be required to implement the following measures: 1. irrigation of landscaped areas only allowed on certain days based on location and between 8pm and 10am, except for irrigation with a hand- held hose, bucket, or drip system, 2. vehicle washing not at a commercial facility is only allowed on watering days between 8pm and 10am and with a bucket or hand-held hose with shut off nozzle, 3. filling pools is only allowed on water days between 8pm and 10am, 4. operation of ornamental fountains is prohibited unless they are required to support aquatic life or are equipped with recirculation system, 5. use of water from hydrants or flush valves are only permitted to maintain public health, safety, or welfare, 6. water golf course and parks is only allowed on water days between 8pm and 10am and with a hand-held hose, 7. the following are prohibited: wash down of sidewalks, walkways, driveways, etc.; wash down of building and structures; use of water for dust control; flushing gutters or permitting water to accumulate in gutters or streets; failure to repair a controllable leak within a reasonable amount of time; any waste of water.

Stage 4	Implemented when: 1. emergency drought conditions are officially declared for the County, 2. water levels in Falcon Reservoir drop below 60% of conservation levels, 3. raw water supply drop to 30% below projected needs, 4. daily water consumption exceeds 105% of daily supply capacity for ten consecutive days	Customers will be required to implement the following measures: 1. irrigation of lawns and landscaped areas is prohibited, 2. vehicle washing is only permitted at a commercial facility, 3. filling pools is prohibited, 4. operation of ornamental fountains is prohibited unless required to sustain aquatic life or if it is equipped with a recirculation system, 5. use of water from hydrants or flush valves is only permitted to maintain public health, safety, and welfare, 6. use of water to irrigate golf course and parks is prohibited, 6. the following are prohibited: wash down of sidewalks, walkways, driveways, etc.; wash down of building and structures; use of water for dust control; flushing gutters or permitting water to accumulate in gutters or streets; failure to repair a controllable leak within a reasonable amount of time; any waste of
	Valley MUD No. 2, 6/18/2013	
BASIS OF DROUGHT	Storage in Amistad-Falcon Reservoir system, water use compared with system capacity, irrigation allocations, treatment or delivery failures	
	TRIGGERS:	**ACTIONS:**
Stage 1	1) When the level of United States water stored in Rio-Grande River Basin Reservoirs reaches 60 % of capacity, or Valley MUD #2 allocation of irrigation water has reached 5400 acre-ft. 2) When equipment failure or treatment problems causes the capacity of Valley MUD #2's treatment and pumping facilities to fall to within 90% of the daily consumption of potable water.	1) Water customers are requested to voluntarily limit the irrigation of landscaped areas to no more than 3 days a week. Do not water between the hours of 10:00 a.m. and 7:00 p.m. 2) Water customers are requested to practice water conservation and to minimize or discontinue water use for non-essential purposes.

Stage 2	1) When the level of United States water stored in Rio-Grande River Basin Reservoirs reaches 50 % of capacity, or Valley MUD #2 allocation of water has reached 3350 acre-ft. 2) When equipment failure or treatment problems causes the capacity of Valley MUD #2's treatment and pumping facilities to fall to within 70% of the daily consumption of potable water.	1) Irrigation of landscaped areas with hose-end sprinklers or automatic irrigation systems shall be limited to Sundays and Thursdays for customers with a street address ending in an even number, and Saturdays and Wednesdays for water customers with a street address ending in an odd number. Irrigation of landscaped areas is further restricted and prohibited between the hours of 10:00 a.m. and 7:00 p.m. on designated watering days. However, irrigation of landscaped areas is permitted at any time if it is by means of a hand-held hose, a faucet filled bucket or watering can of five (5) gallons or less, or drip irrigation system. 2) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is prohibited except on designated watering days. Such washing shall be done with a bucket and a hand-held hose equipped with a positive shutoff nozzle for quick rinses. Vehicle washing may be done at any time on the immediate premises of a commercial car wash or commercial service station. Further, such washing may be exempted from these regulations if the health, safety, and welfare of the public are contingent upon frequent vehicle cleansing, such as garbage trucks and vehicles used to transport food and perishables. 3) Operation of any ponds or ornamental fountain for aesthetic or scenic purposes is prohibited. 4) Use of water from hydrants shall be limited to firefighting, related activities, or other activities necessary to maintain public health, safety, and welfare. Use of water from designated fire hydrants for construction purposes may be allowed under special permit from the Valley MUD #2. 5) Irrigation of golf course greens, tees, and fairways is permitted between the hours 7:00 p.m. and 10:00 a.m.

Stage 3	1) When the level of United States water stored in Rio-Grande River Basin Reservoirs reaches 30%, or Valley MUD #2 allocation of water has reached 1900 acre-ft. 2) When equipment failure or treatment problems causes the capacity of Valley MUD #2's treatment and pumping facilities to fall to within 50% of the daily consumption of potable water.	1) Irrigation of landscaped areas with hose-end sprinklers or automatic irrigation systems shall be limited to Thursdays for customers with a street address ending in an even number, and Wednesdays for water customers with a street address ending in an odd number. Irrigation of landscaped areas is further restricted and prohibited between the hours of 10:00 a.m. and 7:00 p.m. on designated watering days. Irrigation of landscaped areas is permitted at any time if it is by means of a hand-held hose, a faucet filled bucket or watering can of five (5) gallons or less, or drip irrigation system. 2) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is prohibited except on designated watering days. Such washing shall be done with a bucket and a hand-held hose equipped with a positive shutoff nozzle for quick rinses. Vehicle washing may be done at any time on the immediate premises of a commercial car wash or commercial service station. Further, such washing may be exempted from these regulations if the health, safety, and welfare of the public are contingent upon frequent vehicle cleansing, such as garbage trucks and vehicles used to transport food and perishables. 3) Operation of any ponds or ornamental fountain for aesthetic or scenic purposes is prohibited. Fountains that are equipped with a recirculation system are not exempt at this stage. 4) Use of water from hydrants shall be limited to firefighting, related activities, or other activities necessary to maintain public health, safety, and welfare. The use of water for construction purposes from designated fire hydrants under special permit is to be discontinued. 5) Irrigation of golf course greens, tees, is permitted between the hours 7:00 p.m. and 10:00 a.m.

Stage 4	1) when the level of United States water stored in Rio-Grande River Basin Reservoirs reaches 20%, or Valley MUD #2 allocation of water has reached 800 acre-ft. 2) When equipment failure or treatment problems causes the capacity of Valley MUD #2's treatment and pumping facilities to fall to within 25% of the daily consumption of potable water. 3) When water levels in the Rio Grande are low enough to restrict pumping.	1) All irrigation of landscapes is prohibited except for minimal hand watering of drought stressed trees and shrubs. 2) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is prohibited. Washing may be exempted from these regulations if the health, safety, and welfare of the public are contingent upon frequent vehicle cleansing, such as garbage trucks and vehicles used to transport food and perishables. 3) Operation of any ponds or ornamental fountain for aesthetic or scenic purposes is prohibited. Fountains that are equipped with a recirculation system are not exempt at this stage. 4) Use of water from hydrants shall be limited to firefighting, related activities, or other activities necessary to maintain public health, safety, and welfare. The use of water for construction purposes from designated fire hydrants under special permit is to be discontinued. 5) Hand watering of golf course greens and tees is permitted between the hours 7:00 p.m. and 10:00 a.m. Treated effluent must be used for this hand watering. The watering of golf course fairways is prohibited. 6) The following uses of water are defined as non-essential and are prohibited: a) Wash down of any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas; b) use of water to wash down buildings or structures for purposes other than immediate fire protection; c) use of water for dust control; d) flushing gutters or permitting water to run or accumulate in any gutter or street; and e) failure to repair a controllable leak(s) within 3 working days after having been given notice directing the repair of such leak(s).
	City of Weslaco, 5/1/2009	
BASIS OF DROUGHT	Reservoir level, projected water demand, system break/failure	
	TRIGGERS:	**ACTIONS:**
Stage 1	a) Level of US waters in Amistad and Falcon reservoirs reaches 51%, b) water demand projections for the year suggest available water rights may be used at 95%	Request customers to voluntarily reduce water usage
Stage 2	a) Level of US water in Amistad and Falcon reservoirs reaches 25%, b) a condition causes system-wide problems so the normal level of water service may be diminished for a period of time, c) water demand projections for the year suggest available water rights may be used at 98%	The means and/or schedule for the following will be restricted: watering of grass and vegetation, washing of vehicles, adding water to pools, and irrigating golf courses. The following are prohibited: allowing water to run off into gutters or streets, washing of buildings, trailers, railroad cars, maintaining defective home plumbing, use of hydrants except for fire fighting, ornamental fountain without recirculation, use of water to wash down hard surfaced area, and use of water for dust control.

Stage 3	a) Level of US water in Amistad and Flacon reservoirs reaches 15%, b) a condition related to extraordinary circumstances severely and immediately diminish the ability to deliver a normal level of water, c) water demand projections for the year suggest available water rights may be used at 100%	The following are prohibited: new service connections to the water system if another water source is already used, serving restaurant customers water when they do not ask for it, use of water for scenic and recreational ponds or lakes, use of water for pools, use of water to put new agricultural land into production, use of water for new planting or landscaping, and acceptance of applications for new or extended water service connections without approval by City. Industrial and commercial users must implement an individual curtailment plan and residential customers will receive a maximum monthly usage amount.
	Zapata County Waterworks, 7/1/2014	
BASIS OF DROUGHT	Time of year, reservoir level, system break/failure or contamination, water demand/WTP capacity	
	TRIGGERS:	**ACTIONS:**
Stage 1	Automatically initiated on April 1 of each year	Customers are requested to voluntarily limit the use of water for nonessential purposes
Stage 2	a) Level of Falcon reservoir drops below 270 feet, or b) recorded drinking water treatment as a percentage of total drinking water capacity exceeds 70%	Customers are requested to voluntarily reduce their water use and to follow an irrigation schedule and county and nonessential governmental water use will be reduced.
Stage 3	a) Level of Falcon reservoir drops below 260 feet, or b) recorded drinking water treatment as percentage of total treatment capacity exceeds 80%	Customers will be limited to certain schedules and methods for irrigation, vehicle washing, and adding water to pools and the following are prohibited: operation of fountains or ponds without recirculation except when necessary to maintain aquatic life, using water from hydrants or flush valves except when maintaining public health, safety, and welfare, washing down hard-surfaced areas, use of water to wash down buildings or structures, use of water for dust control, flushing gutters, failure to repair controllable leaks within a reasonable period of time, any waste of water
Stage 4	a) Level of Falcon reservoir drops below 250 feet, or b) recorded drinking water treatment as percentage of total treatment capacity exceeds 90%	In addition to Stage 3 restrictions, emergency interconnects or alternative supply arrangements shall be investigated, and implemented, if available.
Stage 5	System outage or supply contamination	The TCEQ Regional Office will be immediately notified

Texas Commission on Environmental Quality
Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4691, FAX (512) 239-2214

Drought Contingency Plan for a Retail Public Water Supplier

This form is provided as a model of a drought contingency plan for a retail public water supplier. If you need assistance in completing this form or in developing your plan, please contact the Conservation Staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Drought Contingency Plans must be formally adopted by the governing body of the water provider and documentation of adoption must be submitted with the plan. For municipal water systems, adoption would be by the city council as an ordinance. For other types of publicly-owned water systems (example: utility districts), plan adoption would be by resolution of the entity's board of directors adopting the plan as administrative rules. For private investor-owned utilities, the drought contingency plan is to be incorporated into the utility's rate tariff. Each water supplier shall provide documentation of the formal adoption of their drought contingency plan.

