
CITY OF PORT LAVACA

CC MEETING: FEBRUARY 12, 2024

DATE: 01-29-2024

TO: JODY WEAVER, INTERIM CITY MANAGER
cc: HONORABLE MAYOR AND CITY COUNCIL MEMBERS

FROM: WAYNE SHAFFER, PUBLIC WORKS DIRECTOR

SUBJECT: Adoption of Updated Water Conservation Plan

BACKGROUND:

The City Of Port Lavaca Water Conservation Plan (WCP) must be updated every 5 Years to keep in line with TCEQ and the TWDB. Staff has updated this plan to meet aforementioned requirements. The WCP will assist the City in meeting current and future needs of its citizens.

FINANCIAL IMPLICATIONS: No implications.

IMPACT ON COMMUNITY SUSTAINABILITY:

The city needs this plan in place in order facilitate the needs of the citizens and to promote growth in our community.

RECOMMENDATION: Staff recommends adoption of the updated plan.

ATTACHMENTS: 2024 Water Conservation Plan

RESOLUTION NO. R-021224-1

WHEREAS, the City of Port Lavaca, Texas, recognizes that the amount of water available to its citizens and customers is limited; and

WHEREAS, the City desires to conserve water resources; and

WHEREAS, the City desires to comply with section 11.1271 of the Texas Water Code and applicable rules of the Texas Commission on Environmental Quality which require these plans for all public water supply; and

WHEREAS, pursuant to chapter 54 of the Local Government Code and in the best interests of its citizens, the City is authorized to adopt Resolutions it deems are necessary and expedient to preserve and conserve its water resources;

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PORT LAVACA, TEXAS THAT:

Section 1. The City Council does hereby find and declare that sufficient and timely written notice of place and subject matter of this meeting adoption this Resolution was posted. The City Council further ratifies, approves and confirms such written notice and posting therefore.

Section 2. The City Council adopts the 2024 Water Conservation Plan attached to this resolution. All resolutions that are in conflict with the provisions of this Resolution are hereby repealed.

Section 3. Should any paragraph, sentence, clause, phrase or word of this Resolution be declared unconstitutional or invalid for any reason, the remainder of this Resolution shall not be affected.

Section 4. The City Secretary is hereby authorized and directed to publish this Resolution.

Section 5. The City Manager or Chief Administrative Officer or his designee is hereby directed to file a copy of the plan and this Resolution with the Texas Water Development Board in accordance with Title 31, Chapter 363 of the Texas Administrative Code.

Section 6. This Resolution shall take effect after passage and publication.

Passed and approved by the City Council on this 12th day February, 2024.

ATTEST:

Jack Whitlow, Mayor

Mandy Grant, City Secretary



CITY OF PORT LAVACA

WATER CONSERVATION PLAN

City of Port Lavaca
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Port Lavaca, Texas 77979
Phone: 361.552.3347
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January 29th, 2024

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SECTION I

INTRODUCTION

The City of Port Lavaca is located in Calhoun County, Texas at the intersection of U.S. Highway 87 and state Highway 35. According to the 2010 Census, Port Lavaca had a population of 12,248.

The City of Port Lavaca provides water and sewer to residents within the city limits and also those areas within the city's ETJ.

Exhibit A shows the Certificate of Convenience and Necessity (CCN) and Service Area Map.

The City of Port Lavaca purchases raw water from the Guadalupe Blanco River Authority (GBRA) via a long-term water purchase contract that is transported via the Guadalupe River. Undine Wholesale Supply, LLC, whom the city also has a long-term treatment contract, Treats the purchased raw surface water from the Guadalupe River which is located approximately 17.5 miles south of Port Lavaca. The city delivers this treated water via their distribution system (PWS #0290002) to Port Lavaca's citizens.

The wastewater treatment plant and collection system are owned and operated by the city. The current plant was constructed in 1982 and upgraded in 2004 and is permitted with the TCEQ (TPDES Permit No. WQ0010251001, EPA ID No. TX0047562). The plant has a capacity of 2.0 MGD, a permitted average annual flow of 2.0 MGD, and a peak two-hour flow of 5,319 gpm (8 MGD). The wastewater collection system provides service for approximately 95% of the City's retail water customers.

The city currently has a Drought Contingency Plan adopted September 2019. This document only addresses reduction in water use during emergency conditions. It is not intended to encourage on-going reduction in water use through conservation efforts. To aid the City in its efforts to conserve water and remain in compliance with the Texas Commission on Environmental Quality (TCEQ) requirements for Water Conservation Plans set forth by the amendment of the Texas Administration Code, Title 30, Chapter 288 in January 2008, the City of Port Lavaca finds that a stand-alone document outlining the water conservation efforts, goals, and updated water system data is needed.

The information found herein represents the Water Conservation Plan developed for and implemented by the City of Port Lavaca. This document had been developed, in part, in accordance with the guidelines and direction of the Texas Water Development Board (TWDB) and through consultation with City officials.

1. Utility Evaluation Data

In order to develop a comprehensive and effective water conservation plan, the conditions of the existing water and wastewater systems must be evaluated. The Water Conservation Utility Profile (TWBD Form No. 1965-R) was completed with the most updated information available. This profile is included in Appendix C. This form refers to the Certificate of Convenience and Necessity (CCN) and Service Area Map which is included as Exhibit A to this Plan.

2. Program Goals

The City of Port Lavaca recognizes the importance of developing an effective water conservation plan. Proper planning will help all users in the system conserve water and reduce the City's contribution to the water needs of Texas today and in future.

The City of Port Lavaca is committed to conservation to avoid waste, save costs, and conserve Texas's natural resources. The city has already accomplished many goals in its efforts to conserve water. These include installing meters at all City facilities, implementing a plan for meter replacement, and providing information on non-wasteful uses of water and techniques that can be employed to conserve water for all customers. The city has also adopted standard construction details and specifications which require proper embedment of all water lines and provides standards for all services and meters.

To further the City's progress, Port Lavaca proposes to establish the following goals for its long-term water conservation plan:

- 1) Promote water conservation, non-wasteful uses of water and techniques that can be employed to conserve water through education and information efforts that will be provided on a yearly basis.
- 2) Reduce real and apparent losses (from the metered purchase amounts from Undine Wholesale Supply, LLC to the metered sales) in the system from the current levels of 29 GPCD to 10 GPCD. This water loss percentage should be obtained within the next 10 years.

