

*Nueces County Water Control &
Improvement District #4
Water Conservation Plan*



Water Conservation Plan

1. Introduction

This water conservation plan is a guideline put forward by Nueces County Water Control and Improvement District #4 (hereinafter referred to as the District) pursuant to the requirements of the Texas Commission on Environmental Quality (TCEQ) and the Texas Water Development Board (TWDB). A majority of this plan is based on the requirements set forth by the City of Corpus Christi as both water supplies are provided through their sources. The introduction chapter will outline the background of the District, service area characteristics, and the purpose of this plan.

1.1 Background of Nueces County Water Control & Improvement 4

Before there was a Water District

Until the late 1920's water supply was strictly an individual effort. The island's population was in the low hundreds and each home had to supply its own needs. There was never a problem of water supply. Water wells could be installed rather easily as the supply existed only a few feet below the surface. What was in short supply was good drinking water. Some of the island's population relied upon cypress cisterns to collect rainwater for drinking. A few who happened to be lucky enough to be located in the right areas found a supply of potable or drinking water about seventeen feet below the surface. Although the water was drinkable, it contained considerable amounts of minerals and was often brackish. There were several windmills used to pump water on the island during this period.

The ground water supply was unpredictable at best. It rested atop salt water and was easily affected by the demand placed on the supply and the ocean tides. This uncertain fresh water supply situation was a constant question in the lives of the island's earliest citizens. It was a time when the water supply for cooking, drinking, and cleaning was a daily problem. Washing clothes was extremely difficult. The mineral laden water was so hard that soap refused to suds and white clothing became dingy after being washed. It was a time that forced people to live by thrift and respect for the environment they chose to inhabit.

The Beginning

The Nueces County Water Control and Improvement District No. 4 began with 300 accounts serving a population of approximately 1000. The system was purchased from the City of Port Aransas in 1958 for \$78,500. The first thing the District did was set a priority for additional water supply. Without an adequate supply, the District could not fulfill its most fundamental service. The District's first directors knew that one four-inch line from Harbor Island could never supply the island's future water needs. Thus began an almost 20-year period of negotiating, issuing bonds, and planning to ensure the island's future needs.

In the first year after the District was formed, an engineering study was made to project the District's future water needs. This study proposed construction of an eight-inch water line from the north end of Padre Island to Port Aransas. This proposal was not accepted by the District for a number of years. Instead, the District chose to bring an eight-inch water supply line from San Patricio Water District through Aransas Pass under the ship channel to Port Aransas. The District signed the first water supply contract with San Patricio Water District in 1958 and received its first billing in November of 1959. To pay for the water billed to the District, a user's fee of \$2.00 per 2,000 gallons was set.

With a contracted supply, storage and delivery capacity planned, the District would undergo all of the growth and maintenance problems associated with a developing system. It was a time when lines had to be laid, repaired, fixed, storage capacity constructed, and daily water needs met.

Early Years

The early years for the District are distinct from the initial demands of the beginning years as the basic supply and delivery system was in place. The years of 1962-1977, were faced with the changes in population and thereby the need for increased water supply and storage and the construction and addition of wastewater treatment for the island. During this 15 year period much upgrading and many additions were made. By the early 1960's, the population had increased enough that the members of the District recognized the problem with wastewater, and in 1962 passed a \$535,000 bond issue to construct the original wastewater treatment plant. Land at the end of Ross Avenue was purchased from the City and a 600,000 GPD treatment facility was constructed. This facility served the island's needs by utilizing a network of lift stations spread throughout the island. Wastewater management on a barrier island is an expensive process and must be maintained properly to accommodate the environmentally sensitive surroundings within which it operates.

Present Management Years

What is characteristic of this period of development for the District is that all of the elements (supply, distribution, wastewater treatment and disposal) are in place and the business of the District turns toward effective management and planning practices. With the construction of a sixteen-inch water supply line up the now park road, the District was virtually assured of an adequate supply for years ahead. A long debate about the best way to satisfy the island's water supply needs, from Aransas Pass and under the ship channel or to come up the park road from North Padre, was settled with the island being served by two water sources, Corpus Christi and San Patricio. This dual supply system has many advantages and the island's water system is better equipped to handle the District's needs because of this configuration.

The District is one of the few which have already planned and permitted for future wastewater needs. The mid-island treatment plant with a capacity of 600,000 GPD has been permitted since the late 1980's, and when the demand is there, the District will be able to fulfill its obligation for service.

The present management approach taken by the District is one which calls for planning and permitting before the need.

It has also allowed the District to take formidable roles in the future of the island, construction standards on the island, and the protection of the island's natural resources.

1.2 Service Area Characteristics

The Nueces County Water and Improvement District #4 currently provides water and wastewater service for residents and businesses within the City of Port Aransas and the surrounding areas. The primary service boundary for both the water and wastewater is bound by the Corpus Christi Ship Channel on the north, the Gulf of Mexico on the east, Mustang Island State Park on the south, and Corpus Christi Bay on the west. The District maintains a secondary service boundary along Harbor Island; which is bound by Redfish Bay on the north, the Corpus Christi Ship Channel on the east, the Corpus Christi Bay on the south, and the City of Aransas Pass on the west.

The area is generally identified by four basic environmental units. These units are the beach, dune complex, barrier flats, and tidal flats. The beach is about 200 to 300 feet wide and comprised of very fine sand. The dune complex varies in height from 15 to 25 feet and averages 800 feet in width. It serves as protection to the barrier island during storm surges. The barrier flat is generally the level plain between the dune complex and the tidal flat on Corpus Christi Bay. The tidal flat of the island consist of the low lying areas with either water cover or areas impacted by continuous wind and tidal influences. A map of the District's service area can be found in Appendix A.

1.3 Purpose of the Water Conservation Plan

Understanding that water is our state's most precious resource and the growing demand of that resource, Texas Water Development Board (TWDB) and Texas Commission on Environmental Quality (TCEQ) require water systems to provide a long term plan for conservation.

This Water Conservation Plan (WCP) will explain the District's current water system, sources, supply, and distribution of water. In addition, it will describe the demand of water now and in the future for the District. In conclusion, the WCP will outline our goals for water conservation and explain how these goals will be implemented utilizing Best Management Practices provided by the TWDB.

2. Water System Profile

This chapter will describe the District's supply system. Including supply sources, storage, distribution system, our master meters, and waste water treatment.

2.1. Supply Sources

Nueces County Water Control and Improvement District #4 have two water systems that provide water to our customers. The District purchases treated water from the City of Corpus Christi which in turn obtains its supply from Lake Corpus Christi, Choke Canyon Reservoir, and Lake Texana by the way of the Mary Rhodes Pipeline. The water supply from the North is accomplished by an agreement with San Patricio Municipal Water District (SPMWD). SPMWD purchases treated and untreated water from City of Corpus Christi. A map of the District's water sources can be found in Appendix B.

2.2. Storage and Pumping

The current system has an elevated storage capacity of 1.5 MG and ground storage capacity of 2.9 MG. Elevated storage tanks serve three purposes; equalization of peak demands to maintain a fairly constant pumping rate, provide pressure maintenances and system surge protection, and reserve capacity for fire protection and emergency conditions. The ground storage tanks generally serve two purposes, equalizing the different rates of supply and pumping into the system and reserve for emergency conditions.

The District presently has three pump stations. The Beasley pump station and storage tanks are located on Beasley Street in the City of Aransas Pass approximately seven miles west of Port Aransas. Here water is stored that was purchased from SPMWD and pumped to the Ferry Landing pump station. The Ferry Landing pump station and storage tanks are located in the City of Port Aransas at Port Street and Cotter Avenue. Stored water received from the Beasley pump station pump water to an elevated tank and provide service to the distribution system. Lastly, the Mustang Island pump station and storage tanks are located approximately eleven miles south of the City of Port Aransas. At this pump station water purchased from the City of Corpus Christi is stored and pumped to Port Aransas.

