City of Newark, Ohio
Division of Water and Wastewater
2019 Annual Report

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Division of Water and Wastewater

City of Newark, OH

"To provide essential services that protect public health, preserve the environment and support sustainable growth of the community"

Shaping the future of the utility was the primary focus for 2019. As the Long-Term Control Plan schedule was being negotiated throughout the later part of the year, it is clear that how those projects are scheduled will certainly affect all aspects of the utility operation. Once the schedule is finalized in early 2020, the plan will drive the future work on infrastructure throughout the City for the extended future. Implementing the plans for this work and planning upgrades to the equipment at the treatment plant will be the focus of our work for this next year and well into the future.

Even though we are continuing to progress towards meeting federal mandates for CSO controls, the approval of the Long-Term Control Plan has been a long term process. In spite of this, two major project designs were completed in 2019. The Optimization and Siphon Improvement project was bid and construction will start in the second quarter of 2020. This project is designed to optimize the amount of flow that can reach the plant during a rain event. The second major CSO project to have design started in 2018 was the Fourth Street Separation project. Bids were accepted for this major project located within the downtown area and work will begin in the 1st quarter of 2020. The project will replace existing combined sewer lines with new sanitary and storm sewers. New water lines will be installed as part of this project as well. This project stretches along 4th Street from Granville Street on the North to National Drive at the south.

We are continuing to develop and expand our backflow prevention program since taking it over from the County a little over two year ago. We have more than doubled the number of backflow devices attached to our system providing an extra layer of protection for our customers. The design for a project to upgrade the existing control system at the water plant was nearing completion at the end of 2019 with construction slated to begin in early 2020. Finally there was a major upgrade of the anaerobic digesters at the WWTP. Upgraded digesters were put on-line in late 2019 and are currently completely operational.

All of our projects are providing better infrastructure which ultimately meets our goal of providing support to the community for sustainable growth. None of the work is possible without an adequate budget. Maintaining a budget that supports this work while keeping the rates affordable is an on-going task. Long-term planning on the execution of our large capital projects is vital to this affordability. We must continue to be effective and efficient in our utility operation so that we can continue to provide quality, reliable service at rates that citizen can afford. We feel confident that our goal of quality and reliable service at an affordable rate will be attainable with a little good planning and personnel dedicated to provide top quality service.

Financial Pages

"*How you pay for it matters*"

Wastewater Department		**Water Department**	
Active Customers	17,193	Active Customers	18,696
Million Gallons Treated	2,281	Total Volume Billed (MG)	1,904
Miles of Sewer Line	182	Total Water Produced (MG)	2,490
Miles of Combined Line	57	Miles of Water Line	195
Lift Stations	16	Booster Stations	3
		Storage Facilities	2

Expenses: *(excluding capital items and projects)*

Wastewater – Operating Expenses		**Water – Operating Expenses**	
Administration	$2,256,594	Administration	$2,298,710
Treatment	$2,784,942	Treatment	$2,635,506
Sewer Maintenance	$ 504,406	Distribution	$1,225,102
Environmental Lab	$ 332,575	Meter Shop	$ 202,659
Debt Retirement	$3,406,791	Debt Retirement	$ 562,226
Total	**$9,285,307**	**Total**	**$6,923,612**

Revenues:

Sewer		**Water**	
Rental *(sewer service)*	$3,484,659	Sales	$5,505,671
Administration	$1,358,314	Bulk Water	$ 21,754
Debt Retirement	$2,907,650	Delinquent	$ 213,347
Surcharge	$ 484,433	Meters	$ 13,528
Capacity Fees	$ 39,984	Permits	$ 104,182
Trucked Wastes	$ 799,600	Capacity Fees	$ 18,738
Transfers	$ 325,528	Deposits	$ 162,619
Miscellaneous*	$ 65,812	On Account	$ 348,238
		Miscellaneous*	$1,448,264
Totals	**$9,465,980**	**Totals**	**$7,836,341**

Includes $1,102,652 in transfers from sewer fund and $202,000 from stormwater for water administration costs.