Achieve Date	Target for Total GPCD	Current Total GPCD	Target for Residential GPCD	Current Residential GPCD	Target for Water Loss GPCD	Current Water Loss GPCD	Target for Water Loss Percentage	Current Water Loss Percentage
Five-year Target Date 2024	107	112	58	57	15	29	14.02 %	25.53 %
Ten-year Target Date 2029	105	112	52	57	10	29	9.52 %	25.53 %

- 3) Maintain water meters and a water meter testing program and expand the Automatic Meter Reading (AMR) System to accurately account for water sold by City.
- 4) Establish and maintain water rate structures that promote conservation of water.

3. Coordination with Regional Water Planning Group

The water service area of the City of Port Lavaca is located within the South-Central Texas Regional Water Planning Group (Region L). The city of Port Lavaca actively participates in the Regional water planning effort and has provided a copy of this Plan to the SCTRWPG to seek comment and insure consistency with the approved regional water plan. A copy of this correspondence is provided in Water Conservation Plan Appendix A.

4. Public Involvement

Opportunity for the public to provide input into the preparation of this Plan by the City of Port Lavaca in form of:

- City Council meeting seeking public comment before adoption of the Plan (see Appendix B for adoption resolution)
- Correspondence with the City's wholesale supplier- the Guadalupe Blanco River Authority (see Appendix A)

In addition, this Plan will be continually available for public review during normal business hours of the City at the City Hall located at 202 N. Virginia St., Port Lavaca, Texas 77979. Any comments received should be considered for inclusion in a revision or amendment to the Water Conservation Plan.

5. Plan Implementation

This Plan and Subsequent Plan elements discussed in this document were adopted by City Resolution of the City of Port Lavaca (see attached Resolution in Appendix B).

Section II

Long-Term Water Conservation Plan

The main goals associated with the long-term water conservation planning for the City of Port Lavaca involve maintaining a non-wasteful water rate structure, reducing unaccounted for water, maintaining city meters through testing and replacement, and providing education and information to all customers. These long-term water conservation goals can only be achieved through adherence to the following plan elements and methods.

1. Education and Information

According to the document titled "Guidelines for Municipal Water Conservation and Emergency Water Demand Management" prepared by the TWDB (November 1991), statistics for municipal water uses in Texas indicate many areas in which water can be conserved or better utilized. Some of the facts about municipal water use include:

- . Seasonal use (primarily for landscaping irrigation) averages 20-30% of the total annual municipal use.
- . Single family homes often use half of the water purchased in the summer months for exterior purposes such as lawn watering car washing.
- . Residential in-home water consumption indicates that 40% is used for toilet flushing, 35% for bathing, 14% for laundry, and 11% for kitchen needs.

As can be seen from these water-use facts, a great potential exists for reducing water consumption if the public is informed about water conservation practices.

Various media outlets exist for effectively communicating water conservation information. Some of these methods include television, radio, and newspaper announcements and advertisements; posters and public displays; exhibits at fairs, contests and school programs;

bill inserts, brochures, pamphlets, and newsletters; and speaker's programs. The vehicle by which information is distributed is dependent on the future approaches taken by City officials in educating the public. At a minimum, the City of Port Lavaca will provide education and information on a yearly basis to all customers presenting non-wasteful uses of water and techniques that can be employed to conserve water through the following vehicles:

1. Annual Education Water Conservation Activity

The City can provide annual water conservation education through media advertisements in local newspaper or other local publication. Publication materials could include selected material from the TWDB giving water conservation strategies for residential, commercial, and industrial customers. Providing city water use data concerning variations in seasonal consumption and yearly/ monthly changes in per capita use can illustrate time periods where water conservation is the most important. Timely publications of these conservation tips during peak seasons can help initiate conservation when per capita consumption is the highest.

2. Water Conservation Literature for Customers

The City can maintain water conservation materials to customers at all times. General water conservation brochures (such as those available through the TWDB) can be mailed to each customer on an annual or biannual basis. New customer packets can also be developed as deemed appropriate and necessary by City officials. The City maintains an up-to-date website containing useful information for residents, and water conservation material can be published online to help reach a wider audience of water users.

The public education program can also include information about techniques and practices that can be employed to conserve water. Specific consideration should be given to the following:

1. Water-Conservation Landscaping (Xeriscape):

Public education on Xeriscape should include landscaping and irrigation procedures which reduce water consumption while lowering water bills. The City can strive to provide an example by applying these procedures to public property whenever and wherever practical.

2. Retrofit Program:

Through the education and information program, plumbers and water consumers can be encouraged to retrofit old fixtures (such as interior plumbing fixtures, lawn watering equipment, and water-using appliances)

with water saving devices. The educational process should focus on the advantages of installing water conservation devices as well as the availability of these items.

2. Conservation-Oriented Water Rate Structures

The City maintains a rate structure as shown in Table 1, and a copy of the utility rate ordinance is found in Appendix D. Such a structure is a step towards maintaining a rate that promotes water conservation.

The flat-rate water structure used by the City applies a base charge by meter size for the first 2,000 gallons of water use and a flat charge for each 1,000 gallons thereafter. Wastewater is billed in a similar manner dependent on water use. This rate structure is more conducive to water conservation than a regressive rate structure since increasing water and sewer use is charged a flat rate instead of a declining rate.

However, the City's current rate structure is not as water conservation oriented as a progressive rate structure, where increasing water and sewer use is charged at an increasing rate. It remains the responsibility of the future City government to maintain a water conservation-oriented rate structure for their water and wastewater utilities and consider the adoption of progressive rate structures as a further step to advance the City's goal of reduced water use. Maintaining a water conservation-oriented rate structure and evaluating its effectiveness is an ongoing task.