2.3. Master Meters

The District has two master meters at the take points. One is located at the Mustang Island pump station which tracks water purchased from the City of Corpus Christi. This meter is read on a daily basis. The other is located and the Beasley pump station located in the City of Aransas Pass which tracks the water purchased from San Patricio Municipal Water District. This meter is read on a weekly basis.

2.4. Water Distribution

The District owns and operates the water distribution system which supplies water to the customers of Port Aransas, Mustang Island, and Harbor Island. The system of pipelines range in diameter from 2 inches to 20 inches and cover 100 miles.

2.5. Wastewater

The wastewater collection system can be identified as separate components, one serving the City of Port Aransas and the other serving the remainder of Mustang Island. The two components are interconnected and the flow is transported by a series of lift stations to the District's wastewater treatment plant. The overall collection system consists of force main and gravity lines varying in diameter from 4" to 24", including 21 lift stations, which are an essential element of design in flat terrain areas such as Port Aransas.

The wastewater treatment plant is located approximately 1/4 mile west of the intersection of Sixth Street and Avenue I, at the end of Ross Avenue in the City of Port Aransas. It is operated under TCEQ's TPDES Permit No.WQOOI0846001 and discharges into the marsh area west of the plant, then into Corpus Christi Bay in water segment No. 2481 of the Bays and Estuaries. The annual average design hydraulic capacity of the plant is 1.88 MGD with a two-hour peak of 3,917 gpm (5.64 MGD).

2.6. Utility Profile

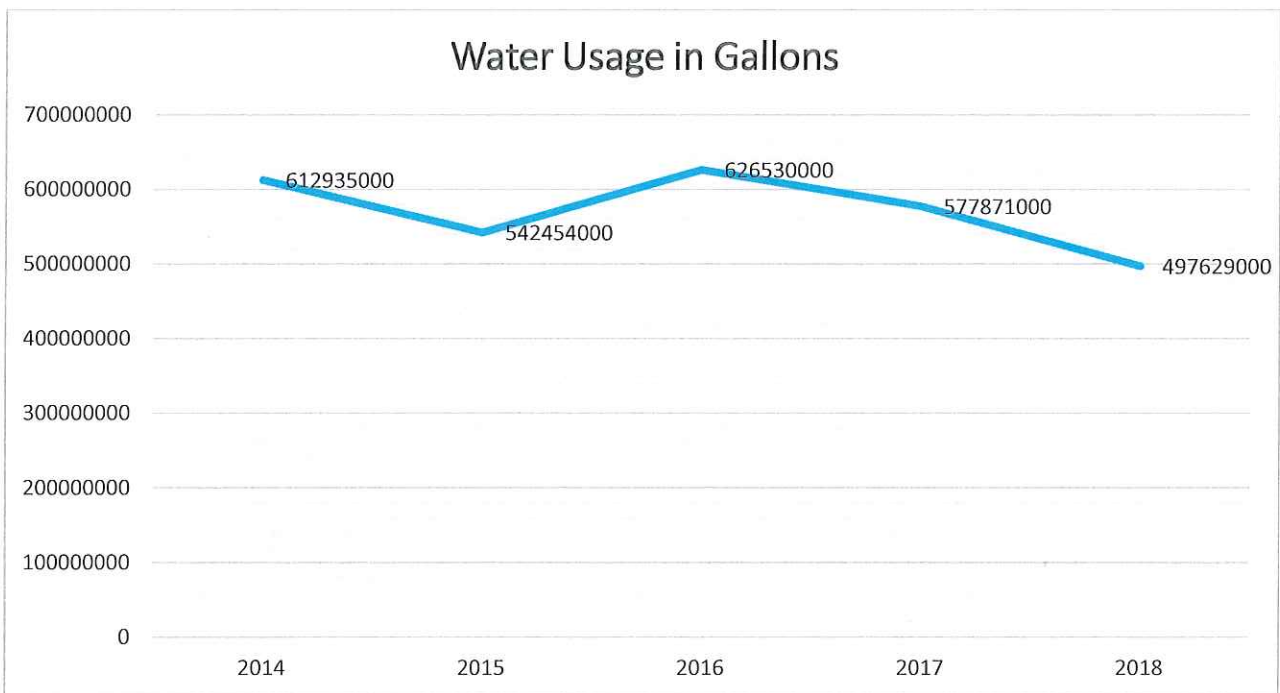
The District's utility profile, a detailed account of the water and wastewater system can be found in Appendix C. This profile will contain historical, present, and projected usage.

3. Water and Wastewater Demand

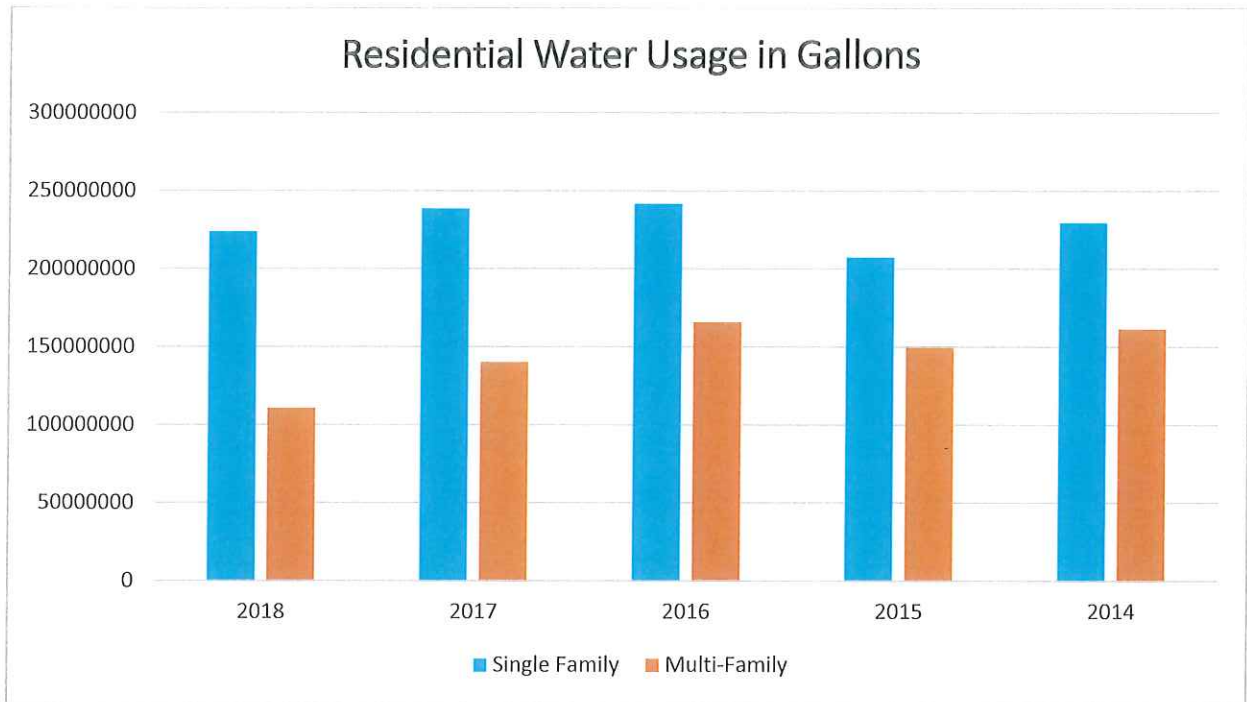
The demand placed on the water and wastewater systems is attributed to three general types of population found within the District. The first type consists of residents that permanently live within the District's service area including the City of Port Aransas. The second type includes customers that have second homes but live elsewhere the majority of the time. The third type includes tourist and vacationers.

