

MONROE COUNTY
WATER AUTHORITY



Infrastructure Maintenance:

A CENTURY IN THE MAKING

2019 **Annual Report**



To Our Customers:

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The Monroe County Water Authority is a not-for-profit public benefit corporation that reliably provides quality, affordable water that fosters economic vitality and enhanced quality of life for Monroe County and area communities who request service.

Our Mission Statement defines a clear commitment. At the same time, it presents a somewhat daunting challenge.

Providing quality water reliably to our customers depends upon a massive infrastructure as described in this report. Some of the Authority's infrastructure is approaching 100 years old, and a sizable percentage of it is underground.

The last significant infusion of Federal funds for water infrastructure was the American Recovery and Reinvestment Act in 2009. Operating expenses include routine maintenance and repair work that allows the water system to run smoothly. Given the age of our infrastructure, investing in maintenance is not enough.

The challenge, then, is to maintain and improve a vast infrastructure while maintaining affordable rates. Our strategy is to be as proactive as possible, and our approach



is to allocate approximately 25 percent of annual revenue and invest it in capital projects and renewal and replacement of existing assets. This allows our dedicated employees to budget, plan and implement the infrastructure maintenance programs outlined in this report. We have a prioritized flexible roadmap for addressing and building the major projects that our ratepayer dollars fund.

We have deliberately chosen relatively modest rate increases to maintain this annual practice, rather than waiting and paying what certainly would be increased infrastructure costs in the future, which would force commensurate larger rate increases.

By realistically evaluating our rate structure and taking proactive steps to stabilize our production, transmission and distribution systems – for both the short and long term – we have set a course for responsible stewardship of “nature’s most precious resource” for our region.

Nicholas A. Noce

Nicholas A. Noce
Executive Director

Scott D. Nasca

Scott D. Nasca
Chairperson

Management Team

Nicholas A. Noce
Executive Director

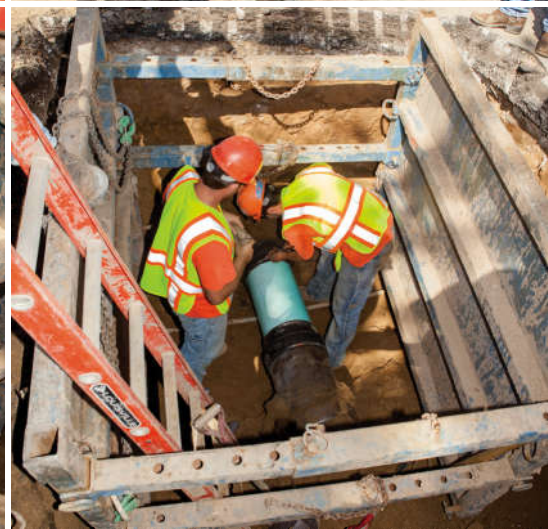
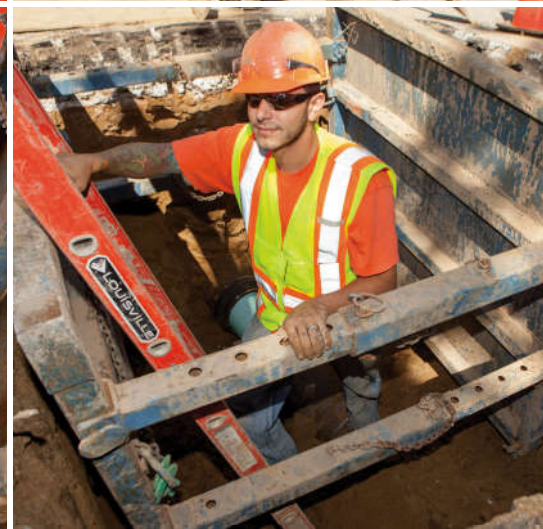
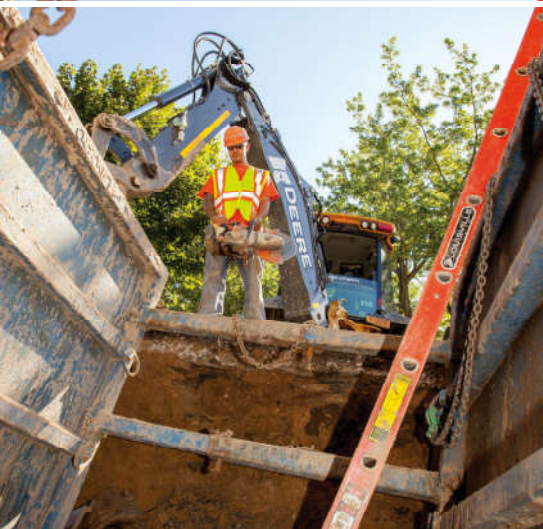
Richard J. Metzger, P.E.
Executive Engineer