Name: _____

Address: _____

Telephone Number: ( ) _____ Fax: ( ) _____

Water Right No.(s): _____

Regional Water Planning Group: _____

Form Completed by: _____

Title: _____

Person responsible for implementation: _____ Phone: ( ) _____

Signature: _____ Date: / / _____

Section I: Declaration of Policy, Purpose, and Intent

In order to conserve the available water supply and protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the _____ (*name of your water supplier*) hereby adopts the following regulations and restrictions on the delivery and consumption of water.

Water uses regulated or prohibited under this Drought Contingency Plan (the Plan) are considered to be non-essential and continuation of such uses during times of water shortage or other emergency water supply condition are deemed to constitute a waste of water which subjects the offender(s) to penalties as defined in Section X of this Plan.

Section II: Public Involvement
Opportunity for the public to provide input into the preparation of the Plan was provided by the _____ (*name of your water supplier*) by means of _____ _____ (*describe methods used to inform the public about the preparation of the plan and provide opportunities for input; for example, scheduling and providing public notice of a public meeting to accept input on the Plan*).

Section III: Public Education
The _____ (*name of your water supplier*) will periodically provide the public with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by means of _____ (*describe methods to be used to provide information to the public about the Plan; for example, public events, press releases or utility bill inserts*).

Section IV: Coordination with Regional Water Planning Groups
The service area of the _____ (*name of your water supplier*) is located within the _____ (*name of regional water planning area or areas*) and _____ (*name of your water supplier*) has provided a copy of this Plan to the _____ (*name of your regional water planning group or groups*).

Section V: Authorization
The _____ (*designated official; for example, the mayor, city manager, utility director, general manager, etc.*), or his/her designee is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The _____ (*designated official*) or his/her designee shall have the authority to initiate or terminate drought or other water supply emergency response measures as described in this Plan.

Section VI: Application
The provisions of this Plan shall apply to all persons, customers, and property utilizing water provided by the _____ (*name of your water supplier*). The terms "person" and "customer" as used in the Plan include individuals, corporations, partnerships, associations, and all other legal entities.

Section VII: Definitions
For the purposes of this Plan**,** the following definitions shall apply:

Aesthetic water use: water use for ornamental or decorative purposes such as fountains, reflecting pools, and water gardens.

Commercial and institutional water use: water use which is integral to the operations of commercial and non-profit establishments and governmental entities such as retail establishments, hotels and motels, restaurants, and office buildings.

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 supply is conserved and made available for future or alternative uses.

Customer: any person, company, or organization using water supplied by _____ (*name of your water supplier*).

Domestic water use: water use for personal needs or for household or sanitary purposes such as drinking, bathing, heating, cooking, sanitation, or for cleaning a residence, business, industry, or institution.

Even number address: street addresses, box numbers, or rural postal route numbers ending in 0, 2, 4, 6, or 8 and locations without addresses.

Industrial water use: the use of water in processes designed to convert materials of lower value into forms having greater usability and value.

Landscape irrigation use: water used for the irrigation and maintenance of landscaped areas, whether publicly or privately owned, including residential and commercial lawns, gardens, golf courses, parks, and rights-of-way and medians.

Non-essential water use: water uses that are not essential nor required for the protection of public, health, safety, and welfare, including:

(a) irrigation of landscape areas, including parks, athletic fields, and golf courses, except otherwise provided under this Plan;
(b) use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle;
(c) use of water to wash down any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;
(d) use of water to wash down buildings or structures for purposes other than immediate fire protection;
(e) flushing gutters or permitting water to run or accumulate in any gutter or street;
(f) use of water to fill, refill, or add to any indoor or outdoor swimming pools or Jacuzzi-type pools;
(g) use of water in a fountain or pond for aesthetic or scenic purposes except where necessary to support aquatic life;
(h) failure to repair a controllable leak(s) within a reasonable period after having been given notice directing the repair of such leak(s); and
(i) use of water from hydrants for construction purposes or any other purposes other than fire fighting.

Odd numbered address: street addresses, box numbers, or rural postal route numbers ending in 1, 3, 5, 7, or 9.

Section VIII: Criteria for Initiation and Termination of Drought Response Stages

The _____ (*designated official*) or his/her designee shall monitor water supply and/or demand conditions on a _____ (*example: daily, weekly, monthly*) basis and shall determine when conditions warrant initiation or termination of each stage of the Plan, that is, when the specified "triggers" are reached.

The triggering criteria described below are based on:

_____.
(*Provide a brief description of the rationale for the triggering criteria; for example, triggering criteria / trigger levels based on a statistical analysis of the vulnerability of the water source under drought of record conditions, or based on known system capacity limits*).

Utilization of alternative water sources and/or alternative delivery mechanisms:

Alternative water source(s) for _____ (*name of utility*) is/are: _____.

(Examples: Other well(s), Inter-connection with other system, Temporary use of a non-municipal water supply, Purchased water, Use of reclaimed water for non-potable purposes, etc.).

Stage 1 Triggers -- MILD Water Shortage Conditions

Requirements for initiation
Customers shall be requested to voluntarily conserve water and adhere to the prescribed restrictions on certain water uses, defined in Section VII Definitions, when _____.
(*Describe triggering criteria / trigger levels; see examples below*).

Following are examples of the types of triggering criteria that might be used in one or more successive stages of a drought contingency plan. The public water supplier may devise other triggering criteria and an appropriate number of stages tailored to its system. One or a combination of the criteria selected by the public water supplier must be defined for each drought response stage, but usually not all will apply.

Example 1: *Annually, beginning on May 1 through September 30.*

Example 2: *When the water supply available to the _____ (name of your water supplier) is equal to or less than _____ (acre-feet, percentage of storage, etc.).*

Example 3: *When, pursuant to requirements specified in the _____ (name of **your** water supplier) wholesale water purchase contract with _____ (name of your wholesale water supplier), notification is received requesting initiation of Stage 1 of the Drought Contingency Plan.*

Example 4: *When flows in the _____ (name of stream or river) are equal to or less than _____ cubic feet per second.*

Example 5: *When the static water level in the _____ (name of your water supplier) well(s) is equal to or less than _____ feet above/below mean sea level.*

Example 6: *When the specific capacity of the _____ (name of your water supplier) well(s) is equal to or less than _____ percent of the well's original specific capacity.*

Example 7: *When total daily water demand equals or exceeds _____ million gallons for _____ consecutive days of _____ million gallons on a single day (example: based on the safe operating capacity of water supply facilities).*

Example 8: *Continually falling treated water reservoir levels which do not refill above _____ percent overnight (example: based on an evaluation of minimum treated water storage required to avoid system outage).*

Requirements for termination
Stage 1 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of _____ (*example: 3*) consecutive days.

Stage 2 Triggers – MODERATE Water Shortage Conditions

Requirements for initiation
Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses provided in Section IX of this Plan when _____ (*describe triggering criteria; see examples in Stage 1*).

Requirements for termination
Stage 2 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of _____ (*example: 3*) consecutive days. Upon termination of Stage 2, Stage 1, or the applicable drought response stage based on the triggering criteria, becomes operative.

Stage 3 Triggers – SEVERE Water Shortage Conditions

Requirements for initiation
Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses for Stage 3 of this Plan when _____ (*describe triggering criteria; see examples in Stage 1*).

Requirements for termination
Stage 3 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of _____ (*example: 3*) consecutive days. Upon termination of Stage 3, Stage 2, or the applicable drought response stage based on the triggering criteria, becomes operative.

Stage 4 Triggers – CRITICAL Water Shortage Conditions

Requirements for initiation
Customers shall be required to comply with the requirements and restrictions on certain non-essential water uses for Stage 4 of this Plan when _____ (*describe triggering criteria; see examples in Stage 1*).

Requirements for termination
Stage 4 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of _____ (*example: 3*) consecutive days. Upon termination of Stage 4, Stage 3, or the applicable drought response stage based on the triggering criteria, becomes operative.

Stage 5 Triggers – EMERGENCY Water Shortage Conditions

Requirements for initiation
Customers shall be required to comply with the requirements and restrictions for Stage 5 of this Plan when _____ (*designated official*), or his/her designee, determines that a water supply emergency exists based on:

1. Major water line breaks, or pump or system failures occur, which cause unprecedented loss of capability to provide water service; **or**

2. Natural or man-made contamination of the water supply source(s).

Requirements for termination
Stage 5 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of _____ (*example: 3*) consecutive days.

Stage 6 Triggers – WATER ALLOCATION

Requirements for initiation
Customers shall be required to comply with the water allocation plan prescribed in Section IX of this Plan and comply with the requirements and restrictions for Stage 5 of this Plan when _____ (*describe triggering criteria, see examples in Stage 1*).

Requirements for termination - Water allocation may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of _____ (*example: 3*) consecutive days.

Note: The inclusion of WATER ALLOCATION as part of a drought contingency plan may not be required in all cases. For example, for a given water supplier, an analysis of water supply availability under drought of record conditions may indicate that there is essentially no risk of water supply shortage. Hence, a drought contingency plan for such a water supplier might only address facility capacity limitations and emergency conditions (example: supply source contamination and system capacity limitations).

Section IX: Drought Response Stages
The _____ (*designated official*), or his/her designee, shall monitor water supply and/or demand conditions on a daily basis and, in accordance with the triggering criteria set forth in Section VIII of this Plan, shall determine that a mild, moderate, severe, critical, emergency or water shortage condition exists and shall implement the following notification procedures:

Notification
Notification of the Public:
The _____ (*designated official*) or his/ her designee shall notify the public by means of:

Examples:
publication in a newspaper of general circulation,
direct mail to each customer,
public service announcements,
signs posted in public places
take-home fliers at schools.

Additional Notification:
The _____ (*designated official*) or his/ her designee shall notify directly, or cause to be notified directly, the following individuals and entities:

Examples:
Mayor / Chairman and members of the City Council / Utility Board
Fire Chief(s)
City and/or County Emergency Management Coordinator(s)
County Judge & Commissioner(s)
State Disaster District / Department of Public Safety
TCEQ *(required when* mandatory *restrictions are imposed)*
Major water users
Critical water users, i.e. hospitals
Parks / street superintendents & public facilities managers

Note: The plan should specify direct notice only as appropriate to respective drought stages.