To have an understanding of the demand placed on the District's systems will allow this utility to better implement and continue water conservation measures. This chapter will present charts and brief descriptions of past, present, and projected water demand for the District.

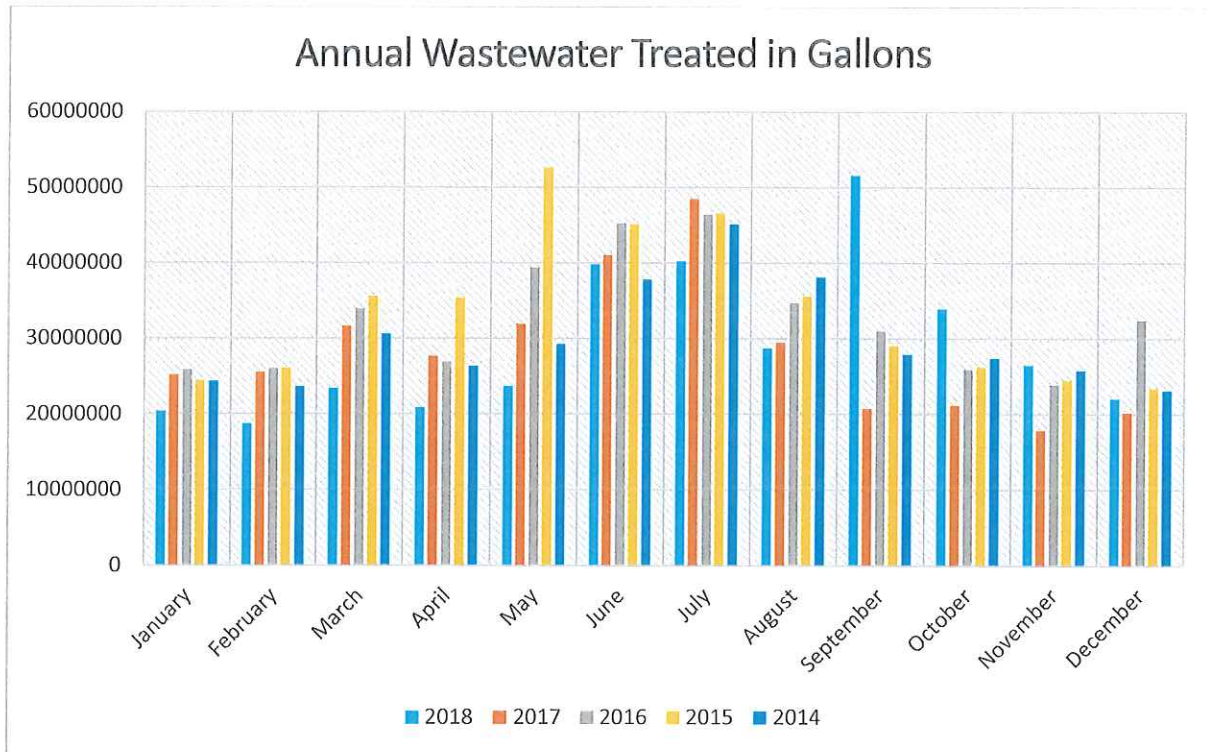
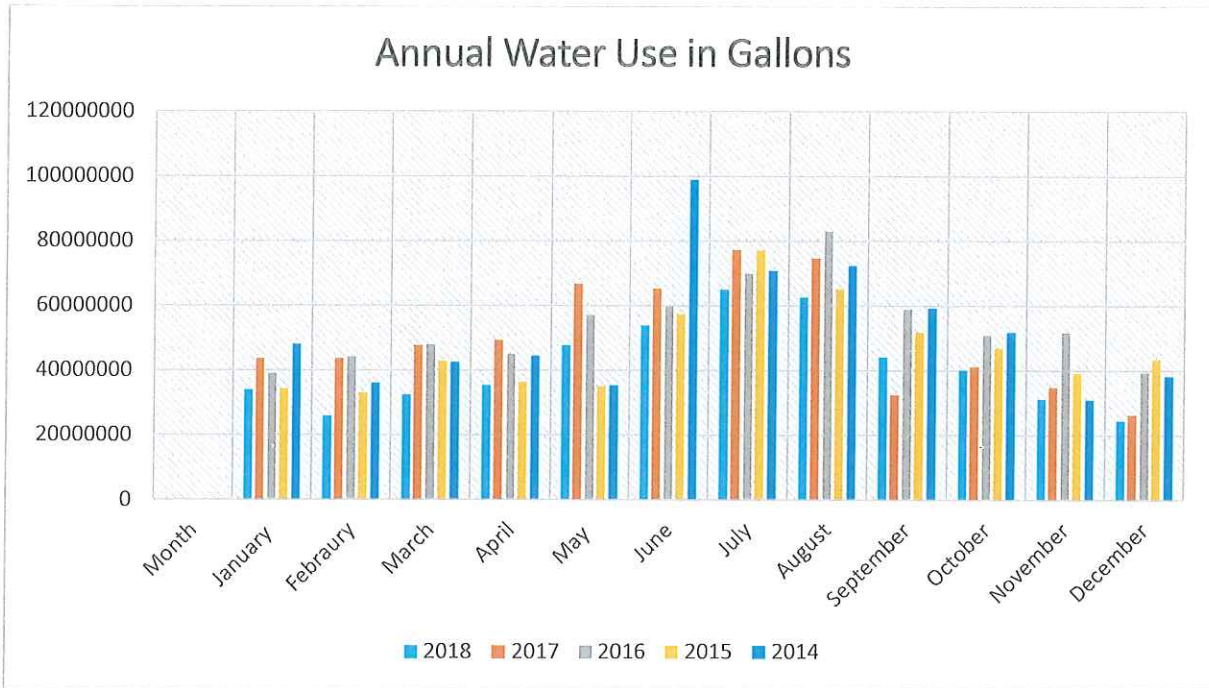
3.1. Historical and Present Water Usage



This chart illustrates the previous five years of annual retail water provided to the District's customers measured by gallons. The dip in usage in 2014 and 2015 can be explained by watering restrictions that were placed District wide due to drought. Hurricane Harvey made landfall in Port Aransas on August 25, 2017. This would explain the decline in usage seen in recent years.

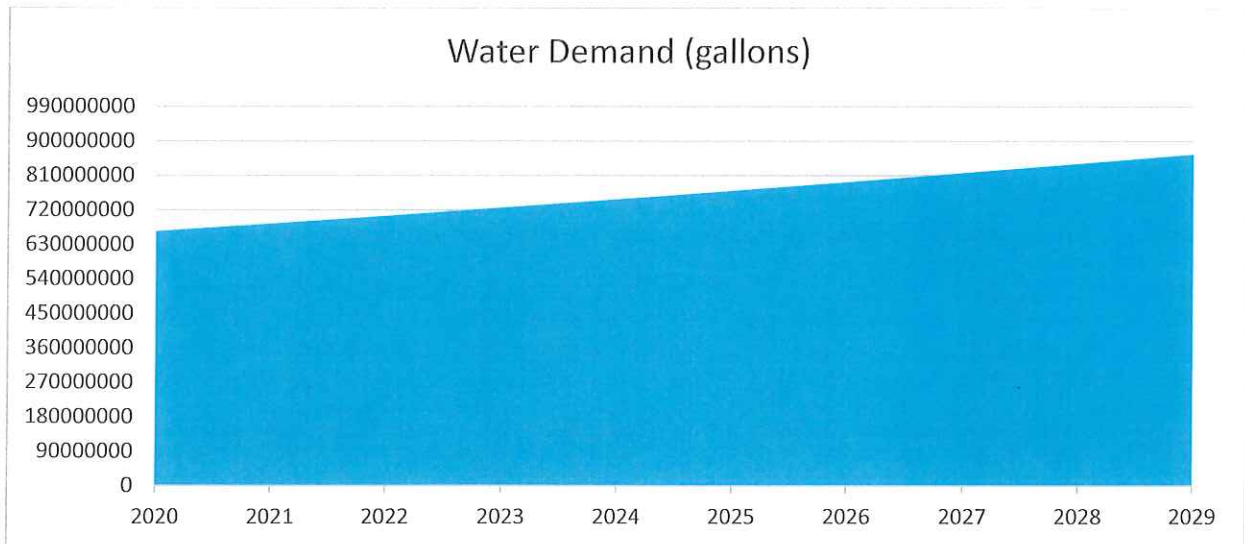


3.2 Above is the residential usage for the previous five years measured by gallons. It can be determined with this information that single family homes are responsible for the majority of the demand put on the water and wastewater systems.



