LOWER NECHES VALLEY AUTHORITY

WATER CONSERVATION PLAN

May 2019

Table of Contents

List of Tables

List of Figures

List of Appendices

1 INTRODUCTION

The Authority was created in 1933 by the 43rd Legislature as a conservation and reclamation district under Section 59 Article 16 of the Texas Constitution to "conserve, store, control, preserve, utilize and distribute the storm and flood waters and the waters of the rivers and streams of the State…." To that end the Authority has developed this Water Conservation Plan as part of LNVA's overall water management program. The Plan was prepared in accordance with the Guidance and Methodology for Reporting on Water Conservation and Water Use developed by the Texas Water Development Board and the Texas Commission on Environmental Quality in consultation with the Water Conservation Advisory Council. This document serves to outline the means the LNVA will use to promote water conservation.

1.1 Lower Neches Valley Authority

Lower Neches Valley Authority's mission is to develop and manage a system which will meet the present and long term freshwater needs of municipal, agricultural and industrial consumers, to protect water quality, to insure its affordability, and to establish conditions which will enhance economic development throughout the Authority's jurisdiction. In the Neches River Basin, LNVA is the local sponsor of Sam Rayburn and B.A. Steinhagen Reservoirs which are owned by the U.S. Government and operated by the U.S. Army Corps of Engineers, Fort Worth District. Water stored in Sam Rayburn Reservoir for use by LNVA is released to Lake B.A. Steinhagen, from which it flows into the lower Neches River and on to the LNVA freshwater intakes. LNVA is also the local sponsor and operator for the Neches River Saltwater Barrier at Beaumont, a Federal project with the U.S. Army Corps of Engineers, Galveston District. The saltwater barrier protects freshwater intakes from saltwater migrating upstream from the deep draft navigation channel to Beaumont. The Authority's State approved water rights include both run-of-river rights and storage rights in the three Federal projects that total 1,173,876 acre-feet per year. Delivery of fresh water is made by diverting water from the Neches River and Pine Island Bayou through two primary lift stations; two secondary lift stations pump the water into an approximately 340-mile-long canal system where most deliveries are made without additional pumping.

Additionally, the LNVA has water rights totaling 30,000 acre-feet from the Trinity River for irrigation purposes in Liberty, Chambers, and Jefferson Counties. Delivery of fresh water in the LNVA-Devers Canal System is made by diverting water from the Trinity River through a primary lift station and two secondary lift stations to pump water into approximately 240 miles of canals.

The combined LNVA-Neches and Devers Canal System covers an area of approximately 750 square miles in Jefferson, Liberty and Chambers Counties as shown in Figure 1.1.

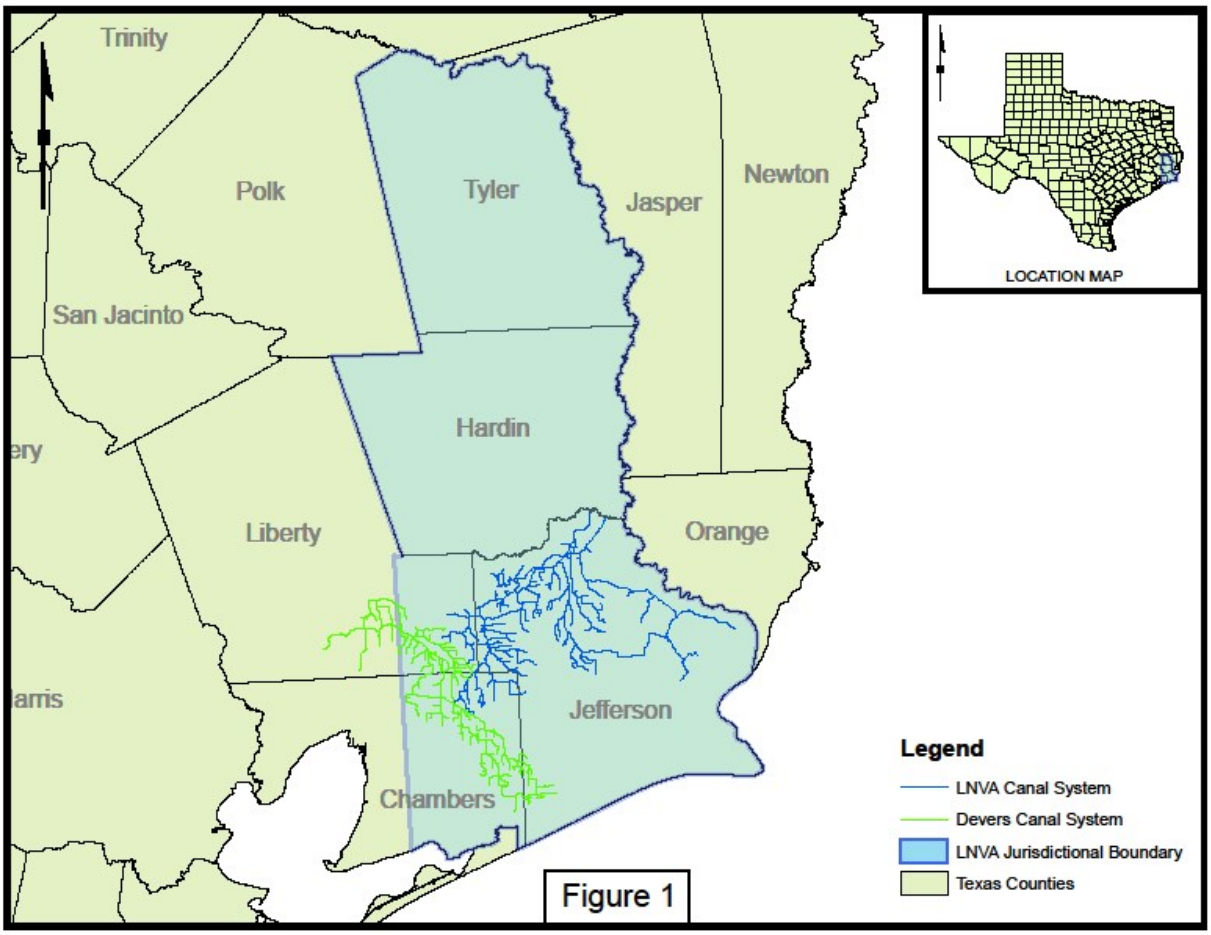

Figure 1.1 Map of LNVA Jurisdictional Boundaries and Canal Systems

1.2 Goals of the Water Conservation Plan

The LNVA has established short-term and long-term goals for conserving water and has outlined the procedures and steps necessary to achieve these goals. The following sections of this Plan describe LNVA's water supply system, the current water conservation practices, and the means the LNVA will use to promote water conservation. LNVA will facilitate regional water conservation and drought contingency planning through its participation in Regional Water Planning Group activities. LNVA is a voting member of the Region I Water Planning Group and a non-voting member of the Region H Water Planning Group. The Authority's goal is to be active in this process through the current planning period and to be a part of subsequent planning phases (every five years).

The Authority will assist State authorities in providing technical assistance to local water users in plan development. It is the Authority's goal to assist all local water users, whether or not they are required by TCEQ to have a plan, to develop water conservation plans that meet the requirements and intent of 30 TAC 288.

1.3 Purpose and Commitment to Water Conservation

The LNVA is committed to providing an adequate supply of quality water to its municipal, industrial, and agricultural users. Water conservation is an integral element of that effort. There are a variety of benefits to be gained by implementing water conservation practices. Specifically, using water conservation to reduce demand in water-poor areas and areas of rapid growth is an effective means to increase available water supplies without developing additional water resources. This provides economic benefits to both the end users of the water and the utility responsible for supplying the water. The most productive conservation measure available to a regional entity such as the LNVA is the effective development and protection of water resources. This includes water use planning, water quality protection activities, and monitoring the quantity and quality of the available water resources. The LNVA works closely with the U.S. Army Corps of Engineers (USACE), the Texas Commission on Environmental Quality (TCEQ), the Texas Water Development Board (TWDB), and the Regional Water Planning Groups to maintain a water supply of high quality.

2 SYSTEM EVALUATION

2.1 Description of Existing System

The Lower Neches Valley Authority operates a pumping and distribution system to supply raw water to municipal, industrial, and agricultural clients. The LNVA-Neches System uses water from the Neches River, Pine Island Bayou, Lake B.A. Steinhagen, and Sam Rayburn Reservoir. Two primary lift stations are located on Pine Island Bayou, a few miles upstream from the confluence with the Neches River. These stations pump water into the LNVA-Neches distribution system, which consists of approximately 45 miles of main canals and 295 miles of laterals. The Neches system also includes the Lakeview Canal, which carries water by gravity flow from the Neches River to the Neches Canal's first lift station.

The LNVA-Neches system has two main canals, the Beaumont Irrigation (BI) Main Canal and the Neches Main Canal. A second lift station then pumps the water to the upper level of the Neches Main Canal. The BI Main Canal is also equipped with two lift stations in series to divert the water

from Pine Island Bayou into the canal system. The canals are arranged such that flow can be delivered to all customers from either of the two main pumping systems. The total capacity of the primary pumping facilities on the Neches system is approximately 1,200 million gallons per day (MGD).

The fresh water diversion points are located on the Neches River and Pine Island Bayou at places where the stream bed is below sea level. During dry conditions, the water surface elevation in the Neches and its tributaries is close to sea level and saltwater from Sabine Lake and the Gulf of Mexico moves upstream. To prevent upstream movement of the saltwater wedge during periods of low flow in the river, the U.S. Army Corps of Engineers has historically released water from the Sam Rayburn - Steinhagen reservoir system. Based on observations by the LNVA, a flow of approximately 2,500 cubic feet per second (cfs) is required to control the upstream movement of the saltwater wedge. This flow was discharged to Sabine Lake and was not available for water supply, thus representing a direct loss of usable yield.

To further protect the water intake structures on the Neches system from saltwater contamination and to conserve fresh water during dry periods, the LNVA, working as the local sponsor with the U.S. Army Corps of Engineers, has constructed and is operating a permanent saltwater barrier on the Neches River at Beaumont under Water Rights Permit No. 5743. The barrier is equipped with five Tainter Gates and a pair of Sector Gates, which permit freshwater traveling downstream to pass the structure, allow for navigation, and prevent the upstream migration of saltwater. It is estimated that the operation of the saltwater barrier will conserve an average of 200,000 acre-feet per year in upstream reservoirs that would have been a loss of usable yield if past practices of flushing saltwater from the channel were continued. The Neches River Saltwater Barrier began operation in November 2003.

The LNVA-Devers system diverts water from the Trinity River. LNVA coordinates with the Trinity River Authority for releases from Lake Livingston. The primarily lift station on the Devers system is located several miles upstream from the saltwater barrier at Wallisville, Texas. The lift station pumps water into the distribution system, which consists of approximately 72 miles of main canals and 168 miles of laterals.

The Devers system consists of two main canals, the Devers East Main and Devers West Main. Two secondary lift stations distribute water by gravity flow throughout the system. The pumping capacity within the system is approximately 215 million gallons per day (MGD). In addition to

providing raw water to customers within its jurisdictional boundaries, the LNVA operates a surface water treatment facility capable of treating five million gallons per day. The facility includes three one million gallon ground storage tanks and currently is the wholesale provider of treated water to the Bolivar Peninsula Special Utility District.

