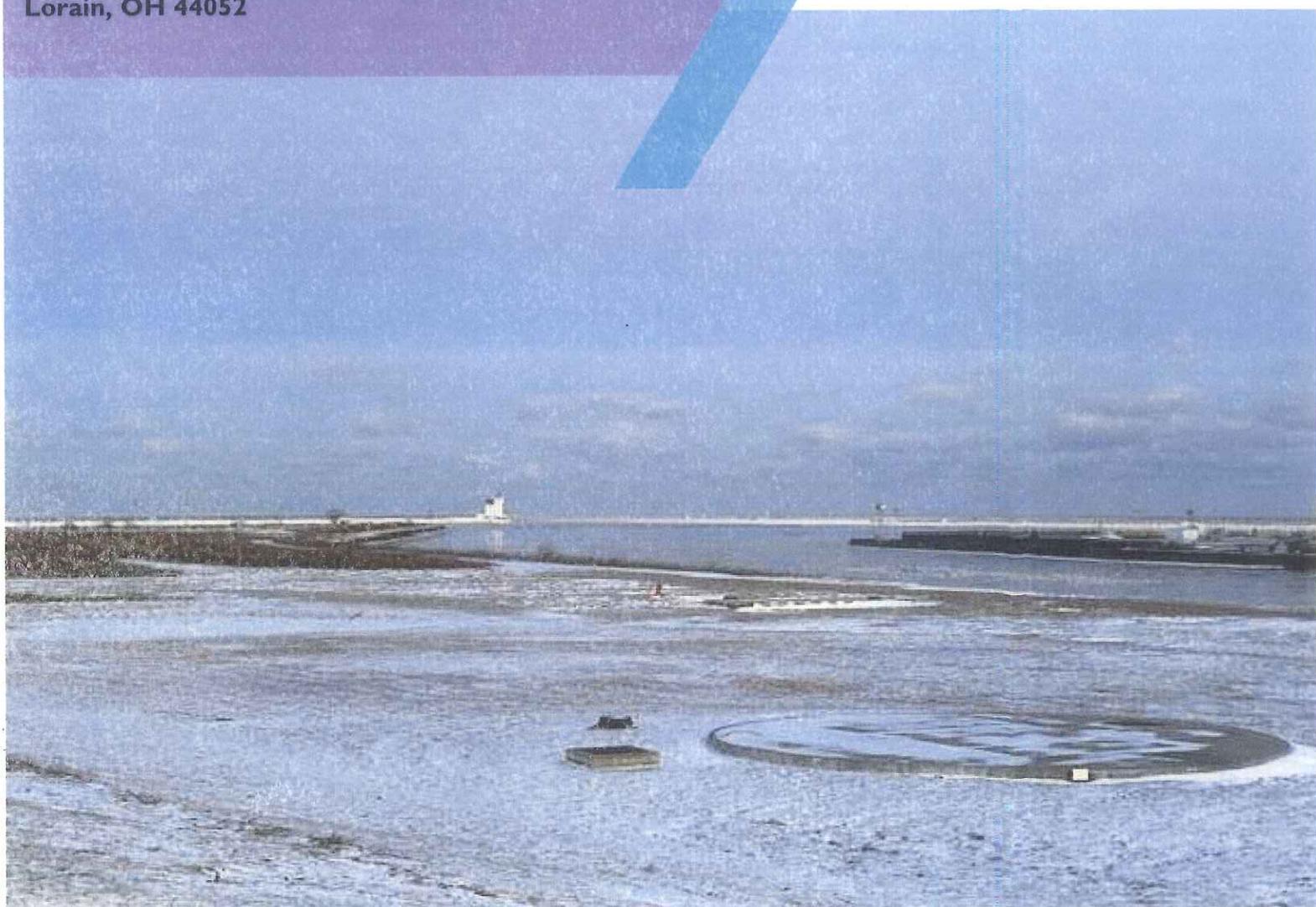


2023

Annual Report

Lorain Utilities Department

1106 First Street
Lorain, OH 44052



Website: www.CityofLorain.org/180/Utilities-Department

Lorain
UTILITIES DEPARTMENT

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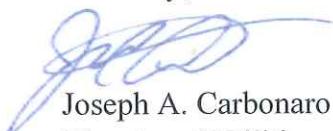
Statement from the Director

Citizens & Customers,

I would like to thank every member of the community and customer base as well as all elected officials of the City of Lorain who assisted us in achieving our goals in 2023. We continue to strive to provide drinking water and wastewater treatment services that meet the expectations of our customers. While working hard to meet these expectations, we accomplished several important projects in 2023. With financial assistance from the Ohio EPA, we have been able to replace nearly 1500 lead service lines that were in the ground in the City of Lorain and continued to line sanitary sewer mains to reduce Inflow and Infiltration to the collection system. These projects help us meet our goals to provide clean and safe drinking water to customers and enhance their wastewater collection and treatment services.

