2022
ANNUAL REPORT
of the
KENOSHA WATER UTILITY
Kenosha, Wisconsin

BOARD OF WATER COMMISSIONERS (Jan - March)

David Bogdala, Chairperson
Bruce Fox, Vice Chairperson
Mitchell Pedersen
Jack Rose
Dominic Ruffalo
Bill Siel

BOARD OF WATER COMMISSIONERS (April - Dec)

David Bogdala, Chairperson
Bill Siel, Vice Chairperson
Anthony Kennedy
Dave Mau
Jack Rose
Dominic Ruffalo

Curt Czarnecki, General Manager
Melissa Arnot, Assistant General Manager

DIVISIONS

John Andersen, Director of Information Technology/Geographic Information Systems
Ian Bagley, Director of Engineering
Todd Giese, Director of Business Services
Steven Hayek, Director of Water Distribution & Sanitary Sewer Collection
Sue Hill, Director of Personnel & Administration
Katrina Karow, Director of Wastewater Treatment
Ryan Spackman, Director of Water Production

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Kenosha Water Utility
Curt Czarnecki
General Manager
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"Providing and Protecting Kenosha's Greatest Natural Resource"

June 2023

Board of Water Commissioners
Kenosha Water Utility
4401 Green Bay Road
Kenosha, WI 53144

Subject: 2022 Annual Report

I respectfully submit the 2022 Annual Report for the Kenosha Water Utility (KWU). The annual report documents the statistics of the operations, capital improvements and financial activity of our three enterprise systems: Water System, Sewerage System, and Household Hazardous Waste Program.

The Kenosha Water Utility continues to maintain a strong financial standing. Operating revenues in the Water System and Household Hazardous Waste Program exceeded operating expenses for the 2022 calendar year. Operating revenues in the Sewer System fell behind operating expenses in 2022. This can mainly be attributed to significant increases in chemical, electrical and natural gas costs. This figure however illustrated the Board of Water Commissioners made a sound financial decision to increase sewer rates in 2023 and beyond.

Each division has provided detailed descriptions of their activities over the past year. It is encouraging to review these accomplishments and realize that we have an outstanding group of directors, supervisors and staff that not only provide exceptional quality water and sewer service, meeting and exceeding all state and federal requirements, but are dedicated to provide this service 24-hours per day, seven days a week, 365 days a year to fulfill our overall mission to **"Provide and Protect Kenosha's Greatest Natural Resource."**

Similar to the rest of the Kenosha community, KWU experienced a challenging year in 2022 adapting to the large inflationary pricing increases, a challenging labor market and continuing supply chain delays. While these events tested our resilience, it also helped accentuate what great employees we have and the excellent customer service they provide. I was extremely proud of how our employees adapted to the changing landscape while also continuing to demonstrate their dedication, knowledge, work ethic, and attention to detail.

Finally, I would like to thank the Board of Water Commissioners for the trust, respect, guidance and leadership you have provided to the Kenosha Water Utility and its staff over the past year. I look forward to another productive and successful year in 2023.

Sincerely,

Curtis Czarnecki, P.E.

Melissa Arnot
Assistant General Manager
4401 Green Bay Road
Kenosha, WI 53144

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Fax (262) 653-4303

"Providing and Protecting Kenosha's Greatest Natural Resource"

June 2023

Mr. Curtis Czarnecki, P.E.
General Manager
Kenosha Water Utility
4401 Green Bay Road
Kenosha WI 53144

Subject: 2022 Annual Report

Dear Mr. Czarnecki,

Over the past year, you have led the Utility extremely well and I am thankful to be working under your guidance and leadership. Thank you for all of the continued hard decisions that you make for the Utility. You are truly making an impact here and staff can see your dedication and drive to make this a place where we can all be proud to work. This year you implemented a number of changes to try and compete with the private sector and provide employees additional benefits.

My time is divided between a number of projects and I get to work with all the divisions in one way or another. Over the last year I was involved mostly with wastewater, production and some of engineering. All of the directors of those departments go into more detail on these projects. When I reflect on what I spent the most time on the following items stick out: the operational issues at wastewater, the membrane plant upgrade, overseeing the lead service program where 375 services were replaced and paid for through the WI DNR grant, reviewing safety policies, and continuously trying to create improvements.

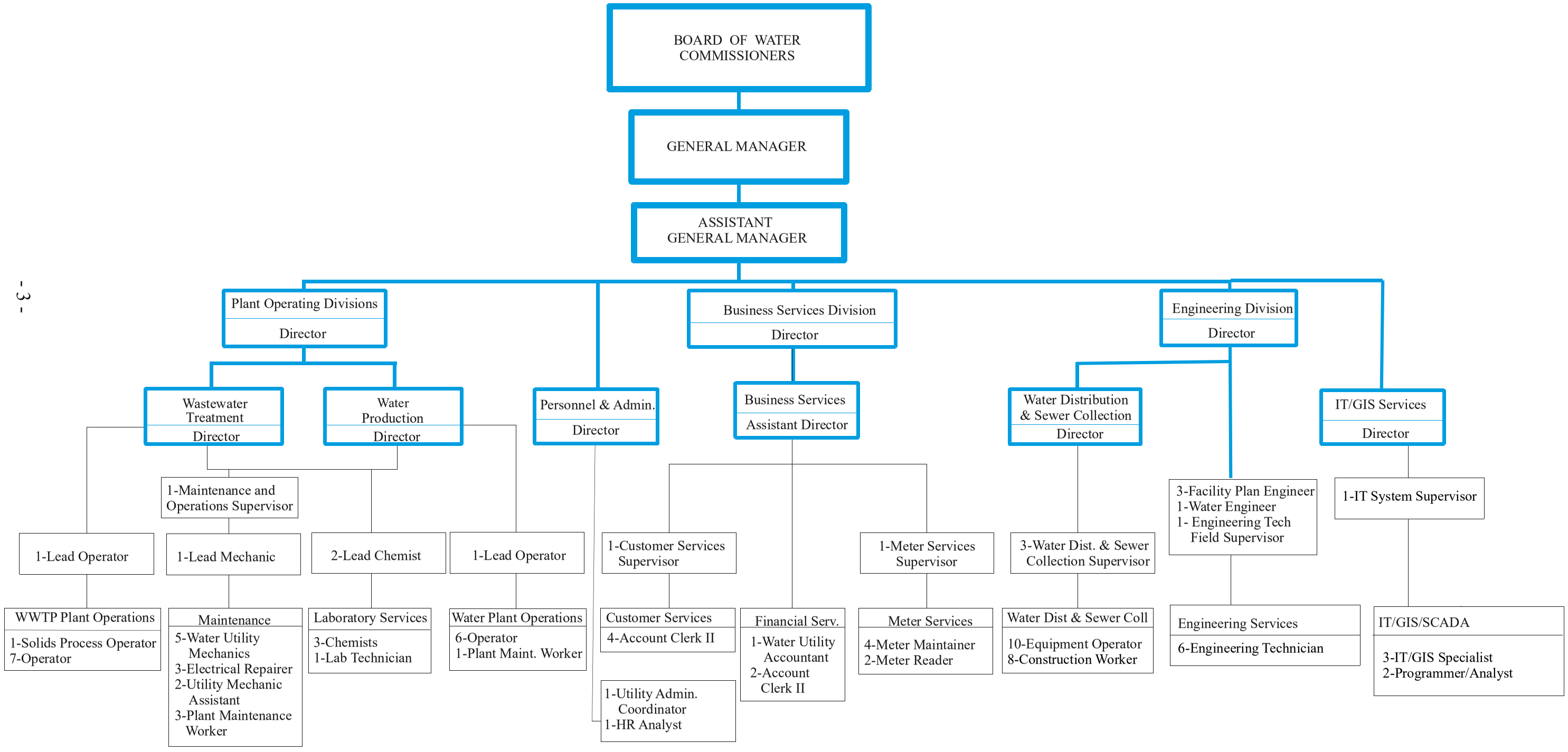
We continued to have many retirements and new hires. I am fortunate to be able to work with all departments on different projects, which allows me to see many different employees work. We have a dedicated, determined and extremely talented staff who do not hesitate to respond to these challenges and I am amazed and thankful for their skills and knowledge.

I would like to thank the Board of Water Commissioners for their continued support and trust. There is no doubt of our entire team's commitment to the mission of the Utility and to be responsive and provide a high level of service to the citizens of Kenosha.

Sincerely,
-melissa Arnot

Melissa Arnot, P.E.
Assistant General Manager

2022 Organizational Chart



General Statistics
Water

		2022	2021
1.	Population of Kenosha, Pleasant Prairie, Somers & Bristol	136,689	137,605
	Population of current service area (estimated)	121,015	119,759
	Population of City of Kenosha	100,051	98,998
2.	Total gallons pumped	6,262,991,000	6,013,603,000
3.	Total gallons low lift water used in plant	445,475,000	618,891,000
4.	Total gallons water pumped – high lift use	5,817,516,000	5,394,712,000
5.	Total gallons high lift water accounted for, not metered	392,959,000	66,533,750
6.	Total gallons water pumped to distribution system	5,424,557,000	5,328,178,250
7.	Increase (decrease) from previous year	1.81%	15.05%
8.	Total gallons passed through customers' meters	4,554,276,000	4,713,337,000
9.	Percent of water accounted for	85%	89%
10.	Consumption:		
	Minimum gallons pumped in any one day	11,400,000	10,290,000
		January 3, 2022	February 1, 2021
	Maximum gallons pumped in any one day	26,790,000	27,100,000
		July 3, 2022	June 12, 2021
11.	Total daily consumption – Average	12,477,468	12,913,252
	Average daily consumption per capita – gallons per day	103.11	107.83
12.	Total number of services	30,561	30,496
	Active accounts (total meters less in stock and deduct meters)	31,300	31,259
	Number of services added (net)	65	15
	Per mile of pipe	81.69	81.95
	Persons per service (City of Kenosha)	3.27	3.25
13.	Pipe in distribution system (in miles)	374.13	372.13
	Size range in diameter	1” - 48”	1” - 48”
	Pressure range – pounds per square inch	40 – 80	40 – 80
	Population per mile (City of Kenosha)	267.42	266.03
14.	Valves for distribution system (except hydrant valves)	6,146	6,094
	Total installed for year	52	12
15.	Hydrants for distribution system	3,435	3,413
	Total installed for year (69 new - 47 retired = 22 additional)	22	10
	Per mile of pipe	9.18	9.17
16.	Utility operating revenue	$ 16,810,893	$ 15,398,257
	Net Operating Income (Loss)	$ 1,536,198	$ 1,517,940
	Net Income (Loss) (all expense and revenue)	$ 3,825,713	$ 2,482,450

		2022	2021
17.	Operating and maintenance expenses	$ 9,858,084	$ 9,135,010
	Per mile of pipe to expense	$ 26,349.35	$ 24,547.90
	Per million gallons to distribution system	$ 1,817.31	$ 1,714.46
18.	Tax Equivalent – Water	$ 1,982,532	$ 2,157,345
	Increase (decrease) from previous year	-8.1%	-5.0%
	Percent of operating revenue	11.8%	14.0%
19.	Depreciation and Amortization	$ 3,447,039	$ 2,613,882
	Percent of operating revenue	22.4%	17.0%
20.	Production Cost Analysis of Energy Used		
	Total electrical costs (high and low lift)	$ 549,286	$ 540,484
	Cost for pumping (per million gallons)	$ 87.70	$ 89.88
	Total electrical costs (booster system)	$ 177,237	$ 176,668
	Cost of re-pumping for booster system (per million gallons)	$ 76.29	$ 73.58
	Total electrical energy consumed at plant	$ 676,276	$ 635,866
	Total natural gas energy consumed at plant	$ 47,288	$ 44,660
21.	Production Cost Analysis of Chemicals Used		
	Sand Filters		
	Sulfate of Aluminum – total tons	451.1	411.8
	Chlorine – total tons	33.9	34.4
	Hydrofluosilcic acid (Fluoride) – total tons (liquid weight)	49.1	50.6
	Orthophosphate – total tons (liquid weight)	52.2	53.8
	Total cost per million gallons of filtered water	$58.34	$39.42
	Membrane Filters		
	Chlorine – total tons	18.8	14.1
	Hydrofluosilcic acid (Fluoride) – total tons (liquid weight)	27.0	20.5
	Orthophosphate – total tons (liquid weight)	28.1	22.2
	Total cost per million gallons of filtered water	$57.23	$32.78
22.	Plant Capacities:		
	Treatment plant	42.0 MGD	42.0 MGD
	Low lift pumps	50.0 MGD	50.0 MGD
	High lift pumps	48.0 MGD	48.0 MGD
	Lake intake	102.0 MGD	102.0 MGD
	Emergency intake	15.0 MGD	15.0 MGD
23.	Water usage in booster service area (million gallons)	2,323.25	2,400.89
24.	Average number of General Customers by class		
	Residential	27,714	27,679
	Multifamily Residential	1,107	1,105
	Commercial	2,173	2,168
	Industrial	84	84
	Private Fire Services	564	552
	Public Authorities	191	195
	Sales for Resale (points of sale)		
	Village of Pleasant Prairie	4	4
	Village of Somers	8	8
	Village of Bristol	2	2

General Statistics
Sewer

		2022	2021
25.	Total gallons wastewater pumped & treated	7,868,084,000	7,161,286,000
26.	Increase (decrease) from previous year	9.87%	(22.68%)
27.	Treatment:		
	Minimum gallons treated in any one day	14,438,000	14,807,000
	Date:	February 13, 2022	November 26, 2021
	Maximum gallons treated in any one day	56,060,000	40,661,000
	Date:	April 23, 2022	March 10, 2021
28.	Total daily wastewater treated – Average	21,556,395	19,619,962
	Average daily treatment per capita – gallons per day	178.13	163.98
29.	Total dry solids to digester, tons	5,684	5,719
30.	Sludge to dewatering centrifuge, gallons	26,442,354	26,399,712
	Sludge to dewatering centrifuge, wet tons	110,265	110,087
	Percent solids	2.25%	2.41%
31.	Sludge off dewatering centrifuge (to landfill), wet tons	4,792	6,979
	Sludge off dewatering centrifuge (to dryer), wet tons	4,262	3,200
	Percent solids	26.2%	25.2%
32.	Sludge from dryer (to landfill), wet tons	1201	848
	Percent solids	93.0%	95.1%
33.	Sludge to landfill, dry tons	2,387	2,556
	Grit to landfill, tons	818	822
34.	Pipe in collection system (in miles)	345.58	344.49
	Size range in diameter	1.5” - 99”	1.5” - 99”
	Population per mile (City of Kenosha)	289.52	287.38
35.	Utility operating revenue	$ 13,479,546	$ 13,981,245
	Net Operating Income (Loss)	($ 312,577)	$ 496,822
	Net Income (all expense and revenue)	($ 584,577)	$ 790,194
36.	Operating and maintenance expenses	$ 10,070,319	$ 10,282,597
	Per mile of pipe to expense	$ 34,782.81	$ 35,780.49
	Per million gallons collected	$ 1,279.89	$ 1,435.86
37.	Depreciation	$ 3,721,803	$ 3,201,825
	Percent of operating revenue	27.6%	22.9%
38.	Wastewater Treatment Cost Analysis of Energy Used		
	Total electrical costs (wastewater treatment)	$ 486,576	$ 595,071
	Cost for treatment (per million gallons)	$ 61.84	$ 83.10
	Total electrical costs (lift stations)	$ 62,460	$ 58,682
	Cost of pumping sewage to treatment plant		
	Total natural gas energy consumed at plant	$ 139,073	$ 109,695
	Methane gas produced by digesters (therms)	463,015	484,125
	Value of methane gas (estimate)	$ 319,905	$ 346,653

	2022	2021
39. Wastewater Treatment Cost Analysis of Chemicals Used		
Ferric Chloride - total gallons	193,849	193,868
Chlorine - total tons	67.0	59.1
Sulfur Dioxide - total tons	48.6	47.2
Polymer - total tons	69.0	68.0
Sodium Hydroxide - total pounds	171,116	123,913
Sulfuric Acid - pounds	3,400	0
Hydrogen Peroxide - pounds	4,491	0
Total cost per million gallons of treated sewage	$ 99.50	$ 78.69
40. Plant Capacity	28.6 MGD	28.6 MGD
41. Average number of General Customers by class		
Residential	26,954	26,930
Multifamily Residential	948	947
Commercial	1,980	1,985
Industrial	70	70
Public Authorities	151	153
Sales for Resale (points of sale)		
Village of Pleasant Prairie	4	4
Village of Somers	4	4
Village of Bristol	1	1

Water Utility Vehicles – 2022

Water Distribution

Fleet #	Description
2091	1992 Ford Truck with Utility Service Body
2367	1997 Ford Hydro Vac Valve Turner Truck
2701	2003 GMC 1 Ton Dump Truck
2843	2006 GMC Pickup with Plow
2850	2006 GMC Pickup
2852	2006 GMC Pickup
2854	2006 GMC 1 Ton Dump Truck
2856	2006 GMC Crew Cab with Utility Service Body
2878	2006 Sterling Tandem Axle Dump Truck
2957	2008 Freightliner Tandem Axle Dump Truck
2959	2008 GMC Van
2960	2008 GMC Pickup
3070	2010 Ford Crew Cab with Utility Service Body
3299	2015 International Tandem Axle Dump Truck
3303	2015 International Tandem Axle Dump Truck
3331	2015 Chevrolet Pickup
3371	2017 GMC Pickup
3376	2017 Ram 1 Ton Dump Truck
3424	2019 International Tandem Axle Dump Truck
3472	2019 Ram 4500 with Utility Service Body
4037	2020 Chevrolet Pickup
4055	2021 International Tandem Axle Dump Truck
4064	2021 GMC Pickup
4074	2022 International Tandem Axle Dump Truck
4115	2022 GMC Pickup
4120	2022 Ram 5500 with Drill Rig

Sewer Repair/Inspection

2299	1996 IHC Tandem Axle Dump Truck
2421	1998 IHC Tandem Axle Dump Truck
2472	1999 Sewer Flusher Vacuum
2554	2000 Vactor Sewer Cleaner
3352	2005 Sewer Flusher Vacuum
2884	2006 TV Truck – Ford Chassis
4105	2007 Peterbilt Semi Tractor
3093	2008 Eager Beaver Lowboy Trailer
3043	2009 Ford F450 with Utility Service Body
3284	2015 GMC Tandem Axle Dump Truck
3370	2017 GMC Pickup
3425	2019 International Tandem Axle Dump Truck
3473	2019 Ram 4500 with Utility Service Body
4039	2020 Chevrolet 1 ton Dump Truck
4081	2022 Vactor Sewer Cleaner

Administration/Customer Service

2962	2008 Jeep Liberty
3253	2013 Chevrolet Suburban

Water Production

2961	2008 GMC Pickup
3283	2014 GMC Pickup
3484	2019 Jeep Compass
4116	2022 GMC Pickup

Meter Shop

Fleet #	Description
2849	2006 GMC Van with Utility Service Body
3127	2011 GMC Van
3248	2014 GMC Van
3257	2014 GMC Van
3285	2014 GMC Van

Wastewater Treatment

1965	1990 Ford Platform Truck with Crane
2063	1991 Ford with Galbraith Container System
2115	1993 IHC Tandem Axle Dump Truck
2535	2001 Ford Pickup
2559	2001 Sterling Dump Truck
2652	2003 Ford Utility Truck with Crane
2700	2003 GMC Van
2746	2004 GMC Pickup
2862	2006 GMC Van
2866	2006 GMC Pickup
2883	2006 GMC Pickup
3407	2006 Ford F750 with Crane
2930	2007 GMC Pickup
2945	2008 Freightliner Quad Axle Dump Truck
2966	2008 GMC Van
3105	2011 GMC Pickup
3391	2008 IHC 4400 with Versalift
3073	2010 Ford Escape Hybrid
3297	2014 Ram 4500 with Service Body and Crane
3304	2014 Ford Edge
3377	2018 Western Star Quad Axle Dump Truck
3463	2018 Ram 3500 with Plow
3453	2019 Ford Transit Cargo Van
4038	2020 Chevrolet Pickup
4150	2023 Freightliner with Container System