Stage 1 Response – MILD Water Shortage Conditions

Target: Achieve a voluntary _____ percent reduction in _____ (*example: total water use, daily water demand, etc.*).

Best Management Practices for Supply Management:

D*escribe additional measures, if any, to be implemented directly by (name of your water supplier) to manage limited water supplies and/or reduce water demand. Examples include: system water loss control, activation and use of an alternative supply source(s); use of reclaimed water for non-potable purposes.*

Voluntary Water Use Restrictions for Reducing Demand:

(a) Water customers are requested to voluntarily limit the irrigation of landscaped areas to Sundays and Thursdays for customers with a street address ending in an even number (0, 2, 4, 6 or 8), and Saturdays and Wednesdays for water customers with a street address ending in an odd number (1, 3, 5, 7 or 9), and to irrigate landscapes only between the hours of midnight and 10:00 a.m. and 8:00 p.m. to midnight on designated watering days.

(b) All operations of the _____ (*name of your water supplier*) shall adhere to water use restrictions prescribed for Stage 1 of the Plan.

(c) Water customers are requested to practice water conservation and to minimize or discontinue water use for non-essential purposes.

Stage 2 Response – MODERATE Water Shortage Conditions

Target: Achieve a _____ percent reduction in _____ (*example: total water use, daily water demand, etc.*).

Best Management Practices for Supply Management:

Describe additional measures, if any, to be implemented directly by _____ (name of your water supplier) to manage limited water supplies and/or reduce water demand. Examples include: system water loss control, reduced or discontinued irrigation of public landscaped areas; use of an alternative supply source(s); use of reclaimed water for non-potable purposes.

Water Use Restrictions for Demand Reduction:
Under threat of penalty for violation, the following water use restrictions shall apply to all persons:

(a) Irrigation of landscaped areas with hose-end sprinklers or automatic irrigation systems shall be limited to Sundays and Thursdays for customers with a street address ending in an even number (0, 2, 4, 6 or 8), and Saturdays and Wednesdays for water customers with a street address ending in an odd number (1, 3, 5, 7 or 9), and irrigation of landscaped areas is further limited to the hours of 12:00 midnight until 10:00 a.m. and between 8:00 p.m. and 12:00 midnight on designated watering days. However, irrigation of landscaped areas is permitted at anytime if it is by means of a hand-held hose, a faucet filled bucket or watering can of five (5) gallons or less, or drip irrigation system.

(b) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is prohibited except on designated watering days between the hours of 12:00 midnight and 10:00 a.m. and between 8:00 p.m. and 12:00 midnight. Such

washing, when allowed, shall be done with a hand-held bucket or a hand-held hose equipped with a positive shutoff nozzle for quick rises. Vehicle washing may be done at any time on the immediate premises of a commercial car wash or commercial service station. Further, such washing may be exempted from these regulations if the health, safety, and welfare of the public is contingent upon frequent vehicle cleansing, such as garbage trucks and vehicles used to transport food and perishables.

(c) Use of water to fill, refill, or add to any indoor or outdoor swimming pools, wading pools, or Jacuzzi-type pools is prohibited except on designated watering days between the hours of 12:00 midnight and 10:00 a.m. and between 8 p.m. and 12:00 midnight.

(d) Operation of any ornamental fountain or pond for aesthetic or scenic purposes is prohibited except where necessary to support aquatic life or where such fountains or ponds are equipped with a recirculation system.

(e) Use of water from hydrants shall be limited to fire fighting, related activities, or other activities necessary to maintain public health, safety, and welfare, except that use of water from designated fire hydrants for construction purposes may be allowed under special permit from the _____ (*name of your water supplier*).

(f) Use of water for the irrigation of golf course greens, tees, and fairways is prohibited except on designated watering days between the hours 12:00 midnight and 10:00 a.m. and between 8 p.m. and 12:00 midnight. However, if the golf course utilizes a water source other than that provided by the _____ (*name of your water supplier*), the facility shall not be subject to these regulations.

(g) All restaurants are prohibited from serving water to patrons except upon request of the patron.

(h) The following uses of water are defined as non-essential and are prohibited:

1. wash down of any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas;
2. use of water to wash down buildings or structures for purposes other than immediate fire protection;
3. use of water for dust control;
4. flushing gutters or permitting water to run or accumulate in any gutter or street; and
5. failure to repair a controllable leak(s) within a reasonable period after having been given notice directing the repair of such leak(s).

Stage 3 Response – SEVERE Water Shortage Conditions

<u>Target</u>: Achieve a _____ percent reduction in _____ (*example: total water use, daily water demand, etc.*).

<u>Best Management Practices for Supply Management</u>:

Describe additional measures, if any, to be implemented directly by _____ (name of your water supplier) to manage limited water supplies and/or reduce water demand. Examples include: system water loss control,

reduced or discontinued irrigation of public landscaped areas; use of an alternative supply source(s); use of reclaimed water for non-potable purposes.

Water Use Restrictions for Demand Reduction:
All requirements of Stage 2 shall remain in effect during Stage 3 except:

(a) Irrigation of landscaped areas shall be limited to designated watering days between the hours of 12:00 midnight and 10:00 a.m. and between 8 p.m. and 12:00 midnight and shall be by means of hand-held hoses, hand-held buckets, drip irrigation, or permanently installed automatic sprinkler system only. The use of hose-end sprinklers is prohibited at all times.

(b) The watering of golf course tees is prohibited unless the golf course utilizes a water source other than that provided by the _____ (*name of your water supplier*).

(c) The use of water for construction purposes from designated fire hydrants under special permit is to be discontinued.

Stage 4 Response – CRITICAL Water Shortage Conditions

Target: Achieve a _____ percent reduction in _____ (*example: total water use, daily water demand, etc.*).

Best Management Practices for Supply Management:

Describe additional measures, if any, to be implemented directly by _____ (name of your water supplier) to manage limited water supplies and/or reduce water demand. Examples include: system water loss control, reduced or discontinued irrigation of public landscaped areas; use of an alternative supply source(s); use of reclaimed water for non-potable purposes.

Water Use Restrictions for Reducing Demand:
All requirements of Stage 2 and 3 shall remain in effect during Stage 4 except:

(a) Irrigation of landscaped areas shall be limited to designated watering days between the hours of 6:00 a.m. and 10:00 a.m. and between 8:00 p.m. and 12:00 midnight and shall be by means of hand-held hoses, hand-held buckets, or drip irrigation only. The use of hose-end sprinklers or permanently installed automatic sprinkler systems are prohibited at all times.

(b) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle not occurring on the premises of a commercial car wash and commercial service stations and not in the immediate interest of public health, safety, and welfare is prohibited. Further, such vehicle washing at commercial car washes and commercial service stations shall occur only between the hours of 6:00 a.m. and 10:00 a.m. and between 6:00 p.m. and 10 p.m.

(c) The filling, refilling, or adding of water to swimming pools, wading pools, and Jacuzzi-type pools is prohibited.

(d) Operation of any ornamental fountain or pond for aesthetic or scenic purposes is prohibited except where necessary to support aquatic life or where such fountains or ponds are equipped with a recirculation system.

(e) No application for new, additional, expanded, or increased-in-size water service connections, meters, service lines, pipeline extensions, mains, or water service facilities of any kind shall be approved, and time limits for approval of such applications are hereby suspended for such time as this drought response stage or a higher-numbered stage shall be in effect.

Stage 5 Response – EMERGENCY Water Shortage Conditions

Target: Achieve a _____ percent reduction in _____ (*example: total water use, daily water demand, etc.*).

Best Management Practices for Supply Management:

Describe additional measures, if any, to be implemented directly by _____ (name of your water supplier) to manage limited water supplies and/or reduce water demand. Examples include: system water loss control, reduced or discontinued irrigation of public landscaped areas; use of an alternative supply source(s); use of reclaimed water for non-potable purposes.

Water Use Restrictions for Reducing Demand:
All requirements of Stage 2, 3, and 4 shall remain in effect during Stage 5 except:

(a) Irrigation of landscaped areas is absolutely prohibited.

(b) Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is absolutely prohibited.

Stage 6 Response – WATER ALLOCATION

In the event that water shortage conditions threaten public health, safety, and welfare, the _____ (*designated official*) is hereby authorized to allocate water according to the following water allocation plan:

Single-Family Residential Customers

The allocation to residential water customers residing in a single-family dwelling shall be as follows:

Persons per Household	Gallons per Month
1 or 2	6,000
3 or 4	7,000
5 or 6	8,000
7 or 8	9,000
9 or 10	10,000
11 or more	12,000

"Household" means the residential premises served by the customer's meter. "Persons per household" include only those persons currently physically residing at the premises and expected to reside there for the entire billing period. It shall be assumed that a particular customer's household is comprised of two (2) persons unless the customer notifies the _____ (*name of your water supplier*) of a greater number of persons per household on a form prescribed by the _____

(*designated official*). The _____ (*designated official*) shall give his/her best effort to see that such forms are mailed, otherwise provided, or made available to every residential customer. If, however, a customer does not receive such a form, it shall be the customer's responsibility to go to the _____ (*name of your water supplier*) offices to complete and sign the form claiming more than two (2) persons per household. New customers may claim more persons per household at the time of applying for water service on the form prescribed by the _____ (*designated official*). When the number of persons per household increases so as to place the customer in a different allocation category, the customer may notify the _____ (*name of water supplier*) on such form and the change will be implemented in the next practicable billing period. If the number of persons in a household is reduced, the customer shall notify the _____ (*name of your water supplier*) in writing within two (2) days. In prescribing the method for claiming more than two (2) persons per household, the _____ (*designated official*) shall adopt methods to insure the accuracy of the claim. Any person who knowingly, recklessly, or with criminal negligence falsely reports the number of persons in a household or fails to timely notify the _____ (*name of your water supplier*) of a reduction in the number of person in a household shall be fined not less than $_____.

Residential water customers shall pay the following surcharges:

$_____ for the first 1,000 gallons over allocation.
$_____ for the second 1,000 gallons over allocation.
$_____ for the third 1,000 gallons over allocation.
$_____ for each additional 1,000 gallons over allocation.

Surcharges shall be cumulative.

