
# PUBLIC UTILITIES

City of BRENHAM

**October 2018**

# Contents

# Introduction

## Introduction

I would like to provide you with an overview of the City's utility systems. This will include a bit of operations, systems status, and current issues. The City Council, over the past 30 years, deserves a lot of credit for supporting these systems and funding the improvements and maintenance necessary to keep them in good condition.

First, I will touch on some of the items that make our utility operations unique in comparison to other municipalities. The City operates one of only 72 municipally owned electric distribution systems in the state and is the 5th largest of the 32 LCRA wholesale electric customers; this includes co-ops and Brenham is the 2nd largest LCRA municipal system. The City operates one of only 89 municipally owned gas distribution systems in the state and ranks around number 5 in sales within that group. Brenham is one of 313 communities in the state that use surface water as their primary drinking water source and we own and operate a surface water treatment plant. The City's Wastewater Treatment Plant design is based on a 900+ Biochemical Oxygen Demand (BOD) and a 500+ Total Suspended Solids (TSS) influent due to biological loading from some industrial customers and for this reason, the plant size is equivalent to a city with a population of 45,000 to 60,000. The plant is also one of a limited number in the state that makes Class A bio-solids that is sold to local farmers and has one of only 82 approved pretreatment programs in the state, this is due to the size and loading of some industrial customers and the uniqueness of others. The City has one very large industrial wastewater user and two that are categorical industrial users. We know there are only 10 cities in the state who own and operate the Electric, Gas, Water and Wastewater systems in their community. When you factor in the other unique programs we have, e.g. Class A bio-solids, surface water plant, pre-treatment program, etc. I believe we are part of an even smaller group of two or maybe three cities within the entire state.

The challenges that face all of our utility funds is maintaining, upgrading, and replacing aging infrastructure, staying current with technology, and attracting and retaining top quality employees. Facing these challenges presents us with another, and that is the need to increase utility rates. The City has not raised residential electric rates since 2003 and only implemented a small increase on small and large industrial electric rates in 2014. Also in 2014, the Gas and Wastewater customer charge was increased by one dollar ($1.00) per month. Water rates have remained unchanged since 2008.

While our utility systems are in good shape, there is a lot of work to be done, particularly in Water and Wastewater. Our Water system is about 50% Transite (AC) and Cast Iron and about 50% PVC. We began a program after the drought of 2011 to replace approximately one mile of Transite (AC) or Cast Iron each year. This program was temporarily put on hold after the floods of 2016 but needs to be reinstated soon. The Water Treatment Plant needs to be expanded and that will present some financial challenges.

We have made sure to take care of our Wastewater Treatment Plant and lifts stations but we have not been pro-active with infrastructure replacement in the collection system. The plan has been to kick this program off when the Treatment Plant debt is retired in 2021-2022. We have replaced sewer lines that have been a problem, but will need to begin a program to replace concrete lines and some clay tile lines.

The electric distribution system is in very good shape. We have a backbone feeder system of 477 ACSR and have had an annual feeder upgrade program in place for a number of years. This program replaces poles, cross arms, insulators and if necessary, transformers on a section of feeder each year. We also have a pole change out program in place that replaces a number of poles each year with some done in-house and some by contractor. We spend approximately $150,000 per year on tree trimming.

The gas distribution system is also in very good shape. The system is approximately 80% polyethylene and 20% mill wrapped steel under cathodic protection. 99% of steel service lines served from poly mains have been replaced.

I will attach a long-range capital plan for each utility along with our vehicle and equipment replacement plan.

Below are some points that emphasize public utilities, what we do and the benefits to the community.

## Who We Are

City of Brenham Public Utilities is a combination utility provider that serves a population of approximately 17,000+ citizens of Brenham, along with some customers in the environs. The services provided include electric distribution, gas distribution, water treatment and distribution, wastewater treatment and collection. These customers are served by over 19,000 meters, along with over 6,000 sewer services that are not metered, but are based on water consumption. The City is fully AMI deployed across all utility operations. Utilities are managed and operated by 52 exceptional employees; customers are served by over 440 miles of water, sewer and gas mains; 122 miles of electric distribution lines and a 15-mile raw water transmission line. The city operates a surface water treatment plant, a wastewater treatment plant and 16 lift stations, 2 electric substations with 11 feeders, 1 raw water pump station, 1 natural gas city gate station and 3 natural gas regulator stations.

## Why Community Owned Utilities?

Texas has a long history of municipal utility operation. When private business would not or could not serve the utility needs of its citizens, city governments stepped up to provide essential utility needs – electric, gas, water, wastewater, storm water, etc. These community-owned utilities are municipal by choice.

The benefits of municipal utility ownership are many. From small, rural towns to large metropolitan cities, municipal utilities are the culmination of that particular American ideal of local people working together to meet local needs.

## Community Ownership

A municipal utility is owned by the city it serves. It exists to provide a public service to the citizens, businesses, and industries of the community. Service, not profit, is the utility's mission.

## Long-Term Community Goals

The emphasis for municipal utilities is helping to achieve the long-term goals of the community. The primary mission of providing the least-cost and most reliable service over maximizing profit ensures that these goals are always in sight.

## Local Control

Because of local control, Texas cities with municipal utilities determine how utility services are provided within their community. This includes the design and aesthetics of electric distribution systems, natural gas infrastructure, water treatment plants and water towers, and wastewater treatment plants. Local control means matching local resources to local needs and offering special programs (energy efficiency & conservation, economic development incentives, etc.) to benefit citizens.