Engineering Services

2682	2003 GMC Van
2771	2004 Jeep Liberty
2842	2006 GMC Pickup
3004	2008 Dodge Grand Caravan
3024	2009 Jeep Grand Cherokee
3027	2009 Chevrolet Impala
3076	2010 Chevrolet Impala
3106	2011 GMC Pickup
3279	2014 GMC Pickup
3280	2014 GMC Pickup
3281	2014 GMC Pickup
3282	2014 GMC Pickup
3452	2019 Ford Transit Cargo Van
3474	2019 GMC Van
4114	2022 GMC Pickup
4117	2022 GMC Pickup
4163	2022 GMC Pickup
4165	2023 GMC Pickup

Water Utility Major Equipment – 2022

Distribution & Sewer Collection

Water Construction

Fleet #	Description
1011	1980 Case Crawler
455-19	1986 Tapmate Tap Machine
	1989 Wach Power Valve Turner
	1992 Wach Power Valve Turner
2366	1997 Case Wheel Loader
2891	2006 Nissan Forklift
3464	2006 Case Dozer
2958	2007 Airman Air Compressor
2968	2007 Case Tractor Loader Backhoe
2970	2008 Case Tractor Loader Backhoe
3326	2015 Case Tractor Loader Backhoe
	2016 Husqvarna Road Saw
3373	2017 Case Tractor Loader Backhoe
3410	2018 Case Tractor Loader Backhoe
3462	2019 Case Wheel Loader
4050	2020 Caterpillar Mini Hydraulic Excavator

Water Production

	1998 Mitsubishi Fork Truck
	2006 Kubota Mower
	2022 Kubota Mower

Sewer Repair/Inspection

Fleet #	Description
3092	2009 Caterpillar Excavator
3334	2016 Case Tractor Loader Backhoe
1050	1980 6” Marlow Pump
	1995 6” Marlow Pump
	1998 4” Barnes Submersible Pump
2551	2000 8” Godwin Pump
2552	2000 6” Gorman-Rupp Pump

Wastewater Treatment

1787	1998 John Deere Mower
	1999 8” Thompson Pump
2987	2003 New Holland Skid Loader
2819	2005 Kubota Mower
2893	2007 JCB Wheel Loader
3332	2015 Kubota Mower
3465	2019 Kubota Mower
3482	2019 Yale Forklift

Water Service Centre

2890	1996 Kubota Mower

Engineering Services
4401 Green Bay Road
Kenosha WI 53144

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"Providing and Protecting Kenosha's Greatest Natural Resource"

June 2023

Mr. Curtis Czarnecki, P.E., General Manager
Kenosha Water Utility
4401 Green Bay Rd.
Kenosha WI 53144

Subject: 2022 Annual Report – Engineering Services Division

Dear Mr. Czarnecki,

I respectfully submit the annual report for the Engineering Services Division for the year 2022. Kenosha Water Utility's Engineering Services Division continues to provide a wide variety of engineering services for the various operating divisions within the utility as well as City departments, public agencies, contractors, and developers.

Planning, review and oversight of private development continues to be a major focus of the Engineering Services Division as we performed 155 private development reviews on 101 different projects in 2022. We are still seeing extensive industrial use along with single family residential and apartment developments.

In addition to private development, the Utility awarded multiple contracts to help rehabilitate and enhance our aging infrastructure, almost exclusively in areas subject to roadway reconstruction and resurfacing. These contracts totaled $4,886,772.50 and a summary can be found later in this report under "2022 Engineering Service Contracts Awarded". These contracts included multiple water main and sanitary sewer main relay projects, much needed upgrades to our Big Buck lift station, and our first sanitary sewer lining project in over 20 years. Our plan moving forward is to have a yearly sanitary sewer lining contract which will help extend the life of our aging system at 15% the cost of replacement.

The KWU lead service replacement program continued to be a priority in 2022 as KWU replaced 328 public side services with our Distribution Division as well as funding 375 private side service replacements. KWU funded an additional 53 private side lead service replacements in 2022 compared with 2021 as we were able to obtain a grant of $2,154,125 from the Safe Drinking Water Loan Program of the Wisconsin Department of Natural Resources. The number of public side lead service replacements increased by 121, greater than a 50% increase compared with 2021, performed entirely with our Distribution Division. The increase can be greatly attributed to the diligence of our Distribution Division with the assistance of the Engineering Services and IT/GIS Divisions. We were able to leverage the power of our Geographic Information System to make maps to greatly increase efficiency. As a result, each of our crews were regularly performing as many as three lead service replacements a day.

On behalf of the staff of the Engineering Services Division, I would like to thank the Board of Water Commissioners as well as our other divisions for all of their efforts to make 2022 another safe, productive, and successful year.

Sincerely,

Ian C. Bagley, P.E.
Director of Engineering Services

Information Technology/
Geographic Information Systems
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"Providing and Protecting Kenosha's Greatest Natural Resource"

June 2023

Mr. Curt Czarnecki, General Manager
Kenosha Water Utility
4401 Green Bay Road
Kenosha WI 53144

Subject: 2022 Annual Report - Information Technology / Geographic Information Systems

Dear Mr. Czarnecki,

The Information Technology (IT) / Geographic Information Systems (GIS) team had a very busy and successful year providing 24/7/365 IT services to all of the Kenosha Water Utility's staff.

In addition to the IT/GIS team working on new projects this year, they continued to support the utility with better ways to not only get the job done easier by using mobile technology, but also to reduce paperwork. The team is always striving to find more efficient ways to do tasks while providing users the proper IT tools.

Some of the legacy services and various new projects that were worked on this year are listed below:

- Continued to support our users by being available at any time to answer questions, troubleshoot or fix any IT issues 24/7/365.
- Training was conducted for users in all of our IT areas to include: thin and mobile clients, GIS and SCADA (Supervisory Control and Data Acquisition) either in groups or one-on-one environments.
- Improved network architecture throughout the main office engineering department with updated switches and cabling.
- Upgraded the Ignition SCADA system at the WWTP plant to include: New version of the Ignition software (8.1.23), updated database (Postgresql 15) and updated Linux clients(Ubuntu 22.04) located throughout the 6 locations at the plant.
- Completed the elimination of all remaining End-of-Life MS windows physical machines.
- Continued to enhance our open-source Geographic Information System called Quantum GIS which allows more users to access the GIS system for substantially lower cost without the yearly maintenance fees from legacy software companies.
- Enhanced and updated KWU's website, www.kenosha.org,

I would like to thank you and the Board of Water Commissioners for their continued support. Additionally, I would also like to thank the IT/GIS staff and all of the divisions within the Water Utility for their support and patience throughout this second challenging year of the pandemic.

Respectfully submitted,

John N. Andersen

John N. Andersen
Director of Information Technology /
Geographic Information Systems

2022 Engineering Service Contracts Awarded

Project	Contractor	Description	Awarded Cost
2022-01-W	A.W. Oakes & Son, Inc.	Pershing Boulevard Area Water Main Relays Pershing Boulevard - 60th Street to 67th Street 60th Street & 46th Avenue Intersection 60th Street & 47th Avenue Intersection	$ 829,402.00
2022-02-W	Globe Contractors, Inc.	KWU Water Main Relay Package #2 (City Resurfacing Projects) 43rd Avenue – 87th Street to 89th Street 54th Avenue – 54th Court to 58th Street 56th Avenue – 52nd Street to 350 feet South 26th Avenue – 23rd Street to 24th Street	$ 888,669.50
2022-03-WWTP	August Winter & Sons	Big Buck Lift Station Improvements Phase I	$ 1,045,000.00
2022-04-W	Reesman's Excavating and Grading, Inc.	KWU 2022 Water Main Relay Package #3 (Town & Country Stormwater Project) 40th Avenue – Grant Road to 650 feet South 40th Avenue – 75th Street to 210 feet South 40th Avenue – Grant Road to 75th Street (Sanitary Sewer Spot Repairs)	$ 359,590.00
2022-05-W	DK Contractors, Inc.	KWU Water Main Relay Package #4 (STH 50 Reconstruction) 75th Street – 47th Avenue to 49th Avenue 75th Street – 60th Avenue to 150 feet East of 57th Avenue 60th Avenue – 75th Street Intersection	$ 804,305.00
2022-06-S	Visu-Sewer, Inc.	KWU 2022 Sanitary Lining Package (City Resurfacing & Reconstruction Projects) 22nd Avenue – 84th Street to 85th Street 37th Avenue – 55th Street to 60th Street 54th Avenue – 5523 54th Avenue to 5625 54th Avenue 56th Avenue – 52nd Street to 55th Street Pershing Boulevard – 60th Street to 67th Street 89th Street – 4008 89th Street to 41st Avenue	$ 371,210.00

2022 Developer Infrastructure Accepted

	Water Mains	Hydrants	Services
Western Water Main Extension on 128th Avenue, 60th Street and 122nd Avenue	$ 1,141,466.15	$ 103,935.00	-
Riverwoods Subdivision	452,350.17	36,900.00	142,000.00
Firestation #4 Water Main Relocation	298,067.68	8,230.00	24,896.00
Northpoint Development	236,769.03	38,678.15	-
Airport Runway Expansion	233,531.35	2,740.00	-
Ava Woods Subdivision	100,286.82	18,441.00	63,684.00

	Sanitary Sewer Mains
Riverwoods Subdivision	$ 418,260.54
Ava Woods Subdivision	165,599.51
Northpoint Development	60,505.55

Note: Total cost includes developer and KWU costs.

2022 Engineering Staff and G.I.S. Personnel
Recap of Significant Projects

	Hours
Water Production Engineering - Total Hours 297	
Water Treatment Plant & Reservoir Maintenance	297
Sewerage System Engineering - Total Hours 5,843	
Sanitary Sewer Locates (Digger's Hotline)	1,980
Wastewater Treatment Plant Maintenance	1,942
Sewer Repair, Cleaning and Inspection	1,895
Big Buck Lift Station Improvements - Phase 1	26
Water Distribution System - Total Hours 8,768	
Water System Locates (Digger's Hotline)	2,589
Maintenance of Mains, Services and Hydrants	2,918
Lead Service Replacement Program	3,261
Water Main Installed by Kenosha Water Utility Crews - Total Hours 25	
Water Main Replacement - 60th Avenue-75th Street to 73rd Street	25
Water Main Installed by Kenosha Water Utility Contract - Total Hours 2,213	
Water Main Replacement - Pershing Boulevard-60th Street to 67th Street	450
Water Main Replacement - 22nd Avenue-81st Street to 85th Street	291
Water Main Replacement - 75th Street-47th Avenue to 49th Avenue	290
Water Main Replacement - STH 50-60th Avenue to 150 feet East of 57th Avenue	265
Water Main Replacement - 43rd Avenue-87th Street to 89th Street	235
Water Main Replacement - 54th Avenue-54th Court to 58th Street	215
Water Main Replacement - 60th Street Intersections-46th Avenue and 47th Avenue	142
Water Main Replacement - Various Locations	325
Sewer Main Installed by Kenosha Water Utility Contract - Total Hours 57	
Sewer Lining - 8", 18" and 24"	28
Sewer Main Replacement - Various Locations	29
New Development - Total Hours 731	
Plan/Project Review	731
GIS Infrastructure Mapping - Total Hours 2,732	
Water Infrastructure	1,522
Sewer Infrastructure	1,210

Business Services
4401 Green Bay Road
Kenosha WI 53144

Phone (262) 653-4300
Fax (262) 653-4320

"Providing and Protecting Kenosha's Greatest Natural Resource"

June 2023

Mr. Curt Czarnecki, General Manager
Kenosha Water Utility
4401 Green Bay Road
Kenosha WI 53144

SUBJECT: 2022 Annual Report – Business Services Division

Dear Mr. Czarnecki,

I respectfully submit the Annual Report of the Kenosha Water Utility Business Services Division.

This division combines the talents and resources of personnel in the areas of customer service, meter reading, meter maintenance and accounting. This combined group strives to provide prompt and accurate service to both our internal and external customers. In addition to general questions about bills, Business Services attempts to be proactive in resolving matters before they become complaints. Our staff in all areas strives to make each customer contact a positive one.

Meter shop personnel are required to be certified as cross connection control testers with the State of Wisconsin. They test all RPZ devices for the Utility as well as other City departments. They have continued the meter testing program for meters larger than 1-inch according to Public Service Commission guidelines. The meter shop provides residential cross connection inspections, sump pump inspections, meter inspections prior to sale of vacant properties as well as doing meter replacements under the twenty year change-out program for small meters. Meter readers are efficiently reading, on average, 410 meters per day. Our meter maintenance personnel use safe contact practices to protect both themselves and our customers.

The finance division supports the entire Utility by providing payroll, accounting, accounts payable, budgeting, purchasing and other services. The rate of return for the water unit was 2.99% based on an average net rate base valued at $56,634,026. The rate of return for the sewer unit was -0.94% based on an average net rate base valued at $33,133,192 and net operating loss of $312,577. Rate of return represents the gain or loss on an investment relative to the amount of money invested. For the utilities, this translates to the profit earned on the investments in infrastructure, technology and other operational necessities. A favorable rate of return enables the utility to reinvest in modernizing facilities, improving service quality and expanding capacity to meet the growing demands or our customers.

I would like to thank you and the other members of the utility management for their continued guidance and support. I wish to thank my staff for their dedication and fine work attitude which are key to getting the job done. Business Services Division employees, together with other divisions, will work to insure that the Kenosha Water Utility continues to "Provide and Protect Kenosha's Greatest Natural Resource."

Sincerely,

Todd L. Giese
Director-Business Services

Water and Sewerage Service Charges – 2022

Water Rates

Water rates for municipally owned water utilities in Wisconsin must be approved and authorized by the Public Service Commission of Wisconsin. The Kenosha Water Utility policy is to maintain water rates that will provide 1.3 times coverage of maximum annual debt service by net income of the system.

Sewerage Service Rates

Sewer service rates for Kenosha are authorized by the Board of Water Commissioners. The Kenosha Water Utility policy is to maintain sewer rates that will provide 1.2 times coverage of maximum annual debt service by net income of the system.

Water Utility General Service Billing

The Kenosha Water Utility issues water and sewer service bills on a bi-monthly basis to residential, commercial and public customers. High consumption customers are billed monthly. The “Sale for Resale" category was added in 1990 and is billed monthly.

Water Rates Effective February 1, 2022
Public Fire Protection Rates Effective February 1, 2022

Meter Size	Public Fire Protection Bi-Monthly Charge	Meter Service Bi-Monthly Charge
5/8 Inch	$8.12	$10.26
3/4 Inch	8.12	10.26
1 Inch	10.82	19.60
1-1/2 Inch	16.24	36.20
2 Inch	24.36	50.00
3 Inch	32.48	112.00
4 Inch	40.60	156.00
6 Inch	48.72	240.00
8 Inch	56.84	340.00
10 Inch	64.96	440.00
12 Inch	73.08	580.00

Plus volume charges:

First 1,700 cubic feet used each month or
3,400 cubic feet used each two months - $ 2.26 / 100 cu. ft.
Next 23,300 cubic feet used each month or
46,600 cubic feet used each two months - $ 2.15 / 100 cu. ft.
Over 25,000 cubic feet used each month or
50,000 cubic feet used each two months - $ 1.76 / 100 cu. ft.

Sewerage Service Rates Effective June 1, 2015

$2.48 monthly or $4.96 bi-monthly - Plus $1.99 / 100 cubic feet

100 cubic feet = 748 gallons

CONSUMPTION CHARGES BY CUSTOMER CLASS
BASED ON BILLING DATE, NOT ACCRUAL BASIS

RESIDENTIAL

	Water		Public Fire	HHW	Sewerage		
Bill Mo.	Cons.Ccf	Charge	Protection	Charge	Cons.Ccf	Charge	Spr. Cr.
April 2022	143,563	$ 443,345.77	$ 96,701.12	$ 13,465.50	142,696	$ 350,734.08	
May 2022	143,642	467,221.31	112,530.32	13,416.50	136,733	338,671.91	
June 2022	142,740	462,858.16	110,684.42	13,466.50	141,820	348,980.92	
July 2022	159,949	507,212.78	114,720.00	13,422.50	151,758	342,114.03	$ 26,484.91
Aug 2022	170,294	524,755.73	111,556.42	13,467.00	168,714	343,744.22	58,760.72
Sept 2022	246,988	701,117.02	115,672.26	13,471.50	230,157	363,005.85	162,069.58
Oct 2022	184,362	556,767.05	110,680.36	13,466.00	182,634	342,015.43	88,182.87
Nov 2022	200,801	598,215.63	115,720.98	13,477.50	186,696	347,684.75	90,893.25
Dec 2022	160,269	502,037.64	110,684.42	13,466.50	158,771	330,764.46	51,948.95
Jan 2023	154,213	494,528.66	115,803.54	13,486.50	146,250	358,080.36	
Feb 2023	156,831	494,398.40	110,696.60	13,486.00	155,721	376,648.87	
March 2023	164,557	517,937.14	115,852.28	13,492.00	156,625	393,943.99	
Totals	2,028,209	$ 6,270,395.29	$ 1,341,302.72	$ 161,584.00	1,958,575	$ 4,236,388.87	$ 478,340.28

COMMERCIAL

	Water		Public Fire	Sewerage	
Bill Mo.	Cons.Ccf	Charge	Protection	Cons.Ccf	Charge
April 2022	39,381	$ 104,561.73	$ 11,508.68	38,381	$ 81,574.88
May 2022	52,379	137,256.06	13,697.81	50,297	104,781.20
June 2022	37,237	104,136.03	12,992.34	35,545	75,854.57
July 2022	63,589	160,007.36	13,944.26	20,446	109,692.30
Aug 2022	63,784	153,543.41	13,049.18	42,662	90,022.71
Sept 2022	88,499	207,864.64	14,499.12	60,511	124,977.94
Oct 2022	65,838	159,007.53	13,042.42	47,150	98,959.27
Nov 2022	80,131	192,968.02	14,511.28	60,074	124,312.14
Dec 2022	48,898	127,633.29	13,034.30	41,187	87,103.49
Jan 2023	57,134	148,073.28	14,715.63	51,554	107,367.33
Feb 2023	37,799	105,484.92	13,041.07	36,837	78,447.84
March 2023	55,750	144,999.98	14,495.03	54,242	119,018.57
Totals	690,419	$ 1,745,536.25	$ 162,531.12	538,886	$ 1,202,112.24

MULTIFAMILY RESIDENTIAL

	Water		Public Fire	HHW	Sewerage	
Bill Mo.	Cons.Ccf	Charge	Protection	Charge	Cons.Ccf	Charge
April 2022	31,451	$ 76,666.81	$ 5,926.21	$ 490.50	30,982	$ 63,462.08
May 2022	48,376	123,609.27	9,445.49	454.50	47,462	96,706.18
June 2022	32,014	82,442.76	6,687.83	490.50	31,517	65,149.23
July 2022	51,405	131,771.70	9,707.96	457.00	49,799	101,369.21
Aug 2022	34,892	88,485.44	6,687.83	490.50	33,492	69,079.48
Sept 2022	64,185	159,583.27	9,787.79	462.00	55,682	113,083.82
Oct 2022	38,926	96,969.47	6,695.95	490.50	33,988	70,069.00
Nov 2022	61,982	154,862.62	9,832.45	463.50	54,496	110,728.64
Dec 2022	35,814	42,003.18	6,704.07	490.50	33,885	69,866.51
Jan 2023	52,953	135,611.02	9,783.73	459.50	51,416	104,599.44
Feb 2023	35,075	88,985.71	6,704.07	490.50	34,543	71,175.93
March 2023	58,778	147,293.18	9,856.91	464.00	57,713	122,268.16
Totals	545,851	$ 1,328,284.43	$ 97,820.29	$ 5,703.50	514,975	$ 1,057,557.68