I am proud of the work and dedication shown by every team member of the Utilities Department. The work they complete on a daily basis, may go largely unnoticed by our customers, but it is no less important as the operations of the Utilities Department depend upon their commitment to the tasks at hand. From fixing broken water mains, unplugging clogged pumps, cleaning sanitary sewers, and answering thousands of customer calls and questions, the work the many 125 employees perform helps us fulfill our mission statement. I would like to thank each team member for their help in maintaining a continued high-level service provided by the City of Lorain Utilities Department presently and for years to come.

Sincerely,



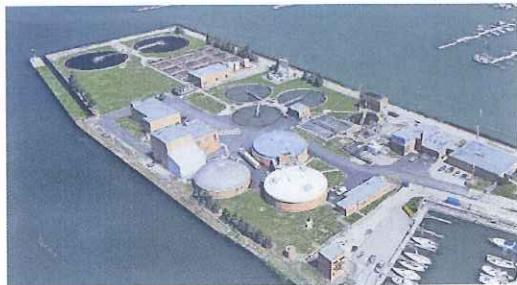
Joseph A. Carbonaro
Director of Utilities
City of Lorain

Mission Statement

“The Lorain Utilities Department is committed to serving the needs of our customers by providing drinking water of the highest quality and wastewater collection and treatment in an efficient and safe manner.”



Department Facilities



Black River Wastewater Treatment Plant
100 Alabama Ave, Lorain Ohio 44052



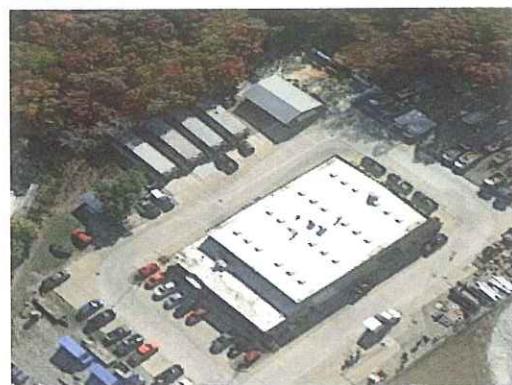
Philip Q. Maiorana (PQM) Wastewater Treatment Plant
6301 W. Erie Ave, Lorain Ohio 44052



Billing & Water Purification Plant
1106 First Street, Lorain Ohio 44052



Water Distribution Department
2111 W Park Drive, Lorain Ohio 44052



Sewer Department
6301 ½ W. Erie Ave, Lorain Ohio 44052

Financial Summary

Water Pollution Control (Sewer)

Active In-City Customers	25,372
Active Out of City Customers	2,520
Millions of Gallons Treated (MG)	4,764.63
Miles of Sewer Mainline	383
Lift & Pump Stations	11
Bulk Sewer Customers	1
Bulk Customer Volume Billed (MG)	0.306

Water Works (Water)

Active In-City Customers	25,372
Active Out of City Customers	824
Total Volume Billed (MG)	1,763.50
Total Water Produced (MG)	2,159.31
Miles of Water Lines	361
Booster Stations	2
Storage Tanks	4

Expenses:

Water Pollution Control Fund

Engineering	\$140,924
General Administration	\$2,763,684
Accounting (Billing/Meter)	\$1,086,371
Plant Operations (BRWWTP)	\$3,929,778
PQM WWTP	\$1,539,750
Maintenance of System (Sewer)	\$4,137,760
Debt Service	\$6,585,357

Total

\$20,183,625

Water Works Fund

Engineering	\$93,504
General Administration	\$2,164,317
Accounting (Billing/Meter)	\$1,109,406
Water Distribution	\$3,895,183
Water Purification Plant	\$3,502,653
Debt Service	\$4,591,000

Total

\$15,356,063

Revenues:

Water Pollution Control Fund

Sewer Rental	\$11,554,917
Compliance Charge	\$3,023,435
Special Assessments	\$130,003
Miscellaneous & Other	\$2,337,034

Total

\$17,045,389

Water Works Fund

Water Sales	\$10,283,712
Compliance Charge	\$3,189,728
Special Assessments	\$126,983
Miscellaneous & Other	\$1,093,385

Total

\$14,693,808

Debt Service Cover Ratio / % Debt of Expenses / Working Capital Days

Wastewater – 4.88 / (33%) / 229 Days

Water – 8.36 / (30%) / 146 Days

DSCR – Total Cash/Debt; Working Capital Days – Days to turn Capital into Revenue

Billing & Meter Department

Accomplishments - 2023

- Worked with the City of Elyria and the Lorain County Engineer's Office to finalize the transfer of sewer account funds to the City of Lorain Billing Software.
- Installed water meters and radios increasing the number of radios throughout the City to 58%.
- Created a PowerPoint display for the lobby to inform customers on how to conserve water, ways to detect leaks and more.
- Purchased new desks to create an office for two account representatives to function as credit counselors. This has allowed us to better assist those customers needing payment plan agreements and information on agencies providing assistance.
- Continued monthly meetings and implemented staff suggestions to improve office efficiency.

Goals - 2024

- Finalize Ordinance for Principal Landlords List.
- Work with the Lorain County Sanitary Engineers to identify and bill all customers outside the City of Lorain who are connected to Lorain's sewerage system.
- Create a more comprehensive bill for customers to include past history and multiple meters.
- Continue Customer Service Skills Training.

2023 Account Delinquency Report

Amount Delinquent as of December 31, 2023

\$1,119,769.75

Down 2.39% from 2022

2023 Lien Report

Amount Liened to Lorain County Auditor for Delinquent Accounts

\$565,644.73

Up 481.2% from 2022

Black River Wastewater Treatment Plant



2023 Plant Operation Data

Average Flow (MGD)	Raw cBOD (mg/L)	Final CBOD (mg/L)	Removal CBOD (%)	Raw TSS (mg/L)	Final TSS (mg/L)	Removal TSS (%)	Raw Phosphorous (mg/L)	Final Phosphorous (mg/L)	Final Ammonia (mg/L)	Land Applied Sludge (W Ton)
13.67	76.31	3.15	95.9	96.91	4.38	95.5	2.61	0.59	0.74	46.72
10.2%	(12%)	(19.8%)	0.3%	17.6%	27.8%	(0.6%)	(4.5%)	5.2%	8.1%	(2.95%)