Debt Service Cover Ratio/% Debt/Working Capital Days Wastewater – 2.8, (36%), 243 Water – 13.9, (25%), 82

Water Rate Comparison for 6000 Gallons of Usage (8 Units):

	Granville	*Heath*	*Johnstown*	*SWLCWS*	*Cols*	*Lancaster*	*Newark*
Water	$32.52	$46.72	$48.08	44.73	33.82	$54.86	$24.24
Wastewater	$39.90	$48.81	$48.04	93.38	44.03	$71.30	$32.51
Total	**$72.42**	**$95.53**	**$96.12**	**138.11**	**77.84**	**$126.16**	**$56.75**

Major Facilities

The Division of Water and Wastewater is made up of six departments at four different base locations throughout the City. Other Facilities include 16 Sanitary Lift Stations, 3 Water Booster Stations, 2 Water Storage Facilities and 2 Auxiliary Water Wells.

Water Treatment Plant:
North Newark on the North Fork of the Licking River, 164 Waterworks Road.

Wastewater Treatment Plant:
East Newark on the Licking River at East Main Street and Ecology Row.

Water Distribution & Sewer Maintenance Complex:
East Newark, 1275 East Main Street.

Water Administration Office & Meter Shop:
Downtown Newark, 34 South 5th Street

Water Office

Goals – 2020

- Formulate a non-revenue water loss control plan with a focus on auditing our larger meter (>2") accuracy both in the field and in billing.
- Implement a $1.00 fee to encourage email bill presentment and online payments with an emphasis on autopay signups.
- Incorporate handheld devices used in the field for MTU diagnostics and programming with a web application geared toward service order updating in the field by the Meter Shop.
- Reestablish Customer Service Skills Training to assist us with our goal of providing exceptional customer service.
- Adjusting the front office lobby area to provide a safer environment for employees.

Account Delinquency Report

Amount Delinquent as of 12-31-2019 (>90 days)	$152,000
Amount Delinquent as of 12-31-2018 (>90 days)	$152,000

Delinquent Collection: Delinquent amounts are being collected through withholding of services, placing liens on properties and in-house collection services.

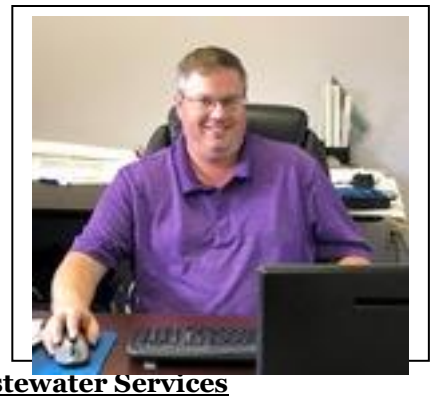
Accomplishments – 2019

- Partnered with Raftelis Financial Consultants to evaluate our operational efficiency and effectiveness of the meter-to-cash operations, plus an analysis of non-revenue water loss. We'll take their recommendations into the year 2020 to improve in both these areas.
- Worked with Systems Analyst to optimize use of our metering and billing data. Monthly reporting created for our larger meter usage.
- Currently have 9456 online registered accounts. These customers are able to manage their accounts via the web.
- After our fourth year of acquiring the Backflow Program, there have been approximately 800 unidentified devices now added for commercial properties.
- Upgraded/installed 827 new meters.
- Finalized 3230 accounts and activated 3191 new accounts. Currently have 18,987 active accounts with 6490 of those being rentals.
- Recuperated $55,995.64 in unpaid services through liens placed with Licking County
- Customer Service answered 14,092 phone calls with an average wait time of 1:27. Busiest phone day was 2/4/19 with 94 answered calls. Wednesdays are the busiest day of the week with 11:00am -11:59am being the busiest time of day.

