LAVACA-NAVIDAD RIVER AUTHORITY

DROUGHT CONTINGENCY PLAN

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INTRODUCTION

Droughts and other uncontrollable circumstances can disrupt the normal availability of water supplies from either ground or surface sources. Natural limitations of the supply of either ground or surface water, or limitations on facilities to pump, treat, store or distribute water can present a public water supply utility with an emergency demand management situation.

During drought periods, consumer demand is typically 15 to 25 percent higher than under normal conditions. Most often, this additional demand is a direct result of the irrigation of lawns but may be created by leaks caused by a shift in the drying soils surrounding distribution systems.

The 75th Texas Legislature enacted Senate Bill1, which directed the State to take a regional approach to water planning. One of the provisions of the legislation required the Texas Commission on Environmental quality (TCEQ) to adopt rules requiring wholesale and retail public water suppliers to develop water conservation and drought contingency plans (DCP). The amended Title 30, Texas Administrative Code, Chapter 288 became effective on December 6, 2012. The next revision of the drought contingency plans for retail public water suppliers serving 3,300 or more connections, wholesale public water suppliers, and irrigation districts must be submitted no later than May1, 2014, and every five years thereafter to coincide with the regional water planning group process. Any new or revised plans must be submitted to the TCEQ within 90 days of adoption by the governing body of the entity.

The DCP establishes temporary methods designed to be used during an emergency situation or other short water supply events exist. The purpose of the DCP is to specify how LNRA will manage stored water supplies during a repetition of the critical drought of record for Texas from 1950 to 1957. Most recently the extreme drought conditions experienced from September 14, 2011 to February 5, 2012 when the Lake Texana elevation fell to 30.38 msl on January 9, 2012, left the reservoir with 38.83% capacity. Consistent with Texas Commission on Environmental Quality (TCEQ) regulations, the LNRA has recommended that, as appropriate, its wholesale water customers consider adoption of drought contingency measures to be implemented in response to LNRA trigger conditions. As a provision of their respective water supply contracts, all LNRA customers will have drought contingency plans on file with the TCEQ.

The Lavaca-Navidad River Authority (LNRA), as a water right holder and wholesale water supplier, is required to submit a Water Conservation and Drought Contingency Plan to the TCEQ and the Texas Water Development Board (TWDB). The Texas Legislature created the Jackson County Flood Control District on May 27, 1949 to manage the flood waters of the Lavaca and Navidad Rivers. The name was changed to the Lavaca-Navidad River Authority in August, 1959. The “Palmetto Bend Project” was approved by Congress in 1968 to provide a dependable municipal and industrial water supply for the area. It was a cooperative water resource project between the LNRA, TWDB and the United States Bureau of Reclamation (USBOR). LNRA

was the local sponsor responsible for operations and maintenance and became sole owner of the project in 2002.

SECTION I DECLARATION OF POLICY, PURPOSE, AND INTENT

LNRA contracts raw water to its customers. In cases of extreme drought, periods of abnormally high usage, system contamination, or extended reduction, or inability to supply water due to equipment failure, LNRA may require water customers to institute temporary restrictions to limit non-essential water usage. The purpose of the DCP is to encourage a reduction of water use in order to maintain supply, storage, or pressure or to comply with the requirements of a court, government agency or other authority. LNRA may require plan updates from time to time in accordance with changes in state law or LNRA rules.

SECTION II WHOLESALE WATER CUSTOMER EDUCATION

LNRA will periodically provide wholesale water customers with information about this drought contingency plan, including the importance of the plan, information about the conditions under which each stage of the plan is to be initiated, processes to reduce water usage, and impending or current drought conditions.

Drought plan information will be provided by means of: *meetings with staff, website, and/or information sheets available on site.*

SECTION III INITIATION AND TERMINATION OF RESPONSE STAGES

LNRA's General Manager will be responsible for the initiation and termination of drought response stages based on the triggering criteria set forth in this plan.