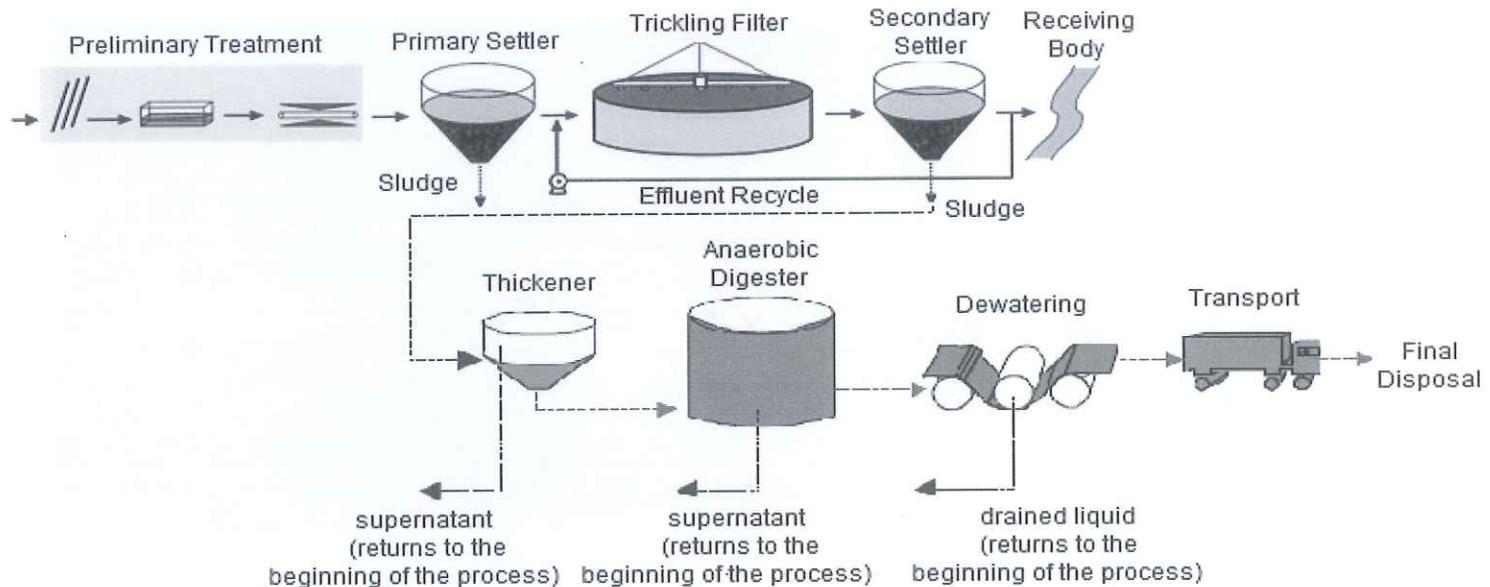
Major Projects Completed in 2023

- Completed rehab of the 2-meter sludge belt press
- Replaced flooded generator at the Martins Run Pump Station
- Assisted with the completion of the East Lorain Water Line Project
- Installed new pump at the Jaeger Rd Pump Station

Major Goals for 2024

- Begin Construction on Digester Improvements Project
- Complete study for the Jaeger Rd Pump Station and secure bids for construction
- Complete studies for the rehab of the Tacoma and Pearl Pump Stations
- Solve pump and grit issues with the Tunnel

Philip Q. Maiorana (PQM) Wastewater Treatment Plant



"Trickling Filters following anaerobic sewage treatment: state of the art and perspectives", Issue 11, 2018

2023 Plant Operation Data

Average Flow (MGD)	Raw CBOD (mg/L)	Final CBOD (mg/L)	Removal CBOD (%)	Raw TSS (mg/L)	Final TSS (mg/L)	Removal TSS (%)	Raw Phosphorus (mg/L)	Final Phosphorus (mg/L)	Removal Phosphorus (%)	Sludge to Black River (Gallons)
2.40	119.34	8.73	92.68	140.86	8.49	93.97	3.43	0.67	81%	1,518,000
5.7%	(10%)	(15.1%)	0.2%	0.1%	14.9%	0.5%	(24.1%)	0.02%	(5.2%)	(0.55%)

Major Projects Completed in 2023

- Replacement of Bar Screen garage door
- Replacement of Drain Valve for Primary Tanks
- Added Trickling Filter actuator control to SCADA
- Cleaned Chlorine Contact Tank

Major Goals for 2024

- Begin construction on improvements to Grit & Final Settling Tanks
- Research Heat Exchanger Replacement
- Optimize plant processes to meet toxicity testing requirements

Sewer Department

Accomplishments - 2023

- Completed the Fifth Year of Sewer Relining in East Lorain.
- Responded to over 600 calls from customers.
- Sanitary Sewer Mains - 32 repaired or replaced.
- Storm Sewer Mains – 21 repaired or replaced
- Sanitary Mainlines Cleaned – 224,566 ft.
- Storm Sewer Mainlines Cleaned – 12,529 ft
- Storm Sewer Mainlines Televised – 17,842 ft
- Catch Basins – 63 repaired or replaced
- Completed Phase 1 of Concrete Yard and Dump Pad at Facility

Goals - 2024

- Support Year 6 Lining Project in South Lorain
- Commence Phase 2 of Concrete Yard at Facility
- Upgrade needed equipment and vehicles to reduce downtime and costs
- Support MS4 Program through ditching and storm sewer maintenance
- Enhance staff knowledge and skills through education and training
- Implement CityWorks AMP to improve workflow and task management