Raymond W. Benshoff
Executive Director of Operations

Stephen M. Savage, P.E.
Director of Engineering

Christopher J. LaManna, P.E.
Director of Production
& Transmission

Amy A. Molinari
Director of Finance
& Business Services





Infrastructure Maintenance:

A CENTURY IN THE MAKING

2019 Annual Report

In 2019, the Monroe County Water Authority distributed nearly 20 billion gallons of clean, safe drinking water to some 749,000 individuals, including both residential and commercial accounts.

To do so relied on two factors: the dedication and experience of 226 employees; and a vast and sophisticated distribution and control infrastructure that requires daily attention and thoughtful planning for the future.

MCWA addresses its infrastructure proactively wherever possible. A 100-year plan addresses the entire system based on the life expectancy of the facilities with the longest service life. Rehabilitation and replacement projects are planned on rolling, five-year budget cycles. These are scheduled and implemented by their respective departments with a goal in line with the century plan. The shorter-term plans are more detailed and are based on the inspections of various elements of the system, which results in repairing, replacing or upgrading as necessary.

Take the 41 steel and 8 concrete storage tanks, for example. Depending on the environment in which they are located, the steel tanks require recoating every 15-25 years. Each tank is taken out of service once every five years to be cleaned and inspected to be sure all components, like the screens over the vents, are in place, sanitary and performing efficiently. At the same time, the coating is evaluated, which allows MCWA to anticipate when a new coating may need to be applied.

While the individual storage tanks hold from 100,000 to 15 million gallons, MCWA's two inground reservoirs hold a combined 60 million gallons, 5 million at the site in Mendon and 55 million at the reservoir in Pittsford. Each has a floating synthetic rubber cover (one covers an acre, the other nine acres)

Consider the sheer scope and complexity of an infrastructure that includes:

3,380 miles of water mains, enough to stretch from Rochester to San Antonio—and back again

26,700 fire hydrants, essential in providing safety in our communities

49 water tanks, ranging in capacity from 100,000 to 15 million gallons

2 reservoirs, with capacities of 55 million and 5 million gallons

44 remote pump stations and 36,000 valves

3 treatment plants with a combined capacity of approximately 190 million gallons per day



featuring drains, troughs and sump pumps to keep rainwater or any type of debris from getting into the finished water supply.

At least once each year, MCWA personnel walk the entirety of both covers and the dam sites to visually check problems, repair leaks or seams or take whatever action necessary. In addition, scuba divers—thoroughly disinfected before entering the water—check the underside of the cover, the integrity of the side walls, the inlets and outlets, and all other areas. The divers have been part of the Monroe County Sheriff's Department, who use the task as a training exercise. At times, remotely operated vehicles from the Sheriff's Department also inspect underwater. At the MCWA treatment plants that draw water from Lake Ontario, divers on contract inspect the intake piping as needed.

A schedule calls for each of the

26,700 hydrants to be inspected every 18 months, and each of the 36,000 valves to be inspected every two years.

Quick reaction

But how does the authority deal with those 3,380 miles of mains that lie almost entirely underground, yet provide perhaps the most vital part of the distribution system?

The answer is MCWA's ability to react extremely quickly to fix problems, such as reported leaks, then to analyze the data from these incidents—like location and frequency—to help develop a proactive repair-or-replace schedule.

Six experienced employees, designated as "first responders," are assigned to different geographic segments of the MCWA service area. When a problem is reported in their area, such as a leaking main or low water pressure in a residence, they respond immediately and prescribe the needed action.