CONSUMPTION CHARGES BY CUSTOMER CLASS
BASED ON BILLING DATE, NOT ACCRUAL BASIS

PUBLIC

Bill Mo.	Water Cons.Ccf	Water Charge	Public Fire Protection	Sewerage Cons.Ccf	Sewerage Charge
April 2022	14,792	$ 34,071.27	$ 2,228.90	6,723	$ 13,825.17
May 2022	18,006	39,890.77	1,817.52	9,009	16,887.87
June 2022	17,731	40,870.70	2,577.94	7,573	15,526.59
July 2022	17,767	39,807.45	1,871.62	9,452	16,324.52
Aug 2022	32,719	69,072.33	2,590.12	8,375	17,125.05
Sept 2022	20,028	44,322.12	1,871.62	7,673	14,787.41
Oct 2022	34,176	71,279.55	2,577.94	7,947	16,270.85
Nov 2022	21,098	46,224.07	1,871.62	10,417	19,720.23
Dec 2022	19,457	44,483.98	2,577.94	8,018	16,412.14
Jan 2023	16,110	36,803.91	1,887.86	7,874	14,230.94
Feb 2023	16,710	39,394.16	2,577.94	7,879	16,130.57
March 2023	16,184	36,775.26	1,887.86	8,202	15,636.97
Totals	244,778	$ 542,995.57	$ 26,338.88	99,142	$ 192,878.31

INDUSTRIAL

Bill Mo.	Water Cons.Ccf	Water Charge	Public Fire Protection	Sewerage Cons.Ccf	Sewerage Charge
April 2022	44,621	$ 82,378.86	$ 856.91	21,687	$ 160,479.32
May 2022	50,781	93,436.87	855.18	26,194	108,423.49
June 2022	47,259	87,124.67	886.36	31,290	165,248.61
July 2022	50,657	93,436.35	829.54	32,696	200,896.12
Aug 2022	52,456	96,629.31	886.36	30,693	117,117.10
Sept 2022	41,895	78,277.68	853.90	24,006	91,383.44
Oct 2022	49,368	91,247.00	886.36	24,254	91,132.04
Nov 2022	49,544	91,517.31	853.90	24,290	79,947.42
Dec 2022	46,315	85,545.27	886.36	23,165	102,357.80
Jan 2023	43,321	80,309.53	837.66	22,039	76,638.06
Feb 2023	44,112	81,423.76	931.36	22,629	73,955.81
March 2023	44,448	82,382.29	837.66	23,289	83,607.74
Totals	564,777	$ 1,043,708.90	$ 10,401.55	306,232	$ 1,351,186.95

SALE FOR RESALE

Bill Mo.	Cons.Ccf	Water Charge	Public Fire Protection
April 2022	125,911	$ 208,279.92	$ 3,123.10
May 2022	141,730	234,182.88	3,123.10
June 2022	139,170	229,931.10	3,123.10
July 2022	160,072	264,247.47	3,123.10
Aug 2022	206,980	341,036.80	3,123.10
Sept 2022	258,216	424,873.59	3,123.10
Oct 2022	232,229	382,335.03	3,123.10
Nov 2022	196,507	323,826.02	3,123.10
Dec 2022	161,370	265,480.45	3,123.10
Jan 2023	132,421	218,955.35	3,123.10
Feb 2023	124,165	205,404.44	3,123.10
March 2023	142,897	236,096.27	3,123.10
Totals	2,021,668	$ 3,334,649.32	$ 37,477.20

Meter Services Report - 2022

Meter Size	New Accounts	Tested/ Upgraded	Total Meters
5/8" Meters	3	1,418	24,627
3/4" Meters	36	473	5,289
1" Meters	8	50	879
1-1/2" Meters	4	182	608
2" Meters	7	204	671
3" Meters	4	59	117
4" Meters	2	28	61
6" Meters	–	23	27
8" Meters	–	9	9
10" Meters	–	2	2
Total	**64**	**2,448**	**32,290**

New Private Fire Lines **8**

Meter Shop Activity

Set New Accounts	64
20 Year Meter Change Outs	1,826
Installl Radio Read Units	103
Remove Meter (test and replace)	197
Check Readings (high/low consumption, etc.)	1,830
Shut Offs, Take Out Seasonals	172
Repair Outside Register/Touch Pad	1,314
Pressure Tests	41
Locate/Clean Curb Box	350
Service Break Checks/Trace Services	31
Shut off at Curb (non-payment & customer requests)	335
Meters Bench Tested/Rebuild & Retest	520
Frozen Services	37
Frozen Meters	51
RPZ Testing	16
Large Meter-Field Testing	93
Total Service Calls	**6,980**

TEN YEAR COMPARISON OF CUSTOMER WATER CONSUMPTION

Average Number of Water Customers	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	% INCR (DECR) 2022 vs. 2021
Residential	27,410	27,452	27,500	27,541	27,572	27,597	27,625	27,763	27,789	27,824	0.13%
Multifamily Residential	1,130	1,115	1,164	1,077	1,091	1,095	1,097	1,112	1,109	1,112	0.27%
Commercial	2,176	2,177	2,114	2,166	2,158	2,157	2,163	2,241	2,235	2,239	0.18%
Industrial	60	61	66	84	83	85	85	87	85	86	1.18%
Public	183	185	185	191	191	198	199	201	197	193	(2.03%)
Irrigation	3	2	2	–	–	–	–	–	–	–	0.00%
Private Fire Lines	467	477	492	499	507	515	522	539	552	564	2.17%
Sale for Resale											
Pleasant Prairie	7	7	7	7	7	7	4	4	4	4	0.00%
Town of Somers	8	8	8	8	8	8	8	8	8	8	0.00%
Village of Bristol	2	2	2	2	2	2	2	2	2	2	0.00%
TOTAL	31,446	31,486	31,540	31,575	31,619	31,664	31,705	31,957	31,981	32,032	0.16%

Annual Consumption (1,000 Gallons)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	% INCR (DECR) 2022 vs. 2021
Residential	1,638,280	1,535,419	1,549,036	1,586,610	1,512,799	1,509,215	1,456,510	1,589,374	1,629,011	1,517,100	(6.87%)
Multifamily Residential	430,591	417,147	417,529	399,652	402,078	410,802	395,833	410,494	414,967	408,297	(1.61%)
Commercial	495,955	471,956	488,315	520,624	497,334	498,612	502,960	467,829	533,046	516,433	(3.12%)
Industrial	336,628	419,995	411,406	481,031	404,877	380,041	387,513	383,623	424,235	422,453	(0.42%)
Public	170,517	170,966	168,484	196,639	193,523	188,702	178,821	159,714	190,449	183,094	(3.86%)
Irrigation	1,323	1,744	2,014	–	–	–	–	–	–	–	0.00%
Sale for Resale											
Pleasant Prairie	746,097	761,521	1,012,853	1,188,200	1,220,396	1,096,551	1,025,478	1,086,056	1,336,945	1,325,669	(0.84%)
Village of Somers	146,385	142,909	145,463	160,352	162,849	187,724	173,431	163,097	193,105	176,248	(8.73%)
Village of Bristol	4,563	5,673	5,962	6,633	6,842	6,371	5,296	5,045	10,688	10,704	0.15%
TOTAL	3,970,339	3,927,330	4,201,062	4,539,741	4,400,698	4,278,018	4,125,842	4,265,232	4,732,446	4,559,998	(3.64%)

Customer Class as a Percent of Total Consumption	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Residential	41.26%	39.10%	36.87%	34.95%	34.38%	35.28%	35.30%	37.26%	34.42%	33.27%
Multifamily Residential	10.85%	10.62%	9.94%	8.80%	9.14%	9.60%	9.59%	9.62%	8.77%	8.95%
Commercial	12.49%	12.02%	11.62%	11.47%	11.30%	11.66%	12.19%	10.97%	11.26%	11.33%
Industrial	8.48%	10.69%	9.79%	10.60%	9.20%	8.88%	9.39%	8.99%	8.97%	9.26%
Public	4.30%	4.36%	4.01%	4.33%	4.40%	4.41%	4.34%	3.75%	4.02%	4.02%
Irrigation	0.03%	0.04%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sale for Resale										
Pleasant Prairie	18.79%	19.39%	24.11%	26.17%	27.73%	25.63%	24.86%	25.47%	28.25%	29.07%
Town of Somers	3.69%	3.64%	3.46%	3.53%	3.70%	4.39%	4.20%	3.82%	4.08%	3.87%
Village of Bristol	0.11%	0.14%	0.14%	0.15%	0.15%	0.15%	0.13%	0.12%	0.23%	0.23%
TOTAL	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Water Production Plant
100 51st Place
Kenosha WI 53140

Phone (262) 653-4330
Fax (262) 653-4362

"Providing and Protecting Kenosha's Greatest Natural Resource"

June 2023

Mr. Curtis Czarnecki, P.E., General Manager
Kenosha Water Utility
4401 Green Bay Rd.
Kenosha WI 53144

Subject: 2022 Annual Report for the O. Fred Nelson Water Production Plant

Dear Mr. Czarnecki,

I hereby respectfully submit the Annual Report for the O. Fred Nelson Water Production Plant. Kenosha Water Utility's Water Production Division continues to provide the highest quality drinking water to our customers. A total of 5.93 billion gallons was pumped into the distribution system in 2022. The average daily flow was 16.24 million gallons per day, with a maximum day of 26.79 million gallons which occurred on July 3rd due to heavy summer time usage. The average tap water turbidity was 0.034 NTU, and the average chlorine residual was 1.1 mg/l. Some significant projects completed in 2022 include:

- **Completion of the Membrane Plant Upgrade at Production**
- **Rebuild of Raw Water Pump 121 at Production**
- **Final integration of Ignition SCADA at Production**
- **Replacement of the chlorinators at Production**

Construction of the Membrane Plant Upgrade was completed in July of 2022 ahead of schedule and under budget. The new plant is capable of producing 21.775 million gallons per day and brings the membrane plant to a state of the art facility. Along with upgrades to the membrane plant, the installation of new compressors and a chemical storage system were completed under the improvement of the membranes. Completion of this project ensures Kenosha Water Utility will continue to produce the highest quality water. The project was awarded the Wisconsin Section AWWA's Project of the Year Award for its excellence in planning, design and construction.

We would like to thank the Wastewater Division for electrical and mechanical upgrades and repairs as well as the Engineering and Business Services Divisions for their support throughout the year. We would also like to extend special thanks to the Board of Water Commissioners for providing us the tools and equipment to ensure we continue providing the best drinking water to Kenosha, Pleasant Prairie, Bristol and Somers.

Support from my staff at the Production Plant, management and others throughout the Utility has been highly appreciated as we complete the transition to a new plant and processes.

Sincerely,

Ryan Spackman

Ryan Spackman, P.E.
Director of Water Production

Kenosha Water Utility

Production Division

Main Plant Pumping

2022

Month	Pumpage X 1000 Gallons				Electricity	
	High Lift	Daily Average	Low Lift	Daily Average	Pumping	Cost/MG
January	437,690	14,119	464,609	14,987	$ 40,104	$ 86.32
February	412,720	14,740	420,973	15,035	38,502	91.46
March	463,220	14,943	492,205	15,878	41,788	84.90
April	444,400	14,813	473,841	15,795	38,445	81.14
May	495,250	15,976	510,397	16,464	43,979	86.17
June	585,320	19,511	610,352	20,345	50,084	82.06
July	638,660	20,602	681,730	21,991	61,339	89.98
August	591,320	19,075	628,648	20,279	53,189	84.61
September	525,099	17,503	555,363	18,512	51,013	91.85
October	470,540	15,179	489,716	15,797	43,444	88.71
November	423,960	14,132	454,205	15,140	40,615	89.42
December	443,550	14,308	480,952	15,515	46,783	97.27
Total	5,931,729		6,262,991		$ 549,286	
Average	494,311	16,242	521,916	17,145	$ 45,774	$ 87.82

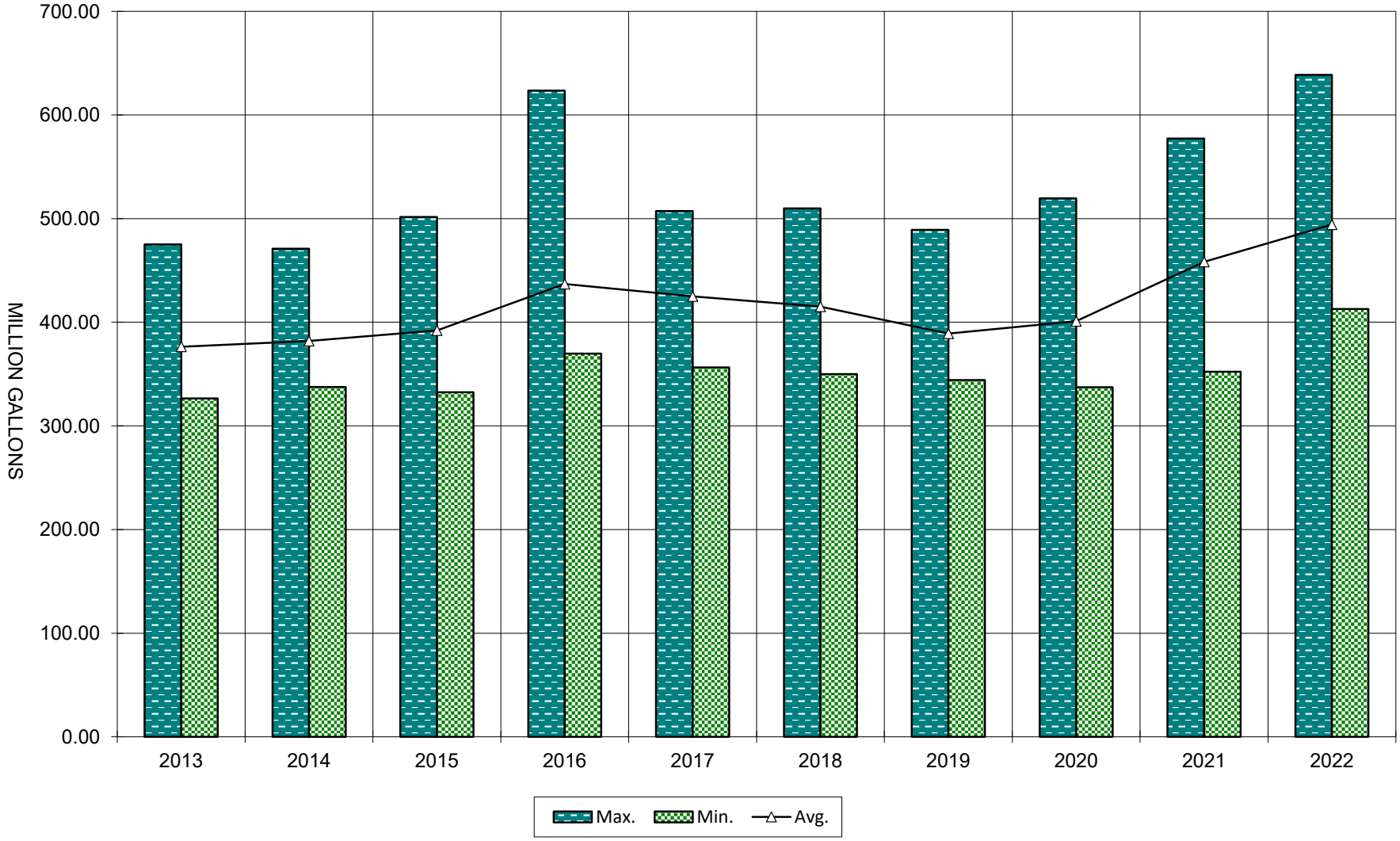
Booster System Pumping

2022

Month	Pumpage X 1000 gal	Total Power Cost	Pumping Power Cost	Total Cost/MG	Pumping Cost/MG
January	160,449	$ 14,797	$ 13,093	$ 92.22	$ 81.60
February	151,143	15,056	13,114	99.61	86.76
March	171,393	15,100	13,148	88.10	76.71
April	164,743	14,853	13,108	90.16	79.57
May	184,786	17,457	15,881	94.47	85.94
June	248,145	19,161	17,994	77.22	72.51
July	254,287	18,600	17,461	73.15	68.67
August	240,817	18,116	16,961	75.23	70.43
September	216,021	16,606	15,449	76.87	71.52
October	192,066	15,173	13,951	79.00	72.64
November	166,358	14,727	13,265	88.52	79.74
December	173,041	15,596	13,812	90.13	79.82
Total	2,323,249	$ 195,241	$ 177,237		
Average	193,604	$ 16,270	$ 14,770	$ 85.39	$ 77.16