Master-Metered Multi-Family Residential Customers

The allocation to a customer billed from a master meter which jointly measures water to multiple permanent residential dwelling units (example: apartments, mobile homes) shall be allocated 6,000 gallons per month for each dwelling unit. It shall be assumed that such a customer's meter serves two dwelling units unless the customer notifies the _____ (*name of your water supplier*) of a greater number on a form prescribed by the _____ (*designated official*). The _____ (*designated official*) shall give his/her best effort to see that such forms are mailed, otherwise provided, or made available to every such customer. If, however, a customer does not receive such a form, it shall be the customer's responsibility to go to the _____ (*name of your water supplier*) offices to complete and sign the form claiming more than two (2) dwellings. A dwelling unit may be claimed under this provision whether it is occupied or not. New customers may claim more dwelling units at the time of applying for water service on the form prescribed by the _____ (*designated official*). If the number of dwelling units served by a master meter is reduced, the customer shall notify the _____ (*name of your water supplier*) in writing within two (2) days. In prescribing the method for claiming more than two (2) dwelling units, the _____ (*designated official*) shall adopt methods to insure the accuracy of the claim. Any person who knowingly, recklessly, or with criminal negligence falsely reports the number of dwelling units served by a master meter or fails to timely notify the _____ (*name of your water supplier*) of a reduction in the number of person in a household shall be fined not less than $_____. Customers billed from a master meter under this provision shall pay the following monthly surcharges:

$_____ for 1,000 gallons over allocation up through 1,000 gallons for each dwelling unit.
$_____, thereafter, for each additional 1,000 gallons over allocation up through a second 1,000 gallons for each dwelling unit.
$_____, thereafter, for each additional 1,000 gallons over allocation up through a third 1,000 gallons for each dwelling unit.
$_____, thereafter for each additional 1,000 gallons over allocation.

Surcharges shall be cumulative.

Commercial Customers

A monthly water allocation shall be established by the _____ (*designated official*), or his/her designee, for each nonresidential commercial customer other than an industrial customer who uses water for processing purposes. The non-residential customer's allocation shall be approximately _____ (*example: 75%*) percent of the customer's usage for corresponding month's billing period for the previous 12 months. If the customer's billing history is shorter than 12 months, the monthly average for the period for which there is a record shall be used for any monthly period for which no history exists. Provided, however, a customer, _____percent of whose monthly usage is less than _____ gallons, shall be allocated _____ gallons. The _____ (*designated official*) shall give his/her best effort to see that notice of each non-residential customer's allocation is mailed to such customer. If, however, a customer does not receive such notice, it shall be the customer's responsibility to contact the _____ (*name of your water supplier*) to determine the allocation. Upon request of the customer or at the initiative of the _____ (*designated official*), the allocation may be reduced or increased if, (1) the designated period does not accurately reflect the customer's normal water usage, (2) one nonresidential customer agrees to transfer part of its allocation to another nonresidential customer, or (3) other objective evidence demonstrates that the designated allocation is inaccurate under present conditions. A customer may appeal an allocation established hereunder to the _____ (*designated official or alternatively, a special water allocation review committee*). Nonresidential commercial customers shall pay the following surcharges:

Customers whose allocation is _____ gallons through _____ gallons per month:

$_____ per thousand gallons for the first 1,000 gallons over allocation.
$_____ per thousand gallons for the second 1,000 gallons over allocation.
$_____ per thousand gallons for the third 1,000 gallons over allocation.
$_____ per thousand gallons for each additional 1,000 gallons over allocation.

Customers whose allocation is _____ gallons per month or more:

_____times the block rate for each 1,000 gallons in excess of the allocation up through 5 percent above allocation.
_____times the block rate for each 1,000 gallons from 5 percent through 10 percent above allocation.
_____times the block rate for each 1,000 gallons from 10 percent through 15 percent above allocation.
_____times the block rate for each 1,000 gallons more than 15 percent above allocation.

The surcharges shall be cumulative. As used herein, "block rate" means the charge to the customer per 1,000 gallons at the regular water rate schedule at the level of the

customer's allocation.

Industrial Customers

A monthly water allocation shall be established by the _____ (*designated official*), or his/her designee, for each industrial customer, which uses water for processing purposes. The industrial customer's allocation shall be approximately _____ (*example: 90%*) percent of the customer's water usage baseline. Ninety (90) days after the initial imposition of the allocation for industrial customers, the industrial customer's allocation shall be further reduced to _____ (*example: 85%*) percent of the customer's water usage baseline. The industrial customer's water use baseline will be computed on the average water use for the _____ month period ending prior to the date of implementation of Stage 2 of the Plan. If the industrial water customer's billing history is shorter than _____ months, the monthly average for the period for which there is a record shall be used for any monthly period for which no billing history exists. The _____ (*designated official*) shall give his/her best effort to see that notice of each industrial customer's allocation is mailed to such customer. If, however, a customer does not receive such notice, it shall be the customer's responsibility to contact the _____ (*name of your water supplier*) to determine the allocation, and the allocation shall be fully effective notwithstanding the lack of receipt of written notice. Upon request of the customer or at the initiative of the _____ (*designated official*), the allocation may be reduced or increased, (1) if the designated period does not accurately reflect the customer's normal water use because the customer had shutdown a major processing unit for repair or overhaul during the period, (2) the customer has added or is in the process of adding significant additional processing capacity, (3) the customer has shutdown or significantly reduced the production of a major processing unit, (4) the customer has previously implemented significant permanent water conservation measures such that the ability to further reduce water use is limited, (5) the customer agrees to transfer part of its allocation to another industrial customer, or (6) if other objective evidence demonstrates that the designated allocation is inaccurate under present conditions. A customer may appeal an allocation established hereunder to the _____ (*designated official or alternatively, a special water allocation review committee*). Industrial customers shall pay the following surcharges:

Customers whose allocation is _____ gallons through _____ gallons per month:

$_____ per thousand gallons for the first 1,000 gallons over allocation.
$_____ per thousand gallons for the second 1,000 gallons over allocation.
$_____ per thousand gallons for the third 1,000 gallons over allocation.
$_____ per thousand gallons for each additional 1,000 gallons over allocation.

Customers whose allocation is _____ gallons per month or more:

_____times the block rate for each 1,000 gallons in excess of the allocation up through 5 percent above allocation.
_____times the block rate for each 1,000 gallons from 5 percent through 10 percent above allocation.
_____times the block rate for each 1,000 gallons from 10 percent through 15 percent above allocation.
_____times the block rate for each 1,000 gallons more than 15 percent above allocation.

The surcharges shall be cumulative. As used herein, "block rate" means the charge to the customer per 1,000 gallons at the regular water rate schedule at the level of the customer's allocation.

Section X: Enforcement

(a) No person shall knowingly or intentionally allow the use of water from the _____ (*name of your water supplier*) for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this Plan, or in an amount in excess of that permitted by the drought response stage in effect at the time pursuant to action taken by _____ (*designated official*), or his/her designee, in accordance with provisions of this Plan.

(b) Any person who violates this Plan is guilty of a misdemeanor and, upon conviction shall be punished by a fine of not less than _____ dollars ($_____) and not more than _____ dollars ($_____). Each day that one or more of the provisions in this Plan is violated shall constitute a separate offense. If a person is convicted of three or more distinct violations of this Plan, the _____ (*designated official*) shall, upon due notice to the customer, be authorized to discontinue water service to the premises where such violations occur. Services discontinued under such circumstances shall be restored only upon payment of a re-connection charge, hereby established at $_____, and any other costs incurred by the _____ (*name of your water supplier*) in discontinuing service. In addition, suitable assurance must be given to the _____ (*designated official*) that the same action shall not be repeated while the Plan is in effect. Compliance with this plan may also be sought through injunctive relief in the district court.

(c) Any person, including a person classified as a water customer of the _____ (*name of your water supplier*), in apparent control of the property where a violation occurs or originates shall be presumed to be the violator, and proof that the violation occurred on the person's property shall constitute a rebuttable presumption that the person in apparent control of the property committed the violation, but any such person shall have the right to show that he/she did not commit the violation. Parents shall be presumed to be responsible for violations of their minor children and proof that a violation, committed by a child, occurred on property within the parents' control shall constitute a rebuttable presumption that the parent committed the violation, but any such parent may be excused if he/she proves that he/she had previously directed the child not to use the water as it was used in violation of this Plan and that the parent could not have reasonably known of the violation.

(d) Any employee of the _____ (*name of your water supplier*), police officer, or other _____ employee designated by the _____ (*designated official*), may issue a citation to a person he/she reasonably believes to be in violation of this Ordinance. The citation shall be prepared in duplicate and shall contain the name and address of the alleged violator, if known, the offense charged, and shall direct him/her to appear in the _____ (*example: municipal court*) on the date shown on the citation for which the date shall not be less than 3 days nor more than 5 days from the date the citation was issued. The alleged violator shall be served a copy of the citation. Service of the citation shall be complete upon delivery of the citation to the alleged violator, to an agent or employee of a violator, or to a person over 14 years of age who is a member of the violator's immediate family or is a resident of the violator's residence. The alleged violator shall appear in _____ (*example: municipal court*) to enter a plea of guilty or not guilty for the violation of this Plan. If the alleged violator fails to appear in _____ (*example: municipal court*), a warrant for his/her arrest may be issued. A summons to appear may be issued

in lieu of an arrest warrant. These cases shall be expedited and given preferential setting in _____ (*example: municipal court*) before all other cases.

Section XI: Variances

The _____ (*designated official*), or his/her designee, may, in writing, grant temporary variance for existing water uses otherwise prohibited under this Plan if it is determined that failure to grant such variance would cause an emergency condition adversely affecting the health, sanitation, or fire protection for the public or the person requesting such variance and if one or more of the following conditions are met:

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

Persons requesting an exemption from the provisions of this Ordinance shall file a petition for variance with the _____ (*name of your water supplier*) within 5 days after the Plan or a particular drought response stage has been invoked. All petitions for variances shall be reviewed by the _____ (*designated official*), or his/her designee, and shall include the following:

(a) Name and address of the petitioner(s).
(b) Purpose of water use.
(c) Specific provision(s) of the Plan from which the petitioner is requesting relief.
(d) Detailed statement as to how the specific provision of the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if petitioner complies with this Ordinance.
(e) Description of the relief requested.
(f) Period of time for which the variance is sought.
(g) Alternative water use restrictions or other measures the petitioner is taking or proposes to take to meet the intent of this Plan and the compliance date.
(h) Other pertinent information.

Texas Commission on Environmental Quality
Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4691, FAX (512) 239-2214

Model Drought Contingency Plan for an Irrigation District

This form is provided as a model of a drought contingency plan for an irrigation district. If you need assistance in completing this form or in developing your plan, please contact the Conservation Staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Drought Contingency Plans must be formally adopted by the governing body of the irrigation district and documentation of adoption must be submitted with the plan. An example resolution can be found at the end of this form.

Irrigation District: _____

Address: _____

Telephone Number: ( ) _____ Fax: ( ) _____

Water Right No.(s): _____

Regional Water Planning Group: _____

Form Completed by: _____

Title: _____

Person responsible for implementation: _____ Phone: ( ) _____

Signature: _____ Date: / / _____

Section I: Declaration of Policy, Purpose, and Intent

The Board of Directors of the _____ (*name of irrigation district*) deems it to be in the interest of the District to adopt Rules and Regulations governing the equitable and efficient allocation of limited water supplies during times of shortage. These Rules and Regulations constitute the District's drought contingency plan required under Section 11.1272, Texas Water Code, *Vernon's Texas Codes Annotated*, and associated administrative rules of the Texas Commission on Environmental Quality (Title 30, Texas Administrative Code, Chapter 288).