## Local Regulation

For municipal utilities, rates and services are governed by the city itself. Utilities are commonly governed by either a city council or city commission or an appointed or elected utility board. The utility is governed by residents of the community who are customers of the utility and are familiar with its operations and services.

## Local Presence

Municipal utilities are located in the community and are readily available to customers. If a customer has a complaint, he or she does not have to take it to a state agency in Austin or corporate headquarters in another city. The customer can discuss the problem locally, with another member of the community, and be assured that the problem will be addressed.

## Reliability

With electric, gas, water and sewer crews located within the community, citizens benefit from a quick and effective local response to emergency situations and outages.

## The Public Interest

A municipal utility is operated in the public interest, for the benefit of the residents of the city. They are not operated for the benefit of stockholders who may live hundreds of miles away and have little interest in the community. With private utility ownership, there is often conflict between the interests of customers and the interests of the stockholders. This disparity of interests has given rise to a complex system of regulation of private utilities that is unnecessary when the utility is publicly owned and operated for the benefit of the community it serves.

## Keeping Dollars in the Community

There are numerous ways that a municipal utility helps to maintain and improve a sound local economy:

- Municipal utilities make significant contributions and payments-in-lieu-of-taxes to the city. These payments are similar, and often much greater than the tax payments that would be made by a private utility.
- Local ownership means that customers' utility dollars stay in the community, creating jobs and supporting the local economy.
- Local employment
- Municipal utilities serve as an engine for economic development. Local flexibility, reliability, and quality service offered by municipal utilities are a major advantage for the community in attracting and retaining commercial and industrial customers.
- Access to tax-exempt financing for capital projects
- On average, municipal utility rates are competitive with those of other utilities. Competitive rates mean that more dollars are available to spend on other goods and services, boosting the local economy.

## Community Values

Decisions about the operation of a municipal utility are made locally by members of the community at open, public meetings. Because all decisions are made locally, a municipal utility is uniquely able to respond to the community's needs, build on the community's strengths, and reflect and advance the community's values.

## Integrated Utility Systems

In most cases, municipal utilities are integrated across many services. The electric or gas utility may work with the city's water and sewer systems. The efficiency of local governments is enhanced through the sharing of personnel, equipment, and supplies across numerous utilities and city departments.

## Private Utility "Yardstick"

Municipal utilities are a strong competitive force that provides a "yardstick" for consumers and regulators to measure the performance and rates of private utilities. This continuous competitive standard benefits not only the customers of municipal utilities but also all utility customers across Texas.

## What if Brenham Did Not Own the Utilities?

The many benefits listed above would not be available if the utility systems were privately owned.

In conclusion, while I believe our utility systems have been well maintained, we will face some threats and challenges over the next few years. I believe that threats and challenges can create opportunities. We will need to prepare ourselves through strategic planning, financial planning and remaining vigilant with proposed legislation etc.

We will face the need for substantial increases in our water rates to fund the need for additional plant capacity, distribution infrastructure replacement, potential additional water sources, unfunded federal mandates, and more. We will also need to increase rates in all other utility funds, with the possible exception of wastewater, to fund infrastructure replacements and upgrades.

We are currently challenged, and will continue to face the challenge of recruiting and retaining employees within our utility systems. It is difficult today to find individuals who are interested in having a career in these fields. When we do find people who want to work these jobs and are passionate about it, we need to be able to retain them.

One of our biggest strengths is also a weakness, and that is a large number of long tenured extremely dedicated employees. As we start to see these employees retire, we will lose a lot of knowledge and skill. As stated in my strategic plan we will need to identify avenues to recruit new employees, as well as groom and equip existing employees to be the future of our utility systems.

We are firm believers in employee training. We will continue to improve and expand our employee training programs. We also believe that safety is a culture and we are continuing to develop that culture.

We also have internal regulatory and compliance audit programs in place. Our approach to regulatory compliance is proactive and we believe in “compliance everyday”.

While we have many examples of our strengths and abilities, I believe that a good example is the difference between our proactive approach to water treatment, as opposed to Flint, Michigan. A system that serves a population of 50,000+ is required to have a corrosion control program, this would include Flint. Our system had no requirements for this, but we removed all known lead service lines from our water system in the 90’s. We also recognized that our water had the potential to cause corrosion in customer piping and at that time we began using pH adjustment to control this potential corrosion. Also, the Detroit water system that Flint switched from was using a phosphate for corrosion control and Flint did not, based on cost. We have been using an Otho-polyphosphate blend since 2008 to help control potential corrosion and for Iron and Manganese sequestration. We were proactive in our approach even when not required by rule.

I could continue for many more pages listing the examples of the things that the City has accomplished within the utility systems, and also the things that we have done that set us apart from other municipal utilities. The credit for what has been accomplished has been a team effort, from the support of City Council, to the hardworking, dedicated men and women that have made our utility systems what they are today.

Where do I see our utility systems in the years to come? I believe that we will continue to improve our systems and will strive to take them to next level. I will challenge our utility teams to achieve greatness and to have our utility systems recognized as some of the best in the industry.