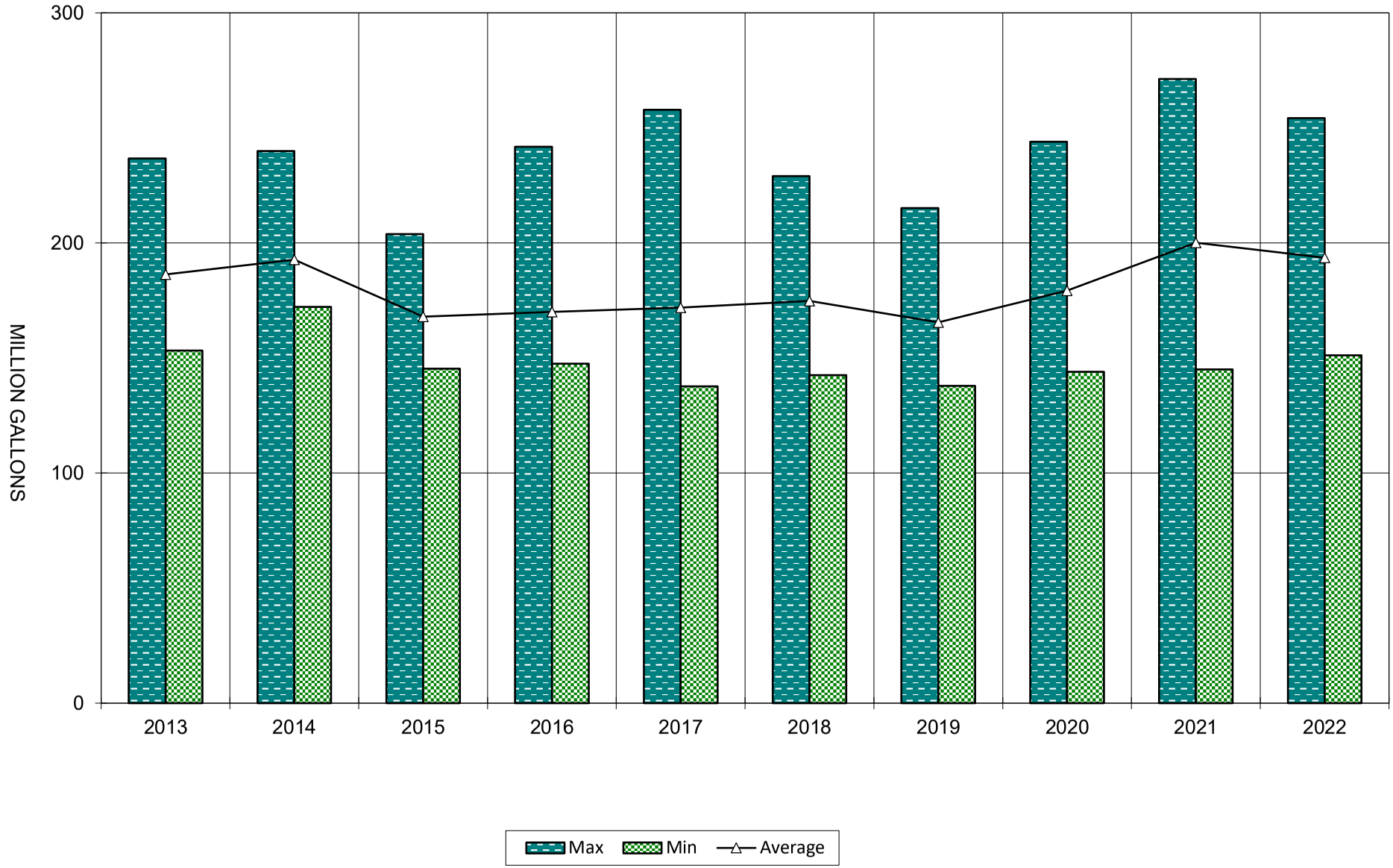
Main Plant Pumping Last Ten Years

Monthly Flow - Million Gallons



Booster Pumping Last Ten Years

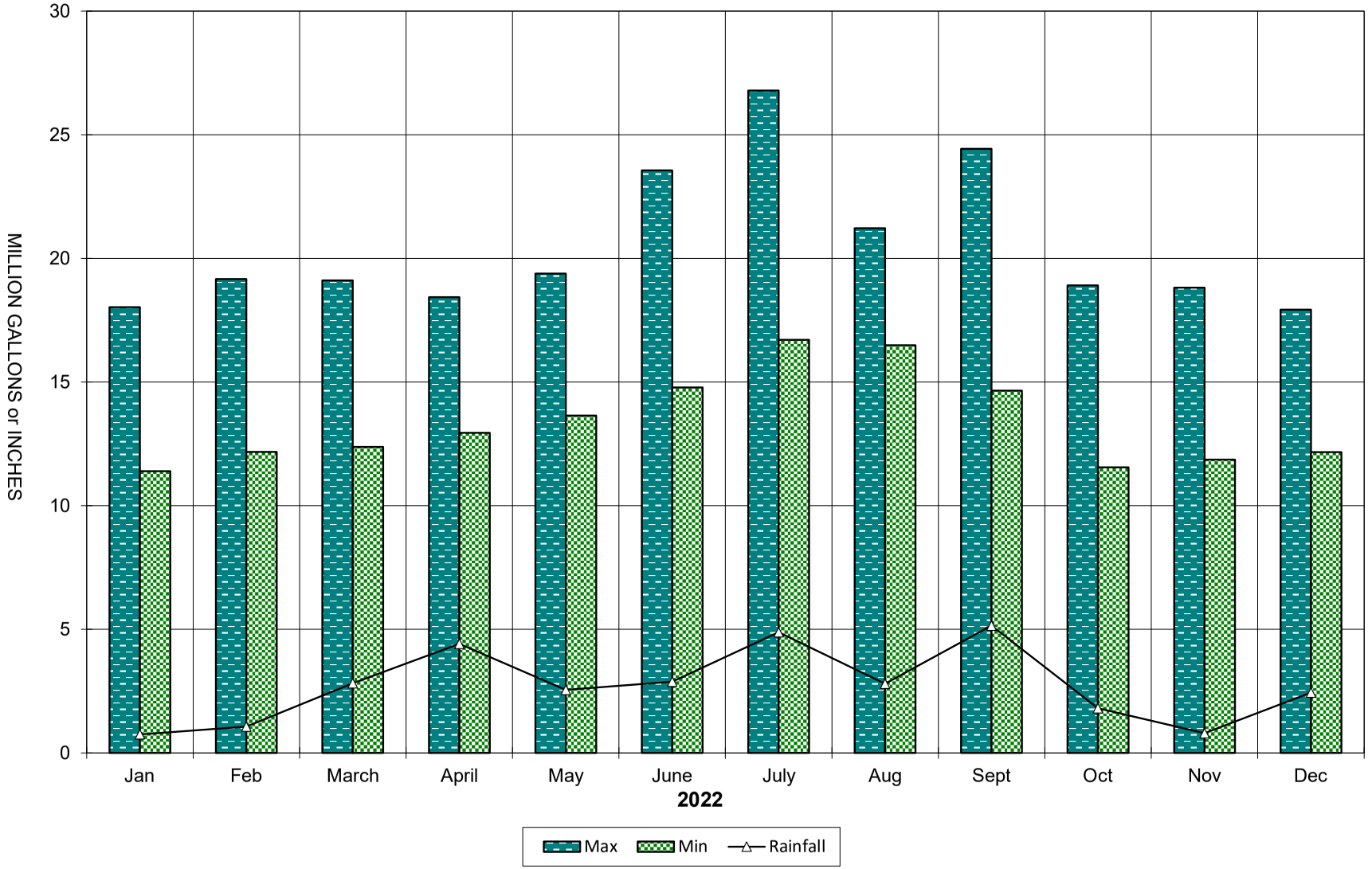
Monthly Flow - Million Gallons



Finished Water Per Month

Compared to Rainfall

Daily Flow Min/Max (MG) + Total Precipitation (Inches)



Kenosha Water Utility
Production Division
Rapid Sand Plant Filtration Report
2022

Month	Pumpage (1000 gal.)			
	Total Water Treated	Max Day	Min Day	Avg Day
January	437,793	18,030	11,401	14,122
February	395,417	19,153	7,869	14,122
March	437,615	19,108	10,650	14,117
April	357,050	15,210	10,000	11,902
May	393,010	17,127	10,232	12,678
June	375,262	18,644	9,562	12,509
July	339,559	14,185	7,517	10,954
August	280,338	11,898	7,604	9,043
September	236,774	9,400	5,729	7,892
October	207,572	11,177	4,476	6,696
November	159,752	8,551	3,060	5,325
December	190,756	9,356	4,300	6,153
Total	3,810,898			
Average	317,575			10,412

Month	Washwater (1000 gal.)	% Rated Capacity	Filter Run Hours		
			Max	Min	Avg
January	6,325	71	56	22	41
February	5,590	71	61	8	37
March	6,120	71	57	19	37
April	4,130	60	57	33	42
May	5,400	63	80	44	61
June	5,228	63	42	22	32
July	4,921	55	49	23	36
August	4,235	45	50	29	37
September	2,261	39	80	37	64
October	1,838	33	85	49	72
November	1,365	27	80	71	79
December	2,114	31	80	62	76
Total	49,527				
Average	4,127	52			51

Kenosha Water Utility
Production Division
Membrane Plant Filtration Report
2022

Month	Pumpage (1000 gal.)				Washwater Raw (1000 gal.)	% Rated Capacity *
	Total Water Treated	Max Day	Min Day	Avg Day		
January	0	0	0	0	0	0
February	0	0	0	0	0	0
March	26,569	3,110	1,755	857	1,905	6
April	92,296	3,109	2,740	3,077	5,880	20
May	103,935	4,013	1,026	3,353	8,042	22
June	216,469	10,658	4,000	7,216	13,390	46
July	312,962	14,901	7,552	10,096	27,286	65
August	308,132	12,343	7,281	9,940	22,136	64
September	274,081	15,641	6,248	9,136	17,306	59
October	249,578	10,661	6,254	8,051	8,995	52
November	256,581	12,425	6,270	8,553	19,219	55
December	245,260	12,468	6,269	7,912	25,735	51
Total	2,085,863				149,894	
Average	173,822			5,699	12,491	36

*** Capacity based on winter operations (water temperature below 65° F)**

Kenosha Water Utility
Production Division
Rapid Sand Plant Chemical Feed Report
2022

Month	Alum		Chlorine		Fluoride	
	Pounds	lb/MG	Pounds	lb/MG	Pounds	lb/MG
January	103,482	236.43	7,508	17.15	11,475	26.22
February	104,389	264.00	7,337	18.56	10,682	27.01
March	97,547	222.91	7,775	17.77	11,098	25.36
April	80,066	224.24	5,969	16.72	9,019	25.26
May	88,332	224.76	6,856	17.45	9,767	24.85
June	84,471	225.10	6,509	17.35	9,483	25.27
July	78,119	230.06	6,341	18.67	8,408	24.76
August	67,419	240.49	5,020	17.91	7,173	25.59
September	57,756	243.93	4,736	20.00	6,045	25.53
October	53,290	256.73	3,897	18.77	5,644	27.19
November	39,390	246.57	2,799	17.52	4,255	26.63
December	47,944	251.34	3,151	16.52	5,165	27.08
Total	902,205		67,898		98,214	
Average	75,184	238.88	5,658	17.87	8,185	25.90

Month	Potassium Permanganate		Orthophosphate		Total Chemical Cost	
	Pounds	lb/MG	Pounds	lb/MG	Total $	Cost/MG
January	0	0.00	12,143	27.74	$ 21,010	$ 48.00
February	0	0.00	11,396	28.82	20,389	51.56
March	0	0.00	12,045	27.52	22,770	52.03
April	0	0.00	9,767	27.36	18,757	52.53
May	0	0.00	10,754	27.36	20,852	53.06
June	0	0.00	10,259	27.34	20,813	55.46
July	0	0.00	9,160	26.98	19,997	58.89
August	0	0.00	7,528	26.85	18,189	64.88
September	0	0.00	6,305	26.63	17,529	74.03
October	0	0.00	5,570	26.83	16,017	77.17
November	0	0.00	4,283	26.81	11,896	74.46
December*	0	0.00	5,117	26.83	14,098	73.91
Total	0		104,327		$ 222,317	
Average	0	0.00	8,694	27.26	$ 18,526	$ 58.34

MG - million gallons

Kenosha Water Utility
Production Division
Membrane Plant Chemical Feed Report
2022

	Cleaning Chemicals			
	Sodium Hypochlorite		Sulfuric Acid	
Month	Pounds	lb/MG	Pounds	lb/MG
January	-	-	-	-
February	-	-	-	-
March	139	5.25	87	3.26
April	485	5.25	301	3.26
May	546	5.25	339	3.26
June	1,136	5.25	705	3.26
July	1,643	5.25	1,020	3.26
August	1,618	5.25	1,004	3.26
September	1,439	5.25	893	3.26
October	1,310	5.25	813	3.26
November	1,347	5.25	836	3.26
December	1,288	5.25	799	3.26
Total	10,951		6,797	
Average	913	4.38	566	2.72

	Process Chemicals							
	Chlorine		Fluoride		Orthophosphate		Total Cost *	
Month	Pounds	lb/MG	Pounds	lb/MG	Pounds	lb/MG	Total $	$/MG
January	-	-	-	-	-	-	$ 0	$ 0.00
February	-	-	-	-	-	-	0	0.00
March	472	17.77	674	25.36	731	27.52	1,256	47.29
April	1,543	16.72	2,331	25.26	2,525	27.36	4,401	47.69
May	1,813	17.45	2,583	24.85	2,844	27.36	5,007	48.17
June	3,755	17.35	5,470	25.27	5,918	27.34	10,943	50.55
July	5,844	18.67	7,749	24.76	8,442	26.98	16,772	53.59
August	5,517	17.91	7,884	25.59	8,274	26.85	18,107	58.76
September	5,483	20.00	6,997	25.53	7,299	26.63	16,738	61.07
October	4,685	18.77	6,786	27.19	6,697	26.83	15,687	62.85
November	4,496	17.52	6,834	26.63	6,879	26.81	15,709	61.22
December	4,051	16.52	6,641	27.08	6,580	26.83	14,756	60.16
Total	37,659		53,949		56,189		$ 119,376	
Average	3,138	14.89	4,496	21.46	4,682	22.54	$ 9,948	$ 57.23

***** Includes cleaning and process chemicals

MG - million gallons

Kenosha Water Utility
Production Division
Laboratory Report
2022

Month	Alkalinity Average mg/L		pH Average pH units		Conductivity µS/cm	
	Raw	Tap	Raw	Tap	Raw	Tap
January	111	103	8.40	7.66	288	297
February	113	104	8.35	7.58	310	311
March	111	103	8.31	7.57	307	308
April	110	103	8.35	7.60	298	296
May	110	103	8.33	7.59	294	302
June	108	102	8.37	7.63	286	289
July	108	102	8.38	7.69	298	302
August	108	103	8.38	7.72	296	300
September	108	102	8.26	7.64	294	298
October	109	103	8.27	7.65	307	314
November	108	103	8.29	7.70	298	302
December	108	103	8.36	7.73	304	309
Average	109	103	8.34	7.65	298	302

Month	Hardness mg/L		Temp Raw ° F		
	Raw	Tap	Max	Min	Avg
January	140	140	42	36	38
February	148	146	39	38	39
March	140	138	44	39	42
April	138	138	51	43	47
May	140	140	54	48	51
June	136	134	59	48	54
July	134	134	70	46	59
August	136	134	69	47	60
September	128	128	69	60	67
October	140	140	63	52	57
November	136	138	56	42	46
December	136	136	43	33	38
Average	138	137	55	44	50

mg/L - milligrams per Liter
µS/cm - microsiemens per centimeter

Kenosha Water Utility
Production Division
Laboratory Report
2022

	Turbidity NTU								
	Rapid Sand Raw			Membrane Raw			Tap		
Month	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**
January	56.5	7.5	23.7	0.0	0.0	0.0	0.060	0.036	0.048
February	26.1	5.7	14.6	0.0	0.0	0.0	0.052	0.034	0.041
March	14.5	5.2	7.2	5.9	3.7	4.8	0.046	0.031	0.038
April	6.7	4.3	5.1	4.8	1.6	3.0	0.045	0.028	0.032
May	9.1	3.4	4.9	9.2	1.8	3.4	0.059	0.027	0.036
June	7.7	3.1	4.8	4.8	1.8	3.1	0.046	0.027	0.031
July	5.9	1.7	3.5	5.5	1.3	2.7	0.044	0.026	0.030
August	3.0	1.7	2.3	5.8	1.5	2.4	0.033	0.026	0.028
September	17.4	1.7	5.1	17.4	1.7	5.5	0.039	0.026	0.029
October	54.0	2.6	11.3	35.6	2.6	10.8	0.040	0.027	0.030
November	12.6	3.2	5.3	12.3	3.0	5.2	0.044	0.025	0.029
December	45.6	3.6	11.4	51.5	3.1	11.9	0.051	0.028	0.033
Average	21.6	3.6	8.3	12.7	1.8	4.4	0.047	0.028	0.034

	PO_4 Average mg/L	Fluoride Composite Average mg/L	Free Chlorine Residual mg/L		
			Tap		
Month	**Tap**	**Tap**	**Max**	**Min**	**Avg**
January	0.92	0.76	1.2	1.1	1.1
February	0.93	0.74	1.3	1.0	1.1
March	0.91	0.72	1.3	1.0	1.1
April	0.91	0.72	1.2	1.0	1.1
May	0.91	0.71	1.3	1.0	1.1
June	0.91	0.72	1.2	1.0	1.1
July	0.91	0.71	1.3	0.9	1.1
August	0.92	0.75	1.2	0.9	1.1
September	0.90	0.75	1.4	0.9	1.1
October	0.90	0.75	1.2	1.0	1.1
November	0.90	0.75	1.2	1.0	1.2
December	0.90	0.75	1.2	1.1	1.2
Average	0.91	0.74	1.3	1.0	1.1

NTU - Nephelometric Turbidity Units

PO_4 - Orthophosphate

mg/L - milligrams per Liter

Synthetic Organic Chemicals

Parameters	Minimum Detection Level µg/L	Kenosha Results µg/L	Maximum Contaminant Level µg/L
Alachlor (Lasso)	0.0044	ND	2
Aldicarb Total	0.23	ND	3
Aldicarb Sulfoxide	0.30	ND	4
Aldicarb Sulfone	0.35	ND	2
Aldrin	0.013	ND	na
Atrazine	0.0060	0.036	3
Butachlor	0.031	ND	na
Carbaryl	0.25	ND	na
Carbofuran	0.36	ND	40
Chlordane	0.070	ND	2
2, 4-D	0.070	ND	70
Dalapon	0.81	ND	200
Dicamba	0.21	ND	na
Dieldrin	0.014	ND	na
Di (2-ethylhexyl) adipate	0.42	ND	400
Di (2-ethylhexyl) phthalate	0.47	ND	6
Dinoseb	0.17	ND	7
Diquat	0.37	ND	20
Endothall	1.5	ND	100
Endrin	0.0080	ND	2.0
Glyphosate (Round-up)	3.0	ND	700
Heptachlor	0.013	ND	0.4
Heptachlorepoxide	0.012	ND	0.2
Hexachlorobenzene	0.014	ND	1
Hexachlorocyclopentadiene	0.0063	ND	50
3-Hydroxycarbofuran	0.28	ND	na
BHC Gamma (Lindane)	0.0049	ND	0.2
Methoxychlor	0.0094	ND	40
Methomyl	0.29	ND	na
Dual (Metolachlor)	0.0064	0.012	na
Metribuzin (Sencor)	0.0052	ND	na
Oxamyl (Vydate)	0.39	ND	200
PCB Total ****	0.1	ND	0.5
Pentachlorophenol	0.040	ND	1
Picloram (Tordan)	0.10	ND	500
Propachlor	0.0049	ND	na
2,4,5-TP (Silvex)	0.13	ND	50
Simazine	0.0068	ND	4
2,3,7,8-TCDD (Dioxin)	0.00000083	ND	0.00003
Toxaphene	0.66	ND	3

na – not applicable

ND – not detected

µg/L – micrograms per Liter or parts per billion

**** PCB 1016 (0.030); PCB 1221 (0.042); PCB 1232 (0.091); PCB 1242 (0.11); PCB 1248 (0.047); PCB 1254 (0.032); PCB 1260 (0.026)

Sampled in 2020

Volatile Organic Chemicals

Parameters	Minimum Detection Level µg/L	Level Found Kenosha Results µg/L	Maximum Contaminant Level µg/L
Benzene	0.43	ND	5
Bromobenzene	0.14	ND	na
Bromodichloromethane	0.42	5.5	80
Bromoform	0.39	ND	80
Bromomethane	1.0	ND	na
Carbon Tetrachloride	0.28	ND	5
Chloroethane	2.7	ND	na
Chloroform	0.52	5.5	80
Chloromethane	0.40	ND	na
1,2-Chlorotoluene (o-)	0.36	ND	na
1,4-Chlorotoluene (p-)	0.40	ND	na
Dibromochloromethane	0.41	3.2	80
Dibromomethane	0.38	ND	na
1,3-Dichlorobenzene (m-)	0.19	ND	na
1,2-Dichlorobenzene (o-)	0.12	ND	600
1,4-Dichlorobenzene 9 (p-)	0.22	ND	75
1,1-Dichloroethane	0.28	ND	na
1,2-Dichloroethane	0.43	ND	5
1,1-Dichloroethylene	0.28	ND	7
1,2-Dichloroethylene, cis	0.35	ND	70
1,2-Dichloroethylene, trans	0.24	ND	100
Dichloromethane	1.1	ND	5
1,2-Dichloropropane	0.63	ND	5
1,3-Dichloropropane	0.40	ND	na
2,2-Dichloropropane	0.87	ND	na
1,1-Dichloropropene	0.35	ND	na
1,3-Dichloropropene	0.51	ND	na
Ethylbenzene	0.27	ND	700
Chlorobenzene	0.28	ND	100
Styrene	0.31	ND	100
1,1,1,2-Tetrachloroethane	0.38	ND	na
1,1,2,2-Tetrachloroethane	0.60	ND	na
Tetrachloroethylene	0.27	ND	5
Toluene	0.21	ND	1,000
1,2,4-Trichlorobenzene	0.44	ND	70
1,1,1-Trichloroethane	0.44	ND	200
1,1,2-Trichloroethane	0.53	ND	5
Trichloroethylene	0.46	ND	5
1,2,3-Trichloropropane	0.91	ND	na
Vinyl Chloride	0.19	ND	0.2
Xylene Total	0.88	ND	10,000

na – not applicable
ND – not detected
µg/L – micrograms per Liter or parts per billion

All parameters are sampled at the distribution system entry point every three years per WDNR regulations.

