City of Newark, Ohio
Division of Water and Wastewater
2018 Annual Report

ReNewark –The Phase 1 sewer separation project was completed October 2018. 3-1/2 years of construction ended with the installation of 6,900'of watermain, 5,570'of sanitary sewer, 12,700' of storm sewer, 120,000 sf of sidewalk, 33,250 plantings, 155 trees and 169 large flower pots and 45 new benches. The completion of the project has breathed new life into Downtown Newark especially as other groups have joined the greater community effort. This Annual Report is intended to inform Council and the Public as to the day to day operations.

2018 Annual Report

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"

With little fanfare the Division of Water and Wastewater, along with the rest of the City completed a major milestone this past year. In mid-September, work on the entire Downtown Revitalization Project was completed. Beginning in 2015, this project has been a major task for many in this department and a struggle for anyone involved in the downtown. Of course in the utility business, there is always the next project, and that next project is well under way at the Wastewater Treatment Facility. This past year work began to rebuild the Anaerobic Digester process at the plant. This project is critical to maintain an effective operation of the treatment plant and keeping our local waters clean.

Even though we are continuing to progress towards meeting federal mandates for CSO controls, the approval of the Long-Term Control Plan is still pending along with the re-issuing of the plants discharge permit. This approval will help to develop the path of work over the next 25 years. In spite of this, two major project designs got under way in 2018. The Optimization and Siphon Improvement project design was nearing completion at the end of 2018 and it is projected to bid for construction in the third quarter of 2019. 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. This is a major project located within the downtown area and will involve replacing existing combined lines with new sanitary and storm sewers. 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 a year ago. We have nearly doubled the number of backflow devices attached to our system providing an extra layer of protection for our customers. A project to upgrade the existing control system at the water plant was designed in 2018. Installation of new control equipment and updated programming is scheduled to start in the 1st quarter of 2019.

We are continuing to take on many challenges which have provided us with plenty of opportunities to meet our goals. It has become more and more challenging to keep our rates reasonable and still continue to improve the overall infrastructure. Many capital improvement projects need to occur in order for us to maintain a consistent level of service and meet regulation. How we plan and execute these capital improvements can have long lasting ramifications. Striking the right balance between what is affordable and maintaining a sustainable infrastructure presents a difficult challenge and is a primary task of running an effective utility. 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.

Roger Loomis

Water Administrator

Financial Pages

"How you pay for it matters"

Wastewater Department		**Water Department**	
Active Customers	17,167	Active Customers	18,611
Million Gallons Treated	3,431	Total Volume Billed (MG)	2,020
Miles of Sewer Line	182	Total Water Produced (MG)	2,786
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	$2,864,715	Administration	$1,807,772
Treatment	$2,708,243	Treatment	$2,559,478
Sewer Maintenance	$ 506,850	Distribution	$1,351,842
Environmental Lab	$ 315,362	Meter Shop	$ 229,659
Debt Retirement	$3,446,280	Debt Retirement	$1,997,645
Total	**$9,841,450**	**Total**	**$7,946,396**

Revenues:

Sewer		**Water**	
Rental *(sewer service)*	$3,505,869	Sales	$5,621,027
Administration	$ 1,336,716	Bulk Water	$ 25,761
Debt Retirement	$2,937,441	Delinquent	$ 230,342
Surcharge	$ 477,718	Meters	$ 22,845
Capacity Fees	$ 53,687	Permits	$ 87,210
Trucked Wastes	$ 300,803	Capacity Fees	$ 38,303
Transfers	$ 331,723	Deposits	$ 169,254
Miscellaneous*	$ 81,981	On Account	$ 365,510
		Miscellaneous*	$1,200,021
Totals	**$9,025,934**	**Totals**	**$7,760,521**

Includes $908,013 in transfers from sewer fund and $197,000 from stormwater for water administration costs.