2023 Annual Sewer Data

Action	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Sanitary Sewer calls	26	30	13	11	20	46	219	14	13	7	19		441
Storm calls	10	6	2	5	2	0	3	10	4	1	0	4	47
Overload call	0	0	0	0	0	15	180	0	0	0	0	1	196
Blocked mains-sanitary	4	5	2	3	0	0	3	3	0	1	1	3	25
Blocked mains-storm	1	4	0	0	0	1	0	0	0	1	0	1	8
Blocked in owners line	20	25	21	9	10	16	27	15	11	11	5	16	186
WIB'S	25	29	23	12	10	16	46	207	11	12	6	19	416
Sanitary MH's checked	18	29	21	6	28	60	7	0	0	0	3	0	172
Catch basin's checked	2	0	202	0	155	201	61	54	17	120	52	5	869
Broken Sanitary sewers repaired	1	1	2	3	5	5	2	6	2	4	0	1	32
Broken Storm sewers repaired	1	0	0	3	0	4	5	4	3	1	0	0	21
Sanitary sewers cleaned /water jet(ft)	7,395	11,332	22,026	17,550	16,345	10,941	26,077	15,686	21,181	24,862	28,667	22,504	224,566
Sanitary sewers / televised (ft)	3,939	2,445	13,516	16,272	6,502	4,507	2,954	3,111	4,512	9,857	6,937	4,209	78,760
Storm sewers cleaned/jet (ft)	0	2,068	3,823	764	0	1,108	794	1,106	2,011	376	240	239	12,529
Storm sewers/televised (ft)	0	930	109	519	904	4,783	1,951	1,963	5,241	988	138	316	17,842
Catch basin's rebuilt	2	1	0	7	20	12	2	8	6	5	0	0	63
Manhole castings replaced	2	3	9	4	3	2	7	1	2	12	2	0	47
Ft ditches (Square Feet)	264,150	158,400	211,402	105,800	158,400	52,800	52,810	106,675	53,050	158,450	105,600	15,940	1,443,477
House laterals tv'd	2	1	8	6	3	1	5	9	5	9	5	4	58

Environmental Management

Industrial Pretreatment Programs Protect Against...



Within the City of Lorain there are eleven (11) Industrial Users that fall under the Pretreatment Program. The Industries are broken up into three (3) categories: Significant Industrial Users, Categorical Industrial Users, and Minor Industrial Users.

Significant Industrial Users

- Elyria Waterworks
- Mercy Hospital
- Pearl Landfill
- Lorain Tubular (US Steel)

Categorical Industrial Users

- Aviva Metals
- Camaco Manufacturing
- Materion Brush
- Republic Steel
- SK Finishing

Minor Industrial Users

- V & A Process
- Beaver Park North Marina

Accomplishments - 2023

- Issued four (4) new Industrial User Permits
- Nine (9) out of Ten (10) Industrial Users are in full Compliance
- Completed ten (10) Industrial User Inspections
- Updated Sampling Requirements per Industry (Adding Annual PFAS and PFOA Testing)

Goals – 2024

- Work with the OEPA to bring SK Finishing back into full Compliance
- Complete PQM WWTP Technical Justification
- Start Creation of a City-Wide FOG Program
- Update General Industrial Users Catalog

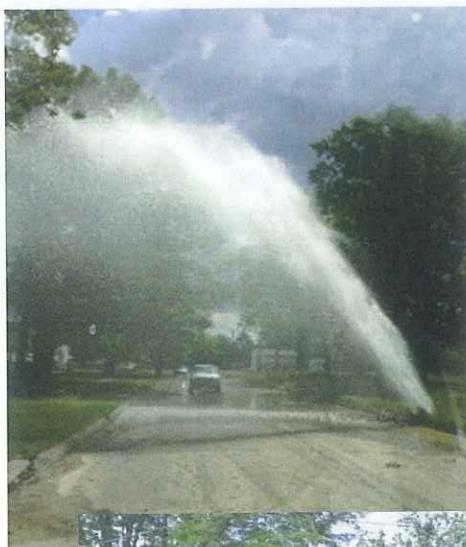
Water Distribution

Accomplishments - 2023

- Completed implementation of City Works Asset Management Program (AMP)
- Completed Eastside Watermain replacement project
- Completed Year 1 – Watermain replacement project
- Installed a total of 199 new valves in the system
- Replaced 90 Lead Service Lines
- Installed a total of 71 hydrants in the system
- Performed 107.5 miles of leak detection on the distribution system

Goals - 2024

- Continue replacement of Lead Service Lines through in-house and contractor work
- Complete design on Year 2 – Watermain project
- Continue to replace non-functioning hydrants and valves
- Explore options to repair/replace watermain across Beaver Creek along Longbrook Rd



Water Purification Plant



Accomplishments - 2023

- Zero treatment violations
- Major repairs to Sedimentation Basins for Sludge Removal
- Completing Quarterly PFAS/PFOA sampling & testing
- Five (5) OEPA Water Supply Certifications were obtained by staff