Section II: User Involvement

Opportunity for users of water from the _____ (*name of irrigation district*) was provided by means of _____ (*describe methods used to inform water users about the preparation of the plan and opportunities for input; for example, scheduling and providing notice of a public meeting to accept user input on the plan*).

Section III: User Education

The _____ (*name of irrigation district*) will periodically provide water users with information about the Plan, including information about the conditions under which water allocation is to be initiated or terminated and the district's policies and procedures for water allocation. This information will be provided by means of _____ (*example: describe methods to be used to provide water users with information about the Plan; for example, by providing copies of the Plan and by posting water allocation rules and regulations on the district's public bulletin board*).

Section IV: Authorization

The _____ (*example: general manager*) is hereby authorized and directed to implement the applicable provision of the Plan upon determination by the Board that such implementation is necessary to ensure the equitable and efficient allocation of limited water supplies during times of shortage.

Section V: Application

The provisions of the Plan shall apply to all persons utilizing water provided by the _____ (*name of irrigation district*). The term "person" as used in the Plan includes individuals, corporations, partnerships, associations, and all other legal entities.

Section VI: Initiation of Water Allocation

The _____ (*designated official*) shall monitor water supply conditions on a _____ (*example: weekly, monthly*) basis and shall make recommendations to the Board regarding irrigation of water allocation. Upon approval of the Board, water allocation will become effective when _____ (*describe the criteria and the basis for the criteria*):

Below are examples of the types of triggering criteria that might be used; singly or in combination, in an irrigation district's drought contingency plan:

Example 1: Water in storage in the _____ (*name of reservoir*) is equal to or less than _____ (*acre-feet and/or percentage of storage capacity*).

Example 2: Combined storage in the _____ (*name or reservoirs*) reservoir system is equal to or less than _____ (*acre-feet and/or percentage of storage capacity*).

Example 3: Flows as measured by the U.S. Geological Survey gage on the _____ (*name of reservoir*) near _____, Texas reaches _____ cubic feet per second (cfs).

Example 4: The storage balance in the district's irrigation water rights account reaches _____ acre-feet.

Example 5: The storage balance in the district's irrigation water rights account reaches an amount equivalent to _____ (*number*) irrigations for each flat rate acre in which all flat rate assessments are paid and current.

Example 6: The _____ (*name of entity supplying water to the irrigation district*) notifies the district that water deliveries will be limited to _____ acre-feet per year (*i.e. a level below that required for unrestricted irrigation*).

Section VII: Termination of Water Allocation

The district's water allocation policies will remain in effect until the conditions defined in Section IV of the Plan no longer exist and the Board deems that the need to allocate water no longer exists.

Section VIII: Notice

Notice of the initiation of water allocation will be given by notice posted on the District's public bulletin board and by mail to each _____ (*example: landowner, holders of active irrigation accounts, etc.*).

Section IX: Water Allocation

(a) In identifying **specific, quantified targets** for water allocation to be achieved during periods of water shortages and drought, each irrigation user shall be allocated _____ irrigations or _____ acre-feet of water each flat rate acre on which all taxes, fees, and charges have been paid. The water allotment in each irrigation account will be expressed in acre-feet of water.

Include explanation of water allocation procedure. For example, in the Lower Rio Grande Valley, an "irrigation" is typically considered to be equivalent to eight (8) inches of water per irrigation acre; consisting of six (6) inches of water per acre applied plus two (2) inches of water lost in transporting the water from the river to the land. Thus, three irrigations would be equal to 24 inches of water per acre or an allocation of 2.0 acre-feet of water measured at the diversion from the river.

(b) As additional water supplies become available to the District in an amount reasonably sufficient for allocation to the District's irrigation users, the additional water made available to the District will be equally distributed, on a pro rata basis, to those irrigation users having _____.

Example 1: An account balance of less than _____ irrigations for each flat rate acre (*i.e.* _____ *acre-feet*).

Example 2: An account balance of less than _____ acre-feet of water for each flat rate acre.

Example 3: An account balance of less than _____ acre-feet of water.

(c) The amount of water charged against a user's water allocation will be _____ (*example: eight inches*) per irrigation, or one allocation unit, unless water deliveries to the land are metered. Metered water deliveries will be charges based on actual measured use. In order to maintain parity in charging use against a water allocation between non-metered and metered deliveries, a loss factor of _____ percent of the water delivered in a metered situation will be added to the measured use and will be charged against the user's water allocation. Any metered use, with the loss factor applied, that is less than eight (8) inches per acre shall be credited back to the allocation unit and will be available to the user. It shall be a violation of the Rules and Regulations for a water user to use water in excess of the amount of water contained in the user's irrigation account.

(d) Acreage in an irrigation account that has not been irrigated for any reason within the last two (2) consecutive years will be considered inactive and will not be allocated water. Any landowner whose land has not been irrigated within the last two (2) consecutive years, may, upon application to the District expressing intent to irrigate the land, receive future allocations. However, irrigation water allocated shall be applied only upon the acreage to which it was allocated and such water allotment cannot be transferred until there have been two consecutive years of use.

Section X: Transfers of Allotments

(a) A water allocation in an active irrigation account may be transferred within the boundaries of the District from one irrigation account to another. The transfer of water can only be made by the landowner's agent who is authorized in writing to act on behalf of the landowner in the transfer of all or part of the water allocation from the described land of the landowner covered by the irrigation account.

(b) A water allocation may not be transferred to land owned by a landowner outside the District boundaries.

or

A water allocation may be transferred to land outside the District's boundaries by paying the current water charge as if the water was actually delivered by the District to the land covered by an irrigation account. The amount of water allowed to be transferred shall be stated in terms of acre-feet and deducted from the landowner's current allocation balance in the irrigation account. Transfers of water outside the District shall not affect the allocation of water under Section VII of these Rules and Regulations.

(c) Water from outside the District may not be transferred by a landowner for use within the District.

or

Water from outside the District may be transferred by a landowner for use within the District. The District will divert and deliver the water on the same basis as District water is delivered, except that a _____ percent conveyance loss will be charged against the amount of water transferred for use in the District as the water is delivered.

Section XI: Penalties

Any person who willfully opens, closes, changes or interferes with any headgate or uses water in violation of these Rules and Regulations, shall be considered in violation of Section 11.0083, Texas Water Code, *Vernon's Texas Codes Annotated*, which provides for punishment by fine of not less than $10.00 nor more than $200.00 or by confinement in the county jail for not more than thirty (30) days, or both, for each violation, and these penalties provided by the laws of the State and may by enforced by complaints filed in the appropriate court jurisdiction in _____ County, all in accordance with Section 11.083; and in addition, the District may pursue a civil remedy in the way of damages and/or injunction against the violation of any of the foregoing Rules and Regulations.

Section XII: Severability

It is hereby declared to be the intention of the Board of Directors of the _____ (*name of irrigation district*) that the sections, paragraphs, sentences, clauses, and phrases of this Plan shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and

sections of this Plan, since the same would not have been enacted by the Board without the incorporation into this Plan of any such unconstitutional phrase, clause, sentence, paragraph, or section.

Section XIII: Authority

The foregoing rules and regulations are adopted pursuant to and in accordance with Sections 11.039, 11.083, 11.1272; Section 49.004; and Section 58.127-130 of the Texas Water Code, *Vernon's Texas Codes Annotated.*

Section XIV: Effective Date of Plan

The effective date of this Rule shall be five (5) days following the date of Publication hereof and ignorance of the Rules and Regulations is not a defense for a prosecution for enforcement of the violation of the Rules and Regulations.

EXAMPLE RESOLUTION FOR ADOPTION OF A DROUGHT CONTINGENCY PLAN

RESOLUTION NO. _____

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE _____ (name of water supplier) ADOPTING A DROUGHT CONTINGENCY PLAN.

WHEREAS, the Board recognizes that the amount of water available to the _____ (*name of water supplier*) and its water utility customers is limited and subject to depletion during periods of extended drought;

WHEREAS, the Board recognizes that natural limitations due to drought conditions and other acts of God cannot guarantee an uninterrupted water supply for all purposes;

WHEREAS, Section 11.1272 of the Texas Water Code and applicable rules of the Texas Commission on Environmental Quality require all public water supply systems in Texas to prepare a drought contingency plan; and

WHEREAS, as authorized under law, and in the best interests of the customers of the _____ (*name of water supply system*), the Board deems it expedient and necessary to establish certain rules and policies for the orderly and efficient management of limited water supplies during drought and other water supply emergencies;

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE _____ (*name of water supplier*):

SECTION 1. That the Drought Contingency Plan attached hereto as Exhibit A and made part hereof for all purposes be, and the same is hereby, adopted as the official policy of the _____ (*name of water supplier*).

SECTION 2. That the _____ (*example: general manager*) is hereby directed to implement, administer, and enforce the Drought Contingency Plan.

SECTION 3. That this resolution shall take effect immediately upon its passage.

DULY PASSED BY THE BOARD OF DIRECTORS OF THE _____, ON THIS __ day of _____, 20__.

_____
President, Board of Directors

ATTESTED TO:

_____
Secretary, Board of Directors

Texas Commission on Environmental Quality
Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4691, FAX (512) 239-2214

Drought Contingency Plan for a Wholesale Public Water Supplier

This form is provided as a model of a drought contingency plan for a wholesale public water supplier. If you need assistance in completing this form or in developing your plan, please contact the Conservation Staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Drought Contingency Plans must be formally adopted by the governing body of the water provider and documentation of adoption must be submitted with the plan. For example, adoption by a city council as an ordinance or by resolution of the entity's board of directors adopting the plan as administrative rules.

Name: _____

Address: _____

Telephone Number: ( ) _____ Fax: ( ) _____

Water Right No.(s): _____

Regional Water Planning Group: _____

Form Completed by: _____

Title: _____

Person responsible for implementation: _____ Phone: ( ) _____

Signature: _____ Date: / / _____

Section I: Declaration of Policy, Purpose, and Intent

In order to conserve the available water supply and/or to protect the integrity of water supply facilities, with particular regard for domestic water use, sanitation, and fire protection, and to protect and preserve public health, welfare, and safety and minimize the adverse impacts of water supply shortage or other water supply emergency conditions, the _____ (*name of your water supplier*) adopts the following Drought Contingency Plan (the Plan).

Section II: Public Involvement

Opportunity for the public and wholesale water customers to provide input into the preparation of the Plan was provided by _____ (*name of your water supplier*) by means of _____ (*describe methods used to inform the public and wholesale customers about the preparation of the plan and opportunities for input; for example, scheduling and proving public notice of a public meeting to accept input on the Plan*).