Table 1

CITY OF PORT LAVACA UTILITY BILLING RATES AND SERVICE FEES

EFFECTIVE 02/01/2019

SERVICE FEES

WATER DEPOSIT	\$ 180.00 OR \$ 280.00
Service Fee	\$ 30.00
Transfer of Service	\$ 30.00
Temporary Service	\$ 45.00
Emergency Cutoff	\$ 30.00
Tampering fee	\$ 100.00-\$500

BULK WATER

Base Charge 0-2,000 gallons	\$50.00
Per 1,000 gallons 2,001-25,000	\$ 88.44
Per 1,000 gallons Over 25,000	\$ 88.44

Garbage Residential

\$ 17.88

Return Check Fee \$ 30.00
 Meter Testing Fee Cost of Fee

Additional Container \$ 17.88

RESIDENTIAL WATER RATES

	<i>INSIDE CITY</i>	<i>OUTSIDE CITY</i>
Base Charge 0-2,000 gallons	\$24.68	\$ 37.02
Per 1,000 gallons 2,001-5000	\$ 4.78	\$ 10.69
Per 1,000 gallons 5,001-25,000	\$ 5.26	\$ 11.56
Per 1,000 gallons Over 25,000	\$ 5.97	\$ 13.14
GBRA Fee	\$ 11.46	\$ 11.46

SEWER RATES

	<i>INSIDE CITY</i>	<i>OUTSIDE CITY</i>
	\$ 25.27	\$ 37.90
	\$ 5.40	\$ 8.10
	\$ 5.40	\$ 8.10
	\$ 5.40	\$ 8.10

Small Commercial Water Rates

5/8—1 1/2" Meter

	<i>INSIDE CITY</i>	<i>OUTSIDE CITY</i>
Base Charge 0-2,000 gallons	\$ 27.18	\$ 40.77
Per 1,000 gallons 2,001-5000	\$ 4.95	\$ 7.43
Per 1,000 gallons 5,001-25,000	\$ 5.26	\$ 7.89
Per 1,000 gallons Over 25,000	\$ 5.97	\$ 8.95
GBRA Fee	\$ 11.46	\$ 11.46

SEWER RATES

	<i>INSIDE CITY</i>	<i>OUTSIDE CITY</i>
	\$ 27.02	\$ 40.53
	\$ 5.40	\$ 8.10
	\$ 5.40	\$ 8.10
	\$ 5.40	\$ 8.10

Large Commercial Rates

2" ---6" Meter

	<i>INSIDE CITY</i>	<i>OUTSIDE CITY</i>
Base Charge 0-2,000 gallons	\$ 44.68	\$ 67.02
Per 1,000 gallons 2,001-5000	\$ 4.95	\$ 7.43
Per 1,000 gallons 5,001-25,000	\$ 5.26	\$ 7.89
Per 1,000 gallons Over 25,000	\$ 5.97	\$ 8.95
GBRA Fee	\$ 11.46	\$ 11.46

SEWER RATES

	<i>INSIDE CITY</i>	<i>OUTSIDE CITY</i>
	\$ 27.02	\$ 40.53
	\$ 5.40	\$ 8.10
	\$ 5.40	\$ 8.10
	\$ 5.40	\$ 8.10

Extra strength Surcharge

Over 250 ppm BOD or TSS

Customer Request Test

Maintenance fee

Suspended Ordinance

Sewer Charges/Fees

\$ 75.00

\$ 80.00 Additional PSS

\$ 15.00 Per Month

Low pressure sewer systems (LPSS)

1. The minimum monthly charge for each residential customer with LPSS within the city limits shall be \$15.00 for the first 2,000 gallons or a fraction thereof plus \$5.18 per thousand gallons of water used in excess of 2,000 gallons.
2. There will be a \$15.00 monthly maintenance fee to all LPSS customers.
3. For residential customers located outside the city limits the rates for discharging normal wastewater into the sanitary sewer system shall be 1 1/2 times the rate for customers inside the city limits.

3. Universal Metering and Meter Repair and Replacement

Apparent loss is water that is supplied to the system but not metered. An example of un-metered water is flushing water distribution mains. Real loss also involves any losses to the system through faulty meter readings of distribution line leaks. These losses to the system should be calculated and reported on an annual basis. To meet this objective, the following concepts should be included in a water loss audit program:

1. Universal Metering of Customer Uses

It is essential that all customers and water users be metered. In addition to installing new meters on previously unmetered connections, the City has completed a meter replacement program whereby old and faulty meters have been replaced with new ones and connected to an automatic meter reading system. This generally improves the accuracy of the meter system, therefore reducing the potential for water loss.

2. Periodic Meter Testing and Repair

In order to maintain accurate data on the water system and to ensure problems are detected on a consistent and methodical basis, all meters owned by the City should be tested per following schedule:

- Master Meters- test annually
- Customer Meters (larger than 1 ½")- test every 5 years
- Customers Meters (smaller than 1 ½") – test sample group of Meters of similar age every 10 years

To avoid testing every customer meter in one year, stagger testing should be utilized to ensure that an equal number of meters are tested each year. Monthly meter readings should also be checked versus previous readings to determine if there is a dramatic change in water use. A large variation could indicate that the meter is not operating properly and should be investigated further.

4. Leak Detection and Repair Programs

A leak detection, location, and repair program are an important part of reducing water losses in the system. It is planned to expand the leak detection program over the next 5 years. Currently, leak detection resides within the meters and is transmitted to the billing department. Such a program will tend to finance itself through savings in water purchased by the City.

A monthly accounting of the amount of water purchased from Undine Wholesale Supply, LLC versus the water metered to the consumers should be maintained and updated on a continual basis. Water loss can be monitored by examining these records and reduced as sources are located and eliminated. These sources could include defective hydrants, abandoned services, un-metered water used for firefighting or other municipal uses, inaccurate meters, illegal hookups, unauthorized use of fire hydrants, and leaks in mains and services.

5. Plumbing Codes

According to the TWDB, “the single most effective method of conserving water inside the home is to replace older, inefficient plumbing fixtures with modern, efficient fixtures”. A strong plumbing ordinance is, therefore, essential in meeting water conservation goals. The City of Port Lavaca has adopted the 2021 International Plumbing Code via City ordinance. A copy of this ordinance is located in Appendix E. Enforcement of this ordinance is vital to achieving the City’s water conservation goals. Additionally, future plumbing code modifications must include the most current Texas Legislature regulations and additional standards as appropriate.

Table 3. Plumbing Minimum Standards

Fixture	Standard
Shower heads	No more than 2.75 gpm at 80 psi
Lavatory & Sinks Faucets and Aerators	No more than 2.2 gpm at 60 psi
Wall-mounted, Flushometer Toilets	No more than 2.0 gallons per flush
All other Toilets	No more than 1.6 gallons per flush
Urinals	No more than 1.0 gallons per flush
Drinking Water Fountains	Must be self-closing
Additional Requirements	
All Hot Water Lines	Must be insulated
New Swimming Pools	Must have recirculating filtration equipment

6. Recycling and Re-use

Recycling or re-use of waters is currently not practiced in Port Lavaca. The effluent from the wastewater treatment plant is available for reuse by an authorized entity. Although it is possible to use the treated effluent for irrigation or cleaning at the WWTP, the City of Port Lavaca does not practice this currently. The City will evaluate and consider possible implementation of a reuse program to help achieve the water conservation goals outlined in this plan.

