



---

# 2019 Annual Report

---

Wooster Water  
Utilities

---

Nathan W. Coey

---



*"Safety, Reliability, and Excellence!"*





## Water Utilities 2019 Report

### Purpose

The purpose of the Wooster Water Utilities (WWU) 2019 Annual Report is to summarize work completed in 2019, benchmark data, goal attainment and future goals.

The content of this report and reviews are from the current Utilities Manager. Future updates and plan reviews will include the best effort to communicate the operation of the WWU with contribution from leadership staff.

### Our Mission

The mission of the City of Wooster is to partner with our community to deliver services, conserve resources, protect quality of life, and plan for the future. We will endeavor to accomplish this mission in the most efficient and fiscally responsible manner possible, and in accordance to the City of Wooster's Core Values. *The Daily Mission of Clean Water is our resolve.*

### Our Vision

Stakeholders, customers, and peers recognize our utility as a leader of excellence. Our focus is to be the epitome of public servanthood, stewardship, environmentally conscious, and dedicated to our community. *The Daily Mission of Clean Water is our vision.*

### Our Values

Our values create cultural expectations and define the pursuit of excellence in public servanthood. *The Daily Mission of Clean water is defined by our values.*

Accountability – As an organization we accept responsibility for our stewardship decisions and actions. We will deliver cost effective and efficient services with the objective of doing our work right the first time. We are concerned about our natural, historic, economic and aesthetic

resources and endeavor to enhance their sustainability for future generations. In doing so, we will:

- ◆ Accept the anticipation of public trust and our mission is outward focused on public quality of life.
- ◆ Active communication with our stakeholders in transparency and to build trust.
- ◆ Ensure operational strategies to meet regulatory standards.
- ◆ Provide timely reports to stakeholders regarding department activities.
- ◆ Provide open hours and tours related to department operations.
- ◆ Gauge stakeholder satisfaction through intentional public surveys.

Continuous Improvement – We provide the highest quality service with the resources available by promoting innovation and flexibility to meet the changing needs in the community. In doing so, we will:

- ◆ Accept the belief of excellence includes continual growth and improvement.
- ◆ Continuing education of the staff and stakeholders in the daily mission of clean water.
- ◆ Ensure operational strategies are in line with regulatory expectations and future trends.

Leadership & Management – We value the importance of serving as a role model and mentor within the organization and community. We make decisions that show responsible management of all our resources. In doing so, we will:

- ◆ Accept our role as a community leader.
- ◆ Prioritize public health and public safety.
- ◆ Utilize leading edge technology to create sustainable operations.
- ◆ Manage all department affairs to ensure integrity and reliability.
- ◆ Update and implement standard operating procedures.
- ◆ Evaluate operations with data management to gauge current and future trends.
- ◆ Recruit, train, and develop staff in step with the department mission and goals.

Respect & Communication – We are honest and treat our coworkers and the public with courtesy and dignity. We promote professional and friendly communication while providing excellent customer service at all times. In doing so, we will:

- ◆ Understand that our position anticipates healthy communication and respect with all stakeholders, customers, elected officials, and coworkers.
- ◆ Honor our commitments and focus on public satisfaction.
- ◆ Be humble and compassionate.
- ◆ Ensure an attitude exemplary of public stewardship.
- ◆ Be honest in all communications.
- ◆ Be creative and flexible.

Honesty & Integrity – We set high standards for our personal, professional, and organizational conduct and act with integrity as we strive to attain our mission. In doing so, we will:

- ◆ Adhere to high standards.
- ◆ Be transparent and reliable.
- ◆ Operate in a professional and ethical manner.
- ◆ Be honest in all communications.
- ◆ Operate in a manner that would safeguard public confidence publically and privately.

Stewardship & Trust – We understand our responsibility to use public funds wisely. We will faithfully deliver services and make decisions that will meet the citizen’s needs. We commit to our core values with open communication with the public and solicit feedback in order to achieve our goals. In doing so, we will:

- ◆ Operate in a manner that supports public trust and confidence.
- ◆ Be responsible in the use of all public resources.
- ◆ Ensure regulatory and customer expectations in an anticipatory manner that honors commitment and stewardship.
- ◆ Serve as an advocate at local, state, and federal levels on behalf of the general public.
- ◆ Recognize the value of stewardship and the solemn oath of public wellbeing and health.
- ◆ Openly engage stakeholders in the department activities and gauge satisfaction.
- ◆ Be driven by excellence in producing quality products and services.

Safety – We use education, prevention, and enforcement methods to protect life and property in our business and residential neighborhoods. Our safety awareness will maintain our infrastructure and facilities to provide a safe environment in which to live and work. In doing so, we will:

- ◆ Accept the significance of our role and trust to operate on behalf of the most vulnerable in our community.
- ◆ The very mission of the utility department is focused on public safety and health.
- ◆ Provide education programs for the stakeholders.
- ◆ Provide training and education to ensure the safety of the public, resources, and employees.
- ◆ Eliminate and gauge potential risks that could affect the public health and wellbeing.

In addition to the core values, the slogan of Wooster Water Utilities is as follows:

**“Safety, Reliability, and Excellence!”**



## Safety

We work in a manner that ensures the integrity of the infrastructure. Safe water is the standard for our citizens and the focus of our daily mission. Our focus is on public health producing a safe product in all aspects. Safety is a focus on the people trusted to operate the infrastructure to ensure quality in every drop to our citizens.

## Reliability

We work to ensure reliability of the customers we serve. It is our duty as stewards to ensure the infrastructure investments are well maintained to ensure quality of life. We are diligent in our operational methods to ensure high quality water every day. We honor the trust from our citizens by sharing information on the process and product quality.

## Excellence

Excellence, every day in the mission of clean water is the expected standard. Citizens expect excellence in service provided, federal and state regulators require excellence, and the science of water treatment requires a commitment to excellence. As a life sustainer, water treatment must be approached with reverence understanding the solemn oath to the citizens as we serve at the frontline as defenders of public health and wellbeing. We expect the best from our infrastructure, consultants, strategic partners, and employees in our pursuit of excellence.



## Introduction

Water is essential to life. Elemental carbon is referred to the “building block of life”, everything we see contains carbon. Water is the sustainer of life. It is no coincidence that the sphere on which we live is 71% water and the human body includes the same carbon to water ratio. Up to 60% of the human body is water, with major organs containing a higher percent and even human bones are 30% water. Water is vital to life.

The City of Wooster is home to a great deal of innovation and progressive efforts to ensure health and quality of life. In 1894, Minor Scovel reported to the Wooster Water Commission to help find sustainable water sources. The water service for the growing Wooster community was sporadic and suspect in quality. The nation was gripped in death tolls related to communicable diseases; specifically those spread by poor water use and discharge practices. Scovel shared with the commission a case of typhoid fever that was spread from a water reservoir to the public. Scovel urged elected officials to find a ground water source with a focus on public health. The study determined a safe ground water source at the site of the first treatment plan near Old Mansfield Road. However, it took nearly 40 years before Scovel’s recommendation became a reality. The report urged elected officials to spend no more than \$40,000 to build a modern water treatment plant to ensure public health. Scovel stated in the report, “Poor water is dear, and pure water is cheap at any prices.” Citation from *Report of the Water Extension Commission to the City Council of Wooster, Ohio Nov. 19<sup>th</sup>, 1894*

The dawn of modern civilization and supporting infrastructure for a growing population created publically owned water management works. Every day, every citizen uses or discards water in one form or another. The water cycle is nonstop, always moving, always changing and producing. The City of Wooster plays a vital role in the water cycle. Natural water is drawn from the ground and treated for drinking water. The water used by customers contains contaminants accrued in the process, as water serves as the universal solvent. The wastewater is treated and delivered back to nature to start the natural and manmade cycle again. Nature serves as a standard of quality in the water cycle. Facilities are operated in a manner that is sustaining in all forms and to bring it to the purest level possible.

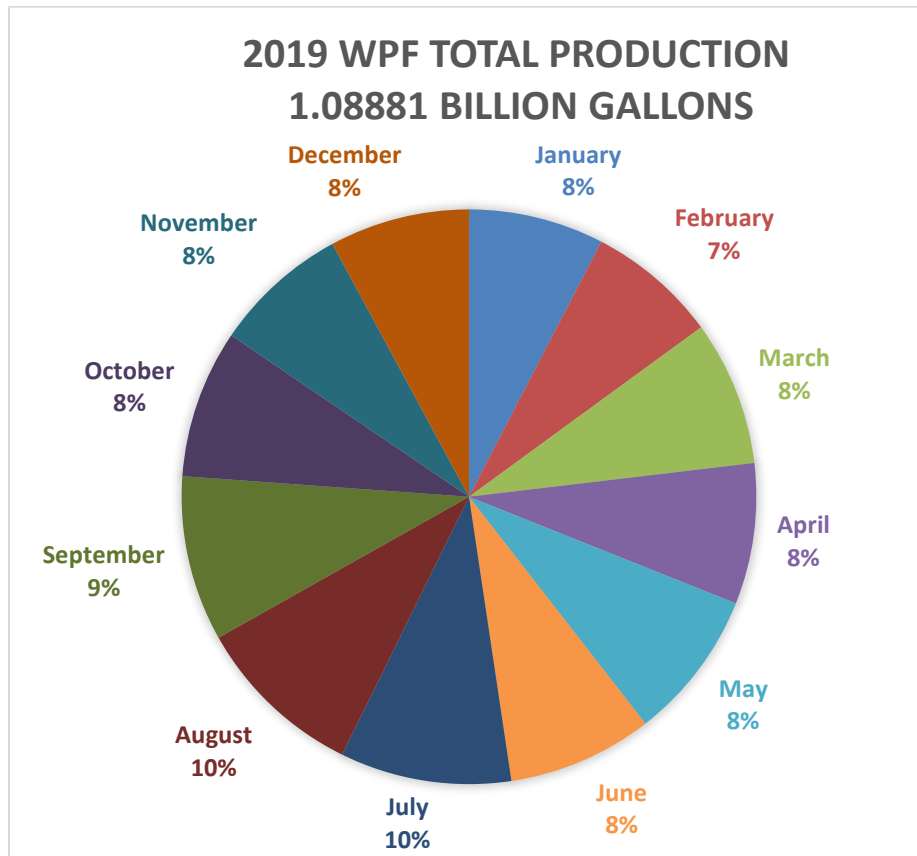
The daily mission of clean water requires our respect and diligence as front line defenders of the environment and public health.

Wooster Water Utilities (WWU) is owned and operated by the City of Wooster, Ohio. Services provided include water treatment and distribution, wastewater treatment and collection, and any service to ensure the delivery and treatment of water for the citizens of Wooster. WWU services a current population of nearly 27,000 people with 9,907 active utility accounts, in a nearly 17 square mile service area. WWU has a total of 33 employees and operated with an 8.9 million dollar approved budget in 2019.