Sampled in 2020

Inorganic Chemicals

Parameters	Minimum Detection Level mg/L	Level Found Kenosha Results mg/L	Maximum Contaminant Level mg/L	Sample Location
Alkalinity Total CaCO3	1.0	107 max	na	Entry point
Antimony Total**	0.00032	ND	0.006	Entry point
Arsenic Total**	0.00014	0.00052	0.01	Entry point
Barium Total**	0.00009	0.021	2	Entry point
Beryllium Total**	0.00006	ND	0.004	Entry point
Cadmium Total**	0.00012	ND	0.005	Entry point
Chromium Total**	0.00058	ND	0.1	Entry point
Copper**	0.00077	0.17	1.3 (AL)	Residential taps
Cyanide**	0.007	ND	0.2	Entry point
Fluoride Total	0.05	0.85 max	4	Entry point
Haloacetic Acids	0.000094	0.0140 max	0.06	Maximum residence
Hardness Total CaCO3	1	146 max	500	Highest result obtained
Lead**	0.00003	0.0078	0.015 (AL)	Residential taps
Mercury Total**	0.000015	ND	0.002	Entry point
Nickel Total**	0.0005	0.0008	0.1	Entry point
Nitrate as N	0.052	0.27	10	Entry point
Nitrite**	0.036	ND	1	Entry point
pH Lab	0.01pH	7.65 pH avg	na	Entry point
Selenium Total**	0.00047	ND	0.05	Entry point
Sodium Total	0.12	7.70	na	Entry point
Sulfate Total**	1.5	26	na	Entry point
Thallium Total**	0.00011	ND	0.002	Entry point
Total Trihalomethanes	0.00014	0.0456 max	0.08	Maximum residence

ND – not detected
mg /L – milligrams per Liter or parts per million
AL – Action Level
na – not applicable
Entry Point – Where water enters the distribution system.
Maximum residence – A point of maximum residence time in the distribution system.

** Sample taken in 2020

Water System
Income Statement – 2022

Sales of Water			
Residential Water Sales	$ 6,247,296.13		
Commercial Water Sales	3,105,683.47		
Industrial Water Sales	1,040,474.07		
Unmetered Sales to General Customers	15,364.53		
Private Fire Protection	204,181.90		
Public Fire Protection	1,667,325.24		
Sales to Public Authorities	538,977.26		
Sales for Resale	3,294,987.48		
Total Sales of Water		16,114,290.08	
Other Operating Revenues			
Penalties	143,744.90		
Other Water Revenue	52,389.71		
Allocated Services	147,318.27		
Miscellaneous Service Revenues	353,150.33		
Total Other Operating Revenues		696,603.21	
Total Operating Revenues			16,810,893.29
Operating Expenses			
Production Plant	2,914,057.92		
Distribution System	5,112,665.04		
Customer Accounting & Collection	346,541.23		
Administration	1,484,820.12		
Depreciation	3,434,078.96		
Taxes	1,982,531.73		
Total Operating Expenses			15,274,695.00
Utility Operating Income			1,536,198.29
Other Income			
Net Investment Income	(7,985.38)		
Lead Service Line Replacement Grant Revenue	2,456,264.02		
Other Non-operating Income	29,195.73		
Total Other Income			2,477,474.37
Non-operating Expenses			
Interest on Long-term Debt	174,999.96		
Other Non-operating Expenses	12,960.00		
Total Non-operating Expenses			187,959.96
Net Income before Capital Contributions			3,825,712.70
Capital Contributions			3,028,663.75
Net Income (Loss)			$ 6,854,376.45

Water System
Statement of Net Position
December 31, 2022

Assets			
Utility Plant			
Utility Plant in Service	$ 133,588,836.50		
Work in Progress - Water Plant	90,506.43		
Work in Progress - Water System	2,490,673.78		
Accumulated Depreciation	(47,502,936.38)		
Net Plant in Service		88,667,080.33	
Nonutility Property			
Nonutility Property	20,370.78		
Accumulated Depreciation - Nonutility Property	(2,370.78)		
Net Nonutility Property		18,000.00	
Current Assets			
Cash and Cash Equivalents	(453,845.71)		
Investments	6,210,633.00		
Customer Accounts Receivable	1,465,597.03		
Receivable from Municipality	642,886.38		
Unbilled Revenues	1,761,195.75		
Other Accounts Receivable	74,136.60		
Materials and Supplies	800,116.30		
Accrued Interest Receivable	20,498.17		
Leases Receivable	105,628.25		
Other Current Assets	161,071.31		
Total Current Assets		10,787,917.08	
Other Assets			
Assessments Receivable	110,329.96		
Deferred Charges	2,733,381.62		
Pension Asset - Wisconsin Retirement System	2,286,729.71		
Leases Receivable	3,376,004.59		
Total Other Assets		8,506,445.88	
Total Assets			$ 107,979,443.29
Deferred Outflow of Resources			
Deferred Pension Resources			$ 4,259,797.78
Deferred OPEB Resources			311,144.43
Total Outflows of Resources			$ 4,570,942.21
Liabilities			
Current Liabilities			
Accrued Taxes	$ 2,022,797.00		
Accounts Payable	398,224.53		
Current Portion of Accrued Compensated Absences	46,360.37		
Current Portion of Net Other Postemployment Benefits	116,538.12		
Payable to Municipality	294,447.69		
Other Current Liabilities	372,537.46		
Total Current Liabilities		3,250,905.17	
Non-current Liabilities			
Long-term Debt			
Advance from Sewerage Unit	5,000,000.00		
Total Long-term Debt		5,000,000.00	
Accrued Compensated Absences		203,071.28	
Worker's Compensation Accrued Liability		8,995.00	
Net Other Postemployment Benefit Obligations		1,466,706.00	
Total Non-current Liabilities		6,678,772.28	
Total Liabilities			$ 9,929,677.45
Deferred Inflow of Resources			
Deferred Pension Resources			$ 5,318,300.38
Deferred Lease Resources			3,481,632.84
Deferred OPEB resources			357,392.16
Total Inflows of Resources			$ 9,157,325.38
Net Position			
Invested in Capital Assets, net of related debt	88,685,080.33		
Restricted for pension	2,286,729.71		
Unrestricted	2,491,572.63		
Total Net Position			$ 93,463,382.67

Water System
Comparative Operating and Maintenance Expenses

	2022	2021	2020
Source of Supply Expenses			
Maintenance of Lake Intakes	$ 0.00	$ 13,536.12	$ 0.00
Miscellaneous	9,625.00	9,625.00	9,625.00
	9,625.00	23,161.12	9,625.00
Pumping Expenses			
Operation			
Supervision and Engineering	133,131.59	133,065.22	214,201.19
Fuel - Electricity and Gas	906,688.62	873,345.75	796,379.94
Labor	127,896.38	129,497.48	127,134.33
Miscellaneous Expense	8,793.52	8,075.80	7,841.26
	1,176,510.11	1,143,984.25	1,145,556.72
Maintenance			
Structures and Improvements	36,008.78	34,610.42	46,793.63
Power Production Equipment	16,486.87	8,099.00	3,205.04
Pumping Equipment	189,370.56	105,450.05	88,308.66
	241,866.21	148,159.47	138,307.33
Water Treatment Expenses			
Operation			
Supervision and Engineering	65,285.14	63,500.41	65,258.33
Chemicals	327,425.35	183,703.31	164,910.83
Labor	380,765.88	330,113.91	314,555.73
Miscellaneous Expense	257,704.95	294,010.53	317,022.99
Lead Testing Program	10,050.50	13,520.04	5,562.44
	1,041,231.82	884,848.20	867,310.32
Maintenance			
Structures and Improvements	66,759.61	111,307.99	102,846.52
Water Treatment Expense	378,065.17	326,529.15	554,061.81
	444,824.78	437,837.14	656,908.33
	2,914,057.92	2,637,990.18	2,817,707.70
Transmission and Distribution Expenses			
Operation			
Supervision and Engineering	237,498.14	202,294.95	165,367.03
Transmission and Distribution Lines	100,314.00	101,211.81	67,968.87
Meter Expense	80,809.72	54,423.60	90,185.38
Customer Installation Expense	17,156.59	9,068.63	8,167.59
Customer Installation Expense - Lead Service Line Replacement	2,246,762.40	1,681,912.98	439,160.67
Miscellaneous Expense	660,616.81	558,698.79	557,331.77
	3,343,157.66	2,607,610.76	1,328,181.31
Maintenance			
Supervision and Engineering	19,465.13	23,112.34	13,126.94
Maintenance of Standpipes/Reservoirs	33,986.90	37,635.00	59,207.12
Transmission Mains	1,123,489.23	1,274,935.39	896,693.04
Services	434,557.34	252,888.65	392,609.38
Meters	83,456.37	69,560.70	50,901.28
Hydrants	74,552.41	153,811.76	61,459.50
	1,769,507.38	1,811,943.84	1,473,997.26
	5,112,665.04	4,419,554.60	2,802,178.57
Customer Account Expenses			
Customer Accounting and Collection	284,335.20	351,274.89	476,552.30
Meter Reading	62,206.03	60,123.46	67,957.57
	346,541.23	411,398.35	544,509.87
Administrative and General Expenses			
Administrative and General Salaries	314,795.37	288,128.51	286,190.14
Office Supplies and Expense	20,983.30	14,266.86	24,677.13
Outside Services Employed	369,768.11	323,404.99	459,437.73
Property Insurance	120,188.14	142,102.76	136,689.71
Employee Benefits and Pensions	625,346.96	641,530.61	1,248,663.77
Regulatory Commission Expense	15,798.05	238,719.15	47,483.96
Miscellaneous Expense	17,940.19	17,914.03	13,333.24
	1,484,820.12	1,666,066.91	2,216,475.68
Total Operation and Maintenance Expenses			
Utility Taxes	1,982,531.73	2,157,344.80	2,271,298.06
Depreciation	3,434,078.96	2,587,961.62	2,639,232.13
Total Operating Expenses	**$ 15,274,695.00**	**$ 13,880,316.46**	**$ 13,291,402.01**

Water System
Comparative Income Statement

	2022	2021	2020
Sales of Water			
Residential Water Sales	$ 6,247,296.13	$ 6,031,581.81	$ 5,893,214.17
Commercial Water Sales	3,105,683.47	2,801,367.92	2,648,807.09
Industrial Water Sales	1,040,474.07	901,488.67	808,849.95
Total Unmetered Sales to General Public	15,364.53	15,545.46	16,132.94
Private Fire Protection	204,181.90	193,316.16	185,869.68
Public Fire Protection	1,667,325.24	1,365,338.15	1,361,003.58
Sales to Public Authorities	538,977.26	472,250.76	412,335.22
Sales for Resale	3,294,987.48	2,949,556.81	2,434,382.72
Total Sales of Water	16,114,290.08	14,730,445.74	13,760,595.35
Other Operating Revenues			
Penalties	143,744.90	136,560.56	85,382.05
Other Water Revenue	52,389.71	52,740.62	55,389.67
Allocated Services	147,318.27	144,400.22	145,313.18
Miscellaneous Service Revenues	353,150.33	334,109.54	314,557.30
Total Other Operating Revenues	696,603.21	667,810.94	600,642.20
Total Operating Revenues	16,810,893.29	15,398,256.68	14,361,237.55
Operating Expenses			
Source of Supply	9,625.00	23,161.12	9,625.00
Power and Pumping Expense	1,418,376.32	1,292,143.72	1,283,864.05
Water Treatment Expense	1,486,056.60	1,322,685.34	1,524,218.65
Transmission and Distribution Expense	5,112,665.04	4,419,554.60	2,802,178.57
Customer Accounting and Collection Expense	346,541.23	411,398.35	544,509.87
Administrative and General Expense	1,484,820.12	1,666,066.91	2,214,297.09
Depreciation and Amortization	3,434,078.96	2,587,961.62	2,643,282.13
Taxes	1,982,531.73	2,157,344.80	2,271,298.06
Total Operating Expenses	15,274,695.00	13,880,316.46	13,293,273.42
Utility Operating Income (Loss)	1,536,198.29	1,517,940.22	1,067,964.13
Other Income			
Net Investment Income	(7,985.38)	14,417.15	110,847.72
Grant Revenue	2,456,264.02	1,165,581.22	101,011.76
Miscellaneous Non-operating Income	29,195.73	29,612.80	10,861.02
Total Other Income	2,477,474.37	1,209,611.17	222,720.50
Operating and Other Income (Loss)	4,013,672.66	2,727,551.39	1,290,684.63
Non-operating Expenses			
Interest on Long-term Debt	174,999.96	174,999.96	174,999.96
Other Non-operating Expenses	12,960.00	70,100.83	-
Total Non-operating Expenses	187,959.96	245,100.79	174,999.96
Net Income (Loss)	**$ 3,825,712.70**	**$ 2,482,450.60**	**$ 1,115,684.67**
Rate of Return on Average Investment (based on operating income & expense)	**2.99%**	**3.08%**	**3.34%**

Water System
Utility Plant in Service
For the year ended December 31, 2022

	Depr. Rate %	Cost of Plant 1/1/2022	2022 Additions	2022 Retirements	Adjustments Incr/(Decr)	Cost of Plant 12/31/2022
Source of Supply						
Structures and Improvements	2.00	$ 1,136,362.88				$ 1,136,362.88
Collect and Impound Reservoirs	1.67	268,710.96				268,710.96
Lake Intakes	1.67	1,615,676.66				1,615,676.66
Supply Mains	1.33	453,081.81				453,081.81
Pumping Plant						
Land	N/A	18,657.25				18,657.25
Structures and Improvements	2.00	3,770,698.21				3,770,698.21
Other Power Prod Equipment	4.00	694,094.37				694,094.37
Electric Pumping Equipment	3.33	3,752,890.48		55,750.98		3,697,139.50
Other Pumping Equipment	4.00	8,646.81				8,646.81
Water Treatment						
Land	N/A	527,047.60				527,047.60
Structures and Improvements	2.00	8,527,402.57				8,527,402.57
Water Treatment Equipment	3.24	1,340,592.21	206,572.59			1,547,164.80
Membrane Filtration Equipment	5.56	13,859,805.15	4,347,694.18	10,410,682.17		7,796,817.16
Transmission and Distribution						
Land	N/A	354,109.99				354,109.99
Reservoirs and Standpipes	1.86	6,246,724.97				6,246,724.97
Mains	0.93	62,104,273.83	3,597,631.88	311,327.66		65,390,578.05
Services	2.09	11,766,555.63	1,609,360.94	6,632.34		13,369,284.23
Meters	5.00	5,231,959.40	355,305.88	228,095.77		5,359,169.51
Hydrants	1.59	6,719,921.76	488,946.21	51,134.30		7,157,733.67
General Plant						
Furniture and Equipment	5.88	48,707.96				48,707.96
Computer Equipment	6.67-14.29	383,986.54	31,780.34	63,646.30		352,120.58
Transportation Equipment	12.86	1,734,728.83	395,036.92			2,129,765.75
Stores Equipment	5.88	1,497.75				1,497.75
Tools and Shop Equipment	5.88	355,225.68	21,775.00	28,745.98		348,254.70
Lab Equipment	5.88	117,554.22				117,554.22
Work (Power) Equipment	9.00	1,114,021.65	14,461.00	2,350.00	(14,129.00)	1,112,003.65
SCADA System Equipment	10.00	686,394.49	152,694.92	8,759.91		830,329.50
Miscellaneous Equipment	5.88	262,525.76	15,739.83	3,634.20		274,631.39
Total		$ 133,101,855.42	$ 11,236,999.69	$ 11,170,759.61	($ 14,129.00)	$ 133,153,966.50

Water System
Accumulated Depreciation
For the year ended December 31, 2022

	Balance 1/1/2022	2022 Depreciation	Less Cost of Retirements	Add Cash Received	Adjustments Incr./Decr.	Balance 12/31/2022
Source of Supply						
Structures and Improvements	$ 536,363.33	$ 36,363.61				$ 572,726.94
Collect and Impound Reservoirs	198,944.17	4,568.09				203,512.26
Lake Intakes	1,048,107.99	27,466.50				1,075,574.49
Supply Mains	157,763.09	8,155.47				165,918.56
Pumping Plant						
Land	–					–
Structures and Improvements	1,598,741.28	120,662.34				1,719,403.62
Other Power Prod Equipment	493,071.17	30,540.15				523,611.32
Electric Pumping Equipment	2,655,577.93	163,900.66	55,750.98	960.00		2,764,687.61
Other Pumping Equipment	8,646.81					8,646.81
Water Treatment						
Land	–					–
Structures and Improvements	4,549,849.47	272,876.88				4,822,726.35
Water Treatment Equipment	1,340,592.21	46,204.11		8,282.70		1,395,079.02
Membrane Filtration Equipment	13,859,805.15	649,698.67	10,410,682.17			4,098,821.65
Transmission and Distribution						
Land	–					–
Reservoirs and Standpipes	3,470,462.06	120,927.93				3,591,389.99
Mains	12,255,017.57	835,376.46	311,327.66			12,779,066.37
Services	4,761,237.88	364,469.68	6,632.34			5,119,075.22
Meters	2,794,953.86	291,256.05	228,095.77	7,265.21		2,865,379.35
Hydrants	2,305,168.94	152,895.83	51,134.30	8,583.16		2,415,513.63
General Plant						
Furniture and Equipment	44,915.94	2,825.06				47,741.00
Computer Equipment	286,269.00	27,941.94	63,646.30			250,564.64
Transportation Equipment	1,149,543.69	113,663.52				1,263,207.21
Stores Equipment	1,497.75					1,497.75
Tools and Shop Equipment	322,923.59	20,400.93	28,745.98	580.00		315,158.54
Lab Equipment	110,607.05	6,818.14				117,425.19
Work (Power) Equipment	511,891.36	51,720.09	2,350.00		(12,716.10)	548,545.35
Communications Equipment	(8,513.49)					(8,513.49)
SCADA System Equipment	652,797.91	69,769.30	8,759.91			713,807.30
Miscellaneous Equipment	160,726.36	15,577.55	3,634.20			172,669.71
Total	$ 55,266,962.07	$ 3,434,078.96	$ 11,170,759.61	$ 25,671.07	($ 12,716.10)	$ 47,543,236.39

Water Distribution &
Sewer Collection Division
4401 Green Bay Road
Kenosha WI 53144

Phone (262) 925-6276
Fax (262) 653-4303

"Providing and Protecting Kenosha's Greatest Natural Resource"

June 2023

Board of Water Commissioners
Kenosha Water Utility
4401 Green Bay Road
Kenosha WI 53144

Subject: 2022 Annual Report – Water Distribution & Sewer Collection Division

The 2022 Annual Report for the Water Distribution and Sewer Collection Division is hereby submitted. We completed 625 excavation projects last year. In addition to excavation activities, our division cleaned 40.4 miles of sanitary sewer as part of our annual sewer flushing program and flushed and maintained nearly all fire hydrants north of 60th Street as part of our annual hydrant maintenance program.

Water Distribution System:

The Distribution Division repaired 107 water main breaks in 2022, a 40% decrease from 2021. Fifty-five water valves and thirty-five fire hydrants were also repaired or replaced in 2022. 374 Water Services were repaired or replaced (328 of these were lead service replacements) an increase of 113% from 2021.