Debt Service Cover Ratio/% Debt/Working Capital Days Wastewater – 2.6, (35%), 223 Water – 3.8, (25%), 30

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

	Granville	*Heath*	*Johnstown*	*SWLCWS*	*Cols*	*Lancaster*	*Newark*
Water	$29.28	$46.48	$48.08	39.40	48.38	$52.84	$23.04
Wastewater	$37.02	$48.57	$48.04	83.20	47.68	$71.30	$31.41
Total	**$66.30**	**$95.05**	**$96.12**	**122.60**	**96.06**	**$124.14**	**$54.45**

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

2018 Water Treatment Plant Project

Annual Report 2018

South Intake Screen Project

Estimated Budget: $ 190,000
Estimated Date of Completion: 2019

The Newark Water Treatment Plant has two raw water intake buildings that each house one 5.5 ton rotating mechanical screening systems. (Thru-Flow Traveling Water Screens) The mechanical screens are designed to protect downstream pumps and equipment from floating debris as raw water is drawn directly from the North Fork Licking River for processing. The screens are maitained on a monthly basis by staff and inspected by commercial/industrial divers bi annually. In 2012, the South intake had major work performed including the replacement of screen baskets and sprockets. Unfortunately the 2012 repairs/replacements didn't provide half the life expectancey as the last major rebuild in 1989.

The water treatment plant staff was informed during the September 22, 2018 routine underwater inspection that major repairs were needed to the south intake screens. A quote was requested for repairs/replacement from two different companies. It quickly came to our attention that Evoqua was the sole provider for Thru-Flow Traveling Water Screens. Quotes for the cost to repair and/or replace were secured. Repairs were thought to only prolong the total life, for possibly another 6 years or less based on the most recent rebuild. Where as the 1989 installation of the original Thru-Flow Traveling Water Screen lasted 23 years. The scope of this bid work will remove the existing screens, inspect the screen bay and installing the new Thru-Flow Traveling Screen. Evoqua Water Technologies is set to begin April 2019 at an estimated cost of $190,000.

PLC Upgrade & Fiber Optic Project

Estimated Budget: $ TBD
Estimated Date of Completion: 2019

The Programmable Logic Controllers (PLCs) upgrade project is set to go out for bid early 2019. The new PLCs will include higher cyber security and an upgraded SCADA (Supervisory Control and Data Acquisition) automation control system. SCADA data is sent to PLCs or RTUs (Remote Terminal Units) from sensors or manual inputs, which then send that information to the control system computers. SCADA software continually analyzes and displays water plant data including mechanical operations, tank levels and better enables operators to make chemical dosage adjustments as water quality or quantity changes throughout the day. The largescale version of the upgrade project also includes the installation of approximately 3 miles of fiber optic cable from the downtown water office to the water treatment facility. Fiber optic cable will increase the reliability of service while providing a more secure network. The estimated project cost for fiber optic cable is currently $175,000. Construction could be completed by the end of 2019.

Water Office

Accomplishments – 2018

- Upgraded our current Customer Information System server and software.
- Established in-house email presentment of monthly bill statements in May. As of January 2019 we have 883 accounts participating.
- Currently have 6752 online registered accounts. These customers are able to manage their accounts via the web.
- After our third year of acquiring the Backflow Program, there have been approximately 500 unidentified devices now added, with an additional 500+ requiring inspections.
- Upgraded/installed 828 new meters.
- Finalized 2633 accounts and activated 2983 new accounts. Currently have 18,690 active accounts with 6488 of those being rentals.
- Recuperated $49,509.64 in unpaid services through liens placed with Licking County
- Customer Service answered 14,697 phone calls with an average wait time of 1:23. Busiest phone days were 1/3/18 & 1/22/18 both with 105 answered calls. Wednesdays are the busiest day of the week with 9:00am - 9:59am being the busiest time of day.