2.2 Description of Proposed System Improvements

The LNVA manages a five-year capital improvement program to maintain and improve the system infrastructure. The budget provides for expenditures of approximately $39 million between 2019 and 2023. The capital improvement program focuses on four primary areas: pumping facilities, canal structures, metering technologies, and water distribution. Pumping facility improvements, which total approximately $9 million, focus on rehabilitation of existing water pumps and intake and discharge piping, as well as the relocation of the Devers Primary Lift Station. Costs associated with the replacement and rehabilitation of water control structures, culverts, and canal levee rehabilitation are expected to exceed $22 million. In excess of $0.75 million is budgeted for improvements in metering technology.

2.3 Customers

The LNVA supplies raw water to municipal, industrial, and agricultural customers located in the lower Neches River, the Neches-Trinity Coastal, and the lower Trinity River Basins. The major municipal customers are the Cities of Port Arthur, Nederland, Groves, and Port Neches along with other smaller communities in Jefferson and neighboring counties including the Bolivar Peninsula. The largest municipality, Port Arthur, accounts for over sixty percent of the total municipal water use. The industrial customers are primarily chemical and petrochemical industries located in the Beaumont-Port Arthur corridor. The LNVA's five highest volume customers from 2016 through 2018 accounted for approximately 49% of all water supplied during the period. Table 2.1 details the average annual water use of these high volume customers.

Customer	Water Use Category	2016-2018 Average Annual Water Use (Ac-Ft)	Treated or Raw
Motiva	Industrial	31,736	Raw
Exxon Oil	Industrial	22,453	Raw
Valero	Industrial	20,923	Raw
Huntsman PetroChemical	Industrial	19,321	Raw
City of Port Arthur	Municipal	16,159	Raw

Table 2.1 Average Annual Water Use for Five Largest Customers

Forty-two industrial customers received freshwater from the LNVA in 2018. In addition to municipal and industrial customers, the LNVA also supplies irrigation water, which is predominantly used for rice farming. In 2018, the LNVA provided agricultural water to more than 80 customers. A breakdown of active municipal, industrial and agricultural wholesale connections by major water use category is presented on Table 2.2. There has been little change in the number of customers during the past five years. Table 2.3 delineates by customer category the fluctuation in number of customers. Sample water contracts for industrial, municipal and irrigation customers are included in Appendix A.

Water Use Category	Active Wholesale Connections in 2018		
	Metered	Unmetered	Total Connections
Municipal	12	-	12
Industrial	42	-	42
Commercial	-	-	-
Institutional	-	-	-
Agricultural	84	-	84
Total	138	-	138

Table 2.2 Active Wholesale Connections by Major Water Use Category

Water Use Category	Net Number of Wholesale Connections				
	2014	2015	2016	2017	2018
Municipal	0	0	0	0	0
Industrial	0	-1	0	-5	6
Commercial	-	-	-	-	-
Institutional	-	-	-	-	-
Agricultural	0	-5	2	3	-1
Total	0	-6	2	-2	5

Table 2.3 New Wholesale Connections by Water Use Category

As a wholesale provider, the LNVA distributed an average of 320 million gallons per year of treated water over the last five years to the Bolivar Peninsula Special Utility District. The utility district serves as the retail provider to citizens in Bolivar Peninsula and High Island. Treated water represented approximately 0.4% of all water distributed by the LNVA in 2018.

Month	Treated Water Delivered (Gallons)				
	2014	2015	2016	2017	2018
January	18,250,000	19,178,000	21,666,000	19,786,000	28,767,000
February	15,242,000	17,642,000	19,677,000	19,046,000	18,762,000
March	22,990,000	24,320,000	22,427,000	28,360,000	26,212,000
April	22,989,000	22,972,000	22,216,000	28,272,000	25,025,000
May	32,385,000	24,913,000	28,372,000	33,614,000	37,620,000
June	38,875,000	30,215,000	29,552,000	30,346,000	38,424,000
July	42,109,000	36,537,000	42,665,000	37,649,000	40,371,000
August	35,501,000	36,755,000	33,157,000	30,519,000	37,473,000
September	26,909,000	28,769,000	27,841,000	13,953,000	26,406,000
October	23,093,000	24,306,000	26,717,000	23,887,000	25,340,000
November	20,783,000	19,782,000	24,009,000	21,747,000	20,864,000
December	18,954,000	19,698,000	22,053,000	22,468,000	22,000,000
Total	318,080,000	305,087,000	320,352,000	309,647,000	347,264,000

Table 2.4 Historical Treated Water Delivered

2.4 Water Rights

The LNVA is permitted under water rights certificate number 06-4411 to store, use, and divert water from the Sam Rayburn-B.A. Steinhagen reservoir system and the Neches River - Pine Island Bayou system. The water released from the Sam Rayburn-B.A. Steinhagen system for diversion by LNVA may not exceed 792,000 acre-feet per year. The Authority can divert 381,876 acre feet from the Neches River and Pine Island Bayou. Permit number 08-5271 authorizes the LNVA to divert and use 30,000 acre-feet per year from the Trinity River. As detailed in Table 2.5, the total quantity of water permitted for use by the LNVA is 1,203,876 acre-feet. Table 2.6 provides data regarding water diverted during the period from 2014 through 2018. Copies of the water rights documents are included in Appendix B.

Source	Water Right	General	Irrigation	Total
Neches River & Pine Island Bayou	06-4411	381,876	-	381,876
Sam Rayburn Reservoir	06-4411	792,000	-	792,000
Trinity River	08-5271		30,000	30,000
Total		1,173,876	30,000	1,203,876

Table 2.5 LNVA Water Rights (Acre-Feet)

Year	Self-supplied Water (Ac-Ft)	Purchased/Imported Water (Ac-Ft)	Total System Input	Total Ac-Ft/day
2014	291,871	-	291,871.31	800
2015	252,864	-	252,863.67	693
2016	256,801	-	256,801.35	702
2017	240,796	-	240,795.66	660
2018	267,255	-	267,255.00	732
Historic 5-year Average	261,917	-	261,917	717

Table 2.6 System Input

The LNVA meters its water diversions from the Neches River and Pine Island Bayou by using ultrasonic meters and pump rating curves for each of the first lift stations. The ultrasonic meters are calibrated semiannually. In the event of a meter failure, the diversion is calculated from pump curves. The pump curves consider the engine speed and the pumping head to determine a pumping rate. This rate is applied to the number of operating hours of the pump to assess the number of gallons pumped. Diversions from the Trinity River are calculated from pump curves. The total gallons metered and/or calculated through all pumps operated during the month are reported as the amount diverted for the month.

The water deliveries to customers are measured by meters installed at each customer's intake point. The difference between diversions and deliveries is the result of system losses. These losses are cumulative for all system components, including metering equipment, numerous water control structures, and the open canal system of earthen dikes. In 2009, the LNVA estimated these losses to range from 15 to 25 percent of the total water diverted. The Authority’s aggressive leak detection and repair program along with vegetation control has continued to result in a reduction in delivery losses.

2.5 Historical and Projected Water Uses

Annually, the LNVA reports to the Texas Commission on Environmental Quality (TCEQ) the metered water diversions and the quantity of water supplied to its customers. Wholesale water demand has increased approximately 6% in the five-year period from 2014 to 2018. Canal system water loss has decreased from 21% to 7% over that same period, although water loss can fluctuate on a yearly due to weather and other variances. The LNVA's historical water deliveries and system losses over the past 5 years are summarized in Tables 2.7, 2.8, 2.9, 2.10, and 2.11.

Customer Category	Total Wholesale Water Delivered (Acre-Feet)				
	2014	2015	2016	2017	2018
Municipal	24,602	24,707	24,189	25,850	29,509
Industrial	119,086	127,304	136,487	134,944	150,607
Commercial	0	0	0	0	0
Institutional	0	0	0	0	0
Agricultural	87,986	60,382	61,553	49,536	68,051
Total	231,674	212,393	222,229	210,330	248,167

Table 2.7 Wholesale Water Delivered for Past Five Years

Customer Category	Statistics for 5 Year Historical Water Use (Acre-Feet)			
	Min	Max	Average	% of Total Use
Municipal	24,189	29,509	25,771	11%
Industrial	119,086	150,607	133,686	59%
Commercial	0	0	0	0%
Institutional	0	0	0	0%
Agricultural	49,536	87,986	65,502	29%
Total	210,330	248,167	224,959	

Table 2.8 Statistics for Five Year Historical Water Use

Month	Total Raw Water Delivered (Acre-Feet)				
	2014	2015	2016	2017	2018
January	10,820	12,043	13,593	13,651	15,282
February	9,852	9,111	13,573	12,531	13,095
March	10,290	10,417	15,031	13,890	16,487
April	17,090	12,286	15,318	17,202	16,874
May	28,206	17,985	21,349	25,794	32,224
June	32,734	26,872	26,375	26,097	33,594
July	35,034	32,843	32,411	24,244	32,584
August	20,671	27,720	20,389	17,744	27,060
September	23,341	19,088	18,657	12,290	17,229
October	17,114	17,706	17,595	18,142	16,287
November	13,064	12,547	14,682	14,510	13,262
December	13,458	13,772	13,296	14,235	14,191
Total	231,675	212,392	222,269	210,330	248,168

Table 2.9 Historical Monthly Water Use

Wholesale	2014	2015	2016	2017	2018	Average (Ac-Ft)
Summer Wholesale	88,439	87,435	79,174	68,085	93,237	83,274
Total Wholesale	231,675	212,392	222,269	210,330	248,168	224,967

Table 2.10 Historic Summer vs. Total Wholesale (Acre-Feet)

Year	Total Water Loss (Ac-Ft)	Water Loss per day (Ac-Ft)	Water Loss as a Percentage
2014	60,197	165	21%
2015	40,471	111	16%
2016	34,572	94	13%
2017	30,466	83	13%
2018	19,088	52	7%
5-year average	36,959	101	14%

Table 2.11 System Water Loss

To evaluate the projected water use for the LNVA, the Texas Water Development Board population and water use projections were used. These projections are broken down by river basin, county and major municipalities and are reported by decade for different analysis criteria. Water use projections are separated into use categories, including municipal, manufacturing, and irrigation. The municipal water use projections consider rainfall conditions and the level of conservation implemented. The manufacturing water use projection criteria are based on oil prices with or without conservation measures. Irrigation water use scenarios address implementation of water efficient irrigation technology and the status of the Federal Farm Program. These projections are presented in Table 2.12. Jefferson County accounts for almost 50% of the projected demand for Region I.