3.3 These charts display the water usage and the wastewater treated in gallons over the previous five years. It illustrates usage peaks during the seasonal summer months of June, July and August.

3.4. Projected Demand



This chart demonstrates the demand for water and wastewater services for the next ten years in gallons.

4. Conservation Practices

The District currently engages in conservation measures that ensures the preservation of water. These measures are on-going and year-round practices. The purpose of these procedures is to restrict supply-side water loss with an emphasis on universal metering. The following is a brief explanation the District's current practices.

- 4.1. **Master Meter:** Two master meters are located the take points from the District's distributors. One is located at Mustang Island pump station which tracks water purchased from the City of Corpus Christi. This meter is read on a daily basis. The other is located in the City of Aransas Pass which tracks the water purchased from San Patricio Municipal District. This meter is read on a weekly basis. All daily records are transferred to a database as well as maintained tangibly in the main District office.
- 4.2 **Universal Metering:** The most significant stride for water conservation of the District was the adoption and implantation of Harmony software. Approved by the District's Board of Directors in 2015, every retail meter was equipped with this technology. Harmony is a real time network that allows for the District to monitor leaks (24 hours of continuous usage), tampering, defective meters, as well as usage on an inactive service. Customer Service Representatives alert customers on a daily basis of leaks and high usage. Individual alerts are

updated and maintained in the meter reading software and billing software. This technology also provides the District's customer's ability to view their utility accounts utilizing a phone app. Customers are alerted to continuous or high usage set by their personal parameters. The District has not launched this program but foresees doing so in the near future. Examples of this software can be found in Appendix D.

- Toilet flappers and leak detection dye tablets are routinely offered by Customer Service Representatives when customers are alerted.
- On site leak detection available on request

4.3 **Water Loss Prevention:** Another water conservation measure the District practices is to monitor water loss closely and effectively. Known loss is tracked on a monthly basis through a database created by District personnel. This database can also account for actual and unknown loss. Also, an annual water loss audit is conducted in accordance with TWDB and TCEQ.

4.4 **Water Rate Structure:** The rate structure is established in order to deter customers from wasteful practices. After the minimum of 2,000 gallons is used a rate for every 1,000 gallons begins. The minimum is based on the size of the meter. The larger the meter the larger the minimum. This is to prevent commercial entities from excessive usage. A copy of the rate schedule can be found in Appendix E.

4.5 **Contractual Obligations:** Both water systems obtain their sources from the City of Corpus Christi. Therefore, the enforceable restrictions the City of Corpus Christi has in place are willingly practiced within this District.

A brief explanation of those measures, extracted from the City of Corpus Christi's WCP, are listed below:

Prohibition on Wasting Water: Under the Prohibition on Wasting Water Conservation Measure, it is unlawful to waste water. Actions leading to the wasting water are prohibited and will be enforced. No person shall:

Allow water to run off property into gutters or streets.

Permit or maintain defective plumbing in a home, business establishment or any location where water is used on the premises. Defective plumbing includes out-of-repair water closets, underground leaks, defective or leaking faucets and taps.

Allow water to flow constantly through a tap, hydrant, valve, or otherwise by any use of water connected to the District water system.

Use any non-recycling decorative water fountain.

Allow irrigation heads or sprinklers to spray directly on paved surfaces such as driveways, parking lots, and sidewalks in public right-of-ways.

Operate an irrigation system at water pressure higher than recommended, causing heads to mist, or to operate with broken heads.

Irrigation timing: Landscape irrigation is most efficient during early morning or nighttime hours, when there is less potential for evaporation from the sun. This conservation measure prohibits irrigation by spray or sprinklers between the hours of 10 am and 6 pm. It is still permissible to water by hand or by drip irrigation at any time of the day.

Restaurant Water Saving: Under this conservation measure, commercial dining facilities must only serve water upon request. In addition, any hand-held dish-rinsing wand must have an automatic shut-off.

- 4.6 **Leak Detection:** Currently the District's practice for leak detection of main transmission and distribution lines is sight/report only. It is the District's intention to implement and maintain a distribution water loss program.
- 4.7 **Education:** Currently the only means of education the District provides is conducted on a case by case basis utilizing our metering software. It is the District's intention to implement and maintain public and school educational programs.
- 4.8 **Wholesale Customers:** Currently the District does not require their wholesale customers to submit a water conservation plan. Upon renewal or an extension of a water contract it will be made a requirement to adopt and submit a water conservation plan.

5. Goals

Ultimately, the goal of the District is to aid the ongoing incentive to conserve water in order to ensure this limited resource for the future. This can be achieved by analyzing historical information, continuing current conservation practices, and implementing new conservation measures. These measures will include the specific conservation practices that are required by TCEQ, enforceable conservation practices by the City of Corpus Christi, and practices unique to the District. This chapter of the WCP will include the District's quantifiable five to ten year goals and a schedule for implementing the District's water conservation plan in order to achieve said goals.

5.1 Five to Ten Year Goal

The long-term goal of the District is to lower the gross per capita consumption by one percent every year over a ten year period. This will be measured, now and in the future, by gross per capita daily (gpcd). This is determined when the total amount system input is divided by permanent population then divided by 365 days. Annual recording of the system gpcd will be tracked and saved in order to ensure progress towards this goal. The total gpcd, residential gpcd, and water loss gpcd is shown on the table below.

	Baseline	5 Year Goal for 2024	10 Year Goal for 2029
Total GPCD	407	396	376
Residential GPCD	281	267	254
Water Loss GPCD	48	46	44