New Faces in Water Administration

Customer Account Rep – Chloe Payne

Project Engineer – Adam Bernard

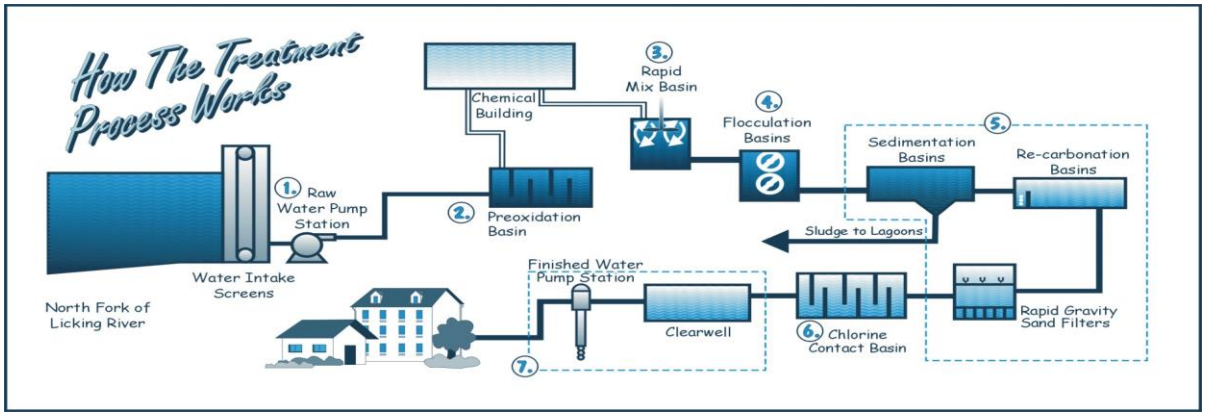


Top 5 Consumers of Water & Wastewater Services

Owens	519,530 gpd
Anomatic	432,737 gpd
Tamarack Farms Dairy	204,608 gpd
Licking Memorial Hospital	109,536 gpd
Mobile Power Wash (Industrial Water)	61,828 gpd

Water Treatment Plant

ANNUAL REPORT 2019



Ohio EPA Chemical Monitoring Averages for 2019

pH	8.83	S.U.
Phen. Alk.	3.0	mg/L
Total Alkalinity	43.2	mg/L
Stability	-2.81	mg/L
Hardness	107	mg/L
Phosphate	0.75	mg/L
Free Chlorine	1.19	mg/L
Combined Chlorine	0.13	mg/L
Fluoride	0.87	mg/L
Nitrate	1.36	mg/L
Turbidity	0.06	NTU
TOC (raw)	2.43	mg/L
TOC (finished)	1.18	mg/L
Lead (90^{th} percentile)	0.00	ug/L
Copper (90^{th} percentile)	0.00	mg/L
PFOA/PFOS (raw)	< 2.0	ng/L
PFOA/PFOS (finished)	< 2.0	ng/L

Production Data for 2019

Daily Average Production	6.81	MGD
Yearly Total Production	2,280.71	MG

Major Project Goals for 2020

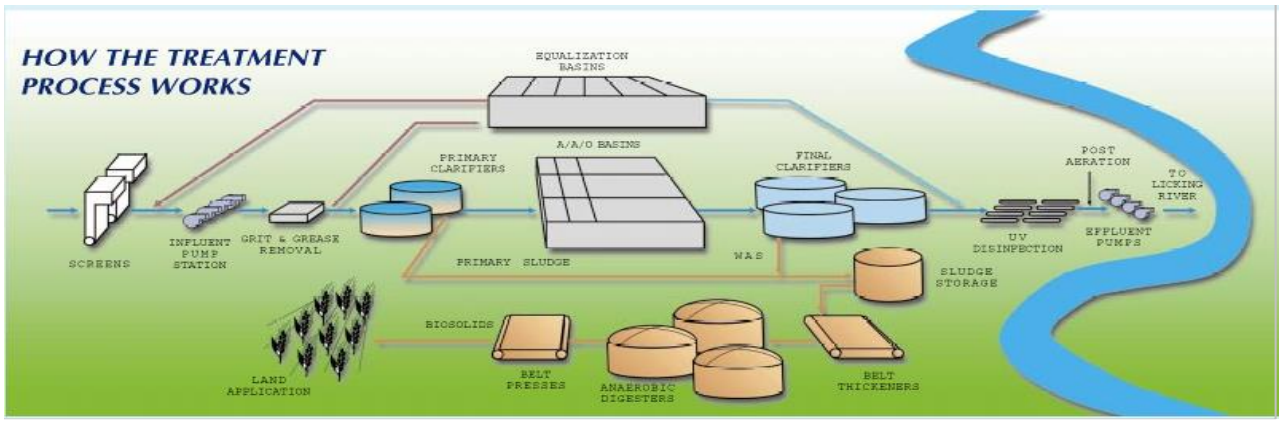
- Lime Sludge lagoon #3 hauling
- UV Control Touch Screen replacement.
- River Dredging
- Bid opening for PLC upgrade & fiber optic cable project
- In-house Filter Floor renovation
- Flat & Metal Roof Replacement, Sludge & Return and Admin buildings
- Replace remaining 2% lights & parking lot lights with LED
- Lead and Copper Sampling
- Lime Silo Painting

