

2021
ANNUAL REPORT
of the
KENOSHA WATER UTILITY
Kenosha, Wisconsin



BOARD OF WATER COMMISSIONERS

David Bogdala, Chairman

Jack Rose

Bruce Fox, Vice Chairman

Dominic Ruffalo

Mitchell Pedersen

Bill Siel

Curtis Czarnecki, General Manager

Melissa Arnot, Assistant General Manager

DIVISIONS

John Andersen, Director of GIS / IT

Ian Bagley, Director of Engineering Services

Cathy Brnak, Director of Business Services

Steven Hayek, Director of Water Distribution & Sewer Collection

Sue Hill, Director of Personnel & Administration

Katrina Karow, Director of Wastewater Treatment

Ryan Spackman, Director of Water Production

Table of Contents

General Manager’s Letter of Transmittal	1
Assistant General Manager’s Letter of Transmittal	2
Water Utility Organizational Chart	3
General Statistics - Water	4-5
General Statistics – Sewer	6-7
Water Utility Vehicles	8
Water Utility Major Equipment	9
 Engineering Division	
Letter of Transmittal – Engineering	10
Letter of Transmittal – GIS/IT	11
Contracts Awarded	12
Developer Infrastructure Accepted	13
Engineering/GIS Recap of Significant Projects	14
 Business Services	
Letter of Transmittal – Business Services	15
Water and Sewerage Service Charges	16
Consumption Charges by Customer Class	17-18
Meter Services Report	19
Ten Year Comparison of Customer Consumption	20
 Water System	
Letter of Transmittal – Water Production	21
Monthly Main Plant Pumping Report	22
Monthly Booster System Pumping Report	22
Main Plant Pumping Last Ten Years (graph)	23
Booster Pumping Last Ten Years (graph)	24
Finished Water Per Month (graph)	25
Monthly Rapid Sand Plant Filtration Report	26
Monthly Membrane Plant Filtration Report	27
Monthly Rapid Sand Plant Chemical Feed Report	28
Monthly Membrane Plant Chemical Feed Report	29
Monthly Laboratory Report	30-31
Water Quality Analysis – Synthetic Organic Chemicals	32
Volatile Organic Chemicals	33
Inorganic Chemicals	34
Income Statement	35
Statement of Net Position	36
Comparative Operating and Maintenance Expenses	37
Comparative Income Statement	38
Utility Plant in Service	39
Accumulated Depreciation	40

Table of Contents

Letter of Transmittal – Water Distribution/Sewer Collection	41
Water Distribution Pipe System	42
Water Services Added to System	43
Fire Hydrants Added to System	43
Water Main Installation Costs	44
Operating and Maintenance Report – Distribution Division-Water	45
Sewerage System	
Letter of Transmittal – Wastewater Treatment Division	46
Treatment Data – 5 Year Comparison	47
Wastewater Flow	48
Treatment Data and Chemical Usage	49
BOD Removal and TSS Removal (graphs)	50
Plant Operating Data	51
Sewage Collection Pipe System	52
Sewer Main Installation Costs	53
Operating and Maintenance Report – Distribution Division-Sanitary Sewer	54
Summary of Sewer Cleaning and Televising	54
Income Statement	55
Statement of Net Position	56
Comparative Operating and Maintenance Expenses	57
Comparative Income Statement	58
Utility Plant in Service	59
Accumulated Depreciation	60
Letter of Transmittal – Industrial Pretreatment Program	61
Summary of Influent Metals	62
Summary of Effluent Metals	63
Summary of Dewatered Sludge Metals	64
Household Hazardous Waste	
Letter of Transmittal	65
HHW Program Participation	66
Comparative Income Statement	67
Statement of Net Position	68
Plant in Service and Accumulated Depreciation	69

Board of Water Commissioners

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



Kenosha Water Utility

Curt Czarnecki
General Manager
4401 Green Bay Road
Kenosha, WI 53144
Phone (262) 653-4306
Fax (262) 653-4303

“Providing and Protecting Kenosha’s Greatest Natural Resource”

June 2022

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

Subject: 2021 Annual Report

I respectfully submit the 2021 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. Revenues in the Water System, Sewerage System and Household Hazardous Waste Program exceeded expenses for the 2021 calendar year.

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 2021 adapting to the evolving global pandemic, large inflationary pricing increases and a challenging labor market. 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 2022.

Sincerely,

Curtis Czarnecki, P.E.



Board of Water Commissioners

David F. Bogdala – Chairperson
Bill Siel – Vice Chairperson
Anthony Kennedy
Dave Mau
Jack Rose
Dominic Ruffalo



Melissa Arnot
Assistant General Manager

4401 Green Bay Road
Kenosha, WI 53144

Phone (262) 653-4300
Fax (262) 653-4303

“Providing and Protecting Kenosha’s Greatest Natural Resource”

June 2022

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

Subject: 2021 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.

Last year, there was again no shortage of emergencies and work to be done. In February during the cold snap, the main switch gear at the wastewater plant had a bay blow up which caused the plant to run on generator for days and have multiple contractors and WE Energies working overnight. It took months to be fully repaired. I was involved with overseeing the lead service program where 370 services were replaced and paid for through the WI DNR grant. In August there was a storm that took out power throughout the city and caused the production plant to run on generator for two days. This was a major event with lots of coordination with contractors and WE Energies. Excitingly, the membrane replacement project was started at the end of the year.

Although it is hard to see people go, I am excited that we had a number of new hires and promotions throughout the Utility and look forward to seeing what can be accomplished in the coming year. 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 support. 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,

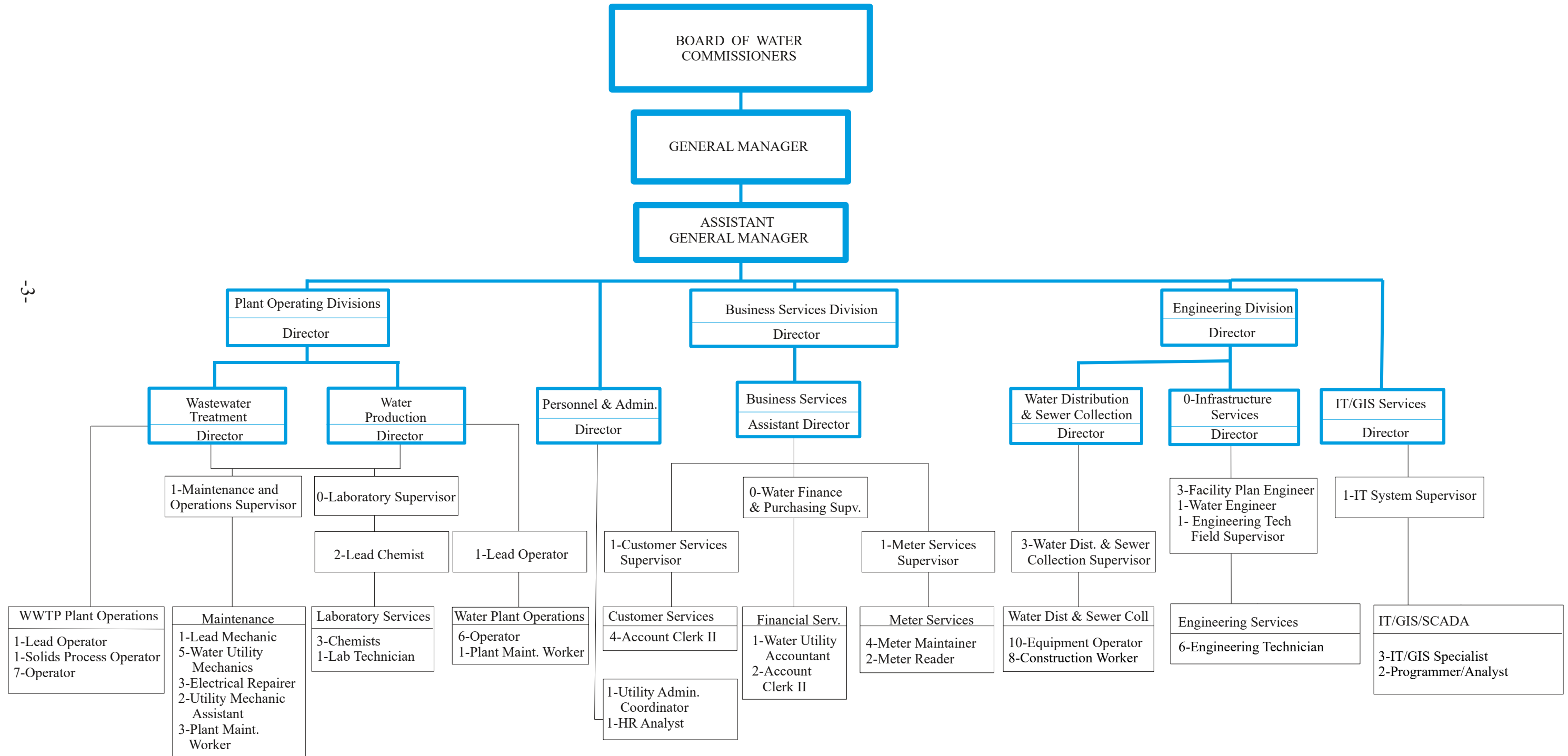
Melissa Arnot, P.E.
Assistant General Manager



www.kenosha.org



2021 Organizational Chart



General Statistics Water

	<u>2021</u>	<u>2020</u>
1. Population of Kenosha, Pleasant Prairie, Somers & Bristol	137,560	136,931
Population of current service area (estimated)	119,652	118,312
Population of City of Kenosha	98,998	98,891
2. Total gallons pumped	6,013,603,000	5,305,911,000
3. Total gallons low lift water used in plant	618,891,000	609,849,000
4. Total gallons water pumped – high lift use	5,394,712,000	4,696,062,000
5. Total gallons high lift water accounted for, not metered	66,533,750	65,059,682
6. Total gallons water pumped to distribution system	5,328,178,250	4,631,002,318
7. Increase (decrease) from previous year	15.05%	2.33%
8. Total gallons passed through customers' meters	4,713,337,000	4,262,261,000
9. Percent of water accounted for	87%	91%
10. Consumption:		
Minimum gallons pumped in any one day	10,290,000	9,370,000
	February 1, 2021	November 29, 2020
Maximum gallons pumped in any one day	27,100,000	23,670,000
	June 12, 2021	July 25, 2020
11. Total daily consumption – Average	12,913,252	11,677,427
Average daily consumption per capita – gallons per day	107.92	98.70
12. Total number of services	30,496	30,481
Active accounts (total meters less in stock and deduct meters)	31,259	31,245
Number of services added (net)	15	20
Per mile of pipe	81.95	82.01
Persons per service (City of Kenosha)	3.25	3.24
13. Pipe in distribution system (in miles)	372.13	371.67
Size range in diameter	1" - 48"	1" - 48"
Pressure range – pounds per square inch	40 – 80	40 – 80
Population per mile (City of Kenosha)	266.03	266.07
14. Valves for distribution system (except hydrant valves)	6,094	6,082
Total installed for year	12	33
15. Hydrants for distribution system	3,413	3,403
Total installed for year (56 new - 46 retired = 10 additional)	10	21
Per mile of pipe	9.17	9.16
16. Utility operating revenue	\$ 15,398,257	\$ 14,361,238
Net Operating Income (Loss)	\$ 1,517,940	\$ 1,072,014
Net Income (Loss) (all expense and revenue)	\$ 2,482,450	\$ 1,115,685

	<u>2021</u>	<u>2020</u>
17. Operating and maintenance expenses	\$ 9,135,010	\$ 8,378,693
Per mile of pipe to expense	\$ 24,547.90	\$ 22,543.37
Per million gallons to distribution system	\$ 1,714.46	\$ 1,809.26
18. Tax Equivalent – Water	\$ 2,157,345	\$ 2,271,298
Increase (decrease) from previous year	-5.0%	3.0%
Percent of operating revenue	14.0%	15.8%
19. Depreciation and Amortization	\$ 2,613,882	\$ 2,643,282
Percent of operating revenue	17.0%	18.4%
20. Production Cost Analysis of Energy Used		
Total electrical costs (high and low lift)	\$ 540,484	\$ 496,042
Cost for pumping (per million gallons)	\$ 89.88	\$ 93.49
Total electrical costs (booster system)	\$ 176,668	\$ 161,801
Cost of re-pumping for booster system (per million gallons)	\$ 73.58	\$ 75.22
Total electrical energy consumed at plant	\$ 635,866	\$ 583,571
Total natural gas energy consumed at plant	\$ 44,660	\$ 33,070
21. Production Cost Analysis of Chemicals Used		
Sand Filters		
Sulfate of Aluminum – total tons	411.8	331.7
Chlorine – total tons	34.4	24.3
Hydrofluosilicic acid (Fluoride) – total tons (liquid weight)	50.6	31.9
Polyphosphate – total tons (liquid weight)	53.8	37.3
Total cost per million gallons of filtered water	\$56.38	\$57.81
Membrane Filters		
Chlorine – total tons	14.1	17.9
Hydrofluosilicic acid (Fluoride) – total tons (liquid weight)	20.5	23.6
Polyphosphate – total tons (liquid weight)	22.2	27.5
Total cost per million gallons of filtered water	\$32.78	\$29.57
22. Plant Capacities:		
Treatment plant	45.0 MGD	45.0 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)	2,400.89	2,151.16
24. Average number of General Customers by class		
Residential	27,679	27,651
Multifamily Residential	1,105	1,106
Commercial	2,168	2,176
Industrial	84	86
Private Fire Services	735	630
Public Authorities	195	199
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

	<u>2021</u>	<u>2020</u>
25. Total gallons wastewater pumped & treated	7,161,286,000	9,261,383,000
26. Increase (decrease) from previous year	(22.68%)	(11.94%)
27. Treatment:		
Minimum gallons treated in any one day	14,807,000	15,754,000
Date:	November 26, 2021	October 17, 2020
Maximum gallons treated in any one day	40,661,000	91,174,000
Date:	March 10, 2021	May 18, 2020
28. Total daily wastewater treated – Average	19,619,962	25,304,325
Average daily treatment per capita – gallons per day	163.98	213.88
29. Total dry solids to digester, tons	5,719	5,437
30. Sludge to dewatering centrifuge, gallons	26,399,712	26,980,922
Sludge to dewatering centrifuge, wet tons	110,087	112,510
Percent solids	2.41%	2.22%
31. Sludge off dewatering centrifuge (to landfill), wet tons	6,979	6,019
Sludge off dewatering centrifuge (to dryer), wet tons	3,200	2,905
Percent solids	25.2%	27.0%
32. Sludge from dryer (to landfill), wet tons	848	823
Percent solids	95.1%	95.3%
33. Sludge to landfill, dry tons	2,556	2,870
Grit to landfill, tons	822	1,313
34. Pipe in collection system (in miles)	344.49	343.97
Size range in diameter	1.5" - 99"	1.5" - 99"
Population per mile (City of Kenosha)	287.38	290.41
35. Utility operating revenue	\$ 13,981,245	\$ 13,088,904
Net Operating Income (Loss)	\$ 496,822	(\$ 132,109)
Net Income (all expense and revenue)	\$ 790,194	\$ 498,144
36. Operating and maintenance expenses	\$ 13,484,422	\$ 13,221,013
Per mile of pipe to expense	\$ 46,921.92	\$ 45,525.34
Per million gallons collected	\$ 1,882.96	\$ 1,427.54
37. Depreciation	\$ 3,201,825	\$ 3,245,555
Percent of operating revenue	22.9%	24.8%
38. Wastewater Treatment Cost Analysis of Energy Used		
Total electrical costs (wastewater treatment)	\$ 595,071	\$ 470,371
Cost for treatment (per million gallons)	\$ 83.10	\$ 50.79
Total electrical costs (lift stations)	\$ 58,682	\$ 77,157
Cost of pumping sewage to treatment plant		
Total natural gas energy consumed at plant	\$ 109,695	\$ 66,256
Methane gas produced by digesters (therms)	484,125	444,708
Value of methane gas (estimate)	\$ 346,653	\$ 177,883

	<u>2021</u>	<u>2020</u>
39. Wastewater Treatment Cost Analysis of Chemicals Used		
Ferric Chloride - total gallons	193,868	185,557
Chlorine - total tons	59.1	70.0
Sulfur Dioxide - total tons	47.2	49.1
Polymer - total tons	68.0	66.0
Sodium Hydroxide - total pounds	123,913	153,220
Sulfuric Acid - pounds	0	0
Total cost per million gallons of treated sewage	\$ 60.85	\$ 56.11
40. Plant Capacity	28.6 MGD	28.6 MGD
41. Average number of General Customers by class		
Residential	26,930	26,842
Multifamily Residential	947	949
Commercial	1,985	1,987
Industrial	70	71
Public Authorities	153	155
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 – 2021