5.2 Water Conservation Implementation Schedule

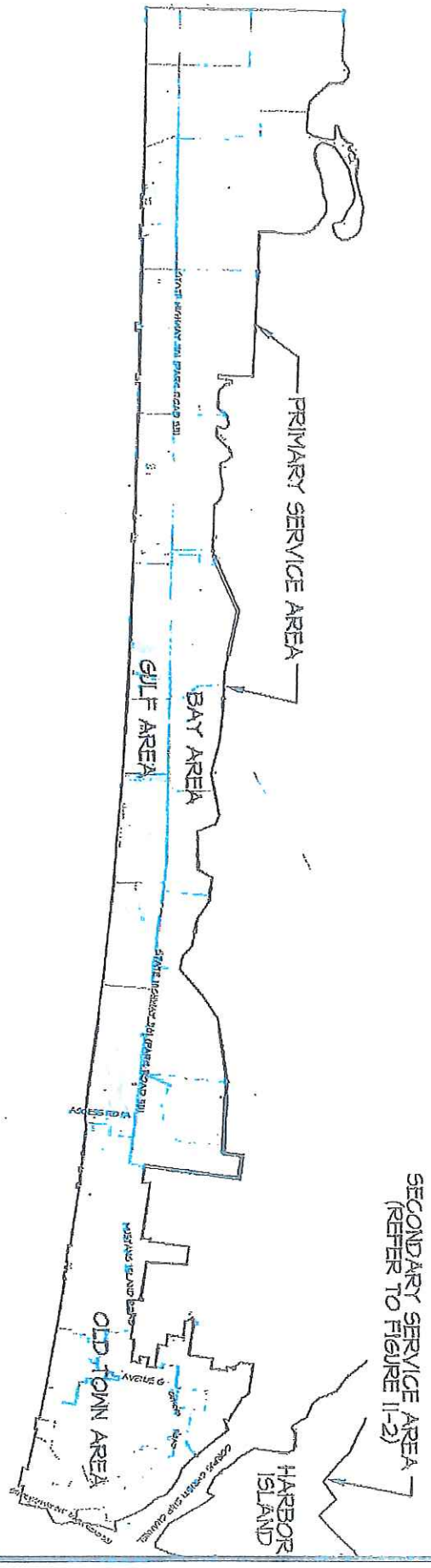
Leak Detection	Reduce real loss of water by introducing and maintaining a program to detect leaks in distribution and main lines	2020	Annually
Public Education	Educate the public of water conservation by providing literature upon every new service and a portal on the District website	2020	Ongoing
School Education	Educate the youth of the importance of water conservation by partnering with local school district	2020	Ongoing
System Water Loss Audit	Identify areas of the water system that contribute to water loss	2016	Annually
Prohibition on wasting water	Reduce consumption of water regardless of drought conditions	2013	Ongoing
Irrigation Timing	Reduce evaporative loss and unnecessary water consumption by limiting hours of irrigation to 10 am to 6pm, regardless of drought conditions	2013	Ongoing
Restaurant water reduction	Reduce unnecessary water loss by requiring restaurants to serve water only upon request	2013	Ongoing
Universal Metering	Continue to utilize software that tracks leaks and high usage and inform customers accordingly.	2015	Ongoing
Website	Add and maintain a conservation page on the District website which will allow for public comments	2020	Ongoing

5.3 Implementation of Conservation Measures

The goals presented in this Water Conservation Plan that are not currently in effect will be implemented by the District's Water Conservation Coordinator upon the completion of this plan. Tracking and evaluation will begin in the year 2020. This will include but not be limited to the requirements set forth by the TWDB and TCEQ.

6.0 Adoption of Water Conservation Plan

On May 16, 2019, the Water Conservation Plan was discussed at a public meeting of the Board of Directors. The Board Meeting agenda was posted along with other items as part of the normal dissemination of the Board Meeting agenda. At this time the Board of Directors adopted the Drought Contingency Plan and the Water Conservation Plan. District Manager, Mark Young was named enforcement agent. Office Manager, Katie Barrett will be responsible for the annual reporting of the utility profile in accordance to TWDB and TCEQ.



NOTE:
PRIMARY SERVICE AREA DIVIDED INTO THREE ZONES:
OLD TOWN AREA, BAY AREA, & GULF AREA.

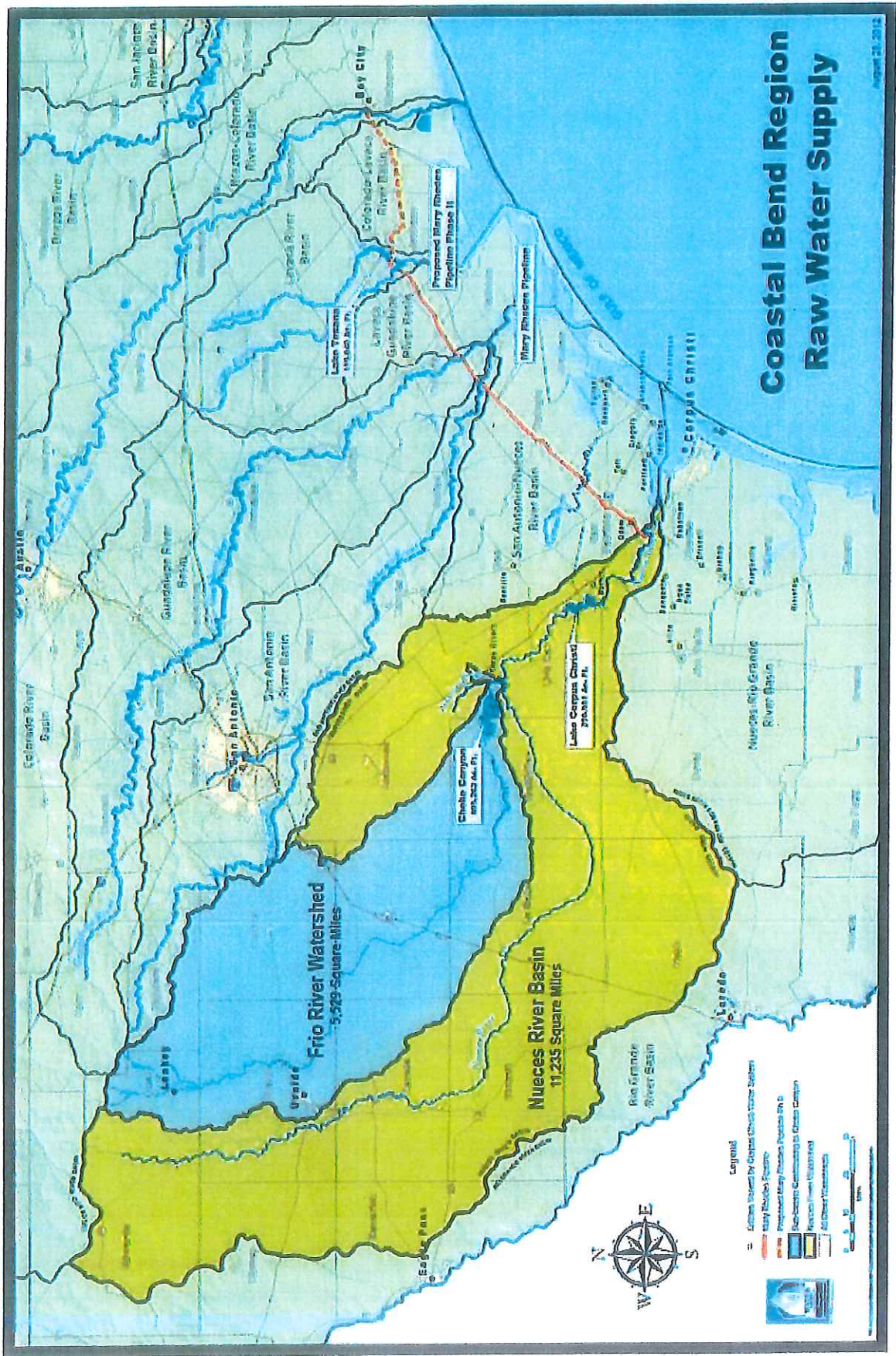


Figure 2.1. Map of the Coastal Bend Regional Water Supply, including the three surface water supply reservoirs.

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

CONTACT INFORMATION

Name of Utility:

Public Water Supply Identification Number (PWS ID):

Certificate of Convenience and Necessity (CCN) Number:

Surface Water Right ID Number:

Wastewater ID Number:

Contact: First Name: Last Name:

Title:

Address: City: State:

Zip Code: Zip+4: Email:

Telephone Number: Date:

Is this person the designated Conservation Coordinator? Yes No

Regional Water Planning Group:

Groundwater Conservation District:

Our records indicate that you:

- Received financial assistance of \$500,000 or more from TWDB
- Have 3,300 or more retail connections
- Have a surface water right with TCEQ

A. Population and Service Area Data

1. Current service area size in square miles:

Attached file(s):

File Name	File Description
Service Area.pdf	Service Area Map

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

2. Historical service area population for the previous five years, starting with the most current year.

Year	Historical Population Served By Retail Water Service	Historical Population Served By Wholesale Water Service	Historical Population Served By Wastewater Water Service
2018	4,143	2	3,522
2017	4,082	2	3,470
2016	3,978	2	3,381
2015	3,894	2	3,310
2014	3,799	2	3,329

3. Projected service area population for the following decades.

Year	Projected Population Served By Retail Water Service	Projected Population Served By Wholesale Water Service	Projected Population Served By Wastewater Water Service
2020	4,395	2	3,604
2030	5,906	2	4,843
2040	7,938	2	6,509
2050	10,668	2	8,748
2060	14,337	2	11,757

4. Described source(s)/method(s) for estimating current and projected populations.

Current and previous population found on US Census Bureau. Projected population utilized a growth rate and water demand of 3%. This information was provided by District Master Water and Wastewater Plan developed by Urban Engineering in 2009, updated in 2016. Wastewater population was calculated on the basis that Agricultural usage is, on average, 15% of total water usage.