		2020	2030	2040	2050	2060	2070
Region I	Irrigation	145,525	148,652	152,397	156,892	162,258	163,471
	Municipal	192,049	199,870	207,822	218,266	230,468	243,611
	Industrial	372,984	420,426	420,426	420,426	420,426	420,426
	Mining	27,523	24,547	18,169	15,488	12,986	12,093
	Total	738,081	793,495	798,814	811,072	826,138	839,601
Jefferson County	Irrigation	89,373	89,373	89,373	89,373	89,373	89,373
	Municipal	60,124	62,112	64,319	67,573	71,563	76,127
	Industrial	206,193	237,193	237,193	237,193	237,193	237,193
	Mining	194	216	244	294	329	368
	Total	355,884	388,894	391,129	394,433	398,458	403,061
	Percent of Region I	48%	49%	49%	49%	48%	48%

Table 2.12 **Fifty Year Water Demand Projection (Acre-Feet)**

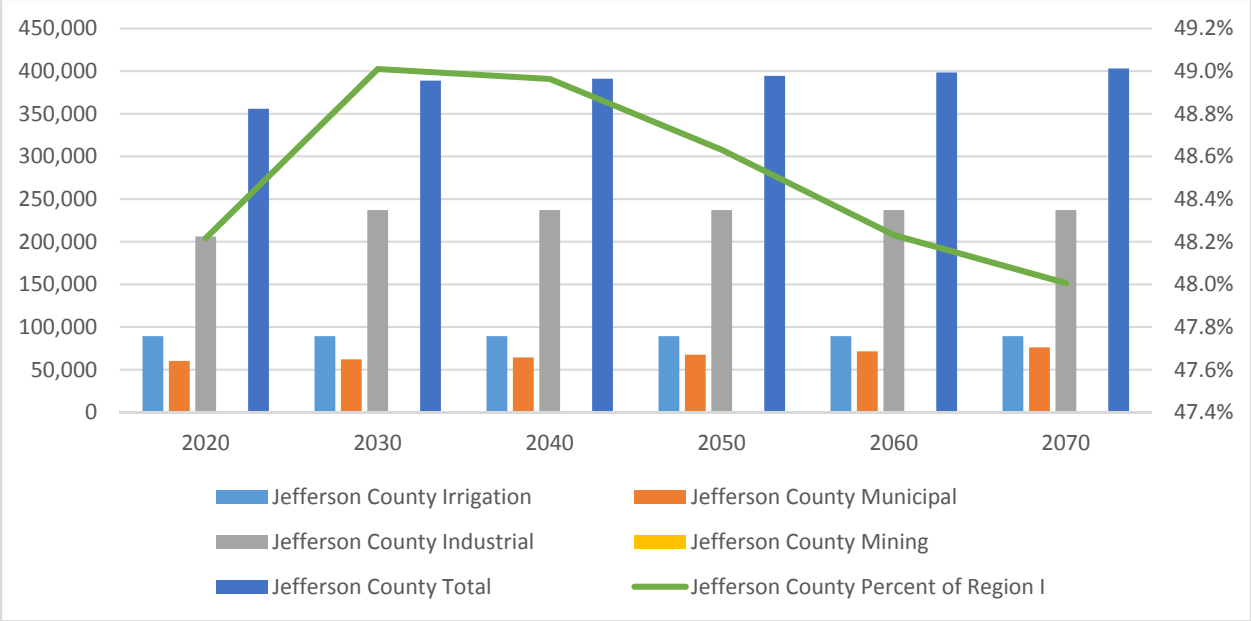

Figure 2.1 Fifty Year Water Demand Projection

2.5.1 Municipal Use

Municipal water usage has historically represented the smallest component of LNVA's total water requirements. From 2014 to 2018, the municipal water usage generally ranged from 25,000 to 30,000 acre-feet per year, representing approximately 11% of the total reported use. The LNVA's highest demand for municipal water is in South Jefferson County, which includes the cities of Groves, Nederland, Port Neches and Port Arthur. The City of Beaumont provides its own diversion facilities on the Neches River and is not directly served by the LNVA canal system, although the

Neches River Saltwater Barrier does protect the City of Beaumont's freshwater intakes. The City of Beaumont does have a contract for stored water with LNVA to back up its run of river water rights. The population projections for municipalities served by LNVA indicate minimal growth through the year 2070. The total municipal water demand for LNVA customers was calculated using the water use projections from the East Texas Regional Water Planning Group. The TWDB-based municipal water demand is projected at 62,112 for the year 2030 in Jefferson County. The projected municipal demand in 2024 represents less than 16% of the anticipated demand for the county, where the LNVA provides around 50% in volume.

2.5.2 Irrigation Use

Water for agricultural purposes has traditionally been the largest component of the total water requirements in the LNVA system. In 1943, irrigation water represented 92 percent of the total use; however, due to shifts from agricultural to industrial use, this percentage has dropped significantly in recent years. From 2014 to 2018, the number of acres irrigated fluctuated between 27,400 and 32,200 acres. This fluctuation is the result of supply and demand associated with the current rice market. During the same period, agricultural water demand fluctuated from approximately 49,500 acre-feet in 2017 to 88,000 acre-feet in 2014. Much of the fluctuation in water demand can be attributed to fluctuations in acreage farmed and weather.

To reflect the influences of current market trends and other economic factors, the projections for irrigation water demand are based on crop-specified prices, yields, water costs, acres under production, improvements in water use efficiency, and federal farm policy. The TWDB has developed a model to predict water demands using the above factors for several different scenarios. The total agricultural water demand for LNVA customers was determined using the water use projections from the East Texas Regional Water Planning Group.

The TWDB-based agricultural water demand is projected at 89,373 acre feet for the year 2030. The projected agricultural demand in 2030 represents approximately 23% of the anticipated demand for Jefferson County, where the LNVA serves a large majority.

2.5.3 Industrial Use

Industrial water requirements have historically accounted for the second largest water use in the LNVA system. Water demand for industry increased at a rapid rate from the 1950s to 1972, when industrial water use reached a maximum amount of 187,000 acre-feet and constituted 40 percent of the total water supplied by LNVA. From 1972 to 2000 there was a general decline in industrial

water use, due in part to industry efforts to reduce the quantities of water needed for their processes. From 2001 until 2005, industrial use increased by 10% per year due to industrial expansion. Between 2009 and 2013, industrial use fluctuated between approximately 115,000 and 132,000 acre- feet per year. The fluctuations primarily reflected market conditions in the petrochemical industry. From 2014 to 2018, industrial use grew approximately 25% (30,000 Ac-Ft) due to recent expansions, which fluctuated between 120,000 and 150,000 acre-feet. Industrial use accounts for approximately 60% of total use.

The TWDB expects significant growth of industrial water use in the lower Neches River basin over the next decade. Continued expansion of industrial facilities will increase industrial water demands to an estimated 237,193 acre feet by 2030. If the predictions are accurate, industrial water use will represent almost two thirds of the total water demand for the LNVA by 2030. The "most likely" scenario used for the industrial water use analysis assumes stable oil prices and continued improvements in water use efficiency.

2.6 Current Water Conservation Measures

The LNVA presently employs and participates in water conservation measures to protect the water supply from possible contamination and minimize losses associated with the water supply system. These measures include implementing customer education programs, participating in the Clean Rivers program, operation of the Neches River Saltwater Barrier, aggressively maintaining the canal system, and conducting leak detection and repairs.

The LNVA has a well-developed information and education program. The LNVA publishes information pamphlets and periodic newsletters to inform the public of the Authority's activities and operations. The LNVA personnel frequently make presentations and participate in public education activities such as Earth Day and the Neches River Festival. The LNVA also sponsors the Major Rivers conservation education program for elementary school classes throughout the Neches River basin, and gives tours of the Neches River Saltwater Barrier.

The LNVA actively participates in the Clean Rivers Program. This program was instituted under Senate Bill 818 of the Texas Legislature, known as the Clean Rivers Act, to conduct regional water quality assessments of Texas watersheds. As required by the program, the LNVA regularly monitors the water quality of local rivers and streams for potential contamination. A water quality "Basin Highlights" report is prepared every year and a "Basin Summary" report is prepared every five years, both reports are submitted to the TCEQ. These reports describe the current water quality

of the lower Neches River and Neches-Trinity Coastal basins and potential impacts of activities along the basin waterways. In addition to the monitoring under the Clean Rivers program, the LNVA has its own monitoring program. This program includes monitoring the movement of the saltwater wedge, river elevations, and periodic water quality monitoring above and below the LNVA diversion intakes and along the canal system.

Another measure developed to protect the quality of water with the LNVA distribution system is the installation of the permanent saltwater barrier. In the past the LNVA erected temporary barriers during times of low flow as part of water conservation and drought contingency efforts. These barriers minimized the amount of water released from the Sam Rayburn-B. A. Steinhagen reservoir system to control saltwater intrusion and protect the quality of water at the LNVA intake structures. The permanent saltwater barrier is operated with the same intent, to minimize release of stored water to control saltwater intrusion, which results in an estimated average conservation of 200,000 acre-feet per year.

Since LNVA's canal system is an open system of earthen levees, evaporation, transpiration, and seepage through the earthen dikes account for much of the estimated system losses. To minimize these losses, the LNVA has an extensive program of canal maintenance, including leak prevention, repairs, and removal of vegetation in the canals and along the levees. The LNVA's program of canal maintenance is designed to prevent leaks from occurring whenever possible and to repair as soon as possible those leaks that do occur. Ten employees of the LNVA, called Canal Riders, are each assigned a portion of the 580-mile canal system to monitor the levees for leaks or potential leaks. The LNVA also employs equipment operators and maintenance personnel, whose duties include reworking the earthen levees, repairing or replacing water control structures, removing aquatic vegetation, and mowing new vegetative growth. Additionally, the LNVA employs one full-time and one seasonal employee to apply herbicides to manage aquatic vegetation and retard establishment of undesirable vegetation on the levees.

LNVA has an established meter repair and replacement program. The LNVA installs, maintains and replaces meters for its municipal, industrial, and agricultural customers. Each meter is on a routine maintenance schedule.

The agricultural meter program was instituted in 2004 to more accurately measure and inform farmers of the quantity of water used to irrigate each field. The Texas A&M Research Center in Beaumont reports that rice requires on average 39 inches of water per crop. Prior to metering water

for agricultural customers, observed demand for rice irrigated by LNVA varied from 30 inches to 200 inches (not including precipitation). In 2004, an average of 3.79 acre feet was used for irrigation by LNVA customers. In 2005, LNVA began billing rice farmers on the quantity of water used rather than by the acre farmed. When metering was instituted along with a conservation oriented rate structure, an average 1.12 acre feet reduction in irrigation demands was observed.

In 2013, the Authority initiated development of water management and billing software that when fully implemented will provide customers with real time water use information. A significant goal of the water management software investment is to encourage conservation by making users more aware of and responsible for their water use.

The LNVA's surface water treatment facility undergoes continuous maintenance and inspection and is managed by qualified water treatment professionals. The facility recycles backwash to the head of the plant thereby conserving approximately 8000 gallons per day. In 2013, the facility conserved almost 3 million gallons with this process.

3 CONSIDERATION OF CONSERVATION PRACTICES FOR A REGIONAL WHOLESALE WATER SUPPLIER

As a wholesale water supplier, the applicable water conservation methods of the LNVA are quite different from water conservation methods applicable to municipal and other retail water suppliers; however, there is a direct connection between the demand placed on the reservoirs and canal system and the use of water by the LNVA's customers. It is this connection that warrants the use and implementation of a water conservation program. The LNVA recognizes this relationship and has already implemented water conservation practices as previously discussed in Section 2.6. To evaluate whether additional measures should be implemented by the LNVA, a discussion of potential conservation practices and their applicability to LNVA is presented below.