Sanitary Sewer Collection System:

Sewer projects in 2022 included the cleaning of over 40.4 miles, a decrease of 22.3% from 2021. Once again the focus of the televising efforts were the limits of any major projects in the City limits such as roadway resurfacing/reconstruction or sewer/water main relays. Direct work on the sanitary system remained fairly steady with thirty-seven lateral repairs, nine sewer main repairs and eight manhole repairs.

In addition to the typical maintenance activities associated with the water distribution and sewer collection, the Distribution Division installed a total of 645 feet of new 12" PVC and 207 feet of new 16" PVC water main to replace deteriorated, problematic pipe and accommodate storm sewer upgrades.

Completing our work would not have been possible without help from other KWU divisions. We would also like to thank the City of Kenosha Streets Division for supporting our operation by salting roads and clearing storm sewer inlets where main breaks occur. Finally, I'd like to acknowledge the outstanding Distribution Division employees. Their willingness to sacrifice their nights, weekends and holidays during inclement weather illustrates their dedication and willingness to provide an unparalleled level of customer service.

None of this would have been possible without the Board of Water Commissioners providing us with all the tools, technology and funding necessary to complete our projects in a safe and efficient manner.

Sincerely,

Steven Hayek
Director of Water Distribution
and Sewer Collection

Water Distribution Pipe System - 2022

Size	Material	Footage
48"	Cast/Ductile Iron Pipe	370
36"	Cast/Ductile Iron Pipe	12,586
30"	Cast/Ductile Iron Pipe	13,280
24"	Cast/Ductile Iron Pipe	60,791
24"	Concrete Pipe	7,892
24"	Plastic Pipe	4,823
20"	Cast/Ductile Iron Pipe	8,327
20"	Plastic Pipe	76
18"	Cast/Ductile Iron Pipe	2,582
16"	Cast/Ductile Iron Pipe	171,879
16"	Plastic Pipe	62,196
14"	Cast/Ductile Iron Pipe	8,311
12"	Cast/Ductile Iron Pipe	217,259
12"	Plastic Pipe	67,860
10"	Cast/Ductile Iron Pipe	16,265
8"	Cast/Ductile Iron Pipe	359,805
8"	Plastic Pipe	245,286
6"	Cast/Ductile Iron Pipe	674,684
6"	Plastic Pipe	7,176
4"	Cast/Ductile Iron Pipe	30,188
3"	Copper Pipe	150
2"	Copper Pipe	2,517
2"	Plastic Pipe	759
1.5"	Copper Pipe	272
1"	Copper Pipe	70
Total Feet of Pipe		1,975,404
Total Miles of Pipe		374.13

Water Services Added to System - 2022

Number	Size	Material	Average Unit Cost	Total Cost
325	1"	Copper Connections	$ 4,237.37	$ 1,377,145.27
58	1-1/2"	Copper Connections	3,546.28	205,684.00
3	6"	PVC	5,010.93	15,032.80
1	12"	PVC	11,498.87	11,498.87
387		Total		$ 1,609,360.94

Fire Hydrants Added to System - 2022

Number	Type	Average Unit Cost	Total Cost
69	Steamer	$ 7,086.18	$ 488,946.21

2022 Water Main Installation Costs

Project	Size/ Type	Installer	Description	Footage	Total Costs	Cost per Foot
			By Job Number			
Installed by Kenosha Water Utility						
420	12" & 16" PVC	DK Contractors, Inc.	Firestation #4 Water Main Relocate	982.0	$ 322,963.68	
505	8" & 24" PVC	DK Contractors, Inc.	Water Main Relay - 60th Street - near Pershing Boulevard; 60th Street - near 42nd Avenue; 60th Street - near 4810 60th Street	480.0	110,359.87	
509	16" & 24" PVC	City of Kenosha (Willkomm Excavating & Grading, Inc.)	Western Water Main Extension on 128th Avenue, 60th Street and 122nd Avenue	9,708.0	1,141,466.15	
518	8" & 12" PVC	City of Kenosha (A.W. Oakes & Son)	Water Main Relay - 22nd Avenue - 81st Street to 85th Street	2,035.0	379,665.61	
534	16" PVC	Kenosha Water Utility	Water Main Relay - Green Bay Road - 75th Street to 300 feet north	208.0	34,608.22	
536	12" PVC	Kenosha Water Utility	Water Main Relay - 60th Avenue - 75th Street to 73rd Street	645.0	80,116.17	
555	16" PVC	Globe Contractors, Inc.	Water Main Relay - Highway 50 at Green Bay Road to 450 feet west	448.0	166,314.98	
568	8" PVC	Globe Contractors, Inc.	Water Main Relay - Highway 50 at 57th Avenue to 450 feet east	482.0	169,187.53	
571	8" PVC	Globe Contractors, Inc.	Water Relay - 45th Avenue at Highway 50 to 75 feet north	645.0	170,012.30	
572	16" PVC	City of Kenosha (DK Contractors, Inc.)	Airport Water Main Relocate	1,429.0	233,531.35	
			Subtotal	17,062.0	2,808,225.86	
Installed by Developers						
422	8" PVC	Home Path Financial Limited Partnership	Ava Woods Subdivision	749.0	100,286.82	
426	12" PVC	NP Kenosha Industrial LLC	Northpoint Development (8311 38th Street)	2,720.0	236,769.03	
445	8" PVC	Home Path Financial Limited Partnership	Riverwoods Subdivision	3,211.0	452,350.17	
			Subtotal	6,680.0	789,406.02	
			Grand total	23,742.0	$ 3,597,631.88	
			By Pipe Size			
505	8" PVC	DK Contractors, Inc.	Water Main Relay - 60th Street - near Pershing Boulevard; 60th Street - near 42nd Avenue; 60th Street - near 4810 60th Street	464.0	$ 105,063.87	
518	8" PVC	City of Kenosha (A.W. Oakes & Son)	Water Main Relay - 22nd Avenue - 81st Street to 85th Street	147.0	22,046.00	
568	8" PVC	Globe Contractors, Inc.	Water Main Relay - Highway 50 at 57th Avenue to 450 feet east	482.0	169,187.53	
571	8" PVC	Globe Contractors, Inc.	Water Relay - 45th Avenue at Highway 50 to 75 feet north	645.0	170,012.30	
422	8" PVC	Home Path Financial Limited Partnership	Ava Woods Subdivision	749.0	100,286.82	
445	8" PVC	Home Path Financial Limited Partnership	Riverwoods Subdivision	3,211.0	452,350.17	
			Subtotal	5,698.0	1,018,946.69	178.83
420	12" PVC	DK Contractors, Inc.	Firestation #4 Water Main Relocate	492.0	161,810.72	
518	12" PVC	Kenosha Water Utility	Water Main Relay - 22nd Avenue - 81st Street to 85th Street	1,888.0	357,619.61	
536	12" PVC	Kenosha Water Utility	Water Main Relay - 60th Avenue - 75th Street to 73rd Street	645.0	80,116.17	
426	12" PVC	NP Kenosha Industrial LLC	Northpoint Development (8311 38th Street)	2,720.0	236,769.03	
			Subtotal	5,745.0	836,315.53	145.57
420	16" PVC	DK Contractors, Inc.	Firestation #4 Water Main Relocate	490.0	161,152.96	
509	16" PVC	City of Kenosha (Willkomm Excavating & Grading, Inc.)	Western Water Main Extension on 128th Avenue, 60th Street and 122nd Avenue	9,528.0	1,036,823.94	
534	16" PVC	Kenosha Water Utility	Water Main Relay - Green Bay Road - 75th Street to 300 feet north	208.0	34,608.22	
555	16" PVC	Globe Contractors, Inc.	Water Main Relay - Highway 50 at Green Bay Road to 450 feet west	448.0	166,314.98	
572	16" PVC	City of Kenosha (DK Contractors, Inc.)	Airport Water Main Relocate	1,429.0	233,531.35	
			Subtotal	12,103.0	1,632,431.45	134.88
509	24" PVC	City of Kenosha (Willkomm Excavating & Grading, Inc.)	Western Water Main Extension on 128th Avenue, 60th Street and 122nd Avenue	180.0	104,642.21	581.35
505	24" DI	DK Contractors, Inc.	Water Main Relay - 60th Street - near Pershing Boulevard; 60th Street - near 42nd Avenue; 60th Street - near 4810 60th Street	16.0	5,296.00	331.00
			Grand total	23,742.0	$ 3,597,631.88	

Distribution Division - Water
Operating & Maintenance Report - 2022

Maintenance Completed

System	Maintenance Type	Quantity
Water Main Breaks	Circumferential	46
	Blow Out	39
	Joint Leaks	2
	Longitudinal	1
	Old Sleeve	–
	Other	19
Total Main Break Repairs		**107**
Valves	Reset/Replace Box (only)	1
	Replaced	39
	Repaired	7
	New Installation	7
	Removed/VBO	1
Total Valve Repairs		**55**
Water Services	Reset/Replace Box (only)	32
	Replaced	1
	Lead Service Replacement	328
	Repaired	4
	Flow Test	–
	Shut at Main	9
Total Water Service Repairs		**374**
Hydrants	Replaced	16
	Repaired	8
	Relocated	4
	Abandoned	7
	New Installation	–
Total Hydrant Repairs		**35**
New Connections	1"	7
& Taps	1 1/2"	-
	2"	–
	4"	–
	6"	8
	8"	–
	12"	1
Total New Connections Installed		**16**

Meter Shop Request for Assistance: 85

Valves Operated: 618

Customer Complaints

(During Normal Work Hours)

Total	**115**

(After Normal Work Hours)

Total	**186**

Total Customer Complaints	**301**

Wastewater Treatment Plant
7834 3rd Avenue
Kenosha WI 53143

Phone (262) 653-4335
Fax (262) 653-4340

"Providing and Protecting Kenosha's Greatest Natural Resource"

June 2023

Mr. Curtis Czarnecki, General Manager
Kenosha Water Utility
4401 Green Bay Road
Kenosha WI 53144

Subject: 2022 Annual Report – Wastewater Treatment Division

Dear Mr. Czarnecki,

I respectfully submit the 2022 Annual Report for the Kenosha Water Utility Wastewater Treatment Plant (WWTP). Over the past year, the wastewater treatment plant treated 7.868 billion gallons of effluent with an average daily flow of 21.543 million gallons per day (MGD). The final effluent biological oxygen demand (BOD), total suspended solids (TSS) and other monitoring requirements complied with all permitted discharge limits for a majority of the year. In February and June, the wastewater plant experienced process upsets resulting in non-compliance of some effluent discharge limits. These were not typical events nor representative of how the Kenosha wastewater plant operates. We took mitigating measures, determined the contributing cause to be excessive BOD loading, identified the industrial source and took remedial action to address the issues.

The annual precipitation reduced significantly compared to previous years:

2022 = 32.36 inches	2018 = 49.27 inches
2021 = 23.68 inches	2017 = 43.96 inches
2020 = 42.49 inches	2013-2016 average = 35.56 inches
2019 = 48.91 inches	

The staff at the wastewater treatment plant works diligently throughout the year to operate, maintain, and improve the wastewater treatment plant and the collection system. Some substantial projects of the year included:
- A new influent meter was installed. The incoming wastewater is metered via a 36" magnetic flow meter as it is pumped from the wet well to the wastewater treatment system. The meter was over 40 years old and due for replacement. The new meter is over 1,200 pounds and had to be installed in-line. The installation required a coordinated effort to rig the meter for installation and take the plant out of service during installation;
- WWTP effluent is continuously disinfected with chlorine to meet discharge permit requirements. Chlorine gas is a dangerous chemical and many safety measures are taken to ensure proper use. An additional chlorine feeder and regulator were installed to meet increased demands.

I am proud of the entire staff at the wastewater treatment plant. It is their attitude, dedication, and teamwork that make this place run smoothly. Thanks to the General Manager and the Board of Water Commissioners for their continued support and guidance.

Sincerely,

Katrina Karow
Director of Wastewater Treatment

Treatment Data - 5 Year Comparison

YEAR	MGD	Influent mg/L	Primary Effluent mg/L	Primary Efficiency %	Final Effluent mg/L	Overall Efficiency %
Suspended Solids						
2022	21.543	166	52	69	14.7	91
2021	19.613	195	57	71	8.9	95
2020	25.278	171	51	70	7.8	95
2019	28.870	149	48	67	8.9	94
2018	25.787	170	50	71	8.8	95
Five-Day BOD						
2022	21.543	161	117	27	12.8	92
2021	19.613	214	150	30	10.6	95
2020	25.278	170	107	34	11.0	94
2019	28.870	143	87	39	12.5	91
2018	25.787	157	95	39	11.7	93
Phosphorus						
2022	21.543	2.98	–	–	0.56	81
2021	19.613	3.46	–	–	0.46	87
2020	25.278	2.96	–	–	0.46	84
2019	28.870	2.53	–	–	0.51	80
2018	25.787	2.70	–	–	0.47	83

mg/L - milligrams per Liter

Summary

	2022	2021
Total wastewater pumped and treated	7,868,084,000	7,161,286,000
Total sludge to digesters - gallons	25,779,048	29,371,808
Total dry solids to digesters - pounds	11,367,469	11,437,270
Total dry volatile solids to digesters - pounds	8,995,885	9,193,554

Digester Data

Total gallons digested sludge removed	26,442,354	26,399,712
Percent dry solids	2.25%	2.41%
Total pounds dry solids removed	4,978,095	5,313,652
Percent volatile matter	58.7%	59.8%
Total dry volatile solids removed	2,922,142	3,176,814
Volatile solids destroyed, percent	67.5%	65.4%

Wastewater Flow

Annual precipitation and average daily flow for the past five years

	Precipitation (inches)	Average MGD
2022	32.36	21.543
2021	23.68	19.613
2020	42.49	25.278
2019	48.91	28.870
2018	49.30	25.786

Sludge to Centrifuge

Gallons per day (361 days per year)	73,248
Percent solids	2.25%
Pounds per day	13,790
Percent volatile	58.7%

Sludge Disposed from Centrifuge and Dryer

Total wet tons from dewatering centrifuge	4,792
Percent solids	26.2%
total wet tons from dryer	1,201
Percent solids	93.0%

Total Solids Disposal

Tons of sludge to landfill, dry tons	2,387
Tons of sludge distributed, dry tons	0
Tons of grit to landfill	818

Electricity Generated

Total kW produced	3,521,336
Average kW produced per month	293,445
Maximum kW produced in a month - May	403,412

Annual Energy Usage

			2022	2021
Electricity	Total On and Off Peak	kWh	5,923,292	5,636,280
	Total Demand	kW	12,731	13,262
		Total cost	$ 575,555	$ 513,823
Natural Gas		therms	201,287	153,197
		Total cost	$ 139,073	$ 109,695
Methane gas produced by digesters		therms	463,015	484,125
Value of methane gas		Total	$ 319,905	$ 346,653