Major Projects Completed in 2019

- South Intake New Traveling Screen Installed (picture to the right)
- Roof Replacement, Flat Roof & Metal Roof 4 buildings.
- Dredged River
- Replaced 2 of 10 UV control touch screen
- UVT analyzer replaced
- East Floc Basin, unplanned Major Repairs completed
- Two Filter Flow Controllers Replaced
- Repaired HVAC for Admin building
- Replaced 98% lights with LED

Visit our website for more information on your water
http://www.newarkohio.net/city-services/water-wastewater-main

Wastewater Treatment Plant



2019 Plant Operation Data

Annual Average

Ave. Flow MGD	Raw Suspended Solids mg/l	Final Suspended Solids mg/l	% Removal Suspended Solids	Raw CBOD mg/l	Final CBOD mg/l	% Removal CBOD	Raw Ammonia mg/l	Final Ammonia mg/l	% Removal Ammonia
9.4	**119.2**	**3.5**	**96.7%**	**73.3**	**2.4**	**96.6%**	**8.1**	**0.17**	**97.9%**

Major Projects Completed in 2019

- Brought Anaerobic Digesters on-line in September of this year.
- Replaced Two Influent Pumps (IP) with new Rotating Shaft Assemblies.
- Replaced Two Influent Pump Variable Frequency Drives (VFD).
- Upgraded SCADA system hardware and software to newest Wonderware platform.
- Replaced Influent Valve for #4 Influent Pump.
- Replaced Non-Potable Water motor and pump.
- Replaced Administration and Filter Building roofs.
- Rebuilt #1 Influent Screen.
- Refurbished Main Breaker for plant electrical system.
- Replaced blower for the Grit/Grease tank.
- Replaced Two Primary and One Thickened Sludge mag meters.
- Started engineering for replacement of our 20 year old Ultraviolet Disinfection Unit.

Major Project Goals for 2020

- Finish rehabilitation of Anaerobic Digesters
- Replace #2 Influent Pump VFD and repair #4 IP VFD.
- Continue asphalt and concrete repairs
- Upgrade SCADA system hardware and software to newest Wonderware platform.
- Begin working on items from Phase II of our Long Term Control Plan
- Recommission #1 Thickener – New PLC and rebuild flow meter.
- Replace Impellers on Return Activated Sludge pumps.
- Continue to evaluate and engineer new Ultraviolet Disinfection System.

Ultraviolet Disinfection

The Wastewater Treatment plant installed a Trojan 4000 Ultraviolet Disinfection System in 1999 replacing chlorine disinfection. Over the last twenty years the system has performed very well, keeping the plant in compliance with our NPDES permit. The age and cost of maintaining the older UV system now makes it feasible to look at newer technology. We will continue to use Ultraviolet Disinfection but with lower energy consumption, we should be able to use about 1/3 the power. Preliminary engineering and site visits were conducted at the end of 2019. We are hopeful the new UV system will be in place for the 2022 disinfection season.

Trojan 4000 UV Disinfection

Anaerobic Digester Rehabilitation

Dugan and Meyers started on the project in June of 2018. September of 2019 the digesters were put into service and have been operating very well since. The new heating and mixing systems are proving to be highly efficient, providing more gas production. Currently only one boiler is needed to keep up with the heating demands of the three anaerobic digesters. Going forward we plan on recommissioning the gas scrubbing system in order to sell excess methane gas produced.