Goals – 2019

- Install TouchPay payment kiosk in front vestibule.
- Have our new Systems Analyst, Kapil Lakhlani, combine AMI and CIS data to optimize reporting on customer usage.
- Reestablish Customer Service Skills Training to assist us with our goal of providing exceptional customer service.
- Promote email bill presentment and online payments with an emphasis on autopay signups.
- Upgrade handheld devices used by the Meter Dept. for MTU diagnostics and programming, plus incorporate these devices with web applications geared toward service order updating in the field.

Account Delinquency Report

Amount Delinquent as of 12-31-2018 (>90 days)	$152,000
Amount Delinquent as of 12-31-2017 (>90 days)	$167,000

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

New Faces in Water Administration

Customer Account Rep – Derek Smith

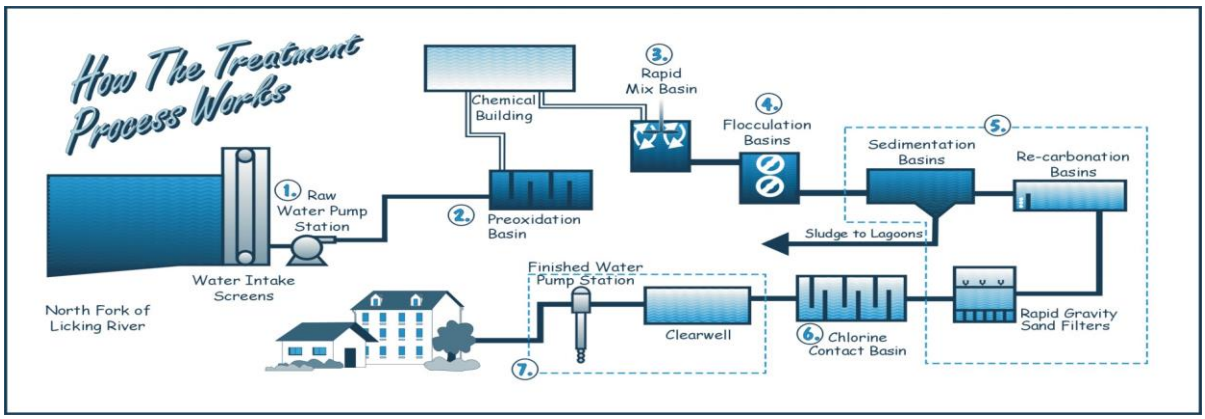
Systems Analyst – Kapil Lakhlani

Top 5 Consumers of Water & Wastewater Services

Owens	574,859 gpd
Anomatic	437,045 gpd
Tamarack Farms Dairy	198,459 gpd
Licking Memorial Hospital	130,465 gpd
Mobile Power Wash (Industrial Water)	75,021 gpd

Water Treatment Plant

ANNUAL REPORT 2018



Ohio EPA Chemical Monitoring Averages for 2018

pH	8.84	S.U.
Phen. Alk.	3.0	mg/L
Total Alkalinity	42.5	mg/L
Stability	0.11	mg/L
Hardness	105	mg/L
Phosphate	0.72	mg/L
Free Chlorine	1.06	mg/L
Combined Chlorine	0.12	mg/L
Fluoride	0.91	mg/L
Nitrate	1.73	mg/L
Turbidity	0.06	NTU
TOC (raw)	3.18	mg/L
TOC (finished)	1.23	mg/L
Lead (90th percentile)	0.00	ug/L
Copper (90th percentile)	0.00	mg/L

Production Data for 2018

Daily Average Production	8.01	MGD
Yearly Total Production	2,786.66	MG

Major Projects Completed in 2018

- Installed Venturi System for Lime Venting
- PLC upgrade fiber optic cable planning.
- Dredged River
- 10 MGD High Service Pump & Motor Repaired
- 2nd Rapid Mixer motor Repaired
- Replaced 2nd Floc Basin Mixer Motor.
- In-house Lab Room Floor Replacement
- Replace 3rd Flocculation basin mix motor
- Backwash Control System Upgrade.
- Backwash Pump Repaired
- Replace #4 & #9 Filter Effluent valve
- Inspection and Evaluation of 3 Filters
- Replaced 95% lights with LED
- Lead and Copper Sampling 51 samples Collected