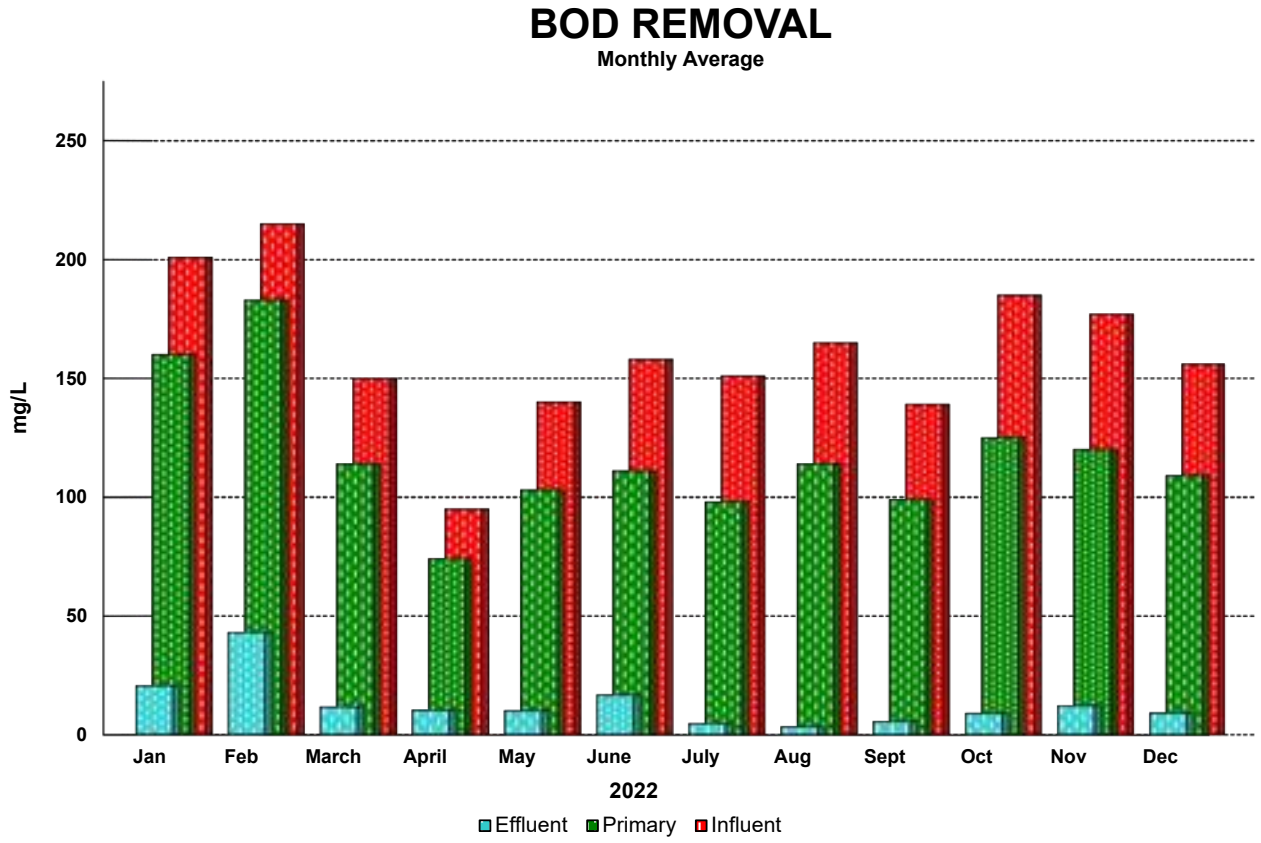
Treatment Plant Data and Chemical Usage

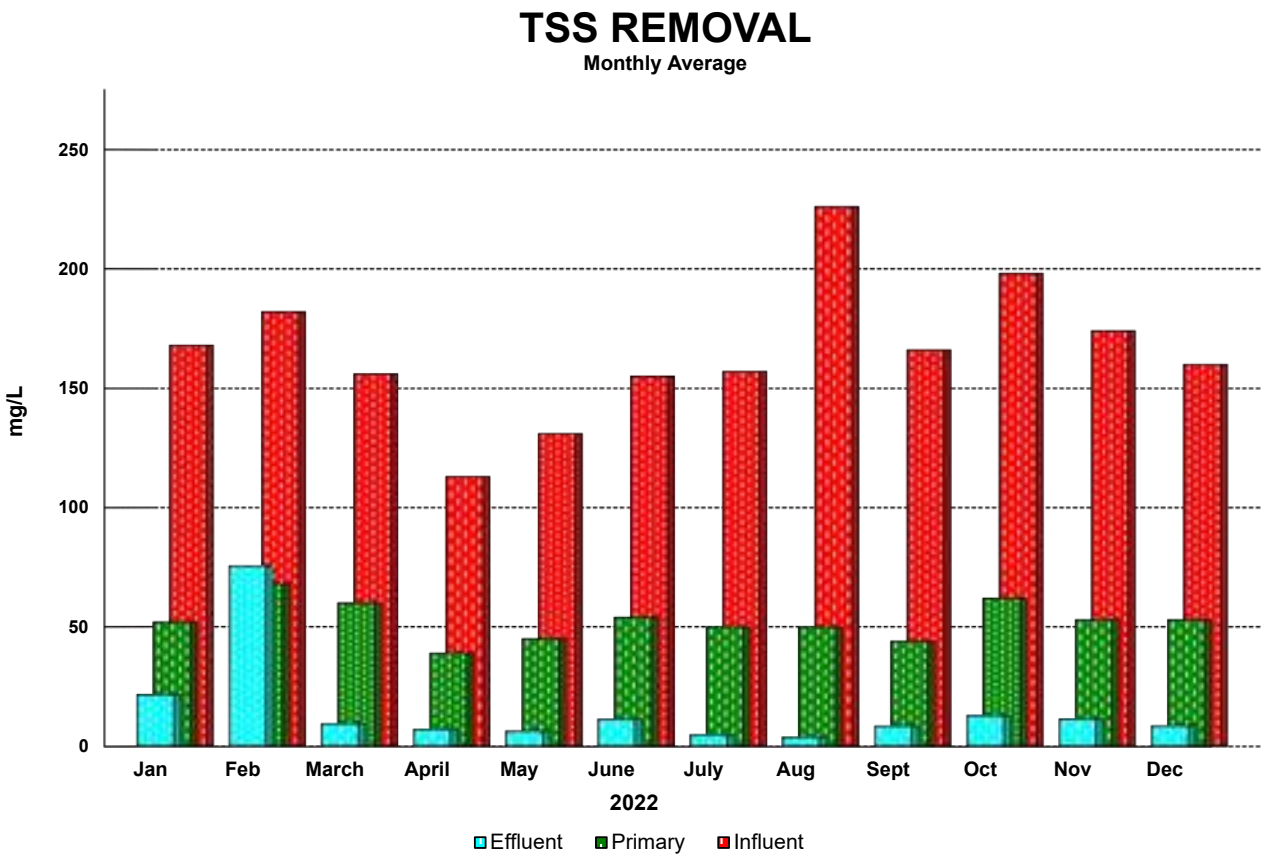
	2022	2021
Chemical Data		
Chlorine		
Total pounds	133,960	118,176
Average pounds per day	367	324
Average residual, µg/L	< 100 µg/L	< 100 µg/L
Sulfur Dioxide		
Total pounds	97,270	94,426
Average pounds per day	266	259
Ferric Chloride, Phosphorus		
Total gallons	193,849	193,868
Average gallons per day	531	531
Average pounds of Fe per day	700	700
Polymer		
Tons	69	68
Pounds per pound of dry solids	0.028	0.026
Sodium Hydroxide		
Total Pounds	171,116	123,913
Pounds per pound of lysed WAS	0.041	0.027
Aeration		
Settleable Solids - mg/L	226	275
Mixed Liquor Suspended Solids - mg/L	2,954	2,934
Dissolved Oxygen - mg/L	2.9	2.4
BOD lbs. applied per day	19,904	23,737
Thickener		
Waste Activated Sludge to Thickener, gallons/day	156,930	160,726
Waste Activated Sludge - % solids	0.88	0.97
Waste Activated Sludge - lbs/day	11,517	13,002
Thickened Sludge - % solids	5.5	5.3
Thickened Sludge - % volatile	75.4	77.4
Thickener Effluent - Suspended Solids - mg/L	166	308
Thickened Sludge - lbs dry solids/day	11,451	13,124
Thickened Sludge - gallons/day	24,963	29,469

mg/L - milligrams per Liter

µg/L - micrograms per Liter

WAS - Waste Activated Sludge


BOD REMOVAL
Monthly Average
mg/L
250
200
150
100
50
0
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
2022
Effluent
Primary
Influent


TSS REMOVAL
Monthly Average
mg/L
250
200
150
100
50
0
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
2022
Effluent
Primary
Influent

Sewerage System
Plant Operating Data - 2022

Month	Precip. Inches	Total Flow Raw Sewage MG	Average Daily Flow MGD	Maximum Daily Flow MGD	Day of Month	Power Cost
January	0.75	558.229	18.007	20.370	3	$ 30,822
February	1.07	481.492	17.196	21.783	27	50,852
March	2.82	717.401	23.142	36.635	24	37,114
April	4.41	1,009.031	33.634	56.060	23	52,122
May	2.55	879.740	28.379	42.833	6	46,743
June	2.88	645.516	21.517	36.372	16	52,960
July	4.88	645.870	20.835	38.277	23	53,908
August	2.80	576.726	18.604	21.970	29	51,660
September	5.15	656.485	21.883	52.130	12	60,216
October	1.81	545.237	17.588	23.426	26	48,907
November	0.80	524.051	17.468	20.643	5	41,511
December	2.44	628.306	20.268	47.288	15	48,740
Total	32.36	7,868.084				$ 575,555
Average	2.70	655.674	21.543	34.816		$ 47,963

Monthly Averages

Month	BOD Influent	BOD Effluent	TSS (mg/L) Influent	TSS (mg/L) Effluent	Phosphorus (mg/L) Influent	Phosphorus (mg/L) Effluent	Total lbs. Dry Solids from Digester
January	201	20.6	168	21.6	3.16	0.52	397,746
February	215	43.1	182	75.6	3.63	1.25	314,348
March	150	11.7	156	9.5	2.66	0.31	392,763
April	95	10.4	113	7.1	1.95	0.23	435,261
May	140	10.1	131	6.4	1.93	0.23	456,728
June	158	16.7	155	11.3	3.05	0.67	371,091
July	151	4.8	157	4.8	3.10	0.67	355,333
August	165	3.4	226	3.8	3.07	0.45	463,166
September	139	5.6	166	8.5	2.66	0.54	518,734
October	185	9.0	198	12.9	3.67	0.67	468,805
November	177	12.2	174	11.4	3.58	0.70	317,582
December	156	9.2	160	8.6	2.97	0.53	281,538
Average	161	13.1	166	15.1	2.95	0.56	397,758

MG - million gallons
MGD - million gallons per day
mg/L - milligrams per liter

Sewage Collection Pipe System - 2022

Size	Material	Footage
99"	Concrete	3,318
96"	Concrete	75
84"	Concrete	9,774
78"	Concrete	4,899
72"	Concrete	4,242
66"	Concrete, Steel	3,151
60"	Concrete, Steel	24,556
54"	Concrete, Steel	3,465
48"	Concrete, Steel, Brick	13,309
42"	Concrete, Steel, Brick	20,527
36"	Concrete, Clay, Steel	39,054
33"	Concrete, Clay	699
30"	Concrete, Clay, Steel	48,329
27"	Concrete, Clay, Steel	9,567
24"	Clay, Concrete, Plastic, Steel	97,762
22"	Clay, Plastic, Steel	5,708
21"	Clay, Plastic	42,065
20"	Clay, Plastic, Steel	19,068
18"	Clay, Plastic, Steel	125,099
16"	Clay, Plastic	3,715
15"	Clay, Plastic, Steel	171,258
14"	Clay, Plastic	1,156
12"	Clay, Plastic, Steel	273,845
10"	Clay, Plastic, Steel	154,428
8"	Clay, Plastic, Steel	736,729
6"	Clay, Plastic	8,241
1.5"	Clay, Plastic	597
Total Feet of Pipe		1,824,636
Total Miles of Pipe		345.58

2022 Sewer Main Installation Costs

Project	Size/ Type	Installer	Description	Footage	Total Costs	Cost per Foot
			By Job Number			
Installed by Kenosha Water Utility						
180	16" PVC	MZ Construction Company, Inc.	Industrial Park Lift Station Improvements	1,190.0	$ 40,000.00	
			Subtotal	1,190.0	40,000.00	
Installed by Developers						
722	8" PVC	Home Path Financial Limited Partnership	Ava Woods Subdivision	1,079.0	165,599.51	
726	12" PVC	NP Kenosha Industrial LLC	Northpoint Development (8311 38th Street)	626.0	60,505.55	
745	12" PVC	Home Path Financial Limited Partnership	Riverwoods Subdivision	2,811.0	418,260.54	
			Subtotal	4,516.0	644,365.60	
			Grand total	5,706.0	$ 684,365.60	
			By Pipe Size			
722	8" PVC	Home Path Financial Limited Partnership	Ava Woods Subdivision	1,079.0	$ 165,599.51	153.47
726	12" PVC	NP Kenosha Industrial LLC	Northpoint Development (8311 38th Street)	626.0	60,505.55	
745	12" PVC	Home Path Financial Limited Partnership	Riverwoods Subdivision	2,811.0	418,260.54	
			Subtotal	3,437.0	478,766.09	139.30
180	16" PVC	MZ Construction Company, Inc.	Industrial Park Lift Station Improvements	1,190.0	40,000.00	33.61
			Grand total	5,706.0	$ 684,365.60	

Distribution Division - Sanitary Sewer
Operating & Maintenance Report - 2022

Maintenance Completed

System	Maintenance Type	Quantity
Sewer Main	Collapse	4
	Broken Pipe	1
	Joint Leaks	1
	Remove Flusher Nozzle	1
	Other	2
Total Sewer Main Repairs		**9**
Sewer Lateral	Collapse	25
	Broken Pipe	-
	Joint Leaks	6
	Broken at Wye	-
	Remove Parkway Trap	2
	Contractor Damage	–
	Other	4
Total Sewer Lateral Repairs		**37**
Manholes	Repaired	6
	Replace	2
	Remove/Abandon	–
Total Manhole Repairs		**8**

Total Sanitary Sewer Repairs	**54**

Customer Complaints

(During Normal Work Hours)

Complaint	Quantity
Sewer back-up	90
Sink Hole	2
Sewer Odor	4
Storm Sewer Back-up	–
Televise Lateral	–
Manhole Problem	1
Utility Locate	1
Total	**98**

Customer Complaints

(After Normal Work Hours)

Complaint	Quantity
Utility Locate	47
Sewer back-up	60
Sink Hole	4
Sewer Odor	–
Storm Sewer Back-up	3
Manhole Problem	5
Total	**119**

Total Complaints	**217**

Summary of Sewer Cleaning and Televising (feet)

Year	Sewer Cleaning	PM List	Televise	Grand Total
2022	142,017	24,368	46,819	213,204
2021	166,438	50,880	57,560	274,878
2020	148,224	34,484	26,337	209,045
2019	196,184	61,656	18,852	276,692
2018	293,833	46,242	22,319	362,394
2017	90,878	30,828	12,440	134,146

Sewerage System
Income Statement – 2022

Sewerage Service Revenues			
Residential Customers	$ 4,214,143.90		
Commercial Customers	2,240,587.56		
Industrial Customers	1,409,925.61		
Public Customers	425,942.76		
Wastehaulers	112,354.48		
Wholesale Customers	2,984,168.49		
Industrial Monitoring	87,208.13		
Total Sewerage Service Revenues		11,474,330.93	
Other Operating Revenues			
Engineering Services	1,828,768.70		
Other Income	78,432.69		
Penalties	98,013.73		
Total Other Operating Revenues		2,005,215.12	
Total Operating Revenues			13,479,546.05
Operating Expenses			
Wastewater Treatment Operation and Maintenance	3,849,102.31		
Collection System Operation and Maintenance	1,321,697.90		
Laboratory Operations	354,458.17		
Industrial Waste Monitoring	87,454.99		
Engineering Services	1,785,880.71		
Customer Accounting and Collection Expense	311,252.19		
Administrative and General Expense	2,320,207.99		
Depreciation	3,721,803.17		
Taxes	40,265.27		
Total Operating Expenses			13,792,122.70
Utility Operating Income			(312,576.65)
Other Income			
Net Investment Income	(295,945.96)		
Miscellaneous Income	23,945.61		
Total Other Income			(272,000.35)
Net Income before Capital Contributions			(584,577.00)
Capital Contributions			1,076,009.26
Net Income			$ 491,432.26

Sewerage System
Statement of Net Position
December 31, 2022

Assets			
Utility Plant			
Utility Plant in Service	$ 162,119,616.98		
Work in Progress - Sewer Plant	553,955.71		
Work in Progress - Sewerage System	51,081.17		
Accumulated Depreciation	(80,308,593.37)		
Net Plant in Service		82,416,060.49	
Other Property			
Other Utility Plant & Equipment for Future Use		1,054,838.62	
Total Net Utility Plant		83,470,899.11	
Current Assets			
Cash and Cash Equivalents	11,717,063.22		
Investments	2,144,910.90		
Restricted cash - Storm Water Utility Collections	383,527.56		
Customer Accounts Receivable	1,146,755.57		
Receivable from Municipality	454,042.53		
Unbilled Revenues	1,013,816.41		
Other Accounts Receivable	922,088.99		
Materials and Supplies	86,624.02		
Accrued Interest Receivable	128,442.05		
Other Current Assets	20,682.40		
Total Current and Accrued Assets		18,017,953.65	
Noncurrent Assets			
Investments		19,268,213.67	
Advance to Water Unit		5,000,000.00	
Total Noncurrent Assets		24,268,213.67	
Other Assets			
Assessments Receivable		43,090.80	
Deferred Charges		2,038,502.31	
Pension Asset - Wisconsin Retirement System		2,332,332.35	
Regulatory Asset		556,890.21	
Total Other Assets		4,970,815.67	
Total Assets			$ 130,727,882.10
Deferred Outflow of Resources			
Deferred Pension Resources			$ 452,678.57
Deferred OPEB Resources			309,835.10
Total Outflows of Resources			$ 762,513.67
Liabilities			
Current Liabilities			
Accounts Payable	$ 795,517.72		
Current Portion of Accrued Compensated Absences	68,534.49		
Current Portion of Net Other Postemployment Benefits	58,251.45		
Payable to Municipality	411,420.65		
Due to City of Kenosha - Storm Water Collections	383,527.56		
Deferred Credits	541,769.20		
Total Current and Accrued Liabilities		2,259,021.07	
Non-current Liabilities			
Accrued Compensated Absences		271,316.91	
Worker's Compensation Accrued Liability		8,608.00	
Net Other Postemployment Benefit Obligations		1,354,034.86	
Total Non-current Liabilities		1,633,959.77	
Total Liabilities			$ 3,892,980.84
Deferred Inflows of Resources			
Deferred Pension Resources			$ 5,564,189.91
Deferred OPEB Resources			337,992.89
Total Inflows of Resources			$ 5,902,182.80
Net Position			
Invested in Capital Assets, net of related debt	83,470,899.11		
Restricted for Pension	2,332,332.35		
Unrestricted	39,942,000.67		
Total Net Position			$ 125,745,232.13

Sewerage System
Comparative Operating and Maintenance Expenses

	2022	2021	2020
Operating Expenses			
Supervision and Labor	$ 393,230.28	$ 393,397.29	$ 466,770.35
Power for Pumping and Aeration	661,050.30	708,905.86	544,838.71
Disinfection Chemicals	186,744.20	77,508.00	79,748.00
Sludge Conditioning Chemicals	563,682.14	466,936.42	420,714.01
Other Chemicals for Sewage Treatment	34,703.13	19,107.84	19,218.89
Laboratory Operations	354,458.17	327,170.63	321,140.78
Industrial Waste Monitoring	87,454.99	89,542.83	84,323.08
Landfill Expense	310,381.81	350,261.72	366,223.30
Transportation Expense	133,253.02	103,369.94	79,813.06
	2,724,958.04	2,536,200.53	2,382,790.18
Maintenance Expenses			
Collection System Operation and Maintenance	1,321,697.90	1,683,460.25	1,361,704.38
Wastewater Treatment Maintenance	1,566,057.43	1,611,561.12	1,401,384.15
	2,887,755.33	3,295,021.37	2,763,088.53
Customer Account Expenses			
Customer Accounting and Collection	249,046.19	318,757.12	445,362.91
Meter Reading Expense	62,206.00	60,123.42	67,957.54
	311,252.19	378,880.54	513,320.45
Administrative and General Expenses			
Administrative and General Salaries	353,868.66	382,170.38	350,025.31
Engineering Services	1,785,880.71	1,780,836.31	1,676,848.39
Office Supplies and Expense	35,305.34	34,533.48	38,800.57
Outside Services Employed	670,459.60	602,204.11	430,096.83
Insurance Expense	243,636.23	241,486.26	208,789.64
Employee Benefits and Pensions	645,341.85	652,799.71	1,207,004.92
Meter Operations Expense	364,096.31	326,261.61	348,741.66
Loss on sale of equipment		-	-
Depreciation	3,721,803.17	3,201,824.94	3,245,555.00
Utility Taxes	40,265.27	45,003.20	49,301.94
Miscellaneous Expense	7,500.00	7,200.00	6,650.00
	7,868,157.14	7,274,320.00	7,561,814.26
Total Operating Expenses	**$ 13,792,122.70**	**$ 13,484,422.44**	**$ 13,221,013.42**

Sewerage System
Comparative Income Statement

	2022	2021	2020
Sewerage Service Revenue			
Residential Customers	$ 4,214,143.90	$ 4,360,762.94	$ 4,386,872.20
Commercial Customers	2,240,587.56	2,258,297.77	2,169,858.62
Industrial Customers	1,409,925.61	1,775,029.14	1,184,650.09
Public Customers	425,942.76	464,588.30	448,921.53
Wastehaulers	112,354.48	124,307.33	204,749.99
Wholesale Customers	2,984,168.49	2,881,770.84	2,746,296.67
Industrial Monitoring	87,208.13	101,089.73	83,147.13
Total Sewerage Service Revenues	11,474,330.93	11,965,846.05	11,224,496.23
Other Operating Revenues			
Engineering Services	1,828,768.70	1,838,151.70	1,705,932.52
Other Income	78,432.69	75,855.93	73,084.92
Penalties	98,013.73	101,391.21	85,390.63
	2,005,215.12	2,015,398.84	1,864,408.07
Total Operating Revenues	13,479,546.05	13,981,244.89	13,088,904.30
Operating Expenses			
Wastewater Treatment Operation and Maintenance	3,849,102.31	3,731,048.19	3,378,710.47
Collection System Operation and Maintenance	1,321,697.90	1,683,460.25	1,361,704.38
Laboratory Operations	354,458.17	327,170.63	321,140.78
Industrial Waste Monitoring	87,454.99	89,542.83	84,323.08
Engineering Services	1,785,880.71	1,780,836.31	1,676,848.39
Customer Accounting/Meter Reading Expense	311,252.19	378,880.54	513,320.45
Administrative and General Expense	2,320,207.99	2,246,655.55	2,590,108.93
Loss on Sale of Equipment	-	-	-
Depreciation	3,721,803.17	3,201,824.94	3,245,555.00
Taxes	40,265.27	45,003.20	49,301.94
Total Operating Expenses	13,792,122.70	13,484,422.44	13,221,013.42
Net Operating Income	(312,576.65)	496,822.45	(132,109.12)
Non-operating Revenue			
Net Investment Income	(295,945.96)	277,084.32	608,979.70
Miscellaneous Income	23,945.61	16,286.93	22,383.32
Total Non-operating Revenue	(272,000.35)	293,371.25	631,363.02
Operating Income and Other Revenue	(584,577.00)	790,193.70	499,253.90
Non-operating Expenses			
Interest on Long-term Debt	-	-	1,109.96
Total Non-operating Expenses	-	-	1,109.96
Net Income	**($ 584,577.00)**	**$ 790,193.70**	**$ 498,143.94**
Rate of Return on Average Investment (based on WWTP net operating income)	**-0.94%**	**0.77%**	**0.28%**
Rate of Return on Average Investment (after debt service payment)	**-0.94%**	**0.77%**	**0.28%**