7. Pressure Reduction

Excessive pressures in water distribution systems and customer connections are directly related to the mechanical wear experienced on plumbing fixtures and the quantities of water lost through system leaks. With lower pressures in a system, line and valve breaks occur less frequently and less water is lost when breaks do occur. It is essential that an updated water distribution system model be maintained to examine impacts of new lines to the existing variations in pressures. At such time that pressures exceed 80 psi in certain portions of the City, installation of pressure reducing valves (PRV) will be warranted to reduce the potential for increases in unaccounted-for water through system leaks. Furthermore, the City is currently conducting improvements to help alleviate pressure differentials found within the distribution system.

8. Targeted Goals for Municipal Water Use Conservation

In order to advance water conservation efforts, the City has established 5-year and 10-year target goals for reduction in municipal use including a schedule for implementing the Plan to achieve the targeted reductions and a method of tracking its implementation and effectiveness.

The TWDB provided a tool for use in estimating the targeted goals for municipal water use conservation. The Water Conservation Utility Profile (TWDB Form No. 1965-R) was completed with updated information from the original plan. This form refers to the Certificate of Convenience and Necessity (CCN) and Service Area Map which is included as Exhibit A to this Water Conservation Plan. The City of Port Lavaca had made great strides in accomplishing water use reduction before the statement of the following targeted goals, and the TWDB estimate for water savings have been adjusted to reflect local conditions. The estimated water savings from the previously described long term goals are as follows:

1. Education and information will be provided on a yearly basis to all customers presenting non-wasteful uses of water and techniques that can be employed to conserve water. Based on the TWDB “most likely” scenario, a 2% savings in the average annual per capita use can be realized through education programs and 5% for the “advanced” scenario. The “most likely” scenario equates to 2.2 gallons per capita per day (gpcpd) reduction (5-year average annual gpcpd of 110 multiplied by 2.0%) and the advanced scenario equates to 5.5 gallons per capita per day (gpcpd) reduction (5-year average annual gpcpd of 110 multiplied by 5%).

2. As part of education measures, customers will be encouraged to retrofit old plumbing fixtures with water-conserving units. The TWDB has set a “most-likely” goal of 20.5 gpcpd and an “advanced” goal of 21.7 gpcpd by replacing old plumbing fixtures. The City of Port Lavaca has already realized some savings from the retrofit and new installation of water-conserving plumbing fixtures. Substantial new development in the City utilizes water efficient plumbing fixtures required by the City’s building code. These existing local conditions allow for an estimated savings of 4.5 gpcpd for an “advanced” goal.

3. Education will also help in reduction of summer usage. Seasonal water uses from June to August have represented approximately 30% of the total annual production over the last 5 years. This seasonal peak can be offset with an increasing water charge as the usage rises and increased public awareness of water-conserving activities. The seasonal per capita usage contributes 15.5 gpcpd (5-year average per capita use of 110 multiplied by 14%). With consideration for existing local conditions, the “most likely” conservation scenario can achieve a 3% reduction in this use and the “advanced” can achieve a 10% reduction. The resulting gpcpd seasonal use reduction provides approximately 1.55 gpcpd in water savings (15.5 multiplied by 10%) for the “advanced” scenario.

4. Unaccounted for water from water production to the consumers on the system should be reduced from the previous 5-year average of 34% (average calculated from water losses for 2019 through 2024). This loss should be reduced to no more than 10%. The associated potential savings by reducing unaccounted for water loss is 5.5 gpcpd (110 gpcpd multiplied by difference between 16% and 12%) for the “advanced” scenario and 50% of the potential savings (2.2gpcpd) for the “most likely” scenario. This goal will require on-going metering and operational adjustments as well as continual repair of old lines and meters in the distribution system. The result will be a decrease in per capita water consumption thus reducing water demands on the system.

These goals provide a total potential for reducing water usage in the most likely scenario by 2.2 gpcpd. This would reduce the average year annual per capita use from 110 to 108 gpcpd. The City intends to meet one-half of this goal within 5 years of plan adoption (2029) and the second-half of this goal within 10 years of plan adoption (2034). The table in Appendix F summarizes the targeted goals.

It is important to note that the 2006 Region L Water Plan adopted by the South-Central Texas Regional Water Planning Group and accepted by the TWDB estimated the per Capita use for Port Lavaca in 2020 to be 117 gpcpd.

These stated targeted 5- and 10-year goals do not account for possible future changes in the makeup of the City's water users. For example, additionally heavy water users are expected to be added to the system, including new educational facilities and regional parks currently under construction. Changes to the makeup and usage patterns of the City's water users will affect the per capita water usage, but the water conservation strategies outlined in this Plan will still apply to all the city's water users, and the City will make every effort to accommodate new heavy water users while maintaining its goals for water use reduction.

It is also important that updates to the Region L Water Plan be coordinated with the City so that water use demand and projections accurately reflect the trends in Port Lavaca's water use. The City believes that historical production volumes from years as far back as a decade provide a better representation of the City's historical water use, and this data coupled with current and future water use trends would provide greater accuracy for modeling future water use projections.

9. Schedule of Program

In order to maintain a schedule for its program, the city must consider a wide variety of tasks in order to successfully meet the goals of its Plan. The City has made significant progress on many conservation efforts before the adoption of this Plan. Programs to inform the public about water conservation exists, new water conservation-oriented rates have been adopted, and most meters have been replaced. However, many of these programs have ongoing steps that that will need to be performed consistently in order to maintain effectiveness. The following is a schedule of tasks for the City's Water Conservation Plan.

1. The City of Port Lavaca should complete a Public Information Plan encompassing all aspects of information and education programs already mentioned within 6 months of adopting the 2024 Water Conservation Plan. In the second year after the Public Information Plan is complete, the City of Port Lavaca should revise the Public Information Plan and conduct a survey of its customers to measure the effectiveness of its plan. For each subsequent year, a revision of the Public Information Plan should be completed. Every other year after the first survey has been completed; the City should survey its customers or determine some method to measure the effectiveness of its information campaign.
2. Once a year, the City of Port Lavaca should review consumption patterns and its income and expense levels and evaluate whether or not the current water rates are effective and appropriate. Adjustments should be made as needed, and consideration should be given to the adoption of a progressive water and sewer rate structure.
3. The City of Port Lavaca should provide information regarding the water rate structure to each of its customers once a year. Also, every five years, or when

the billing software is changed, the City of Port Lavaca should provide customers with historical water use for the previous 12 months.

