We treated 1,008.4 million gallons of residential, commercial and industrial wastewater, with an average flow of 2.759 million gallons per day (MGD). Removal rates of 96.2% for carbonaceous biochemical oxygen demand, 98.1% for total suspended solids, and 96.4% for ammonia have been achieved consistently through the treatment plant.

Starting April 24, 2017 we began adding ferric chloride for phosphorus reduction. We had no problem consistently meeting our new phosphorus limit of 1.0 mg/l, which we are required to achieve compliance by October 31, 2018. No later than July 1, 2030 we have to achieve the wasteload allocation of 0.913 kg/day or 0.08 mg/l. This will require a major plant upgrade in order to meet the limit of 0.08 mg/l that is presently required by the OEPA.

Over 175 dry tons of sludge were removed from the Wastewater Treatment Plant between March 1, and December 15, 2017. This sludge was applied to farm ground as fertilizer.

Our Supervisory Control and Data Acquisition (SCADA) system failed on September 4, 2017. Due to the SCADA system not working we had to manually operate the wastewater treatment plant (WWTP) around the clock. Which required the staff to go from one 8 hour shift to three 8 hour shifts per day until November 13, 2017. The system upgrade cost was $120,000.

We applied for and received two grants from the Ohio Public Works Commission (OPWC) with the aid of Ohio Valley Environmental Engineering, Inc. These grants pay for 69% of estimated cost and the City is responsible for the remaining 31%.

The first OPWC grant is replacing 1,700 feet of sanitary sewer (SS) on the north end of town and upsizing the existing line from a 10-inch and 12-inch to a 15-inch line at an estimated cost of $595,100. This project is replacing and upsizing 900 feet of SS that was installed in 1936. All 1,700 feet of SS is complete and in operation. The contractor will be back in early spring to complete restoration.

The second OPWC grant is replacing our ultra-violet light (UV) disinfection system at the WWTP. The total estimated cost is $427,000 and won’t be operational until April 1, 2018.

We traded in our old 2001 (9) yard jet/vac truck for a new 2017 (11) yard jet/vac truck. This truck is used to clean the sewers and we can also hydro-excavate with it when needed.

The operation of the pretreatment program continues to be successful. The occurrence of upset, interference, or pass-through violations is almost nonexistent. Multiple industrial wastewater effluent samplings and facility inspections are conducted each year. This year, we purchased a new portable sampler to replace an aging unit, and ensure reliable sampling during these events. We are also currently in the process of reviewing and revising our sewer use ordinance so that we may continue to successfully implement and enforce all aspects of the city’s pretreatment program and satisfy requirements set forth by the Ohio EPA.
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The City of Wilmington’s “Storm Water Management Program” has been renewed, as required by Ohio EPA. Although simplified in its approach, the requirements of the plan will continue to take more and more time, effort and capital to implement. Several ordinance changes are taking place because of this.

The Wastewater Department continues to take the proactive approach to safety by conducting periodic safety meeting and enforcing the policies already in place. We believe the City’s greatest assets are its’ employees and the citizen they serve, and do not wish to jeopardize the health and well-being of either.

Laboratory

The Wastewater Laboratory provides qualitative and quantitative data for use in complying with our EPA permit requirements and for use in decision making. To be valuable, the data must accurately describe the characteristics and concentration of constituents in the plant samples. Our lab employs a comprehensive QC/QA program designed to provide validation of our results.

Decisions based on process changes, plant modifications, or the construction of a new facility will be based upon the lab generated results. The financial implications of such decisions dictate that extreme care is utilized in our testing. We have received the highest ratings in the annual Federal DMRQA audit and the OEPA inspection again this year.

Our Senior Lab Analyst Stan Bolka retired this year after 27 years of service with the City of Wilmington and will be missed. We wish him the best of luck, health and happiness in his retirement.

Maintenance

The maintenance and sewer crew employees were busy maintaining the operation and management of the sanitary and storm water collection systems, which consist of 76.8 miles of sanitary and over 100 miles of storm sewers, thirteen lift stations, over 2,000 manholes, over 2,400 catch basins, driveway approaches, sidewalks, and curb replacements, and the following:

- Replaced 400 ft. of 15-in. N-12 storm sewer (STS) on Mulberry and Fulton
- Replaced 320 ft. of 10-in. STS in field behind 515 South St.
- Joint pipe patch STS at Jefferson & Mayfair
- Installed STS junction box at Mayfair & Kenyon
- STS pipe patch repair at Lorish & Lincoln
- STS pipe patch repair at South & Sugartree
- STS pipe patch repair at 420 Forest lake
- Replaced 12 ft. of 4-in. lateral at 308 Curtis
- Replaced 6 ft. of 4-in. lateral at Denver Park
- Replaced 6 ft. of 6-in. lateral at 60 Jodi Lane
- Replaced 10 ft. of 4-in lateral at 766 Bernice
- Installed back flow preventer in manhole on lateral at 530 Lincoln
- Replaced 18 ft. of 4-in. lateral at 422 S. South
- Replaced 6 ft. of 4-in. lateral at 529 Prairie
- Replaced 20 ft. of 8-in. sanitary sewer (SS) at W. Short
- Installed new 220 ft. of 8-in. SS main at Airborne Connector Rd.
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**Maintenance (cont.)**

- Installed 9 Sentry vents to prevent inflow in SS manhole lids
- Sealed 36 SS manhole castings in Timber Glen subdivision
- Cleaned 122,000 ft. of SS/Televised 5,000 ft. of SS /Televised 2,000 ft. of SS laterals
- 1,104 OUPS tickets processed
- 37 sewer Inspections
- Street Sweeper removed 1,425 cubic yards of debris
- Cleaned 2,000 ft. of Lytle Creek
- Replaced 17 catch basins (complete)/Installed 2 new catch basins at Denver Williams Park
- Replaced 11 catch basins (partial)
- Formed and poured 16 yds. of concrete for headwalls at the landfill
- Replaced and set 15 manhole castings & lids
- Poured 367 sq. ft. of concrete pad/Replaced 190 ft. of aprons & gutters
- Replaced 2 drive approaches (270 sq. ft.)/Replace 458 sq. ft. of sidewalk/Replaced 171 ft. of curb
- 5,328 ft. of sanitary line root treated
- Installed rebuilt Primary Effluent Rotating Assembly, rebuilt check valve, cleaned air relief valve, laser aligned motor to pump.
- Installed Flygt 3102 5hp pump submersible in Primary #2 sludge pit.
- Rebuilt (2) Turbotron blowers used on round sludge holding tanks, Installed rebuilt electric motor, and one Stoddard silencer.
- Installed new (warranted) 2hp Flygt 3045 sample pump.
- Repaired Trickling Filters: Replaced stabilizing cable, remove loose/broken water shields and, reinstalled, removed loose/cracked/deteriorated concrete repaired with hydraulic cement.
- Replaced main scraper chain and cross collector chain, several 24 ft. flights and several 4 ft. flights on storm flow tank #4. Also replaced motor/gear reducer coupling, repair skimmer pipe.
- Rebuilt Labconco commercial laboratory dishwasher including: tap water inlet valve, pure rinse water valve, drain valve, solenoid, control board, ribbon cable and power cord.
- Installed new ferric chloride chemical addition pumping system including: plumbing, electrical, new radar level control, and safety shower. Repaired inlet/loading valve/piping on chemical tank.
- Installed rebuilt intermediate gear drive, gear reducer, and motor on secondary tank #2. Also drained, cleaned and inspected tank.
- Installed new reducer to intermediate chain and sprockets on Secondary #1
- Cleaned, rebuilt, and repaired ultra violet disinfection system. Used 30 new lamps, 640 O-rings, and 5 new cannon plugs.
- Installed new 18” mag meter, 18” dresser coupling, welded 18” ductile flanged spacer into primary effluent piping, control console and wiring in secondary building.
- Replaced tires, wheels, starter on portable Stanley hydraulic unit.
- Replaced fuel pump and battery on Wisconsin portable trailer mounted 3” pump.
- Replaced 6 cylinder engine, battery, muffler, and carburetor on 1990 model 4” sludge disposal pump.
- Repaired 1988 Hobbs Reel Rain field irrigator discharge hose, (reduced hose length by 300 ft.) due to wear and repaired Honda gas motor that drives unit.
- Replaced radio/sim cards/controller chips at various lift stations throughout the city to upgrade our radio telemetry monitoring system.
- Replaced carburetor on Honda gas engine on 150 gallon portable water tank.
- Replaced carburetor on portable manhole ventilating fan unit.
- Repaired deck, replaced rear wheel fork, blade tower, belts, PTO switch, PTO deck gear box on 2008 Grasshopper mower.
- Replaced various wear items on Gorman Rupp pumps in the plant and throughout the city lift stations including: Impellers, wear plates, mechanical seals etc.….  
- Installed new pump, motor, belts, and discharge check valve at 68 lift station.
- Installed new discharge check valve at DP&L/Fire Station #2 lift station.

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**Submitted by:**  
Harry J. McVey, Superintendent  
Wastewater/Stormwater Department