3.1 Education and Information Program

The LNVA understands that water conservation benefits individuals and communities in terms of long-term availability and costs for water. One of the most effective measures that the LNVA may undertake in cooperation with its customers is a coordinated public education and information program. As previously discussed, the LNVA currently publishes and distributes information on its activities, status of the LNVA's supply reservoirs, and the water quality of the Lower Neches Basin. The LNVA is active in the Major Rivers and Clean Rivers programs, which include public education information on the water supply system and conservation measures. In addition to

continuing information and education programs, the LNVA encourages customer awareness of water conservation practices through the following measures:

a. Encourage the boards of education and teachers in local school systems to promote Major Rivers program and water conservation through classroom lectures every school year.

b. Actively distribute water conservation brochures in the places of easy access, such as schools, libraries, churches, headquarters of civic groups and other organizations.

c. Disseminate the conservation information through LNVA website (www.lnva.dst.tx.us) and news media, such as publishing articles in local newspapers discussing the benefits of water conservation.

3.2 Conservation-Oriented Rate Structure

The LNVA recognizes that proper water pricing can be an important water conservation measure. Based on projected water use requirements in the coming decades the TWDB predicts a significant increase in industrial water use and a decrease in irrigation water use in the LNVA service area. The municipal water use continues to be a small percentage of LNVA's total water demand, with one major municipality (Port Arthur) accounting for a significant portion of the total municipal water use. In consideration of the projected water use trends, the LNVA has implemented a conservation-oriented rate structure for its industrial and municipal customers.

3.3 Neches River Saltwater Barrier

The Neches River Saltwater Barrier at Beaumont is a Federal project constructed by the U.S. Army Corps of Engineers and operated by the LNVA to offset the effects of the deep draft navigation channel to Beaumont. The saltwater barrier operation is a critical part of LNVA's conservation and water supply operations. Customers are required to give notice of water supply needs a minimum of three days in advance of the need. This request is routed through the barrier where the operators evaluate the quantity of water available in the uncontrolled portion of the watershed, and when needed, request reservoir releases from Lake B.A. Steinhagen to supplement the flow in the lower basin in order to insure water is available to meet the diversion requests and in stream flow requirements to Sabine Lake. Operations of the Saltwater Barrier are reported to TCEQ under the annual water rights permit report for Permit No. 5743.

3.4 Metering and Meter Repair and Replacement

The LNVA understands the importance of metering water diversions and maintaining the meters to accurately record the amount of water used. The Authority has installed meters on the system's diversion pumps to measure its total diversions. The LNVA currently has a meter maintenance and replacement program for its municipal and industrial customers. Meters are routinely checked and calibrated to an accuracy of two percent in accordance with the supply contracts.

The LNVA began metering all agricultural customers in 2004. A meter test chamber was constructed in 2007 and an associated calibration facility was completed in 2008. The facility allows LNVA to minimize the cost of maintenance on meters required for irrigation metering and verifies the accuracy of the meters. The LNVA-Devers system was acquired in 2008. At that time, all Devers system agricultural customers were billed based on an estimated demand volume per acre. By 2014, all LNVA-Devers system customer fields were metered. The LNVA continues its existing metering program for municipal and industrial customers, and has an aggressive program to improve agricultural metering by replacing mechanical meters with Doppler ultrasonic meters.

3.5 Leak Detection and Repair

The LNVA is responsible for leak detection and repair along its canal system and lift stations. The LNVA has an active leak detection and repair program along its canal system as described in Section 2.6. This includes employees dedicated to monitoring the levees for leaks or potential leaks, maintenance personnel whose duties include reworking the earthen levees, repairing or replacing the water control structures and removal of vegetation, and outside contractors to remove trees and control vegetative growth. These activities help minimize losses attributed to transpiration and seepage through the earthen levees. The LNVA will continue its program to maintain and repair leaks detected along its levee system and will actively pursue grubbing and brush control within the canal distribution system. The LNVA will continue to inspect and repair or replace water control structures that contribute to significant water losses.

To address the potential water losses associated with its customers' distribution systems, the LNVA will continue to provide technical assistance to all in-basin users by promoting the conservation services of the TWDB and the Texas Rural Water Association (TRWA). The TWDB provides leak detection equipment to basin users to evaluate the integrity of their distribution systems. The TWDB can also provide municipalities, industries, and business with conservation services. These services include technical assistance in developing water conservation programs,

information and education materials on water conservation, leak detection, and water audit assistance, and information on water reuse, desalting and alternative water sources. The TRWA provides water audits and leak detection services to rural users or water supply corporations.

3.6 Target 5 and 10 Year Goals

LNVA staff will continue to work with Municipal, Industrial and Agricultural customers by providing resources that will enable them to improve their processes and thus conserve water. The LNVA will continue to track water loss for the system. For wholesale suppliers of raw water such as the LNVA, system water loss is primarily associated metering and billing, evaporation, transpiration, infiltration, and structural leaks. There are practical limits for potential reductions in each of these areas; however, the Authority has significantly reduced system losses over the previous ten-year period, and will continue to seek methods of minimizing system losses. System losses have averaged 14% of total diversions over the previous five years.

Industrial customers in the LNVA jurisdictional boundaries represent a diverse group of industries and associated processes. These industrial customers are required to establish specific water conservation goals for their processes; therefore, this plan does not include specific industrial goals. Similarly, LNVA municipal customers of raw water establish their own conservation goals; however, per capita per day goals are established herein as a target for those customers. The LNVA will continue to monitor this goal and will work with municipal customers to meet the goals.

Irrigation needs are dependent on many factors, most notably seasonal weather conditions. The LNVA will continue to track water use per acre for rice farms and has established a goal for total irrigation water. It is recognized that significant rainfall events or the lack of rainfall can impact water demand. The LNVA will continue to work with farmers to insure water distribution systems within the farm system are maintained to minimize water loss.

The LNVA, with the adoption of this Water Conservation Plan, is establishing voluntary target goals as follows:

	Five Year Goals	Ten Year Goals
LNVA Canal System Losses	14% of total diversions	13% of total diversions
Municipal Consumption	185 gallons per capita per day	175 gallons per capita per day
Rice Irrigation	32 inches applied to field	28 inches applied to field

Table 3.1 Target 5 and 10 Year Goals

3.7 Recycling and Reuse

The LNVA does not currently have a water rights permit which would allow it to utilize recycling and reuse of raw water. The LNVA water treatment facility does recycle backwash water through the plant as discussed in section 2.6. The LNVA continues to investigate the possibility of recycling and reuse wherever legally possible and economically feasible.

3.8 Technical Assistance in Development of Conservation Plans

The LNVA has three basic contracts, one for industrial customers, one for municipal customers, and one for irrigation customers. Each contract contains language addressing water conservation and/or compliance with regulatory agencies. To further promote water conservation, the LNVA requires customers signing new and renewed water supply contracts to develop and implement water conservation plans prepared in accordance with TCEQ guidelines. Each plan should include material and data similar to the contents of the LNVA's plan; however, it should be more specific to the area and uses of the customer.

3.9 Enforcement

The Water Conservation Plan will be enforced by the LNVA through contracts with its customers, which will detail specific clauses relating to the requirements of the Plan. New and renewed contracts executed after adoption of this Plan will include the conservation measures recommended in this Plan, in addition to present requirements. The contracts will address applicable rules and regulations of the Texas Commission on Environmental Quality, Texas Water Development Board, or any other federal, state or local regulatory authority with power to require or approve water conservation and drought contingency plans. Contracts stipulate that when the customer is not in compliance with the LNVA's Water Conservation and Drought Contingency Plans, water made available to the customer will be reduced to that amount of water that the LNVA's General Manager estimates would be necessary to satisfy customer's demand, if the customer was operating in compliance with both LNVA's and customer's Drought Contingency Plans.

The water conservation activities will be reviewed every two years for compliance with the Plan and applicable rules and regulations. Based on the results of the review, the Plan will be updated as needed.

4 IMPLEMENTATION REPORT FOR CONSERVATION PRACTICES FOR A REGIONAL WHOLESALE WATER SUPPLIER

As a wholesale water supplier, the Lower Neches Valley Authority does not maintain "per capita" style of records on its municipal or industrial customers based on persons served at the retail level, or unit of industrial production per unit of water delivered. The Authority does however track irrigation water usage based on acreage of rice production.

4.1 Education and Information Program

LNVA staff has a long history of being proactive in public outreach and education programs described in Section 3.1 above. Each year, the interest of both educators and students is seen in the repeat requests from local schools for Major Rivers program materials.

4.2 Conservation-Oriented Rate Structure

The LNVA has adopted a conservation-oriented rate structure for all industrial and municipal customers. The contracted rate structure in 2018 provides for an increase from $0.35 to $0.40 per thousand gallons for water used above the contracted amount for industrial customers and an increase from $0.26 to $0.30 per thousand gallons for municipal customers.

4.3 Neches River Saltwater Barrier

Prior to the October 2003 completion of the Neches River Saltwater Barrier at Beaumont, the water stored in Sam Rayburn Reservoir was frequently over-drafted as a means of keeping salt water flushed from the LNVA and City of Beaumont freshwater intakes. In a typical period of low river flows, approximately 2,500 cfs was released from the reservoir to keep the salt at bay. Since the Neches River Saltwater Barrier has been in operation, the excess releases are no longer necessary. With the Barrier in operation an average of 50 to 150 days per year, the saving of water in storage exceeds 200,000 acre-feet annually.

4.4 Metering and Meter Repair and Replacement

LNVA has an established meter repair and replacement program. The LNVA installs, maintains, and replaces meters for its municipal, industrial and agricultural customers. Each meter is on a routine maintenance schedule. Annual calibration and maintenance of meters insures accurate accounting of water use. The transition to Doppler ultrasonic meters initiated in 2013 will further insure accurate and timely reporting of water usage to the customer and the Authority. The accurate accounting and billing for usage provides incentive for customers to conserve.

4.5 Leak Detection and Repair

The LNVA has an aggressive leak detection and repair program throughout the canal system. Though difficult to quantify, timely leak detection and repair are critical to the LNVA's conservation efforts. From 2016 to 2018, the Authority estimated a water conservation of more than 1,500 acre-feet pre year from detecting and repairing an average of 100 leaks across the canal system. The water conservation amount of 1,500 acre-feet accounts for 0.6% of the total water diverted in 2018 (248,167 ac-ft); however, left unaddressed, would result in a more significant loss.

4.6 Recycle and Reuse

The LNVA water treatment facility will continue to recycle backwash through the plant. Assuming no increase in projected demand, an estimated 8000 gallons per day (~3 million gallons per year) will be conserved at the facility.

Appendix A

Typical Water Contracts

Lower Neches Valley Authority
Industrial
Raw Water Supply Contract

LOWER NECHES VALLEY AUTHORITY

INDUSTRIAL RAW WATER SUPPLY CONTRACT

TABLE OF CONTENTS

LIST OF EXHIBITS

THE STATE OF TEXAS	**§**	**INDUSTRIAL**
	§	**RAW WATER SUPPLY**
COUNTY OF JEFFERSON	**§**	**CONTRACT**

This Industrial Raw Water Supply Contract ("Agreement") is made and entered into this 31st day of March, 2015 by and between the **Lower Neches Valley Authority** ("LNVA"), a political subdivision of the State of Texas, having offices in Jefferson County, Texas, and the _____ ("Customer"), a Delaware limited liability company,

RECITALS

1. LNVA is a political subdivision of the State of Texas, being a conservation and reclamation district created and governed by the provisions of Article 8280-103, Vernon's Revised Civil Statues, as amended, and Chapter 8504 Texas Special District Local Laws Code and pursuant to Article 16, Section 59, of the Texas Constitution.