Triggering Criteria for Initiation and Termination of Drought Response Stages

(1) STAGE 1 – Mild Water Shortage Condition One

A. **Requirements for Initiation:** Stage 1 will be initiated when one or a combination of such triggering criteria occurs:
- Reservoir Conservation Pool elevation equal to or less than 43.00 feet msl; and/or
- Upon notification from LNRA that it is implementing Trigger I of the LNRA DCP.

B. **Requirements for termination:** LNRA announces that mandatory water restrictions for firm water customers are no longer required in accordance with the LNRA DCP.

(2) STAGE 2 – Moderate Water shortage Condition Two

A. **Requirements for Initiation:** Stage 2 will be initiated when one or a combination of such triggering criteria occurs:
- Reservoir Conservation Pool elevation equal to or less than 40.23 feet msl; with a capacity of 78.18% and/or
- Upon notification from LNRA that it is implementing Trigger II of the LNRA DCP.

B. **Requirements for termination:** LNRA announces that mandatory water restrictions for firm water customers are no longer required in accordance with the LNRA DCP.

(3) STAGE 3 – Severe Water Shortage Condition Three

A. **Requirements for Initiation:** Stage 3 will be initiated when one or a combination of such triggering criteria occurs:
- Reservoir Conservation Pool elevation equal to or less than 34.09 feet msl, with a capacity of 50% in accordance with the LNRA DCP; and/or
- The LNRA Board declares a drought worse than the Drought of Record or other water supply emergency and orders the mandatory curtailment of firm water supplies; and
- Upon notification from LNRA that it is implementing Stage 3 of the LNRA DCP.

B. **Requirements for Termination**: LNRA announces that mandatory water restrictions for firm water customers are no longer required in accordance with the LNRA DCP.

(4) STAGE 4 – Critical Water Shortage Condition Four

A. **Requirements for Initiation:** Stage 4 will be initiated when one or a combination of such triggering criteria occurs:
- Natural or man-made contamination of the water supply source;
- Natural or otherwise catastrophic event causing failure or damage to the operating structures rendering these inoperable, or causing emergency evacuation of the reservoir; and/or
- Any other emergency water supply or demand conditions that the LNRA General Manager or the LNRA Board determines that either constitutes a water supply emergency or is associated with the LNRA Board declaration of a drought worse than the drought of record.

B. **Requirements for Termination:** LNRA announces that mandatory water restrictions for firm water customers are no longer required in accordance with the LNRA DCP.

SECTION IV DROUGHT RESPONSE MEASURES

The following contingency measures should be taken as trigger conditions are met. As a wholesale water supplier, the LNRA continuously monitors Lake Texana water levels and communicates with its wholesale water customers as to the condition of surface water supplies in the Lavaca River Basin.

(1) STAGE 1 – Mild Water Shortage Condition One

A trigger condition has been established by an agreement between the LNRA and specified water rights permit holders upstream of Lake Texana that use surface water for irrigation purposes. According to that certain Compromise Settlement Agreement, diversions for irrigation purposes upstream of Lake Texana are limited to times that Lake Texana is at or above elevation 43.00 msl. Prior to initiating diversions, permittees must confirm the level of Lake Texana with either the LNRA or the TCEQ South Texas Watermaster. Diversions must cease within 24 hours following the time when the reservoir level drops below elevation 43.00 msl.

A. **Target:** The water use reduction under Stage 1 should equate to a 50% reduction of the use of surface water that would have occurred in the absence of this drought contingency measure.

B. **Water Use Reduction Response Measures:**

- Notify the TCEQ Watermaster of reservoir conditions.
- Watermaster will notify water rights permit holders upstream of Lake Texana of reservoir conditions.
- Inform public, giving notice of reservoir conditions to the customers served by LNRA.

(2) STAGE 2 – Moderate Water Shortage Condition Two

A trigger condition has been established by an agreement between LNRA, Texas Parks and Wildlife Department and Texas Water Development Board. Accordingly, upon Lake Texana reaching a conservation pool elevation of 78.18% of the reservoir capacity or roughly elevation 40.23 feet msl, as calculated per periodic reservoir volumetric surveys, LNRA will reduce the volume of freshwater releases to the local bays and estuaries to the historical subsistence flow of five (5) cubic feet per second.