# 2025 Strategic Initiatives

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**SI 1 Enhance Customer Confidence, Experience, and Understanding**
**SI 2 Enhance Stakeholder Engagement**
**SI 3 Optimize Infrastructure Performance and Increase Infrastructure Reliability**
**SI 4 Enhance Operating Excellence through Innovation, Leveraging of Technology, And Business Process Improvements**
**SI 5 Develop, Maintain, and Recruit a Diverse, Sustainable, High-Performing Workforce**
**SI 6 Assure Long-Term Financial Stability and Integrity of Utility**

## STRATEGIC INITIATIVE 1
## Enhance Customer Confidence, Experience, and Understanding

### *Increase our Understanding of Customer Expectations and Perceptions*

1. Identify all classes of customers (internal, external, wholesale, retail, builders, service providers, etc.) and tailor outreach
2. Conduct broad-scale customer surveys every two years, commencing in 2019, to ensure we are informed about customer opinions, desires, and concerns, and enhance other means of obtaining customer feedback.

### *Improve the Customer Service Experience*

1. Collect and analyze customer feedback, comments from community involvement, and customer surveys to prioritize future customer communications and service enhancements
2. Improve customer experience by increasing ease of and options for services available online
3. Adopt “first-call” resolution program as the primary measurement for customer service operations

### *Effectively Communicate our Mission, Challenges, and Opportunities to Customers*

1. Educate customers and increase community awareness on issues, projects, services, and the value of community owned utilities
2. Maximize effective reach and efficiency of all available communication channels to better inform customers

## STRATEGIC INITIATIVE 2
## Enhance Stakeholder Engagement

### *Increase Community/Stakeholder Understanding and Engagement*

1. Develop an outreach program to actively engage a more diverse stakeholder base
2. Establish effective Citizens Utility Academy (or suitable alternative) and hold first class in 2021

### *Be Recognized as a Responsible, Innovative Leader in the Industry by the General Public, Our City Partners, the State Legislature, and Local and National Organizations*

1. Report Utility performance related to quality and reliability goals and regulatory compliance no less than annually
2. Track and effectively engage in legislation relevant to Brenham Utilities
3. Advance industry knowledge and Brenham's reputation by offering regional and statewide industry training or other improvements that can be utilized by other utility providers, and promoting employee engagement in the utility industry through targeted participation in associations, workshops, presentations, workgroups, and research efforts

## STRATEGIC INITIATIVE 3
## Optimize Infrastructure Performance and Increase Infrastructure Reliability

### *Maximize Performance of Existing Infrastructure*

1. Participate in APPA, APGA, AWWA, and other utility benchmark surveys to ensure and analyze comparative results to ensure Brenham's infrastructure performance meets or exceeds that of industry peers
2. Continue development and implementation of asset management tools such as the valve inspection program, pole inspections etc. to minimize asset life-cycle costs

### *Improve Long-Term Reliability of Infrastructure*

1. Continue to maintain, replace and upgrade utility infrastructure

2. Develop schedule to review emergency response plans and risks from man-made or natural disasters; conduct regular disaster response exercises and modify ERPs as necessary

## STRATEGIC INITIATIVE 4
## Enhance Operating Excellence through Innovation, Leveraging of Technology, and Business Process Improvements

### *Evaluate Industry Best Practices to Identify Cost Effective Innovations and Solutions to Provide Operating Excellence*

1. Develop utility-wide review capabilities to analyze and, as appropriate, document and improve business processes

2. Expand number of cross-departmental teams to increase coordination of activities and reduce costs
3. Institute a project management program to ensure successful execution of both operational and capital projects

### *Enhance Information Technology Capabilities*

1. Identify emerging technology trends and adjust current technology based on changing business requirements
2. Provide users with on-going support, and resources for all business applications

## STRATEGIC INITIATIVE 5
## Develop, Maintain, and Recruit a Diverse, Sustainable, High-Performing Workforce

### *Recruit, Develop, Appropriately Reward, and Retain a High-Performing, Innovative, Value-Driven, Informed, Passionate, and Diverse Work Force Committed to Achieving Brenham's Mission and Strategic Goals*

1. Evaluate workforce programs to ensure our ability to successfully recruit and retain talented, diverse employees
2. Expand relationships with community and educational organizations to effectively broaden training and diversify recruitment efforts, and explore feasibility of local high schools and colleges offering industry specific certifications and/or job readiness programs
3. Explore and establish effective alternative employment programs such as internships and externships
4. Ensure total compensation package is competitive while balancing costs to the organization and adjusting as needed

### *Measure and Improve Employee Satisfaction Levels*

1. Develop and maintain a comprehensive employee communication program to ensure timely two-way communication, to include messages from the CM or ACM

### *Expand Employee Skills and Technical Training to Develop and Prepare Employees for Future Positions and Increase Span of Employee Certification and Licensing*

1. Develop and periodically review training programs with an emphasis on professional and leadership development in order to cultivate and increase pool of leader talent (succession plan)
2. Improve knowledge and skill transfer to support workforce sustainability and develop knowledge management protocols for retaining and transferring essential, intellectual and tact knowledge of employees

3. Promote continuous improvement for all employees, including development of continuous improvement training programs
4. Expand breadth of recommended or required certifications and licenses, as appropriate, and increase employee attainment of such

### *Assure Safety and Security of Employees*

1. Develop safety protocols, improve training, and redefine work methodologies to improve safety of all employees and reduce the number of accidents, lost time days, job reassignment due to accidents, etc.
2. Improve work conditions, surroundings, and performance protocols to reduce opportunities for employees to be placed in at risk locations and/or confronted with undesirable actors

## STRATEGIC INITIATIVE 6
## Assure Long-Term Financial Stability and Integrity of Utility

### *Be Fiscally Strong and Financially Stable*

1. Maintain accurate 5-year forecast of rates, operating costs, capital expenditures, and cash reserves

### *Enhance High Stakeholder Confidence in Financial Procedures, Rates, and Budgets*

1. Re-examine current rate models, determine needs for 2019-2025, and present recommendations
2. Explore alternative rate structures regarding allocation of operating costs and capital
3. Explore potential rate targets for low-income customers utilizing affordability standards