2. LNVA owns and operates water supply facilities including the LNVA System and is authorized under the provisions of Certificates of Adjudication Nos. 06-4411, as amended, issued by the Texas Commission on Environmental Quality or its predecessor agencies to appropriate public waters of the State of Texas.

3. Customer proposes to purchase untreated water from LNVA for industrial and ancillary domestic use at Customer's plant.

4. Customer wants to purchase, and LNVA is willing to sell, raw water from the LNVA System subject to the terms and conditions of this Agreement.

5. Customer will take water from the LNVA System subject to all applicable rules and regulations of LNVA, state and federal agencies, and the water rights associated with the LNVA System.

AGREEMENT

For and in consideration of the mutual promises, covenants, obligations, and benefits described in this Agreement, LNVA and Customer agree as follows:

SECTION 1. DEFINITIONS.

1) "Agreement" shall mean this Industrial Raw Water Supply Contract including exhibits and any amendments thereto.

2) “Water” shall mean raw, untreated water from the LNVA System.

3) "Point(s) of Delivery" shall mean the point or points at which Customer withdraws Water from the LNVA System.

4) "Effective Date" shall mean the Effective Date of this Agreement. The Effective Date is _____ ____, 2015.

5) “LNVA Rate” the rate at which Customer will pay LNVA for Water taken from the LNVA System up to 1.05 times the Monthly Allocation of the Annual Contract Quantity as shown in Exhibit 5. The LNVA Rate may be modified from time to time as specified in Section 8 and will be published annually as set by the Board and is contained in Exhibit 2.

6) “Excess Water Rate” the rate at which Customer will pay LNVA for Water taken from the LNVA System in excess of 1.05 times the Monthly Contract Quantity shown in Exhibit 5. The Excess Water Rate may be modified from time to time as specified in Section 8, and will be published annually and is contained in Exhibit 2.

7) "Maximum Diversion Rate" shall mean _____ gallons per minute and is the maximum rate at which Customer may withdraw Water from the LNVA System as measured at the Point of Delivery.

8) "Annual Contract Quantity” shall be the quantity of Water described in Exhibit 5, unless modified pursuant to Section 7.

9) "Minimum Monthly Payment" shall be the Monthly Allocation of the Annual Contract Quantity as shown in Exhibit 5 times the LNVA Rate.

10) "Maximum Monthly Amount" shall mean 1.05 times Monthly Allocation of the Annual Contract Quantity for the Month as stated in Exhibit 5..

11) "LNVA System" shall mean the facilities owned and operated by LNVA used to provide Water to LNVA's customers including but not limited to water rights, reservoirs, pumps, canals, flumes, and meters.

12) "Fiscal Year" shall mean a one-year period beginning on January 1 and ending on December 31 of the same calendar year.

13) "Commission" shall mean the Texas Commission on Environmental Quality and its predecessor and successor agencies.

SECTION 2. TERM.

This Agreement shall be in effect from the Effective Date until _____ ___, 201_ ("Initial Term") and shall remain in force for successive one year periods unless and until terminated as provided in the next two succeeding sentences. Customer may terminate this Agreement as of the expiration date of the Initial Term or as of the expiration of any successive one year periods as noted above, by giving 12 months prior written notice to LNVA. LNVA's termination rights remain as identified in Section 22 of this Agreement.

SECTION 3. EQUITY.

Customer acknowledges that it will accrue no equity or any other interest in the LNVA System or any other assets of LNVA as a result of payment or other performance of Customer under this Agreement.

SECTION 4. VOLUME.

Subject to the limitations and conditions described in this Agreement and Certificate(s) of Adjudication No. 06-4411, as amended, LNVA agrees to sell Customer Water from the LNVA System at the Point of Delivery in an amount not to exceed the Annual Contract Quantity. Customer shall not take more than the Annual Contract Quantity without the prior written consent of LNVA.

SECTION 5. RATES AND COMPENSATION.

Customer agrees to pay LNVA at the times and in the manner hereinafter prescribed the following:

Beginning with the Effective Date, Customer shall pay, on a monthly basis, an amount equal to the greater of the Minimum Monthly Payment or the LNVA Rate and Excess Water Rate as described in Section 7 times the amount of Water actually taken during a month.

SECTION 6. BILLING AND PAYMENT.

A. As used in this Agreement, the term "month" shall mean a period beginning at 8:00 a.m. on the first day of each succeeding calendar month and ending at 8:00 a.m. of the first day of the following month or on the meter reading on or about the first of each month for the preceding month..

B.. LNVA shall render to Customer at Customer's offices at the address shown in the Signature Block of this agreement, (or such other place as designated by Customer), on or before the 10th day of each calendar month, a statement for the amount due under Section 5 for Water taken during the preceding month. Payment of such statement shall be due and payable at the LNVA's office at 7850 Eastex Freeway, Beaumont, TX 77708 (or such other place as designated by LNVA) on or before the 10th day after receipt of such statement.

SECTION 7. TAKING EXCESS WATER.

In the event Customer diverts more than Maximum Monthly Amount during a month, Customer shall pay LNVA for the Water used above the Maximum Monthly Amount at the Excess Water Rate.

SECTION 8. RATE ADJUSTMENT

At least once per year, the LNVA Board of Directors will review the LNVA Rate and the Excess Water Rate. It is expressly understood and agreed that, LNVA, with 30 days notice, shall have the right at any time during the term of this Agreement to change the rates charged its customers for Water, and in the event, such rates are lowered, Customer shall have the advantage of same immediately when they become effective, and if said rates are made higher or different, the Customer hereby agrees to pay for Water under such higher or different rates, if taken.

SECTION 9. MEASURING EQUIPMENT.

LNVA will provide at Customer's sole cost for any metering and diversion equipment needed under this Agreement to measure and provide Water to Customer. LNVA has heretofore furnished and installed at the Point of Delivery of Water for Customer's operations, the meter or meters and other equipment so installed, and denominated herein as the Customer's meters. The meters so installed shall be and remain the property of LNVA and be operated and maintained by LNVA, and the same shall be used in determining the quantity of Water delivered to Customer under this Agreement and the following provisions in reference thereto shall apply:

LNVA shall arrange for the reading, calibrating and adjustment of the metering equipment. For the purpose of this contract the original record of readings of the meter or meters shall be the journal or other record book of LNVA in its office into which the records of the employees or agents of LNVA who takes meter readings is or may be transcribed and LNVA will, upon request, give Customer a copy of such journal or record book or permit Customer to have access to same at the office of LNVA during business hours.

Not more than once each calendar year, on a date as near the last day of the month as practicable, LNVA must calibrate its meters if requested by Customer to do so, in the presence of representatives of Customer, and the parties shall jointly observe any adjustments which are made to the meters, should such adjustments be necessary. If the customer has provided and installed check meters, the check meters shall also be calibrated by LNVA in the presence of representatives of Customer and the parties shall jointly observe any adjustments, should such adjustments be necessary. If Customer shall request LNVA to calibrate its meters and LNVA shall have given

Customer notice of the time when any such calibration is to be made a sufficient length of time in advance to enable Customer to have its representatives present, and if representatives are not present at the time set, LNVA may proceed with said calibration and adjustments in the absence of Customer's representatives.

If either party at any time observes a variation between the delivery meter or meters and the check meter or meters, if any such check meter or meter is or are installed, it will promptly notify the other party and the parties will then cooperate to secure an immediate calibration test and joint observation of any adjustment and the meter or meters shall then be adjusted to accuracy. Each party shall give to the other party forty-eight (48) hours notice of the time of all tests of meters so that the other party may conveniently have its representatives present.

If, upon any test, the percentage of inaccuracy of any metering equipment is found to be in excess of two percent (2%), registrations thereof shall be corrected for a period extending back to the time such inaccuracy occurred, if such time is ascertainable, and if not ascertainable, then back one-half (½) of the time elapsed since the last date of calibration. If, for any reason, any meters are out of service and/or out of repair so that the amount of Water delivered cannot be ascertained or computed from the readings thereof, the Water delivered through the period such meters are out of service and/or out of repair shall be estimated and agreed upon by the parties hereto upon the basis of the best data available, using the first of the following methods which is feasible:

A. By using the registration of any check meter or meters if installed and accurately registering;

B. By correcting the error if the percentage of error is ascertainable by calibration test or mathematical calculation; or

C. By estimating the quantity of delivery by deliveries during preceding periods under similar conditions when the meter or meters was or were registering accurately.

Customer may, at its option and expense, install and operate check meters to check each LNVA meter but measurement of Water for the purpose of this agreement shall be by the LNVA's meters only, except in case hereinabove specifically provided to the contrary. Check meters shall

be subject at all reasonable times to inspection and examination of LNVA, but the reading, calibration and adjustment shall be done only by Customer.

SECTION 10. DISPUTE REGARDING PAYMENT.

If Customer, at any time, disputes the amount to be paid by it to LNVA, Customer shall nevertheless promptly make the disputed payment or payments; but, if it is subsequently determined by agreement or court decision that the disputed amount paid by Customer should have been less or more, LNVA shall promptly revise and reallocate Customer' payments in a manner that Customer or LNVA will recover the amount due.

If a court, the Commission, or any federal or state regulatory authority finds that LNVA's rates or policies for delivering Water to Customer under this Agreement are unreasonable or otherwise unenforceable, LNVA has the option to terminate this Agreement without liability to Customer. By signing this Agreement, Customer stipulates and agrees that LNVA and its other customers will be prejudiced if Customer avoids the obligation to pay the rates for Water specified in this Agreement while accepting the benefits of obtaining Water from the LNVA. Nothing in this Agreement shall be construed as constituting an undertaking by LNVA to furnish Water to Customer except pursuant to the terms of this Agreement. If Customer initiates or participates in any proceeding regarding LNVA's rates and policies under this Agreement and advocates a position that is adverse to LNVA and LNVA prevails, Customer shall pay LNVA for its expenses, including attorneys' fees, in the proceeding within fifteen (15) days after LNVA's demand for payment. Customer stipulates and agrees that the rates and policies specified in this Agreement are just, reasonable, and without discrimination.

SECTION 11. POINT(S) OF DELIVERY.

A narrative description of the location of the Point(s) of Delivery and a vicinity map that shows the location of the Point(s) of Delivery are attached as Exhibit 1 to this Agreement. Customer shall provide, at Customer' expense, the facilities required to divert and transport Water to Customer' place of treatment and/or use.

SECTION 12. RESPONSIBILITY FOR WATER.

Once the Water supplied hereunder to Customer passes through the Point(s) of Delivery, Customer hereby agrees to save and hold LNVA harmless from all claims,

demands, and causes of action which may be asserted by anyone on account of the quality, transportation and delivery of said Water. Further, in consideration for receiving the Water, Customer releases, waives, discharges and covenants not to sue the LNVA, The State of Texas, their officers, agents, servants, or employees (hereinafter referred to as Releasees) from any and all liability, claims, demands, actions and causes of action whatsoever arising out of or related to any loss, damage, or injury, including death, that may be sustained by Customer or its employees, or any of the property belonging to Customer, whether caused by any sole or comparative negligence of the Releasees, or otherwise, for supplying and/or not supplying the Water or for any other cause.