"From the time we get the call about a break to the time we have it repaired and water restored to the area, it's about five hours," says Ray Benschoff, MCWA's Executive Director of Operations. "That includes assembling a crew, getting them on site, and completing the needed action. We're proud of that capability."

The work crews can rely on a

warehousing facility with a million-dollar inventory that includes any material needed for emergency or routine maintenance, including mains from 2 to 60 inches in diameter.

As main breaks occur, the Engineering Department evaluates each one and keeps track of where they are and how often they occur. Engineering compiles a list and sends it to stakeholders within the organization, such as Operations, Production and Transmission, and Customer Service, asking for feedback. For example, operators in the Production and Transmission department distribution system often are first to detect a potential main break by observing a system demand in an area that exceeds the normally anticipated range. They would then notify and coordinate with the first responders to assist in locating the break.

Customer Service will know which of the listed mains generates more customer complaints than other areas, and Operations can assess the frequency and difficulty involved in making a repair or replacement in that location.

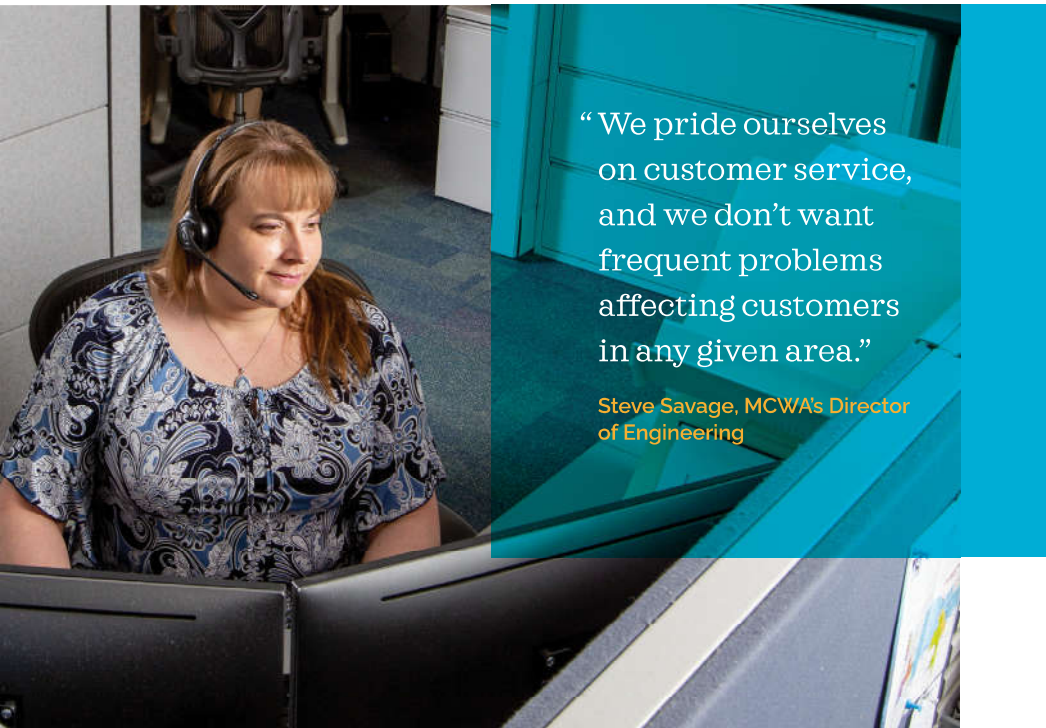
Each department ranks each problem area based on the affect to their portion of the business. Engineering then compiles the input and prioritizes a plan for rehabilitation or replacement, trying when possible to group them in similar geographic





“From the time we get the call about a break to the time we have it repaired and water restored to the area, it’s about five hours.”

Ray Benshoff, MCWA's Executive Director of Operations.



"We pride ourselves on customer service, and we don't want frequent problems affecting customers in any given area."

Steve Savage, MCWA's Director of Engineering

areas for the sake of economic efficiency.

"We certainly take into account customer complaints," says Steve Savage, MCWA's Director of Engineering. "We pride ourselves on customer service, and we don't want frequent problems affecting customers in any given area."