# Public Utilities

| ADMINISTRATION | | | |
|---|---|---|---|
| **Employee** | **Position** | **Hire Date** | **Yrs. of Service** |
| Ogle, Lowell | ACM-Public Utilities/Dev | 04.03.1984 | 34 |
| McCracken, Daniel | SCADA System Manager | 04.19.1999 | 19 |
| Squyres, Becky | GIS Technician | 02.03.1999 | 19 |
| Patranella, Mason | Public Utilities Analyst | 10.06.2014 | 3 |
| Glenz, Michele | Pretreatment Coordinator/Backflow | 02.23.1989 | 29 |
| Stafford, Nancy | Administrative Assistant | 12.01.2008 | 9 |
| Ross, Cynthia | Public Utilities Support | 12.30.2002 | 15 |
| Ongudu, Luke | Utility Systems Manager | 01.22.2007 | 11 |
| Prigge, Jordan | Customer Service Tech | 01.19.2010 | 8 |
| Swonke, Dawson | Customer Service Tech | 06.12.17 | 1 |

**Staffing:** Adequate

The Public Utilities department is responsible for the administration and oversight of the Utility departments. There are also some operational elements that fall within this area:

Day-to-day oversight of utility operations,

Planning and oversight for capital projects,

Strategic planning,

Management and negotiation of wholesale power, natural gas, and water supply contracts,

Supervisory Control and Data Acquisition (SCADA) System operation and maintenance,

Regulatory and safety compliance. The department conducts regulatory and safety compliance audits and develops programs and policies. We also coordinate a monthly safety meeting that is facilitated by a third party trainer,

Work orders - currently all maintenance work orders for the entire city are dispatched through Public Utilities. Line locates for all city departments are called in from Public Utilities. All utility department and many public works work orders are dispatched here also,

Commercial sanitation account set-ups,

All utility tap arrangements,

AMI system maintenance and operations, meter programming and troubleshooting,

Electric meter sets and programming including annual meter testing program,

Management of the City's Electric Outage Management System (OMS),

Utility Billing Customer Service, connects, disconnects, re-reads, non-payment cutoffs etc.

Wastewater pre-treatment program administration including annual and bi-weekly sampling,

Backflow program administration,

Fats, Oils, and Grease (FOG) program administration,

Line locates, Gas, Water and Sewer locates. Gas locates are by far the most difficult and heavily regulated,

GIS for the entire city, and

GPS of utility infrastructure for GIS.

### Challenges and opportunities:

Continued increase in regulatory compliance and

Keep current with technology and industry practices

# Water Treatment

| WATER TREATMENT | | | |
|---|---|---|---|
| **Employee** | **Position** | **Hire Date** | **Yrs. of Service** |
| Monfreda, Matthew | Water Systems Superintendent<br>Class “A” License | 03.29.2016 | 2 |
| Franco, Greg | Chief Operator<br>Surface Water Treatment Operator “B” | 01.02.2001 | 17 |
| Moudry, Kyle | Operator<br>Surface Water Treatment Operator “C” | 01.27.2014 | 4 |
| Moerbe, Ben | Operator<br>Surface Water Treatment Operator “B” | 08.17.2015 | 2 |
| Tieman, Jacob | Operator<br>Surface Water Treatment Operator “C” | 04.19.2016 | 2 |
| Lewis, DeQuincey | Operator Trainee<br>Water Operator “D” | 07.03.2017 | 8 |
| Jeter-Gilman, Jerrid | Operator Trainee | 07.24.2018 | 0 |
| Randermann, Johnny | W/WW Systems Mechanic | 01.30.1989 | 29 |

**Staffing:** Conservative

The City of Brenham is a 100 percent surface water community. This was the trend back in the 1960’s and probably up through the 1990’s. However, this does bring some additional risk when it comes to future supply or the loss of supply. A city that is on groundwater would have multiple wells to rely on. The groundwater in Washington County is not of the best quality or quantity.

We currently begin our treatment process at the lake with chlorine dioxide, which is used as our primary disinfectant as well as for taste and odor control. The switch was made in the 1990’s from chloramines to chlorine dioxide due to the abilities of chlorine dioxide regarding taste and odor and chlorine dioxide is less prone to disinfection by-products such as tri-halo methanes and halo acetic acids. Once the raw water reaches the plant, we are using Poly Aluminum Chloride (PACl) in the flocculation and coagulation process as well as polymer as a filter aid. This past year we switched from Aluminum Sulfate to the PACL to achieve lower Nepholemetric Turbidity Units (NTUs) on our filters, increase filter run times, and achieve better Total Organic Carbon (TOC) removal ratios. Prior to the filters, we are using caustic to increase the pH and an Ortho-Poly Phosphate blend for iron and manganese sequestration and corrosion control. After the filters, we are injecting chlorine and ammonia to create chloramines. Last year we moved the Chloramine injection point, from the raw water tank at the head of the plant, to the new location to limit the amount of Naturally Occurring Organic (NOM) material that the disinfectant reacts with to reduce the formation of DBP’s. Once this treatment process is complete, the water is stored in clearwell’s at the plant. The Water Treatment Plant is a 24/7 operation. The treatment plant runs numerous in-house lab tests per day and even per shift along with many lab tests that are run by outside labs.