SECTION 13. PURPOSE AND PLACE OF USE.

Customer shall use the Water purchased from LNVA under this Agreement for industrial purposes and ancillary domestic uses only at Customer's facilities, the location of which are shown by map attached as Exhibit 1 to this Agreement. Customer is hereby prohibited from selling raw Water to other users. If a facility purchasing Water from the LNVA System is sold to one or more entities, these entities and their successors can continue to use Water from the LNVA System upon notification of the LNVA and the signing of a LNVA Industrial Contract.

SECTION 14. COMMISSION RULES.

The effectiveness of this Agreement is dependent upon LNVA and Customer complying with the rules of the Commission, specifically including the rules codified as Texas Administrative Code, Title 30, §§ 295.101 and 297.101-.108 as of the effective date of this Agreement.

SECTION 15. REGULATORY REQUIREMENTS.

This Agreement is subject to all applicable federal, state, and local laws and any applicable ordinances, rules, orders, and regulations of any local, state, or federal governmental authority having jurisdiction. However, nothing contained in this Agreement shall be construed as a waiver of any right to question or contest any law, ordinance, order, rule, or regulation in any forum having jurisdiction, and LNVA and Customer each agree to make a good faith effort to support proposed laws and regulations which would be consistent with the performance of this Agreement in accordance with its terms.

SECTION 16. WATER CONSERVATION PLANS.

Customer shall cooperate with and assist LNVA in its efforts to develop and implement plans, programs, and rules to develop water resources and to promote practices, techniques, and technologies that will reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in use of water, or increase the recycling and reuse of water. LNVA's obligations under this Agreement shall be subject to Customer preparing and implementing a water conservation plan or water conservation measures, as well as implementing any water conservation plans and drought contingency plans adopted by LNVA and required or approved by the Commission, the Texas Water Development Board, or any other federal, state, or local regulatory authority with power to require or approve water conservation and drought contingency plans. Upon execution of this Agreement, Customer shall submit its' water conservation plan and/or water conservation measures to LNVA for its review and approval.

If Customer is granted the right to and does resell LNVA's Water, Customer shall require through a contract condition that any successive user of LNVA's Water must implement water conservation measures that comply with the State's, the LNVA's, and Customer' water conservation plans, programs, and rules.

SECTION 17. SOURCE AND ADEQUACY OF SUPPLY.

Water supplied by LNVA to Customer under this Agreement shall be from the LNVA System and from no other source, unless LNVA, at its sole discretion, decides to supply Water from another source available to LNVA. LNVA and Customer hereby agree that Customer shall have no right or entitlement to any portion of LNVA's Water in the LNVA System after the expiration of the term of this Agreement. LNVA will use its best efforts to remain in a position to furnish raw Water sufficient for the reasonable demands of Customer. LNVA's agreement to provide Water to Customer shall not be deemed a guarantee on LNVA's part that any particular quantity of Water will be available, and the quantity of Water taken shall at all times be subject to the right of LNVA to reduce said quantity of Water as the LNVA, in its sole judgment, may deem necessary in order to meet the LNVA's commitments under its existing contracts, comply with any order of any court or administrative body having appropriate jurisdiction, reduce flooding, or prevent injury.

LNVA has adopted a Water Conservation and Drought Contingency Plan. If Customer fails to implement LNVA's and its own Drought Contingency Plan when trigger conditions occur, LNVA's General Manager is authorized to institute rationing pursuant to any applicable wholesale Water contracts, including this Agreement, as well as to enforce any contractual, statutory, or common law remedies available to LNVA necessary to protect the public welfare. LNVA's Water made available to Customer when Customer is not in compliance with LNVA's Water Conservation and Drought Contingency Plan will be reduced to the amount of Water that the LNVA's General Manager estimates would be necessary to satisfy Customer' demand if Customer was operating in compliance with both LNVA's and Customer' Drought Contingency Plans.

LNVA's rights to maintain and operate the reservoirs owned or used by LNVA and its Water transportation facilities and at any and all times in the future to impound and release Waters thereby in any lawful manner and to any lawful extent LNVA may see fit is recognized by Customer, and, except as otherwise provided herein, there shall be no obligation hereunder upon LNVA to release or not to release any impounded Waters at any time or to maintain any Waters at any specified level. Further, if the permitted yield of the LNVA System is reduced by Commission, LNVA reserves the right to decrease the Annual Quantity by a like percentage.

SECTION 18. RAW WATER QUALITY.

THE WATER WHICH THE LNVA OFFERS TO SELL TO CUSTOMER IS NON-POTABLE, RAW, AND UNTREATED. CUSTOMER HAS SATISFIED ITSELF THAT SUCH WATER IS SUITABLE FOR ITS NEEDS. THE LNVA EXPRESSLY DISCLAIMS ANY WARRANTY AS TO THE QUALITY OF THE RAW WATER OR SUITABILITY OF THE RAW WATER FOR ITS INTENDED PURPOSE. THE LNVA EXPRESSLY DISCLAIMS THE WARRANTIES OF MERCHANTABILITY AND FITNESS. CUSTOMER AGREES THAT ANY VARIATION IN THE QUALITY OR CHARACTERISTICS OF THE RAW WATER OFFERED FOR SALE AS PROVIDED BY THIS AGREEMENT SHALL NOT ENTITLE CUSTOMER TO AVOID OR LIMIT ITS OBLIGATION TO MAKE PAYMENTS PROVIDED FOR BY THIS AGREEMENT. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED IN THIS AGREEMENT. CUSTOMER ASSUMES FULL RESPONSIBILITY WITH RESPECT TO THE TREATMENT OF THE WATER PRIOR TO ITS

DISTRIBUTION FOR HUMAN CONSUMPTION OR ANY OTHER USES.

SECTION 19. RETURN FLOWS.

Customer acknowledges that some of the Water supplied to it by LNVA may be returned to watercourses in the Neches River Basin, adjacent coastal basins, or associated bay and estuary systems as return flows. LNVA and Customer believe that the most economical means for meeting some of the future demands of the LNVA's customers may involve the use of return flows to extend or enhance the yield of LNVA's Water supplies. Customer agrees that it will provide LNVA with a monthly report on the return flows resulting from Customer's use of Water under this Agreement and that LNVA has the right, subsequent to Customer' use of Water purchased from LNVA, to make whatever reuse of the Water LNVA deems desirable. Customer will receive no compensation, credit, or off-set for making return flows available to LNVA.

SECTION 20. OTHER CHARGES.

In the event that any sales or use taxes, or taxes, assessments, storage fees, storage assessments or charges of any similar nature are imposed on diverting, storing, delivering, gathering, impounding, taking, selling, using, or consuming the Water received by Customer from the LNVA System, the amount of the tax, assessment, or charge shall be borne by Customer, in addition to all other charges, and whenever LNVA shall be required to pay, collect, or remit any tax, assessment, or charge on Water received by Customer, then Customer shall promptly pay or reimburse LNVA for the tax, assessment, or charge in the manner directed by LNVA. Rates are set with fuel prices at a forecasted index price. If fuel prices exceed the forecast value, the excess fuel cost will be prorated among all customers within their class based on their proportionate use.

SECTION 21. DEFAULT IN PAYMENTS.

All amounts due and owing to LNVA by Customer shall, if not paid when due, bear interest at the Texas post-judgment interest rate set out in TEX. FIN. CODE ANN. § 304.003 (Vernon Supp. 1998), or any successor statute, from the date when due until paid, provided that such rate shall never be usurious or exceed the maximum rate permitted by law. If any amount due and owing by Customer to LNVA is placed with an attorney for collection, Customer shall pay to LNVA, in addition to all other payments provided for by this Agreement, including interest, LNVA's

collection expenses, including court costs, attorneys' fees, and expenses. LNVA shall, to the extent permitted by law, suspend delivery of Water from the LNVA System to Customer if Customer remains delinquent in any payments due hereunder for a period of sixty (60) days and shall not resume delivery of Water while Customer is so delinquent and may, at its option, terminate this Agreement without further liability to Customer. LNVA shall pursue all legal remedies against Customer to enforce and protect the rights of LNVA, LNVA's customers, and the holders of LNVA's bonds. It is understood that the foregoing provisions are for the benefit of the holders of the LNVA's bonds.

SECTION 22. TERMINATION.

If LNVA decides to terminate this Agreement, as provided by this Agreement, LNVA shall deliver written notice of the decision to Customer. Customer shall discontinue taking Water from LNVA under this Agreement within one hundred eighty (180) days after LNVA delivers written notice to Customer.

SECTION 23. WAIVER AND AMENDMENT.

Failure to enforce or the waiver of any provision of this Agreement or any breach or nonperformance by LNVA or Customer shall not be deemed a waiver by Customer or LNVA of the right in the future to demand strict compliance and performance of any provision of this Agreement. Regardless of any provision contained in this Agreement to the contrary, any right or remedy or any default under this Agreement, except the right of LNVA to receive the Annual Payment which shall never be determined to be waived, shall be deemed to be conclusively waived unless asserted by a proper proceeding at law or in equity within two (2) years plus one (1) day after the occurrence of the default.

No officer or agent of LNVA or Customer is authorized to waive or modify any provision of this Agreement. No modifications to or rescission of this Agreement may be made except by a written document signed by LNVA's and Customer' authorized representatives.

SECTION 24. REMEDIES.

It is not intended hereby to specify (and this Agreement shall not be considered as specifying) an exclusive remedy for any default, but all such other remedies (other than

termination) existing at law or in equity may be availed of by any party hereto and shall be cumulative. Recognizing, however, that failure in the performance of any party's obligations hereunder could not be adequately compensated in money damages alone, each party agrees in the event of any default on its part that each party shall have available to it the equitable remedy of mandamus and specific performance, in addition to any other legal or equitable remedies (other than termination) which also may be available to LNVA. Nothing in the agreement should be construed as a waiver or relinquishment of LNVA's statutory or governmental immunities.

SECTION 25. FORCE MAJEURE.

If, for any reason of force majeure, either LNVA or Customer shall be rendered unable, wholly or in part, to carry out its obligation under this Agreement, other than the obligation of Customer to make the payments required under the terms of this Agreement, then if the party shall give notice of the reasons in writing to the other party within a reasonable time after the occurrence of the event or cause relied on, the obligation of the party giving the notice, so far as it is affected by the "force majeure," shall be suspended during the continuance of the inability then claimed, but for no longer period. The term "force majeure," as used in this Agreement, shall mean acts of God, strikes, lockouts, or other industrial disturbances, acts of public enemy, orders or actions of any kind of government of the United States or of the State of Texas, or any civil or military authority, insurrections, riots, epidemics, land slides, lightning, earthquakes, fires, hurricanes, storms, floods, washouts, droughts, arrests, restraints of government and people, civil disturbances, explosions, breakage or accident to dams, machinery, pipelines, canals, or other structures, partial or entire failure of Water supply, including pollution (accidental or intentional), and any inability on the part of LNVA to deliver Water, or of Customer to receive Water, on account of any other cause not reasonably within the control of the party claiming the inability.

SECTION 26. NON-ASSIGNABILITY.