4. Meters will be tested according to Periodic Meter Testing and Repair on page 11 of this plan.
5. A leak detection and repair program will be maintained as mentioned previously. Accounting data of the water purchased from GBRA versus the measured consumption from the City water meters should be maintained on a continual basis. These records can be monitored to determine water loss and unaccounted-for water. In addition, the City should also consider implementing surveys of the water system once a year to find possible leaks in the system.
6. Replacement of old and leaking water lines should be completed as soon as practical when a leak is identified. Even when leaks are not apparent, a schedule for replacement of old water lines should be maintained and updated as needed.
7. The City should consider adopting provisions to require the installation of pressure reducing valves for areas with pressure greater than 80 psi. A water distribution system model should be updated on a periodic basis and can be used to determine information about the City's water system and where pressure problems can be alleviated.

10. Method of Tracking

In order to track the progress, the City should collect information about its programs and conduct surveys of the population to evaluate the effectiveness of the program. For literature pieces, the number of such pieces and topics covered should be documented. The number of news programs or advertisements should be documented and the total population of the service area should be conducted and recorded to evaluate the effectiveness of the program.

1. For information programs, the City should collect information about its programs and conduct surveys of the population to evaluate the effectiveness of the program. For literature pieces, the number of such pieces and topics covered should be documented. The number of news programs or advertisements should be documented and the total population of the service area should be tracked. After this information is collected, surveys should be conducted and recorded to evaluate the effectiveness of the program.

2. The billing structure should be evaluated annually. Several pieces of information are necessary to evaluate this structure effectively. A copy of the rate ordinance should be documented. Billing and customer records should be kept and water consumption by each customer class at the beginning and end of the reporting period should be recorded.
3. In order to evaluate the meter installation program, guidelines of meter installation based upon customer usage should be written and available, a meter repair and replacement policy should be documented, and meter number, size, make, and model should be recorded for each meter repair and replacement.
4. To track the progress of the City's Leak Detection and Repair Program, the City should maintain a water distribution model, records of water consumption of its customers, and accounting information of water bought from GBRA. This information will also be helpful in evaluating the City's Pressure Reduction Program.
5. The effectiveness of the City's Water Conservation Plan can be Measured by tracking information similar to that found in the Utility Profile in Attachment C.

The Water Conservation Implementation Report, found in Appendix F, should be completed periodically to gauge the effectiveness of the City's water conservation efforts. Accounting data of water purchased from GBRA and records of water consumption by the City's customers can be performed annually to measure progress toward the 5- and 10-year goals in water usage reduction. If no progress is apparent, the City may want to consider alternative water conservation programs.

11. Means of Implementation and Enforcement

The City Manager of Port Lavaca or his/her duly appointed representative will act as the Administrator of the Water Conservation Plan. The Administrator will oversee the execution and implementation of all elements of the plan and be responsible to oversee the keeping of adequate records for program verification.

As a means of implementing and enforcing this plan, all plan elements discussed in this document were adopted by the City Resolution of the City of Port Lavaca (see attached Resolution and Appendix B).

12. Periodic Reviews and Evaluations

The TCEQ requires (under 30 TAC 288.30) that the Water Conservation Implementation Report located in Appendix F be completed every 5 years and whenever this Plan is updated or amended.

When under financial obligation to the TWDB, the City is required (under 31 TAC 363.71) to submit an annual report describing the implementation, status, and quantitative effectiveness of the water conservation program. This annual report can be completed in the form of the Water Conservation Report, which is found in Appendix F, and is due within 60 days after the anniversary date of the loan closing for each year the City is under financial obligation to the TWDB. The Administration will undertake the task of completing this annual report.

13. Contracts with Other Entities

The adoption of this plan does not affect the water contracts with GBRA or the City's wholesale customers. The City will require, through contractual agreements, that any political subdivision or utility contracting with the City in the future for treated water adopt a water conservation plan acceptable to the TWDB and TCEQ.

Appendix A

Definitions of Utility Profile Terms

1. **Residential – Single Family** should include water sold to single family and duplexes. **Residential – Multi-Family** should include water sold to this class of customers only. **Commercial/Institutional** sales should include water sold to retail businesses, offices, hospitals, etc. **Industrial** sales should include water sold to manufacturing and other heavy industry. **Wholesale** sales should include water sold to another utility for resale to the public. **Other** water sales should be noted as necessary.
2. **Total use in gallons per capita per day** is defined as total average daily amount of water treated or raw water provided for potable use by a public water supply system. The calculation is made by dividing the water diverted or pumped for treatment by population served. Indirect reuse volumes shall be credited against total diversion volumes for the purpose of calculation gallons per capita per day for targets and goals developed for the water conservation plan. Total water use is calculated by subtracting the wholesale sales from the total treated or raw water.
3. **Residential use in gallons per capita per day** is calculated by dividing the total single family plus multi-family residential water sales by the population served and then dividing by 365.
4. **Seasonal water use** is the difference between winter daily per capita use and summer daily per capita use. To calculate the **winter daily per capita use**, add the monthly diversions for December, January, and February, and divide by 90. Then divide this figure by the population. To calculate the **summer daily per capita use**, use the months of June, July, and August.
5. **Water Loss** is the difference between water a utility purchases or produces and the amount of water that it can account for in sales and other use, metered and unmetered, such as firefighting, line flushing, and water for public buildings and water treatment plants. Water loss can result from:
 1. Inaccurate or incomplete record keeping;
 2. Meter error;
 3. Leaks; and
 4. Water theft and unauthorized use.
6. The **peak-day to average-day ratio** is calculated by dividing the maximum daily pumpage by the average daily pumpage. Average daily pumpage is the total pumpage for the year divided by 365.

Appendix B
Adoption Resolution



CITY OF
PORT LAVACA

202 N. Virginia, Port Lavaca, Texas 77979-0105 www.portlavaca.org
Main Number: 361-552-9793 Main Facsimile: 361-552-6062

City Manager
Ext. 222

City Secretary
Ext. 230

Code Enforcement
Ext. 229

Finance
Ext. 234

Inspections/Permits
Ext. 229

Municipal Court
Ext. 226

Personnel
Ext. 224

Utility Billing
Ext. 238

Animal Control
361-552-5726

Bauer Center
361-552-1234

Fire Station
361-552-3241

Public Works Director
361-552-3347

Parks & Recreation
361-552-8731

Police
361-552-3788

Streets
361-552-3347

Utilities Operation
361-552-3347

January 29th, 2024

South Central Texas Regional Water Planning Group
c/o San Antonio River Authority
100 East Guenther St.
San Antonio, Texas 78204

Re: City of Port Lavaca 2024 Water Conservation Plan

The City of Port Lavaca is seeking to adopt the 2024 Water Conservation Plan. As the city's water planning group, a copy of this plan is hereby submitted for review.