With priorities set, the challenge becomes pinpointing the exact location of the underground leaks. This procedure is often a combination of technology and the experience of trained MCWA personnel. Crews use a surveying device that is basically a highly powered, amplified, ultra-sensitive stethoscope with headphones. A microphone is placed on a hydrant, for example, and the operator can listen to the sound of water moving through a main. To a trained ear, the sound is different in areas where there is no leak than where water is being lost.

Readings from various hydrants and valves are fed into a computer to identify two "end points" where the leak is determined to be in between. MCWA reviews records to identify

what type of main is in that area—plastic, metal, etc. The sound will be different in each.

At that point, the trained ear of an experienced MCWA employee comes into play. "For example, we have one person with some 28 years' experience who can listen to the sounds and identify the location of a leak within several feet," said Savage. Signals sent from digital correlators can then pinpoint the exact location.

Every year, MCWA performs acoustical leak detection surveys on approximately 600 to 700 miles of main.

Production and Transmission

On a day-to-day basis, the Production and Transmission Department is responsible for water treatment, transmission, water quality and maintenance. Production system infrastructure is protected and maintained by a team of production engineers, mechanics, electricians, operators, and laboratory personnel. Treatment plant and distribution system operators monitor and control the treatment processes and transmission/distribution

system using a sophisticated network of instruments that are part of a supervisory control and data acquisition system commonly referred to as SCADA.

In addition, field personnel collect samples daily at select locations throughout the distribution system to monitor water quality for process control and regulatory reporting.

The department's maintenance personnel are responsible for maintenance of the treatment plants, remote pump stations, storage tanks and reservoirs, and other MCWA facilities. Preventive maintenance is a priority. Schedules for routine maintenance—greasing bearings on a pump, replacing oil in a generator, etc.—are set on a weekly or monthly or annual basis as required. Reactive maintenance is also called for, responding quickly to repair a pump or make an electrical repair.

"We also have a capital planning process," says Chris LaManna, Director of Production and Transmission. "We continually assess our needs, look at short-term projects, and set plans and budgets out five to ten years. For example, if we need to replace the pumps at one of our large pump stations, we'll identify the timeline and who is going to design and implement the project."

With every project, large or small, LaManna says, "we look at ways to make improvements. Can we make the process or operation more resilient and reliable? Is there a good back-up system in case of a problem? We always are looking to improve."

Preparation, anticipation, reaction, planning. Those are the underpinnings of a system that looks after a massive infrastructure, one that allows MCWA to fulfill its mission every day.

Financial Highlights

WATER SALES (million gallons)	2019 Metered Consumption	Increase (Decrease) From 2018
Residential & Commercial	12,509.1	(522.2)
Industrial	2,465.3	(67.7)
Water Districts	1,517.5	2.4
City of Rochester	3,242.1	30.8
Total	19,734.0	(556.7)

OPERATING REVENUES (000s omitted)	2019 Amount	Increase (Decrease) From 2018
Residential & Commercial	\$56,587	\$850
Industrial	6,644	124
Water Districts	3,848	175
Fire Services	1,333	21
Other	2,744	(36)
Total	\$71,156	\$1,134

OPERATING EXPENSES (000s omitted)	2019 Actual	Increase (Decrease) From 2018
Operating Departments		
Administration	\$4,149	\$(522)
Production/Transmission	13,275	(1204)
Engineering	3,423	(363)
Facilities, Fleet & Operations	13,046	(682)
Finance & Business Services	6,961	137
Total	\$40,854	\$(2,634)