Customer understands and agrees that any assignment of rights or delegation of duties under this Agreement is void without the prior written consent of LNVA.

SECTION 27. NO THIRD-PARTY BENEFICIARIES.

This Agreement shall inure only to the benefit of the parties hereto and third persons not

privy hereto shall not, in any form or manner, be considered a third-party beneficiary of this Agreement. Each party hereto shall be solely responsible for the fulfillment of its customer contracts or commitments, and LNVA shall not be construed to be responsible for Customer' contracts or commitments by virtue of this Agreement or any provision contained herein.

SECTION 28. RELATIONSHIP OF THE PARTIES.

This Agreement is by and between LNVA and Customer and is not intended, and shall not be construed to create, the relationship of agent, servant, employee, partnership, joint venture, or association as between LNVA and Customer nor between LNVA and any officer, employee, contractor, or representative of LNVA. No joint employment is intended or created by this Agreement for any purpose. Customer agrees to so inform its employees, agents, contractors, and subcontractors who are involved in the implementation of or construction under this Agreement.

SECTION 29. SOLE AGREEMENT.

This Agreement constitutes the sole and only agreement of Customer and LNVA and supersedes any prior understanding or oral or written agreements between LNVA and Customer respecting the subject matter of this Agreement, including any oral or written agreement with LNVA that Customer obtained by assignment.

SECTION 30. SEVERABILITY.

The provisions of this Agreement are severable, and if, for any reason, any one or more of the provisions contained in this Agreement shall be held to be invalid, illegal, or unenforceable in any respect, the invalidity, illegality, or unenforceability shall not affect any other provision of this Agreement, and this Agreement shall remain in effect and be construed as if the invalid, illegal, or unenforceable provision had never been contained in the Agreement.

SECTION 31. NOTICES.

All notices, payments, and communications (collectively "notices") required or allowed by this Agreement shall be in writing and be given by hand-delivery or by depositing the notice in the United States mail, postage prepaid, registered or certified, with return receipt requested, and addressed to the party to be notified. Notice deposited in the mail in the previously described

manner shall be conclusively deemed to be effective from and after the expiration of three (3) days after the notice is deposited in the mail. For purposes of notice, the addresses of and the designated representative for receipt of notice for each of the parties shall be shown above the signatures of the individuals who signed this Agreement on behalf of LNVA and Customer. Either party may change its address by giving written notice of the change to the other party at least fifteen (15) days before the change becomes effective.

SECTION 32. PLACE OF PERFORMANCE.

All acts performable under the terms of this Agreement and all amounts due under this Agreement, including, but not limited to, payments due under this Agreement or damages for the breach of this Agreement, shall be paid and be due in Jefferson County, Texas, said Jefferson County, Texas, being the place of performance agreed to by the parties to this Agreement. In the event that any legal proceeding is brought to enforce this Agreement or any provision hereof, the same shall be brought in Jefferson County, Texas.

SECTION 33. DUPLICATE ORIGINALS.

Customer and LNVA, acting under the authority of their respective governing bodies, shall authorize the execution of this Agreement in several counterparts, each of which shall be an original. Customer shall submit written evidence in the form of bylaws, charters, resolutions, or other written documentation specifying the authority of Customer's representative to sign this Agreement, which evidence shall be attached to this Agreement as Exhibit 3.

EFFECTIVE as of the date signed by the authorized representative of LNVA.

Lower Neches Valley Authority
7850 Eastex Freeway
Beaumont, TX 77708
Attn.: General Manager

BY: _____
TITLE: General Manager
DATE: _____

ATTEST:
_____
APPROVED AS TO FORM AND LEGALITY:

BY:_____
ATTORNEY FOR THE LNVA

Company Name
Address
Attn: _____

BY: _____
TITLE: _____
DATE: _____

ATTEST:
_____
APPROVED AS TO FORM AND LEGALITY:

BY:_____
ATTORNEY FOR Customer

Exhibit 1 Location of Point(s) of Delivery

Use a Google Earth Picture of meter locations

Exhibit 2 Water Rates for the Year and Volume for the Year

Water Rate 2018……...$0.40 per 1000 gallons
Excess Water Rate for 2018…….$0.80 per 1000 gallons

Exhibit 3 Location Map of Service Area

Exhibit 4 Authorization to Execute on Behalf of the of Customer

[To be provided by Customer]
[Resolution, minutes or action authorizing contract]

Exhibit 5 Monthly Allocation of Annual Quantity

Monthly Allocation for the Year 2015	
Month	**Gallons of Water**
January	**MM**
February	**MM**
March	**MM**
April	**MM**
May	**MM**
June	**MM**
July	**MM**
August	**MM**
September	**MM**
October	**MM**
November	**MM**
December	**MM**
Total Annual 2015 Contract Quantity	**MM**

Monthly Allocation for the Year 2016	
Month	**Gallons of Water**
January	**MM**
February	**MM**
March	**MM**
April	**MM**
May	**MM**
June	**MM**
July	**MM**
August	**MM**
September	**MM**
October	**MM**
November	**MM**
December	**MM**
Total Annual 2016 Contract Quantity	**MM**

Monthly Allocation for the Year 2017	
Month	**Gallons of Water**
January	**MM**
Total Annual 2017 Contract Quantity	**1,000.000 MM**

LOWER NECHES VALLEY AUTHORITY
2019 RICE IRRIGATION RAW WATER CONTRACT

THE STATE OF TEXAS §
COUNTY OF JEFFERSON §

This raw water supply CONTRACT this day made and entered into by and between LOWER NECHES VALLEY AUTHORITY, a political subdivision of the State of Texas, hereinafter called LNVA, and

_____

hereinafter called BUYER (whether one or more):

W I T N E S S E T H :

SECTION I - <u>WATER AVAILABILITY FOR THE FIRST CROP; NO GUARANTEE OF AVAILABILITY FOR A SECOND CROP; RESERVING AND PURCHASING WATER</u>

A. Between March 15th and October 31st of each calendar year, and subject to the terms hereof, LNVA undertakes to furnish in its canals at the water gate thereof, a quantity of water which, together with the usual rainfall, will be sufficient, in the judgment of LNVA, to irrigate a first growth rice crop planted and grown by BUYER during the current calendar year, upon the land described in the most current application (Farmed Property), Exhibit A, filed by BUYER with LNVA as is hereafter provided in Section IV. Each application filed will become a part of this contract as fully and to the same extent as if copied herein in full. It is understood by each party hereto that should an amended application change the number of acres or description of land to be farmed by BUYER, the same will constitute an amendment, in each instance, to this contract, but all other terms and conditions of this contract are to remain the same. BUYER contracts and agrees to take said water for said number of acres at the water gate of the canal of LNVA or at a meter installed by LNVA and to pay each year for said irrigation or flushing water used times the RICE IRRIGATION RATE (RIR) adopted by order of the Board of Directors of LNVA for the current crop year and then in effect.

B. BUYER contracts and agrees to pay LNVA for the cost of any diversion equipment needed under this Agreement to provide water to BUYER at a rate established by the LNVA Board of Directors. Meters will be installed where deemed appropriate as determined by the LNVA. The cost of the diversion equipment shall be determined on a field by field basis and paid prior to the delivery of water. In any event, if BUYER and LNVA cannot agree on the cost of the diversion equipment, this contract shall be terminated. If LNVA has heretofore furnished and installed a meter at the Point of Delivery of water for BUYER's operations, then the meter or meters and other diversion equipment so installed, and denominated herein as the Buyer's Meter, shall be and remain the property of LNVA. The meter or meters shall be operated and maintained by LNVA, and the same shall be used in determining the quantity of water delivered to BUYER under this Agreement.

C. It is further understood and agreed that if, after water is delivered between March 15th and October 31st for the first crop of rice which is harvested and removed from the land in the approved application, BUYER desires to continue receiving irrigation water to grow a second growth crop of rice on said land, then and in that event BUYER shall give written notice to LNVA of such intention, and on receipt of such notice LNVA shall determine whether or not it will have available from its source of supply over and above its other water supply commitments sufficient water to provide for continued irrigation water of such second growth rice crop, and if LNVA so determines, it shall notify BUYER to that effect and thereafter LNVA shall undertake to furnish in its canals at the water gate a quantity of water which, together with the usual rainfall, will be sufficient for irrigation of a second growth rice crop grown on said Farmed Property in the approved application during the current calendar year by BUYER. Such water will be furnished subject to the terms and conditions hereof and BUYER promises to pay LNVA (in addition to the payment provided

for the first crop of rice above) compensation for such additional water supplied for the second crop hereunder at the RICE IRRIGATION RATE (RIR) for water taken then in effect by order of LNVA's Board of Directors. The RICE IRRIGATION RATE (RIR) for the second crop may be increased from that charged for the first crop depending on the availability of water to the LNVA. Water rates for the second crop will be established not later than thirty (30) days after the total 1st crop water usage is determined.

D. All first crop payments due hereunder shall be paid by BUYER when the rice crop is sold or placed in the government loan program or 30 days after the invoice date whichever first occurs. Second crop payment is due thirty (30) days after invoice. Any payment becoming due hereunder, which is not paid on or before the due date, shall bear interest at the rate of 1½ percent per month for each month or part of a month after due date or any part thereof remains unpaid. All payments due hereunder are payable at the office of LNVA in Beaumont, Jefferson County, Texas. In the event BUYER defaults on the payment due and the account is placed in the hands of an attorney for collection or suit is brought to collect the same, BUYER agrees to pay an additional twenty percent (20%) of the amount due as costs, collection and attorney fees. BUYER represents and warrants to LNVA that it is purchasing the water in this Contract for its own use and consumption. BUYER shall not sell the water purchased hereunder to any third party. If payment is not received when due, notice of the nonpayment. Amount due and Notice of Lien will be delivered to the Landowner involved.