Distribution & Sewer Collection

Water Distribution

Fleet #	Description
2091	1992 Ford Truck with Utility Service Body
2367	1997 Ford Hydro Vac Valve Turner Truck
2427	1998 Ford Pickup
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

Meter Shop

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

Engineering Services

2682	2003 GMC Van
2771	2004 Jeep Liberty
2842	2006 GMC Pickup
2883	2006 GMC Pickup
3004	2008 Dodge Grand Caravan
3024	2009 Jeep Grand Cherokee
3027	2009 Chevrolet Impala
3076	2010 Chevrolet Impala
3105	2011 GMC Pickup
3106	2011 GMC Pickup
3124	2011 GMC Pickup
3166	2012 Chevrolet Impala
3279	2014 GMC Pickup
3281	2014 GMC Pickup
3282	2014 GMC Pickup
3452	2019 Ford Transit Cargo Van
3474	2019 GMC Van

Sewer Repair/Inspection

Fleet #	Description
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
3202	2012 Sewer Flusher Vacuum
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
3280	2014 GMC Pickup
3283	2014 GMC Pickup
3484	2019 Jeep Compass

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
2649	2003 GMC Pickup
2652	2003 Ford Utility Truck with Crane
2700	2003 GMC Van
2714	2004 Ford Pickup
2746	2004 GMC Pickup
2862	2006 GMC Van
2866	2006 GMC Pickup
3407	2006 Ford F750 with Crane
2930	2007 GMC Pickup
2945	2008 Freightliner Quad Axle Dump Truck
2966	2008 GMC Van
3391	2008 IHC 4400 with Versalift
3073	2010 Ford Escape Hybrid
3164	2012 Chevrolet Impala
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

Water Utility Major Equipment – 2021

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
2206	1994 Smith Air Compressor
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
2005 Kubota Mower
2006 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
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

Phone (262) 653-4315
Fax (262) 653-4303



“Providing and Protecting Kenosha’s Greatest Natural Resource”

June 2022

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

Subject: 2021 Annual Report – Engineering Services Division

Dear Mr. Czarnecki,

I respectfully submit the annual report for the Engineering Services Division for the year 2021. 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 173 private development reviews on 95 different projects in 2021. 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, relocate our facilities for multiple roadway reconstruction projects, and extend new service west of I-94. These contracts totaled \$3,510,352.00 and a summary can be found later in this report under “2021 Engineering Service Contracts Awarded”. These contracts included water main relay projects, a public side lead service replacement contract, multiple contracts associated with relocating our facilities for roadway reconstruction projects, and extending new service west of I-94. This water main extension was an incredibly ambitious project as we were tasked with having 9,700 feet of 16” water main installed, tested, and functional in 7 weeks to meet an occupancy date required by Uline. The contractor had two crews working simultaneously, 12 hours a day, 6 days a week and overseen by Engineering Division personnel. Not only was the main installed on time, it was completed over two weeks early. This main has helped to provide robust looping in our third pressure zone west of I-94. Finally, our Distribution Division completed dozens of water main offsets, valve replacements, and hydrant relocations necessitated by City and WisDOT roadway reconstruction and resurfacing projects.

The KWU lead service replacement program continued to be a priority in 2021 as KWU replaced 207 public side services with a combination of our Distribution Division and outside contractors as well as funding 322 private side service replacements. KWU funded over three times as many lead services in 2021 compared with 2020. The large increase in private side lead service replacements came from our ability to fully fund this work for homeowners, up to a cap of \$6,000, as a result of a \$1,950,000 grant from the Safe Drinking Water Loan Program of the Wisconsin Department of Natural Resources.

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 2021 another safe, productive, and successful year.

Sincerely,

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



www.kenosha.org

**Information Technology/
Geographic Information Systems**

4401 Green Bay Road
Kenosha WI 53144

Phone (262) 653-4315
Fax (262) 653-4303



“Providing and Protecting Kenosha’s Greatest Natural Resource”

June 2022

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

Subject: 2021 Annual Report - Information Technology / Geographic Information Systems

Dear Mr. Czarnecki,

The Information Technology (IT) / Geographic Information Systems (GIS) team continued to provide 24/7/365 IT services to all of the Kenosha Water Utility's staff. Whether working at the legacy office, using mobile devices out-in-the-field or using secure connections from home, the staff has successfully supported all of these technologies especially in this unusual and challenging pandemic times for the second year in a row.

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 and various new projects are listed below:

- Maintained, supported and trained users in all of our technologies to include: Thin clients, mobile thin clients, GIS and SCADA (Supervisory Control and Data Acquisition) system
- Continued to manage virtual Water Board, staff, and any other online meetings, using Zoom as our primary platform.
- Enhanced our Lead Service Replacement program which is continuing to be entered into our home-grown GIS system called QGIS (Quantum Geographic Information System)
- Ran in parallel with our legacy SCADA (Supervisory Control and Data Acquisition) system and our new human-machine interface (HMI) called Ignition at the Production Plant
- Created a new network architecture that will include the Membrane Retrofit project SCADA system
- Developed new physical and virtual machines to increase performance of the SCADA, GIS and other applications
- 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,

A handwritten signature in black ink that reads 'John N. Andersen'.

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



www.kenosha.org

2021 Engineering Service Contracts Awarded

<u>Project</u>	<u>Contractor</u>	<u>Description</u>	<u>Awarded Cost</u>
2021-01-W	Mid-City Corporation	Lead Service Replacement Program - Road Reconstruction Projects 22nd Avenue - Washington Road to 27th Street 22nd Avenue - 65th Street to 60th Street 60th Street - 21st Avenue to 23rd Avenue 30th Avenue - 52nd Street to Washington Road	\$553,700.00
2021-02-W	DK Contractors, Inc.	60th Street Improvements 60th Street - near Pershing Boulevard 60th Street - near 42nd Avenue 60th Street - near 4810 60th Street	\$406,029.00
2021-04-W	Willkomm Excavating & Grading, Inc.	Western Water Main Extension on 128th Avenue, 60th Street and 122nd Avenue	\$1,640,988.00
2021-05-S	A.W. Oakes & Son	Sheridan Road Sanitary Repairs	\$63,795.00
2021-06-W	Globe Contractors, Inc.	STH 50 Water Main Relocations	\$1,011,785.00

2021 Water Treatment Plant Contract Awarded

DuPont	Memcor CPII Membrane Filtration System Retrofit and Service Agreement	\$4,186,746.00
--------	---	----------------

2021 Developer Infrastructure Accepted

	Water Mains	Hydrants	Services
Midwest Transportation	\$ 346,140.99	86,626.80	\$ 13,602.87

	Sanitary Sewer Mains
Midwest Transportation	\$ 473,619.58

Note: Total cost includes developer and KWU costs.

**2021 Engineering Staff and G.I.S. Personnel
Recap of Significant Projects**

	<u>Hours</u>
<u>Water Production Engineering - Total Hours 452</u>	
Water Treatment Plant & Reservoir Maintenance	452
<u>Sewerage System Engineering - Total Hours 4,655</u>	
Sanitary Sewer Locates (Digger's Hotline)	2,186
Wastewater Treatment Plant Maintenance	706
Sewer Repair, Cleaning and Inspection	1,763
<u>Water Distribution System - Total Hours 9,645</u>	
Water System Locates (Digger's Hotline)	2,737
Maintenance of Mains, Services and Hydrants	3,712
Lead Service Replacement Program	3,196
<u>Water Main Installed by Kenosha Water Utility Crews - Total Hours 126</u>	
Water Main Replacement - Various Locations	126
<u>Water Main Installed by Kenosha Water Utility Contract - Total Hours 1,159</u>	
Western Water Main Extension on 128th Avenue, 60th Street and 122nd Avenue	660
Water Main Replacement - 60th Street near Pershing Boulevard, 60th Street near 42nd Avenue and 60th Street near 4810 60th Street	226
STH 50 Water Main Relocations	207
Water Main Replacement - Various Locations	66
<u>Water/Sewer Infrastructure Installed by Developers 370</u>	
North Point Development	193
Fire Station #4	177
<u>New Development - Total Hours 926</u>	
Plan/Project Review	926
<u>GIS Infrastructure Mapping - Total Hours 1,754</u>	
Water Infrastructure	942
Sewer Infrastructure	812

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 2022

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

Dear Mr. Czarnecki,

SUBJECT: 2021 Annual Report – Business Services Division

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 maintainers have been identifying and removing meters containing lead as a part of the utility’s ongoing meter change-out program. Meter readers are efficiently reading, on average, 410 meters per day. Operations that were significantly impacted by COVID-19 and the inability to enter private homes have been returning to normal. 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 3.08% based on an average net rate base valued at \$52,375,887. The rate of return for the sewer unit was 0.77% based on an average net rate base valued at \$34,702,170. Staff in the finance division, together with other utility divisions, continued to compile and provide data to the Public Service Commission for the utility’s water rate increase application. A water rate increase was approved by the Public Service Commission and was made effective February 1, 2022.

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,

A handwritten signature in black ink that reads 'Todd L. Giese'.

Todd L. Giese
Interim Director-Business
Services



www.kenosha.org

Water and Sewerage Service Charges – 2021

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 June 1, 2015 Public Fire Protection Rates Effective June 1, 2015

Meter Size	Public Fire Protection Bi-Monthly Charge	Meter Service Bi-Monthly Charge
5/8 Inch	\$6.18	\$10.10
3/4 Inch	6.18	10.10
1 Inch	8.24	18.96
1-1/2 Inch	12.36	32.96
2 Inch	18.54	45.32
3 Inch	24.72	78.28
4 Inch	30.09	117.42
6 Inch	37.08	206.00
8 Inch	43.26	306.94
10 Inch	49.44	432.60
12 Inch	55.62	560.32

Plus volume charges:

- First 1,700 cubic feet used each month or
3,400 cubic feet used each two months - \$ 2.00 /100 cu. ft.
- Next 23,300 cubic feet used each month or
46,600 cubic feet used each two months - \$ 1.85 /100 cu. ft.
- Over 25,000 cubic feet used each month or
50,000 cubic feet used each two months - \$ 1.50 /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

Bill Mo.	Water		Public Fire Protection	HHW Charge	Sewerage		Spr. Cr.
	Cons.Ccf	Charge			Cons.Ccf	Charge	
April 2021	153,602	\$ 445,187.95	\$ 84,138.64	\$ 13,451.00	152,910	\$ 371,002.90	
May 2021	152,175	447,299.68	87,846.64	13,450.00	145,043	355,558.47	
June 2021	157,637	451,627.71	84,151.00	13,452.00	156,899	378,945.97	
July 2021	178,722	525,501.48	87,145.21	13,400.50	184,710	354,629.05	\$ 79,416.92
Aug 2021	190,495	517,695.78	84,160.27	13,454.00	188,670	355,941.54	83,238.64
Sept 2021	269,161	676,347.67	87,831.19	13,451.50	249,782	373,977.58	190,023.11
Oct 2021	193,681	525,886.69	84,200.44	13,459.50	192,324	353,798.74	95,675.22
Nov 2021	234,140	607,529.93	87,865.18	13,455.50	218,122	362,815.38	138,207.49
Dec 2021	174,227	484,989.07	84,206.62	13,463.00	172,288	344,768.58	64,846.14
Jan 2022	161,122	465,239.16	87,862.09	13,455.50	152,234	369,889.65	
Feb 2022	152,807	443,034.09	84,243.70	13,466.50	151,738	368,737.58	
March 2022	160,306	465,862.96	89,193.59	13,455.50	152,876	371,155.24	
Totals	2,178,075	\$ 6,056,202.17	\$ 1,032,844.57	\$ 161,414.50	2,117,596	\$ 4,361,220.68	\$ 651,407.52

COMMERCIAL

Bill Mo.	Water		Public Fire Protection	Sewerage	
	Cons.Ccf	Charge		Cons.Ccf	Charge
April 2021	46,087	\$ 99,635.58	\$ 9,898.30	40,172	\$ 85,149.68
May 2021	51,282	118,772.59	10,955.08	50,143	103,189.41
June 2021	43,068	101,145.37	9,905.51	39,499	83,796.44
July 2021	68,086	146,085.03	10,526.60	54,958	112,571.40
Aug 2021	60,783	129,879.97	9,886.97	43,716	92,206.71
Sept 2021	89,558	181,495.45	11,003.49	63,416	129,609.68
Oct 2021	66,747	139,987.24	9,884.91	47,435	98,086.35
Nov 2021	84,856	175,159.81	11,005.55	61,450	125,883.67
Dec 2021	54,631	120,108.37	9,891.09	277,336	54,835.50
Jan 2022	56,809	128,559.93	11,001.43	51,076	105,220.69
Feb 2022	35,775	94,930.67	9,869.46	34,986	80,214.05
March 2022	54,947	124,893.22	11,139.23	52,489	116,502.50
Totals	712,629	\$ 1,560,653.23	\$ 124,967.62	816,676	\$ 1,187,266.08

MULTIFAMILY RESIDENTIAL

Bill Mo.	Water		Public Fire Protection	HHW Charge	Sewerage	
	Cons.Ccf	Charge			Cons.Ccf	Charge
April 2021	34,277	\$ 76,225.19	\$ 5,108.80	\$ 496.50	34,318	\$ 69,913.28
May 2021	49,535	111,644.02	7,345.96	455.50	48,261	97,877.29
June 2021	33,407	75,449.96	5,127.34	496.50	33,564	68,715.83
July 2021	51,629	115,691.42	7,128.63	452.50	49,302	99,773.04
Aug 2021	34,934	77,511.36	5,121.16	495.50	32,754	67,088.77
Sept 2021	65,957	142,174.02	7,352.14	456.50	54,135	109,458.22
Oct 2021	37,653	82,629.81	5,090.26	490.50	33,374	68,293.84
Nov 2021	66,174	142,650.82	7,345.96	455.50	55,438	112,027.64
Dec 2021	36,452	81,932.26	5,090.26	490.50	34,165	70,423.71
Jan 2022	55,286	122,335.60	7,379.95	457.00	52,707	106,527.79
Feb 2022	33,794	75,543.44	5,084.08	489.50	33,258	68,103.70
March 2022	55,671	123,484.81	7,478.35	458.00	54,595	110,092.01
Totals	554,769	\$ 1,227,272.71	\$ 74,652.89	\$ 5,694.00	515,871	\$ 1,048,295.12

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

PUBLIC

Bill Mo.	Water		Public Fire Protection	Sewerage	
	Cons.Ccf	Charge		Cons.Ccf	Charge
April 2021	14,901	\$ 30,201.94	\$ 2,007.47	6,309	\$ 13,016.19
May 2021	14,600	28,524.40	1,463.63	7,011	13,154.56
June 2021	15,585	31,383.84	2,007.47	6,659	13,712.69
July 2021	17,765	33,742.20	1,414.19	7,217	14,615.88
Aug 2021	32,296	58,885.35	2,016.74	10,794	21,943.82
Sept 2021	21,662	40,039.20	1,448.18	6,806	13,817.15
Oct 2021	42,898	74,646.24	2,007.47	11,997	24,335.31
Nov 2021	24,082	43,884.60	1,438.91	9,060	18,117.48
Dec 2021	21,969	42,793.04	1,949.25	9,858	20,063.82
Jan 2022	16,201	31,310.69	1,418.31	8,678	15,833.72
Feb 2022	16,892	33,725.29	1,931.25	6,517	13,415.23
March 2022	15,760	30,284.43	1,427.74	8,181	14,910.65
Totals	254,611	\$ 479,421.22	\$ 20,530.61	99,087	\$ 196,936.50