Anaerobic Digester #1

Digester Gas Holding Duosphere

#1 Digester Heat Exchanger

Boilers

WATER DISTRIBUTION

2018 Accomplishments

- **Renewed 185 water services.**
- **Installed 1583 ft of new water main on Arlington Ave.**
- **Installed 9 new water taps.**
- **Discontinued 26 old abandoned water services.**
- **Repaired 41water main breaks.**
- **Replaced 9 Fire Hydrants.**
- **Repaired 31 Fire Hydrants.**
- **Completed 2019 annual fire hydrant flushing program.**
- **Painted 667 Fire Hydrants.**
- **Helped with downtown project, Line stops new valves etc.**
- **Leak detection, 18.7 miles of water main completed.**
- **Worked Valve Maintenance program, repaired 21 Valves, Worked 1231 Valves, Replaced 12 Valves.**

New 8" watermain on Arlington Ave. Horns Hill Rd. lowering for sewer.

Goals for 2020

- **Upgrade water main on Pierce Ave.**
- **Continue to upgrade old galvanized water services.**
- **Continue fire hydrant flushing in warmer months.**
- **Resume valve maintenance program.**
- **Continue valve and leak detection program.**
- **Continue high quality service to water customers of Newark.**

Line stop installation on the Square on some 100+ year old pipe.

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SEWER MAINTENANCE 2019

Accomplishments

- **Responded to 20 plugged sewer orders on city mains**
- **Responded to 60 plugged orders on owners.**
- **Televised 72,016 FT of sewer main.**
- **Cleaned 137,435 FT of sewer main.**
- **Inspected CSO overflows 57 times after rain events**
- **Manholes Worked, 124 repaired or replaced**
- **Manhole inspections 1,231 completed.**

Goals for 2020

- **Continue televising sewer mains to determine if repairs are needed in a effort to reduce the chances of catastrophic sewer failure.**
- **Complete upgrade of sanitary and storm lift stations with SCADA monitoring system.**
- **Continue to monitor for long term control plan.**
- **Continue with preventive maintenance work on manholes and sewers to provide customers with reliable and uninterrupted service.**
-

Completed Projects

Horns Hill Rd. – Sanitary Sewer - The existing sanitary sewer was extended north on Horns Hill Rd. approximately one mile to the Fairway Estates subdivision. Additionally, the box culvert under Horns Hill Rd. at Turkey Run was replaced and future connections for potable water and sanitary sewer were installed at Licking Springs Rd. The completion of this project allows for the decommissioning of an existing sanitary sewer lift station as well as providing access to sanitary sewer and potable water for future development in the area.

Future Projects

Fourth St. Sewer Separation - The existing combined (sanitary and storm) brick sewer will be replaced with new separated sanitary and storm sewers. Due to the scope of the excavation required for the sewer replacement this project will also include waterline, roadway, sidewalk and green infrastructure work, similar to the recently completed downtown project. The project will begin on National Dr. between 4th St. and 5th St., continue on 4th St. to Locust St., then onto Granville St. to S.R. 16. Construction is expected to begin in early 2020 with completion in late 2023, the estimated construction cost is approximately $24,000,000.

Water Plant Instrumentation Upgrades - The Supervisory Control and Data Acquisition (SCADA) system provides monitoring and control capabilities for many of the Water Treatment Plant processes. The upgrades include replacing or upgrading the existing Human Machine Interface (HMI), Programmable Logic Controllers (PLCs) plant-wide, Data Highway Plus network and Remote I/O and various monitoring and reporting upgrades for plant processes. The project is expected to be competitively bid in the second quarter of 2020 with an estimated construction cost of $1,600,000.

Interceptor Siphon Optimization - Two existing sanitary sewer pipes, originally installed in the 1940's, under the North Licking River will be replaced with a single large diameter sanitary sewer pipe near the confluence of the North Licking River and South Licking River. In the vicinity of Jefferson St. and Wilson St. approximately 600' of sanitary sewer, a CSO and various other structures will be eliminated along and under Raccoon Creek, significantly reducing the number of combined sewer overflows into Raccoon Creek and reduce the required maintenance in this area. Small modifications to the WWTP infrastructure and SCADA system combined with the work noted above will allow for better monitoring and treatment of high flows during wet weather events. Construction is expected to begin in mid-2020 with completion in late 2020, with an estimated construction cost of approximately $2,400,000.