Section III: Wholesale Water Customer Education

The _____ (*name of your water supplier*) will periodically provide wholesale water customers with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. This information will be provided by means of _____ (*example: describe methods to be used to provide customers with information about the Plan; for example, providing a copy of the Plan or periodically including information about the Plan with invoices for water sales*).

Section IV: Coordination with Regional Water Planning Groups

The water service area of the _____ (name of your water supplier) is located within the _____ (*name of regional water planning area or areas*) and the _____ (*name of your water supplier*) has provided a copy of the Plan to the _____ (*name of your regional water planning group or groups*).

Section V: Authorization

The _____ (*designated official; for example, the general manager or executive director*), or his/her designee, is hereby authorized and directed to implement the applicable provisions of this Plan upon determination that such implementation is necessary to protect public health, safety, and welfare. The _____ or his/her designee, shall have the authority to initiate or terminate drought or other water supply emergency response measures as described in this Plan.

Section VI: Application

The provisions of this Plan shall apply to all customers utilizing water provided by the _____ (*name of your water supplier*). The terms "person" and "customer" as used in the Plan include individuals, corporations, partnerships, associations, and all other legal entities.

Section VII: Criteria for Initiation and Termination of Drought Response Stages

The _____ (*designated official*), or his/her designee, shall monitor water supply and/or demand conditions on a (*example: weekly, monthly*) basis and shall determine when conditions warrant initiation or termination of each stage of the Plan. Customer notification of the initiation or termination of drought response stages will be made by mail or telephone. The news media will also be informed.

The triggering criteria described below are based on:
_____.
(*provide a brief description of the rationale for the triggering criteria; for example, triggering criteria are based on a statistical analysis of the vulnerability of the water source under drought of record conditions).*

Utilization of alternative water sources and/or alternative delivery mechanisms:

Alternative water source(s) for _____ (*name of utility*) is/are:
_____.
(Examples: Other well(s), Inter-connection with other system, Temporary use of a non-municipal water supply, Purchased water, Use of reclaimed water for non-potable purposes, etc.).

Stage 1 Triggers -- MILD Water Shortage Conditions

Requirements for initiation – The _____ (*name of your water supplier*) will recognize that a mild water shortage condition exists when _____ (*describe triggering criteria, see examples below).*

Below are examples of the types of triggering criteria that might be used in a wholesale water supplier's drought contingency plan. *The wholesale water supplier may devise other triggering criteria and an appropriate number of stages tailored to its system; however, the plan must contain a minimum of three drought stages.* ***One or a combination of such criteria may be defined for each drought response stage:***

Example 1: Water in storage in the _____ (name of reservoir) is equal to or less than _____ (acre-feet and/or percentage of storage capacity).

Example 2: When the combined storage in the _____ (name of reservoirs) is equal to or less than _____ (acre-feet and/or percentage of storage capacity).

Example 3: Flows as measured by the U.S. Geological Survey gage on the _____ (name of river) near _____, Texas reaches _____ cubic feet per second (cfs).

Example 4: When total daily water demand equals or exceeds _____ million gallons for _____ consecutive days or _____ million gallons on a single day.

Example 5: When total daily water demand equals or exceeds _____ percent of the safe operating capacity of _____ million gallons per day for _____ consecutive days or _____ percent on a single day.

Requirements for termination - Stage 1 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of _____ (*example: 30*) consecutive days. The _____ (*name of water supplier*) will notify its wholesale customers and the media of the termination of Stage 1.

Stage 2 Triggers -- MODERATE Water Shortage Conditions

Requirements for initiation – The _____ (*name of your water supplier*) will recognize that a moderate water shortage condition exists when _____ (*describe triggering criteria*).

Requirements for termination - Stage 2 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of _____ (*example: 30*) consecutive days. Upon termination of Stage 2, Stage 1, or the applicable drought response stage based on the triggering criteria, becomes operative. The _____ (*name of your water supplier*) will notify its wholesale customers and the media of the termination of Stage 2.

Stage 3 Triggers -- SEVERE Water Shortage Conditions

Requirements for initiation – The _____ (*name of your water supplier*) will recognize that a severe water shortage condition exists when _____ (*describe triggering criteria; see examples in Stage 1*).

Requirements for termination - Stage 3 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of _____ (*example: 30*) consecutive days. Upon termination of Stage 3, Stage 2, or the applicable drought response stage based on the triggering criteria,

becomes operative. The _____ (*name of your water supplier*) will notify its wholesale customers and the media of the termination of Stage 3.

Stage 4 Triggers -- CRITICAL Water Shortage Conditions

Requirements for initiation - The _____ (*name of your water supplier*) will recognize that an emergency water shortage condition exists when _____ (*describe triggering criteria*; *see examples below*).

Example 1. ***Major water line breaks, or pump or system failures occur, which cause unprecedented loss of capability to provide water service; or***

Example 2. ***Natural or man-made contamination of the water supply source(s).***

Requirements for termination - Stage 4 of the Plan may be rescinded when all of the conditions listed as triggering events have ceased to exist for a period of _____ (*example: 30*) consecutive days. The _____ (*name of your water supplier*) will notify its wholesale customers and the media of the termination of Stage 4.

Section VIII: Drought Response Stages

The _____ (*designated official*), or his/her designee, shall monitor water supply and/or demand conditions and, in accordance with the triggering criteria set forth in Section VII, shall determine that mild, moderate, severe, or critical water shortage conditions exist or that an emergency condition exists and shall implement the following actions:

Stage 1 Response -- MILD Water Shortage Conditions

Target: Achieve a voluntary _____ percent reduction in _____ (*example: total water use, daily water demand, etc.*).

Best Management Practices for Supply Management:

Describe additional measures, if any, to be implemented directly by _____ (designated official), or his/her designee(s), to manage limited water supplies and/or reduce water demand. Examples include modifying reservoir operations procedures, interconnection with another water system, and use of reclaimed water for nonpotable purposes.

Water Use Restrictions for Reducing Demand:

(a) The _____ (*designated official*), or his/her designee(s), will contact wholesale water customers to discuss water supply and/or demand conditions and will request that wholesale water customers initiate voluntary measures to reduce water use (*example: implement Stage 1 or appropriate stage of the customer's drought contingency plan*).

(b) The _____ (*designated official*), or his/her designee(s), will provide a weekly report to news media with information regarding current water supply and/or demand conditions, projected water supply and demand conditions if drought conditions persist, and consumer information on water conservation measures and practices.

Stage 2 Response -- MODERATE Water Shortage Conditions

Target: Achieve a _____ percent reduction in _____ (*example: total water use, daily water demand, etc.*).

Best Management Practices for Supply Management:

Describe additional measures, if any, to be implemented directly by _____ (designated official), or his/her designee(s), to manage limited water supplies and/or reduce water demand. Examples include modifying reservoir operations procedures, interconnection with another water system, and use of reclaimed water for non-potable purposes.

Water Use Restrictions for Reducing Demand:

(a) The _____ (*designated official*), or his/her designee(s), will request wholesale water customers to initiate mandatory measures to reduce non-essential water use (*example: implement Stage 2 or appropriate stage of the customer's drought contingency plan*).

(b) The _____ (*designated official*), or his/her designee(s), will initiate weekly contact with wholesale water customers to discuss water supply and/or demand conditions and the possibility of pro rata curtailment of water diversions and/or deliveries.

(c) The _____ (*designated official*), or his/her designee(s), will further prepare for the implementation of pro rata curtailment of water diversions and/or deliveries by preparing a monthly water usage allocation baseline for each wholesale customer.

(d) The _____ (*designated official*), or his/her designee(s), will provide a weekly report to news media with information regarding current water supply and/or demand conditions, projected water supply and demand conditions if drought conditions persist, and consumer information on water conservation measures and practices.

Stage 3 Response -- SEVERE Water Shortage Conditions

Target: Achieve a _____ percent reduction in _____ (*example: total water use, daily water demand, etc.*).

Best Management Practices for Supply Management:

Describe additional measures, if any, to be implemented directly by _____ (designated official), or his/her designee(s), to manage limited water supplies and/or reduce water demand. Examples include modifying reservoir operations procedures, interconnection with another water system, and use of reclaimed water for non-potable purposes.

Water Use Restrictions for Reducing Demand:

(a) The _____ (*designated official*), or his/her designee(s), will contact wholesale water customers to discuss water supply and/or demand conditions and will request that wholesale water customers initiate additional mandatory measures to reduce non-essential water use (example: implement Stage 3 or appropriate stage of the customer's drought contingency plan).

(b) The _____ (*designated official*), or his/her designee(s), will initiate pro rata curtailment of water diversions and/or deliveries for each wholesale customer.

(c) The _____ (*designated official*), or his/her designee(s), will provide a weekly report to news media with information regarding current water supply and/or demand conditions, projected water supply and demand conditions if drought conditions persist, and consumer information on water conservation measures and practices.

Stage 4 Response -- EMERGENCY Water Shortage Conditions

Whenever emergency water shortage conditions exist as defined in Section VII of the Plan, the _____ (*designated official*) shall:

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

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

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

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

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

Section IX: Pro Rata Curtailment

In the event that the triggering criteria specified in Section VII of the Plan for Stage 3 – Severe Water Shortage Conditions have been met, the _____ (*designated official*) is hereby authorized to initiate allocation of water supplies on a pro rata basis in accordance with Texas Water Code, §11.039.

Section X: Contract Provisions

The _____ (*name of your water supplier*) will 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.

Section XI: Enforcement

Example of surcharge:
During any period when either mandatory water use restrictions or pro rata allocation of available water supplies are in effect, wholesale customers shall pay the following surcharges on excess water diversions and/or deliveries:

_____ times the normal water charge per acre-foot for water diversions and/or deliveries in excess of the monthly allocation from _____ percent through _____ percent above the monthly allocation.

Examples of fines and/or discontinuation of service:
Mandatory water use restrictions or pro rata allocation of available water supplies may be imposed during drought stages and emergency water management actions. These water use restrictions will be enforced by warnings and penalties as follows:

- On the first violation, customers will be notified by written notice that they have violated the mandatory water use restriction.
- If the first violation has not been corrected after ten (10) days from the written notice, _____ (*name of your water supplier*) may assess a fine up to $_____ per violation.
- _____ (*name of your water supplier*) may install a flow restricting device in

the line to limit the amount of water which will pass through the meter in a 24-hour period. The utility may charge the customer for the actual cost of installing and removing the flow restricting device, not to exceed fifty dollars ($50.00);

- _____ (*name of your water supplier*) maintains the right, at any violation or action level, to disconnect irrigation systems and/or suspend water services to a customer for public safety issues with reconnection fees and possible citations.
- Subsequent violations of the plan shall result in increased fines or upon the occurrence of _____ violations, after notice, the discontinuation of services. Services discontinued under this provision shall be restored only upon payment of a reconnection fee and any other costs incurred by the utility in discontinuing service.