If additional information is needed or if there are any questions, please feel free to call (361) 552-3347.

Regards,

William W. Shaffer
Director of Public Works

Appendix C
Water Conservation Utility Profile
(TWDB Form WRD-264)

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

CONTACT INFORMATION

Name of Utility: CITY OF PORT LAVACA

Public Water Supply Identification Number (PWS ID): TX0290002

Certificate of Convenience and Necessity (CCN) Number: 10723

Surface Water Right ID Number:

Wastewater ID Number: 20298

Contact: First Name: William Last Name: Shaffer

Title: Director of Public Works

Address: 628 West George St. City: Port Lavaca State: TX

Zip Code: 77979 Zip+4: Email: wshaffer@portlavaca.org

Telephone Number: 3615523347 Date: 1/17/2024

Is this person the designated Conservation Coordinator? Yes No

Regional Water Planning Group: L

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: 14

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
2023	12,086	0	12,086
2022	12,086	0	12,086
2021	12,086	0	12,086
2020	12,433	0	12,433
2019	12,433	0	12,433

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
2030	11,962	0	11,962
2040	11,840	0	11,840
2050	11,719	0	11,719
2060	11,600	0	11,600
2070	11,482	0	11,482

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

Based upon US census and Texas State demographers office records.

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
2023	0	494,480,166	0	494,480,166	112
2022	0	522,019,388	0	522,019,388	118
2021	0	471,552,041	0	471,552,041	107
2020	0	501,614,286	0	501,614,286	111
2019	0	465,488,412	0	465,488,412	103
Historic Average	0	491,030,859	0	491,030,859	110

C. Water Supply System

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)
2025	11,962	468,272,717
2026	11,940	443,454,263
2027	11,900	419,951,187
2028	11,880	397,693,774
2029	11,860	376,616,004
2030	11,840	356,655,356
2031	11,820	337,758,622
2032	11,800	319,851,733
2033	11,780	302,899,591
2034	11,760	286,845,913

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

Data comes from the historical usage and the population decline projected by the US Census Bureau. Usage is based upon a 5.3 percent drop in water usage historically. However, these numbers may be inaccurate based upon the growth we are seeing.

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
City of Port Lavaca	Industrial	13,000,000	Treated
CCISD	Institutional	4,236,000	Treated
Viva Properties	Residential	4,212,000	Treated
Sea Breeze Village	Residential	3,972,000	Treated
Calhoun county detention center	Institutional	3,852,000	Treated

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

Customer	Water Use Category	Annual Water Use	Treated or Raw
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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	4,842	76.26 %
Residential - Multi-Family	950	14.96 %
Industrial	3	0.05 %
Commercial	447	7.04 %
Institutional	107	1.69 %
Agricultural	0	0.00 %
Total	6,349	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	
2023	43	0	0	1	0	0	44
2022	165	0	0	0	0	0	165
2021	40	0	0	0	0	0	40
2020	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0

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
2023	209,072,000	44,184,000	2,750,000	69,473,000	40,833,000	0	366,312,000
2022	117,714,000	44,376,000	2,154,000	62,149,000	38,367,000	0	264,760,000
2021	125,295,000	42,756,000	2,064,000	67,779,000	32,399,000	0	270,293,000
2020	165,156,000	44,922,000	73,000	60,683,000	28,071,000	0	298,905,000
2019	230,554,000	49,517,000	3,817,000	80,158,000	37,111,000	0	401,157,000

C. Residential Water Use

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

Year	Total Residential GPCD
2023	57
2022	37
2021	38
2020	46
2019	62
Historic Average	48

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				
	2023	2022	2021	2020	2019
January	28,487,000	38,094,000	35,015,000	33,692,000	32,288,000
February	22,089,000	37,355,000	38,091,000	32,417,000	30,326,035
March	23,862,000	33,991,000	37,273,000	36,940,000	33,286,000
April	21,063,000	36,154,000	36,095,000	40,712,000	34,296,000
May	45,103,896	44,373,000	36,814,000	43,012,000	38,686,000
June	54,601,975	49,717,000	38,857,000	45,545,000	39,581,400
July	58,892,288	56,182,000	53,764,000	49,950,000	44,669,000
August	64,486,224	47,658,000	42,119,000	47,443,000	47,247,000
September	57,249,804	40,842,000	40,354,000	39,397,000	42,548,000
October	46,172,569	44,638,000	32,618,000	49,413,000	49,931,000
November	43,922,912	40,206,000	35,519,000	38,807,000	40,196,000
December	18,659,895	42,389,000	35,530,000	34,254,000	37,503,000
Total	484,590,563	511,599,000	462,049,000	491,582,000	470,557,435

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				
	2023	2022	2021	2020	2019
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
October	0	0	0	0	0
November	0	0	0	0	0
December	0	0	0	0	0
Total	0	0	0	0	0

3. Summary of seasonal and annual water use.

	Summer RETAIL (Treated + Raw)	Total RETAIL (Treated + Raw)
2023	177,980,487	484,590,563
2022	153,557,000	511,599,000
2021	134,740,000	462,049,000
2020	142,938,000	491,582,000
2019	131,497,400	470,557,435
Average in Gallons	148,142,577.40	484,075,599.60

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
2023	126,252,386	29	25.00 %
2022	254,764,388	58	48.00 %
2021	199,982,683	45	42.00 %
2020	196,054,107	43	39.00 %
2019	58,162,807	13	12.50 %
Average	167,043,274	38	33.30 %

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)
2023	1,327,645	1934570	1.4571
2022	1,401,641	1669097	1.1908
2021	1,265,887	1464565	1.1569
2020	1,346,800	1553673	1.1536
2019	1,289,198	1429319	1.1087

G. Summary of Historic Water Use

Water Use Category	Historic Average	Percent of Connections	Percent of Water Use
Residential - Single Family	169,558,200	76.26 %	52.94 %
Residential - Multi-Family	45,151,000	14.96 %	14.10 %
Industrial	2,171,600	0.05 %	0.68 %
Commercial	68,048,400	7.04 %	21.25 %
Institutional	35,356,200	1.69 %	11.04 %
Agricultural	0	0.00 %	0.00 %