INDUSTRIAL

Bill Mo.	Water		Public Fire Protection	Sewerage	
	Cons.Ccf	Charge		Cons.Ccf	Charge
April 2021	45,998	\$ 72,654.71	\$ 674.65	35,639	\$ 118,352.80
May 2021	49,735	78,285.50	637.57	30,323	143,263.51
June 2021	45,009	71,140.41	674.65	30,223	164,942.10
July 2021	51,693	81,391.50	631.39	28,792	128,330.52
Aug 2021	52,892	83,301.26	674.65	28,524	152,039.11
Sept 2021	44,058	69,937.80	637.57	22,433	129,164.45
Oct 2021	52,152	82,288.11	674.65	27,669	134,635.03
Nov 2021	52,198	81,822.45	637.57	24,709	191,254.18
Dec 2021	48,785	77,039.21	674.65	32,351	179,406.78
Jan 2022	39,534	63,026.70	637.57	21,153	147,077.84
Feb 2022	37,103	59,298.86	674.65	25,146	121,456.74
March 2022	48,002	75,728.98	639.39	24,282	148,482.03
Totals	567,159	\$ 895,915.49	\$ 7,868.96	331,244	\$ 1,758,405.09

SALE FOR RESALE

Bill Mo.	Cons.Ccf	Water Charge	Public Fire Protection
April 2021	114,084	\$ 166,053.31	\$ 8,359.48
May 2021	126,243	183,521.12	8,359.48
June 2021	135,104	196,078.24	8,359.48
July 2021	177,253	256,704.34	8,359.48
Aug 2021	231,875	335,810.16	8,359.48
Sept 2021	250,598	362,917.01	8,359.48
Oct 2021	248,613	358,561.96	8,359.48
Nov 2021	213,236	309,128.48	8,359.48
Dec 2021	174,986	253,663.80	8,359.48
Jan 2022	126,335	183,660.08	8,359.48
Feb 2022	126,671	184,283.90	8,359.48
March 2022	134,229	194,701.15	3,123.10
Totals	2,059,227	\$ 2,985,083.55	\$ 95,077.38

Meter Services Report - 2021

<u>Meter Size</u>	<u>New Accounts</u>	<u>Tested/ Upgraded</u>	<u>Total Meters</u>
5/8" Meters	1	2,302	24,629
3/4" Meters	33	802	4,910
1" Meters	4	65	901
1-1/2" Meters	1	46	594
2" Meters	4	37	663
3" Meters	4	11	116
4" Meters	-	4	60
6" Meters	-	23	28
8" Meters	-	10	10
10" Meters	-	2	2
Total	47	3,302	31,913

New Private Fire Lines **2**

Meter Shop Activity

Set New Accounts	47
20 Year Meter Change Outs	1,482
Install Radio Read Units	109
Remove Meter (test and replace)	137
Check Readings (high/low consumption, etc.)	2,384
Shut Offs, Take Out Seasonals	131
Repair Outside Register/Touch Pad	1,198
Pressure Tests	22
Locate/Clean Curb Box	317
Service Break Checks/Trace Services	20
Shut off at Curb (non-payment & customer requests)	313
Meters Bench Tested/Rebuild & Retest	54
Frozen Services	14
Frozen Meters	46
Pool Fills	3
Large Meter-Field Testing	54
Total Service Calls	6,331

TEN YEAR COMPARISON OF CUSTOMER WATER CONSUMPTION

Average Number of Water Customers	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	% INCR (DECR) 2021 vs. 2020
Residential	27,365	27,410	27,452	27,500	27,541	27,572	27,597	27,625	27,763	27,789	0.09%
Multifamily Residential	N/A	1,130	1,115	1,164	1,077	1,091	1,095	1,097	1,112	1,109	(0.27%)
Commercial	3,315	2,176	2,177	2,114	2,166	2,158	2,157	2,163	2,241	2,235	(0.27%)
Industrial	63	60	61	66	84	83	85	85	87	85	(2.30%)
Public	185	183	185	185	191	191	198	199	201	197	(1.99%)
Irrigation	3	3	2	2	-	-	-	-	-	-	0.00%
Private Fire Lines	464	467	477	492	499	507	515	522	539	552	2.41%
Sale for Resale											
Pleasant Prairie	7	7	7	7	7	7	7	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	31,412	31,446	31,486	31,540	31,575	31,619	31,664	31,705	31,957	31,981	0.08%

Annual Consumption (1,000 Gallons)	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	% INCR (DECR) 2021 vs. 2020
Residential	1,838,553	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	2.49%
Multifamily Residential	N/A	430,591	417,147	417,529	399,652	402,078	410,802	395,833	410,494	414,967	1.09%
Commercial	977,711	495,955	471,956	488,315	520,624	497,334	498,612	502,960	467,829	533,046	13.94%
Industrial	287,364	336,628	419,995	411,406	481,031	404,877	380,041	387,513	383,623	424,235	10.59%
Public	183,924	170,517	170,966	168,484	196,639	193,523	188,702	178,821	159,714	190,449	19.24%
Irrigation	2,148	1,323	1,744	2,014	-	-	-	-	-	-	0.00%
Sale for Resale											
Pleasant Prairie	842,036	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	23.10%
Village of Somers	179,703	146,385	142,909	145,463	160,352	162,849	187,724	173,431	163,097	193,105	18.40%
Village of Bristol	5,025	4,563	5,673	5,962	6,633	6,842	6,371	5,296	5,045	10,688	111.85%
TOTAL	4,316,464	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	10.95%

Customer Class as a Percent of Total Consumption	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Residential	42.60%	41.26%	39.10%	36.87%	34.95%	34.38%	35.28%	35.30%	37.26%	34.42%
Multifamily Residential	N/A	N/A	10.62%	9.94%	8.80%	9.14%	9.60%	9.59%	9.62%	8.77%
Commercial	22.65%	12.49%	12.02%	11.62%	11.48%	11.30%	11.66%	12.19%	10.97%	11.26%
Industrial	6.66%	8.48%	10.69%	9.79%	10.60%	9.20%	8.88%	9.39%	8.99%	8.97%
Public	4.26%	4.29%	4.36%	4.01%	4.33%	4.40%	4.41%	4.33%	3.75%	4.02%
Irrigation	0.05%	0.03%	0.04%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sale for Resale										
Pleasant Prairie	19.51%	18.79%	19.39%	24.11%	26.17%	27.73%	25.63%	24.85%	25.47%	28.25%
Town of Somers	4.16%	3.69%	3.64%	3.46%	3.53%	3.70%	4.39%	4.20%	3.82%	4.08%
Village of Bristol	0.12%	0.11%	0.14%	0.14%	0.15%	0.16%	0.14%	0.13%	0.12%	0.23%
TOTAL	100.01%	89.14%	100.00%	100.00%	100.01%	100.01%	99.99%	99.98%	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 2022

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

Subject: 2021 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 5.50 billion gallons was pumped into the distribution system in 2021. The average daily flow was 15.07 million gallons per day, with a maximum day of 27.10 million gallons which occurred on June 12th due to heavy summer time usage. The average tap water turbidity was 0.036 NTU and the average chlorine residual was 1.1 mg/l. Some significant projects completed in 2021 include:

- **Completion of Valve Automation Upgrades for the Harbor Intakes at Production**
- **Replacement of the VFD for Raw Water Pump 112 at Production**
- **Repair of the Sedimentation Drain Valves at Production**

In addition to the above, we completed our submission of our Optimal Corrosion Control Treatment. This was a completely in-house effort from the harvesting of lead service pipes by our Distribution Division to the design and construction of the system itself by Production Staff. Lead loop samples were taken throughout 2021, and a final recommendation for dosing was submitted to the DNR in December. In October, we began construction for our Membrane Plant Upgrade. This is an entire retrofit of the membrane system. Construction completion is expected early Q3 of 2022.

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 appreciated as we begin the transition to a new plant and processes.

Sincerely,

A handwritten signature in black ink that reads 'Ryan Spackman'.

Ryan Spackman, P.E.
Director of Water Production



www.kenosha.org

Kenosha Water Utility

Production Division

Main Plant Pumping

2021

Month	Pumpage X 1000 Gallons				Electricity	
	High Lift	Daily Average	Low Lift	Daily Average	Pumping	Cost/MG
January	368,720	11,894	413,290	13,332	\$ 43,187	\$ 104.50
February	352,340	12,584	396,720	14,169	43,017	108.43
March	382,110	12,326	423,328	13,656	39,012	92.16
April	377,680	12,589	422,033	14,068	39,012	92.44
May	463,020	14,936	512,168	16,522	44,355	86.60
June	577,290	19,243	628,377	20,946	56,431	89.80
July	570,600	18,406	626,044	20,195	51,563	82.36
August	547,460	17,660	603,821	19,478	50,321	83.34
September	540,960	18,032	584,868	19,496	52,965	90.56
October	494,570	15,954	532,712	17,184	47,610	89.37
November	411,990	13,733	438,843	14,628	39,457	89.91
December	413,112	13,326	434,580	14,019	33,554	77.21
Total	5,499,852		6,016,784		\$ 540,484	
Average	458,321	15,057	501,399	16,474	\$ 45,040	\$ 90.56

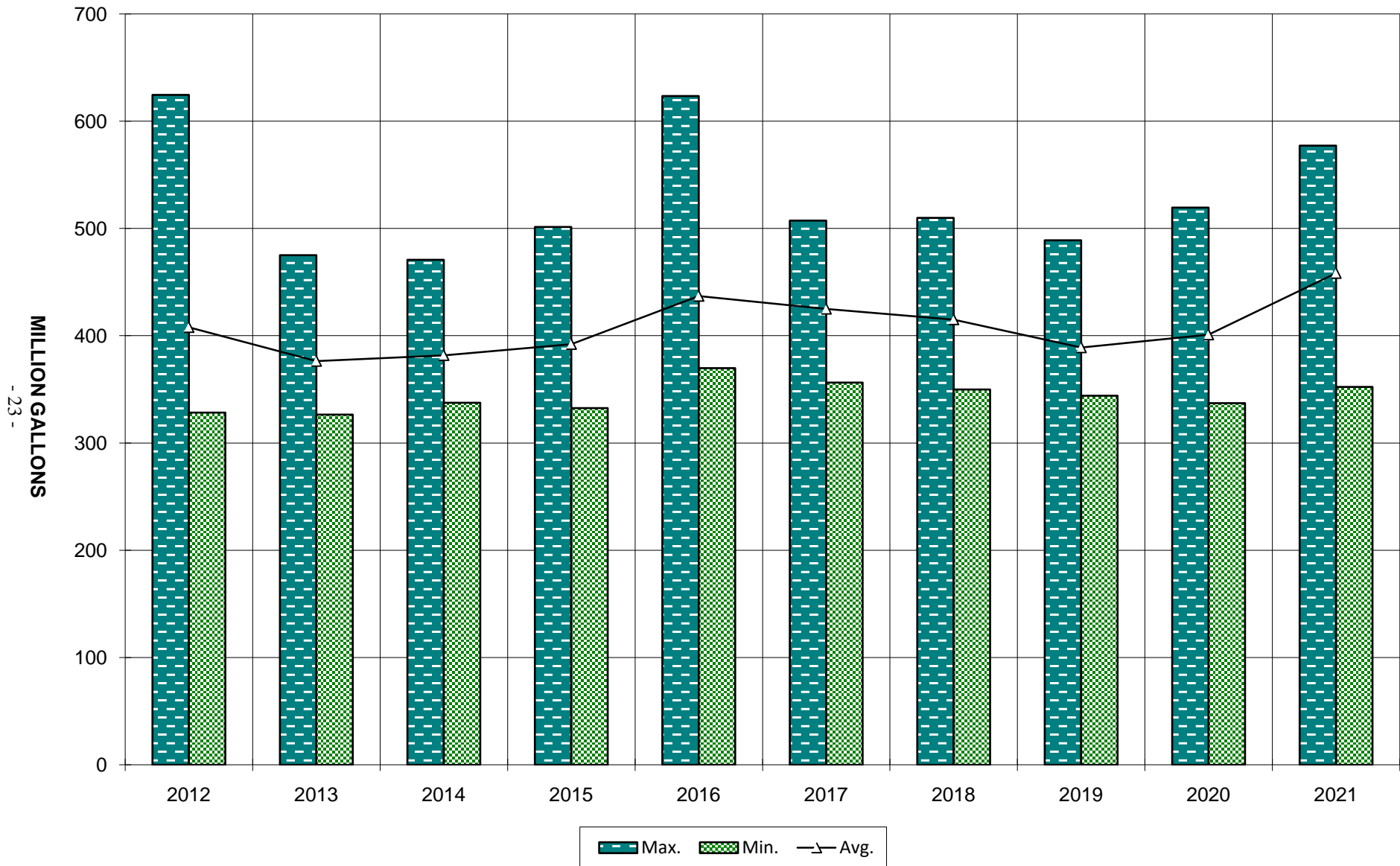
Booster System Pumping

2021

Month	Pumpage X 1000 gal	Total Power Cost	Pumping Power Cost	Total Cost/MG	Pumping Cost/MG
January	155,840	\$ 12,967	\$ 11,347	\$ 83.21	\$ 72.81
February	144,970	15,311	13,520	105.61	93.26
March	163,210	12,022	10,544	73.66	64.60
April	161,810	13,814	12,672	85.37	78.31
May	213,610	15,504	14,382	72.58	67.33
June	271,330	22,075	20,933	81.36	77.15
July	254,500	19,739	18,633	77.56	73.21
August	260,100	21,776	20,651	83.72	79.40
September	248,180	17,319	16,183	69.78	65.21
October	209,900	14,971	13,772	71.32	65.61
November	163,670	13,601	12,142	83.10	74.19
December	153,770	13,619	11,889	88.57	77.32
Total	2,400,890	\$ 192,718	\$ 176,668		
Average	200,074	\$ 16,060	\$ 14,722	\$ 81.32	\$ 74.03