Sewerage System
Utility Plant in Service
For the year ended December 31, 2022

	Depr. Rate %	Cost of Plant 1/1/2022	2022 Additions	2022 Retirements	Adjustments Incr/(Decr)	Cost of Plant 12/31/2022
Collection System						
Land	N/A	$ 125,244.31				$ 125,244.31
Structures and Improvements	2.94	–				–
Service Connections	2.00	1,904,640.65				1,904,640.65
Collecting Mains	1.00	50,738,480.98	644,365.60			51,382,846.58
Interceptor Mains	1.00	29,415,933.32				29,415,933.32
Force Mains	1.00	1,482,478.87	40,000.00			1,522,478.87
Collection Equipment	4.00	1,788,565.61				1,788,565.61
Collection Pumping System						
Land	N/A	129,783.09				129,783.09
Structures and Improvements	2.50	6,416,910.12				6,416,910.12
Receiving Wells	2.50	5,685,387.42				5,685,387.42
Electric Pumping Equipment	5.33	9,118,282.68	986,045.47	17,918.62		10,086,409.53
Other Power Pumping Equip.	4.00	376,363.38				376,363.38
Miscellaneous Pumping Equip.	4.00	31,000.00	31,621.65			62,621.65
Treatment and Disposal						
Land	N/A	1,534,819.68				1,534,819.68
Structures and Improvements	2.50	11,730,521.01	56,880.00	7,812.50		11,779,588.51
Preliminary Equipment	3.80	1,462,769.31				1,462,769.31
Primary Treatment Equipment	2.97	4,198,658.73				4,198,658.73
Secondary Treatment Equip.	3.53	8,277,854.29				8,277,854.29
Advanced Treatment Equip.	2.86	219,279.28				219,279.28
Chlorination Equipment	4.41	1,342,190.06		8,460.00		1,333,730.06
Sludge Treatment & Disposal	4.17	13,657,996.51		12,192.26		13,645,804.25
Plant Site Piping	2.00	114,592.02				114,592.02
Flow Metering and Monitoring	4.44	243,100.22				243,100.22
Outfall Sewer	2.31	1,179,759.13				1,179,759.13
Engineering Equipment						
Furniture and Equipment	5.88	31,136.15				31,136.15
Computer Equipment	6.67-14.29	122,885.35	20,448.80			143,334.15
Transportation Equipment	14.28	342,052.25	164,200.00	30,987.41	(52,886.91)	422,377.93
Engineering Equipment	5.88	20,794.50		10,364.77		10,429.73
Communication Equipment	9.09	(1,610.32)				(1,610.32)
Telephone Equipment	20.00	–				-
General Plant & Equipment						
Land	N/A	713,789.54				713,789.54
Structures and Improvements	2.50	2,692,008.93	18,069.00	8,386.40		2,701,691.53
Furniture and Equipment	5.88	101,604.49				101,604.49
Computer Equipment	6.67-14.29	128,633.82	16,002.84			144,636.66
Transportation Equipment	12.86	3,201,371.70	239,509.50	364,170.00	52,886.91	3,129,598.11
Work (Power) Equipment	9.00	554,181.37			14,129.00	568,310.37
Tools and Shop Equipment	5.88	422,722.53	6,890.00	8,842.45		420,770.08
Lab Equipment	5.88	187,674.98	7,220.08			194,895.06
Communication Equipment	9.09	2,228.00				2,228.00
SCADA System Equipment	9.20	370,294.54				370,294.54
Miscellaneous Equipment	5.88	263,447.68	17,360.37	1,817.10		278,990.95
Total		**$ 160,327,826.18**	**$ 2,248,613.31**	**$ 470,951.51**	**$ 14,129.00**	**$ 162,119,616.98**

Sewerage System
Accumulated Depreciation
For the year ended December 31, 2022

	Balance 1/1/2022	2022 Depreciation	Less Cost of Retirements	Add Cash Received	Adjustments Incr./Decr.	Balance 12/31/2022
Collection System						
Land	–					–
Structures and Improvements	–					–
Service Connections	$ 1,059,080.84	38,092.81				$ 1,097,173.65
Collecting Mains	15,159,280.08	516,813.28				15,676,093.36
Interceptor Mains	7,505,389.22	295,605.47				7,800,994.69
Force Mains	291,815.80	15,024.79				306,840.59
Collection Equipment	1,194,857.58	89,428.28				1,284,285.86
Collection System Pumping						
Land	–					–
Structures and Improvements	4,555,789.26	194,201.50				4,749,990.76
Receiving Wells	3,989,655.55	198,941.34				4,188,596.89
Electric Pumping Equipment	9,142,837.43	384,010.73	17,918.62			9,508,929.54
Other Power Pumping Equip.	280,640.86	21,886.38				302,527.24
Miscellaneous Pumping Equip.	21,174.97	2,340.54				23,515.51
Treatment and Disposal						
Land	–					–
Structures and Improvements	7,364,780.55	376,161.75	7,812.50			7,733,129.80
Preliminary Equipment	292,807.70	58,510.77				351,318.47
Primary Treatment Equipment	4,198,658.73					4,198,658.73
Secondary Treatment Equip.	7,413,473.00	275,652.55				7,689,125.55
Advanced Treatment Equip.	131,457.17	8,771.17				140,228.34
Chlorination Equipment	1,255,144.19	87,045.87	8,460.00			1,333,730.06
Sludge Treatment & Disposal	7,533,223.49	682,595.02	12,192.26			8,203,626.25
Plant Site Piping	6,875.52	2,291.84				9,167.36
Flow Metering and Monitoring	240,283.84	2,816.38				243,100.22
Outfall Sewer	1,029,592.54	29,493.98				1,059,086.52
Engineering Equipment						
Furniture and Equipment	28,872.41	1,924.81				30,797.22
Computer Equipment	59,148.56	14,824.43				73,972.99
Transportation Equipment	279,394.93	25,136.48	30,987.41	3,250.00	(46,671.78)	230,122.22
Engineering Equipment	2,940.55	1,002.27	10,364.77			(6,421.95)
Communication Equipment	(1,610.32)					(1,610.32)
Telephone Equipment	–					–
Miscellaneous Equipment	–					–
General Plant & Equipment						
Land	–					–
Structures and Improvements	825,372.50	86,299.21	8,386.40			903,285.31
Furniture and Equipment	86,125.28	5,893.06				92,018.34
Computer Equipment	108,756.10	13,009.60				121,765.70
Transportation Equipment	1,986,576.42	184,647.98	364,170.00	86,080.01	(769.82)	1,892,364.59
Work (Power) Equipment	290,419.16	24,027.24			12,716.10	327,162.50
Tools and Shop Equipment	267,322.29	24,461.29	8,842.45			282,941.13
Lab Equipment	112,069.74	11,094.53				123,164.27
Communication Equipment	2,228.00					2,228.00
SCADA System Equipment	189,424.50	34,067.10				223,491.60
Other Equipment	99,278.76	15,730.72	1,817.10			113,192.38
Total	**$ 77,003,137.20**	**$ 3,721,803.17**	**$ 470,951.51**	**$ 89,330.01**	**($ 34,725.50)**	**$ 80,308,593.37**

Wastewater Treatment Plant
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"Providing and Protecting Kenosha's Greatest Natural Resource"

June 2023

Mr. Curtis Czarnecki
Kenosha Water Utility
4401 Green Bay Road
Kenosha WI 53144

Subject: 2022 Industrial Pretreatment Program Annual Report

Dear Mr. Czarnecki,

The Industrial Pretreatment Program is a requirement of the Clean Water Act and is regulated by the Wisconsin Department of Natural Resources (WDNR) through our wastewater treatment plant discharge permit. The WDNR designates the Kenosha Water Utility as the Control Authority to carry out the required elements of the program. The program regulates and monitors local significant industrial users, waste haulers, and adjoining communities discharging to Kenosha's wastewater collection system. The program is designed 1) to prevent the discharge of pollutants to the wastewater treatment plant (WWTP) which could interfere with operations or disposal of biosolids; 2) to prevent the introduction of pollutants to the WWTP that may pass through to the lake; and 3) to protect employee health and safety.

Significant dischargers are monitored at the regulated process and/or where their wastewaters enter the Kenosha sanitary sewer collection system. Haulers are monitored at the wastewater treatment plant. The adjoining communities are monitored weekly for conventional parameters being discharged to the collection system. We receive wastewater from the Villages of Bristol, Pleasant Prairie and Somers.

The wastewater treatment plant effluent complied with the discharge limits for a majority of the year. The wastewater biosolids meet the state of Wisconsin's requirements for an exceptional-quality sludge. In February 2022, the wastewater treatment plant experienced a process upset that resulted in excessive fine solids in the effluent causing non-compliance with effluent discharge limits. In June 2022, the wastewater plant experienced a process upset resulting in incomplete nitrification. This interfered with disinfection, causing uncharacteristically high effluent bacteria results. While the monitoring results represented the effluent quality at those times, these were not typical events nor representative of how the Kenosha wastewater plant operates. We notified the WDNR as required at the time and kept in contact with them throughout the events. The Kenosha Water Utility took mitigating measures, determined the contributing cause to be excessive BOD loading, identified the contributing industrial source and took remedial action to address the issues.

While we must monitor and enforce local and federal sanitary sewer discharge limits, our goal is to work cooperatively with significant industrial users to achieve continued compliance. I want to express my appreciation to the General Manager and the Board of Water Commissioners for their continued support and guidance.

Respectfully Submitted,

Katrina Karow
Director of Wastewater Treatment

SUMMARY OF INFLUENT METALS TO THE KENOSHA WASTEWATER TREATMENT PLANT

POTW Influent: average pounds/day

Year	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury
2003	< 0.16	1.4	9.4	1.7	1.2	19.1	0.032
2004	< 0.38	1.1	23.0	1.1	1.1	34.3	0.012
2005	< 0.31	1.1	10.4	0.78	1.1	23.7	0.030
2006	< 0.34	0.85	7.8	1.0	0.85	16.5	0.016
2007	< 0.5	1.1	12.0	1.3	2.4	23.0	0.022
2008	< 0.7	0.9	8.4	0.9	< 0.7	18.3	0.031
2009	< 0.4	0.6	7.6	1.0	< 0.6	18.0	0.018
2010	0.075	1.4	9.7	0.63	0.88	23.4	0.006
2011	< 0.14	0.8	8.5	0.58	0.56	20.9	0.008
2012	< 0.13	0.85	8.5	0.73	0.68	28.8	0.010
2013	< 0.12	1.3	7.9	0.78	1.8*	32.3	0.011
2014	< 0.12	1.2	11.7	0.99	1.0	32.3	0.006
2015	<0.061	1.0	9.1	1.12	0.70	22.7	0.010
2016	<0.066	1.3	9.0	0.94	0.53	19.7	0.005
2017	<0.066	1.0	10.2	1.14	0.70	20.4	0.005
2018	<0.041	1.0	7.9	0.97	<0.46	23.0	0.005
2019	<0.049	0.7	7.9	0.78	<0.37	22.7	0.005
2020	<0.040	0.9	7.4	0.73	<0.40	22.7	0.003
2021	<0.032	0.64	5.9	0.64	0.41	24.3	0.005
2022	<0.034	0.54	5.6	0.59	<0.28	18.6	0.004

* Average may be biased high due to a few uncharacteristically elevated results.

SUMMARY OF EFFLUENT METALS FROM THE KENOSHA WASTEWATER TREATMENT PLANT

POTW Effluent: average pounds/day

Year	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury
2003	< 0.16	0.18	< 1.1	1.43	0.64	4.8	0.0016
2004	< 0.38	< 0.38	1.5	0.75	< 0.94	5.3	0.0005
2005	< 0.31	< 0.31	0.94	0.62	< 0.47	5.1	0.0005
2006	< 0.34	< 0.34	1.0	0.51	0.51	6.3	0.0008
2007	< 0.5	< 0.5	1.6	0.8	0.8	8.2	0.0008
2008	< 0.7	< 0.7	1.0	< 0.7	< 0.7	5.2	0.0006
2009	< 0.4	< 0.6	< 1.0	0.8	< 0.6	4.6	0.0004
2010	< 0.03	0.37	1.3	< 0.22	0.47	5.8	0.0004
2011	< 0.14	< 0.27	0.8	< 0.36	< 0.17	5.4	0.0002
2012	< 0.05	< 0.16	1.0	< 0.44	< 0.14	6.2	0.0002
2013	< 0.11	< 0.22	1.8	< 0.47	< 0.25	4.9	0.0003
2014	< 0.06	< 0.21	1.6	< 0.55	< 0.15	8.2	0.0002
2015	<0.06	<0.28	2.0	0.84	<0.15	5.3	0.0002
2016	<0.06	0.28	1.3	0.59	<0.17	5.0	0.0002
2017	<0.06	0.31	2.7	0.94	<0.17	5.1	0.0002
2018	<0.034	<0.29	2.1	0.85	<0.33	5.1	0.0002
2019	<0.04	<0.20	3.2	0.65	<0.32	<5.0	0.0002
2020	<0.04	<0.15	2.2	0.54	<0.33	<3.9	0.0001
2021	<0.031	<0.13	1.9	0.60	<0.15	4.2	0.0001
2022	<0.034	<0.21	1.6	0.58	<0.16	3.8	0.0002

SUMMARY OF DEWATERED SLUDGE METALS FROM THE KENOSHA WASTEWATER TREATMENT PLANT

POTW Anaerobic Digested Sludge (Dewatered): average mg/kg

Year	Arsenic	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Selenium	Molybdenum	Mercury
2011	7.8	2.3	72.3	415	23.8	55.4	996	4.2	13.7	0.332
2012	8.1	3.5		372	21.2	36.4	1,114	6.1	17.7	0.598
2013	7.5	2.1	64.1	402	25.2	55.8	1,117	3.6	17.9	0.603
2014	10.9	1.8	55.4	364	24.0	44.8	909	2.1	17.1	0.475
2015	9.4	3.0	70.5	406	28.4	45.7	905	2.7	20.4	0.377
2016	10.2	2.6	86.9	433	31.2	29.1	895	5.0	18.2	0.497
2017	12.3	2.6	76.6	441	30.7	38.1	866	5.5	19.4	0.470
2018	13.1	3.1	91.2	444	32.1	30.3	867	5.7	20.1	0.532
2019	10.7	3.3	81.8	410	35.2	25.2	817	5.8	18.1	0.505
2020	10.4	2.9	78.7	354	33.0	27.3	806	4.0	16.5	0.290
2021	7.8	2.9	94.5	374	33.9	21.0	867	5.0	25.5	0.450
2022	7.4	3.7	86.2	394	33.2	22.8	840	5.8	23.6	0.605
High Quality Limit	41	39	No established limits	1,500	420	300	2,800	100	No established limits	17
Ceiling Limit	75	85	No established limits	4,300	420	840	7,500	100	75	57

mg/kg – milligrams per kilogram

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June 2023

Mr. Curtis Czarnecki
Kenosha Water Utility
4401 Green Bay Road
Kenosha, WI 53144

Subject: 2022 Household Hazardous Waste Collection Program Annual Report

Dear Mr. Czarnecki,

The Water Utility organizes and staffs a Residential Household Hazardous Waste (HHW) Program which was held in 2022 on the first Saturday of the month (February-April & December) and on the first and third Saturdays of the month (May-November). The goal of the program is to offer City of Kenosha residents a convenient disposal option for household hazardous wastes in an effort to minimize waste disposed to sanitary and storm sewers. Additionally, the Kenosha Water Utility carries out a Mercury Minimization Program as a requirement of our wastewater discharge permit. The HHW events are one way to keep mercury out of the environment. Along with household chemicals, we also accept mercury containing products such as thermometers and fluorescent light bulbs.

All events are staffed solely by Water Utility employees. There are at least five to six employees plus a chemist in charge for each event. The employees collect acceptable chemicals for disposal and offer educational materials to customers about where they can dispose of unacceptable chemicals (i.e. oil, antifreeze, medicine, needles). The collected chemicals are disposed through a contracted disposal company.

The Water Utility conducted eighteen collection events throughout the year. As in past years, it was well received. The number of residents disposing waste per event ranged from 32 (November 19) to 88 (May 7) with an average of 56 per event. The total number of participants in 2022 was 1,012. This program continues to be a beneficial service to our customers and the environment.

Respectfully Submitted,

Katrina Karow
Director of Wastewater Treatment

Kenosha Household Hazardous Waste Program Participation

2022 Collection Dates and Number of Participants

February 5	47 participants
March 5	53 participants
April 2	53 participants
May 7	88 participants
May 21	63 participants
June 4	69 participants
June 18	45 participants
July 2	51 participants
July 16	43 participants
August 6	81 participants
August 20	50 participants
September 3	42 participants
September 17	52 participants
October 1	63 participants
October 15	58 participants
November 5	75 participants
November 19	32 participants
December 3	47 participants
Total Participants	1,012

The program averaged 56 participants per collection event.

Household Hazardous Waste Unit
Comparative Income Statement

	2022	2021	2020
Operating Revenue			
Residential	$ 167,271.66	$ 167,101.83	$ 166,964.46
Stormwater Administration	14,040.00	14,040.00	14,040.00
Penalties	3,286.73	3,136.69	2,700.50
Total Operating Revenue	184,598.39	184,278.52	183,704.96
Operating Expenses			
Labor and Supplies	55,022.06	46,827.65	45,695.20
Outside Disposal Service	41,200.66	28,251.38	42,476.23
Costs Allocated from Other Funds:			
Wages	48,489.33	59,360.65	72,320.31
Postage	9,644.94	8,388.82	9,347.77
Other	3,720.55	4,698.54	3,216.65
Depreciation	3,202.45	3,202.45	3,202.45
Total Operating Expenses	161,279.99	150,729.49	176,258.61
Operating Income	23,318.40	33,549.03	7,446.35
Other Income			
Interest Income	571.39	39.99	342.34
Miscellaneous Income	-	22.56	108.68
Net Income	**$ 23,889.79**	**$ 33,611.58**	**$ 7,897.37**

Household Hazardous Waste Unit
Statement of Net Position
December 31, 2022

Assets			
Utility Plant			
Plant in Service	$ 80,893.24		
Accumulated Depreciation	(37,248.62)		
Net Plant in Service		43,644.62	
Current Assets			
Cash	472,739.84		
Accounts Receivable	27,030.42		
Receivable from Municipality	15,410.47		
Unbilled Revenues	20,880.50		
Total Current Assets		536,061.23	
Other Assets			
Pension Asset - Wisconsin Retirement System		23,754.11	
Total Assets			603,459.96
Deferred Outflow of Resources			
Deferred Pension Resources			36,901.31
Liabilities			
Current and Accrued Liabilities			
Accounts Payable	7,012.13		
Payable to Municipality	–		
Total Current Liabilities		7,012.13	
Total Liabilities			7,012.13
Deferred Inflow of Resources			
Deferred Pension Resources			47,090.50
Net Position			
Invested in Capital Assets	43,644.62		
Restricted for Pension	23,754.11		
Unrestricted	518,859.91		
Total Net Position			$ 586,258.64

Household Hazardous Waste Unit
Plant in Service and Accumulated Depreciation
For the year ended December 31, 2022

	Depr. Rate %	Plant in Service: Cost of Plant 1/1/2022	2022 Additions	2022 Retirements	Adjustments Incr/(Decr)	Cost of Plant 12/31/2022
General Plant						
Structures and Improvements	4.00	$ 80,061.24	–	–	–	$ 80,061.24
Equipment	8.33	832.00	–	–	–	832.00
Total		$ 80,893.24	–	–	–	$ 80,893.24

	Accumulated Depreciation: Balance 1/1/2022	2022 Depreciation	Less Cost of Retirements	Add Cash Received	Adjustments Incr./Decr.	Balance 12/31/2022
General Plant						
Structures and Improvements	$ 33,214.17	3,202.45	–	–	–	$ 36,416.62
Equipment	832.00	–	–	–	–	832.00
Total	$ 34,046.17	3,202.45	–	–	–	$ 37,248.62