We have reached a point where our water treatment capacity needs to be increased. As it stands now this would be accomplished by adding additional capacity to our plant. This project could run from 10 million dollars to 20+ million dollars depending on some complexities of adding treatment capacity to existing infrastructure and decisions about types of treatment, conventional filtration vs microfiltration etc.

Attracting and retaining personnel in this department continues to be a concern. Because there are a limited number of surface water plants in the state, competition for licensed operators has been high. We typically are not able to attract licensed operators to our plant and must rely on training new operators. This process can take about 18 months to get an operator licensed. Once they are licensed, we need to have programs in place to retain those operators.

## Water Treatment Plant Required Testing

**In-House Laboratory Testing (Daily)**

| Parameter | Zone | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Raw | D1 | D2 | D3A/B/C | Filter 1/2/3/4 | Combined Filters | D4 | D5A/B/C/D | EP001 |
| Turbidity | ✓ | | | ✓ | ✓ | ✓ | | | |
| Temperature | | ✓ | ✓ | ✓ | | | ✓ | ✓ | |
| pH | | ✓ | ✓ | ✓ | | | ✓ | ✓ | |
| Alkalinity | ✓ | | | | | | | | ✓ |
| Hardness | ✓ | | | | | | | | ✓ |
| Iron | ✓ | | | | | | | | ✓ |
| Manganese | ✓ | | | | | | | | ✓ |
| Chlorine Dioxide | | ✓ | ✓ | ✓ | | | | | ✓ |
| Chlorite | | ✓ | | | | | | | ✓ |
| Fluoride | | | | | | | | | ✓ |
| Monochloramine | | | | | | | ✓ | ✓ | |
| Free Ammonia | | | | | | | | ✓ | |
| Total Chlorine | | | | | | | ✓ | ✓ | |
| Total Ammonia | ✓ | | | | | | ✓ | | |
| Sludge Depth | | | | ✓ | | | | | |
| Sludge Density | | | | ✓ | | | | | |

**Distribution In-House Laboratory Testing**

| Purpose | Parameter | Frequency of Testing | Goal | Makeup | Number of Tests Per Sample Date | Total Number of Tests Due |
|---|---|---|---|---|---|---|
| Flushing | Total Chlorine | Daily | 1st – 27th Day | 28th – 31st | 4 | 108 |
| Nitrification Action Plan | Total Chlorine | Weekly | Monday - Thursday | Friday - Sunday | 4 | 16 |
| | Monochloramine | | | | 4 | 16 |
| | Free Ammonia | | | | 4 | 16 |
| | Nitrite | Monthly | 1st Week | 2nd Week | 4 | 16 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Nitrate | | | | 4 | 16 |

**Distribution Outsourced Laboratory Testing**

| Purpose | Parameter | Frequency of Testing | Goal | Makeup | Number of Tests Per Sample Date | Total Number of Tests Due |
|---|---|---|---|---|---|---|
| Bacteriological | Coliform | Weekly | 1st – 3rd Week | 4th Week | 5 | 15 |
| Disinfection Byproducts | Chlorite | Monthly | 1st Week | 2nd Week | 3 | 3 |
| | THM & HAA5 | Quarterly | Within Quarter | None | 4 | 4 |
| EPA Mandate Cryptosporidium | Cryptosporidium | Monthly | Monday of 3rd Week | Tuesday of 3rd Week | 1 | 1 |
| | Escherichia Coli | | | | 1 | 1 |
| EPA Mandate UCMR4 | Unregulated Contaminants | Quarterly | February 2019 | None | Several | Several |
| Chemical Analysis | Contaminants | Annually | 1st Quarter | 2nd Quarter | Several | Several |
| Lead & Copper Rule | Lead & Copper | Every 3 Years | July | None | 30 | 30 |
| Sludge Permit | Sludge | Annually | August | None | 10 | 10 |

## Challenges and opportunities:

Need to increase treatment capacity

Retain licensed operators

Keep current with technology and industry practices

Meet continually increasing federal mandates

Need to increase rates to fund future improvements

Single raw water source

Single raw water transmission line

Need to increase rates to maintain current infrastructure and fund future improvements

## Projects and responsibilities ongoing and upcoming:

Repair gabions at the lake pump station

Lower an exposed section of the raw water line at Little Sandy Creek

Complete monitoring plan

Rebuild one front high service pump and one transfer pump

600K protective coating of clarifiers, some structures, clear wells and raw water tank

Rehabilitation of the Church Street Water Tower

25K replaced online residual monitors and added online pH

# Wastewater Treatment

| WASTEWATER TREATMENT | | | |
|---|---|---|---|
| **Employee** | **Position** | **Hire Date** | **Yrs. of Service** |
| Keene, Bobby | WW Systems Superintendent<br>Class “A” License | 05.10.2010 | 7 |
| Scheffer, Stephen | Chief Operator<br>Class “A” License | 06.05.1995 | 22 |
| Kmiec, Roger | Operator<br>Class “B” License | 08.30.1982 | 35 |
| Bender, Billy | Operator Trainee<br>Class “D” License | 05.01.2017 | 1 |

**Staffing:** We are discussing cross-training opportunities between Wastewater Treatment and Wastewater Construction

The city’s Wastewater Treatment Plant has been in operation for approximately 14 years. The plant design was based on a Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) numbers that were 3 to 4 times what you would see in a typical plant. This was due to some very large industrial loading, including the now closed cotton mill, and included 30 years of growth. At that time, the plant’s hydraulic capacity was increased from 2.55MGD to 3.55 MGD but the biological capacity is much greater. The plant includes a Class A bio-solids (RDP) process and that product is marketed to local farmers and ranchers and a water fill station that sells reclaimed water for local construction, road projects and other non-potable uses.