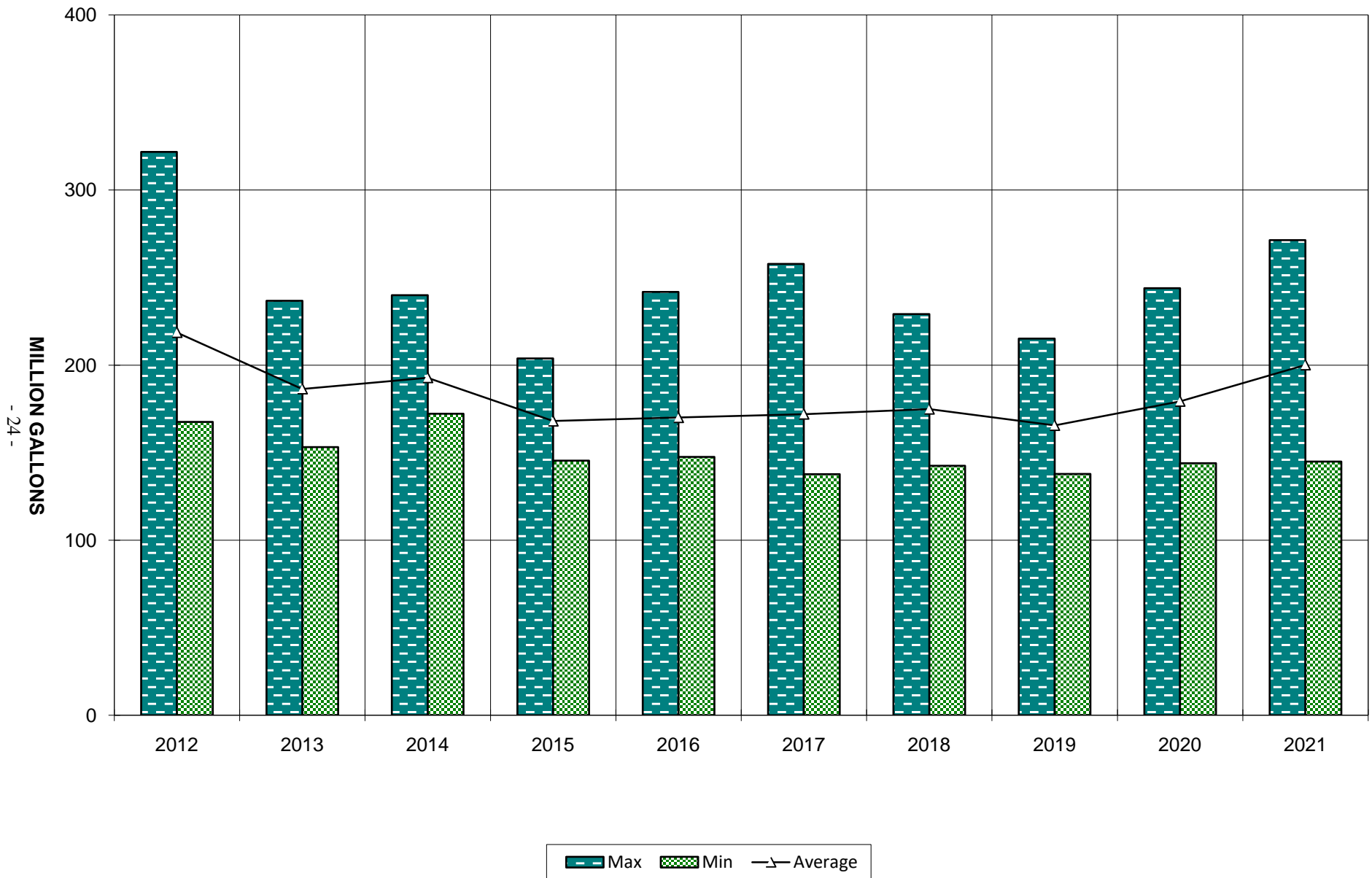
Main Plant Pumping Last Ten Years

Monthly Flow - Million Gallons



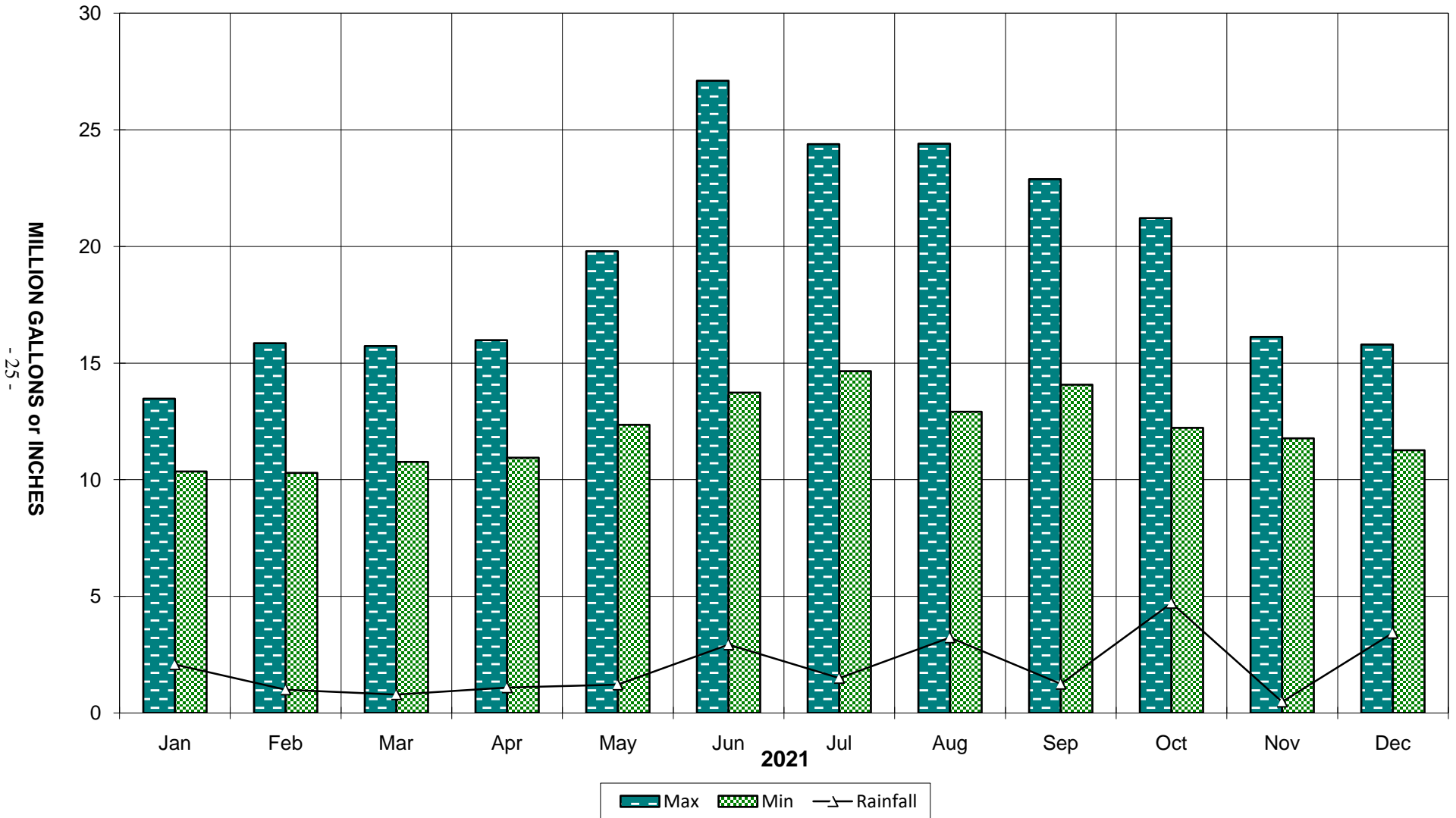
Booster Pumping Last Ten Years

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

2021

Month	Pumpage (1000 gal.)			
	Total Water Treated	Max Day	Min Day	Avg Day
January	198,223	8,403	4,819	6,394
February	217,498	11,272	5,470	7,768
March	214,883	10,143	5,081	6,932
April	202,643	10,322	5,221	6,755
May	286,037	14,219	6,549	9,227
June	380,465	18,910	7,842	12,682
July	382,057	18,859	8,784	12,324
August	416,090	18,696	9,149	13,422
September	411,960	18,854	9,353	13,732
October	387,769	18,581	8,355	12,509
November	383,777	16,691	10,860	12,793
December	411,023	15,788	11,257	13,259
Total	3,892,425			
Average	324,369			10,635

Month	Washwater (1000 gal.)	% Rated Capacity	Filter Run Hours		
			Max	Min	Avg
January	1,910	32	80	36	70
February	4,160	39	80	12	76
March	1,750	35	80	72	79
April	1,630	34	80	57	71
May	2,470	46	80	44	61
June	4,260	63	71	26	41
July	4,170	62	56	20	39
August	5,400	67	43	17	31
September	5,040	69	48	24	34
October	4,340	63	61	30	42
November	4,120	64	52	39	46
December	4,350	66	61	39	47
Total	43,600				
Average	3,633	53			53

Kenosha Water Utility

Production Division

Membrane Plant Filtration Report

2021

Month	Pumpage (1000 gal.)			
	Total Water Treated	Max Day	Min Day	Avg Day
January	170,711	5,713	4,824	5,507
February	134,172	5,142	3,559	4,792
March	166,348	5,754	4,767	5,366
April	174,305	7,247	5,445	5,810
May	176,803	5,772	5,601	5,703
June	193,667	8,562	5,208	6,456
July	190,133	7,494	5,047	6,133
August	141,407	6,851	2,750	4,562
September	130,970	6,559	2,286	4,366
October	107,889	6,412	1,123	3,480
November	29,304	2,829	277	977
December	0	0	0	0
Total	1,615,709			
Average	134,642			4,415

Month	Washwater Raw (1000 gal.)	% Rated Capacity *	CIP Run Hours		
			Max	Min	Avg
January	28,670	35	505	351	480
February	25,680	31	503	390	493
March	26,400	34	500	405	495
April	25,880	37	500	437	496
May	27,390	37	501	453	497
June	25,020	41	502	184	467
July	24,670	39	501	268	458
August	19,080	29	500	240	382
September	11,190	28	500	142	364
October	8,686	22	502	426	477
November	3,180	6	500	487	493
December	0	0	0	0	0
Total	225,846				
Average	18,821	28			425

* Capacity based on winter operations (water temperature below 65° F)
CIP - Clean-in-Place

**Kenosha Water Utility
Production Division
Rapid Sand Plant Chemical Feed Report
2021**

Month	Alum		Chlorine		Fluoride	
	Pounds	lb/MG	Pounds	lb/MG	Pounds	lb/MG
January	47,245	238.34	3,270	16.49	4,682	23.62
February	56,642	260.43	3,564	16.39	5,108	23.48
March	52,898	246.17	3,630	16.89	5,240	24.39
April	56,942	281.00	3,354	16.55	5,273	26.02
May	57,916	202.48	4,811	16.82	7,338	25.65
June	73,284	192.62	6,420	16.87	9,704	25.51
July	74,644	195.37	6,953	18.20	9,887	25.88
August	90,004	216.31	7,728	18.57	10,996	26.43
September	81,145	196.97	7,899	19.18	10,997	26.69
October	81,244	209.52	7,472	19.27	10,381	26.77
November	73,852	192.43	6,876	17.92	10,308	26.86
December	77,768	189.21	6,817	16.59	11,215	27.29
Total	823,584		68,794		101,129	
Average	68,632	218.40	5,733	17.48	8,427	25.72

Month	Potassium Permanganate		Polyphosphate		Total Chemical Cost	
	Pounds	lb/MG	Pounds	lb/MG	Total \$	Cost/MG
January	0	0.00	5,290	26.69	\$ 11,312	\$ 57.06
February	0	0.00	5,769	26.53	13,119	60.32
March	0	0.00	5,895	27.43	12,643	58.84
April	0	0.00	5,561	27.44	13,040	64.35
May	0	0.00	7,860	27.48	14,979	52.37
June	0	0.00	10,597	27.85	19,409	51.01
July	0	0.00	10,618	27.79	19,813	51.86
August	0	0.00	11,806	28.37	24,957	59.98
September	0	0.00	11,452	27.80	23,457	56.94
October	0	0.00	10,773	27.78	22,876	58.99
November	0	0.00	10,601	27.62	21,360	55.66
December*	0	0.00	11,394	27.72	22,495	54.73
Total	0		107,616		\$ 219,460	
Average	0	0.00	8,968	27.54	\$ 18,288	\$ 56.84

**Kenosha Water Utility
Production Division
Membrane Plant Chemical Feed Report
2021**

Cleaning Chemicals								
Month	Sodium Hydroxide		Hydrogen Peroxide		EDTA		Sulfuric Acid	
	Pounds	lb/MG	Pounds	lb/MG	Pounds	lb/MG	Pounds	lb/MG
January	4,309	25.24	1,623	9.51	719	4.21	460	2.69
February	4,309	32.11	1,623	12.10	719	5.36	460	3.42
March	5,116	30.76	1,928	11.59	854	5.13	546	3.28
April	4,578	26.26	1,725	9.89	764	4.38	488	2.80
May	4,578	25.89	1,725	9.75	764	4.32	488	2.76
June	5,116	26.42	1,928	9.95	854	4.41	546	2.82
July	5,655	29.74	2,131	11.21	944	4.96	603	3.17
August	5,116	36.18	1,928	13.63	854	6.04	546	3.86
September	4,039	30.84	1,522	11.62	674	5.15	431	3.29
October	1,885	17.47	710	6.58	315	2.92	201	1.86
November	539	18.38	203	6.92	90	3.07	57	1.96
December	-	-	-	-	-	-	-	-
Total	45,240		17,046		7,551		4,826	
Average	3,770	24.94	1,421	9.40	629	4.16	402	2.66

Process Chemicals								
Month	Chlorine		Fluoride		Polyphosphate		Total Cost *	
	Pounds	lb/MG	Pounds	lb/MG	Pounds	lb/MG	Total \$	\$/MG
January	2,816	16.49	4,033	23.62	4,556	26.69	\$ 5,043	\$ 29.54
February	2,199	16.39	3,151	23.48	3,559	26.53	4,273	31.85
March	2,810	16.89	4,057	24.39	4,563	27.43	5,334	32.07
April	2,885	16.55	4,536	26.02	4,783	27.44	5,344	30.66
May	2,973	16.82	4,536	25.65	4,859	27.48	5,403	30.56
June	3,268	16.87	4,940	25.51	5,394	27.85	5,985	30.90
July	3,460	18.20	4,920	25.88	5,284	27.79	6,180	32.50
August	2,626	18.57	3,737	26.43	4,012	28.37	5,788	40.93
September	2,511	19.18	3,496	26.69	3,641	27.80	5,072	38.72
October	2,079	19.27	2,888	26.77	2,997	27.78	3,574	33.13
November	525	17.92	787	26.86	809	27.62	964	32.90
December	-	-	-	-	-	-	0	0.00
Total	28,152		41,081		44,457		\$ 52,960	
Average	2,346	16.10	3,423	23.44	3,705	25.23	\$ 4,413	\$ 30.31

* Includes cleaning and process chemicals
MG - million gallons

Kenosha Water Utility
Production Division
Laboratory Report
2021

Month	Alkalinity Average		pH Average		Conductivity	
	mg/l		pH units		µS/cm	
	Raw	Tap	Raw	Tap	Raw	Tap
January	112	105	8.33	7.74	306	307
February	115	107	8.34	7.68	298	306
March	115	108	8.35	7.67	319	341
April	111	106	8.35	7.68	298	302
May	109	103	8.39	7.69	307	312
June	109	103	8.38	7.67	292	296
July	109	103	8.40	7.65	294	298
August	109	103	8.35	7.64	289	292
September	109	102	8.37	7.65	288	292
October	109	103	8.30	7.62	289	293
November	110	102	8.38	7.65	285	292
December	109	102	8.41	7.68	285	290
Average	111	104	8.36	7.67	296	302

Month	Hardness		Temp Raw		
	mg/l		° F		
	Raw	Tap	Max	Min	Avg
January	138	138	35	33	34
February	144	142	35	33	33
March	146	144	42	35	39
April	140	140	48	41	45
May	132	134	52	46	49
June	134	132	65	47	53
July	134	134	71	51	65
August	136	134	71	50	65
September	136	136	71	49	61
October	134	134	66	55	61
November	138	136	56	45	51
December	138	138	46	42	44
Average	138	137	55	44	50

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

Kenosha Water Utility
Production Division
Laboratory Report
2021

Month	Turbidity NTU								
	Rapid Sand Raw			Membrane Raw			Tap		
	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg
January	140.0	4.4	21.4	137.3	3.8	21.1	0.051	0.030	0.044
February	85.6	5.1	23.2	84.3	5.2	22.4	0.042	0.027	0.030
March	49.6	3.3	13.5	64.3	4.7	15.9	0.031	0.025	0.028
April	9.9	2.8	4.9	13.6	3.8	6.4	0.036	0.024	0.027
May	26.6	2.7	6.3	32.1	3.2	7.7	0.045	0.025	0.029
June	27.3	1.7	5.4	28.0	1.8	6.3	0.041	0.023	0.028
July	8.0	1.5	3.8	10.1	1.9	4.5	0.046	0.025	0.027
August	7.7	1.2	2.2	7.0	1.1	2.7	0.070	0.026	0.034
September	18.6	1.6	4.6	24.3	1.6	6.0	0.052	0.027	0.036
October	68.1	1.5	10.9	77.2	1.9	12.8	0.153	0.025	0.050
November	17.6	3.2	6.3	18.6	3.7	8.4	0.049	0.040	0.044
December	13.2	3.2	7.0	0.0	0.0	0.0	0.057	0.046	0.052
Average	39.4	2.7	9.1	41.4	2.7	9.5	0.056	0.029	0.036

Month	PO4 Average mg/l	Fluoride Composite Average mg/l	Chlorine Residual mg/l		
			Tap		
	Tap	Tap	Max	Min	Avg
January	0.90	0.73	1.1	1.1	1.1
February	0.89	0.73	1.2	1.1	1.1
March	0.91	0.72	1.2	1.0	1.1
April	0.91	0.75	1.2	1.0	1.1
May	0.90	0.74	1.2	1.0	1.1
June	0.91	0.73	1.2	0.9	1.1
July	0.91	0.73	1.2	0.9	1.1
August	0.90	0.74	1.2	1.0	1.1
September	0.89	0.77	1.2	1.0	1.1
October	0.90	0.77	1.3	1.0	1.1
November	0.91	0.77	1.2	1.0	1.2
December	0.91	0.78	1.2	1.1	1.1
Average	0.90	0.75	1.2	1.0	1.1

NTU - Nephelometric Turbidity Units
PO4 - 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	0.060	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
Heptachlorepoxyde	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
1,1,1,2,2-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 CaCO ₃	1.0	112 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	0.83 max	4	Entry point
Haloacetic Acids	0.000094	0.0132 max	0.06	Maximum residence
Hardness Total CaCO ₃	1	144 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	0.040	0.48	10	Entry point
Nitrite**	0.036	ND	1	Entry point
pH Lab	0.01pH	7.67 pH avg	na	Entry point
Selenium Total**	0.00047	ND	0.05	Entry point
Sodium Total	0.19	15	na	Entry point
Sulfate Total**	1.5	26	na	Entry point
Thallium Total**	0.00011	ND	0.002	Entry point
Total Trihalomethanes	0.0002	0.0348 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 – 2021**