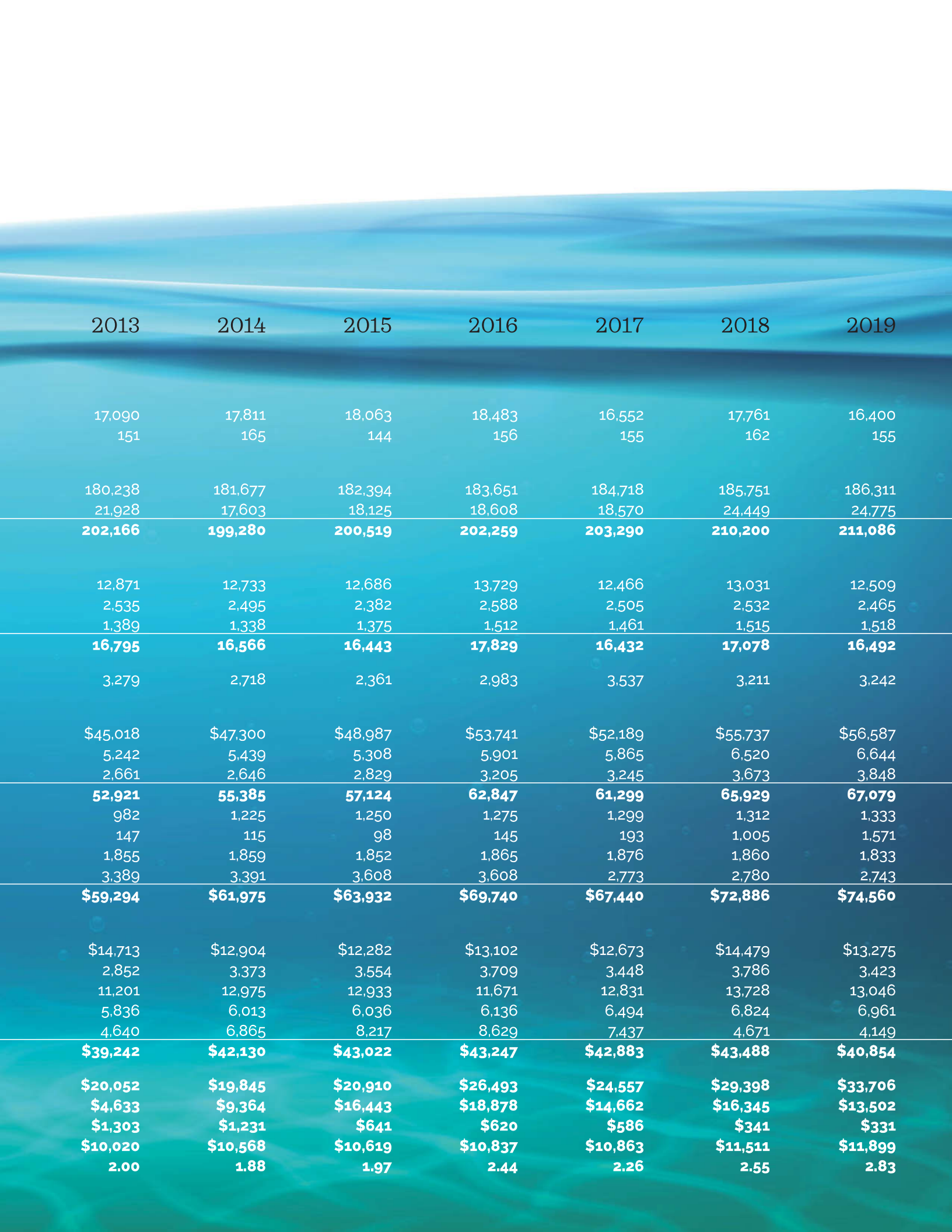
To review our audited financial
statements, please visit:

mcwa.com

Operating Statistics

(2010-2019 unaudited)

	2010	2011	2012
TOTAL WATER OUTPUT (MILLION GALLONS)			
Lake Ontario Production	17,816	18,844	17,991
Miscellaneous Purchases & Production	163	159	161
ACTIVE CUSTOMERS			
Retail	172,470	173,134	173,554
Wholesale	19,385	20,404	20,588
Total	191,855	193,538	194,142
WATER SALES (MILLION GALLONS)			
Residential & Commercial	12,798	13,136	13,453
Large Commercial & Industrial	2,550	2,545	2,531
Wholesale	1,771	1,816	1,849
Total	17,119	17,497	17,833
WATER PURCHASES (NET EXCHANGE)	2,911	2,531	3,517
REVENUES (000'S OMITTED)			
Residential & Commercial	\$39,945	\$41,689	\$44,375
Large Commercial & Industrial	4,968	5,164	5,184
Wholesale	3,239	3,482	3,554
Total Metered	48,152	50,335	53,113
Fire Service	636	664	793
Interest Earnings	253	548	192
Federal Int. Subsidy Series 2010B Taxable Build America Bonds		2,059	2,003
Other	3,244	3,272	3,426
Total	\$52,285	\$56,878	\$59,527
OPERATING EXPENSE (000'S OMITTED)			
Production/Transmission	\$12,459	\$12,695	\$13,685
Engineering	2,620	2,761	2,407
Facilities, Fleet & Operations	11,122	11,509	11,716
Finance & Business Services	8,030	8,964	5,258
Administration	679	756	4,909
Total	\$34,910	\$36,685	\$37,975
NET REVENUE	\$17,375	\$20,193	\$21,552
CASH CAPITAL PROGRAM	\$6,914	\$5,835	\$12,452
CAPITAL LEASE PAYMENTS	\$1,436	\$1,421	\$1,376
WATER REVENUE DEBT SERVICE	\$4,319	\$8,193	\$7,991
COVERAGE EXCLUDING OBLIGATIONS ON LEASE FACILITIES	4.02	2.46	2.70