Tamarack Transmission Waterline - A new 16" water transmission line will be extended from Country Club Dr. at Granville St. to W. Main St. and Coffman Rd. This project will also include the reconstruction of 40th St. including new storm sewers along 40th St. and the installation of additional storm sewer piping to accommodate future storm sewer projects in this area. The project is expected to be competitively bid in the second quarter of 2020 with an estimated

SAFETY & TRAINING

Training continues to be an important part of our daily duties. Training whether done under the category of "Safety" or "Education" is tracked by this department. Training time is then logged as "contact hours" which are then used by employees to re-new individual job required OEPA licenses. During 2019, the Division of Water and Wastewater made available a total of 60 contact hours per employee through 59 in-house educational training sessions. In all, employees earned 494 creditable hours. Safety training accounted for 291 of the 494 hours. Some of this year's topics included Working in Cold Weather, Excavation Safety, Excavation Competent Person Training, Distracted Driving, and Lock Out Tag Out. Employees again received a refresher in Confined Space Entry Procedures. Confined spaces are a serious danger in the water and wastewater industry and yearly refresher training is a top priority. Fall Protection was installed at North Street Extended CSO to protect employees from falling down steep bank close to the river's edge. New user-friendly MSA V-Fit body harnesses were purchased for Confined Space Entry/Fall Protection for WD/SM, WWTP and WTP. "Hands-on training" was held this year for distribution employees to be trained on Line Stop Insta-Valve 250 installations. Next year, employees will be offered the opportunity to take an Adult CPR, AED, First aid class.

In an effort to keep current with new equipment and products the Division uses many resources. This past year, 18 "hot topic" webcasts from the Ohio and US EPA, the Water Environment Federation, and the American Water Works Association were used to help address those comprehensive issues. Working with our online training provider, 360water.com, employees have access to training that is site-specific to the Newark Water and Wastewater Treatment Plants. The online training website contains 35 wastewater and 7 water site site-specific courses. We further provided 10 Safety training courses providing training in Hazard Recognition, Personal Protective Equipment, Fall Protection and Excavation to name a few. This past year employees earned 136 hours of EPA approved training from use of this website.

Sewer Maintenance and Wastewater Treatment Plant both received Safety Awards from OWEA for not having any recordable work related injuries

Human Resources

Over 30 Years of Service

Stan Vinning	Wastewater	1974
Don Dyar	Water Plant	1977 & 11
Roger Loomis	Water Office	1985
John Kreager	Dist./Collection	1986
Randy McDaniel	Env. Lab	1988
Jon Moulton	Wastewater	1989

25 to 29 Years of Service

Trent Johnson	Meter Shop	1990
Nancy Taylor	WW Lab	1990
Jeff Krauskopf	Wastewater	1992
Bryan Curry	Wastewater	1993
David Wells	Distribution	1993

15 to 19 Years of Service

Catherine Austin	Water Office	2000
Keith Hampshire	Water Plant	2000
Mary Hull	Water Office	2001*
Clint White	Wastewater	2001
Jay Fisher	Wastewater	2002
Drew Forgrave	Dist/Collection	2003
Bill Charles	Water Plant	2004
Jeremy Moore	Distribution	2004
James Robb	Collection	2004
Angela Reischman	WW Lab	2004
Trophy Iler	Collection	2005*
Shawn Wagner	Water Plant	2005
Jay Fisher	Wastewater	2005*

20 to 24 Years of Service

Elizabeth Beckman	Water Office	1995*
Joe Hickman	Water Office	75 & 06
Jeff Postle	Distribution	1996
Paula Glosser	Water Office	1996*
Andrea Beichler	Water Office	1997
Lori Bane	Water Office	1997*
Ed Metzger	Water Plant	1997

10 to 14 Years of Service

Mark Patznick	Distribution	2006
Josh Wilson	Dist/Collection	2006
John Lee II	Water Plant	2007
Leslie Redman	Water Office	2007*
Kevin Rodenizer	Distribution	2008
Patrick Thompson	Collection	2008*

Avg. Age as of 1/2020 – 48.00
Avg. Years of Service with the City – 14.05
*includes service time outside
Division of Water and Wastewater

No retirements in 2019.