Sales of Water

Residential Water Sales	\$ 6,031,581.81
Commercial Water Sales	2,801,367.92
Industrial Water Sales	901,488.67
Unmetered Sales to General Customers	15,545.46
Private Fire Protection	193,316.16
Public Fire Protection	1,365,338.15
Sales to Public Authorities	472,250.76
Sales for Resale	<u>2,949,556.81</u>

Total Sales of Water

14,730,445.74

Other Operating Revenues

Penalties	136,560.56
Other Water Revenue	52,740.62
Allocated Services	144,400.22
Miscellaneous Service Revenues	<u>334,109.54</u>

Total Other Operating Revenues

667,810.94

Total Operating Revenues

15,398,256.68

Operating Expenses

Production Plant	2,637,990.18
Distribution System	4,419,554.60
Customer Accounting & Collection	411,398.35
Administration	1,666,066.91
Depreciation	2,587,961.62
Taxes	<u>2,157,344.80</u>

Total Operating Expenses

13,880,316.46

Utility Operating Income

1,517,940.22

Other Income

Interest Income	14,417.15
Lead Service Line Replacement Grant Revenue	1,165,581.22
Other Non-operating Income	<u>29,612.80</u>

Total Other Income

1,209,611.17

Non-operating Expenses

Interest on Long-term Debt	174,999.96
Other Non-operating Expenses	<u>70,100.83</u>

Total Non-operating Expenses

245,100.79

Net Income before Capital Contributions

2,482,450.60

Capital Contributions

436,026.99

Net Income (Loss)

\$ 2,918,477.59

**Water System
Statement of Net Position
December 31, 2021**

Assets

Utility Plant

Utility Plant in Service	\$ 133,549,685.42	
Work in Progress - Water Plant	1,655,148.99	
Work in Progress - Water System	1,270,343.51	
Accumulated Depreciation	<u>(55,226,662.06)</u>	
Net Plant in Service		81,248,515.86

Nonutility Property

Nonutility Property	20,370.78	
Accumulated Depreciation - Nonutility Property	<u>(2,370.78)</u>	
Net Nonutility Property		18,000.00

Current Assets

Cash and Cash Equivalents	1,423,464.98	
Investments	7,704,953.44	
Restricted Cash and Cash Equivalents	-	
Restricted Investments	-	
Customer Accounts Receivable	1,208,372.53	
Receivable from Municipality	626,212.28	
Unbilled Revenues	1,526,056.95	
Other Accounts Receivable	50,445.50	
Materials and Supplies	527,162.19	
Accrued Interest Receivable	20,336.70	
Other Current Assets	<u>45,120.69</u>	
Total Current Assets		13,132,125.26

Other Assets

Deferred Charges	2,553,160.26	
Assessments Receivable	120,901.00	
Pension Asset - Wisconsin Retirement System	<u>1,822,642.18</u>	
Total Other Assets		4,496,703.44

Total Assets

\$ 98,895,344.56

Deferred Outflow of Resources

Deferred Pension Resources	\$ 2,861,438.90
Deferred OPEB Resources	<u>391,667.04</u>
Total Outflows of Resources	\$ 3,253,105.94

Liabilities

Current Liabilities

Accrued Taxes	\$ 2,202,348.00	
Accounts Payable	682,907.26	
Current Portion of Accrued Compensated Absences	51,104.69	
Current Portion of Net Other Postemployment Benefits	61,678.01	
Payable to Municipality	694,774.59	
Other Current Liabilities	<u>784,542.82</u>	
Total Current Liabilities		4,477,355.37

Non-current Liabilities

Long-term Debt		
Advance from Sewerage Unit	<u>5,000,000.00</u>	
Total Long-term Debt		5,000,000.00
Accrued Compensated Absences		210,310.50
Worker's Compensation Accrued Liability		2,952.00
Net Other Postemployment Benefit Obligations		1,809,628.74
Pension Liability - Wisconsin Retirement System		<u>7,022,891.24</u>
Total Non-current Liabilities		7,022,891.24

Total Liabilities

\$ 11,500,246.61

Deferred Inflow of Resources

Deferred Pension Resources	\$ 3,946,885.49
Deferred OPEB resources	<u>92,312.18</u>
Total Inflows of Resources	\$ 4,039,197.67

Net Position

Invested in Capital Assets, net of related debt	81,266,515.86	
Restricted for pension	1,822,642.18	
Unrestricted	<u>3,519,848.18</u>	
Total Net Position		<u>\$ 86,609,006.22</u>

Water System
Comparative Operating and Maintenance Expenses

	2021	2020	2019
Source of Supply Expenses			
Maintenance of Lake Intakes	\$ 13,536.12	\$ 0.00	\$ 5,603.50
Miscellaneous	9,625.00	9,625.00	9,625.00
	<u>23,161.12</u>	<u>9,625.00</u>	<u>15,228.50</u>
Pumping Expenses			
<u>Operation</u>			
Supervision and Engineering	133,065.22	214,201.19	216,911.75
Fuel - Electricity and Gas	873,345.75	796,379.94	780,844.44
Labor	129,497.48	127,134.33	130,963.59
Miscellaneous Expense	8,075.80	7,841.26	11,655.36
	<u>1,143,984.25</u>	<u>1,145,556.72</u>	<u>1,140,375.14</u>
<u>Maintenance</u>			
Structures and Improvements	34,610.42	46,793.63	42,095.41
Power Production Equipment	8,099.00	3,205.04	64.57
Pumping Equipment	105,450.05	88,308.66	127,043.02
	<u>148,159.47</u>	<u>138,307.33</u>	<u>169,203.00</u>
Water Treatment Expenses			
<u>Operation</u>			
Supervision and Engineering	63,500.41	65,258.33	74,519.86
Chemicals	183,703.31	164,910.83	145,018.83
Labor	330,113.91	314,555.73	325,452.59
Miscellaneous Expense	294,010.53	317,022.99	314,274.06
Lead Testing Program	13,520.04	5,562.44	-
	<u>884,848.20</u>	<u>867,310.32</u>	<u>859,265.34</u>
<u>Maintenance</u>			
Structures and Improvements	111,307.99	102,846.52	104,362.23
Water Treatment Expense	326,529.15	554,061.81	553,701.33
	<u>437,837.14</u>	<u>656,908.33</u>	<u>658,063.56</u>
	<u>2,637,990.18</u>	<u>2,817,707.70</u>	<u>2,842,135.54</u>
Transmission and Distribution Expenses			
<u>Operation</u>			
Supervision and Engineering	202,294.95	165,367.03	190,642.05
Transmission and Distribution Lines	101,211.81	67,968.87	53,125.24
Meter Expense	54,423.60	90,185.38	79,087.43
Customer Installation Expense	9,068.63	8,167.59	83,261.55
Customer Installation Expense - Lead			
Service Line Replacement	1,681,912.98	439,160.67	624,303.27
Miscellaneous Expense	558,698.79	557,331.77	573,733.65
	<u>2,607,610.76</u>	<u>1,328,181.31</u>	<u>1,604,153.19</u>
<u>Maintenance</u>			
Supervision and Engineering	23,112.34	13,126.94	21,204.98
Maintenance of Standpipes/Reservoirs	37,635.00	59,207.12	561,815.79
Transmission Mains	1,274,935.39	896,693.04	852,950.24
Services	252,888.65	392,609.38	184,765.98
Meters	69,560.70	50,901.28	58,515.76
Hydrants	153,811.76	61,459.50	47,011.17
	<u>1,811,943.84</u>	<u>1,473,997.26</u>	<u>1,726,263.92</u>
	<u>4,419,554.60</u>	<u>2,802,178.57</u>	<u>3,330,417.11</u>
Customer Account Expenses			
Customer Accounting and Collection	351,274.89	476,552.30	514,822.53
Meter Reading	60,123.46	67,957.57	70,560.12
	<u>411,398.35</u>	<u>544,509.87</u>	<u>585,382.65</u>
Administrative and General Expenses			
Administrative and General Salaries	288,128.51	286,190.14	314,895.71
Office Supplies and Expense	14,266.86	24,677.13	22,184.25
Outside Services Employed	323,404.99	459,437.73	424,471.07
Property Insurance	142,102.76	136,689.71	121,336.14
Employee Benefits and Pensions	641,530.61	1,248,663.77	1,578,799.23
Regulatory Commission Expense	238,719.15	47,483.96	13,777.18
Miscellaneous Expense	17,914.03	13,333.24	31,995.73
	<u>1,666,066.91</u>	<u>2,216,475.68</u>	<u>2,507,459.31</u>
Total Operation and Maintenance Expenses			
Utility Taxes	2,157,344.80	2,271,298.06	2,205,316.57
Depreciation	2,587,961.62	2,639,232.13	3,018,293.72
Total Operating Expenses	<u><u>\$ 13,880,316.46</u></u>	<u><u>\$ 13,291,402.01</u></u>	<u><u>\$ 14,489,004.90</u></u>

Water System Comparative Income Statement

	2021	2020	2019
Sales of Water			
Residential Water Sales	\$ 6,031,581.81	\$ 5,893,214.17	\$ 5,570,080.95
Commercial Water Sales	2,801,367.92	2,648,807.09	2,665,119.20
Industrial Water Sales	901,488.67	808,849.95	812,551.24
Total Unmetered Sales to General Public	15,545.46	16,132.94	17,724.82
Private Fire Protection	193,316.16	185,869.68	176,585.30
Public Fire Protection	1,365,338.15	1,361,003.58	1,358,470.44
Sales to Public Authorities	472,250.76	412,335.22	455,077.24
Sales for Resale	2,949,556.81	2,434,382.72	2,361,566.25
Total Sales of Water	14,730,445.74	13,760,595.35	13,417,175.44
Other Operating Revenues			
Penalties	136,560.56	85,382.05	148,565.64
Other Water Revenue	52,740.62	55,389.67	59,074.97
Allocated Services	144,400.22	145,313.18	145,628.29
Miscellaneous Service Revenues	334,109.54	314,557.30	308,677.88
Total Other Operating Revenues	667,810.94	600,642.20	661,946.78
Total Operating Revenues	15,398,256.68	14,361,237.55	14,079,122.22
Operating Expenses			
Source of Supply	23,161.12	9,625.00	15,228.50
Power and Pumping Expense	1,292,143.72	1,283,864.05	1,309,578.14
Water Treatment Expense	1,322,685.34	1,524,218.65	1,517,328.90
Transmission and Distribution Expense	4,419,554.60	2,802,178.57	3,330,417.11
Customer Accounting and Collection Expense	411,398.35	544,509.87	585,382.65
Administrative and General Expense	1,666,066.91	2,214,297.09	2,445,089.30
Depreciation and Amortization	2,587,961.62	2,643,282.13	3,018,293.72
Taxes	2,157,344.80	2,271,298.06	2,205,316.57
Total Operating Expenses	13,880,316.46	13,293,273.42	14,426,634.89
Utility Operating Income (Loss)	1,517,940.22	1,067,964.13	(347,512.67)
Other Income			
Interest Earned	14,417.15	110,847.72	168,239.53
Grant Revenue	1,165,581.22	101,011.76	-
Miscellaneous Non-operating Income	29,612.80	10,861.02	33,658.51
Total Other Income	1,209,611.17	222,720.50	201,898.04
Operating and Other Income (Loss)	2,727,551.39	1,290,684.63	(145,614.63)
Non-operating Expenses			
Interest on Long-term Debt	174,999.96	174,999.96	175,691.70
Other Non-operating Expenses	70,100.83	-	-
Total Non-operating Expenses	245,100.79	174,999.96	175,691.70
Net Income (Loss)	\$ 2,482,450.60	\$ 1,115,684.67	(\$ 321,306.33)
Rate of Return on Average Investment (based on operating income & expense)	3.08%	3.34%	1.07%

**Water System
Utility Plant in Service
For the year ended December 31, 2021**

	Depr. Rate %	Cost of Plant 1/1/2021	2021 Additions	2021 Retirements	Adjustments Incr/(Decr)	Cost of Plant 12/31/2021
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	1,567,121.31	48,555.35			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	3,747,814.69	28,311.08	23,235.29		3,752,890.48
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	1,342,350.89		1,758.68		1,340,592.21
Membrane Filtration Equipment	5.56	13,859,805.15				13,859,805.15
Transmission and Distribution						
Land	N/A	311,485.99	42,624.00			354,109.99
Reservoirs and Standpipes	1.86	6,246,724.97				6,246,724.97
Mains	0.93	59,709,601.37	2,439,144.66	44,472.20		62,104,273.83
Services	2.09	10,207,423.77	1,567,161.08	8,029.22		11,766,555.63
Meters	5.00	5,165,940.37	236,354.50	170,335.47		5,231,959.40
Hydrants	1.59	6,268,261.06	491,714.04	40,053.34		6,719,921.76
General Plant						
Furniture and Equipment	5.88	49,402.96		695.00		48,707.96
Computer Equipment	6.67-14.29	385,126.54		1,140.00		383,986.54
Transportation Equipment	12.86	1,679,199.64	68,872.50		(13,343.31)	1,734,728.83
Stores Equipment	5.88	1,497.75				1,497.75
Tools and Shop Equipment	5.88	359,254.68		4,029.00		355,225.68
Lab Equipment	5.88	117,554.22				117,554.22
Work (Power) Equipment	9.00	1,114,021.65				1,114,021.65
SCADA System Equipment	10.00	765,593.89	44,904.00	124,103.40		686,394.49
Miscellaneous Equipment	5.88	262,525.76				262,525.76
Total		<u>\$ 128,565,409.12</u>	<u>\$ 4,967,641.21</u>	<u>\$ 417,851.60</u>	<u>(\$ 13,343.31)</u>	<u>\$ 133,101,855.42</u>

**Water System
Accumulated Depreciation
For the year ended December 31, 2021**

	Balance 1/1/2021	2021 Depreciation	Less Cost of Retirements	Add Cash Received	Adjustments Incr./Decr.	Balance 12/31/2021
Source of Supply						
Structures and Improvements	\$ 499,999.72	\$ 36,363.61				\$ 536,363.33
Collect and Impound Reservoirs	194,376.08	4,568.09				198,944.17
Lake Intakes	1,021,054.21	27,053.78				1,048,107.99
Supply Mains	149,607.62	8,155.47				157,763.09
Pumping Plant						
Land	-					-
Structures and Improvements	1,478,078.94	120,662.34				1,598,741.28
Other Power Prod Equipment	462,531.02	30,540.15				493,071.17
Electric Pumping Equipment	2,513,797.70	165,015.52	23,235.29			2,655,577.93
Other Pumping Equipment	8,646.81					8,646.81
Water Treatment						
Land	-					-
Structures and Improvements	4,276,972.59	272,876.88				4,549,849.47
Water Treatment Equipment	1,342,350.89		1,758.68			1,340,592.21
Membrane Filtration Equipment	13,859,805.15					13,859,805.15
Transmission and Distribution						
Land	-					-
Reservoirs and Standpipes	3,309,234.13	161,227.93				3,470,462.06
Mains	11,501,039.67	798,450.10	44,472.20			12,255,017.57
Services	4,450,644.40	318,622.70	8,029.22			4,761,237.88
Meters	2,659,233.41	285,942.24	170,335.47	20,113.68		2,794,953.86
Hydrants	2,183,826.42	143,111.64	40,053.34	18,284.22		2,305,168.94
General Plant						
Furniture and Equipment	42,765.73	2,845.21	695.00			44,915.94
Computer Equipment	253,662.98	33,746.02	1,140.00			286,269.00
Transportation Equipment	1,044,130.81	117,525.15			(12,112.27)	1,149,543.69
Stores Equipment	1,497.75					1,497.75
Tools and Shop Equipment	306,232.66	20,719.93	4,029.00			322,923.59
Lab Equipment	103,788.91	6,818.14				110,607.05
Work (Power) Equipment	460,659.33	51,232.03				511,891.36
Communications Equipment	(8,513.49)					(8,513.49)
SCADA System Equipment	725,162.28	7,558.20	124,103.40		44,180.83	652,797.91
Miscellaneous Equipment	145,499.87	15,226.49				160,726.36
Total	<u>\$ 52,986,085.59</u>	<u>\$ 2,628,261.62</u>	<u>\$ 417,851.60</u>	<u>\$ 38,397.90</u>	<u>\$ 32,068.56</u>	<u>\$ 55,266,962.07</u>

**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 2022

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

Subject: 2021 Annual Report – Water Distribution & Sewer Collection Division

The 2021 Annual Report for the Water Distribution and Sewer Collection Division is hereby submitted. We completed 564 excavation projects last year. In addition to excavation activities, our division cleaned 52 miles of sanitary sewer as part of our annual sewer flushing program and flushed and maintained nearly all fire hydrants south of 60th Street as part of our annual hydrant maintenance program.