2013	2014	2015	2016	2017	2018	2019
17,090	17,811	18,063	18,483	16,552	17,761	16,400
151	165	144	156	155	162	155
180,238	181,677	182,394	183,651	184,718	185,751	186,311
21,928	17,603	18,125	18,608	18,570	24,449	24,775
202,166	199,280	200,519	202,259	203,290	210,200	211,086
12,871	12,733	12,686	13,729	12,466	13,031	12,509
2,535	2,495	2,382	2,588	2,505	2,532	2,465
1,389	1,338	1,375	1,512	1,461	1,515	1,518
16,795	16,566	16,443	17,829	16,432	17,078	16,492
3,279	2,718	2,361	2,983	3,537	3,211	3,242
\$45,018	\$47,300	\$48,987	\$53,741	\$52,189	\$55,737	\$56,587
5,242	5,439	5,308	5,901	5,865	6,520	6,644
2,661	2,646	2,829	3,205	3,245	3,673	3,848
52,921	55,385	57,124	62,847	61,299	65,929	67,079
982	1,225	1,250	1,275	1,299	1,312	1,333
147	115	98	145	193	1,005	1,571
1,855	1,859	1,852	1,865	1,876	1,860	1,833
3,389	3,391	3,608	3,608	2,773	2,780	2,743
\$59,294	\$61,975	\$63,932	\$69,740	\$67,440	\$72,886	\$74,560
\$14,713	\$12,904	\$12,282	\$13,102	\$12,673	\$14,479	\$13,275
2,852	3,373	3,554	3,709	3,448	3,786	3,423
11,201	12,975	12,933	11,671	12,831	13,728	13,046
5,836	6,013	6,036	6,136	6,494	6,824	6,961
4,640	6,865	8,217	8,629	7,437	4,671	4,149
\$39,242	\$42,130	\$43,022	\$43,247	\$42,883	\$43,488	\$40,854
\$20,052	\$19,845	\$20,910	\$26,493	\$24,557	\$29,398	\$33,706
\$4,633	\$9,364	\$16,443	\$18,878	\$14,662	\$16,345	\$13,502
\$1,303	\$1,231	\$641	\$620	\$586	\$341	\$331
\$10,020	\$10,568	\$10,619	\$10,837	\$10,863	\$11,511	\$11,899
2.00	1.88	1.97	2.44	2.26	2.55	2.83

Performance Metrics



QUALITY

of quality complaints per 1,000 customers
MCWA's Customer Service Information System includes tracking mechanisms for categorizing and measuring the number of customer calls specific to quality. In 2019, MCWA received about 338.

1993
26
per 1,000

2019
1.8
per 1,000



RESPONSIVENESS

Call center wait time
MCWA answers your calls faster. In 2019, the average wait time for customers to talk to a Customer Service representative was a fraction of the national median (timed in seconds).

MCWA
12.4
National Median
60

COST

2019 rate comparison
MCWA residents pay less per month than our neighbors.

MCWA
31.05

Erie County	\$31.23
Onondaga County.....	\$34.10
City of Rochester	\$35.81



RELIABILITY

Supply outages for more than 4 hours

Continuity of production capacity is paramount. In 2019, MCWA had **no** unplanned outages of supply capacity lasting more than four hours.