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. System Input

System input data for the previous five years.

Total System Input = Self-supplied + Imported – Exported

Year	Water Produced in Gallons	Purchased/Imported Water in Gallons	Exported Water in Gallons	Total System Input	Total GPCD
2018		497,629,000		497,629,000	329
2017		577,871,000		577,871,000	388
2016		626,530,000		626,530,000	432
2015		542,454,000		542,454,000	382
2014		612,935,000		612,935,000	442
Historic Average	0	571,483,800	0	571,483,800	394

C. Water Supply System

Attached file(s):

File Name	File Description
Water System.pdf	Water System Master Plan

1. Designed daily capacity of system in gallons
2. Storage Capacity
 - 2a. Elevated storage in gallons:
 - 2b. Ground storage in gallons:

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

D. Projected Demands

1. The estimated water supply requirements for the next ten years using population trends, historical water use, economic growth, etc.

Year	Population	Water Demand (gallons)
2020	4,395	664,688,000
2021	4,526	684,629,000
2022	4,662	705,168,000
2023	4,802	726,323,000
2024	4,946	748,113,000
2025	5,095	770,556,000
2026	5,247	793,673,000
2027	5,405	817,481,000
2028	5,567	842,005,000
2029	5,734	866,265,000

2. Description of source data and how projected water demands were determined.

Current and previous population found on US Census Bureau. Projected population utilized a growth rate and water demand of 3%. This information was provided by District Master Water and Wastewater Plan developed by Urban Engineering in 2009, updated in 2016.

E. High Volume Customers

1. The annual water use for the five highest volume **RETAIL** customers.

Customer	Water Use Category	Annual Water Use	Treated or Raw
Gulf Waters RV Resort	Commercial	9,347,000	Treated
University of Texas	Institutional	8,206,000	Treated
Port Royal	Commercial	7,171,000	Treated
Shark Reef Resort	Commercial	4,051,000	Treated
Island Hotel	Commercial	3,694,000	Treated

2. The annual water use for the five highest volume **WHOLESALE** customers.

Customer	Water Use Category	Annual Water Use	Treated or Raw
Midstream Combined	Industrial	2,229,000	Treated
ERF Port Aransas	Industrial	594,000	Treated

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

F. Utility Data Comment Section

Additional comments about utility data.

Section II: System Data

A. Retail Water Supplier Connections

1. List of active retail connections by major water use category.

Water Use Category Type	Total Retail Connections (Active + Inactive)	Percent of Total Connections
Residential - Single Family	3,141	30.87 %
Residential - Multi-Family	4,773	46.90 %
Industrial	11	0.11 %
Commercial	1,986	19.52 %
Institutional	46	0.45 %
Agricultural	219	2.15 %
Total	10,176	100.00 %

2. Net number of new retail connections by water use category for the previous five years.

Year	Net Number of New Retail Connections						Total
	Residential - Single Family	Residential - Multi-Family	Industrial	Commercial	Institutional	Agricultural	
2018	133	25	1	10		6	175
2017		242		17	2	27	288
2016	177	118	1		9		305
2015	494	58	17	79		17	665
2014	201		8	558	1	35	803

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. Accounting Data

The previous five years' gallons of RETAIL water provided in each major water use category.

Year	Residential - Single Family	Residential - Multi-Family	Industrial	Commercial	Institutional	Agricultural	Total
2018	224,003,000	110,602,000	10,223,000	71,135,000	22,798,000	58,868,000	497,629,000
2017	238,649,000	140,230,000	3,702,000	78,203,000	16,604,000	100,483,000	577,871,000
2016	241,731,000	165,806,000	2,676,000	93,723,000	17,797,000	104,797,000	626,530,000
2015	207,458,000	149,664,000	2,674,000	95,522,000	14,443,000	72,693,000	542,454,000
2014	229,639,000	161,572,000	3,192,000	101,144,000	17,660,000	99,728,000	612,935,000

C. Residential Water Use

The previous five years residential GPCD for single family and multi-family units.

Year	Total Residential GPCD
2018	221
2017	254
2016	281
2015	251
2014	283
Historic Average	258

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

D. Annual and Seasonal Water Use

1. The previous five years' gallons of treated water provided to RETAIL customers.

Month	Total Gallons of Treated Water				
	2018	2017	2016	2015	2014
January	34,110,000	43,662,000	39,015,000	34,361,000	48,101,000
February	25,931,000	43,652,000	44,186,000	33,112,000	36,146,000
March	32,447,000	47,687,000	47,908,000	42,889,000	42,575,000
April	35,412,000	49,358,000	45,044,000	36,308,000	44,593,000
May	47,838,000	66,734,000	57,104,000	35,055,000	35,492,000
June	53,972,000	65,288,000	59,826,000	57,461,000	98,930,000
July	65,074,000	77,263,000	69,956,000	77,197,000	70,920,000
August	62,698,000	74,671,000	83,001,000	65,093,000	72,442,000
September	44,162,000	32,487,000	58,946,000	51,810,000	59,254,000
October	40,171,000	41,236,000	50,911,000	46,956,000	51,929,000
November	31,248,000	34,840,000	51,717,000	39,168,000	31,048,000
December	24,566,000	26,325,000	39,443,000	43,443,000	38,305,000
Total	497,629,000	603,203,000	647,057,000	562,853,000	629,735,000

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

2. The previous five years' gallons of raw water provided to RETAIL customers.

Month	Total Gallons of Raw Water				
	2018	2017	2016	2015	2014
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Total					

3. Summary of seasonal and annual water use.

	Summer RETAIL (Treated + Raw)	Total RETAIL (Treated + Raw)
2018	181,744,000	497,629,000
2017	217,222,000	603,203,000
2016	212,783,000	647,057,000
2015	199,751,000	562,853,000
2014	242,292,000	629,735,000
Average in Gallons	210,758,400.00	588,095,400.00

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

E. Water Loss

Water Loss data for the previous five years.

Year	Total Water Loss in Gallons	Water Loss in GPCD	Water Loss as a Percentage
2018	7,212,000	5	1.45 %
2017	5,250,000	4	0.91 %
2016	4,706,000	3	0.75 %
2015	7,944,000	6	1.46 %
2014	5,463,000	4	0.36 %
Average	6,115,000	4	0.99 %

F. Peak Day Use

Average Daily Water Use and Peak Day Water Use for the previous five years.