Water Distribution System:

The Distribution Division repaired 179 water main breaks in 2021, a 69% increase from 2020. Fifty-six valves were also repaired or replaced in 2021, an increase in four valves from 2020. Additionally, forty-seven fire hydrants were repaired or replaced as well as 175 water services (137 of these were lead service replacements).

Sanitary Sewer Collection System:

Sewer projects in 2021 included the cleaning of over 52 miles, an increase of 31% from 2020. 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 fifty-three lateral repairs, five sewer main repairs and seven manhole repairs.

In addition to the typical maintenance activities associated with the water distribution and sewer collection, the Distribution Division installed a total of 3,128 feet of new 8” PVC water main and 14 feet of new 6” PVC water main to replace deteriorated, problematic pipe.

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,

A handwritten signature in black ink, appearing to read 'Steven Hayek'.

Steven Hayek
Director of Water Distribution
and Sewer Collection



www.kenosha.org

Water Distribution Pipe System - 2021

<u>Size</u>	<u>Material</u>	<u>Footage</u>
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	60,775
24"	Concrete Pipe	7,892
24"	Plastic Pipe	4,643
20"	Cast/Ductile Iron Pipe	8,327
20"	Plastic Pipe	76
18"	Cast/Ductile Iron Pipe	2,582
16"	Cast/Ductile Iron Pipe	173,309
16"	Plastic Pipe	50,966
14"	Cast/Ductile Iron Pipe	8,311
12"	Cast/Ductile Iron Pipe	223,416
12"	Plastic Pipe	62,115
10"	Cast/Ductile Iron Pipe	16,265
8"	Cast/Ductile Iron Pipe	363,501
8"	Plastic Pipe	240,119
6"	Cast/Ductile Iron Pipe	675,159
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		1,964,824
Total Miles of Pipe		372.13

Water Services Added to System - 2021

<u>Number</u>	<u>Size</u>	<u>Material</u>	<u>Average Unit Cost</u>	<u>Total Cost</u>
144	1"	Copper Connections	\$ 9,303.39	\$ 1,339,688.09
3	1-1/2"	Copper Connections	14,285.42	42,856.25
7	2"	Copper Connections	10,897.17	76,280.19
5	6"	PVC	8,101.98	40,509.88
5	8"	PVC	4,627.93	23,139.64
2	12"	PVC	22,343.51	44,687.01
<u>166</u>		Total		<u>\$ 1,567,161.06</u>

Fire Hydrants Added to System - 2021

<u>Number</u>	<u>Type</u>	<u>Average Unit Cost</u>	<u>Total Cost</u>
56	Steamer	\$ 8,780.61	\$ 491,714.04

2021 Water Main Installation Costs

Project	Size/ Type	Installer	Description	Footage	Total Costs	Cost per Foot
By Job Number						
Installed by Kenosha Water Utility						
504	8" PVC	Kenosha Water Utility	Water Main Relay - 21st Avenue - 85th Street to 87th Street	1,282.0	\$ 242,750.07	
510	12" PVC	City of Kenosha (Townsend Construction, Inc.)	Water Main Relay - 22nd Avenue - 80th Street to 81st Street	836.0	213,759.19	
511	8" PVC	Kenosha Water Utility	Water Main Relay - 18th Avenue - Madison Road to 18th Street	635.0	87,293.90	
512	8" PVC	City of Kenosha (A.W. Oakes & Son)	Water Main Relay - 22nd Avenue - 76th Street to 78th Street	778.0	125,640.26	
513	8" PVC	Kenosha Water Utility	Water Main Relay - 49th Avenue - 83rd Place to 84th Street; 84th Street - 47th Court to 49th Avenue	1,009.0	138,161.68	
515	8" PVC	Kenosha Water Utility	Water Main Relay - 35th Place - 22nd Avenue to East	66.0	59,736.98	
517	8" PVC	Kenosha Water Utility	Water Main Relay - 35th Street - 22nd Avenue to West Side of Intersection	98.0	17,960.70	
519	8" PVC	Kenosha Water Utility	Water Main Relay - 32nd Street - 22nd Avenue to East Side of Intersection	52.0	14,935.37	
529	8" PVC	Reesman's Excavating and Grading, Inc.	Water Main Relay - 26th Avenue - 82nd Street to 8255 26th Avenue	620.0	160,529.28	
556	8" PVC	Genesis Excavators, Inc.	Water Main Relay - 63rd Street - 47th Avenue to 49th Avenue	2,473.0	599,144.33	
580	8" PVC	Reesman's Excavating and Grading, Inc.	Water Main Relay - Johnson Road - 79th Street to 24th Avenue	698.0	152,211.28	
586	8" PVC	Reesman's Excavating and Grading, Inc.	Water Main Relay - 25th Avenue - 80th Street to Johnson Road	896.0	199,717.89	
592	8" PVC	Reesman's Excavating and Grading, Inc.	Water Main Relay - 79th Street - 23rd Avenue to 24th Avenue	361.0	98,480.34	
Subtotal				9,804.0	2,110,321.27	
Installed by Developers						
443	12" & 16" PVC	Midwest Transportation	77th Avenue - 62nd Place to 65th Street	<u>2,740.0</u>	<u>328,823.39</u>	
Grand total				12,544.0	\$ 2,439,144.66	
By Pipe Size						
504	8" PVC	Kenosha Water Utility	Water Main Relay - 21st Avenue - 85th Street to 87th Street	1,282.0	\$ 242,750.07	
511	8" PVC	Kenosha Water Utility	Water Main Relay - 18th Avenue - Madison Road to 18th Street	635.0	87,293.90	
512	8" PVC	City of Kenosha (A.W. Oakes & Son)	Water Main Relay - 22nd Avenue - 76th Street to 78th Street	778.0	125,640.26	
513	8" PVC	Kenosha Water Utility	Water Main Relay - 49th Avenue - 83rd Place to 84th Street; 84th Street - 47th Court to 49th Avenue	1,009.0	138,161.68	
515	8" PVC	Kenosha Water Utility	Water Main Relay - 35th Place - 22nd Avenue to East	66.0	59,736.98	
517	8" PVC	Kenosha Water Utility	Water Main Relay - 35th Street - 22nd Avenue to West Side of Intersection	98.0	17,960.70	
519	8" PVC	Kenosha Water Utility	Water Main Relay - 32nd Street - 22nd Avenue to East Side of Intersection	52.0	14,935.37	
529	8" PVC	Reesman's Excavating and Grading, Inc.	Water Main Relay - 26th Avenue - 82nd Street to 8255 26th Avenue	620.0	160,529.28	
556	8" PVC	Genesis Excavators, Inc.	Water Main Relay - 63rd Street - 47th Avenue to 49th Avenue	2,473.0	599,144.33	
580	8" PVC	Reesman's Excavating and Grading, Inc.	Water Main Relay - Johnson Road - 79th Street to 24th Avenue	698.0	152,211.28	
586	8" PVC	Reesman's Excavating and Grading, Inc.	Water Main Relay - 25th Avenue - 80th Street to Johnson Road	896.0	199,717.89	
592	8" PVC	Reesman's Excavating and Grading, Inc.	Water Main Relay - 79th Street - 23rd Avenue to 24th Avenue	361.0	98,480.34	
Subtotal				8,968.0	1,896,562.08	211.48
510	12" PVC	City of Kenosha (Townsend Construction, Inc.)	Water Main Relay - 22nd Avenue - 80th Street to 81st Street	836.0	213,759.19	
443	12" PVC	Majestic Transportation	77th Avenue - 62nd Place to 65th Street	<u>62.0</u>	<u>21,265.14</u>	
Subtotal				898.0	235,024.33	261.72
443	16" PVC	Midwest Transportation	77th Avenue - 62nd Place to 65th Street	<u>2,678.0</u>	<u>307,558.25</u>	114.85
Grand total				12,544.0	\$ 2,439,144.66	

**Distribution Division - Water
Operating & Maintenance Report - 2021**

Maintenance Completed

System	Maintenance Type	Quantity
Water Main Breaks	Circumferential	81
	Blow Out	74
	Joint Leaks	7
	Longitudinal	12
	Old Sleeve	-
	Other	5
	Total Main Break Repairs	
Valves	Reset/Replace Box (only)	-
	Replaced	37
	Repaired	16
	New Installation	-
	Removed/VBO	3
Total Valve Repairs		56
Water Services	Reset/Replace Box (only)	2
	Replaced	3
	Lead Service Replacement	137
	Repaired	27
	Flow Test	-
	Shut at Main	6
Total Water Service Repairs		175
Hydrants	Replaced	18
	Repaired	11
	Relocated	6
	Abandoned	12
	New Installation	-
	Total Hydrant Repairs	
New Connections & Taps	1"	7
	1 1/2"	4
	2"	6
	4"	-
	6"	12
	8"	10
	12"	3
Total New Connections Installed		42

Meter Shop Request for Assistance: 126
Valves Operated: 618

Customer Complaints

(During Normal Work Hours)

Complaint	Quantity
Main Breaks	78
Hydrant Hit/Damaged	10
Hydrant Leaking	11
Service Repairs	6
Signs/Barricades Needed	3
Curb/Valve Box Repair	4
Low Pressure	3
No Water	15
Service Turn-On	1
Service Turn Off	3
Temporary Road Patch	16
Utility Locates	2
Miscellaneous	21
Total	173

Customer Complaints

(After Normal Work Hours)

Complaint	Quantity
Main Breaks	118
Hydrant Hit/Damaged	15
Hydrant Leaking	7
Service Repairs	6
Signs/Barricades Needed	2
Curb box/Valve Box	3
Low Pressure	1
No Water	24
Service Turn-On	6
Service Turn Off	29
Temporary Road Patch	3
Utility Locate	67
Miscellaneous	10
Total	291

Total Customer Complaints	464
----------------------------------	------------

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 2022

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

Subject: 2021 Annual Report – Wastewater Treatment Division

Dear Mr. Czarnecki,

We respectfully submit the 2021 Annual Report for the Kenosha Water Utility Wastewater Treatment Plant (WWTP). Over the past year, the wastewater treatment plant treated 7.161 billion gallons of effluent with an average daily flow of 19.61 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.

The annual precipitation reduced significantly compared to previous years:

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

The staff at the wastewater treatment plant works very hard throughout the year to operate, maintain, and improve the wastewater treatment plant and the collection system. Some substantial events and projects of the year included:

- The WWTP experienced a power outage due to damaged equipment in the main switchgear and had to run on the back-up generator for over 24 hours. WE Energies and High Voltage Maintenance worked all night to replace equipment and restore power to the plant;
- 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. A new chlorine feeder and regulator were installed to meet the increased demands. The new system is an all vacuum system that is safer and easier to operate along with having less frequent maintenance requirements;
- The incoming pipe elbow at the EQ basin was rotated 180 degrees to prevent the force of water from deteriorating the crack sealant and concrete that was recently repaired;
- Final clarifier #4 was taken out of service and rebuilt to ensure continued, reliable operation.

We are very 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,

Melissa Arnot
Assistant General Manager

Katrina Karow
Director of Wastewater Treatment



www.kenosha.org

Treatment Data - 5 Year Comparison

<u>YEAR</u>	<u>MGD</u>	<u>Influent mg/L</u>	<u>Primary Effluent mg/L</u>	<u>Primary Efficiency %</u>	<u>Final Effluent mg/L</u>	<u>Overall Efficiency %</u>
Suspended Solids						
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
2017	25.417	168	46	72	10.1	94
Five-Day BOD						
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
2017	25.417	159	105	34	13.2	92
Phosphorus						
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	2.7	–	–	0.47	83
2017	25.417	2.71	–	–	0.52	81

mg/L - milligrams per Liter

Summary

	2021	2020
Total wastewater pumped and treated	7,161,286,000	9,261,383,000
Total sludge to digesters - gallons	29,371,808	27,594,827
Total dry solids to digesters - pounds	11,437,270	10,874,412
Total dry volatile solids to digesters - pounds	9,193,554	8,149,006

Digester Data

Total gallons digested sludge removed	26,399,712	26,980,922
Percent dry solids	2.41%	2.22%
Total pounds dry solids removed	5,313,652	5,011,833
Percent volatile matter	59.8%	56.1%
Total dry volatile solids removed	3,176,814	2,811,638
Volatile solids destroyed, percent	65.4%	65.5%

Wastewater Flow

Annual precipitation and average daily flow for the past five years

	<u>Precipitation (inches)</u>	<u>Average MGD</u>
2021	23.68	19.613
2020	42.49	25.278
2019	48.91	28.870
2018	49.30	25.786
2017	43.96	25.465

Sludge to Centrifuge

Gallons per day (360 days per year)	74,575
Percent solids	2.41%
Pounds per day	14,760
Percent volatile	59.8%

Sludge Disposed from Centrifuge and Dryer

Total wet tons from dewatering centrifuge	6,979
Percent solids	25.2%
total wet tons from dryer	848
Percent solids	95.1%

Total Solids Disposal

Tons of sludge to landfill, dry tons	2,556
Tons of sludge distributed, dry tons	0
Tons of grit to landfill	822

Electricity Generated

Total kW produced	3,155,776
Average kW produced per month	262,981
Maximum kW produced in a month - October	385,268

Annual Energy Usage

		2021	2020
Electricity	Total On and Off Peak kWh	5,636,280	5,346,193
	Total Demand kW	13,262	11,920
	Total cost	\$ 513,823	\$ 462,060
Natural Gas	therms	153,197	165,640
	Total cost	\$ 109,695	\$ 66,256
Methane gas produced by digesters	therms	484,125	444,708
Value of methane gas	Total	\$ 346,653	\$ 177,883

Treatment Plant Data and Chemical Usage

	<u>2021</u>	<u>2020</u>
<u>Chemical Data</u>		
<u>Chlorine</u>		
Total pounds	118,176	139,945
Average pounds per day	324	382
Average residual, µg/L	< 100 µg/L	< 100 µg/L
<u>Sulfur Dioxide</u>		
Total pounds	94,426	98,208
Average pounds per day	259	268
<u>Ferric Chloride, Phosphorus</u>		
Total gallons	193,868	185,557
Average gallons per day	531	507
Average pounds of Fe per day	700	668
<u>Polymer</u>		
Tons	68	66
Pounds per pound of dry solids	0.026	0.026
<u>Sodium Hydroxide</u>		
Total Pounds	123,913	153,220
Pounds per pound of lysed WAS	0.027	0.038
<u>Sulfuric Acid</u>		
Total pounds	0	0
Pounds per CF through air scrubber	0.000	0.000

Aeration

Settleable Solids - mg/L	275	258
Mixed Liquor Suspended Solids - mg/L	2,934	2,789
Dissolved Oxygen - mg/L	2.4	2.4
BOD lbs. applied per day	23,737	20,591

Thickener

Waste Activated Sludge to Thickener, gallons/day	160,726	159,047
Waste Activated Sludge - % solids	0.97	0.89
Waste Activated Sludge - lbs/day	13,002	11,805
Thickened Sludge - % solids	5.3	5.4
Thickened Sludge - % volatile	77.4	73.8
Thickener Effluent - Suspended Solids - mg/L	308	737
Thickened Sludge - lbs dry solids/day	13,124	11,160
Thickened Sludge - gallons/day	29,469	24,781