## Water Production Information

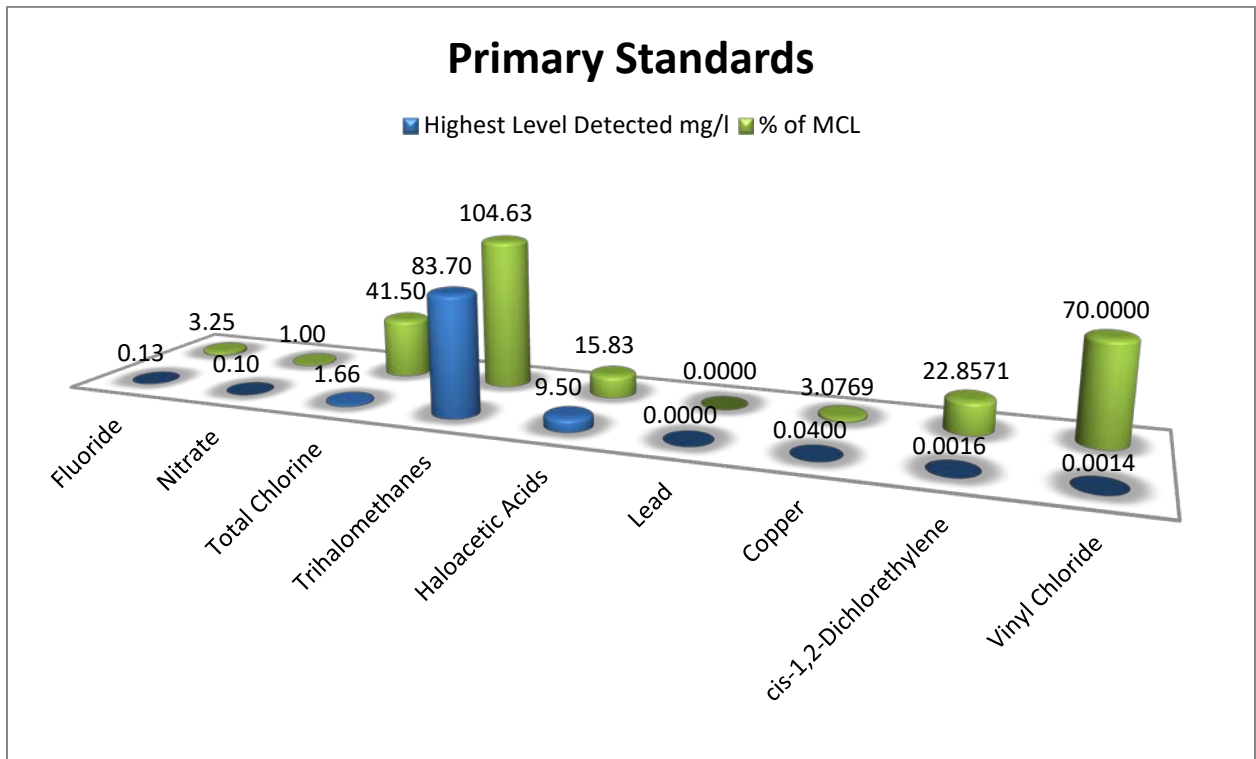
Water Production Facility (WPF) infrastructure assets include two separate source water wellfields with a total of nine wells, eight interceptor wells, and over four dozen ground water monitoring wells. Additional water assets include a water treatment facility, nine finished water storage tanks, five water booster stations, 161 miles of main line inventory, a staff of twelve individuals, facilities, and necessary equipment for the function of the facility. The current OEPA Class 3 water treatment facility process includes ground water sources, coagulation, flocculation, iron removal, softening, sedimentation, VOC removal, recarbonation, filtration, disinfection, and solids handling. The facility has been in operation since 1998.

In 2019, the Water Production Facility treated and delivered 1.08881 billion gallons of drinking water to the customers. The average daily flow production in 2019 was 2.98 million gallons, or 48.85% of the facility design capacity of 6.1 million gallons per day. Compared to 2018 totals and averages, 2019 indicates a total flow increase of 7.99% to the total and average thus indicative of customer base growth rates. The facility was designed with the use of 87 gallons per day / capital, at current flow rates the population equivalent is 34,253. The design capacity of the facility has the ability to produce enough water for a population of 70,000 people.

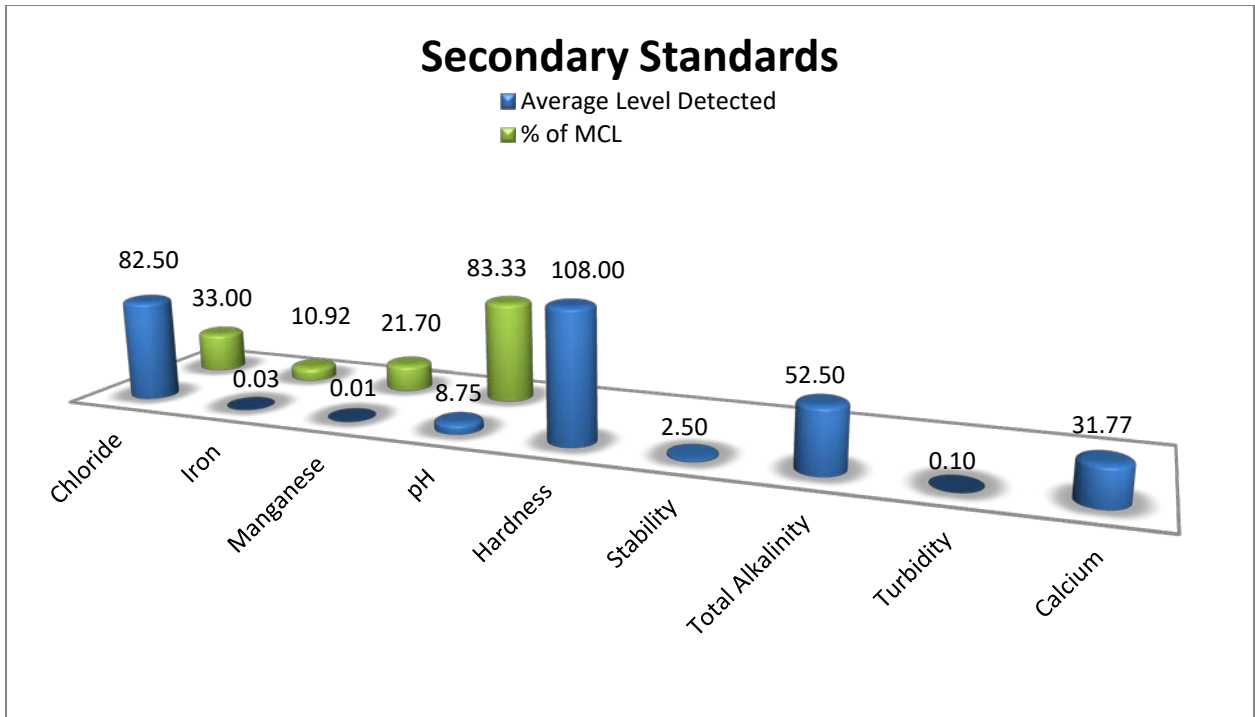


For the sake of this report, the data provided below relates to finished water treatment levels in comparison to OEPA Maximum Contaminate Levels (MLC's). Any parameters below detectable limits were not used in this report as, results below detectible limits are not required in the annual OEPA required "Consumer Confidence Report". The purpose of this data is to indicate efforts to continually monitor operations in relation to treatment standards. The data provided in this report will be used as future benchmark results in facility optimization and future guidance reports.

In the 1980's, contaminants were detected in the Wooster South Wellfield, specifically the S-1 production well. Significant testing continues under the guidance of the Ohio EPA regarding the detected contaminants. A series of interceptor wells were installed to create a hydraulic barrier in the aquifer to mitigate pollution movement in the aquifer the source water. Through an OEPA approved testing and operational technique the contamination is closely monitored, in some cases on a bi-weekly basis. The detected contaminants fall into a general category as "Volatile Organic Compounds" (VOC), specifically the Wooster testing focuses on cis-1,2 – Dichlorethylene and Vinyl Chloride . The VOC testing is included as it related to treatment target levels in the blended source water. The testing reference serves as treatment goals in the removal of VOC's. The trigger for operational changes is when the blended source water MCL is exceeded on two consecutive samples. To date no VOC's or MCL's have been detected in the filtered or finished water. In 2019 a total of 194 million gallons of interceptor water was pumped at an average of .531 million gallons per day.

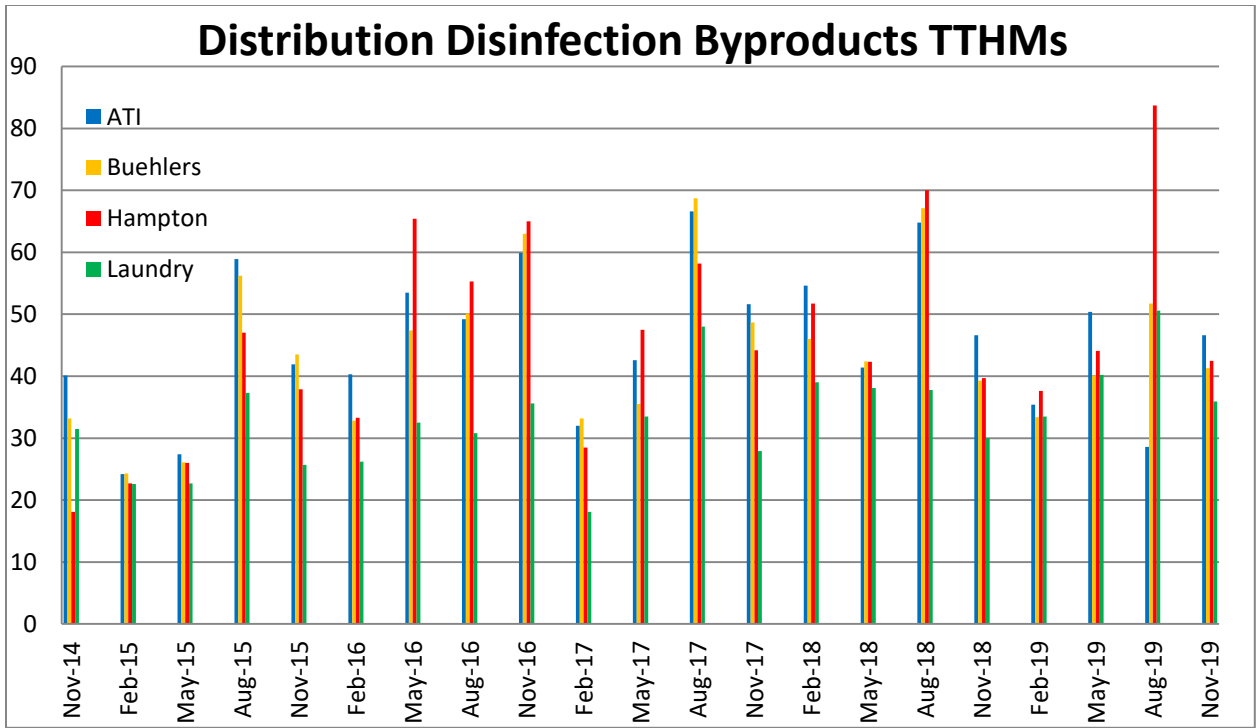






Based on the 2019 data, the following summary relates to WPF.

- Data summary indicates full compliance on all testing standards regulated by the Safe Drinking Water Act.
  - The Water Production Facility was 100% compliant with all federal and state regulations. This is a calculation of total days in compliance throughout the year.
- Trihalomehtanes (TTHM) and haloacetic acids are monitored as disinfection by products. The MCL established at the federal and state level as disinfection byproducts have the potential to be carcinogenic in very high ranges. Sampling occurs in parts of the system furthest away from the source and relates to water turn over in the system. This includes quarterly sampling at four different monitoring locations. While the highest level detected in 2019 at the furthest part of the system indicates 104% of the MCL, the lowest level detected in the sampling year was 47% of the MCL. The OEPA requires quarterly cumulative reporting the average is well below MCL. It is important to note historically 3<sup>rd</sup> quarter testing in the system has been higher due to elevated ambient temperatures. Furthermore, this directly relates to tank turn over percentages. This theory is further supported by efficient system operations and significant reduction in non-revenue water coupled with end use water smart fixtures. See chart below in relation to historical TTHM testing and tank turnover. A goal of 25% in turnover is to reduce the potential for disinfection by product levels and system efficiencies.