Goals - 2024

- Meet all Water Quality Goals
- Make necessary/needed repairs to Water Towers and Storage Tanks
- Make improvements to Raw Water Intake
- Upgrade plant electrical equipment
- Clean sludge from basins and upgrade removal equipment
- Test in-line instrumentation to monitor water quality
- Continue to complete voluntary testing on emerging contaminants

WATER PURIFICATION PLANT PRODUCTION
Water Delivered to Distribution System (High Service)
2022 vs. 2023

2022 Month	Total (MG)	2023 Month	Total (MG)
January	188.706	January	193.006
February	175.396	February	169.020
March	199.177	March	177.869
April	173.422	April	167.887
May	182.099	May	196.955
June	214.741	June	210.085
July	186.344	July	196.127
August	219.437	August	186.738
September	216.784	September	178.040
October	197.408	October	172.003
November	175.022	November	153.897
December	200.023	December	157.687
Annual	2,328.559	Annual	2,159.314

WATER PURIFICATION PLANT TREATMENT
Water Treated at Purification Plant (Low Service)
2022 vs. 2023

2022 Month	Total (MG)	2023 Month	Total (MG)
January	197.529	January	204.137
February	184.298	February	176.853
March	208.226	March	186.228
April	182.377	April	176.555
May	191.941	May	206.285
June	223.919	June	218.744
July	197.305	July	204.833
August	229.837	August	196.457
September	224.245	September	185.833
October	206.185	October	179.307
November	181.799	November	163.150
December	207.433	December	164.695
Annual	2,435.094	Annual	2,263.077

Safety and Training



Accomplishments - 2023

- Reduced the number of accidents by one (1) from total in 2023
- Created SOP for Bloodborne Pathogens
- Updated Contingency Plans with Sub Departments
- Upgraded tripod safety harnesses for all employees
- Repaired and inspected ALL cranes and hoists in Utilities Department
- Continue meeting quarterly with Safety Committee form 6621
- Created additional safety forms for better communication in the Utilities Department
- Treatment Safety Certificate for BRWPC (applied in 2022 and awarded in 2023)
- Sewer Department received Safety Award Collections – 20+ Employees (applied in 2022 and awarded in 2023)

Goals - 2024

- Continue and complete necessary safety and training courses
- Schedule and maintain EPA required contact hours for required personnel
- Continue creating SOP's that are necessary for Utilities Department daily operations
- Continue to establish uniform system for Safety Data Sheets for Utilities Department
- Continue to decrease the number of preventable injuries
- Schedule quarterly safety inspections for all Utilities Sub-Departments

Capital Projects

2023 – Capital Improvement Projects (Completed/Ongoing)

Project	Department	Commencement Date
Water Plant Rehabilitation - Design	Water Purification	Ongoing
East Lorain Waterline Project - Construction	Water Distribution	Completed
Pearl & Tacoma Pump Station Improvements - Design	Wastewater Treatment	Ongoing
Jaeger Road Pump Station Improvements - Design	Wastewater Treatment	Ongoing
Sewer & Manhole Lining and Rehabilitation - Year 5	Sewer Department	Completed
Water Main Replacement Program Year 1 - Construction	Water Distribution	Completed
Water Main Replacement Program Year 2 - Design	Water Distribution	Ongoing
Lead Service Line Removal Phase 1 – Construction	Water Distribution	Completed
Lead Service Line Removal Phase 2 – Construction	Water Distribution	Ongoing

Lorain Utilities Department

Department Leadership

Joseph A. Carbonaro

Director of Utilities

Carmen Dito

Superintendent of Billing & Meter

Alex T. Berki

Superintendent of Black River

Tim Cox

Assistant Superintendent of Black River

Brent Stoll

Assistant Superintendent of Black River

Avery Brown

Superintendent of Water Purification

Neuronsy Adams

Assistant Superintendent of Water Purification

Robert Butler

Superintendent of PQM

Robert Culp

Superintendent of Sewer

Allen Wilson

Assistant Superintendent of Sewer

James Malick

Superintendent of Water Distribution

Gabriel Ramos

Assistant Superintendent of Water Distribution

Ronald Russell

Safety & Training Compliance Officer

Douglas Dietzel

Environmental Manager

“Water is the driving force of all nature.” – Leonardo da Vinci