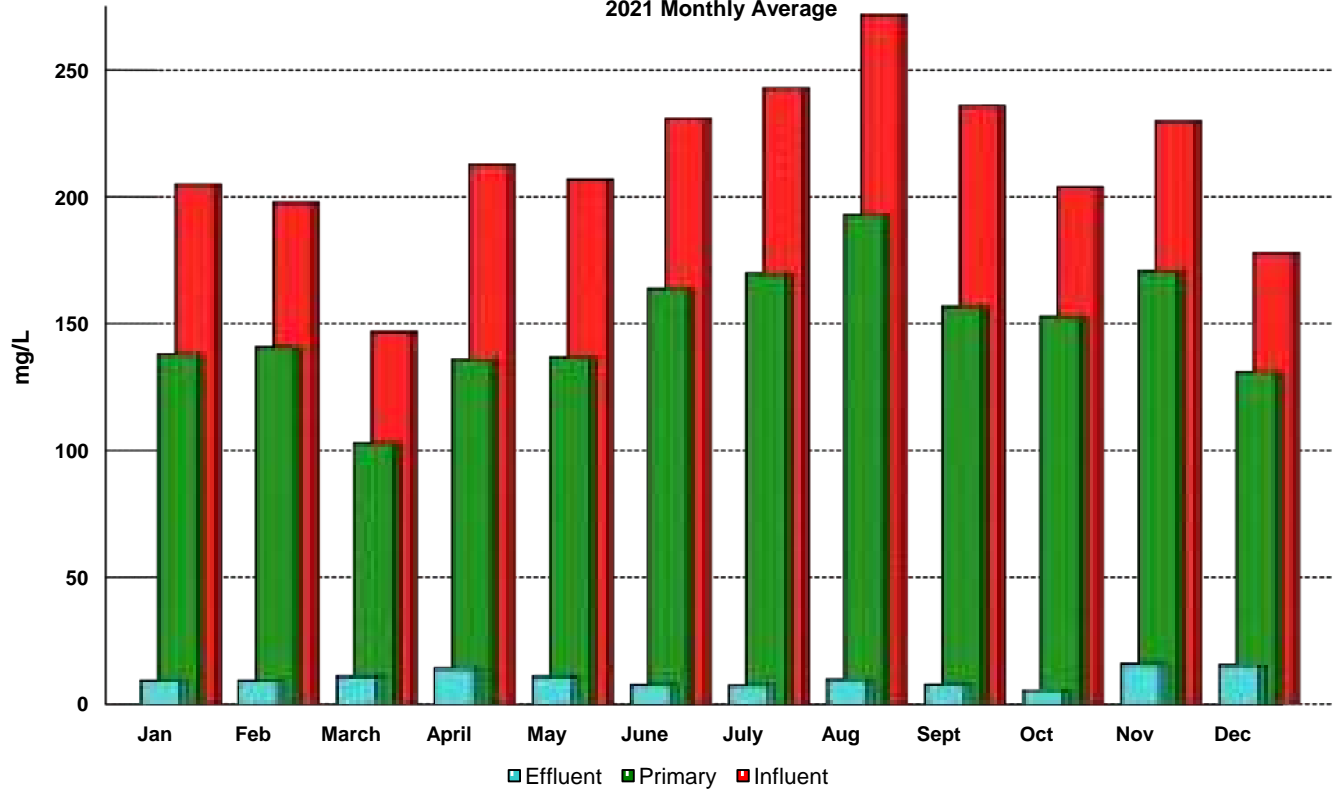
mg/L - milligrams per Liter

µg/L - micrograms per Liter

WAS - Waste Activated Sludge

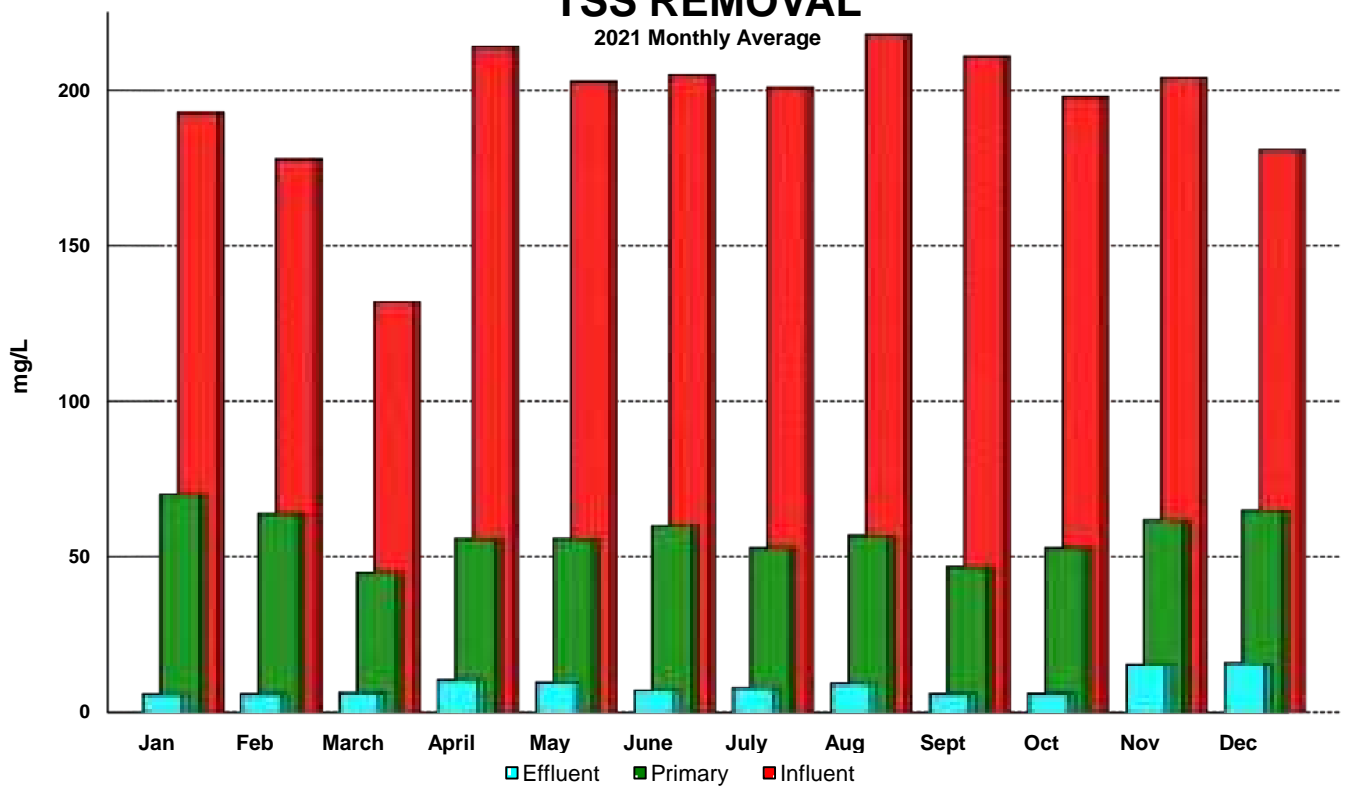
BOD REMOVAL

2021 Monthly Average



TSS REMOVAL

2021 Monthly Average



**Sewerage System
Plant Operating Data - 2021**

Month	Precip. Inches	Total Flow Raw Sewage MG	Average Daily Flow MGD	Maximum Daily Flow MGD	Day of Month	Power Cost
January	2.08	608.434	19.627	24.225	16	\$ 39,246
February	1.00	568.753	20.313	38.459	28	41,549
March	0.79	911.617	29.407	40.661	10	46,671
April	1.09	656.225	21.874	28.384	11	37,104
May	1.21	555.690	17.925	20.452	6	41,720
June	2.93	517.669	17.256	19.864	26	48,634
July	1.49	514.396	16.593	19.557	15	46,260
August	3.23	535.601	17.277	22.485	9	45,759
September	1.24	504.810	16.827	17.758	28	53,213
October	4.71	640.244	20.653	33.394	25	41,568
November	0.48	533.481	17.783	21.731	1	37,727
December	3.43	614.366	19.818	39.514	11	34,373
Total	23.68	7,161.286				\$ 513,824
Average	1.97	596.774	19.613	27.207		\$ 42,819

Monthly Averages

Month	BOD		TSS (mg/L)		Phosphorus (mg/L)		Total lbs. Dry Solids from Digester
	Influent	Effluent	Influent	Effluent	Influent	Effluent	
January	205	9.4	193	5.9	3.63	0.41	387,800
February	198	9.4	178	6.0	3.59	0.34	345,400
March	147	11.2	132	6.5	2.28	0.29	472,400
April	213	14.4	214	10.6	3.25	0.32	494,400
May	207	11.2	203	9.7	3.70	0.56	432,200
June	231	7.8	205	7.1	3.85	0.54	359,400
July	243	7.6	201	7.9	4.14	0.70	395,400
August	272	10.0	218	9.4	3.99	0.54	485,000
September	236	7.9	211	6.1	3.79	0.62	420,200
October	204	5.6	198	6.2	2.98	0.28	487,000
November	230	16.2	204	15.4	3.38	0.42	457,800
December	178	15.7	181	16.0	3.05	0.49	375,200
Average	214	10.5	195	8.9	3.47	0.46	426,017

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

Sewage Collection Pipe System - 2021

<u>Size</u>	<u>Material</u>	<u>Footage</u>
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	2,525
15"	Clay, Plastic, Steel	171,258
14"	Clay, Plastic	1,156
12"	Clay, Plastic, Steel	270,408
10"	Clay, Plastic, Steel	154,428
8"	Clay, Plastic, Steel	735,650
6"	Clay, Plastic	8,241
1.5"	Clay, Plastic	597
Total Feet of Pipe		1,818,930
Total Miles of Pipe		344.49

2021 Sewer Main Installation Costs

Project	Size/ Type	Installer	Description	Footage	Total Costs	Cost per Foot
<u>By Job Number</u>						
Installed by Kenosha Water Utility						
610	15" PVC	City of Kenosha (Townsend Construction, Inc.)	Sewer Main Relay - 22nd Avenue - 80th Street to 81st Street	681.0	\$ 236,626.66	
674	8" PVC	City of Kenosha (Edgerton Contractors)	Sewer Main Relay - 70th Street - 57th Avenue East to 5612 70th Street	291.0	97,145.52	
			Subtotal	972.0	333,772.18	
Installed by Developers						
743	8" & 15" PVC	Midwest Transportation	77th Avenue - 62nd Place to 65th Street	2,766.0	473,619.58	
			Grand Total	3,738.0	\$ 807,391.76	
<u>By Pipe Size</u>						
743	8" PVC	Midwest Transportation	77th Avenue - 62nd Place to 65th Street	99.0	\$ 4,864.33	
674	8" PVC	City of Kenosha (Edgerton Contractors)	Sewer Main Relay - 70th Street - 57th Avenue East to 5612 70th Street	291.0	97,145.52	
			Subtotal	390.0	102,009.85	261.56
610	15" PVC	City of Kenosha (Townsend Construction, Inc.)	Sewer Main Relay - 22nd Avenue - 80th Street to 81st Street	681.0	236,626.66	
743	15" PVC	Midwest Transportation	77th Avenue - 62nd Place to 65th Street	2,667.0	468,755.25	
			Subtotal	3,348.0	705,381.91	210.69
			Grand Total	3,738.0	\$ 807,391.76	

**Distribution Division - Sanitary Sewer
Operating & Maintenance Report - 2021**

Maintenance Completed

System	Maintenance Type	Quantity
Sewer Main	Collapse	2
	Broken Pipe	3
	Joint Leaks	-
	Remove Flusher Nozzle	-
	Other	-
Total Sewer Main Repairs		5
Sewer Lateral	Collapse	25
	Broken Pipe	6
	Joint Leaks	11
	Broken at Wye	6
	Remove Parkway Trap	1
	Contractor Damage	1
	Other	3
	Total Sewer Lateral Repairs	
Manholes	Repaired	7
	Replace	-
	Remove/Abandon	-
Total Manhole Repairs		7
Total Sanitary Sewer Repairs		65

Customer Complaints

(During Normal Work Hours)

Complaint	Quantity
Sewer back-up	81
Sink Hole	4
Sewer Odor	4
Storm Sewer Back-up	-
Televise Lateral	-
Manhole Problem	3
Utility Locate	2
Miscellaneous	1
Total	95

Customer Complaints

(After Normal Work Hours)

Complaint	Quantity
Utility Locate	67
Sewer back-up	53
Sink Hole	3
Sewer Odor	6
Storm Sewer Back-up	1
Manhole Problem	3
Miscellaneous	-
Total	133

Total Complaints	228
-------------------------	------------

Summary of Sewer Cleaning and Televising (feet)

Year	Sewer Cleaning	PM List	Televise	Grand Total
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
2016	567,460	72,996	16,057	656,513

Sewerage System Income Statement – 2021

Sewerage Service Revenues

Residential Customers	\$ 4,360,762.94
Commercial Customers	2,258,297.77
Industrial Customers	1,775,029.14
Public Customers	464,588.30
Wastehaulers	124,307.33
Wholesale Customers	2,881,770.84
Industrial Monitoring	101,089.73

Total Sewerage Service Revenues

11,965,846.05

Other Operating Revenues

Engineering Services	1,838,151.70
Other Income	75,855.93
Penalties	101,391.21

Total Other Operating Revenues

2,015,398.84

Total Operating Revenues

13,981,244.89

Operating Expenses

Wastewater Treatment Operation and Maintenance	3,731,048.19
Collection System Operation and Maintenance	1,683,460.25
Laboratory Operations	327,170.63
Industrial Waste Monitoring	89,542.83
Engineering Services	1,780,836.31
Customer Accounting and Collection Expense	378,880.54
Administrative and General Expense	2,246,655.55
Depreciation	3,201,824.94
Taxes	45,003.20

Total Operating Expenses

13,484,422.44

Utility Operating Income

496,822.45

Other Income

Interest Income	277,084.32
Miscellaneous Income	16,286.93

Total Other Income

293,371.25

Net Income before Capital Contributions

790,193.70

Capital Contributions

1,163,343.12

Net Income

\$ 1,953,536.82

**Sewerage System
Statement of Net Position
December 31, 2021**

Assets		
Utility Plant		
Utility Plant in Service	\$ 160,327,826.18	
Work in Progress - Sewer Plant	958,091.13	
Work in Progress - Sewerage System	25,935.28	
Accumulated Depreciation	<u>(77,003,137.20)</u>	
Net Plant in Service		84,308,715.39
Other Property		
Other Utility Plant & Equipment for Future Use		<u>1,054,838.62</u>
Total Net Utility Plant		85,363,554.01
Current Assets		
Cash and Cash Equivalents	6,695,326.27	
Investments	14,920,589.20	
Restricted cash - Storm Water Utility Collections	392,059.89	
Customer Accounts Receivable	1,300,886.17	
Receivable from Municipality	472,483.23	
Unbilled Revenues	1,030,248.99	
Other Accounts Receivable	554,237.43	
Materials and Supplies	64,294.29	
Accrued Interest Receivable	93,300.73	
Other Current Assets	<u>25,435.39</u>	
Total Current and Accrued Assets		25,548,861.59
Noncurrent Assets		
Investments		10,072,659.90
Advance to Water Unit		<u>5,000,000.00</u>
Total Noncurrent Assets		15,072,659.90
Other Assets		
Assessments Receivable		50,577.60
Deferred Charges		2,040,202.31
Pension Asset - Wisconsin Retirement System		1,805,653.24
Regulatory Asset		<u>576,344.85</u>
Total Other Assets		4,472,778.00
Total Assets		<u>\$ 130,457,853.50</u>
Deferred Outflow of Resources		
Deferred Pension Resources		\$ 2,915,722.73
Deferred OPEB Resources		<u>398,174.04</u>
Total Outflows of Resources		\$ 3,313,896.77
Liabilities		
Current Liabilities		
Accounts Payable	\$ 692,494.67	
Current Portion of Accrued Compensated Absences	55,523.10	
Current Portion of Net Other Postemployment Benefits	60,698.99	
Payable to Municipality	674,104.56	
Due to City of Kenosha - Storm Water Collections	392,059.89	
Deferred Credits	<u>651,185.00</u>	
Total Current and Accrued Liabilities		2,526,066.21
Non-current Liabilities		
Accrued Compensated Absences	265,240.58	
Worker's Compensation Accrued Liability	2,846.00	
Net Other Postemployment Benefit Obligations	<u>1,626,767.94</u>	
Total Non-current Liabilities		1,894,854.52
Total Liabilities		<u>\$ 4,420,920.73</u>
Deferred Inflows of Resources		
Deferred Pension Resources		\$ 4,007,812.00
Deferred OPEB Resources		<u>89,217.67</u>
Total Inflows of Resources		\$ 4,097,029.67
Net Position		
Invested in Capital Assets, net of related debt	85,363,554.01	
Restricted for Pension	1,805,653.24	
Unrestricted	<u>38,084,592.62</u>	
Total Net Position		<u>\$ 125,253,799.87</u>