### WATER STORAGE TANK TURNOVER 2019

	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Yearly Ave.
Long Rd. 1.0MG	41%	46%	46%	44%	48%	51%	50%	48%	48%	50%	53%	49%	48%
I.P. .250MG	36%	31%	35%	42%	36%	31%	37%	41%	42%	43%	49%	45%	39%
Madison 1.0MG	14%	26%	21%	22%	17%	21%	22%	14%	16%	21%	23%	21%	20%
OARDC .250MG	23%	25%	22%	23%	20%	off line	off line	27%	32%	33%	31%	31%	27%
Melrose 1.5MG	11%	16%	13%	13%	12%	13%	12%	14%	16%	24%	25%	26%	16%
Oldman 1.0MG	16%	17%	16%	26%	19%	20%	15%	16%	23%	27%	26%	26%	21%
Milltown .250MG	13%	20%	20%	23%	19%	18%	17%	19%	23%	33%	31%	33%	22%
Monthly Ave.	22%	26%	25%	28%	24%	26%	26%	26%	29%	33%	34%	33%	

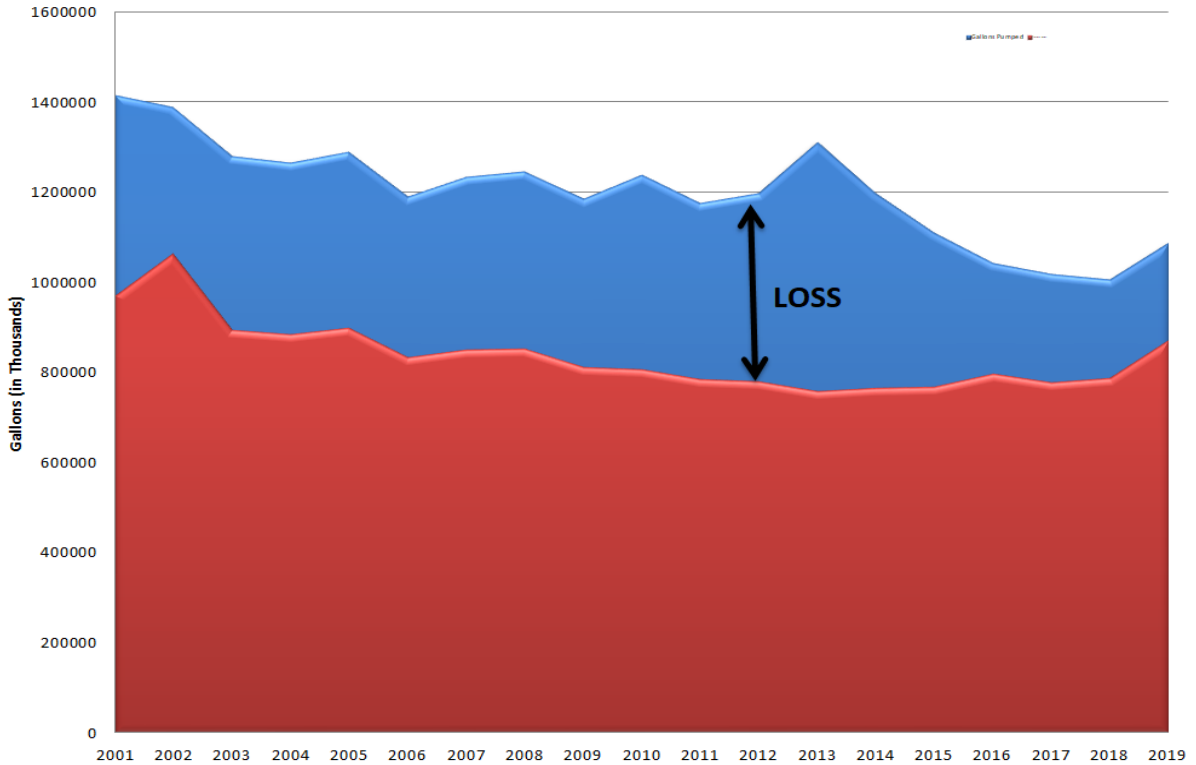
- Vinyl chloride testing is required as it relates to the South Wellfield contamination detected in 1986. An intricate testing and monitoring program is in place to effectively remove VOC's along with stripper towers in the treatment plant. The monitoring program is in place to ensure compliance and proper treatment techniques. While the highest level detected in 2019 was at 70% of the MCL, the average test results for the year resulted in levels 54.5% of the MCL. We will continue to monitor and utilize the 70% of the MCL level (for all VOC's) as an indicator to gauge any changes in the system. It is important to note no VOC's have been detected in the filter or finished water from the facility.



- The ratio of employee to annual total gallons treated is equal to 136 million gallons / employee or an 8% increase compared to 2018 data.
- The operation and maintenance cost per million gallons treated is equal to \$2,778.41 or \$2.78 to treat 1,000 gallons. Compared to 2018 a reduction of 34% in operating expenses was realized. While this is a positive indicator in an often unpredictable environment, it indicates a commitment stewardship.

- Through collaborative city wide department efforts the non-revenue water percent has been on a decline since 2013. 2019 saw a NRW reduction to 19.95% from the 2018 21.89% or an 8.8% reduction. Very respectable ratio and efforts. See charts below.

**Unaccounted Water Loss 2001-2019**



Year	Gallons Produced	Gallons Billed	NRW%	Customer Accts
2013	1,312,736,000	759,870,000	42.12	9,812
2014	1,197,307,000	766,965,000	35.94	9,818
2015	1,116,050,000	768,536,000	31.14	9,857
2016	1,044,260,000	797,950,000	23.59	9,869
2017	1,018,920,000	777,150,000	23.73	9,892
2018	1,008,588,000	787,834,000	21.89	9,907
2019	1,088,808,000	871,567,000	19.95	9,892
<b>Total</b>	<b>7,786,669,000</b>	<b>5,529,872,000</b>		

- **Water Production Special Projects Completed in 2019**
  - SCADA system upgrades and component replacements.
  - Electrical system improvements due to brown out issues.
  - High duty pump VFD and ability to use backup generator in power loss.
  - Installed a VFD on a large pump at Madison booster and new motor during tank out of service.
  - Sodium hypochlorite feed system improvements.
  - Hydraulic modeling of the system.
  - Meter data collection units were updated to ensure timely readings.
  - Started the update to the SWPP and study for future consideration of water sources and emerging contaminants.
  - Lead and copper survey completed with no issues.
  - Interceptor well NPDES renewal along with dialog to route that product to WRRF.
  - Chemical feed room painting completed.
  - Due to additional demands and tanks out of service, periods of the year where operations were staffed around the clock.
  - Portions of the building were power washed and cleaned.
  - Annual assistance and water quality testing annually at the fairgrounds.
  - S1 well failed and required replacement along with installation of VFD.
  - Annual wellfield monitoring and testing.
  - All four filters were cleaned to remove build up and to better gauge condition and performance.
  - Cleaned and replaced striper tower media at the plant.
  - Purchased a new bulk water station, awaiting delivery and installation.
  
- **2020 Goals and Initiatives**
  - Complete SWPP update.
  - Replace sodium hypochlorite storage tanks.
  - Work with stakeholders to continue progress regarding NRW. At this point to place a numerical goal on percent reduction would be difficult. Goal is to work at a level where NRW is below 20%.
  - Work with stakeholders to continue progress regarding backflow program. Focus in 2020 is to take steps to include device compliance in known fire systems.
  - Increase system turnover and distribution water quality. The goal is to be at or 25% for monthly averages. This will be improved by the addition of the third shift operator at the treatment facility. Producing and providing water with a focused control with additional staffing.
  - Paint clarifiers. After 20 plus years of service it is time to reinvest in this equipment.
  - Paint the other clearwell.



- Add variable speed drive to S-2 Production Well.
  - Complete filtration study and restore filter cells.
  - Participate in Federal EPA Unregulated Contaminant Monitoring.
  - Rebuild #4 High Duty Pump. This pump is original to the facility and has not had a major overhaul since it was put into service in 1998. It is one of four pumps that convey water from the onsite storage tanks into the Low Pressure zone.
- **2020 Talent Review**
    - Based on current service commitments and division needs the staffing level is nearly adequate. The 2018 AWWA Benchmarking Survey provides comparison to survey participants. The aggregate data for MGD of water produced per employee indicates a median of .23 and 75<sup>th</sup> percentile of .29. Based on the current WPF staff level, .373 MGD per FTE is the average based on 2019 data or a 7.5% increase from the previous year. This means that less than 25% of survey participants are at or less than our current staffing level. While staffing level is currently meeting operational needs, we are limited in extended absence coverage. The facility is currently operated during the course of two shifts or 16 hours per day. Operational and water quality stability based on demand is required to maintain commitments and to provide steady around the clock water production. The WPF currently operates 16 hours per day with two rotating days off shift schedules. The WPF currently does not include a third shift. Based on current operational demands and future considerations for growth, additions to the FTE would be appropriate under the following circumstances.
    - 2020 talent goals include a third shift operator (1 FTE, total of 9 FTE's) to minimize peak demands and stabilize flows during the week. This would provide a .33 MGD per FTE based on 2019 data.
      - 2020 will also require the replacement of a talent due to a retirement.
    - Future considerations include addition of a Plant Operator (1 FTE, total of 10 FTE's) when average daily MGD reaches 3.1 MGD. This will compensate for expected demand from the manufacturing sector in Wooster and maintain a .33 MGD per WPF FTE. This will provide 3 operational shifts during the course of the week to ensure product quality.
    - Add a Plant Mechanic (1 FTE, total of 11 FTE's) when average daily MGD 3.5 to provide sufficient preventive maintenance and back up operator in the event of full shifts around the clock.
    - When facility average production reaches 4.5 the facility operation versus demand needs will be evaluated to determine optimum staffing levels.

It is imperative to review the methods and means to ensure proper staffing with future suggested intervals. Specifically, budgetary forecasts will provide focus as it relates to staffing

levels in relation rates and use of contractual services. At any time the business model should allow for considerations as it relates to continuity of service.

In the future, based on service needs, the suggested structure will provide opportunities based on the qualified level of applicants. The continuity of excellent customer service hinges on the ability to develop and retain the workforce. The goal now and as we move into the future is to establish a structure in line with needs and ability for individual growth within the drinking water facility division.



## **Water Resource Recovery Information**

Water Resource Recovery Facility (WRRF) assets include 162 miles of sanitary sewer main, ten sanitary sewer lift stations, and a modern treatment facility with anaerobic digestion including the co-generation of methane gas and electrical energy for facility operation. Additional assets include a staff of twelve individuals, facilities, and necessary equipment for the function of the facility.

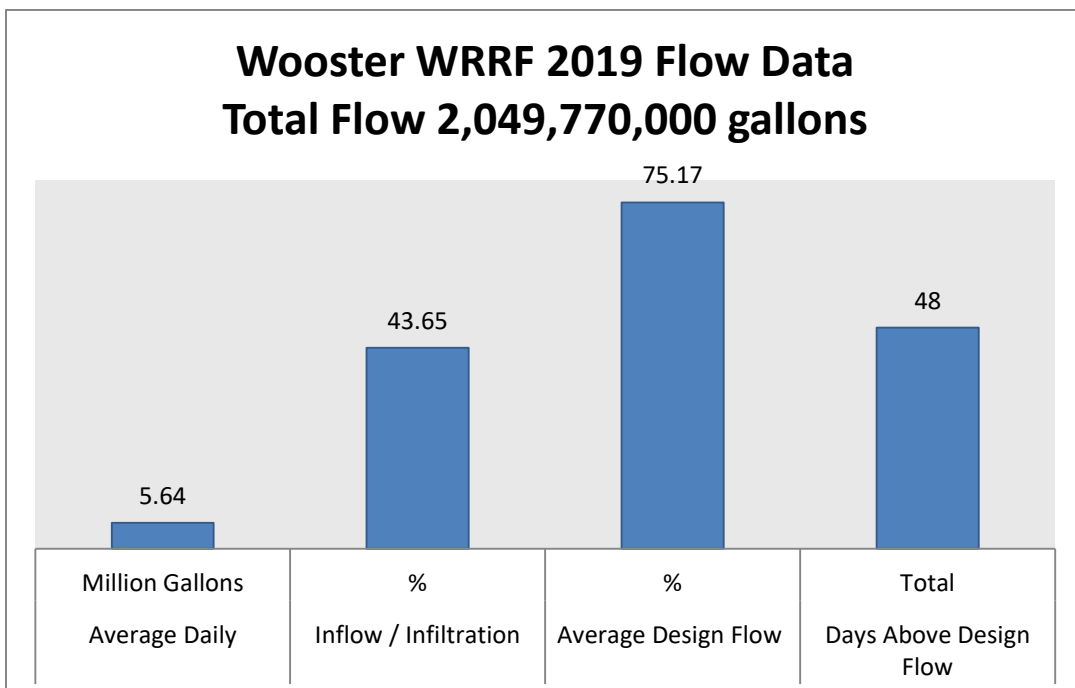
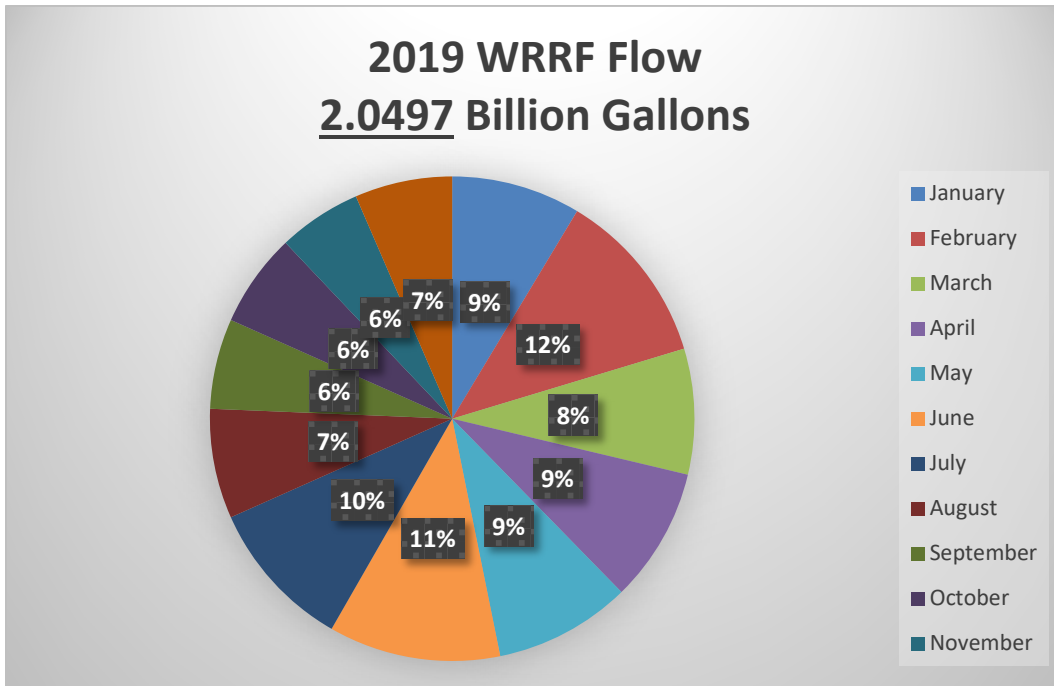
Wastewater treatment for the citizens of Wooster has been in operation at the current site since 1938. The facilities went through upgrades in 1965, 2007, and 2014. In 2009, the OEPA placed enforcement actions against Wooster due to the under performance of the 2007 upgrade. Wooster has spent millions of dollars over the past decade to address treatment inadequacies and collection system improvements.

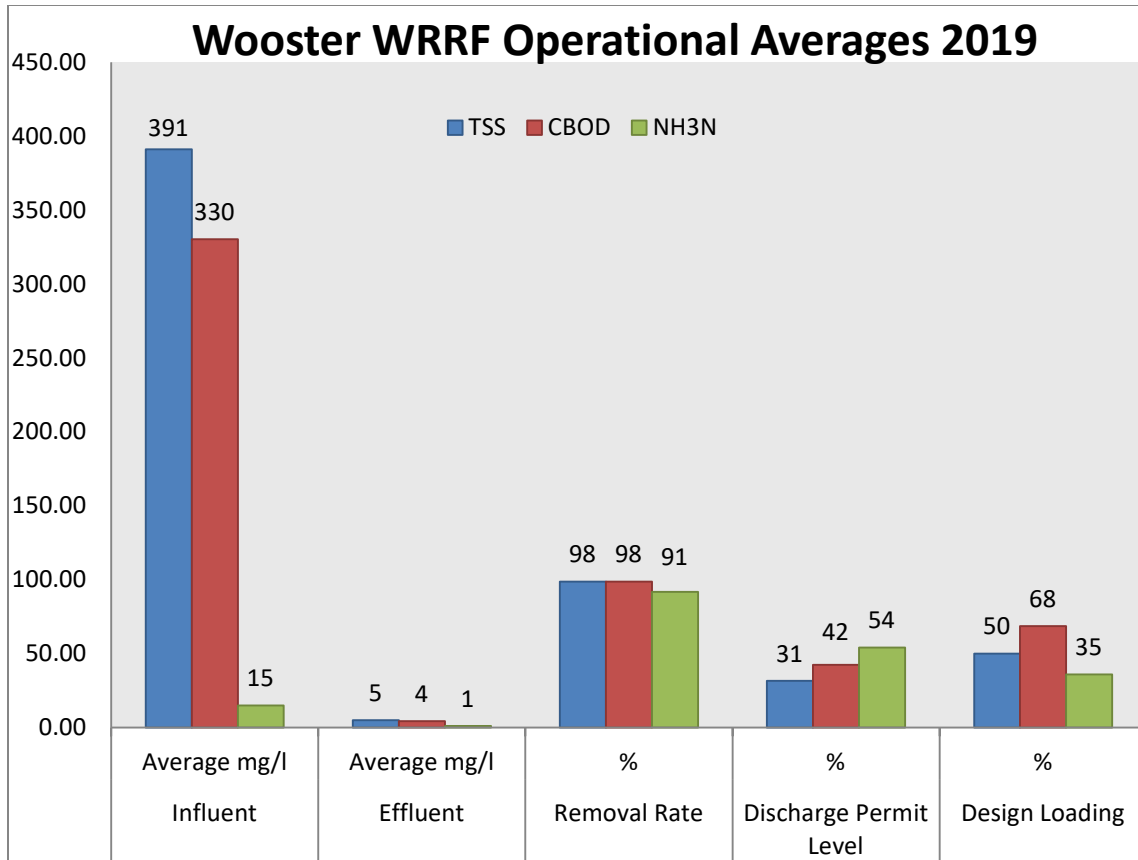
The Ohio EPA Class 4 facility includes a vertical loop reactor system, a modification of the traditional oxidation ditch activated sludge process with a storm flow mode of operation. The processes include grit and grease removal, primary settling tanks, vertical loop reactor, final settling tanks, anaerobic digester, biological phosphorus removal, ultraviolet disinfection and post aeration. The facility plays a vital role in the local water cycle to eliminate pollutants in the wastewater prior to discharge to the Killbuck Creek to enter back into the natural water cycle.

The 2014 upgrade, through a cooperative effort with an outside entity, the facility was converted to full co-generation. The ability to receive outside waste streams to support the energy needs of the facility also creates a revenue stream. The facility currently accepts semi-solid and liquid waste streams to the facility through hauling fees paid for by the waste generator. The facility is selective at the acceptance of other municipal biosolids, food processing wastes, and septic system waste. The facility serves as a power station for the WRRF and the WPF.

In 2019, the Water Resource Recovery Facility received, treated, and discharged 2.0497 billion gallons of recovered water back into the natural water cycle. The average daily flow in 2019 was 5.64 million gallons, or 75.17% of the facility design capacity of 7.5 million gallons per day. Compared to 2018 totals and averages, 2019 indicates a total flow increase of 6.7% and average daily flow increase of 6.6%. This is indicative of customer base growth rates and precipitation. The facility was designed with the peak high flow rate of 27 million gallons per day. The average daily flow design level was exceeded 48 times in 2019 directly related to the 46.79 inches of precipitation for the calendar year, both categories saw an increase from 2018, 14.5% and 1.1%. Based on available data of metered water usage, nearly 43.65% of the annual flow rate is directly related to inflow and infiltration (I&I) sources. Based on traditional design data, the current facility should support a population equivalent of 70,000 people. However, specific design and loading criteria must be evaluated as growth, regulations, and treatment technologies change.

For the sake of this report, the data provided below relates to discharge treatment levels in comparison to OEPA permitted discharge levels. Levels are established by the regulatory community to ensure public health, healthy aquatic life at the receiving stream, and the removal of pollutants into the natural water cycle. The purpose of this data is to indicate efforts to continually monitor operations in relation to treatment standards. The data provided in this report will be used as future benchmark results in facility optimization and future guidance reports.





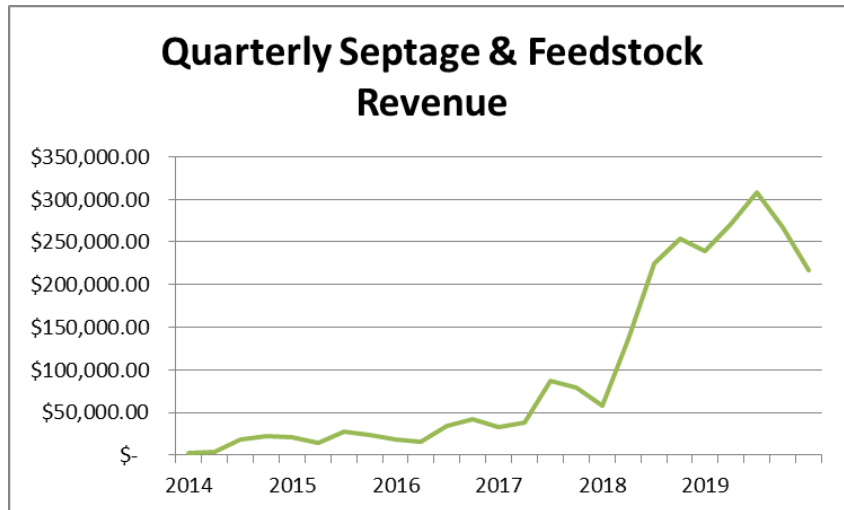
Based on the 2019 data, the following summary relates to WRRF.

- The Water Recovery Facility was 98% compliant with all federal and state regulations. This is a calculation of days in compliance throughout the year. Related to high flows there were acute exceedances of ammonia exceedances in February and September totaling seven days. It is important to note, these exceedances were directly related to I and I related storm flows.
- Across the most common pollutant levels, the facility is greater than 90% on removal rates. It is important to note regarding other parameter annual averages that discharge quality is exceptional: Nitrate/Nitrite 6.11 mg/l, total phosphorus .33 mg/l, total kjeldahl nitrogen 5.29 mg/l and biannual testing of discharge in a certified laboratory indicates no toxic fish mortality.
- The data indicates the facility, on average operates below all design loading rates. While this data point serves as a trend indicator, the important data set is the removal rate with capacity for future growth.
- The facility operates at 75.17% of the average design flow includes the contributed level of inflow and infiltration. While the facility is meeting regulatory requirements, future



consideration includes additional I & I removal to ensure the investments meet growth requirements. The past several years indicate highest levels of recorded perception amounts which contribute directly the average daily flow calculation.

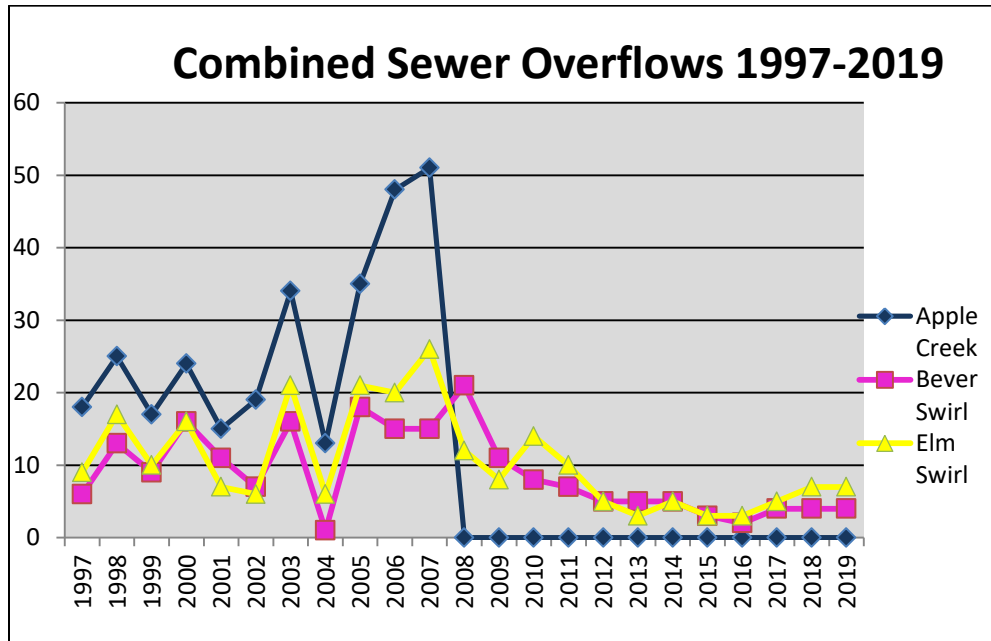
- The ratio of employee to annual total gallons treated is equal to 163 million gallons / employee or a 6.7% increase from 2018.
- The annual operation and maintenance cost per million gallons treated is equal to \$2,005.92 or \$2.01 to treat 1,000 gallons. Compared to 2018 a reduction of 6.9% in operating expenses was realized. While this is a positive indicator in an often unpredictable environment, it indicates a commitment stewardship.
- The facility created 4.3 mega-watts of electricity or 53% of annual power needs for both treatment facilities. The power created would be enough to power 441 homes over the course of a year. Compared to the previous year electric production was increased by 9.3%. The estimated cost savings of electricity production versus purchasing electricity from the grid is equal to \$220,520. \*December electric purchase values are estimated at the time of this report.
- The facility generated \$1,065,457.47 in revenue from the acceptance of third party waste to the recovery facility. Third party product acceptance provides the ability to create natural gas to power the electric generator. Compared to the previous year revenue was increased by 19.8%.



- A total of 2,466 dry tons or 16,325,550 gallons of class A biosolids were provided to local agricultural fields for soil enrichment and ultimate reduction of commercial fertilizers. Related to 2018 data there was an increase of 3% of total gallons hauled in 2019. The beneficial reuse disposal cost is equal to \$330 / dry ton or \$.049 / gallon.
- The WRRF facilitates an Industrial Pretreatment Program to meet regulatory requirements. In 2019 the WRRF experienced no spills, interferences or toxin discharges directly attributable to industrial dischargers. Annual inspections are conducted on the Significant Industrial User(s) in the collection system. Additional sampling occurs to ensure the dischargers to the public system are in compliance. In the

event of non-compliance surcharges are issued when waste concentrations are over the local limits. In 2019, a total of \$443,190 industrial surcharge fees were issued a 4.7% increase from the previous year.

- Significant efforts have been made to reduce inflow and infiltration and the elimination of multiple combined sewer overflow discharges. Improvements have realized minimal CSO discharges through direct management of a control plan and release structures. The Bever and Elm CSO flow control structures allowed for weather related controlled release of diluted flow in a total of 11 events, same as 2018.



- **Special Projects and Accomplishments Completed in 2019**
  - SOP updates throughout the year.
  - Air permit and stack testing completed.
  - CHP upgrades, planned and unplanned.
  - Flare improvements with the ADS.
  - Replaced controllers on interceptor valve actuators.
  - New lab van was purchased and put into service.
  - Repairs to the UV system prior to seasonal start up.
  - Implementation of testing and procedures to reduce odor emittance from WRRF.
  - Annual preventive maintenance tank cleanings throughout the year.
  - Updated pretreatment local limits.

- Efforts to add redundancies on the ADS system to maintain service commitments and stability.
  - With the addition of a 2<sup>nd</sup> lab tech additional septic and feedstock testing operations were put in to effect.
  - A methane chiller was replaced.
  - Installation of additional RAS pumps.
  - Cleaned all lift station wet wells.
  - Henry Street Lift Station improvement project is nearing completion at the time of this report.
  - The Bio-Tower was cleaned out for future storage or third party waste acceptance uses.
- **2020 Goals and Initiatives**
    - Continue to improve ADS operation by improving feedstock quality, producing consistent kilowatts, and automation updates to ensure reliability. At this time to place an energy production goal would be difficult understanding operations and machine downtime. In 2020 the goal is to create 50% of energy facility needs and maintain 1 million dollars in feed stock and septic receiving revenue.
    - Installation of a finished biosolids holding tank to reduce product odors.
    - Improve the septic receiving station with automation to ensure reliability.
    - Continue employee training and education.
    - Continue to update SOP's and Emergency Plans.
- **2020 Talent Review**
    - Based on current service commitments and division needs the staffing level is nearly adequate. Based on the 2018 AWWA Benchmarking Survey provides comparison to survey participants. The aggregate data for MGD of wastewater processed per employee indicates a median of .19 and 75<sup>th</sup> percentile of .26. Based on the current WRRF staff level, .446 MGD per FTE is the average based on 2019 data or a 9.6% increase compared to the previous year. This means that less than 25% of survey participants are at or less than our current staffing level. While staffing level is currently meeting operational needs, we are limited in extended absence coverage. Additional considerations of staffing do not include the advanced liquid and solids treatment streams along with third party waste acceptance and power generation.
    - 2020 goals include a second / third shift Master Operator (1 FTE, total of 14 FTE's) to provide off shift coverage, maintenance support, reduction of call out time and shift supervision. This position would also provide a Plant Supervisor

succession candidate the ability to work on a Wastewater 4 OEPA certification. This would provide a .4 MGD per FTE based on 2019 data (comparable to WPF).

- 2021 Add a shift Plant Mechanic (1 FTE, total of 15 FTE's) for off shift preventive maintenance and support to the operators.
- Add a 2nd and 3rd shift Plant Operator Plant Mechanic (1 FTE, total of 16 FTE's) when annual average daily flow reaches 5.5 MGD (2019 Staffing Review) to provide additional man power for operations off shift. This will support expected increase in flow and customer acceptance of septic and feedstock; sufficient preventive maintenance and back up operator in the event of full shifts around the clock.
- When facility average production reaches 5.5 the facility operation versus demand needs will be evaluated to determine optimum staffing levels. This was a result of the 2019 Staffing Review and flows indicate a focus on staffing in 2020.

It is imperative to review the methods and means to ensure proper staffing with future suggested intervals. Specifically, budgetary forecasts will provide focus as it relates to staffing levels in relation rates and use of contractual services. At any time the business model should allow for considerations as it relates to continuity of service.

In the future, based on service needs, the suggested structure will provide opportunities based on the qualified level of applicants. The continuity of excellent customer service hinges on the ability to develop and retain the workforce. The goal now and as we move into the future is to establish a structure in line with needs and ability for individual growth within the water recovery facility division.

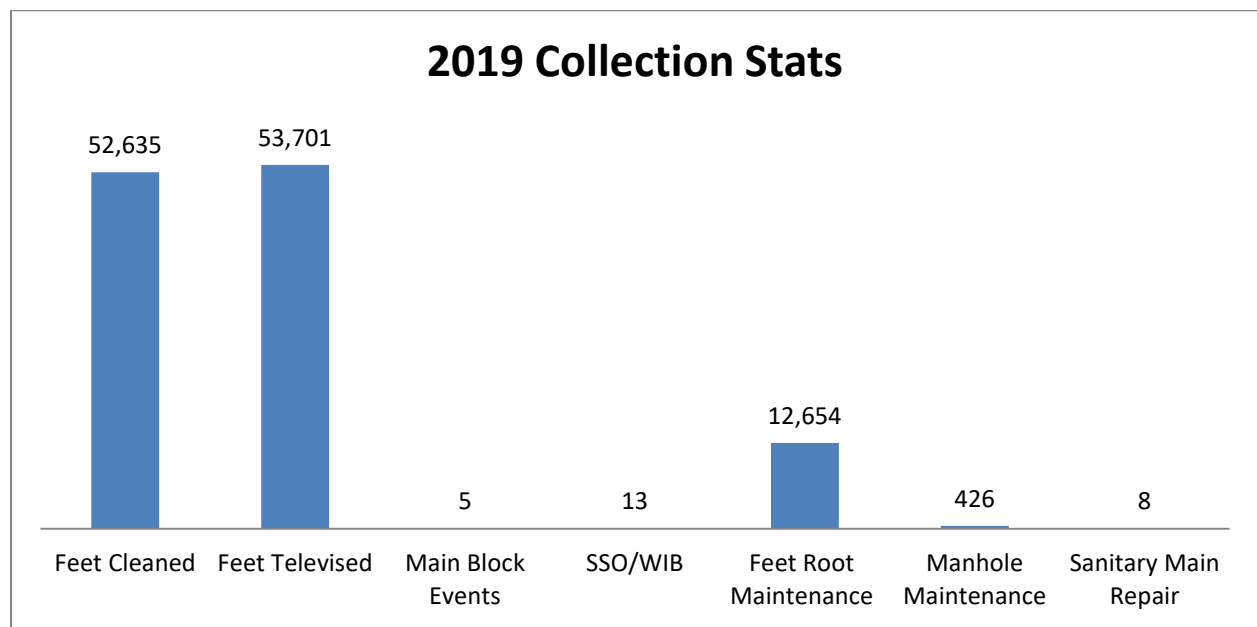


## Distribution, Collection, and Meter Information

The Distribution, Collection, and Meter (DCM) division works to ensure proper service delivery to our customers. DCM assets include 162 miles of sanitary sewer main, 161 miles of water main, 1,142 fire hydrants, 4,558 water valves, 3,308 sanitary manholes, metering units for the 9,892 (end of 2019) customer accounts, and a well maintained geographic information system (GIS) for the infrastructure location . DCM assets also include a workforce of ten individuals, facilities, sanitary sewer cleaning and televising equipment, excavation equipment, fleet vehicles and all equipment necessary for task completion.

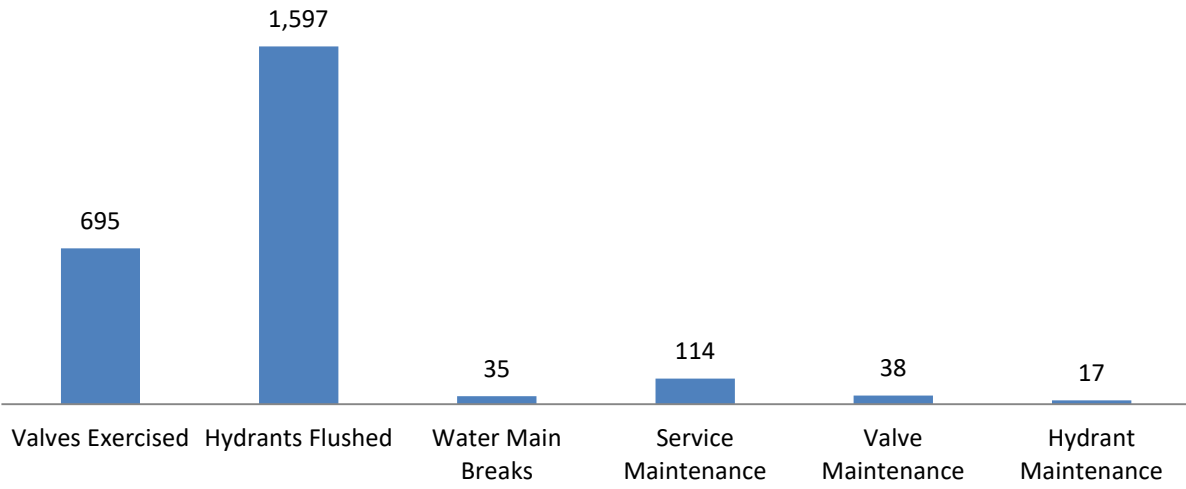
For the sake of this report, the data provided below relates to tasks completed in the mission of providing service to customers. While the data provided is not intended to quantify the DCM workflow, but to provide a view of currently tracked tasks. For example, the total number of water main breaks in 2019 totaled 35. While this is specific to the Wooster system, the data can be compared to other similarly sized communities in the future. It is however important to note that the work that goes into each main line job. Tasks include mobilization, isolation, exaction, repair, restoration, and communication with the public. On average, four employees are needed to complete the work on an average of six hours each job. Unfortunately, the 840 man hour estimate in 2019 includes work after normal business hours and usually in unfavorable weather.

The DCM is most often the face of the department to the customers. The nature of the service wing of the department includes direct customer interaction. This could be in the form of service requested by the customer or service initiated by city services. DCM works close with Utility Billing to ensure timely delivery of service not limited to accurate meter reading, meter replacement, and service verification.

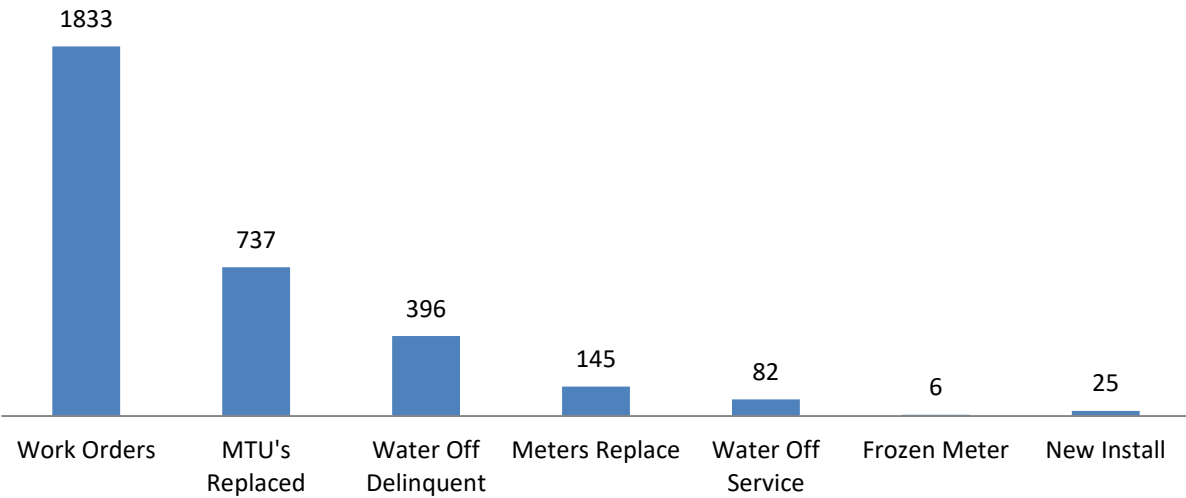




## 2019 Distribution Stats



## 2019 Meter Stats



Based on the 2019 data, the following summary relates to DCM.

- Basic data summary indicates the vital support service provided through DCM. While the treatment of distributed and collected water is vital to a community, infrastructure support ensures the integrity of expected level of service.

#### DCM Benchmarking Data

- A total of 1,833 work orders were completed for the 9,892 customer accounts. This equates to a ratio of 18.5 service orders / 100 customer accounts. In 2019 there was a 26% increase of work orders compared to 2018.
- A total of 737 meter transmitting units (MTU's) were replaced in comparison to 145 meters replaced. 2019 data indicates an increase of 12% in MTU replacement and 16% decrease in meter replacement compared to 2018.
- A total of 396 accounts were disconnected due to delinquency. This represents 4% of the customer base. This is indicative of excellence in customer service and service collection efforts. A 2018 comparison indicates 397 accounts were disconnected due to delinquency.
- A total of 695 water main valves were exercised to ensure proper operation in the event of required isolation. This represents 15.2% of the total valves indicated in the GIS system. Compared to 2018 a total increase of 35.2% additional valves was exercised in 2019.
- A combined average of 53,168 feet of sanitary main line was preventively cleaned and televised. This represents over 6.23% of the current main line inventory. The ability to conduct this work in house provides an estimated cost savings of \$71,280 versus contractual fees. 2019 efforts resulted in an increase of 18.8% compared to 2018.
- In 2019 a total of 35 water main breaks surfaced and were repaired, same total in 2018. The 2019 unplanned main line water service disruptions are equal to 4.1 disruptions / per 100,000 feet of system inventory.
- The 2019 unplanned main line sewer service disruptions are equal to 2.1 disruptions / per 100,000 feet of system inventory. This data set totals main block and SSO/WIB events with a total of 18 or a 56% decrease compared to 2018.



- **Special Projects and Accomplishments Completed in 2019**
  - I and I remediation to the Cleveland Road North Lift Station.
  - Spring and fall leak detection program resulted in the correction of a total of 42 leaks and the elimination of an estimated total of 292,320 gallons per day.
  - Meter crew continues to review curb boxes listed as off from the billing system and meter bypass surveys.
  - RAW water line from the North Well Field was repaired.
  - New 'Vactor' combination sewer cleaning and hydro excavating truck was put into service.
  - Installed a hydrant at the base of OARDC for control and draining during tank out of service.
  - Seasonal mowing of right of way areas related to pipe line infrastructure.
  
- **2020 Goals and Initiatives**
  - Continual efforts with Engineering to locate and eliminate sanitary inflow and infiltration.
  - Exercise 15% of the main line valve inventory.
  - Clean and televise 10 miles of sanitary main line.
  - Efforts to locate and eliminate water main leaks.
  - Flush all fire hydrants in the system.
  - Replace 10% of meters 3 inch and larger (150) to reduce the non-revenue water percent.
  
- **2020 Talent Review**
  - Based on current service commitments and division needs the staffing level is adequate. Based on the 2018 AWWA Benchmarking Survey the entire department equates to 309 customer accounts per FTE. This data indicates WWU is less than the 25<sup>th</sup> percentile of 367 or the median of 492 accounts per FTE. If the DCM staff are used in this comparison a 990 accounts per FTE is the total. Understanding that this staffing level is sufficient based on current trends additions to the FTE would be appropriate under the following circumstances.
    - 2020 will require the replacement of a talent due to a retirement.
  - Addition of a Utility Operator Trainee (1 FTE, total of 11 FTE's) when accounts grows to 10,890.
  - Addition of a Utility Technician (1 FTE, total of 12 FTE's) when accounts grow to 11,880.
  - Addition of a Utility Operator (1 FTE, total of 13 FTE's) when accounts grow to 12,870.

It is imperative to review the methods and means to ensure proper staffing with future suggested intervals. Specifically, budgetary forecasts will provide focus as it relates to staffing levels in relation

rates and use of contractual services. At any time the business model should allow for considerations as it relates to continuity of service.

In the future, based on service needs, the suggested structure will provide opportunities based on the qualified level of applicants. This will be driven by the future applicant credentials. The continuity of excellent customer service hinges on the ability to develop and retain the workforce. The goal now and as we move into the future is to establish a structure in line with needs and ability for individual growth within the service arm of Wooster Water Utilities.

- **Utilities Manager 2020 Vision and Goals**

#### Talent Related

As with any business in the service industry the challenges are universal. Providing cost conscientious services while maintaining service expectation levels and regulatory standards. Ultimately the driver is based on the ability to provide economical goods at an intentional return rate for continual successful service operation and financial vitality. Staffing challenges as we move into the future are not unique to this industry; however it does require an intentional focus on a Wooster specific plan of attack.

- **2020 Goal 1** Update job descriptions to reflect relevant standard operating procedures specific to performance and title. Understanding specific functions of each position allows for summary and testing regarding skills required for position. *Manager will work with Supervisors to ensure talent knowledge and skill level.*
  - Identify critical positions that will be needed to support continuity. Proviso, current data indicates all occupied positions is critical to service delivery.
- **2020 Goal 2** Establish intentional efforts to provide individual and positional focused growth opportunities. Implement a progressive training module program with a focus to encourage development with incentivized growth. Incentives embrace college education, distance learning, certification programs and emotional intelligence quotient to provide growth opportunities. This will also provide future vertical movement in the organization with methods to cultivate future leadership potential. Focused means to identify high potential talent. *Please see the Utilities Staff Training Modules document.*
  - In 2019 a total of 632 hours of training were completed by the staff. It equates to 19.7 hours / FTE / year. The 2018 AWWA Benchmarking survey indicated a media of 13.9 hours / FTE / year of survey participants. Indeed an example of commitment to talent.
- **2020 Goal 3** Incorporate additional in house training methods to ensure retention of required skills and knowledge supporting talent continuity. *This correlates with item 1, ensuring effective training and expectations of talent focus and task completion.*
- **Weakness/Concern** There is no plan or promotional pathway in the ranks to elevate the workforce based on talent performance and initiative. Any organization lateral

movements, position or salary, is limited to need based vacancy. Career minded talent thirsts for a program to establish and achieve goals. Intentional organization (city) wide focused plan or promotional based directive to develop, retain and elevate the staff prior to position vacancy. Emphasis to prepare and develop with a concentration on talent with successors in place prior to any vacancy; yields continuity. Without an established talent growth plan; **there is or can be no “succession plan”**. Navigation of this weakness will continue to be a focus and a reality in play with this field and candidate market.

- **Annual Review 1** Preparation regarding retirement. Annually evaluate the talent numbers eligible for retirement. Identifying the talent and expertise level as it relates to ensuring service continuity. Establish time required to develop the ability and confidence of retained and recruited talent. *Manager and Supervisors will collaborate for this annual review.*
- **Annual Review 2** Focus on long term preservation of developed personnel. The climate in this industry is highly competitive regarding career opportunities and salary potential. It is prudent to be aware of the market and response regarding competition. Annual review of relevant compensation as it relates to positions. *Manager and Supervisors will collaborate for this annual review.*





## 2019 Strategic Plan Review Related

This portion of this document will cover 2019 Strategic Plan goals that were completed and initiatives for focus or completion in 2020.

### Utility Strategic Planning Background

In 2008, in a cooperative effort with the Water Environment Federation (WEF), American Water Works Association (AWWA), and the US EPA created the framework for utility strategic planning. The guidance document, *“Effective Utility Management, A Primer for Water and Wastewater Utilities”* provided the “Ten Attributes of Effectively Managed Water Sector Utilities”. Please see the diagram below regarding the recommended reviewable attributes.

## Ten Attributes of Effectively Managed Water Sector Utilities

2019 Review Focus\*



**2019 WWU Strategic Plan Review Themes**

The 2019 Wooster Water Utilities Strategic Plan includes the review of the following categories:

- ◆ Product Quality
- ◆ Employee Development
- ◆ Operational Optimization
- ◆ Financial Viability
- ◆ Infrastructure Stability
- ◆ Operational Resiliency

Theme review is based on lowest to highest ranking based on current known data and information. The ranking was completed by the Utilities Manager based on currently available information. The review provides an opportunity to review current strengths and weaknesses. Attributes in the shaded graphic area are strong candidates for improvement efforts. For the sake of this review, even with progress the ranks will be addressed of any positive change in future reports. Furthermore, the WWU Strategic Plan will be updated once all 2019 goals are achieved and focus on additional improvements. **Green** highlighted categories mean completion of initiative or progress; **yellow** highlighted categories mean incomplete or 2020 focus.

Wooster Water Utilities Attribute Ranking

<b>Rating</b>	<b>Lower Achievement</b>	5			ED			
		4		OO				
		3						OR
	<b>Higher Achievement</b>	2	PC				IS	
		1				FV		
			1	2	3	4	5	6
			More Important			Less Important		
Ranking								
								2019 Attributes Review
R1	Effective, systematic approach and implementation; consistently achieve goals.							PC = Product Quality ED= Employee/Leadership Development OO= Operational Optimization FV= Financial Viability IS= Infrastructure Stability OR= Operational Resiliency
R2	Workable systems in place ; mostly achieve goals.							
R3	Partial systems in place with moderate achievement, but could improve.							
R4	Occasionally address this when specific need arises.							
R5	No system for addressing this.							

- Product Quality (PC), Priority 1, Rating 2

- **Product Quality** is the focus on producing potable water, treated effluent, and process residuals in compliance with regulatory and reliability requirements and consistent with customer, public health, and ecological needs. In addition, **Customer Satisfaction** is included in this review category with the focus on providing reliable, responsive and affordable services in line with explicit, customer-accepted service levels. Receives timely customer feedback to maintain responsiveness to customer needs and emergencies.
- Strength. WWU received high marks in this category as it relates to consistent proven efforts to provide high quality treated water to the community. Product quality has been the driver on recent facility upgrades and system reinvestment. WWU has received national attention regarding practices. Continue 100% water compliance and improve recovery compliance percent.
- Weakness. WWU currently does not have a path to gauge and react to customer satisfaction.
- Opportunity. WWU has the potential to become a premier leader in utility management through intentional performance indicator tracking with a focus on product excellence and customer satisfaction.
- Threat. The management of intentional product messaging is required in our sector. Public perception and satisfaction should be a focus regarding emerging contaminants and regulatory changes. There is no current, intentional product messaging in place outside of basic regulatory requirements. WWU has received national recognition on efforts; outward focus must include state and regional awareness.

2019 Strategic Initiative      Product Quality

Goals	Actions	Measure of Success
Improve data tracking and reporting.	Participate in the annual AWWA Benchmarking Survey.	Compare WWU benchmark data with national comparison.
Gauge customer satisfaction on an annual basis.	Produce customer surveys and communicate survey availability.	Utilize survey results to gauge and build customer satisfaction.
Update Standard Operating Procedures.	Intentional effort to update all plans and review of regulatory changes.	Procedures ensure compliance reliability and continuity.
Update Source Water Protection Plan.	Internal and consultant based review of current and future protection needs.	Plan in place to ensure customer and regulatory confidence.
Active, intentional product messaging.	Public education; publications, open communication and use all media type.	A well informed customer is a confident customer.

- Employee / Leadership Development (ED), Priority 3, Rating 5
  - **Employee / Leadership Development** recruits and retains a workforce that is competent, motivated, adaptive, and safe-working. Establishes a participatory, collaborative organization dedicated to continual learning and improvement. Ensures employee institutional knowledge is retained and improved upon over time. Provides a focus on and emphasizes opportunities for professional and leadership development and strives to create an integrated and well-coordinated senior leadership team.
  - Strength. WWU has a diverse workforce with professional skills to ensure proper department execution of duties. The ratio of certifications needs is healthy with the current staffing level. Intentional efforts through budgeting and policy are in place to provide professional growth opportunities for the staff. The certification and continuing education resources are stout.
  - Weakness. WWU currently does not have a succession plan in place to ensure professional development and talent preservation. There is not a plan in place to ensure intentional, specific focus on staff in all ranks.
  - Opportunity. WWU has the potential to become a premier leader in utility workforce training. The state of the art facilities, technology, and equipment can be the envy of many communities. Our organization can be a leader in workforce education internally and externally with a specific training plan. We have the opportunity to work with local higher learning institutions to continue to recruit homegrown talent.
  - Threat. WWU is not unique in the threat of a workforce nearing retirement age and the in ability to recruit sufficient replacement talent. The threat is increased without employee satisfaction surveys. Active engagement to build a workplace complementary to the changing workforce needs.

2019 Strategic Initiative      Employee / Leadership Development

Goals	Actions	Measure of Success
Succession Plan, Staffing Plan.	Complete needs based staffing plan and succession plan with strategic partners.	Ensure optimum staff levels and pathway for succession.
Employee Satisfaction Survey.	Provide annual survey to staff to gauge satisfaction.	Adapt plans to address survey results.
Develop WWU Specific Training Modules.	Utilize educational partners for professional and leadership development.	Ability to promote and retain the workforce.
Develop internal training modules.	WWU specific training based on SOP's and adapting to regulatory changes.	Educated workforce based on WWU goals and values.

- Operational Optimization (OO), Priority 2, Rating 4
  - **Operational Optimization** focus is on ensuring ongoing, timely, cost-effective, reliable, and sustainable performance improvements in all facets of its operations. Minimizes resource use, loss, and impacts from day-to-day operations. Maintains awareness of information and operational technology developments to anticipate and support timely adoption of improvements.
  - Strength. WWU has done a remarkable job reducing the percentage of non-revenue water since the year 2000. A collaborative approach through several departments has yielded a high success rate. Wooster is committed to operational efficiency. Efforts are currently underway to complete a water system hydraulic model along with future considerations for a sewer system hydraulic model.
  - Weakness. WWU currently does not have an aggressive plan in place to address inflow and infiltration (I and I) into the collection system and subsequently the treatment facility. While Wooster has made excellent strides in addressing the combined sewer overflows, the nature of I and I remediation can be difficult in a combined system.
  - Opportunity. WWU has the potential to ensure long term system capacity by continuing to address non-revenue water loss and aggressive I and I elimination practices. Through concentrated efforts in data management, maintenance tracking, and resource allocation improvements are achievable in this category along with Product Quality.
  - Threat. If left unchecked inefficient asset management can lead to a lack of customer confidence. Particularly, if loss margins are not maintained at healthy levels, rate increases could be met with opposition. Without direct data management and performance indicators in place, it may be difficult to adapt quickly to any regulatory changes.
    - Operational Optimization and Product Quality improvements share common future performance indicators; it begins with properly tracking and trending the data.

2019 Strategic Initiative	Operational Optimization	
Goals	Actions	Measure of Success
Reduce 2020 non-revenue water percent.	Continue to repair and delineate leaks. Continue to efficiently meter water use.	Overall percent reduction from 2019 to 2020.
Reduce I&I percentage (based on water meter use) in the system.	Study potential high ROI remediation areas through testing, base line indicators.	Reduction in SSO's and calculated I & I flow rates.
Data tracking software.	Purchase and build data for the tracking of operations and maintenance.	Consistent application of data regarding resource allocations.
Technology optimization review.	Review best practices; evaluate emerging technology for data collection and operation.	Utilize instant flow data in the operation of the department.

- Financial Viability (FV), Priority 4, Rating 1

- **Financial Viability** focus is on understanding full life-cycle cost of the utility and establishes and maintains an effective balance between long-term debt, asset values, operations and maintenance expenditures, and operating revenues. Establishes predictable rates-consistent with community expectations and acceptability – adequate to recover costs, provide for reserves, maintain support from bond rating agencies, and plan and invest for future needs.
  - **Disclaimer.** At the time of this report the reviewer does not have full understanding of current debt and budget figures outside of the operations budget. Future strategic review will provide additional to the overall financial health of the department.
- **Strength.** WWU has an excellent rate structure in place to ensure healthy fiscal operation. A 5% rate increase was put into place for 2019. In comparison to the OEPA Annual Rate Study (most recent report completed in November 2018), WWU is in line with averages in the state. It is important to note, the most recent data from the OEPA was for the 2017 calendar year. The annual average in the survey was equal to \$1,311, or water average of \$634 and sewer \$677 per year. WWU comparatively (at the ¾ meter rate) is \$1,270.92 annually, or water average of \$689.04 and sewer \$581.88 per year. WWU is nearly 97% of the state average which serves as in indicator of current cost trends. The average monthly uses of 7,756 gallons were used for the comparative calculation based on the OEPA criteria. While each community is unique with specific rate drivers, it provides a comparison as it does show consistency. Wooster has a solid capital improvement plan in place and has indicated excellence in this area.
  - The city has shown commitment to financial responsibility. Rates and review of rates are in place to recover costs, provide for reserves, maintain support from bond rating agencies, and plan and invest for future needs. High ranks in this category as the city has done an excellent job in financial resource management.
- **Weakness.** The reviewer finds the schedule of rates to be confusing and difficult to interpret. The reviewer feels this could be true for the general consumer. It is quite possible it makes better sense in the bill format. The ability to transparently communicate rate structure (at this time the reviewer may not be able to effectively communicate) falls in line with intentional messaging and branding.
- **Opportunity.** The reviewer has no comment on this category at the time of the report.
- **Threat.** WWU is not unique in the threat of the ever-changing national and global economics. At this time the reviewer has no specific threats to review.

2019 Strategic Initiative	Financial Viability	
Goals	Actions	Measure of Success
Simplify schedule of fees.	Develop a plan to provide transparency and ease of interpretation.	Public understands rates and provides feedback.

- Infrastructure Stability (IS), Priority 5, Rating 2
  - **Infrastructure Stability** is the understanding of conditions and of costs associated with critical infrastructure assets. Maintains and enhances the condition of all assets over the long-term at the lowest possible life-cycle cost and acceptable risk consistent with customer, community, and regulator-supported service levels, and consistent with anticipated growth and system reliability goals. Assures asset repair, rehabilitation, and replacement efforts are coordinated within the community to minimize disruptions and other negative consequences.
  - Strength. WWU received high marks in this category as it relates to collaborative efforts Wooster Engineering. The reviewer finds the recent past and current infrastructure reinvestment efforts to be outstanding. Wooster has a plan into the future to continue with the commitment to excellence and commitment to outstanding service.
    - The Water Asset Management Plan has had a strong start with support from engineering.
    - Efforts are underway to complete a water system hydraulic modeling.
  - Weakness. The reviewer does not currently report a weakness in this category.
  - Opportunity. WWU has the potential to become a premier leader in utility management. Recommend the completion of the Water Asset Management Plan and then use the same model to proactively create a plan for the sewer system.
  - Threat. The threat of aging infrastructure nationwide is gaining attention at state and federal legislators. While identifying critical infrastructure age and condition will present focused pathway for rehabilitation, the threat is not removed. Infrastructure vigilance in evaluating, revitalizing, optimizing and increasing the long term reliability is the goal of any successful utility.

2019 Strategic Initiative      Infrastructure Stability

Goals	Actions	Measure of Success
Complete update to the Water Asset Management Plan.	Review; collect the remaining data and information required in the document.	Message of excellence to customers and regulators.
Consider Sewer Asset Management Plan.	Follow the model in the WAMP and build document.	Ahead of future regulations on this topic.
Continue to update and improve the GIS system.	Data review based on infrastructure age, rate of failure, and failure consequence.	Priority based reinvestment to ensure long-term reliability.



- Operational Resiliency (OR), Priority 6, Rating 3
  - **Operational Resiliency** focus is to ensure utility leadership and staff work together to anticipate and avoid problems. Proactively identifies, assesses, establishes tolerance levels for, and effectively manages a full range of business risks (including legal, regulatory, financial, environmental, safety, security, and natural disaster-related) in a proactive way consistent with industry trends and system reliability goals.
    - **This category shares common theme with categories. Efficiency, with focus on organizational values, begins with data management.** Operational Resiliency, Operational Optimization and Product Quality improvements share common future performance indicators; it begins with properly tracking and trending the data.
  - Strength. WWU has worked well with the Engineering Division on efforts to date. Healthy efforts on GIS management, capital improvements, and operational improvements. The Water Asset Management Plan, rate structure, combined sewer improvements, capital improvement plan, and the bioenergy facility are examples of efforts and commitment in infrastructure resiliency.
  - Weakness. Very few tolerance levels exist for operations outside of specific regulatory standard. It is appropriate for an operation of this size to establish specific tolerances for internal control instead of relying on regulatory levels. Without a clear definition of what data should be used and what it means; it is difficult to identify said goals (benchmarks, operational set points) and utilize performance indicators for management.
  - Opportunity. WWU has the potential to become a premier leader in utility management. Once data management tools and solid, specific operational plans (SOP's, Asset Management Plans, etc.) are in place, the objectives and goals can be identified and performance easily gauged internally. Recommend the completion of the Water Asset Management Plan and then use the same model to proactively create a plan for the sewer system.
  - Threat. Three categories (Product Quality, Operational Optimization, and Operational Resiliency) share a symbiotic relationship as it relates to current inefficiencies tracking and managing data. Improvement or impairment in any of the three common focus categories shares a combined trajectory.

2019 Strategic Initiative      Operational Resiliency

Goals	Actions	Measure of Success
Implement a department wide data management program.	Purchase and build data for the tracking of operations and maintenance.	Establish internal controls and performance indication tools.
Establish operational tolerances.	Build and utilize department wide data management program in all categories.	Ability to operate and manage operations intentionally.
Utilize succession/staffing plan ensures proper staff resources.	Complete staffing / succession plan to establish internal staffing controls.	Sufficient and prepared staff for now and the future.

## 2019 WWU Annual Report Summary

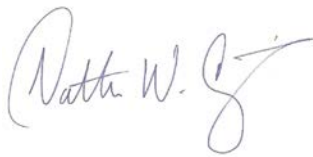
As a customer owned utility, we are committed to providing reliable, high quality water treatment services. The Annual Report is a tool to ensure effective management of essential service responsibilities to the citizens of the City of Wooster. We will continue to strive towards our mission of "Safety, Reliability, and Excellence!" to the extent if customers could choose their water utility, they would select Wooster.

The goal of this document is to provide an intentional, internal review of current operations and current goals and initiatives. While this review is not intended to be comprehensive, it is a review of current understanding of the reviewer. This report will serve as goals for the 2020 calendar year. Measures of success greatly depend on the ability to accomplish the goals referenced in this document. The focus of the 2020 plan and data presentation hinges on the ability to meet and implement the goals set forth in this document.

The WWU Annual Report will be provided to the Director of Administration for the dissemination to elected body and the general public. The document will also be published to the City of Wooster's webpage. The Wooster Utilities Manager will provide regular updates on department progress on goals and measures of success. The effort to share this document internally and externally will provide direction and the opportunity for public interaction and dialog. WWU is here to serve the community and success depends greatly on the ability share the message and efforts with the public in full transparency.

WWU welcomes questions and comments the Annual Report and the general management of services provided. Please feel free to contact:

Nathan W. Coey, Wooster Water Utilities Manager



330-263-5284

Email: [ncoey@woosteroh.com](mailto:ncoey@woosteroh.com)



## 2019 WWU Annual Report Executive Summary

Dear Mayor, City Council, Administration and the public we serve,

I am pleased to share with you the Wooster Water Utilities (WWU) 2019 Annual Report. The goal of this report is to condense all progress, projects, challenges, and accomplishments during the 2019 calendar year. In review, 2019 was a very successful year in the overall mission in our pursuit of “Safety, Reliability, and Excellence!” The City of Wooster embodies a proud tradition with a promising future. I see that same symbolism in WWU. When you take a drink of water or run a load of laundry, please know there is a staff of 32 individuals that work around the clock to make clean water a reality.

The Water Production Facility (WPF) is a life sustaining resource for this community with a plentiful supply of water for now and the future. Water is a finite resource that is necessary to sustain life as we know it.

### WPF Data Highlights

- The Water Production Facility was 100% compliant with all federal and state regulations.
- The Water Production Facility treated and delivered 1.08881 billion gallons of drinking water to the customers. The average daily flow production in 2019 was 2.98 million gallons, or 48.85% of the facility design capacity of 6.1 million gallons per day. Compared to 2018 totals and averages, 2019 indicates a total flow increase of 7.99% to the total and average. The facility was designed with the use of 87 gallons per day / capital, at current flow rates the population equivalent is 34,253.
  - The ratio of employee to annual total gallons treated is equal to 136 million gallons / employee or an 8% increase compared to 2018 data.
  - The 2018 AWWA Benchmarking Survey aggregate data for MGD of water produced per employee indicates a median of .23 and 75<sup>th</sup> percentile of .29. Based on the current WPF staff level, .373 MGD per FTE is the average based on 2019 data or a 7.5% increase from the previous year. This means that less than 25% of survey participants are at or less than our current staffing level.
- The operation and maintenance cost per million gallons treated is equal to \$2,778.41 or \$2.78 to treat 1,000 gallons. Compared to 2018 a reduction of 34% in operating expenses was realized. While this is a positive indicator in an often unpredictable environment, it indicates a commitment stewardship.
- Through collaborative city wide department efforts the non-revenue water percent has been on a decline since 2013. 2019 saw a NRW reduction to 19.95% from the 2018 average of 21.89% or an 8.8% reduction. Very respectable ratio and efforts.

The Water Resource Recovery Facility (WRRF) plays a vital role in the local water cycle. The water used by our customers has to be treated prior to natural water cycle entry. The focus of proper water treatment has made illness like typhoid fever and dysentery a matter of the past. The ingenuity of the facility correlates to the spirit of this community to utilize daily waste and create self-sufficient power.

#### WRRF Data Highlights

- The Water Recovery Facility was 98% compliant with all federal and state regulations. This is a calculation of days in compliance throughout the year. Related to high flows there were acute exceedances of ammonia exceedances in February and September totaling seven days. It is important to note, these exceedances were directly related to I and I related storm flows.
  - Across the most common pollutant levels, the facility is greater than 90% on removal rates. Additional indicators of exceptional quality : Nitrate/Nitrite 6.11 mg/l, total phosphorus .33 mg/l, total kjeldahl nitrogen 5.29 mg/l and biannual testing of discharge in a certified laboratory indicates no toxic fish mortality.
- The Water Resource Recovery Facility received, treated, and discharged 2.0497 billion gallons of recovered water back into the natural water cycle. The average daily flow in 2019 was 5.64 million gallons, or 75.17% of the facility design capacity of 7.5 million gallons per day. Compared to 2018 totals and averages, 2019 indicates a total flow increase of 6.7% and average daily flow increase of 6.6%.
  - The average daily flow design level was exceeded 48 times in 2019 directly related to the 46.79 inches of precipitation for the calendar year. Based on available data of metered water usage, nearly 43.65% of the annual flow rate is directly related to inflow and infiltration (I&I) sources. Based on traditional design data, the current facility should support a population equivalent of 70,000 people.
- The ratio of employee to annual total gallons treated is equal to 163 million gallons / employee or a 6.7% increase from 2018.
  - Based on the 2018 AWWA Benchmarking Survey aggregate data for MGD of wastewater processed per employee indicates a median of .19 and 75<sup>th</sup> percentile of .26. Based on the current WRRF staff level, .446 MGD per FTE is the average based on 2019 data or a 9.6% increase compared to the previous year. This means that less than 25% of survey participants are at or less than our current staffing level.
- The annual operation and maintenance cost per million gallons treated is equal to \$2,005.92 or \$2.01 to treat 1,000 gallons. Compared to 2018 a reduction of 6.9% in operating expenses was realized. While this is a positive indicator in an often unpredictable environment, it indicates a commitment stewardship.
- The facility created 4.3 mega-watts of electricity or 53% of annual power needs for both treatment facilities. The power created would be enough to power 441 homes over the course of a year. Compared to the previous year electric production was increased by 9.3%. The estimated cost savings of electricity production versus purchasing electricity from the grid is equal to \$220,520.

- The facility generated \$1,065,457.47 in revenue from the acceptance of third party waste to the recovery facility. Third party product acceptance provides the ability to create natural gas to power the electric generator. Compared to the previous year revenue was increased by 19.8%.
- A total of 2,466 dry tons or 16,325,550 gallons of class A biosolids were provided to local agricultural fields for soil enrichment and ultimate reduction of commercial fertilizers. Related to 2018 data there was an increase of 3% of total gallons hauled in 2019. The beneficial reuse disposal cost is equal to \$330 / dry ton or \$.049 / gallon.
- The WRRF facilitates an Industrial Pretreatment Program to meet regulatory requirements. In 2019 the WRRF experienced no spills, interferences or toxin discharges directly attributable to industrial dischargers. Annual inspections are conducted on the Significant Industrial User(s) in the collection system. Additional sampling occurs to ensure the dischargers to the public system are in compliance. In the event of non-compliance surcharges are issued when waste concentrations are over the local limits. In 2019, a total of \$443,190 industrial surcharge fees were issued a 4.7% increase from the previous year.

The Distribution, Collection and Meter Division (DCM) is the outward facing service arm of WWU. DCM continued the proud tradition of managing the challenges of underground infrastructure. While disruption in service can happen, it is often unpredictable. Regardless of time and weather the crew will respond and address repairs in a safe and expedient method. Without a vast network of pipes the treatment facilities can not meet the expectations of our customers.

#### DCM Data Highlights

- 2019 saw a NRW reduction to 19.95% from the 2018 average of 21.89% or an 8.8% reduction. Very respectable ratio and efforts.
  - Spring and fall leak detection program resulted in the correction of a total of 42 leaks and the elimination of an estimated total of 292,320 gallons per day. This attitude and approach supports the historical record low 19.95% of non-revenue water.
- Based on the 2018 AWWA Benchmarking Survey the entire department equates to 309 customer accounts per FTE. This data indicates WWU is less than the 25<sup>th</sup> percentile of 367 or the median of 492 accounts per FTE. If the DCM staff are used in this comparison a 990 accounts per FTE is the total.
- A total of 1,833 work orders were completed for the 9,892 customer accounts. This equates to a ratio of 18.5 service orders / 100 customer accounts. In 2019 there was a 26% increase of work orders compared to 2018.
- A total of 737 meter transmitting units (MTU's) were replaced in comparison to 145 meters replaced. 2019 data indicates an increase of 12% in MTU replacement and 16% decrease in meter replacement compared to 2018.
- A total of 396 accounts were disconnected due to delinquency. This represents 4% of the customer base. This is indicative of excellence in customer service and service collection efforts. A 2018 comparison indicates 397 accounts were disconnected due to delinquency.

- At total of 695 water main valves were exercised to ensure proper operation in the event of required isolation. This represents 15.2% of the total valves indicated in the GIS system. Compared to 2018 a total increase of 35.2% additional valves was exercised in 2019.
- A combined average of 53,168 feet of sanitary main line was preventively cleaned and televised. This represents over 6.23% of the current main line inventory. The ability to conduct this work in house provides an estimated cost savings of \$71,280 versus contractual fees. 2019 efforts resulted in an increase of 18.8% compared to 2018.
- In 2019 a total of 35 water main breaks surfaced and were repaired, same total in 2018. The 2019 unplanned main line water service disruptions are equal to 4.1 disruptions / per 100,000 feet of system inventory.
- The 2019 unplanned main line sewer service disruptions are equal to 2.1 disruptions / per 100,000 feet of system inventory. This data set totals main block and SSO/WIB events with a total of 18 or a 56% decrease compared to 2018.

The mission of the Utilities Department includes a healthy dose of challenge. In the pursuit of our mission of clean water, challenges must be converted to solutions and achievements. This report is intended to share some of our critical data points and completion of annual goals. Our success and progress is attributed to the fine people that work together with a common goal, to provide the best water and best service possible to our residents and utility customers. We will continue to strive for “continual growth and progress” as we seek to do our very best in every task. We will continue to make strides to maintain our water and wastewater infrastructure in a responsible and respectable manner. We appreciate your support as we meet every challenge with a resolve for solution.



*“Without continual growth and progress, such words as improvement, achievement, and success have no meaning.”* **Benjamin Franklin**