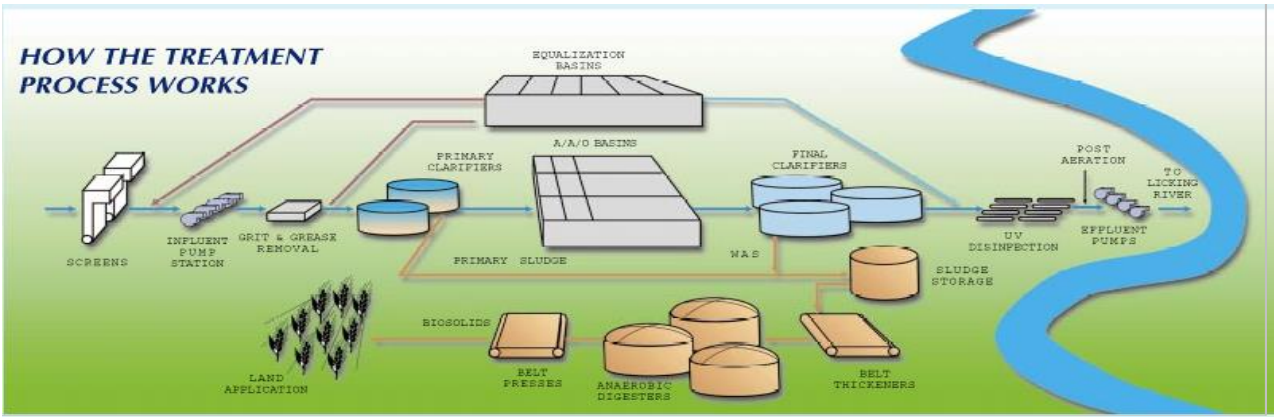
Major Project Goals for 2019

- South Intake Screen Replacement
- UVT analyzer replacement.
- River Dredging
- PLC upgrade & fiber optic cable Bid & start project
- Begin Roof replacement to Metal roofing
- Flat Roof Replacement, raw pump & filter buildings
- Lime Lagoon Sludge Hauling
- Inspection and Evaluation of Remaining 4 Filters
- Replace remaining 20% lights with LED
- Lime Silo Painting

Lime Sludge Lagoons

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

Wastewater Treatment Plant



2018 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 2018

- Started construction for rehabilitation of Anaerobic Digesters.
- Rebuilt and replaced 3 Influent Pumps.
- Rewired all 100' light poles and changed to LED lamps along with majority of outside lighting.
- Replaced #3 RAS pump impeller and mechanical seal.
- Rebuilt One Influent Pump motor.
- Recommissioned use of #2 Ashbrook Thickener. Replaced PLC and level sensing equipment.
- Continued a detailed study to establish limitations on Nitrogen, Phosphorus, and Sulfur loadings from local industry.
- Pulled and repaired #3 NPW pump.
- Replaced #1 NPW pump with a new pump assembly.
- Coated and sealed the deck of the Schreiber grit removal system and top of Primaries.
- Replaced Main 1600 Amp breaker for plant electrical system.
- Changed all coolant lines on plant Trojan UV system.

Major Project Goals for 2019

- Complete rehabilitation of Anaerobic Digesters
- Replace Two Influent Pumps with new Rotating Shaft Assemblies.
- Continue to upgrade outdoor lighting with LED fixtures
- 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.
- Repair Main 1600 Amp breaker for plant electrical system and save for spare.

Long Term Control Plan Phase II

A comprehensive plan has been written by the engineers at Hazen Engineering and the City of Newark Water Department. Currently we are in the process of completing plans and drawings for the construction of new siphons that will traverse under the North Fork of the Licking River and Raccoon Creek. The new siphons will enable higher flows of water during rain events. The higher flow of water will be conveyed to the Wastewater Treatment Plant and High Rate Treatment Facility.