After the closure of the cotton mill, we removed a portion of the plants aeration basins and digesters from service. We also changed plant operations from a 24/7 operation to a Monday through Friday and half day on weekends with an operator on call. We were able to reduce the full time staff from seven to the current level of four. The operational changes allowed us to run fewer blowers and reduce electrical expenses and some maintenance expenses.

## Challenges and opportunities:

Maintain Treatment Plant infrastructure

Retain licensed and qualified operators

Keep current with technology and industry practices

## Projects and responsibilities ongoing and upcoming:

Raise elevation of Ralston Creek Lift Station

Complete erosion control project at plant oufall

Re-locate and rehabilitate the Munz Lift Station

Replace diffusers and clean sediment from new aeration basin

# Wastewater Treatment Plant Required Testing

**In-House Laboratory Testing (Daily)**

| Parameter | Zone Effluent Grab | | Parameter | Zone Influent Grab | | Parameter | Zone Sludge Grab |
|---|---|---|---|---|---|---|---|
| Total Chlorine | Daily | | pH | Daily | | pH | Every truck load |
| Sulphur Dioxide | Daily | | | | | Temperature | Continues |
| pH | Daily | | | | | | |
| Dissolved Oxygen | Daily | | | | | | |

**Outsourced Laboratory Testing (Weekly)**

| Parameter | Zone Effluent Grab |
|---|---|
| E.coli | Thursday |

**In-House Laboratory Testing (Bi-weekly)**

| Parameter | Zone Reclaimed Water Grab | | Parameter | Zone Reclaimed Water Grab |
|---|---|---|---|---|
| Turbidity | Wednesday / Thursday | | Carbonaceous Biochemical Oxygen Demand (CBOD) | Tuesday / Thursday |
| | | | E.coli | Tuesday / Thursday |

**In-House Laboratory Testing (Bi-weekly)**

| Parameter | Zone Effluent | | |
|---|---|---|---|
| | 1st week of month 24 hour composite | 2nd week of month 24 hour composite | 3rd week of month 24 hour composite |
| Carbonaceous Biochemical Oxygen Demand (CBOD) | 8:00 am Tuesday to 8:00 am Wednesday | 8:00 am Sunday to 8:00 am Monday | 8:00 am Monday to 8:00 am Tuesday |
| | 8:00 am Wednesday to 8:00 am Thursday | 8:00 am Wednesday to 8:00 am Thursday | 8:00 am Thursday to 8:00 am Friday |
| Total Suspended Solids (TSS) | 8:00 am Tuesday to 8:00 am Wednesday | 8:00 am Sunday to 8:00 am Monday | 8:00 am Monday to 8:00 am Tuesday |
| | 8:00 am Wednesday to 8:00 am Thursday | 8:00 am Wednesday to 8:00 am Thursday | 8:00 am Thursday to 8:00 am Friday |
| Ammonia nitrogen (NH3) | 8:00 am Tuesday to 8:00 am Wednesday | 8:00 am Sunday to 8:00 am Monday | 8:00 am Monday to 8:00 am Tuesday |
| | 8:00 am Wednesday to 8:00 am Thursday | 8:00 am Wednesday to 8:00 am Thursday | 8:00 am Thursday to 8:00 am Friday |

**Outsourced Laboratory Testing (Bi-weekly)**

| Parameter | Zone Influent | | |
|---|---|---|---|
| | **1st week of month 24 hour composite** | **2nd week of month 24 hour composite** | **3rd week of month 24 hour composite** |
| Biochemical Oxygen Demand (BOD) | 8:00 am Tuesday to 8:00 am Wednesday | 8:00 am Sunday to 8:00 am Monday | 8:00 am Monday to 8:00 am Tuesday |
| | 8:00 am Wednesday to 8:00 am Thursday | 8:00 am Wednesday to 8:00 am Thursday | 8:00 am Thursday to 8:00 am Friday |
| Total Suspended Solids (TSS) | 8:00 am Tuesday to 8:00 am Wednesday | 8:00 am Sunday to 8:00 am Monday | 8:00 am Monday to 8:00 am Tuesday |
| | 8:00 am Wednesday to 8:00 am Thursday | 8:00 am Wednesday to 8:00 am Thursday | 8:00 am Thursday to 8:00 am Friday |
| Ammonia nitrogen (NH3) | 8:00 am Tuesday to 8:00 am Wednesday | 8:00 am Sunday to 8:00 am Monday | 8:00 am Monday to 8:00 am Tuesday |
| | 8:00 am Wednesday to 8:00 am Thursday | 8:00 am Wednesday to 8:00 am Thursday | 8:00 am Thursday to 8:00 am Friday |

**Outsourced Laboratory Testing (Monthly)**

| Parameter | Zone Effluent 24 hour composite |
|---|---|
| Mercury | 1st of month |