A. **Target:** The water use reduction under Stage 2 should equate to a 5% reduction of the surface water use that would have occurred in the absence of drought contingency measures.

B. **Water Use Reduction Response Measures**

- Notify the TCEQ Watermaster of reservoir conditions.
- Notify TPWD of reservoir conditions and change in B&E release schedule.
- Inform public, giving notice of reservoir condition to the customers served by LNRA and include in the information recommendations for water conservation.

(3) STAGE 3 – Severe Water Shortage Condition Three – Severe Local Drought

A trigger condition has been established by virtue of LNRA's reservoir refilling guidelines as defined by LNRA's Standard Operation Procedures that have been developed for Lake Texana.

Lower reservoir pool elevations will impact LNRA's ability to divert water from Lake Texana. Generally, upon reaching 50% capacity, the remaining water shall be divided among the water customers in accordance with Texas Water Code §11.039. LNRA will plan for up to a 50% reduction of the surface water use that would have occurred in the absence of drought contingency measures.

A. **Target:** Upon reaching Stage 3, LNRA will implement the following relevant actions as the reservoir condition declines. Suggested pro-rata water reductions are shown in Table 3.0.

Reservoir Storage Capacity	Reservoir Elevation	Pro-Rata Water Use Reduction
50%	34.09	10%
40%	31.33	20%
30%	28.10	35%
20%	24.27	50%
10%	19.33	--%

Table 3.0
Pro-rata Water Use Reductions during Periods of Shortage and/or Drought

B. **Water Use Reduction Response Measures:**

- Notify the TCEQ Watermaster of reservoir conditions.
- Notify the TCEQ Dam Safety Team of reservoir conditions.
- Notify LNRA water customers giving notice of reservoir conditions and current delivery volume.
- Implement a pro rata reduction of water deliveries to all municipal and industrial water customers as shown in table 3.0. The volume of water to be delivered from the remaining water supply stored in Lake Texana will be established for each customer and will be based on LNRA's record of the average daily volume of water diverted from Lake Texana and delivered to the customer(s) over the proceeding twelve (12) month period.
- Through the news media, the public should be advised by the customers of the trigger condition. Include in the information to the public an advisement of the mandatory reduction and that water users conserve water.

Modifications to the percentage of pro rata water reductions will occur as the reservoir elevation rises or falls. Resumption of normal operation and termination of water supply reductions will occur when reservoir levels are equal to or greater than elevation 34.09 feet msl.

(4) STAGE 4 – Emergency Water Conditions

A. **Target:** Water supply reduction target as determined by the LNRA Board and Management.

B. **Water Use Reduction Response Measures:**

- Notify the TCEQ Watermaster of reservoir conditions.
- Notify the TCEQ Dam Safety Team of reservoir conditions.
- Notify LNRA water customers giving notice of reservoir condition and current delivery volume.
- Dependent on the nature of the event causing the Emergency Condition, LNRA will advise its water customers throughout the event.

- Through the news media, the public should be advised by the customers of the trigger condition. Include in the information to the public an advisement of the mandatory reduction and that water users conserve water.

SECTION V INFORMATION

Once trigger conditions have been reached for the LNRA system, LNRA will notify the TCEQ Watermaster and its customers, whereby customers should notify the public within their jurisdictions of conditions and conservation measures to be taken. The process for notifying the public should include:

a. Posting the Notice of Drought conditions at City Hall, County Courthouse, Post Office, Public Library, Senior Citizens Center and Major Supermarkets;
b. Copy of notice to newspapers and hold press conferences;
c. Copy of notice to local radio and television stations; and
d. Post notice on their respective websites.

SECTION VI TERMINATION NOTIFICATION

Termination of the drought contingency measures should take place when the trigger conditions that initiated the drought contingency measure have subsided, and an emergency situation no longer exists.

LNRA will notify the TCEQ Watermaster and its customers. Customers should notify the public within their jurisdiction of termination of the drought contingency measures in the same manner they were informed of initiation of the drought contingency measures through the city officials in charge.