Year	Average Daily Use (gal)	Peak Day Use (gal)	Ratio (peak/avg)
2018	1,363,367	1975478	1.4490
2017	1,652,610	2361108	1.4287
2016	1,772,758	2312858	1.3047
2015	1,542,063	2171206	1.4080
2014	1,725,301	2633608	1.5265

G. Summary of Historic Water Use

Water Use Category	Historic Average	Percent of Connections	Percent of Water Use
Residential - Single Family	228,296,000	30.87 %	39.95 %
Residential - Multi-Family	145,574,800	46.90 %	25.47 %
Industrial	4,493,400	0.11 %	0.79 %
Commercial	87,945,400	19.52 %	15.39 %
Institutional	17,860,400	0.45 %	3.13 %
Agricultural	87,313,800	2.15 %	15.28 %

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

H. System Data Comment Section

Section III: Wastewater System Data

A. Wastewater System Data

1. Design capacity of wastewater treatment plant(s) in gallons per day: 1,800,000

2. List of active wastewater connections by major water use category.

Water Use Category	Metered	Unmetered	Total Connections	Percent of Total Connections
Municipal	7,939		7,939	77.70 %
Industrial	12		12	0.12 %
Commercial	1,996		1,996	19.53 %
Institutional	46		46	0.45 %
Agricultural	225		225	2.20 %
Total	10,218		10,218	100.00 %

3. Percentage of water serviced by the wastewater system: 89.25 %

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

4. Number of gallons of wastewater that was treated by the utility for the previous five years.

Month	Total Gallons of Treated Water				
	2018	2017	2016	2015	2014
January	20,387,000	25,217,000	25,859,000	24,478,000	24,387,000
February	18,753,000	25,568,000	26,049,000	26,132,000	23,681,000
March	23,413,000	31,662,000	33,924,000	35,615,000	30,650,000
April	20,916,000	27,738,000	26,944,000	35,415,000	26,388,000
May	23,683,000	31,942,000	39,365,000	52,665,000	29,296,000
June	39,851,000	41,091,000	45,277,000	45,153,000	37,846,000
July	40,278,000	48,528,000	46,453,000	46,631,000	45,184,000
August	28,756,000	29,517,000	34,704,000	35,589,000	38,132,000
September	51,641,000	20,744,000	31,004,000	29,061,000	27,947,000
October	33,952,000	21,222,000	25,942,000	26,259,000	27,426,000
November	26,498,000	17,916,000	23,864,000	24,544,000	25,803,000
December	22,113,000	20,247,000	32,410,000	23,438,000	23,211,000
Total	350,241,000	341,392,000	391,795,000	404,980,000	359,951,000

5. Could treated wastewater be substituted for potable water?

Yes
 No

B. Reuse Data

1. Data by type of recycling and reuse activities implemented during the current reporting period.

Type of Reuse	Total Annual Volume (in gallons)
On-site Irrigation	
Plant wash down	
Chlorination/de-chlorination	
Industrial	
Landscape irrigation (park,golf courses)	112,150,000
Agricultural	
Discharge to surface water	247,801,000
Evaporation Pond	
Other	
Total	359,951,000

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

C. Wastewater System Data Comment

Additional comments and files to support or explain wastewater system data listed below.

Search for Customers, Locations, Meters, Account No



Connectivity Status

Base Stations

Total: 2
Connected: 2
Disconnected: 0

Details



Connected
Disconnected

Repeaters

Total: 8
Connected: 8
Disconnected: 0

Details



Connected
Disconnected

System Status

Reception Quality by Meters

99.5%
4130 Meters



■ RX Level 1
■ RX Level 2
■ RX Level 3
■ Not Received

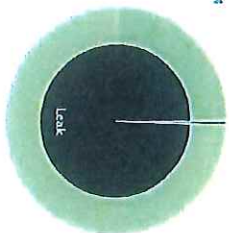
Meters with no reception

Meter ID	Unit Type	Address
00010949700	Allegro 4GBL / UT-21	217 W AVE A
00010448856	Allegro 4GBL / UT-21	1313 PALUSADES DR
00010679223	Allegro 4GBL / UT-21	683 KAU-A COURT
00010282773	Allegro 4GBL / UT-21	641 Dolphin Circle
00010534075	Allegro 4GBL / UT-21	1307 9TH ST
00010285426	Allegro 4GBL / UT-21	639 PELICAN CIRCLE
00010281564	Allegro 4GBL / UT-21	344 W COTTER
00010285426	Allegro 4GBL / UT-21	1265 HWY 261 E
00010595749	Allegro 4GBL / UT-21	148 Sea Road Lane
00010595749	Allegro 4GBL / UT-21	1725 PALUSADES DR
00010681240	Allegro 4GBL / UT-21	508 S STATION
00010796428	Allegro VMA Enc1 / UT-30	HARBOR ISLAND
00010595720	Allegro 4GBL / UT-21	125 Reservoir Lane
00010521436	Allegro 4GBL / UT-21	1620 ON THE BEACH

Priorities

Alerts Status and Handling Status

Snoozed: 44



New: 131

Consumption Map

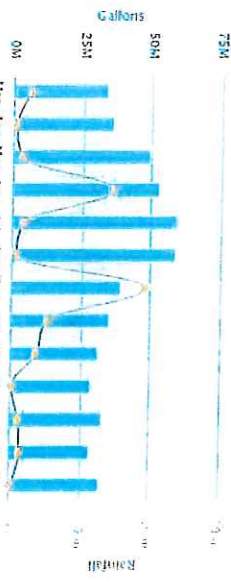
Map Satellite

High

Map Data | Terms of Use | Report a map error

Consumption

Monthly Total Consumption

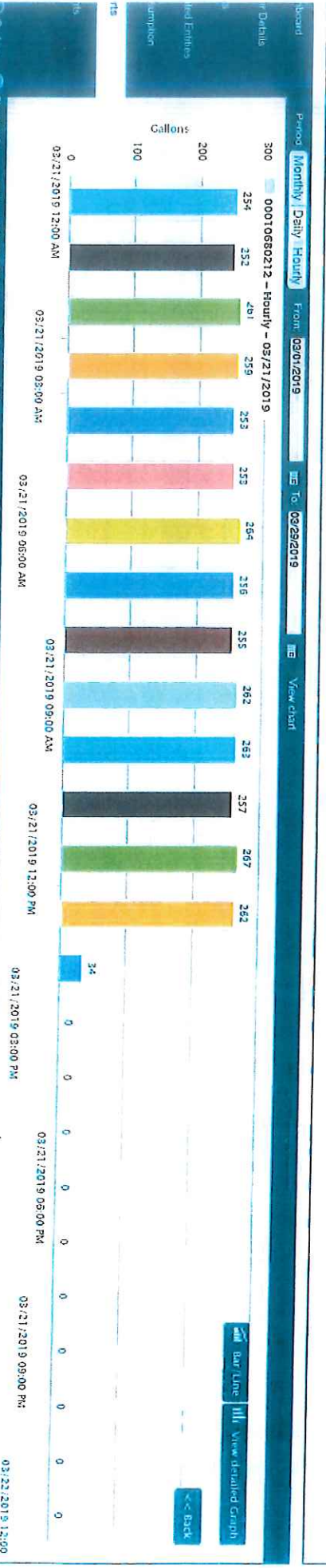


Monthly ▼

Residential Rainfall



sr ID	00010680212	Account Number	105934	Customer Name	BOPE LEONARD	Last Read (Gallons)	28995
al Number	10571499	Location Number	16-06880	Location Address	398 MUSTANG BLVD	Last Read Time	03/29/2019 12:00 AM
ros Type	Water	Meter Size	3/4	Status	OK	Location Noise	BF LOCATED FRONT F
						Email	
						Mobile Phone	



2018-2019 Rates

AMENDED RATES EFFECTIVE 10/01/2018

Water and Wastewater Rates

Meter Size	Water Rates Minimum Charge *	Wastewater Rates Minimum Charge *	Connect/Service Workorder Fee
3/4"	20.00	20.00	45.00
1"	32.50	32.50	45.00
1 1/2"	82.50	62.50	45.00
2"	102.50	102.50	45.00
3"	190.00	190.00	45.00
4"	318.00	318.00	45.00
Consumption /1000 gallons over the min	\$5.00	\$3.60	Out of district sewer \$5.75

* Each Individual Metered Apartment, SF Units, RV's, Etc are Subjected to SF Mfrn. Sewer Rate

Approved Sewer Truck Dump and Refill Max 2000 Gallons 100.00

Construction Water Rates

Minimum for a 3" Fire Hydrant Meter	Consumption /1000 over the 2000 gallon	Connect/Relocation Fee	Tampering Fee / Unauthorized Use
\$280.00	\$7.50	\$45.00	100.00 Plus actual damages

Water and Wastewater Tap Fees

Size	Water Tap	Wastewater Tap
3/4"	1,400.00	1,900.00
1"	1,500.00	2,000.00
1 1/2"	3,000.00	3,500.00
2"	3,500.00	5,000.00
3"	5,000.00	7,500.00
4"	7,500.00	

*1. Min charge. Final cost based on actual cost of installation and will be billed to

*2. If street crossing is required:
Bore \$500.00
Small street cut \$600.00
Medium street cut \$1,000.00
Large street cut \$2,000.00
Drop in meter \$425.00
Drop in meter \$500.00
From 3/4 if service allows \$700.00

*3 Special taps (deep sewer lines, large water lines, large street patches, taps with a by-pass, or taps with special street crossing requirements) are usually contracted and will be billed at actual cost.