Section XII: Variances

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

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

Persons requesting an exemption from the provisions of this Plan shall file a petition for variance with the _____ (*designated official*) within 5 days after pro rata allocation has been invoked. All petitions for variances shall be reviewed by the _____ (*governing body*), and shall include the following:

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

Variances granted by the _____ (*governing body*) shall be subject to the following conditions, unless waived or modified by the _____ (*governing body*) or its designee:

(a) Variances granted shall include a timetable for compliance.
(b) Variances granted shall expire when the Plan is no longer in effect, unless the petitioner has failed to meet specified requirements.

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

Section XIII: Severability

It is hereby declared to be the intention of the _____ (*governing body of your water supplier*) that the sections, paragraphs, sentences, clauses, and phrases of this Plan are severable and, if any phrase, clause, sentence, paragraph, or section of this Plan shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect

any of the remaining phrases, clauses, sentences, paragraphs, and sections of this Plan, since the same would not have been enacted by the _____ (*governing body of your water supplier*) without the incorporation into this Plan of any such unconstitutional phrase, clause, sentence, paragraph, or section.

Texas Commission on Environmental Quality
Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4691, FAX (512) 239-2214

Utility Profile and Water Conservation Plan Requirements for Municipal Water Use by Retail Public Water Suppliers

This form is provided to assist retail public water suppliers in water conservation plan assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Water users can find best management practices (BMPs) at the Texas Water Development Board's website http://www.twdb.texas.gov/conservation/BMPs/index.asp. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name of Water Supplier:	Click to add text
Address:	
Telephone Number:	( ) Fax: ( )
Water Right No.(s):	
Regional Water Planning Group:	
Water Conservation Coordinator (or person responsible for implementing conservation program):	Phone: ( )
Form Completed by:	
Title:	
Signature:	Date: / /

A water conservation plan for municipal use by retail public water suppliers must include the following requirements (as detailed in 30 TAC Section 288.2). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

Utility Profile

I. POPULATION AND CUSTOMER DATA

A. Population and Service Area Data

1. Attach a copy of your service-area map and, if applicable, a copy of your Certificate of Convenience and Necessity (CCN).

2. Service area size (in square miles):

   (Please attach a copy of service-area map)

3. Current population of service area:

4. Current population served for:

   a. Water

   b. Wastewater

5. Population served for previous five years:

Year	*Population*

6. Projected population for service area in the following decades:

Year	*Population*
2020	
2030	
2040	
2050	
2060	

7. List source or method for the calculation of current and projected population size.

B. Customer Data

Senate Bill 181 requires that uniform consistent methodologies for calculating water use and conservation be developed and available to retail water providers and certain other water use sectors as a guide for preparation of water use reports, water conservation plans, and reports on water conservation efforts. A water system must provide the most detailed level of customer and water use data available to it, however, any new billing system purchased must be capable of reporting data for each of the sectors listed below. More guidance can be found at: http://www.twdb.texas.gov/conservation/doc/SB181Guidance.pdf

1. Quantified 5-year and 10-year goals for water savings:

	Historic 5-year Average	*Baseline*	*5-year goal for year*	*10-year goal for year*
Total GPCD				
Residential GPCD				
Water Loss GPCD				
Water Loss Percentage				

Notes:
Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365
Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365
Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

2. Current number of active connections. Check whether multi-family service is counted as ☐ Residential or ☐ Commercial?

Treated Water Users	*Metered*	*Non-Metered*	*Totals*
Residential			
Single-Family			
Multi-Family			
Commercial			
Industrial/Mining			
Institutional			
Agriculture			
Other/Wholesale			

3. List the number of new connections per year for most recent three years.

Year			
Treated Water Users			
Residential			
Single-Family			
Multi-Family			
Commercial			
Industrial/Mining			
Institutional			
Agriculture			
Other/Wholesale			

4. List of annual water use for the five highest volume customers.

Customer	*Use (1,000 gal/year)*	*Treated or Raw Water*

II. WATER USE DATA FOR SERVICE AREA

A. Water Accounting Data

1. List the amount of water use for the previous five years (in 1,000 gallons).

   Indicate whether this is ☐ diverted or ☐ treated water.

Year					
Month					
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Totals					

2. Describe how the above figures were determined (e.g, from a master meter located at the point of a diversion from the source or located at a point where raw water enters the treatment plant, or from water sales).

3. Amount of water (in 1,000 gallons) delivered/sold as recorded by the following account types for the past five years.

Year					
Account Types					
Residential					
Single-Family					
Multi-Family					
Commercial					
Industrial/Mining					
Institutional					
Agriculture					
Other/Wholesale					

4. List the previous records for water loss for the past five years (the difference between water diverted or treated and water delivered or sold).

Year	*Amount (gallons)*	*Percent %*

B. Projected Water Demands

1. If applicable, attach or cite projected water supply demands from the applicable Regional Water Planning Group for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirements from such growth.

III. WATER SUPPLY SYSTEM DATA

A. Water Supply Sources

1. List all current water supply sources and the amounts authorized (in acre feet) with each.

Water Type	*Source*	*Amount Authorized*
Surface Water		

Groundwater	_____	_____
Other	_____	_____

B. Treatment and Distribution System (if providing treated water)

1. Design daily capacity of system (MGD):
2. Storage capacity (MGD):
   a. Elevated
   b. Ground
3. If surface water, do you recycle filter backwash to the head of the plant?

   ☐ Yes ☐ No If yes, approximate amount (MGD):

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

1. Design capacity of wastewater treatment plant(s) (MGD):
2. Treated effluent is used for ☐ on-site irrigation, ☐ off-site irrigation, for ☐ plant wash-down, and/or for ☐ chlorination/dechlorination.

   If yes, approximate amount (in gallons per month):
3. Briefly describe the wastewater system(s) of the area serviced by the water utility. Describe how treated wastewater is disposed. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and the receiving stream if wastewater is discharged.

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: %
2. Monthly volume treated for previous five years (in 1,000 gallons):

Year					
Month					
January	_____	_____	_____	_____	_____
February	_____	_____	_____	_____	_____
March	_____	_____	_____	_____	_____
April	_____	_____	_____	_____	_____

May					
June					
July					
August					
September					
October					
November					
December					
Totals					

Water Conservation Plan

In addition to the utility profile, please attach the following as required by Title 30, Texas Administrative Code, §288.2. Note: If the water conservation plan does not provide information for each requirement, an explanation must be included as to why the requirement is not applicable.

A. Record Management System

The water conservation plan must include a record management system which allows for the classification of water sales and uses in to the most detailed level of water use data currently available to it, including if possible, the following sectors: residential (single and multi-family), commercial.

B. Specific, Quantified 5 & 10-Year Targets

The water conservation plan must include specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in gallons per capita per day. Note that the goals established by a public water supplier under this subparagraph are not enforceable. These goals must be updated during the five-year review and submittal.

C. Measuring and Accounting for Diversions

The water conservation plan must include a statement about the water suppliers 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.

D. Universal Metering

The water conservation plan must include and a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement.

E. Measures to Determine and Control Water Loss

The water conservation plan must include measures to determine and control water loss (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections; abandoned services; etc.).

F. Continuing Public Education & Information

The water conservation plan must include a description of the program of continuing public education and information regarding water conservation by the water supplier.

G. Non-Promotional Water Rate Structure

The water supplier must have 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. This rate structure must be listed in the water conservation plan.

H. Reservoir Systems Operations Plan

The water conservation plan must include 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.

I. Enforcement Procedure and Plan Adoption

The water conservation plan must include 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.

J. Coordination with the Regional Water Planning Group(s)

The water conservation plan must include 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.

K. Plan Review and Update

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. The revised plan must also include an implementation report.

VI. ADDITIONAL REQUIREMENTS FOR LARGE SUPPLIERS

Required of suppliers serving population of 5,000 or more or a projected population of 5,000 or more within the next ten years:

A. Leak Detection and Repair

The plan must include a description of the 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. Contract Requirements

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.

VII. ADDITIONAL CONSERVATION STRATEGIES

Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements of 30 TAC §288.2(1), 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:

1. 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;

2. 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;

3. A program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;

4. A program for reuse and/or recycling of wastewater and/or graywater;

5. A program for pressure control and/or reduction in the distribution system and/or for customer connections;

6. A program and/or ordinance(s) for landscape water management;

7. A method for monitoring the effectiveness and efficiency of the water conservation plan; and

8. 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.

VIII. WATER CONSERVATION PLANS SUBMITTED WITH A WATER RIGHT APPLICATION FOR NEW OR ADDITIONAL STATE WATER

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support 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.

Additionally, 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.

Texas Commission on Environmental Quality
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Telephone (512) 239-4691, FAX (512) 239-2214

System Inventory and Water Conservation Plan for Agricultural Water Suppliers Providing Water to More Than One User

This form is provided to assist entities in developing a water conservation plan for agricultural water suppliers providing water to more than one user. If you need assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Additional resources such as best management practices (BMPs) are available on the Texas Water Development Board's website http://www.twdb.texas.gov/conservation/BMPs/index.asp. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name: Click to add text

Address: _____

Telephone Number: ( ) Fax: ( )

Form Completed By: _____

Title: _____

Signature: _____ Date: / /

A water conservation plan for agriculture use (for a system providing agricultural water to more than one user) must include the following requirements (as detailed in 30 TAC Section 288.4). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

I. BACKGROUND DATA

A. Structural Facilities (Supplier's water storage, conveyance, and delivery structures)

1. Description of service area:

2. Total miles of main canals and pipelines:

3. Total miles of lateral canals and pipelines:

4. Description of canal construction:
    a. Miles of unlined canals
    b. Miles of lined canals
    c. Miles of enclosed pipelines
    d. Other
5. Description of canal conditions and recent or planned improvements:

6. Reservoir capacity, if applicable:

7. Description of pumps and pumping stations:

8. Description of meters and/or measuring devices:

9. Description of customer gates and measuring devices:

10. Description of any other structural facilities not covered above:

B. Management Practices

1. Total water available to district (in acre-feet/year):
    a. Maximum water rights allocation to district:
    b. Water right number(s):
    c. Other water contracted to be delivered by district:

2. Average annual water diverted by district (in acre-feet/year):
3. Average annual water delivered to customers (in acre-feet/year):
4. Delivery efficiency (percentage):

5. Historical diversion and deliveries for the previous three years (in acre-feet/year):

Year	*Total Water Diverted Annually*	*Irrigation Water Delivered Annually*	*Municipal Water Delivered Annually*	*Total Water Delivered Annually*	*Estimated Delivery Efficiency (%)*
Average					

6. Description of practices and/or devices used to account for water deliveries:

7. Water pricing policy:

8. Operating rules and policies which encourage water conservation (if a separate document, include it as an attachment to the Water Conservation Plan):

9. Provide specific, quantified 5-year and 10-year targets for water savings or system efficiency below, including maximum allowable losses for the storage and distribution system. Water savings may be represented in acre-feet or in water use efficiency.