Pollinator Habitat

The Wastewater Treatment Staff this year planted approximately ½ acre mix of prairie grasses and wildflowers at the plant. The area is now habitat for wildlife that help to pollinate all types of plants including fruit trees and vegetables. The wildflowers bloomed from spring to late fall, making this a highly successful planting. The other benefit of this field is that employees no longer need to mow this area, saving time and resources. The staff also removed old shrubbery along the Administration building and replanted with Monarch Butterfly habitat that provides food for Monarch caterpillars. There were several chrysalis hanging around the windows that morphed into butterflies.

Anaerobic Digester Rehabilitation

Dugan and Meyers started on the project in June of 2018. To date all three digester lids have been removed along with piping contained within. All three of the concrete replacement lids have been poured and are in place. Demolition of electrical, plumbing and all other equipment inside of the Digester building has been completed. A new boiler building has been constructed and is pictured below. The project is going smoothly and should be completed October of 2019.

Anaerobic Digester #3

Digester Building Demolition

New Boiler Building

WATER DISTRIBUTION

2018 Accomplishments

- Renewed/replaced 156 lead water services.
- Replaced 1,300’ of 6”D.I. with C 900 PVC watermain along Morgan Avenue.
- Ran leak detection of +16 miles of water main.
- Disconnected 18 abandoned water services.
- Repaired 51 water main breaks.
- Completed the Annual Fire Hydrant flushing program.
- Replaced 11, Repaired 89, Painted 835 fire hydrants.
- Flow tested 37 Fire Hydrants.
- Continued the Valve Maintenance Program: Repaired 23, Replaced 7, Worked 1,102
- Assisted the contractor numerous times on the Downtown Renovation Project.

16” watermain break on Essex St. at Garfield Ave

Goals for 2019

- Upgrade water main on PierceAvenue..
- Continue to upgrade old galvanized water services.
- Continue fire hydrant flushing in warmer months.
- Resume valve maintenance program.
- Continue leak detection and location program.
- Continue GPS programming eventually recording all water curb box locations.

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

SEWER MAINTENANCE

Accomplishments 2018

- Responded to 20 plugged sewer orders on city mains.
- Responded to 96 sewer orders that were on property owners.
- Televised just more than 100,000 feet (almost 19 miles!) of sewer mains.
- Pressure cleaned ("jet") a bit more than 123,000 feet (23+ miles!) of sewer mains.
- Inspected CSO's 73 times after every moderate to heavy rain event.
- Manholes Worked, 131 repaired or replaced.
- Manhole Inspections Completed, 1,127.

Goals for 2019

- Continue televising sewer mains to determine where repairs are needed. All in an effort to reduce the chances of a catastrophic sewer failure.
- Complete upgrade of sanitary and storm lift stations with SCADA monitoring system.
- Continue to monitor CSO's for Long Term Control Plan (LTCP).
- Continue with preventive maintenance work on manholes and sewer mains to provide customers with reliable and uninterrupted service.

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

25 to 29 Years of Service

Jon Moulton	Wastewater	1989
Trent Johnson	Meter Shop	1990
Nancy Taylor	WW Lab	1990
Jeff Krauskopf	Wastewater	1992
Bryan Curry	Wastewater	1993
David Wells	Distribution	1993

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

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

10 to 14 Years of Service

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*
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 12/2018 – 46.97
Avg. Years of Service with the City - 13.17
*includes service time outside
Division of Water and Wastewater

Retired - 2018

Ed Nutter	**Water Ad – Safety/Training Coordinator**
Teresa Robb	**Water Office – Customer Account Rep.**
Mark Butler	**Water Distribution – Utility Worker**
Mark Wachter	**Water Plant – WTP Maint. Supervisor**
Russ Livingston	**Water Plant – WTP Operator**