Additional District Rates

Fire Line (Monthly)	42.50
Return Check Fee	35.00
After Hours or Weekend call /hr.	50.00
Delinquent Fee (includes re-connect)	45.00
Unauthorized Connect or Re-Connect	70.00
Water Inspection Fee	100.00
Sewer Inspection Fee	60.00
Developer/Const. Inspection Fee (hourly)	45.00
Crew Charge (hourly) one man	50.00
Crew Charge (hourly) two man	90.00
Crew Charge (hourly) three man	120.00
Adjust Meter Size (minimum)	100.00
Raise/Lower Meter (minimum)	100.00
Test Meter (minimum)	50.00
Plan Review/Admin Fee (per hour)	75.00

Equipment Charges

Backhoe with operator (per hour)	90.00
Compressor (per hour)	30.00
Dewatering Equipment (per day)	300.00
Dump/Meter Truck w/operator (per hour)	60.00
Sewer Router w/crew (per hour)	150.00

Water Restriction Violations

Offense	Penalty
1st	Written Notice
2nd	Disconnect Service w/ \$150.00 Reconnect
3rd	Disconnect Service w/ \$300.00 Reconnect
4th	Disconnect Service w/ \$500.00 Reconnect
5th	Disconnect Service w/ no Reconnect *

* May File Appeal to the Water Allocation and Review Committee

Drought Related Rates and Penalties **

Stage	Combined Lake Levels	Water Rate for Each Drought Stage Condition
1	Below 50% Capacity	No Surcharge
2	Below 40% Capacity	No Surcharge
3	Below 30% Capacity	Optional, Rate may be 1.5 Times Published Rate / 1000 Gallons
4	Below 20% Capacity	Water Rate will be 2 Times Published Rate for all Classes / 1000 Gallons
5	Below 10% Capacity	Water Rate will be 3 Times Published Rate for all Classes / 1000 Gallons

**In Accordance with the Resolution Concerning Enforcement Provisions in the Drought Contingency Plan for the NCWCID4



1812 state highway 361 suite f • port aransas, texas 78373

office 361.749.5201 • fax 361.749.5799

May 30, 2019

Nueces River Authority
rfreund@nueces-ra.org

Re: Drought Contingency Plan and Water Conservation Plan

Dear Ms. Fruend

This letter is to notify you that the Nueces County Water Control and Improvement District #4 (PWS 1780006) had adopted a Water Conservation Plan and a Drought Contingency Plan. This notices is in accordance with Texas Water Development Board and Texas Commission on Environmental Quality.

Please contact me if you have any questions or concerns.

Sincerely,



Katie Barrett
Office Manager



1812 state highway 361 suite f • port aransas, texas 78373

office 361.749.5201 • fax 361.749.5799

May 30, 2019

HDR Engineering
Kristi.Shaw@hdrinc.com

Re: Drought Contingency Plan and Water Conservation Plan

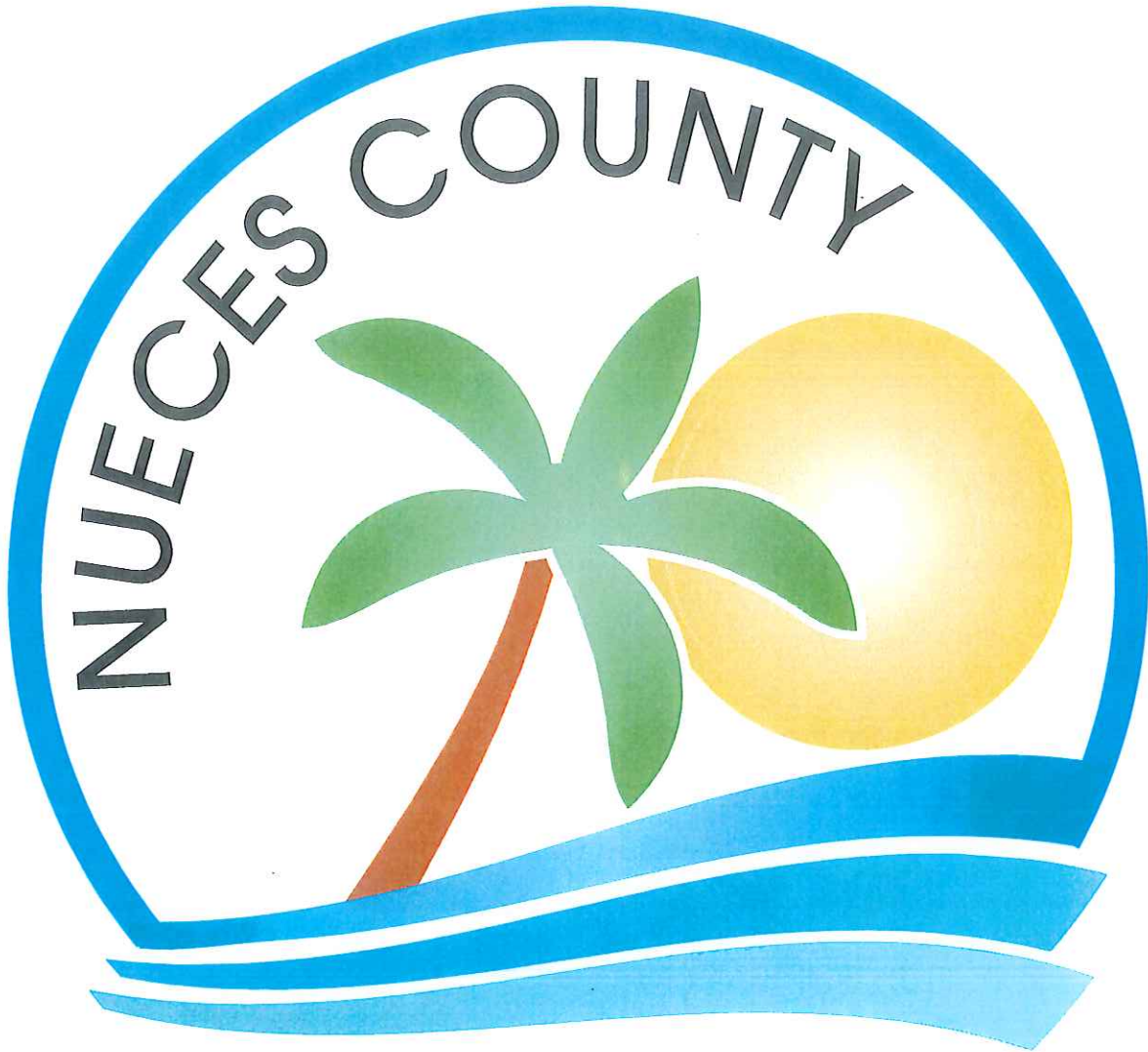
Dear Ms. Shaw

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Please contact me if you have any questions or concerns.

Sincerely,

Katie Barrett
Office Manager



WATER CONTROL &
IMPROVEMENT DISTRICT 4