**Sewerage System
Comparative Operating and Maintenance Expenses**

	<u>2021</u>	<u>2020</u>	<u>2019</u>
Operating Expenses			
Supervision and Labor	\$ 393,397.29	\$ 466,770.35	\$ 430,027.16
Power for Pumping and Aeration	708,905.86	544,838.71	578,739.68
Disinfection Chemicals	77,508.00	79,748.00	90,024.00
Sludge Conditioning Chemicals	466,936.42	420,714.01	398,290.77
Other Chemicals for Sewage Treatment	19,107.84	19,218.89	37,770.47
Laboratory Operations	327,170.63	321,140.78	312,794.02
Industrial Waste Monitoring	89,542.83	84,323.08	73,127.52
Landfill Expense	350,261.72	366,223.30	340,222.77
Transportation Expense	103,369.94	79,813.06	98,052.49
	<u>2,536,200.53</u>	<u>2,382,790.18</u>	<u>2,359,048.88</u>
Maintenance Expenses			
Collection System Operation and Maintenance	1,683,460.25	1,361,704.38	1,195,385.30
Wastewater Treatment Maintenance	1,611,561.12	1,401,384.15	1,579,661.61
	<u>3,295,021.37</u>	<u>2,763,088.53</u>	<u>2,775,046.91</u>
Customer Account Expenses			
Customer Accounting and Collection	318,757.12	445,362.91	484,992.97
Meter Reading Expense	60,123.42	67,957.54	70,560.09
	<u>378,880.54</u>	<u>513,320.45</u>	<u>555,553.06</u>
Administrative and General Expenses			
Administrative and General Salaries	382,170.38	350,025.31	391,077.33
Engineering Services	1,780,836.31	1,676,848.39	1,829,534.62
Office Supplies and Expense	34,533.48	38,800.57	47,236.51
Outside Services Employed	602,204.11	430,096.83	431,889.14
Insurance Expense	241,486.26	208,789.64	331,662.48
Employee Benefits and Pensions	652,799.71	1,207,004.92	1,424,231.08
Meter Operations Expense	326,261.61	348,741.66	348,451.59
Loss on sale of equipment	-	-	19,565.29
Depreciation	3,201,824.94	3,245,555.00	2,904,929.95
Utility Taxes	45,003.20	49,301.94	47,387.43
Miscellaneous Expense	7,200.00	6,650.00	6,600.00
	<u>7,274,320.00</u>	<u>7,561,814.26</u>	<u>7,782,565.42</u>
Total Operating Expenses	<u>\$ 13,484,422.44</u>	<u>\$ 13,221,013.42</u>	<u>\$ 13,472,214.27</u>

Sewerage System Comparative Income Statement

	<u>2021</u>	<u>2020</u>	<u>2019</u>
Sewerage Service Revenue			
Residential Customers	\$ 4,360,762.94	\$ 4,386,872.20	\$ 4,269,341.75
Commercial Customers	2,258,297.77	2,169,858.62	2,241,939.50
Industrial Customers	1,775,029.14	1,184,650.09	1,080,324.12
Public Customers	464,588.30	448,921.53	489,165.59
Wastehaulers	124,307.33	204,749.99	150,679.14
Wholesale Customers	2,881,770.84	2,746,296.67	3,247,358.69
Industrial Monitoring	101,089.73	83,147.13	85,959.06
Total Sewerage Service Revenues	<u>11,965,846.05</u>	<u>11,224,496.23</u>	<u>11,564,767.85</u>
Other Operating Revenues			
Engineering Services	1,838,151.70	1,705,932.52	1,851,543.66
Other Income	75,855.93	73,084.92	69,641.91
Penalties	101,391.21	85,390.63	114,560.98
	<u>2,015,398.84</u>	<u>1,864,408.07</u>	<u>2,035,746.55</u>
Total Operating Revenues	<u>13,981,244.89</u>	<u>13,088,904.30</u>	<u>13,600,514.40</u>
Operating Expenses			
Wastewater Treatment Operation and Maintenance	3,731,048.19	3,378,710.47	3,552,788.95
Collection System Operation and Maintenance	1,683,460.25	1,361,704.38	1,195,385.30
Laboratory Operations	327,170.63	321,140.78	312,794.02
Industrial Waste Monitoring	89,542.83	84,323.08	73,127.52
Engineering Services	1,780,836.31	1,676,848.39	1,829,534.62
Customer Accounting/Meter Reading Expense	378,880.54	513,320.45	555,553.06
Administrative and General Expense	2,246,655.55	2,590,108.93	2,981,148.13
Loss on Sale of Equipment	-	-	19,565.29
Depreciation	3,201,824.94	3,245,555.00	2,904,929.95
Taxes	45,003.20	49,301.94	47,387.43
Total Operating Expenses	<u>13,484,422.44</u>	<u>13,221,013.42</u>	<u>13,472,214.27</u>
Net Operating Income	496,822.45	(132,109.12)	128,300.13
Non-operating Revenue			
Interest Income	277,084.32	608,979.70	776,869.84
Miscellaneous Income	16,286.93	22,383.32	5,073.31
Total Non-operating Revenue	<u>293,371.25</u>	<u>631,363.02</u>	<u>781,943.15</u>
Operating Income and Other Revenue	790,193.70	499,253.90	910,243.28
Non-operating Expenses			
Interest on Long-term Debt	-	1,109.96	5,109.20
Total Non-operating Expenses	<u>-</u>	<u>1,109.96</u>	<u>5,109.20</u>
Net Income	<u><u>\$ 790,193.70</u></u>	<u><u>\$ 498,143.94</u></u>	<u><u>\$ 905,134.08</u></u>
Rate of Return on Average Investment (based on WWTP net operating income)	0.77%	0.28%	0.42%
Rate of Return on Average Investment (after debt service payment)	0.77%	0.28%	0.41%

**Sewerage System
Utility Plant in Service
For the year ended December 31, 2021**

	Depr. Rate %	Cost of Plant 1/1/2021	2021 Additions	2021 Retirements	Adjustments Incr/(Decr)	Cost of Plant 12/31/2021
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	49,939,775.78	807,391.76	8,686.56		50,738,480.98
Interceptor Mains	1.00	29,415,933.32				29,415,933.32
Force Mains	1.00	1,482,478.87				1,482,478.87
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	6,402,853.12	20,784.00	6,727.00		6,416,910.12
Receiving Wells	2.50	5,685,387.42				5,685,387.42
Electric Pumping Equipment	5.33	9,117,276.68	11,698.00	10,692.00		9,118,282.68
Other Power Pumping Equip.	4.00	376,363.38				376,363.38
Miscellaneous Pumping Equip.	4.00	31,000.00				31,000.00
Treatment and Disposal						
Land	N/A	331,080.05	1,203,739.63			1,534,819.68
Structures and Improvements	2.50	11,680,595.57	57,272.00	7,346.56		11,730,521.01
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	8,221,652.29	56,202.00			8,277,854.29
Advanced Treatment Equip.	2.86	219,279.28				219,279.28
Chlorination Equipment	4.41	1,252,141.06	90,049.00			1,342,190.06
Sludge Treatment & Disposal	4.17	13,657,996.51				13,657,996.51
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	125,955.35		3,070.00		122,885.35
Transportation Equipment	14.28	357,211.25		15,159.00		342,052.25
Engineering Equipment	5.88	20,794.50				20,794.50
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	2,655,587.27	36,421.66			2,692,008.93
Furniture and Equipment	5.88	101,604.49				101,604.49
Computer Equipment	6.67-14.29	128,633.82				128,633.82
Transportation Equipment	12.86	2,759,878.87	565,174.80	137,025.28	13,343.31	3,201,371.70
Work (Power) Equipment	9.00	554,181.37				554,181.37
Tools and Shop Equipment	5.88	413,903.53	8,819.00			422,722.53
Lab Equipment	5.88	187,674.98				187,674.98
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	253,482.68	9,965.00			263,447.68
Total		<u>\$ 157,635,672.42</u>	<u>\$ 2,867,516.85</u>	<u>\$ 188,706.40</u>	<u>\$ 13,343.31</u>	<u>\$ 160,327,826.18</u>

**Sewerage System
Accumulated Depreciation
For the year ended December 31, 2021**

	Balance 1/1/2021	2021 Depreciation	Less Cost of Retirements	Add Cash Received	Adjustments Incr./Decr.	Balance 12/31/2021
Collection System						
Land	-					-
Structures and Improvements	-					-
Service Connections	\$ 1,020,988.03	38,092.81				\$ 1,059,080.84
Collecting Mains	14,658,368.71	509,597.93	8,686.56			15,159,280.08
Interceptor Mains	7,209,783.75	295,605.47				7,505,389.22
Force Mains	276,991.01	14,824.79				291,815.80
Collection Equipment	1,105,429.30	89,428.28				1,194,857.58
Collection System Pumping						
Land	-					-
Structures and Improvements	4,368,539.68	193,976.58	6,727.00			4,555,789.26
Receiving Wells	3,790,714.21	198,941.34				3,989,655.55
Electric Pumping Equipment	9,151,879.11	20.12	10,692.00	1,630.20		9,142,837.43
Other Power Pumping Equip.	258,754.48	21,886.38				280,640.86
Miscellaneous Pumping Equip.	19,624.97	1,550.00				21,174.97
Treatment and Disposal						
Land	-					-
Structures and Improvements	6,997,549.24	374,577.87	7,346.56			7,364,780.55
Preliminary Equipment	234,296.93	58,510.77				292,807.70
Primary Treatment Equipment	4,177,635.78	21,022.95				4,198,658.73
Secondary Treatment Equip.	7,138,756.22	274,716.78				7,413,473.00
Advanced Treatment Equip.	122,686.00	8,771.17				131,457.17
Chlorination Equipment	1,252,141.06	3,003.13				1,255,144.19
Sludge Treatment & Disposal	6,850,323.66	682,899.83				7,533,223.49
Plant Site Piping	4,583.68	2,291.84				6,875.52
Flow Metering and Monitoring	224,069.06	16,214.78				240,283.84
Outfall Sewer	1,000,098.56	29,493.98				1,029,592.54
Engineering Equipment						
Furniture and Equipment	26,947.60	1,924.81				28,872.41
Computer Equipment	42,619.48	19,599.08	3,070.00			59,148.56
Transportation Equipment	284,474.60	8,563.43	15,159.00	1,825.00	(309.10)	279,394.93
Engineering Equipment	1,337.70	1,302.85		300.00		2,940.55
Communication Equipment	(1,610.32)					(1,610.32)
Telephone Equipment	-					-
Miscellaneous Equipment	-					-
General Plant & Equipment						
Land	-					-
Structures and Improvements	771,896.53	53,475.97				825,372.50
Furniture and Equipment	80,232.22	5,893.06				86,125.28
Computer Equipment	92,299.83	16,456.27				108,756.10
Transportation Equipment	1,946,836.86	150,950.04	137,025.28	8,737.00	17,077.80	1,986,576.42
Work (Power) Equipment	266,391.92	24,027.24				290,419.16
Tools and Shop Equipment	243,060.14	24,262.15				267,322.29
Lab Equipment	101,184.59	10,885.15				112,069.74
Communication Equipment	2,228.00					2,228.00
SCADA System Equipment	155,357.40	34,067.10				189,424.50
Other Equipment	84,287.77	14,990.99				99,278.76
Total	\$ 73,960,757.76	\$ 3,201,824.94	\$ 188,706.40	\$ 12,492.20	\$ 16,768.70	\$ 77,003,137.20

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 2022

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

Subject: 2021 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 and sludge continue to meet or exceed discharge limits. The wastewater biosolids meet the state of Wisconsin’s requirements for an exceptional-quality sludge.

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.

Respectfully Submitted,

A handwritten signature in blue ink that reads "Katrina Karow".

Katrina Karow
Director of Wastewater Treatment



www.kenosha.org

**SUMMARY OF INFLUENT METALS TO THE
KENOSHA WASTEWATER TREATMENT PLANT**

POTW Influent:average pounds/day

Year	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury
2002	< 0.18	1.9	9.7	1.6	1.6	27.4	0.015
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

* 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
2002	< 0.18	0.30	< 1.2	0.97	0.71	7.6	0.0028
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

**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

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

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 2022

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

Subject: 2021 Household Hazardous Waste Collection Program Annual Report

Dear Mr. Czarnecki,

The Water Utility organizes and staffs a Residential Household Hazardous Waste (HHW) Program 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 collection event scheduled for February was canceled due to sub-freezing temperature. The Water Utility conducted seventeen collection events throughout the year. As in past years, it was well received. The number of residents disposing waste per event ranged from 48 (September 18) to 130 (March 6) with an average of 74 per event. The total number of participants in 2021 was 1,252. This program continues to be a beneficial service to our customers and the environment.

Respectfully Submitted,

A handwritten signature in blue ink that reads 'Katrina Karow'.

Katrina Karow
Director of Wastewater Treatment



www.kenosha.org

Kenosha Household Hazardous Waste Program Participation

2021 Collection Dates and Number of Participants

February	canceled due to sub-freezing temperature
March 6	130 participants
April 3	105 participants
May 1	99 participants
May 15	54 participants
June 5	98 participants
June 19	69 participants
July 3	52 participants
July 17	49 participants
August 7	74 participants
August 21	51 participants
September 4	63 participants
September 18	48 participants
October 2	96 participants
October 16	62 participants
November 6	92 participants
November 20	51 participants
December 4	59 participants
Total Participants	1,252

The program averaged 74 participants per collection event.

Household Hazardous Waste Unit Comparative Income Statement

	<u>2021</u>	<u>2020</u>	<u>2019</u>
Operating Revenue			
Residential	\$ 167,101.83	\$ 166,964.46	\$ 166,741.16
Stormwater Administration	14,040.00	14,040.00	14,040.00
Penalties	3,136.69	2,700.50	3,720.97
Total Operating Revenue	184,278.52	183,704.96	184,502.13
Operating Expenses			
Labor and Supplies	46,827.65	45,695.20	44,468.23
Outside Disposal Service	28,251.38	42,476.23	44,024.78
Costs Allocated from Other Funds:			
Wages	59,360.65	72,320.31	79,283.32
Postage	8,388.82	9,347.77	9,170.80
Other	4,698.54	3,216.65	3,509.60
Depreciation	3,202.45	3,202.45	3,202.45
Total Operating Expenses	150,729.49	176,258.61	183,659.18
Operating Income	33,549.03	7,446.35	842.95
Other Income			
Interest Income	39.99	342.34	2,354.96
Miscellaneous Income	22.56	108.68	-
Net Income	\$ 33,611.58	\$ 7,897.37	\$ 3,197.91

**Household Hazardous Waste Unit
Statement of Net Position
December 31, 2021**

Assets		
Utility Plant		
Plant in Service	\$ 80,893.24	
Accumulated Depreciation	<u>(34,046.17)</u>	
Net Plant in Service		46,847.07
Current Assets		
Cash	454,584.09	
Accounts Receivable	26,365.07	
Receivable from Municipality	15,212.22	
Unbilled Revenues	<u>20,878.00</u>	
Total Current Assets		517,039.38
Other Assets		
Pension Asset - Wisconsin Retirement System		19,107.52
Total Assets		<u>582,993.97</u>
Deferred Outflow of Resources		
Deferred Pension Resources		<u>22,900.51</u>
Liabilities		
Current and Accrued Liabilities		
Accounts Payable	10,166.16	
Payable to Municipality	<u>—</u>	
Total Current Liabilities		10,166.16
Total Liabilities		<u>10,166.16</u>
Deferred Inflow of Resources		
Deferred Pension Resources		<u>33,359.47</u>
Net Position		
Invested in Capital Assets	46,847.07	
Restricted for Pension	19,107.52	
Unrestricted	<u>496,414.26</u>	
Total Net Position		<u><u>\$ 562,368.85</u></u>

**Household Hazardous Waste Unit
Plant in Service and Accumulated Depreciation
For the year ended December 31, 2021**

	Depr. Rate %	Plant in Service				Cost of Plant 12/31/2021
		Cost of Plant 1/1/2021	2021 Additions	2021 Retirements	Adjustments Incr/(Decr)	
General Plant						
Structures and Improvements	4.00	\$ 80,061.24	-	-	-	\$ 80,061.24
Equipment	8.33	832.00	-	-	-	832.00
Total		<u>\$ 80,893.24</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>\$ 80,893.24</u>

	Accumulated Depreciation					Balance 12/31/2021
	Balance 1/1/2021	2021 Depreciation	Less Cost of Retirements	Add Cash Received	Adjustments Incr./Decr.	
General Plant						
Structures and Improvements	\$ 30,011.72	3,202.45	-	-	-	\$ 33,214.17
Equipment	832.00	-	-	-	-	832.00
Total	<u>\$ 30,843.72</u>	<u>3,202.45</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>\$ 34,046.17</u>