**Outsourced Laboratory Testing (Quarterly)**

| Parameter | Zone Effluent | | | |
|---|---|---|---|---|
| | **1st Quarter Early February 24 hour composite** | **2nd Quarter End April/Early May 24 hour composite** | **3rd Quarter Early August 24 hour composite** | **4th Quarter End Oct/Early Nov 24 hour composite** |
| Chronic Biomonitoring Samples (BIOs) | 8:00am Sunday to 8:00 am Monday | 8:00 am Sunday to 8:00 am Monday | 8:00 am Sunday to 8:00 am Monday | 8:00 am Sunday to 8:00 am Monday |
| | 8:00 am Tuesday to 8:00 am Wednesday | 8:00 am Tuesday to 8:00 am Wednesday | 8:00 am Tuesday to 8:00 am Wednesday | 8:00 am Tuesday to 8:00 am Wednesday |
| | 8:00 am Thursday to 8:00 am Friday | 8:00 am Thursday to 8:00 am Friday | 8:00 am Thursday to 8:00 am Friday | 8:00 am Thursday to 8:00 am Friday |

**Outsourced Laboratory Testing (Quarterly)**

| Parameter | Zone Sludge | | | |
|---|---|---|---|---|
| | **1st Quarter August - October Grab** | **2nd Quarter November - January Grab** | **3rd Quarter February - April Grab** | **4th Quarter May - July Grab** |
| TCLP | August | | | |
| Fecal | August | November | February | May |
| Metals | August | November | February | May |
| PCB | August | | | |

# Water / Wastewater Construction

| WATER / SEWER CONSTRUCTION | | | |
|---|---|---|---|
| **Employee** | **Position** | **Hire Date** | **Yrs. of Service** |
| Bolenbarr, Shawn | W/WW Construction Manager<br>Class “C” Water Distribution | 05.21.2007 | 11 |
| Kokemor, Chris | Crew Leader<br>Class “C” Water Distribution | 12.10.2008 | 9 |
| Gonzales, Josh | Equipment Operator<br>Class “C” Water Distribution | 08.17.2015 | 3 |
| Fielder, Terry | Customer Service Tech | 03.08.1988 | 30 |
| Busby, JaQuan | Maintenance Worker I | 02.16.2017 | 2 |
| Spivey, Ty | Crew Leader<br>Class “D” Wastewater Treatment Operator | 09.07.2015 | 3 |
| Daniels, Josh | Maintenance Worker I | 01.02.2018 | 10 mos |

**Staffing:** We are discussing cross-training opportunities between Wastewater Treatment and Wastewater Construction

The Water and Wastewater Construction department is responsible for the maintenance, replacement, and extension of Water Distribution and Wastewater Collection lines within the City’s service area. This includes all new water and sewer taps, repairs of water leaks, repair or replace fire hydrants, monitor contractors’ installation of new and replacement water mains, and inspect system maintenance, e.g. valve maintenance, manhole repairs, line extensions and replacement, and much more. Other than subdivision development, this department installs all main extensions. Line replacements have been done through a combination of in-house and contractor.

The Transite (AC) and Cast Iron main replacement program needs to be restarted as soon as possible. AC pipe is subject to breakage when installed in expansive soils, especially if not bedded properly. We began this program several years ago and replaced the areas where we had the most problems. The program has been on hold since the 2016 flooding but we are ready to restart. We are discussing with Finance.

We are in the process of expanding our Water CCN (Certificate of Convenience and Necessity) to include some of the fringe areas of the City and some areas that have been annexed but are not within our current CCN.

We will start to identify in our long-range plan areas in the wastewater collection system that need replacement or attention. This will include concrete sewer lines, some clay tile lines and some other areas where inflow and infiltration have been a problem. Financial opportunities will arise in the next few years that should allow us to increase capital spending within the Wastewater Fund.

## Challenges and opportunities:

A/C line replacement over 2M spent since 2011, currently on hold due to FEMA projects.

Cast Iron line replacement

Sewer line replacement

Retain qualified employees

## Projects and responsibilities ongoing and upcoming:

Replace water mains on Cedar, Sandy, and Mary Gene

Replace water main on Woodson, Ledbetter, and Bruce

Replace water main on N Baylor (between E Vulcan and E Main)

Repair or replace fire hydrants

Inspect and monitor contractors

Repair water leaks

Clear sewer stoppages

Video sewer mains to troubleshoot problems

Monthly maintenance jetting in problem areas

Install new water taps

Install new sewer taps

# Electric Department

| ELECTRIC DEPARTMENT | | | |
|---|---|---|---|
| **Employee** | **Position** | **Hire Date** | **Yrs of Service** |
| Somerfield, Alton | Superintendent | 11.30.1979 | 38 |
| Lange, Jason | Asst Electric Supt | 09.06.2005 | 12 |
| Church, Brett | Sr Lineworker | 01.17.1995 | 23 |
| Eckert, Trevor | Sr Lineworker | 12.21.2012 | 5 |
| Vela Sr, Jesse | Lineworker II | 10.24.1994 | 23 |
| Antkowiak, James | Lineworker II | 05.10.1999 | 18 |
| Marshall, Ryian | Lineworker II | 12.20.1999 | 18 |
| Martin, Curtis | Lineworker II | 03.26.2007 | 11 |
| Beard, Ryan | Lineworker I | 07.27.2015 | 2 |
| Glenz, Trevor | Apprentice Lineworker | 09.20.16 | 1 |
| Scott, Nick | Apprentice Lineworker | 07.17.2017 | 8 mos |

**Staffing:** Adequate

The city is served via two substations known as the South Substation on Stone Street and the North Substation on Hwy 105. The substation transformers and everything on the high voltage side is the responsibility of LCRA; our system is served at 7200 volts, and we own the feeder breakers, feeder bay structures, relays and control cables. Including both substations, we have eleven feeders and two spare breakers.