SECTION II – RAW WATER QUALITY; <u>LEGAL RELEASE OF LNVA</u>

A. **THE WATER WHICH THE LNVA OFFERS TO SELL TO BUYER IS NON-POTABLE, RAW WATER. BUYER HAS SATISFIED ITSELF THAT SUCH WATER IS SUITABLE FOR ITS NEEDS. THE LNVA EXPRESSLY DISCLAIMS ANY WARRANTY AS TO THE QUALITY OF THE RAW WATER OR SUITABILITY OF THE RAW WATER FOR ITS INTENDED PURPOSE. THE LNVA EXPRESSLY DISCLAIMS THE WARRANTIES OF MERCHANTABILITY AND FITNESS. BUYER AGREES THAT ANY VARIATION IN THE QUALITY OR CHARACTERISTICS OF THE RAW WATER OFFERED FOR SALE AS PROVIDED BY THIS AGREEMENT SHALL NOT ENTITLE BUYER TO AVOID OR LIMIT ITS OBLIGATION TO MAKE PAYMENTS PROVIDED FOR BY THIS AGREEMENT. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED IN THIS AGREEMENT.**

B. **IT WILL BE THE RESPONSIBILITY OF BUYER TO DISTRIBUTE SUCH WATER OVER THE FARMED PROPERTY IN THE APPROVED APPLICATION AND TO PREVENT THE WASTE THEREOF. IT IS FURTHER UNDERSTOOD AND AGREED THAT IT IS THE RESPONSIBILITY OF BUYER, AND BUYER HEREBY CONTRACTS AND AGREES, TO HOLD LNVA HARMLESS FROM AND AGAINST AND TO PROTECT LNVA AND RELEASES THE LNVA FROM AND AGAINST ANY CLAIM OR CAUSE OF ACTION OF ANY KIND GROWING OUT OF OR ARISING FROM ANY LOSS OR DAMAGE TO PERSON OR PROPERTY SUFFERED OR CLAIMED TO HAVE BEEN SUFFERED BY BUYER. FARMED PROPERTY OWNER OR BY ANY OTHER PERSON, FIRM OR CORPORATION WHOMSOEVER BY REASON OF OR RESULTING FROM ANY WASTE, LEAKAGE FROM THE LEVEE OR MISUSE THEREOF ON THE FARMED PROPERTY AND FURTHER RELEASES THE LNVA FROM ANY CLAIM OF ANY KIND ARISING FROM OR RESULTING FROM ANY DEFECT OR FAILURE IN THE DESIGN, CONSTRUCTION OR OPERATION OF LNVA'S PUMPS, MOTORS, EQUIPMENT OR CANAL OR IN ANY CANAL, LEVEE, GATE, LATERAL OR ANY OTHER PART OF THE DISTRIBUTION SYSTEM, WORKS AND/OR FACILITIES OR RESULTING FROM OR ARISING FROM ANY DEFECT IN THE QUALITY OF ANY WATER DELIVERED BY LNVA OR FROM ANY SHORTAGE OF WATER OR**

FAILURE TO DELIVER THE SAME OR FROM ANYTHING ELSE DONE OR FAILED TO BE DONE BY LNVA OR FROM ANY ACTION TAKEN OR NOT TAKEN BY LNVA OR FOR ANY CLAIM BUYER MAY ASSERT AGAINST LNVA WHETHER KNOW OR UNKNOWN.

SECTION III - MAINTENANCE & OWNERSHIP OF DISTRIBUTION SYSTEM; TAKING AND CONTROL OF WATER; HANDLING OF GATES

A. In order to conserve water and to prevent waste, BUYER further agrees that BUYER is responsible for preparing the Farmed Property and any private lateral(s) for the delivery of water. LNVA reserves the right to inspect BUYER's Farmed Property and laterals prior to delivery of water. If LNVA determines that improvements are needed to prevent the waste of water, BUYER will be contacted and BUYER must make improvements prior to delivery of water. Furthermore, LNVA reserves the right to enter BUYER's land and cut-off delivery or diversions of water to said Farmed Property if BUYER causes, permits, or allows such wasteful use of water to occur. LNVA reserves and is hereby granted the right to enter BUYERS' land, including field roads and levees for the purpose of delivering and monitoring water to BUYER or other water users.

B. While it is the duty of the BUYER hereunder to construct and maintain said distributing laterals, drains and field levees, the LNVA shall have exclusive control of and sole and exclusive discretion concerning the distribution of the water supply and to that end shall control canals, flumes, drains and laterals and neither BUYER nor BUYER's agents, employees or anyone on the premises of BUYER shall open, close or in any manner meddle with any flood gate, meter or check gate appertaining to any canal or lateral of LNVA, or any levee thereof, or in any way disturb the flow and distribution of said water unless under the direction of the LNVA. If BUYER including BUYER's agents, employees or anyone on the premises of BUYER, receives water by opening, closing or in any manner tamper with any flood gate, meter, meter gate or check gate, then BUYER may be subject to a violation of the Texas Water Code Section 11.081 Unlawful Use of State Water and be subject to the civil penalties allowed under the Texas Water Code Section 11.082 Unlawful Use: Civil Penalty, Class A Misdemeanor, Penal Code 28.03(b) (3).

C. No water will be furnished by LNVA when the land to be irrigated has water closer than 3 inches from the top of the levee at any point or where, in the LNVA's opinion, the condition of the crop is so poor as to render the crop inadequate security for the water charges referenced herein. In the event BUYER requests water be supplied to land beyond the limit of any LNVA distribution canal, then LNVA may arrange with such BUYER for the construction and operation of such necessary supply canals and extensions, at BUYER's expense, so as to reach the Farmed Property to be thus watered, and BUYER hereby agrees to obtain for LNVA an easement over the premises in the approved application for a right of way for said ditches and extensions for the use of said other Farmed Property. BUYER must supply an irrigation easement on an approved LNVA form to the LNVA over all necessary property before the LNVA will supply the water.

D. No water will be taken until notice of the proposed water taking has been given to LNVA's representative for the area where the Farmed Property in the approved application is located. BUYER shall contact the Saltwater Barrier at (409) 898-0561/Extension 1, three (3) days before the BUYER will need to start or stop delivery of water. Changes in delivery of water to a field will occur between the hours of 7:00 a.m. and 3:00 p.m. only.

SECTION IV - APPLICATION FOR WATER; LIEN ON CROP; TERMINABLE CONTRACT

A. An application form for irrigation water will be supplied to BUYER by LNVA each year on or before March 15th. The terms of this contract, and the lien herein created, will apply to the Farmed Property described in any such application with equal force and to the same extent as if each tract described in an application filed hereunder was described herein in full.

B. LNVA shall prepare and file, at BUYER's expense, a proper UCC 1 Financing Statement on the crop giving LNVA a first lien on the crop. BUYER shall supply LNVA sufficient documentation of the number of acres planted as certified by the Farm Service Administration (FSA). See 11.051 Water Code.

C. An application fee will be assessed in the amount of $5.00 per acre on the BUYER's Farmed Property and will be due on execution of each application. No water will be furnished to BUYER until an application fee has been received in the office of the Authority. No water will be made available after October 31st or prior to March 15th or to a first crop planted after June 15th of any calendar year.

D. The Authority does not install meters on private lateral fields. In the event, two or more fields are located on a private lateral and cannot be served directly from an Authority canal, the Authority will measure the volume of water diverted from the Authority's canal and BUYERS must have agreed to prorate the water diverted based on the number of acres served and shall be jointly and separately liable for the cost of the water diverted from the Authority's canal to serve these two or more fields. Water will be started and/or stopped under normal Authority operating procedures.

SECTION V - <u>WATER TO BE USED IN WORKMANLIKE MANNER REMEDIES</u>

A. BUYER contracts and agrees to prepare, plant and cultivate the Farmed Property in the approved application in a good, proper, timely and workmanlike manner and to diligently save and harvest the Farmed Property and should it appear that BUYER is not using due care and diligence, LNVA, at its sole option, may declare the indebtedness hereunder or any part thereof due and may, at its option, enter upon said Farmed Property, take possession of said crop, and perform such service or so much thereof as will be sufficient to pay its indebtedness herein fixed and to remunerate it for all necessary and reasonable expenses incurred by it in so doing. Should BUYER refuse to permit LNVA to do so, or should BUYER at any time before the stipulated date for maturity of the indebtedness due LNVA hereunder sell or remove or threaten to sell or remove any part of the crop, or should BUYER at any time prior to the payment of such indebtedness, fail or refuse to do and perform and to strictly keep and observe each of the obligations herein assumed by BUYER, LNVA may, at LNVA's option, declare this contract terminated and all amounts due by BUYER to LNVA hereunder shall at once become due and payable; in the alternative, LNVA may, at LNVA's sole option and discretion, file suit in the District Court of Jefferson County, Texas, for the specific performance of this contract and each of the obligations herein imposed upon and assumed by BUYER. For the purpose of further securing LNVA in the payment of the indebtedness due it hereunder, BUYER hereby creates and gives up to LNVA, its successors and assigns, a valid first lien upon said rice crops grown upon the Farmed Property which is or becomes subject hereto by reason of the filing of an application as hereinabove provided in Section IV. This lien is in addition to any lien which may exist by law, and it is contracted that the same shall have preference over any and all other liens, if any, upon said crops and LNVA shall not be obligated to furnish water hereunder until the lien in its favor as aforesaid is fixed as a first lien upon said crop.

SECTION VI - <u>DROUGHT, WATER SHORTAGE, MISCELLANEOUS</u>

A. This contract is subject to the LNVA Drought Contingency Plan, on file in the LNVA's Office, in Beaumont, Texas, and provides, that in case of a shortage of water, the procedures for granting variances to the plans and procedures for the enforcement of any mandatory water use restrictions including specification of penalties (e.g., liquidated and/or discontinuation of service) for violations of such restrictions. This contract does not entitle the BUYER to a vested right to water under the Laws of the State of Texas. BUYER does not waive any rights/entitlement to waters BUYER possesses or waive any rights/entitlement if such rights/entitlements exist.

B. In the event the supply of water available for all parties with whom LNVA has theretofore contracted is insufficient, then it is agreed that water available will be distributed according to the LNVA Drought Contingency Plan.

C. This contract is made and entered into in Beaumont, Jefferson County, Texas, and shall be construed and enforced in accordance with the laws of the State of Texas, and any cause of action hereunder shall be filed and maintained in a court of competent jurisdiction in Jefferson County, Texas.

D. Nothing contained herein shall be considered to be a waiver of any defenses, immunities or consents given to political subdivisions of the State of Texas under the Texas or U.S. Constitution, statutes or court decisions.

E. All prior understandings and agreements between the parties relating to the subject matter hereof have become merged in and are evidenced by this instrument, and the provisions hereof constitute the rules and conditions whereon water is furnished by LNVA, and such water is accepted and used upon said regulations and conditions, and no waiver of any provisions hereof can be made, save by written endorsements hereon signed by both parties.

F. The term of the Contract is for a time period from the date of the execution of the Contract until all payments are received consistent with this contract and any rules promulgated by the LNVA Board of Directors. LNVA's obligation to supply water is limited to the current year's irrigation season as defined from March 15th to October 31st of the Crop year.

G. **Force Majeure**. LNVA shall not be held liable or responsible for any damage that may be caused by its inability, after the exercise of reasonable diligence, to make the supply of water available to BUYER due to any Force Majeure. LNVA shall use reasonable diligence to repair or recondition the machinery, canals, or dams in the event said machinery, canals or dams are damaged or made unserviceable from any Force Majeure. The term "Force Majeure" as used herein shall mean situations or conditions beyond the control of LNVA that render LNVA unable, wholly or in part, to carry out its obligations under the Contract. Such Force Majeure includes but is not limited to acts of God, strikes, lockouts, acts of the public enemy, orders of any of kind of the government of the United States or of the State of Texas or any civil or military authority, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, hurricanes, storms, floods, washouts, droughts, civil disturbances, explosions, breakage or accidents to machinery, pipelines, canals, or dams, partial, or entire failure of water supply.

This contract is signed, executed and delivered in duplicate originals this _____ day of _____, 2019.

BUYER

By:

Address:

LOWER NECHES VALLEY AUTHORITY

By: General Manager or Designee

Exhibit "A"

2019 RICE IRRIGATION APPLICATION

Customer No.	Customer/Farm Name	Phone Number/Email

FSN	TRACT	Field	1st Crop Acres	2nd Crop (Y/N)	County	Crop	Comment/Notes
					Jefferson	Rice	
					Jefferson	Rice	
					Jefferson	Rice	
Total Acres			0.00			Check Number	
Application Fee ($5/Acre)			$0.00			#	
Lien Fee			15.00				
Total Due			$15.00				

Property Owner

Name:

Address:

Phone: