



2022 Annual Report

Mike Fritz, Manager

Water Production

Water Recovery

Distribution

Collection

Meters

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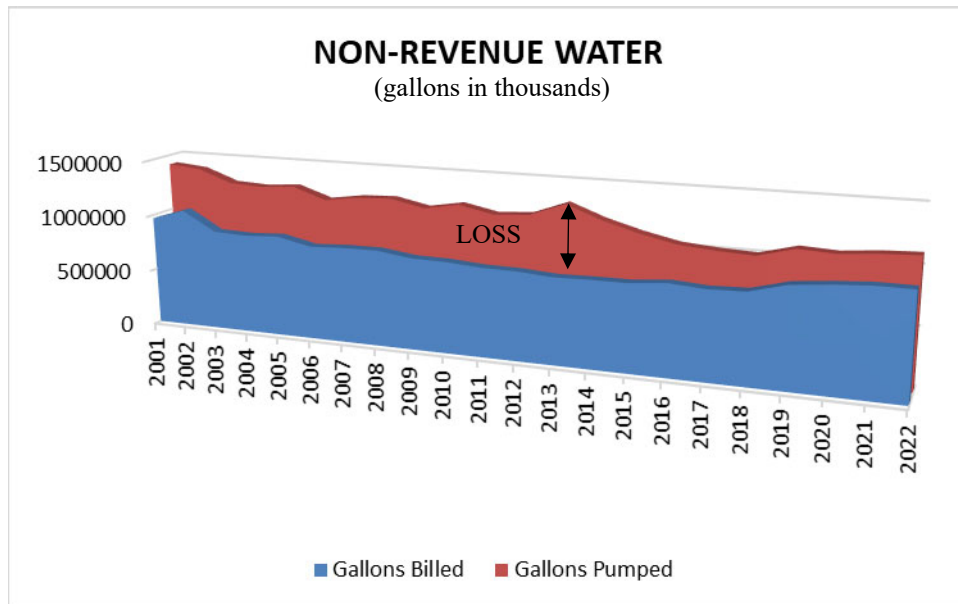
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WATER PRODUCTION FACILITY OPERATIONS SUMMARY

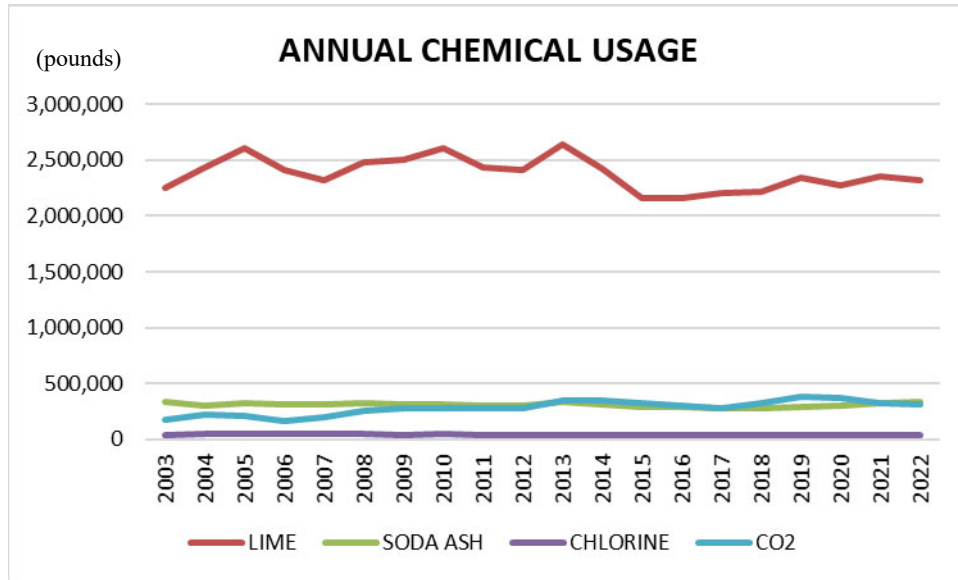
The City of Wooster Water Production Facility (WPF), now in its 25th year of operation, continues to perform well. The overall reliability of the plant systems has been excellent with the aid of our well-trained and attentive operations and maintenance staff.

The WPF pumped a total of 1.114 billion gallons of water in 2022. This number shows an increase of 12 million gallons from 2021. Unaccounted for water held steady when compared to the previous year. These losses are attributed to service line leaks, distribution line losses (main line valve leaks, main line leaks) and hydrant leaks. In 2022, the entire system was leak surveyed twice and 26 main leaks were identified and repaired.

Finished water pumped to the city in 2022 increased by 12 million gallons from the previous year for a total of 1.114 billion gallons. The high duty pumps sent an average of 3.06 million gallons per day of finished water into the distribution system. The peak-pumping day occurred on May 25 when 3.866 million gallons of finished water was pumped into the city. The average per capita usage of water in 2022 was 112 gallons per day (based on population data of 27,232).



The chemical cost per million gallons of treated water in 2022 was \$207.45 while the total cost of WPF operations and personnel was \$2,200 per million gallons of treated water.

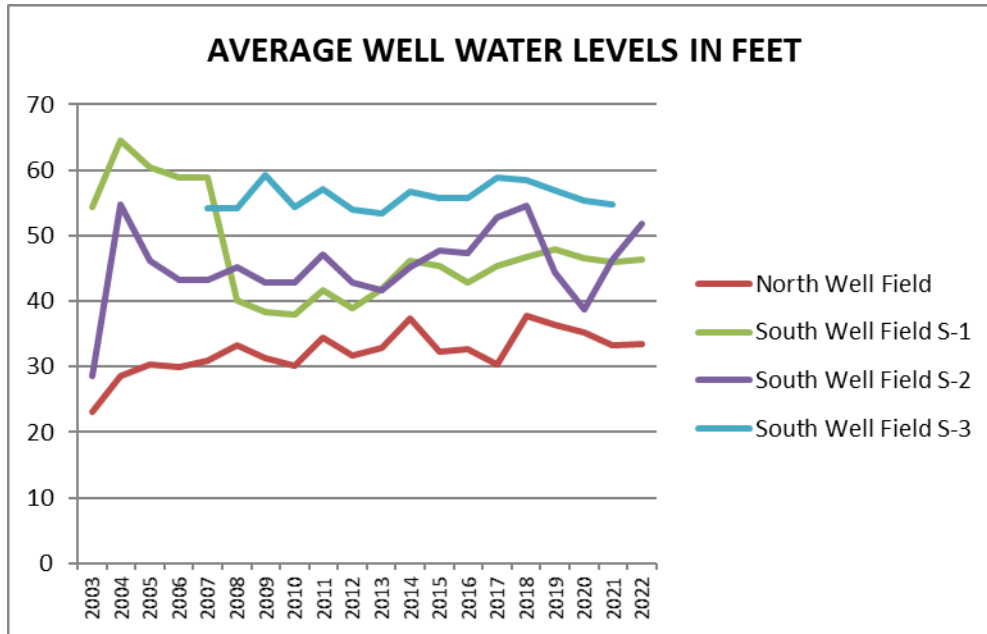


Annual Chemical Usage (in pounds)				
YEAR	LIME	SODA ASH	CHLORINE	CO2
2003	2,250,126	340,446	41,896	178,309
2004	2,436,907	306,616	46,896	219,410
2005	2,607,260	320,853	52,155	210,899
2006	2,417,440	311,940	45,883	170,141
2007	2,322,350	317,163	49,313	198,571
2008	2,482,800	330,000	44,856	261,200
2009	2,501,644	308,622	42,026	280,971
2010	2,604,814	309,347	50,066	279,712
2011	2,433,240	304,865	44,468	284,815
2012	2,411,607	306,815	43,374	285,115
2013	2,647,538	335,271	42,947	346,816
2014	2,424,685	315,308	40,206	352,278
2015	2,157,529	295,341	33,852	326,458
2016	2,165,766	287,543	39,353	305,167
2017	2,205,395	284,636	33,631	274,472
2018	2,213,615	278,182	35,966	326,574
2019	2,347,060	293,973	38,028	380,975
2020	2,275,302	304,033	37,045	367,164
2021	2,351,707	323,444	38,970	327,616
2022	2,326,375	333,850	44,269	319,448

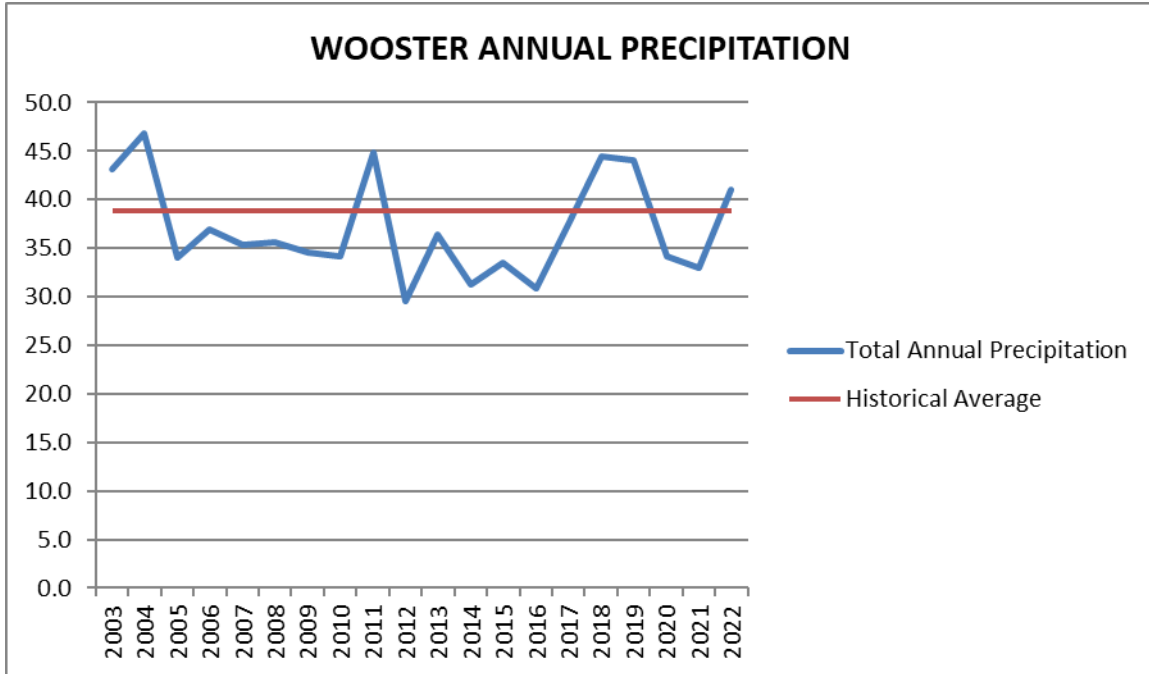
ANNUAL WATER FACILITY PRODUCTION				
Year	Total Million Gallons Finished Water	Average Chemical Cost Per Million Gallons	Average Hardness Raw Water mg/L	Average Hardness Finished Water mg/L
2003	1378	\$99.86	371	111
2004	1267	\$121.10	389	117
2005	1290	\$179.94	389	119
2006	1249	\$186.83	379	114
2007	1240	\$186.83	365	110
2008	1248	\$193.45	371	110
2009	1185	\$211.43	374	112
2010	1269	\$205.46	369	108
2011	1176	\$218.47	369	108
2012	1197	\$240.43	367	107
2013	1312	\$230.73	365	108
2014	1197	\$231.55	365	107
2015	1113	\$212.79	358	103
2016	1036	\$207.51	364	104
2017	1019	\$212.24	357	104
2018	1008	\$210.58	367	119
2019	1088	\$208.63	352	109
2020	1073	\$207.44	347	106
2021	1102	\$207.48	351	101
2022	1114	\$207.45	352	101

Sludge, a byproduct of the lime and soda ash softening process, is pumped to the sludge lagoon at the Water Resource Recovery Facility. There were 8.45 million gallons of lime sludge pumped to the WRRF in 2022. The sludge is held in a storage lagoon until it can be transported to farm fields for agricultural use.

The City wells are rotated monthly to allow for recharge periods and scheduled maintenance with the exception of S-1, which is used as an interceptor to prevent underground contamination from migrating into the other production wells. The North Well Field average water level was 33.4 feet. Its lowest level was in January at 21.8 feet, and the high was at 45 feet in February. The S-1 Well in the South Well Field averaged 46.4 feet of water peaking at 54.3 feet in February and a low of 39.8 feet in December. The S-2 Well in the South Well Field averaged 51.8 feet, peaking at 67 feet in October, and a low of 37 feet in December. The S-3 Well averaged 57.4 feet, peaking at 63.7 feet in February to a low of 50.1 in October.



The OARDC reports of 2022 show 41 inches of precipitation in the Wooster area compared to 33 inches in 2021. The average rainfall is 38.9 inches for the Wooster community. For the year 2022, the area was 2.1 inches above the normal precipitation.



Production of safe and satisfactory drinking water throughout 2022 was indicated by negative E-Coli bacteria results in samples of finished water collected from representative points of the distribution system. There were a total of 1,185 bacteria tests completed including Wooster distribution, new water lines, water line breaks, depressurization events, boil advisories, outside water systems and private wells.

South Well Field Contamination Management

Since 1985, the city has operated interceptor wells and packed media stripping towers to remove volatile organic contamination from the South Well Field. The interceptor wells protect the City’s production wells from the contamination plume migrating further into the South production wells. In addition, the operations staff conducts a semiannual testing event of monitoring wells in and around the South Well Field to record movement and levels of contaminants found in the ground water. Twelve test wells are measured for water depth, tested for turbidity, pH, conductivity and sampled for volatile organics. In 2022, the packed media stripping towers treated 202 million gallons of contaminated water then discharged into the Little Apple Creek.

Special Water Production Projects Completed in 2022

- Upgraded lime slaker control panels.
- Installed new chlorine bulk storage tank bringing total number of tanks to three.
- Installed emergency generator controls and switch gear upgrades.
- Completed lead and copper survey.

Water Production Goals and Objectives for 2023

- Replace rooftop HVAC unit at WPF.
- Install HVAC system at Buckeye Booster Station.
- Complete design for S-2 well building replacement.
- Replace Long Road booster station.
- Complete filter rehabilitation.
- Upgrade SCADA system.
- Implement Source Water Assessment and Study.
- Implement Performance Study, Settling and Filtration.

WATER PRODUCTION EMPLOYEE ROSTER
1020 Old Columbus Road

Utilities Manager:Mike Fritz

Water Production Supervisor: Robert King (WS-III, WT-I)

Laboratory Technician:Derek Sigler (WS-III, WT-I)

Operators: Jeff Buck
.....Kevin Cormany (WT-I)
..... Emma Fox (WS-II)
..... James Goon (WS-II)
..... Wanjin Kwon (WS-I)
..... Nathan Wichterman (WS-I)

Plant Mechanic:Rory Reed (WT-II)

Office Specialist:Pam Corbett

OHIO EPA CERTIFICATIONS

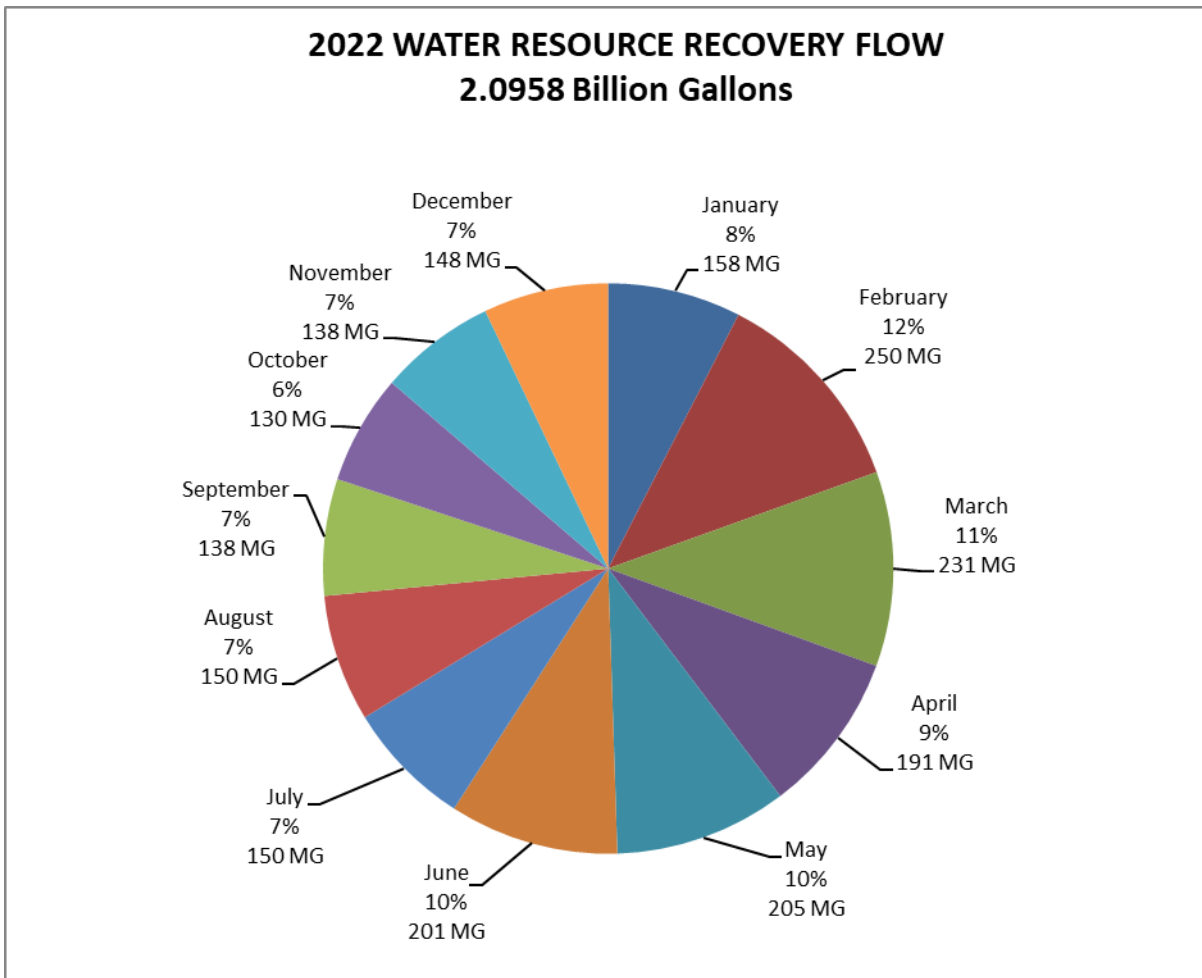
- WC – Wastewater Collection
- WD – Water Distribution
- WS – Water Supply
- WT – Wastewater Treatment

(Level IV is the highest level.)

WATER RESOURCE RECOVERY FACILITY OPERATIONS SUMMARY

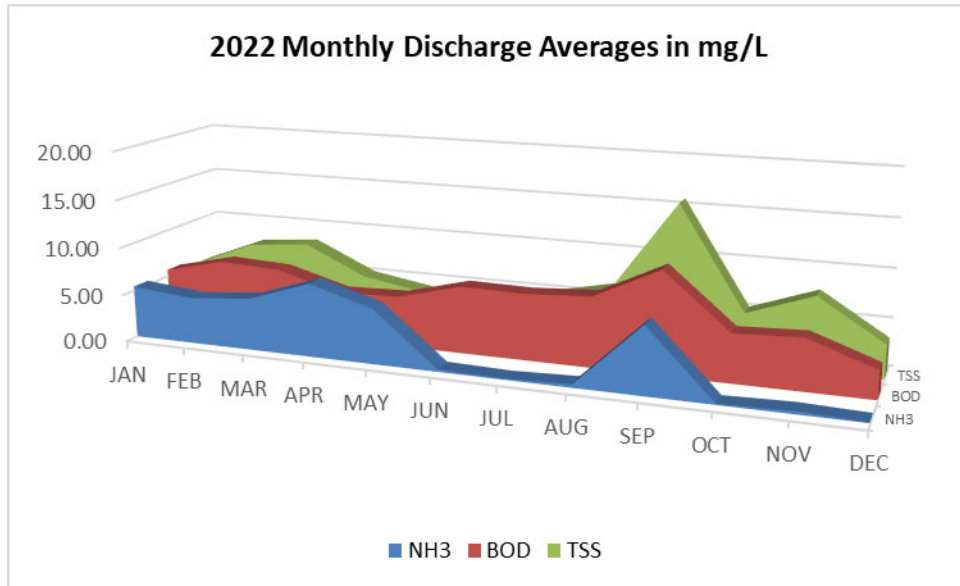
The Water Resource Recovery Facility (WRRF) treated a total of 2.096 billion gallons of wastewater with the average daily flow being 5.77 million gallons per day receiving a peak daily flow of 20.47 million gallons on February 18, 2022. This represents an increase of 376 million gallons over 2021. In addition, the plant removed 6.52 million pounds (design is 7.99 million pounds) of biological oxygen demanding (BOD) substances and 5.38 million pounds (design is 12.56 million pounds) of suspended solids from the wastewater. The flow design of the facility is for 7.5 million gallons per day with a hydraulic maximum of 27 million gallons.

In contrast to the wastewater treated at WRRF, the Water Production Facility produced on average 3.06 million gallons per day. The reasons for this obvious disparity of 2.69 million gallons per day between water produced and wastewater treated in 2022 is attributed to a combination of precipitation entering the WRRF through the combined sewer system, collection system infiltration and well water customers. The infiltration component of this disparity continues to be actively addressed.

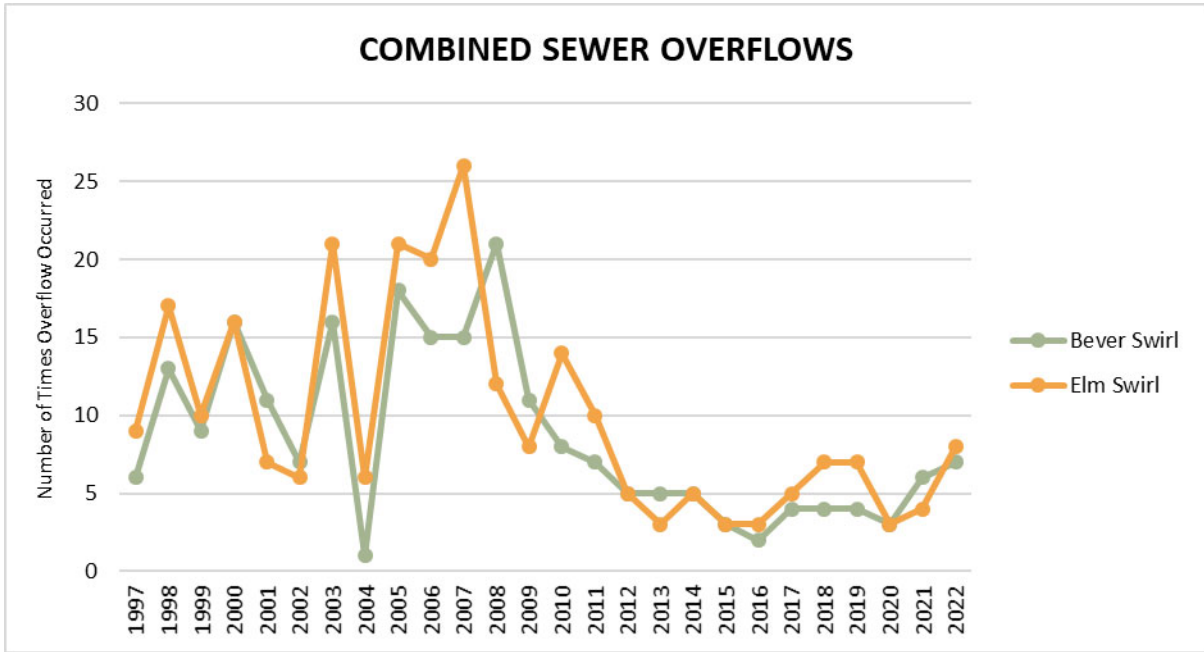


WRRF cost per million gallons of treated wastewater in 2022 was \$715 for O&M and the total cost of WRRF operations and personnel was \$1,278/MG.

The typical strength of wastewater is calculated in relationship to three basic attributes, Carbonaceous Biochemical Oxygen Demand (CBOD), Suspended Solids (SS) and Ammonia (NH3). An additional indication of wastewater strength, Chemical Oxygen Demand (COD) is used primarily at our industrial users because of the repeatability and speed in which information can be derived by testing. The average daily strength of the raw wastewater treated at this facility in calendar year 2022 was 18,224 pounds of CBOD, 15,036 pounds of TSS and 683 pounds of NH3. When comparing to the design of the facility, the plant is operating at 83% CBOD loading, 43% TSS loading and 37% Ammonia loading. In regard to removal efficiency of these parameters, the plant removed 98%, 98% and 78% respectively.



The ongoing sanitary/storm water separation projects continue to show improvement on controlling surface water from entering the City collection system and overloading the hydraulic capacity of the treatment plant. The combined sewer overflow structures that allow raw wastewater to enter the Apple Creek were activated 15 times during 9 separate storm events in 2022. As part of the City's long term control plan, the goal is to only activate the overflows when a 5-year storm event occurs.



Industrial Pretreatment/Biosolids Program

The City of Wooster's Sewer Use Ordinance and Enforcement Response Guide provide the legal authority to enforce the Ohio EPA approved pretreatment program of the city as well as US EPA regulations. A conscious effort is made through training, continued education and Ohio EPA's numerous websites and links to keep current with rule changes pertaining to pretreatment. Modification requests will be submitted for EPA approval, when deemed necessary.

The primary objectives and activities of the Pretreatment Program are to:

- Protect the environment and public health and safety.
- Protect the sewers and wastewater treatment plant from damage due to an accidental or deliberate discharge of pollutants.
- Provide safe working conditions for sewer utility workers.
- Locate all industrial users and identify the pollutants they discharge.
- Issue discharge permits to industrial users (IUs) classified by the POTW as a significant industrial user (SIU).
- Sample and analyze the wastewater discharge from IUs and conduct yearly inspections.
- Investigate instances of noncompliance with pretreatment standards and permit requirements.
- Collect samples in order to surcharge industries for high strength wastes.

Pretreatment operating procedures that are in place are adequate and are followed to meet program goals. All industrial sampling and reporting requirements were met this pretreatment year. Annual industrial inspections were completed in March 2022.

All industrial users that meet the criteria, as established by the EPA, of a Significant Industrial User (SIU) or Categorical Industrial User (CIU) are monitored for compliance with categorical and/or local limits for conservative and conventional pollutants. Additional sampling is done to ensure non-domestic wastewater dischargers are in compliance with local limits. Currently, the city has 9 permitted SIUs, 5 of which are CIUs, and monitors numerous other non-significant dischargers for compliance.

In addition to quarterly compliance sampling, several industrial users discharging higher than normal conventional pollutants are sampled weekly for Chemical Oxygen Demand (COD) and Total Suspended Solids (TSS). The analytical results of those samples are averaged for each month and a sewer surcharge for high strength waste is billed accordingly. These surcharge fees brought in more than \$604,890 last year.

Three industries were published in the public notices section of The Daily Record on January 10, 2023 for 2022 violations of either local City of Wooster limits or EPA pretreatment violations. Those industries were:

- Daisy Brand
- Artiflex
- Rayco

The City of Wooster Pretreatment Program is financed through the city sewer fund. No financing problems were experienced in this pretreatment year or are anticipated for the next pretreatment year. All financing needed for the administration of the program is available.

All U.S. and Ohio EPA reporting requirements for the WRRF biosolids program were met in 2022. In 2022, the WRRF contracted with Synagro to land apply biosolids. The equivalent of 907.67 total dry tons of biosolids was land applied in 2022.

Special Water Resource Recovery Projects Completed in 2022

- Rebuilt effluent pump #5.
- Henry Street lift station was switched to PLC control enabling it to be remotely accessed.
- Refurbished one of the UV disinfection units.
- Installed new biogas boiler in switchgear building providing redundancy.
- Set up TopView alarm software to be able to text the operators in case of major events/issues.
- Replaced Landia mixer in biophos tank with a new unit.
- Rebuilt Landia mixer.
- Provided onsite training for new operators.
- Hired a new plant mechanic.

Water Resource Recovery Goals and Objectives for 2023

- Maintain Compliance with NPDES Permit.
 - Modify process flows to improve ammonia/nitrogen treatment.
 - Reduce permit exceedances to zero.
- Switch two more lift stations to PLC operation and have float backup for level control to reduce call-ins.
- Improve biogas boiler to operate on methane. Add SCADA control.
- Streamline pretreatment testing for better efficiency in result tracking.
- Identify true capacity of the plant. Review limits and surcharges accordingly.
- Continue staff training and professional development.
 - Update lockout-tagout, bloodborne pathogen and PPE training.
 - Maintain 100% staff certification.
 - Update/write SOPs for all processes.
- Replace obsolete and worn equipment.
- Complete VLR #5 improvements.
- VLR 1&2 Improvements - Complete design and bidding. Start Construction.
- Headworks Improvements - Complete design and bidding. Start construction.
- ADS/Bioenergy Plant - Complete design and bidding. Start construction.
- Improve facility plans.
- Complete installation of new RAS pump for clarifiers 3&4. (Replaces a 25-year-old pump.)

WATER RESOURCE RECOVERY EMPLOYEE ROSTER
1123 Old Columbus Road

Utilities Manager:Mike Fritz

Master Operator:Chad Frank (WT-III)

Laboratory Technicians:.....Cody Bower (WT-III, WS-III)
..... Donavon Reichert (WT-III, WS-II)

Pretreatment/Biosolids Coordinator: Adam Wilford (WT-III)

Operators: Dana Bower (WT-I)
.....Patrick Carnahan (WT-I)
..... Mike Hershberger (WT-I)
..... Mike McCaskey (WT-I, WS-I)
..... Coleman Quay (WT-II)
..... Charlie Scott (WT-I)

Plant Mechanic: Randy Harper
..... Robert Parsons (WT-I)

Office Specialist:Pam Corbett

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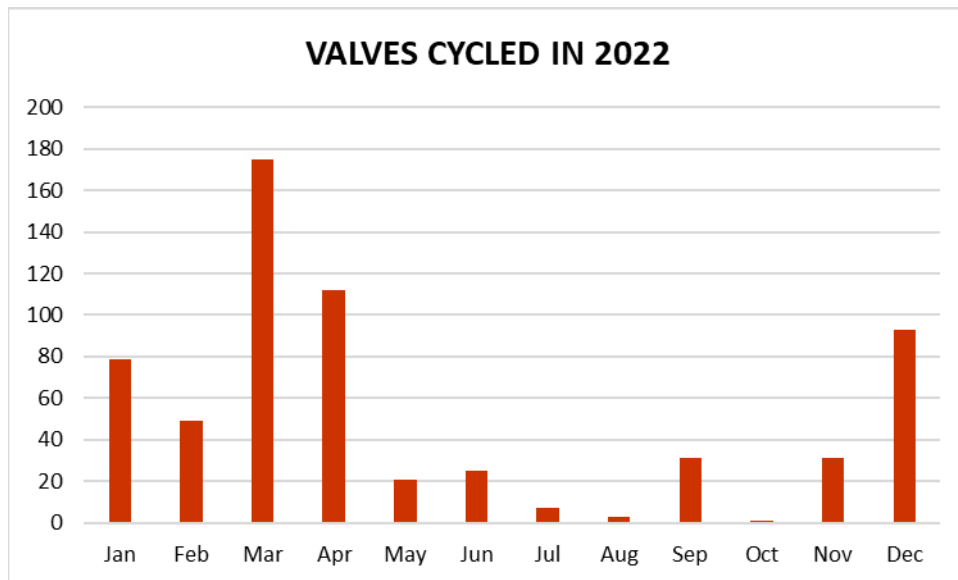
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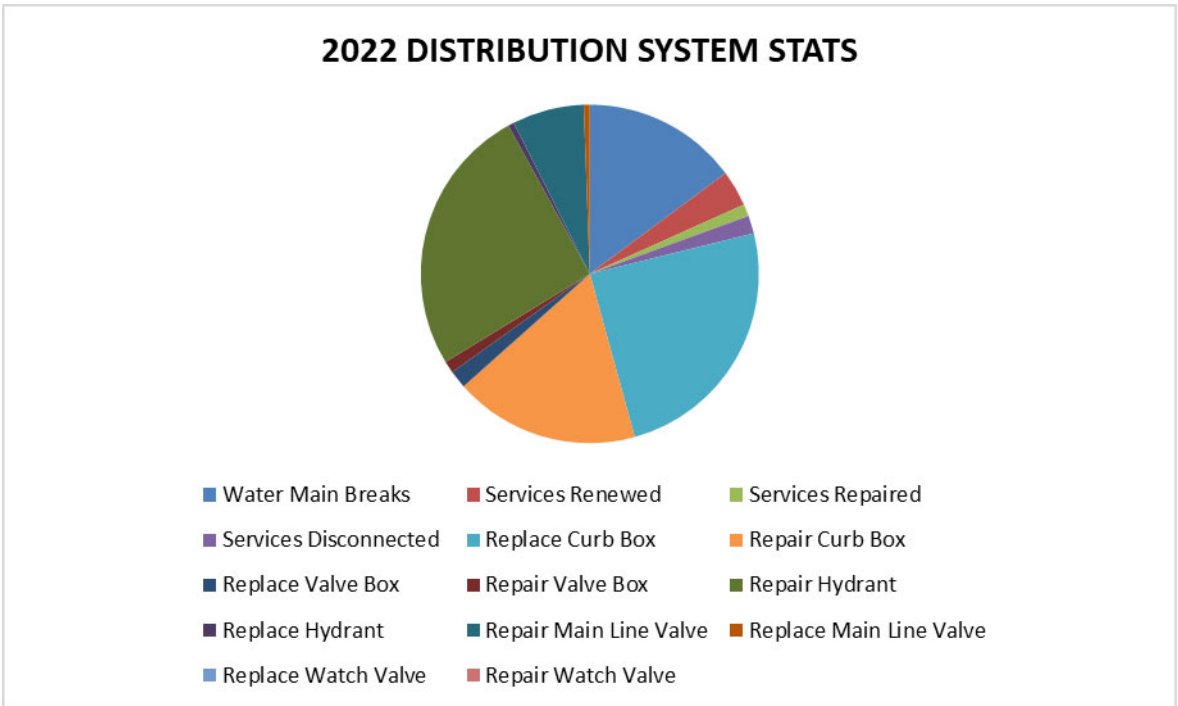
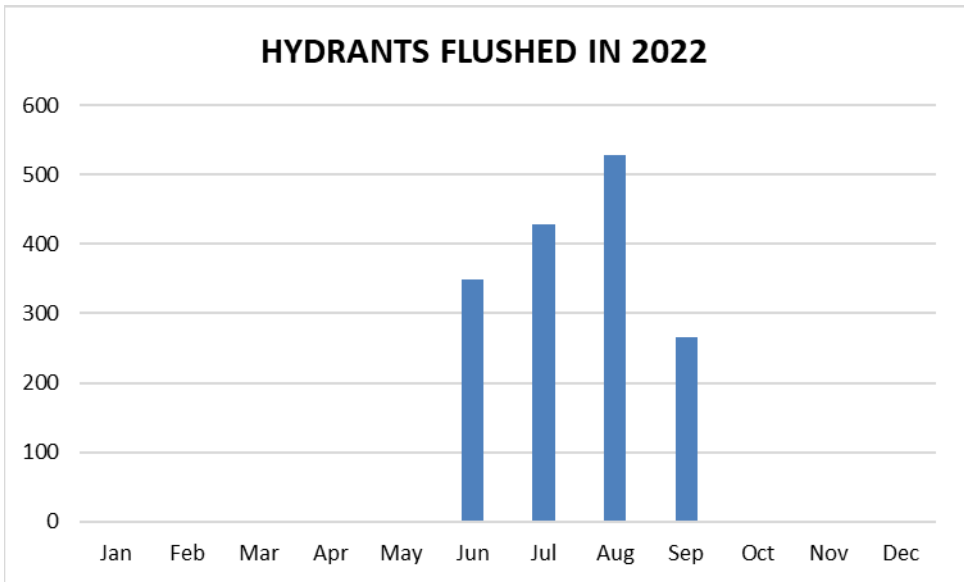
DISTRIBUTION & COLLECTION OPERATIONS SUMMARY

The Distribution & Collection Subdivision (D&C) is responsible for the maintenance and operation of all the City's underground water utilities and the metering system. As part of the ongoing water loss reduction program, D&C completed 2 full sonic leak detection survey rounds of the distribution system.

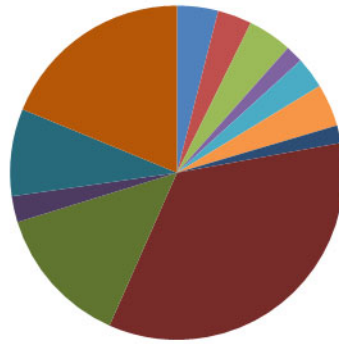
2022 Distribution & Collection Highlights

- 627 Water main valves cycled
- 45 Hydrants repaired
- 74 Curb boxes repaired or replaced
- 26 Main breaks repaired
- 1571 Hydrants flushed
- 5.9 Miles of sewer mains jetted
- 6 Miles of sewer mains televised
- 2.2 Miles of sewers root treated
- 391 Delinquent water shut offs
- 1,388 Meters work orders processed



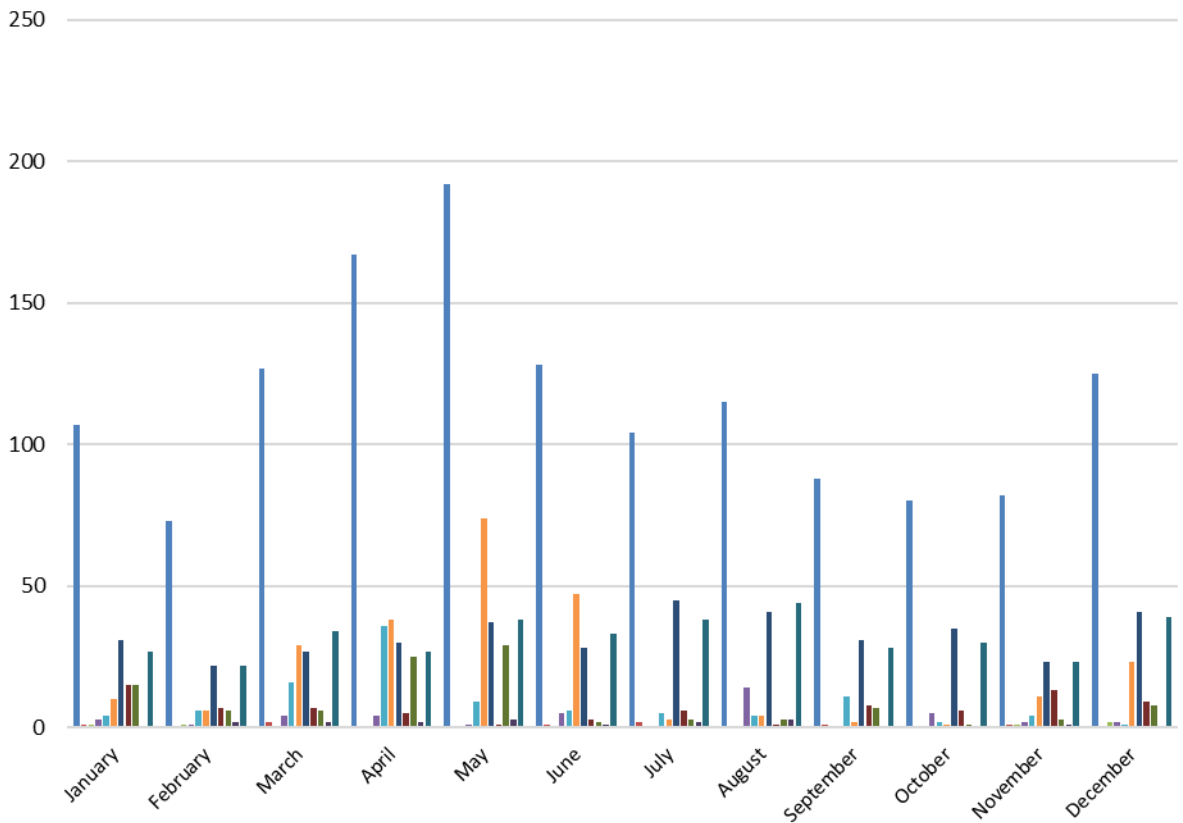


2022 COLLECTION SYSTEM STATS



- Sewer Mains Jettied
- Sanitary Main Backups
- Sanitary Mains Root Cut
- MH/Casting Repair/Replace
- WIBs Reported
- Sanitary Mains Televised
- Grease Treat/Check/Flush MHS
- Install Sanitary MH
- CSOs and SSOs
- Sanitary Mains Root Treated
- Sanitary Mains Repaired

2022 METER STATS



- Work Orders
- Meters Repair/Replace
- Delinquent Warning
- Check Curb Box
- MTUs Replaced
- High Use/Low Pressure
- Frozen Meter
- Water Off Delinquent
- Water Off Misc
- New Install
- Restore Service

Distribution & Collection Goals for 2023

- Jet 10,000 feet of sewer main
- Televis 2 miles of main
- Switch more focus to sewer maintenance to reduce overflows and WIBs
- Flush every hydrant in distribution system
- Cycle 20% of main water valves
- Complete 2 leak detection surveys
- Partner with WRRF and Engineering to investigate illicit sewer connections and reduce water intrusion into the sanitary collection system

DISTRIBUTION & COLLECTION EMPLOYEE ROSTER
1514 West Old Lincoln Way

Utilities Manager:Mike Fritz

Distribution & Collection Supervisor:..... Milan Steiner (WD-II, WC-II)

Utility Operators: John Bender (WD-II, WC-I)
..... Ed Flinner (WD-II, WC-II)

Utility Operator Trainees: Jason Boreman (WD-I)
..... Barb Hardin (WD-I, WC-I)
..... Ben Martin (WS-I, WT-II)
..... John Rutter (WD-I, WC-I)
..... Rick Thompson (WD-I)

Meter Technicians: Joseph Geitgey (WD-I)
..... Jerry Hartzler (WD-II)

Office Specialist:Pam Corbett

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Wooster vs Ohio Water Utility Rates

In the latest Ohio EPA rate survey (2019), when comparing Wooster's water and sewer rates to all other systems in Ohio; Wooster rates fall below the 50th percentile. Wooster's average annual cost is \$1,125 for water and sewer compared to \$1,446 for the average cost of the systems surveyed (based on 7,756 gallons used per month).