Overhead electric distribution is a challenge due to the conductors and hardware being exposed to the elements. We have implemented many system improvements to increase the reliability of our system. This includes system automation such as reclosers and sectionalizers, animal guards, bird wire (coated) to transformers, annual contractor tree trimming and annual feeder upgrade program. In addition, we are in the design phase of the copper conductor replacement project. This project will replace 50 to 60% of the 24 miles of copper conductor left in our system. These copper conductors have been in service for 50+ years, are subject to breakage, and are the least reliable parts of our system during storm events.

Having qualified and trained personnel is key for the operation of this department. We have monthly electric specific training provided by a third party and send employees to outside training. Certain requirements and experience levels have to be achieved to advance within the department. Personnel in a system such as ours must be cross-trained to understand and perform multiple skillsets that in larger systems would be specialized.

## Challenges:

Retain Linemen

Maintain and replace infrastructure

Keep current with technology and industry practices

Need to increase rates to maintain current infrastructure and fund future improvements

## Projects ongoing and upcoming:

Copper conductor replacement approximately 1/2 to 2/3 of remaining 24 miles

Continue feeder upgrades

Small contractor replacement projects

Relocate feeder at Blinn Housing Project

Relocate a section of overhead line on Old Mill Creek with underground

Continue system automation and protection upgrades

Inspect and treat poles once every 10 years

Continue pole replacement program

Continue tree trimming 150K per year

# Gas Department

| GAS DEPARTMENT | | | |
|---|---|---|---|
| **Employee** | **Position** | **Hire Date** | **Yrs of Service** |
| Bostain, Ande | Superintendent | 08.26.1985 | 32 |
| Marburger, Gary | Gas Crew Leader | 01.04.1999 | 19 |
| Moore, Joe | Gas Tech II | 10.01.1996 | 21 |
| Bugai, Chris | Gas Tech I | 08.20.2007 | 10 |
| Estrada, Vincent | Gas Tech I | 06.27.2016 | 1 |

**Staffing:** Conservative

The Gas System is served through one city Gate Station. The inlet pressure at the station is over 600 psi and we are using control valves (regulators) to reduce it to 250 psi. Natural Gas is odorless in its natural state and we are responsible for adding the odor (odorization), the odorant (mercaptan) is added at the city gate station using an YZ odorizer. The gas then travels to two border stations and the pressure is reduced to distribution pressure, 60 psi or less.

The gas system is in very good condition but we will continue to make improvements to it; these improvements include but are not limited to: the addition of sectionalizing valves, replacing customer owned yard lines including relocating the meter, and replacing sections of steel main as needed.

The gas system has no defined service territory and we will continue to expand the footprint of the system. We have some projects identified to accomplish this goal.

This is the only utility that did not have every meter changed during the AMI implementation; most gas meters could be converted using an index kit, however, the gas system has a pro-active meter replacement plan in which meters are replaced after 18 years of service.

Having qualified and trained personnel is key for the operation of this department. We have monthly gas specific training provided by a third party and send employees to outside training. Certain requirements and experience levels have to be achieved to advance within the department. Personnel in a system such as ours must be cross-trained to understand and perform multiple skillsets that in larger systems would be specialized.

**Challenges and opportunities:**

Retain qualified employees

Keep current with technology and industry practices

Continue to expand footprint of Gas service territory

## Projects and responsibilities ongoing and upcoming:

Install (in-house) distribution infrastructure in new Stylecraft Subdivision (Vintage Farms) and Heritage Oaks

Continue meter change out program

Continue meter loop painting

System is 80% poly 20% mill wrapped steel under cathodic protection. Use Dimp to replace steel mains as needed. A prescriptive approach.

99% of all steel services connected to poly mains replaced, 22 left

Proactive meter replacement program changing 220+ per year.

Poly valve installation for sectionalizing

Extensions to serve growth and expand service area

# Customer Service / Billing

| CUSTOMER SERVICE / UTILITY BILLING | | | |
|---|---|---|---|
| **Employee** | **Position** | **Hire Date** | **Yrs of Service** |
| Ortega, Amber | Utility Billing Supervisor | 04.03.2017 | 11 mos |
| Addison, Shelley | Asst Utility Billing Supv | 10.27.1988 | 29 |
| Mariscal, Ellie | Utility Billing Clerk/Asst Cashier | 01.12.2015 | 3 |
| Rogers, Leah | Utility Billing Clerk | 01.19.2016 | 2 |
| Bozich, Dallas | Utility Billing Clerk | 11.14.2016 | 1 |

**Staffing:** Adequate, we are exploring opportunities to cross-train staff, and assist other departments

Utility Billing is responsible for the billing of all utility accounts and serves as the cash control center for the entire city. The department sends out over 90,000 bills per year. The department also assists Development services. Because Brenham is a full service utility city, the town was divided into four billing cycles to accommodate meter reading. This creates an issue of every week due dates, bill checks, cutoffs, etc. With the new AMI system, we would like to investigate the possibility of moving to one bill date, this would increase efficiencies, etc. We would need to move customers slowly, over several months, to the new read and bill date.

We are currently in the process of upgrading our AMI software and adding a customer portal, we are also adding a 24/7 customer payment option in the drive-thru for customer convenience and staff efficiencies.

## Challenges and opportunities:

Move to one billing date

Look for efficiencies

Cross train some staff to help other departments

Have department take payments currently handled by some other city hall staff, such as permits, taps fees etc.

## Projects ongoing and upcoming:

Upgrade AMI software

Implement customer portal

Complete customer kiosk in drive-thru