   Quantified 5-year and 10-year targets for water savings and water loss:

   5-year goal:
   Water savings in acre-feet or water use efficiency %
   Water loss

   10-year goal:
   Water savings in acre-feet or water use efficiency %
   Water loss

10. Describe 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:

11. Describe the monitoring and record management program for water deliveries, sales, and losses:

12. Describe any programs that will be used for water loss control, leak detection, and repair:

13. Describe any program for customer assistance in the development of on-farm water conservation and pollution prevention plans and/or measures:

14. Describe any other water conservation practice, method, or technique which the supplier shows to be appropriate for achieving conservation (if applicable):

C. User profile

1. Total number of acres or square miles in service area:
2. Average number of acres irrigated annually:
3. Projected number of acres to be irrigated in 10 years:
4. Number of active customers taking delivery of water by the system:
5. Total irrigation water delivered annually (in acre-feet):
6. Types of crops grown by customers:

7. Types of irrigation systems used by customers:

8. Types of drainage systems used by customers:

9. Any additional relevant information on irrigation customers:

10. List of municipal customers and number of acre-feet allocated annually:

11. List of industrial and other large customers and number of acre-feet allocated annually:

D. Additional Requirements

In addition to the above information, please attach the following as required by Title 30, Texas Administrative Code, §288.4(3).

1. 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 30 TAC Chapter 288. If the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with applicable provisions of 30 TAC Chapter 288.

2. Evidence of 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.

3. Documentation of coordination with the Regional Water Planning Group(s) in order to ensure consistency with the appropriate approved regional water plan(s).

II. Water Conservation Plans submitted with a Water Right Application for New or Additional State Water

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support 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.

Additionally, 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.

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Utility Profile and Water Conservation Plan Requirements for Wholesale Public Water Suppliers

This form is provided to assist wholesale public water suppliers in water conservation plan development. If you need assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Water users can find best management practices (BMPs) at the Texas Water Development Board's website http://www.twdb.texas.gov/conservation/BMPs/index.asp. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name: Click to add text

Address: _____

Telephone Number: ( ) Fax: ( )

Water Right No.(s): _____

Regional Water Planning Group: _____

Person responsible for implementing conservation program: _____ Phone: ( )

Form Completed By: _____

Title: _____

Signature: _____ Date: / /

A water conservation plan for wholesale public water suppliers must include the following requirements (as detailed in 30 TAC Section 288.5). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

Utility Profile

I. WHOLESALE SERVICE AREA POPULATION AND CUSTOMER DATA

A. Population and Service Area Data:

1. Service area size (in square miles):

   (Please attach a copy of service-area map)

2. Current population of service area:

3. Current population served for:

   a. Water

   b. Wastewater

4. Population served for previous five years:

Year	*Population*

5. Projected population for service area in the following decades:

Year	*Population*
2020	
2030	
2040	
2050	
2060	

6. List source or method for the calculation of current and projected population size.

B. Customer Data

List (or attach) the names of all wholesale customers, amount of annual contract, and amount of annual use for each customer for the previous year:

Wholesale Customer	*Contracted Amount (Acre-feet)*	*Previous Year Amount of Water Delivered (acre-feet)*

II. WATER USE DATA FOR SERVICE AREA

A. Water Delivery

Indicate if the water provided under wholesale contracts is treated or raw water and the annual amounts for the previous five years (in acre feet):

Year	*Treated Water*	*Raw Water*
Totals		

B. *Water Accounting Data*

1. Total amount of water diverted at the point of diversion(s) for the previous five years (in acre-feet) for all water uses:

Year					
Month					
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

Totals _____ _____ _____ _____ _____

2. Wholesale population served and total amount of water diverted for **municipal use** for the previous five years (in acre-feet):

Year	*Total Population Served*	*Total Annual Water Diverted for Municipal Use*

C. Projected Water Demands

If applicable, project and attach water supply demands for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirements from such growth.

III. WATER SUPPLY SYSTEM DATA

A. Projected Water Demands

List all current water supply sources and the amounts authorized (in acre feet) with each.

Water Type	*Source*	*Amount Authorized*
Surface Water		
Groundwater		
Other		

B. Treatment and Distribution System (if providing treated water)

1. Design daily capacity of system (MGD):

2. Storage capacity (MGD):

   a. Elevated

   b. Ground

3. Please attach a description of the water system. Include the number of treatment plants, wells, and storage tanks

IV. WASTEWATER SYSTEM DATA

A. Wastewater System Data (if applicable)

1. Design capacity of wastewater treatment plant(s) (MGD):

2. Briefly describe the wastewater system(s) of the area serviced by the wholesale public water supplier. Describe how treated wastewater is disposed. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and the receiving stream if wastewater is discharged.

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: %

2. Monthly volume treated for previous five years (in 1,000 gallons):

Year					
Month					
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Totals					

Water Conservation Plan

In addition to the description of the wholesaler's service area (profile from above), a water conservation plan for a wholesale public water supplier must include, at a minimum, additional information as required by Title 30, Texas Administrative Code, Chapter 288.5. Note: If the water conservation plan does not provide information for each requirement an explanation must be included as to why the requirement is not applicable.

A. Specific, Quantified 5 & 10-Year Targets

The water conservation plan must include specific, quantified 5-year and 10-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 water loss, and the basis for the development of these goals. Note that the goals established by a wholesale water supplier under this subparagraph are not enforceable. These goals must be updated during the 5-year review and submittal.

B. Measuring and Accounting for Diversions

The water conservation plan must include 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.

C. Record Management Program

The water conservation plan must include a monitoring and record management program for determining water deliveries, sales, and losses.

D. Metering/Leak-Detection and Repair Program

The water conservation plan must include a program of metering and leak detection and repair for the wholesaler's water storage, delivery, and distribution system.

E. Contract Requirements for Successive Customer Conservation

The water conservation plan must include 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 Title 30 TAC Chapter 288. If the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of this chapter.

F. Reservoir Systems Operations Plan

The water conservation plan must include 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 plan shall include optimization of water supplies as one of the significant goals of the plan.

G. Enforcement Procedure and Official Adoption

The water conservation plan must include 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.

H. Coordination with the Regional Water Planning Group(s)

The water conservation plan must include 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.

Example statement to be included within the water conservation plan:

The service area of the _____ (name of water supplier) is located within the _____ (name of regional water planning area or areas) and _____ (name of water supplier) has provided a copy of this water conservation plan to the _____ (name of regional water planning group or groups).

I. Plan Review and Update

A wholesale water supplier shall review and update its water conservation plan, as appropriate based on an assessment of previous 5-year and 10-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 no later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. The revised plan must also include an implementation report.

V. ADDITIONAL CONSERVATION STRATEGIES

Any combination of the following strategies shall be selected by the water wholesaler, in addition to the minimum requirements of 30 TAC §288.5(1), 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:

1. 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;

2. A program to assist agricultural customers in the development of conservation, pollution prevention and abatement plans;

3. A program for reuse and/or recycling of wastewater and/or graywater;

4. 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.

VI. WATER CONSERVATION PLANS SUBMITTED WITH A WATER RIGHT APPLICATION FOR NEW OR ADDITIONAL STATE WATER

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support 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.

Additionally, 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.

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Industrial / Mining Water Conservation Plan

This form is provided to assist entities in developing a water conservation plan for industrial water use. If you need assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Additional resources such as best management practices (BMPs) are available on the Texas Water Development Board's website http://www.twdb.texas.gov/conservation/BMPs/index.asp. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name: Click to add text

Address: _____

Telephone Number: ( ) _____ Fax: ( ) _____

Form Completed By: _____

Title: _____

Signature: _____ Date: / /

A water conservation plan for industrial use must include the following requirements (as detailed in 30 TAC Section 288.3). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

I. BACKGROUND DATA

A. Water Use

1. Annual diversion appropriated or requested (in acre-feet):

2. Maximum diversion rate (cfs):

B. Water Sources

1. Please indicate the maximum or average annual amounts of water currently used and anticipated to be used (in acre-feet) for industrial purposes:

Source	*Water Right No.(s)*	*Current Use*	*Anticipated Use*
Surface Water			
Groundwater			
Purchased			
Total			

2. How was the surface water data and/or groundwater data provided in B(1) obtained?

   Master meter ; Customer meter ; Estimated ; Other

3. Was purchased water raw or treated?

   If both, % raw ; % treated ; and Supplier(s)

C. Industrial Information

1. Major product(s) or service(s) produced by applicant:

2. North American Industry Classification System (NAICS):

II. WATER USE AND CONSERVATION PRACTICES

A. Water Use in Industrial Processes

Production Use	*% Groundwater*	*% Surface Water*	*% Saline Water*	*% Treated Water*	*Water Use (in acre-ft)*
Cooling, condensing, & refrigeration					
Processing, washing, transport					
Boiler feed					
Incorporated into product					
Other					

Facility Use	*% Groundwater*	*% Surface Water*	*% Saline Water*	*% Treated Water*	*Water Use (in acre-ft)*
Cooling tower(s)					
Pond(s)					
Once through					
Sanitary & drinking water					
Irrigation & dust control					

1. Was fresh water recirculated at this facility? ☐ Yes ☐ No

2. Provide a detailed description of how the water will be utilized in the industrial process.

3. Estimate the quantity of water consumed in production processes and is therefore unavailable for reuse, discharge, or other means of disposal.

4. Monthly water consumption for previous year (in acre-feet).

Month	*Diversion Amount*	*% of Water Returned (If Any)*	*Monthly Consumption*
January			
February			
March			
April			
May			
June			
July			
August			

September			
October			
November			
December			
Totals			

5. Projected monthly water consumption for next year (in acre-feet).

Month	*Diversion Amount*	*% of Water Returned (If Any)*	*Monthly Consumption*
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			
Totals			

B. Specific and Quantified Conservation Goal

Water conservation goals for the industrial sector are generally established either for (1) the amount of water recycled, (2) the amount of water reused, or (3) the amount of water not lost or consumed, and therefore is available for return flow.

1. Water conservation goal (water use efficiency measure)

   Type of goal(s):

   % reused water

   % of water not consumed and therefore returned

   Other (specify)

2. Provide specific, quantified 5-year and 10-year targets for water savings and the basis for development of such goals for this water use/facility.

   Quantified 5-year and 10-year targets for water savings:

   a. 5-year goal:

   b. 10-year goal:

3. Describe the device(s) and/or method(s) used to measure and account for the amount of water diverted from the supply source, and verify the accuracy is within plus or minus 5%.

4. Provide a description of the leak-detection and repair, and water-loss accounting measures used.

5. Describe the application of state-of-the-art equipment and/or process modifications used to improve water use efficiency.

6. Describe 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:

III. Water Conservation Plans submitted with a Water Right Application for New or Additional State Water

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support 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.

Additionally, 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.