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: 2,000,000

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

Water Use Category	Metered	Unmetered	Total Connections	Percent of Total Connections
Municipal	0	5,792	5,792	91.23 %
Industrial	0	3	3	0.05 %
Commercial	0	447	447	7.04 %
Institutional	0	107	107	1.69 %
Agricultural	0	0	0	0.00 %
Total	0	6,349	6,349	100.00 %

3. Percentage of water serviced by the wastewater system: 100.00 %

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				
	2023	2022	2021	2020	2019
January	41,640,000	44,700,000	51,010,000	37,660,000	35,760,000
February	34,910,000	40,440,000	35,920,000	35,040,000	32,400,000
March	38,610,000	43,370,000	47,910,000	48,320,000	27,630,000
April	48,850,000	39,810,000	44,640,000	48,300,000	29,700,000
May	56,670,000	46,960,000	72,100,000	56,280,000	36,340,000
June	38,940,000	50,990,000	70,200,000	74,720,000	37,460,000
July	43,250,000	48,250,000	71,410,000	72,810,000	33,730,000
August	39,660,000	51,860,000	55,670,000	75,430,000	33,750,000
September	38,470,000	47,470,000	55,590,000	66,930,000	33,180,000
October	42,670,000	61,880,000	58,420,000	59,520,000	34,130,000
November	40,190,000	65,070,000	46,230,000	54,860,000	29,920,000
December	36,620,000	50,660,000	48,380,000	55,470,000	28,900,000
Total	500,480,000	591,460,000	657,480,000	685,340,000	392,900,000

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)	0
Agricultural	
Discharge to surface water	500,480,000
Evaporation Pond	0
Other	
Total	500,480,000

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

C. Wastewater System Data Comment

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

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Appendix D

Section Number	Subject	Fee Amount
<i>Cross-Connection Program (Backflow Prevention)</i>		
50-19	<i>Enforcement Penalty</i>	
	*A violation of this section is a misdemeanor and, upon conviction, any person who violates this section shall be punished by a fine up to \$500.00.	*
<i>Water service deposits</i>		
	<i>Type of Deposit:</i>	
50-49(a)	Residential	\$180.00—\$280.00
50-49(b)	Commercial	Up to 60-day average bill
50-50(2)	Fire hydrant	\$1,500.00
50-64	Contractor's deposit	\$50.00
<i>Water tap and meter installation fees</i>		
50-52(a), 42-105	<i>Water tap/meter set fees:</i>	
	¾-inch water tap	\$840.00
	¾-inch meter set fee	\$370.00
	1-inch water tap	\$940.00
	1-inch meter set fee	\$540.00
	2-inch or greater tap	Based on current materials and labor
50-52(b)	Inspection fee	
<i>Water table</i>		
50-67	<i>Water user rates:</i>	
50-67	<i>Residential:</i>	
	Base charge 0—2,000 gallons	\$24.68 per month
	Guadalupe-Blanco River Authority (GBRA) Raw Water fee	\$11.46 per month
	2,001—5,000 gallons	\$4.78 per 1,000 gallons
	5,001—25,000 gallons	\$5.26 per 1,000 gallons
	Over 25,000 gallons	\$5.97 per 1,000 gallons
50-67	<i>Small Commercial:</i>	

	Base charge 0—2,000 gallons 5/8—1½-inch meter	\$27.18 per month
	Guadalupe-Blanco River Authority (GBRA) Raw Water fee	\$11.46 per month
	2,001—5,000 gallons	\$4.95 per 1,000 gallons
	5,001—25,000 gallons	\$5.26 per 1,000 gallons
	Over 25,000 gallons	\$5.97 per 1,000 gallons
50-67	<i>Large commercial:</i>	
	Base charge 2—6-inch water meter	\$44.68 per month
	Guadalupe-Blanco River Authority (GBRA) fee	\$9.42 per month
	0—5,000 gallons	\$4.95 per 1,000 gallons
	5,001—25,000 gallons	\$5.26 per 1,000 gallons
	Over 25,000 gallons	\$5.97 per 1,000 gallons
50-67	<i>Outside city limits:</i>	
	For residential and commercial customers located outside the city limits, the charge for water shall be 1½ times the rate charged to customers inside the city limits	
	Bulk Water: (Metered Water)	
	Base charge 0—2,000 gallons	\$50.00
	2,001—25,000 gallons	2 times large commercial rate
	Over 25,000 gallons	2 times large commercial rate
<i>Sewer table</i>		
50-111 (a)(1), 42-105	<i>Sewer tap fees:</i>	
	4" or 6" Sewer Tap Fee < 8 feet in length	\$780.00
	4" or 6" Sewer Tap Fee > 8 feet in length	\$1,350.00
	8-inch or greater	Based on current materials and labor
	Pavement break will be charged at \$35.00 per linear foot	
	Street bore will be charged based on current contractor fees	

50-111(b)	Inspection fee	\$25.00 per tap
50-120(a)	Annual industrial wastewater permit	\$2.00
50-122	<i>Residential wastewater user rates:</i>	
	Base charge 0—2,000 gallons	\$25.27 per month
	Over 2,000 gallons	\$5.40 per 1,000 gallons
50-122	<i>Residential wastewater user rate for customer outside city limits:</i>	1½ times rate for customers inside city limits
50-123	<i>Commercial and industrial wastewater user rates:</i>	
	Base charge 0—2,000 gallons	\$27.02 per month
	Over 2,000 gallons	\$5.40 per 1,000 gallons
	<i>Commercial wastewater user rate for customers outside city limits:</i>	1½ times user rate for customers inside city limits
50-124	<i>Extra strength surcharge: Suspended</i>	
	Over 250 ppm BOD or TSS	\$75.00 per week, per test
	Additional tests at customer request	\$80.00 per test
	Industrial wastewater discharge over 250 ppm BOD or TSS	Based on formula

Appendix E

Sec. 12-20. - Building trade codes—Adopted.