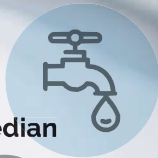
MCWA

0

National Median

29.5

for utilities of similar size



Water main breaks per 100 miles of pipeline

The AWWA benchmark for system integrity is less than 33.5 breaks/100 miles of pipeline per year. MCWA's distribution system includes 3,350 miles of water main. In 2019, the number of breaks and leaks repaired was well below national median.

MCWA

21.4

National Median

37



EFFICIENCY

Accounts per employee

In 2019, MCWA employees handled more than double the number of customer accounts as the national median.

MCWA

889

National Median

424



REINVESTMENT

Maintaining infrastructure

MCWA's goal is to implement a budget that reinvests a minimum of 2% of annual revenues in the renewal and replacement of our infrastructure. In 2019, our reinvestment in infrastructure replacement exceeded 20%.

MCWA

20%

Customer Base

Large Commercial and Industrial	Sales 1000 Gallons
Lidestri Foods Inc. (2 meters)	399,836
Xerox	214,063
Rochester Institute of Technology (4 meters)	155,062
Delta Sonic (4 meters)	75,575
Wegmans-1500 Brooks Ave. (2 meters)	58,627
Tech Park Owner LLC	51,405
Darien Lake Theme Park	47,794
Bouduelle USA Inc (formerly Birdseye) – Bergen (2 meters)	41,837
MCPW – NW QUADRANT	27,795
Nazareth College	24,761
Subtotal	1,096,755
Remaining 472 Accounts	1,458,127
Total	2,554,882

Water Districts	Customers By Town	Sales 1000 Gallons
Wayne County Water & Sewer	4,360	333,573
Genesee County	9,595	282,931
Village of Brockport	1,817	281,192
Sea Breeze Water District	3,129	211,352
Village of Hilton	1,821	144,485
Village of Victor	1,010	75,599
Livingston County Water & Sewer*	1,050	72,126
Town of Clarendon	831	42,941
Town of Murray	375	42,561
Village of Holley	775	30,152
Town of Farmington	12	612
Total	24,775	1,517,524

Residential and Small Commercial	Customers By Town	Sales 1000 Gallons
Town of Greece	33,219	2,190,555
Town of Irondequoit	16,594	1,018,598
Town of Henrietta	13,574	952,838
Town of Perinton	14,189	936,819
Village of Fairport	2,065	121,093
Town of Penfield	12,750	889,230
Town of Webster	14,070	879,369
Village of Webster	1,584	136,261

Residential and Small Commercial	Customers By Town	Sales 1000 Gallons
Town of Brighton	10,103	848,708
Town of Pittsford	9,024	660,434
Village of Pittsford	675	45,013
Town of Gates	10,358	658,368
Town of Chili	9,641	601,765
Town of Victor	4,601	373,283
Town of Ogden	5,007	321,804
Village of Spencerport	1,323	80,543
Town of Parma	3,730	201,945
Village of Hilton	192	6,825
Town of Hamlin	2,622	155,464
Village of East Rochester	2,396	149,534
Town of Clarkson	1,857	125,967
Town of Mendon	1,907	120,557
Village of Honeoye Falls	859	66,531
Town of Sweden	1,307	114,239
Town of Riga	1,199	71,652
Village of Churchville	876	43,914
Town of LeRoy	802	62,396
Village of LeRoy	1,704	108,022
Town of Rush	1,136	62,350
Town of Pembroke	600	49,550
Village of Corfu	288	13,608
Town of Wheatland	608	45,853
Village of Scottsville	744	40,954
Town of West Bloomfield	380	44,418
Town of Richmond	1,005	37,843
Town of Kendall	751	36,714
Town of Darien	378	30,615
Town of Stafford	542	25,873
Town of Byron	518	22,752
Town of Bergen	257	20,049
Village of Bergen	418	20,506
Town of Pavilion	340	19,774
Town of Caledonia	35	2,013
Village of Caledonia	6	1,298
Town of East Bloomfield	20	996
Town of Bethany	34	932
Town of Covington	11	863
Town of Lima	12	794
Total	186,311	12,419,482

Water: The Healthy Drink



To review our audited financial
statements, please visit:
mcwa.com

Drinking more water is good for your health!
Stick this magnet on your fridge to remind
you to drink more.



**MONROE COUNTY
WATER AUTHORITY**

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