SECTION VII LNRA ENVIRONMENTAL ASSURANCE PROGRAM

LNRA participates in the TCEQ sponsored Texas Clean Rivers Program, conducting water quality assessments of the Lavaca River Basin. The purpose of the water quality assessment is to identify issues affecting water quality in the Lavaca River Basin, and to develop solution techniques for improving water quality. The assessment program is divided into two phases. LNRA's Clean Rivers Program involves collecting, reviewing, and analyzing past and present water quality data, addressing public opinion, and identifying areas of potential pollution. The program has required the implementation of a comprehensive data management system, the establishment of a water quality monitoring network, and the identification of specific water quality concerns throughout the Lavaca River Basin. LNRA is providing water quality and water conservation information to citizens throughout the Lavaca River Basin as a means of

public education. The LNRA Clean Rivers Program will assist in the protection of the water resources in the Lavaca River Basin.

SECTION VIII PUBLIC INVOLVEMENT AND CUSTOMER COORDINATION

LNRA's wholesale water supply contracts are based on allocations from firm yield and are governed by and are enforceable in all respects in accordance with the laws of the State of Texas.

LNRA's water customers are required to prepare and submit Water Conservation and/or Drought Contingency Plans to the TCEQ. LNRA works closely and coordinates with its customers and recommends that each develop plans consistent with LNRA's DCP and conditions as established herein.

H.B. 252, 83rd Legislature, requires LNRA to inform the Commission when LNRA's available water supply is reduced such that it is less than or equal to 180 days. Consistent with this mandatory requirement, LNRA will fulfill its reporting requirement under the Stage 3 and/or 4 response measures.

As a means of actively informing the public and to provide opportunity for input in the preparation of the DCP, and to inform LNRA's customers of the plan, information concerning drought management will be provided to the customers and the public by means of annual customer meetings, public board meetings, mail, telephone and the news media as appropriate.

SECTION IX PRO RATA WATER ALLOCATION

If a) the triggering criteria specified herein have been met and b) the General Manager, or his designee, deems it necessary, LNRA, in coordination with the South Texas Watermaster and LNRA water customers will allocate water supplies on a pro-rata basis in accordance with Texas Water Code, §11.039.

SECTION X ENFORCEMENT

This DCP and all plans developed hereunder are incorporated by reference into all LNRA water supply contracts. Violation of this DCP is a violation of the contract and will be treated as such.

SECTION XI VARIANCES

The General Manager, or his designee, may grant a temporary variance to the pro-rata water allocation policies provided by this DCP 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 DCP cannot be technically accomplished during the duration of the water supply shortage or other conditions for which the DCP is in effect.

b. Alternative methods can be implemented which will achieve the same level of reduction in water use.

SECTION XII ALTERNATE WATER SUPPLIES

Utilization of alternative water supplies can only be accomplished with the approval of the executive director in accordance with Texas Water Code §11.039.

LNRA does not have an alternative water supply for use in drought conditions. LNRA has arranged to make available up to the historical municipal volume in Jackson County of raw water in an emergency condition. Important to note: this raw water supply would need to undergo treatment prior to use or substitution as a potable water supply.

LNRA has a pending application with TCEQ for a new water right on the Lavaca River that includes an off-channel reservoir to provide a new/alternative water supply.

SECTION XIII PLAN UPDATE

LNRA shall review and update, as appropriate, this DCP at least every five (5) years, based on new or updated information, such as revisions in the regional water plan.

APPENDIX A

Texas Administrative Code, Section 288.22

APPENDIX A
Texas Commission on Environmental Quality Rules on Drought Contingency Plans for Wholesale Water Suppliers

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

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

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

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

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

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

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

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

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

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

(B) utilization of alternative water sources with the prior approval of the executive director as appropriate (e.g., interconnection with another water system, temporary use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.) in accordance with Texas Water Code, §11.039.

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

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

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

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

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

Source Note: The provisions of this § 288.22 adopted to be effective February 21, 1999, 24 TexReg 949; amended to be effective April 27, 2000, 25 TexReg 3544; amended to be effective October 7, 2004, 29 TexReg 938