In order to establish uniform rules, regulations and provisions for the placement, construction, enlargement, alteration, repair, moving, removal, conversion, demolition, occupancy, equipment, use, height, area and maintenance of buildings, signs and structures, there is hereby adopted by the city the following building trade codes:

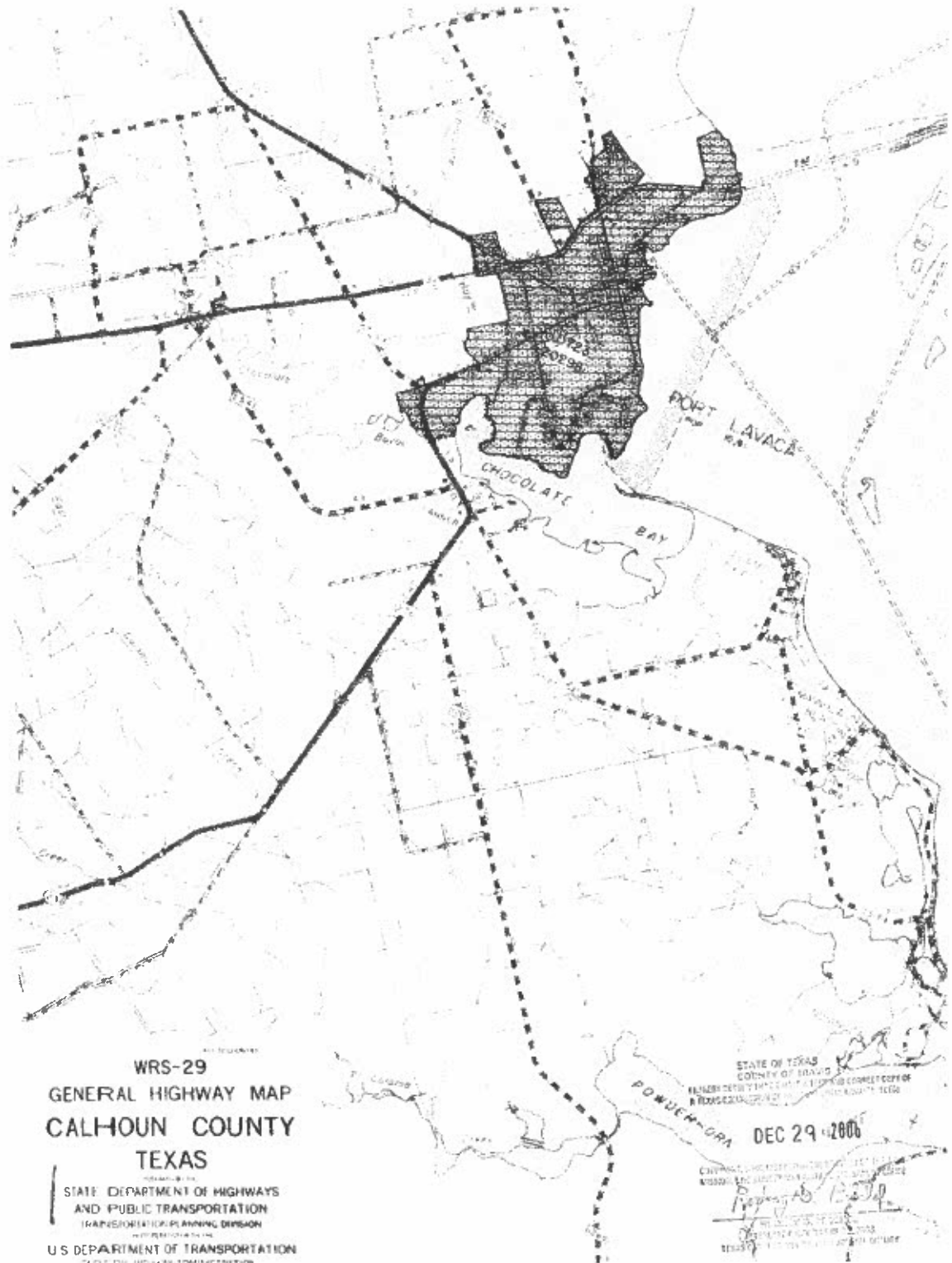
- (1) 2021 International Building Code, as amended with appendixes.
- (2) 2021 International Residential Code, as amended with appendixes.
- (3) 2021 International Mechanical Code, as amended with appendixes.
- (4) 2021 International Plumbing Code, as amended with appendixes.
- (5) 2021 International Fuel Gas Code, as amended with appendixes.
- (6) 2021 International Energy Conservation Code, as amended with appendixes.
- (7) 2021 International Fire Code, as amended with appendixes.
- (8) 2021 International Code Council Performance Code, as amended with appendixes.
- (9) 2021 International Property Maintenance Code, as amended with appendixes.
- (10) 2020 National Electrical Code, as amended.

(Ord. No. G-7-06, § 2, 9-11-2006; Ord. No. G-4-13, § 1, 9-9-2013; Ord. No. G-2-16, § 1, 4-11-2016; Ord. No. G-8-16, § 1, 9-12-2016; Ord. No. G-2-21, § 1, 4-12-2021; Ord. No. G-6-23, § 1(Exh. A), 8-14-2023)

Appendix F

Achieve Date	Target for Total GPCD	Current Total GPCD	Target for Residential GPCD	Current Residential GPCD	Target for Water Loss GPCD	Current Water Loss GPCD	Target for Water Loss Percentage	Current Water Loss Percentage
Five-year Target Date 2024	107	112	56	57	15	29	14.02 %	25.53 %
Ten-year Target Date 2029	105	112	52	57	10	29	9.52 %	25.53 %

Exhibit A
Service Area Map



WRS-29
 GENERAL HIGHWAY MAP
 CALHOUN COUNTY
 TEXAS



STATE DEPARTMENT OF HIGHWAYS
 AND PUBLIC TRANSPORTATION
 TRANSPORTATION PLANNING DIVISION
 U.S. DEPARTMENT OF TRANSPORTATION

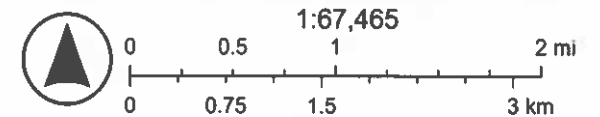
STATE OF TEXAS
 COUNTY OF BRAZOS
 PUBLIC DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION
 A TEXAS COMMISSION
 DEC 29 2006
 COUNTY ENGINEER
 STATE ENGINEER
 TEXAS

ArcGIS Web Map



1/25/2024, 4:54:29 PM

-  Water CCN Service Areas
-  Sewer CCN Service Areas



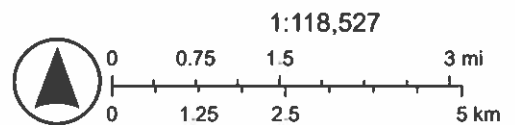
Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, MET/NASA, USGS, EPA, NPS, USDA,

ArcGIS Web Map



1/29/2024, 10:16:57 AM

 Sewer CCN Service Areas



Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS