

MARSHALL MUNICIPAL UTILITIES
ANNUAL REPORT
2023/2024

TO: Board of Public Works
City Council

February 4, 2025

This annual report summarizes many of the improvements, accomplishments, and challenges to Marshall's publicly owned utility systems during the fiscal year ending September 30, 2024. Many of the accomplishments made in 2024 are not only important to provide reliable service to our community, but necessary for Marshall to develop and grow.

As a publicly owned utility, MMU is an Executive Department of the City governed by a 4-member Board of its customers/owners. These members are appointed by the Mayor, confirmed by the City Council, and are responsible for the overall operation of Water, Wastewater, Electric, and Broadband services for Marshall. MMU has been in operation for over 100 years and developed into an award-winning utility, providing above-average service at below-average costs under the guidance of its Board.

2023/2024 Improvement Highlights:

The largest project for 2023/2024 was the upgrade and renovation of the North Street Pump Station. This station was originally constructed in 1945 and the last upgrade was made in 1989. Work began in August 2023 with the engineering work and project management by Burns & McDonnell using the design build process. This project included removal of asbestos and lead paint, building repairs, replacement of all motors, pumps, valves and associated piping along with electrical equipment. One of the biggest improvements to the station was the replacement of the back-up diesel pump with an electric pump powered by an electric generator with automatic transfer. The generator that was used was re-purposed from the old Marshall Habilitation Center cutting project costs. A large portion of this project is being paid for through the State Infrastructure Grant Program. MMU received approximately \$4 million dollars of funding with a 10% match.

A second large project for 2023/2024 was the overhaul of MMU generating Unit #6. This unit is a Westinghouse dual fuel simple-cycle turbine with a rating of approximately 14 megawatts. The unit is capable of running on natural gas or diesel and was critical during Winter Storm Uri, generating approximately \$5 million dollars of market revenue during the event utilizing diesel fuel (natural gas was not available). MMU started having issues with the unit in the summer of 2023 and reached out to the OEM for assistance. After inspection and troubleshooting it was determined that we needed to overhaul the unit. The overhaul process with Ethos (OEM) hit a few snags in the beginning and we were assigned a new project manager in 2024. Right now, the completion of the overhaul is anticipated in late February or early March of 2025. MMU has filed an insurance claim for this unit under its boiler and machinery policy and the reimbursement amount won't be known until project completion. This unit is very critical for protecting MMU customers from extreme winter price spikes. The possibility of winter price spikes is expected to continue for the foreseeable future as the industry transitions away from coal to renewables.

The MMU IT & Broadband Department continued its work to extend high-speed internet services to rural areas of Saline County utilizing USDA ReConnect Grant funding. MMU completed the construction of infrastructure for Round 1 and has reached its revenue and subscriber targets. We have received all reimbursements for the 50% grant and are now paying down the 50% loan amount. Contractors have installed approximately 130 miles (of 450 miles total) of conduit, pull boxes, and pedestals required for Round 2 of grant funding. Another 70 miles has already been contracted out and is progressing. MMU crews have been installing fiber, splicing, and installing service drops where conduit installation is completed. We are running approximately 5-6 months behind the contractor installing and splicing fiber. This has been pretty consistent since the beginning of the project, but will probably grow when we have multiple contractors working at the same time. Bids were sent out in November for conduit, pull box, and pedestal installation for another 130 miles to begin in 2025. At this stage, our cost projections are holding up pretty well and our subscriber and revenue targets are in line with the portion of the project that is complete.

Other Notable Accomplishments:

- With the changing resource mix and capacity crediting, capacity for the MoPEP Pool is forecast to be short beginning in 2026. MMU began working with the Missouri Electric Commission in April of 2024 to utilize existing MMU infrastructure for the construction of a new gas-fired generating station. The project includes 4 simple cycle turbines and is split into 2 phases. The first phase will be the installation of 2-Solar 22.5-megawatt units followed by 2-Solar 35-megawatt units in the second phase. These units will be dual fueled and can run on natural gas or diesel. Capacity from this station will be used to meet the needs of all three power pools (MoPEP, MMMPEP and SWMPEP) when completed. Capacity for the 3 pools will be allocated across the units, reducing the impact to any one pool if a unit is down. Completion of phase one is anticipated in the fall of 2026 with completion of phase 2 in 2028. Upon project completion, MEC will contract with MMU for maintenance, operation and upkeep of the units. MEC is also replacing the 2 substation transformers in Miami Substation with larger units to match output of the first phase. MMU will also receive gas transportation revenue on its gas transmission line from the Panhandle tap in Pettis County to the project site. Total project cost is forecast at approximately \$160 million.

MMU Mission Statement

It is our responsibility to provide for the current needs and to plan for the future needs of Marshall's citizens. We must never forget that Marshall's citizens are the owners of MMU. The citizens of Marshall can be assured that the employees of MMU are committed to continuing the efforts necessary to fulfill our mission, which is to:

Provide reliable utility service for our owners at the lowest reasonable cost; Maintain and operate facilities that will assure safe, dependable electricity, potable water, wastewater treatment, broadband services, and natural gas transportation giving due consideration to conservation and environmental impacts; Plan for the future to assure adequate resources with progressive but sound economic reasoning.

Department information

The following information provides a glimpse of some of the challenges, accomplishments, and operations during the 2023-2024 fiscal year.

Electric Distribution

- **Miami 1 Switchgear Replacement:** With extensive repairs made to the Miami 1 load tap changer over the winter and several test results, engineers recommended keeping the Miami 1 transformer and circuit switcher in service and replace the 15kV switchgear only. The new switchgear lineup is on order with an expected delivery date of September 2025.
- **Overhead to underground projects:** We completed the overhead to underground project in the 900, 1000, and 1100 blocks of S. Lincoln and Fairlawn. The crew buried approximately 1,300' of primary and secondary lines and 23 house services.
- **Southeast Substation T1 Inspection/Recondition:** Southeast Substation Transformer #1 (T1) has been in service since 1976. Contractors pumped out the insulating oil and replaced all transformer gaskets. They ran the oil through a processing rig that heats the oil while removing combustible gasses. The oil was put back in the transformer and final testing was completed. This process extends the life of the transformer.
- **A-Sub Recloser Replacement/Maintenance:** Crews replaced the 2 oil filled reclosers with Nova vacuum reclosers, they also replaced all post insulators and lightning arresters.
- **Street/Area Light Conversion:** We replaced 4 high-pressure sodium area lights. That leaves 12 to complete the conversion. The remaining high-pressure sodium area lights are located in areas difficult to access and will be replaced as they fail or during pole change-outs.
- Replaced or installed 74 new utility poles.
- Connected 8 new net metering installations, this brings the total net meter installations connected to 41.

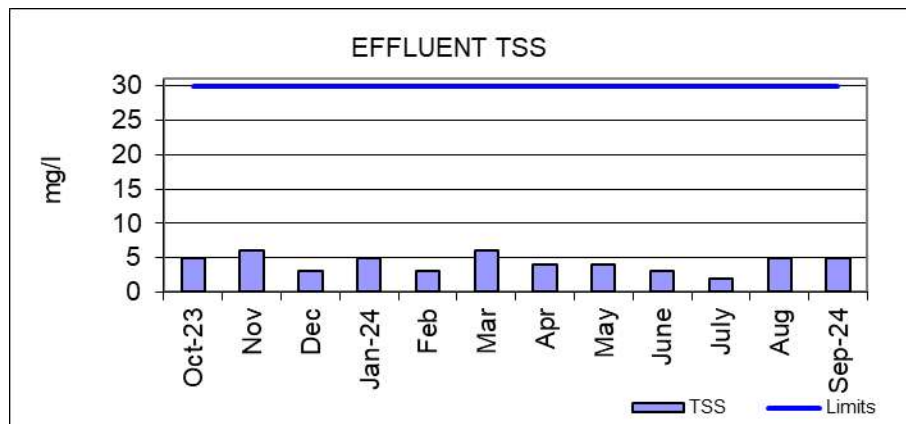
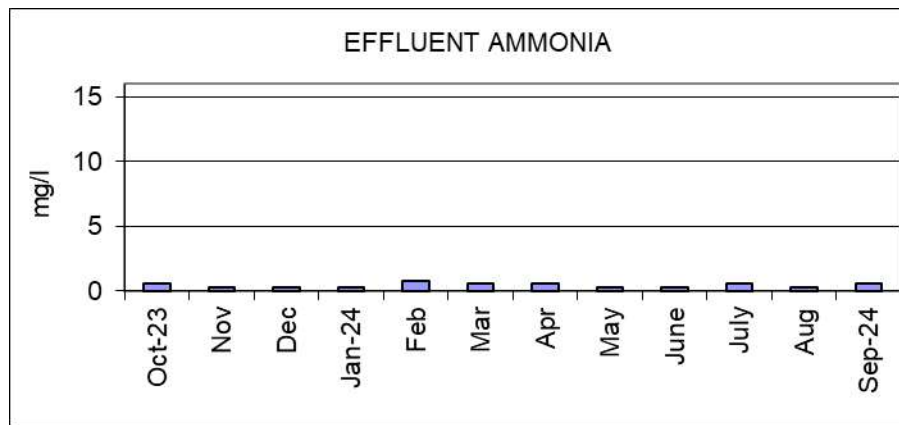
Water Treatment Plant

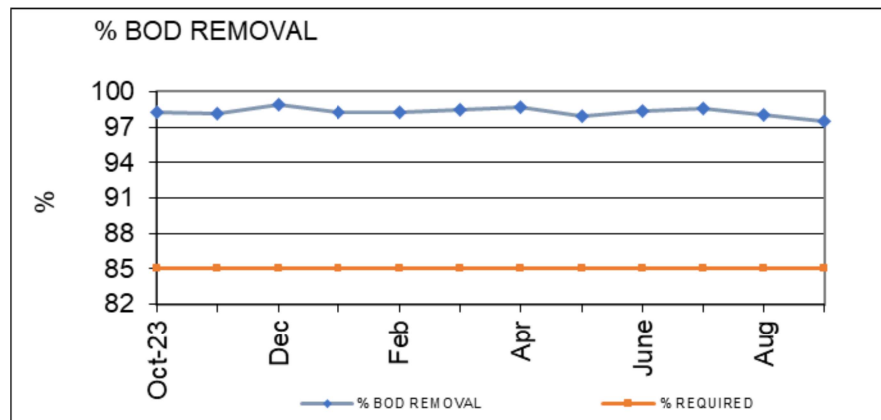
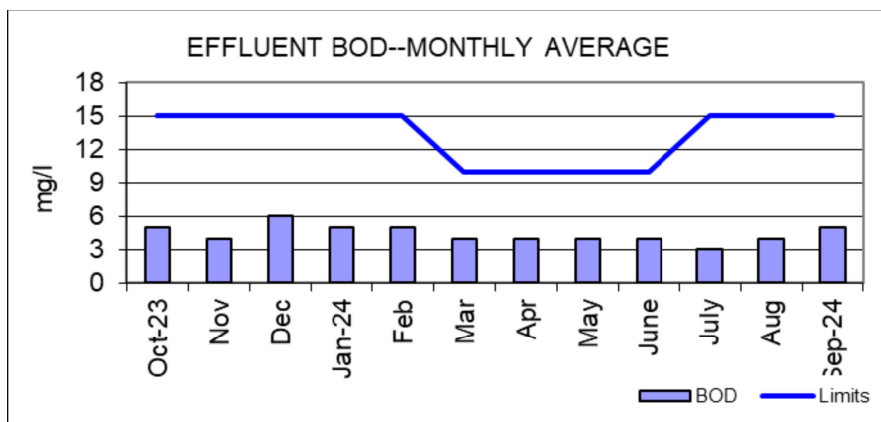
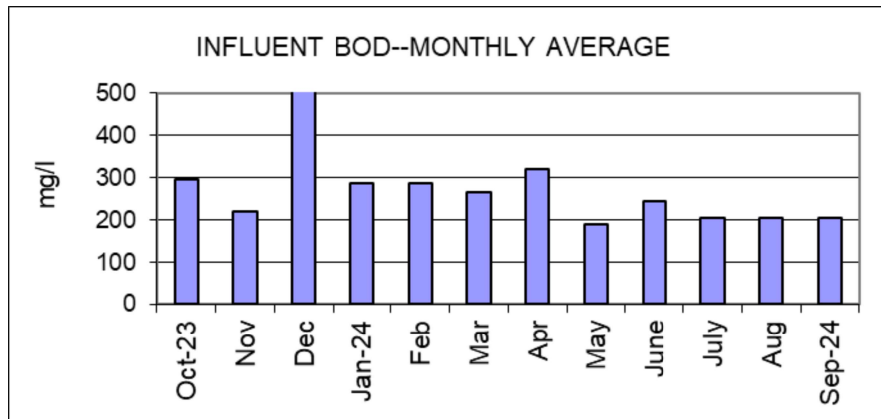
- The plant produced 880,667,000 gallons of water in FY24.
- Daily average water produced was 2.41 million gallons per day.
- Max day of production was 4.771 MGD on October 2, 2023.
- Completed annual well treatment of 5 wells.
- Completed a water treatment plant system study with Burns & McDonnell.
- Replaced a half-ton and a ¾-ton pickup truck.
- Replaced exterior doors and frames at plant.
- Filter effluent valves and actuators were replaced on all five filters.
- Removed asbestos containing materials (floor tiles) from an office at the plant so it could be used.
- Received a refurbished truck with a new spreader bed in December 2024.
- Hired contractor to land apply 2,509.55 dry tons of lime sludge on 400 acres.
- Land applied 2,124.16 dry tons of lime sludge on 1,133 acres.
- Gave away 313.28 dry tons of lime to a local farmer.

Wastewater Treatment Plant

- The plant treated approximate 936,791,000 gallons of wastewater. This was an increase from 791,580,000 treated the previous year. We applied roughly 475 tons of sludge to local farmland.
- Replaced existing sludge holding basin manifolds with stainless steel in both basins. All work was completed in-house with assistance from Electric Production and Underground Facilities.
- Replaced the roof on the waste aeration building.
- Replaced the blowers in the waste aeration building. These were the original blowers and we were able to find replacements with the exact specs as the old ones. This reduced the overall cost.
- Replaced the asphalt to the south of the office and around the sludge holding pads.
- Started the replacement of the UV system, this project has an anticipated completion date before April 2025.
- Underground Facilities replaced the trench drain in front of the sludge holding pad with a new larger drain.

Following are charts showing the wastewater treatment plant's effluent sampling results for FY24. The plant continues to stay below the limits set by DNR.





BOD – biochemical oxygen demand

TSS – total suspended solids

mg/l – milligrams per liter or parts per million

There currently is no discharge limit, only a monitoring requirement, for ammonia.

Electric Production

- During the Unit 6 overhaul, it was discovered that the entire exhaust for the unit was in very poor shape. Electric Production crews fabricated a new plenum. This project was very complex and took many hours to complete. The plenum was in very poor shape.
- Received the new glass crusher that was purchased using a grant that was received from the Solid Waste Management District Region F in 2023. The glass crusher was put into operation and is working well.
- We were awarded a 60/40 grant from the Solid Waste Management District Region F for the purchase of a new baler for the Recycling Facility. This new baler will replace the current baler that was purchased used in 2017. Bids have been requested and will be awarded in January of 2025. The lead time on a new unit is around 22 weeks.
- Started a water treatment program with Garret Callahan to improve our water treatment for Units 10 and 11. The new equipment was installed by in-house labor and can be monitored by Garret Callahan. This will help the performance of these units and improve the overall unit operation.

Underground Facilities

- Upgrades and renovations on North Street Pump Station were started in August 2023. All demolition was completed in November 2023. While the station is substantially complete, material lead times have delayed completion to January 2025.
- Inspection and cleaning of the sewer mains continue throughout the collection system. The sewer camera was used to video inspect over 13,762' of sewer mains. These video inspections reveal areas that need to be repaired, totally replaced, or reconditioned, as well as identifying other potential problems in the collection system. There were 9 new sewer services installed.
- MMU has approximately 100 miles of distribution mains, some of which are over 100 years old. Last year, we had a total of 60 main failures in the distribution system and 22 on the transmission line. The increase in main and transmission line failures can be attributed to the drought and dry ground conditions, as well as the water tower being out of service for several weeks. We have a very well-maintained distribution system and have demonstrated that we can endure droughts and maintain water for major fires without having to curtail consumption. There were 16 new water services installed.
- A sewer main project in the alley between West Marion Street and West North Street, from Benton Avenue to Lyon Avenue, was completed in September 2024. The 6" clay main was in poor condition. The project consisted of approximately 550' of 8" PVC main, 17 services, and 2 new precast manholes.
- The Cured-in-place-pipe (CIPP) sewer main rehabilitation was awarded for approximately 5,000' of sewer main in the South Odell Avenue and South Grant Avenue areas. Work was completed in the Summer 2024.
- The water tower was taken out of service in October 2024. The tower interior was sandblasted, inspected and recoated. The tower was put back in service in November 2024.
- A water main replacement project on Boyd Street from Grant Avenue to Benton Avenue was completed in August 2024. The project consisted of replacing the 4" cast iron main that had failed several times with a 6" PVC C900 main.

- The first round of the EPA mandated Lead Service Line Inventory was completed in October 2024. All known lead in MMU's distribution system was removed in the 1990's. The private service inventory continues. To date, 1,445 services have been identified including 5 lead and 70 galvanized; leaving 4,373 service lines with material not yet identified.

IT & Broadband

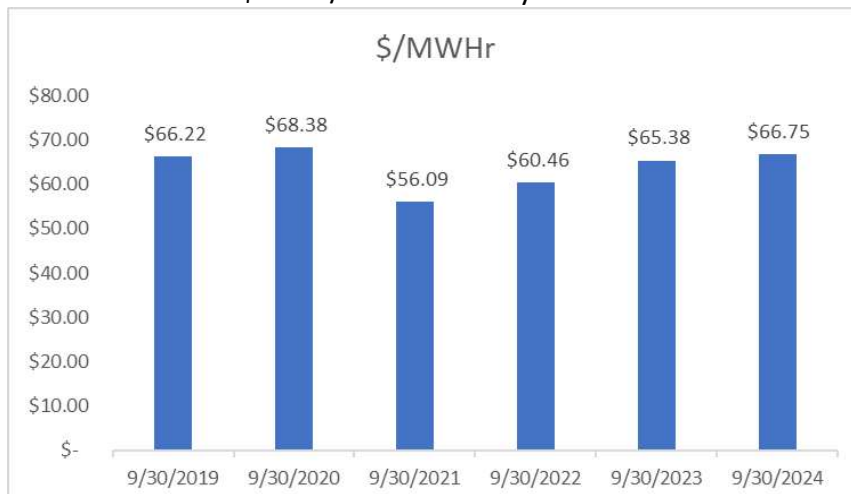
- We are nearing 4,400 customers, including over 350 in the grant areas.
- The 2019 USDA Broadband Grant is finished. We will have reporting requirements for the next several years.
- The 2020 (Round 2) USDA Broadband Grant is progressing nicely. We have about 25% of the conduit installed and MMU crews have installed about 20% of the fiber. We have until January 2028 to finish.

Administration

- Updated the Marshall Municipal Utilities website to allow a more user-friendly platform for our customers to get access to utility information and pay their bill. We also worked with Tyler Technologies on a "customer portal" that will allow customers access to their account and utility information.
- Continued work on testing the electric residential Time-of-Use (TOU) rate within the billing software. This rate became an option for residential customers effective October 1st, 2024.
- Worked with SOA Architecture on developing building plans for a proposed new Customer Connect Center that would be located at the old power plant location. This building would provide the IT & Broadband Department with a location to support the growth of the department and its 4,400+ customers (and counting). Administration would be moved at the same time due to the close working relationship between the two departments in supporting customers.

Wholesale Energy

MoPEP wholesale energy in the fiscal year 2023/2024 averaged approximately \$69.92/MWh. Compared to the fiscal year 2022/2023 average of \$70.43/MWh, wholesale energy was down approximately \$0.51/MWh. MMU generation credits for 2023/2024 were \$520,230 versus \$827,728 in 2022/2023. This resulted in an all-in cost of \$66.75/MWh for the year.



Net Metering

In 2003, MMU adopted net metering in compliance with the Consumer Clean Energy Act. For calendar year 2024, MMU reported a total of 36 net metering customers with a total kW capacity of 421 kW. During calendar year 2024, those net metering customers produced 529,069 kWh of which 251,179 kWh was fed back to the electric grid.

HR/Personnel

In fiscal year 2024, a total of three (3) people were hired. All were hired to fill vacancies created by departing or transferring personnel. During the year:

- One person was hired for Underground Facilities (General Maintenance/Meter Reader);
- One person was hired for Water Treatment (Operator);
- One person was hired for Electric Distribution (General Maintenance/Groundman);

At year's end, we have five (5) vacancies created by personnel who have departed (including retirements). Three (3) of these vacancies will remain unfilled indefinitely. The information and statistics above are intended to give you a feel for what was accomplished this last year, but these statistics do not begin to convey the importance of the utility services provided to the citizens of Marshall by the citizens of Marshall. This local ownership yields many hometown advantages, not the least of which is having the business office right here in town and having decisions made by citizen owners.

Jeff Bergstrom
General Manager

JB/jm

TABLE A

Free Services
Fiscal Year 2023/2024

ELECTRIC:	
Steet Lighting Energy	\$ 52,413
Steet Lighting Maintenance	-
Depreciation of Street Lighting	34,211
Labor and Material Donated	6,903
Marshall-Saline Development Corp.	30,000
Utilities Donated to City	103,579
	227,106
WATER:	
Fire Hydrant Maintenance	3,037
Depreciation of Fire Hydrants	6,762
Labor and Material Donated	10,154
Utilities Donated to City	35,059
	55,012
WASTEWATER:	
Labor and Material Donated	152
Utilities Donated to City	15,633
	15,785
IT BROADBAND:	
Labor and Material Donated	464
Utilities Donated to City	12,240
	12,704
TOTAL	
	\$ 310,607

Payments in Lieu of Taxes

Electric Transfers to City General Fund	\$ 1,552,146
Water Transfers to City General Fund	203,424
	\$ 1,755,570

TABLE B

Operating Statistics

	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Average # Elec. Customers	5,935	5,949	5,979	6,018	6,023
Average # Water Customers	4,998	5,025	5,024	5,110	5,133
Average # IT Broadband Customers	2,971	3,266	3,543	4,004	4,227
Average Residential Bill (monthly)					
Water	\$32.02	\$31.82	\$32.13	\$31.89	\$31.25
Electric	\$101.68	\$94.05	\$95.22	\$91.49	\$97.86
Wastewater	\$37.18	\$37.13	\$39.29	\$41.71	\$42.02
IT Broadband	\$36.06	\$36.82	\$38.68	\$37.33	\$37.90
Uncollectable (Bad Debts)	\$86,943	\$83,053	\$65,570	\$90,207	\$115,275
Customers Assisted	536	677	538	1026	1324
MVCAA	\$67,866	\$94,588	\$124,623	\$156,669	\$113,374
Other*	\$30,087	\$17,735	\$0	\$95,727	\$129,586
Peak Day Water (on production)	10/14	10/19	7/7	6/5	10/2
(1,000,000 gal.)	4.09	4.42	4.71	4.95	4.77
Water Sold (1,000,000 gal.)					
Residential	205	204	209	219	211
Commercial	56	59	59	57	55
Small General	37	43	51	41	41
Large General	59	63	59	60	52
Industrial	216	229	233	218	237
Wholesale	223	228	208	251	219
TOTAL	796	826	819	846	815
Total Annual Water from Wells	870	909	855	868	881
(1,000,000 gal.)					
Water % Losses	8.46%	9.21%	4.25%	2.61%	7.57%
Tons Waste Lime (land applied)	0	44	900	214	4,946
# Acres	0	44	0	79	1,533

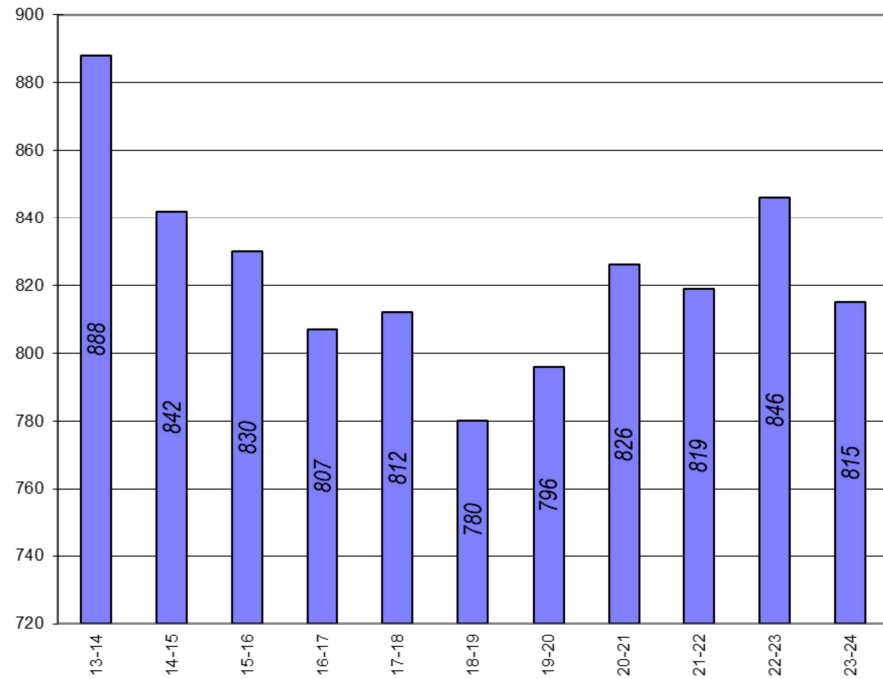
*Includes churches and Salvation Army.

TABLE B - Operating Statistics (cont.)

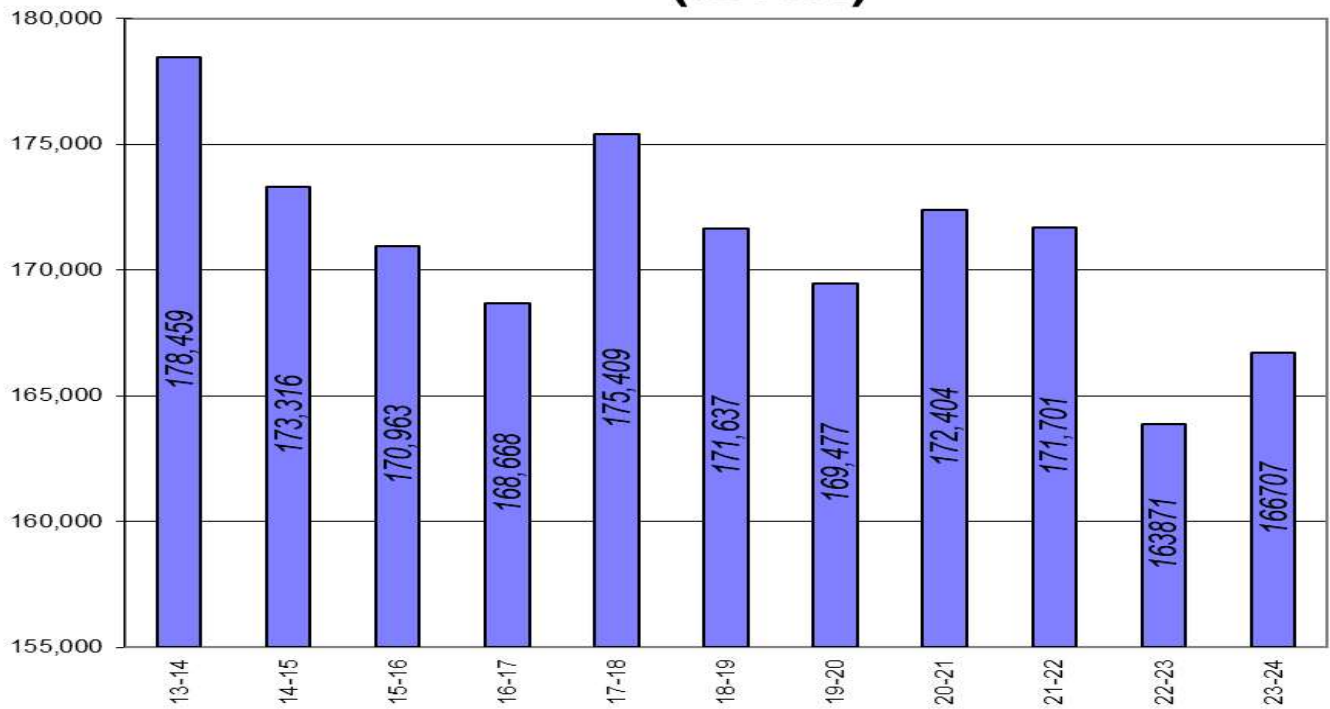
	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Peak Day Wastewater	23-Mar	30-Jun	23-Mar	16-Aug	5-Jul
(1,000,000 gal.)	7.88	11	5.87	5.69	8.06
Total Annual Wastewater	1,002	1,113	771	738	937
(1,000,000 gal.)					
Tons Wastewater Sludge	420	350	335	200	409
# Acres	710	466	430	730	730
Golf Course Irrigation Water 04-000429-01					
(1,000,000 gal.)					
Potable	6,412	6,687	7,589	5,997	3,368
Peak Load KW	35,730	37,781	36,790	38,666	37,320
Date	8/25	8/11	6/16	8/24	7/31
MWH sold					
General Lighting - Included in below in 2022.	114	104	74	0	0
Residential	50,051	49,850	51,446	50,851	50,473
Commercial	13,832	12,982	13,243	12,893	12,132
Small General	17,014	18,263	16,081	15,388	17,205
Large General	24,914	25,526	30,870	29,290	22,080
Industrial	63,191	65,276	60,451	54,796	64,205
Interruptible - Included with SM General in 2022.	78	65	36	0	0
Area Light	283	203	114	115	90
Street Lights - Split out from above in 2022.	0	0	0	538	522
TOTAL	169,477	172,269	172,315	163,871	166,707
Total MWH Purchased	174,416	179,030	174,431	167,427	169,555
Total MWH Generated *	1,141	11,840	7,341	1,885	403
% Losses	2.18	3.71	1.62	2.12	1.68
Natural Gas Burned (MCF)	16,685	144,803	106,383	21,353	3,276
#2 Fuel Oil Burned (gal)	2,855	263,088	6,704	5,591	4,836
Paper Sold (tons)	194	172	175	67	178
Cardboard Sold (tons)	3,804	2,706	429	172	396

* Beginning in June 2006, all energy generated is sold to MoPEP.

WATER SALES (MIL GAL)



ELECTRIC SALES (MWH)



Fiscal Year 2023/2024

	<u>ELECTRIC</u>	<u>WATER</u>	<u>SEWER</u>	<u>INTERNET</u>	<u>GAS</u>	<u>TOTAL</u>
Fund Balance (10/1/23)*	\$ 9,491,253	\$ 3,094,911	\$ 4,398,206	\$ 2,340,864	\$ 343,219	\$ 19,668,453
Revenues	\$ 20,061,406	\$ 4,450,549	\$ 3,924,689	\$ 2,400,475	\$ 300,646	\$ 31,137,765
Disbursement:	\$ 19,948,102	\$ 7,160,639	\$ 4,437,393	\$ 2,946,418	\$ 55,473	\$ 34,548,026
Net Transfers	\$ 186,006	\$ (290,202)	\$ 505,144	\$ (200,948)	\$ (200,000)	\$ -
Fund Balance (9/30/24)*	\$ 9,790,563	\$ 94,619	\$ 4,390,646	\$ 1,593,973	\$ 388,392	\$ 16,258,192
Investments (9/30/24)	\$ 2,921,816	\$ -	\$ 245,000	\$ -	\$ -	\$ 3,166,816

* Includes Investments

TABLE D

Water, Wastewater, and IT & Broadband Debt
(Subject to interest rate change semi-annually)

Estimated payments due for year ending:

Principal & Interest	Water	Wastewater	IT Broadband
9/30/2025	\$ 324,273	\$ 788,504	\$ 322,231
9/30/2026	\$ 162,136	\$ 788,504	\$ 322,231
9/30/2027	\$ -	\$ 788,504	\$ 322,231

TABLE E-1

Cash and Investments
9/30/2024

	<u>TOTAL</u>	<u>CASH</u>	<u>INVESTMENTS</u> <u>(at cost)</u>
ELECTRIC			
Operating	3,956,614	3,956,614	-
Consumer Deposits	705,526	705,526	-
Equipment Reserve	3,913,382	991,566	2,921,816
Genset Reserves	287,308	287,308	-
Interdepartment Loan Fund	785,641	785,641	-
Economic Development	150,000	150,000	-
	<u>9,798,471</u>	<u>6,876,655</u>	<u>2,921,816</u>
WATER			
Operating	32,826	32,826	-
Water Reserve	61,793	61,793	-
	<u>94,619</u>	<u>94,619</u>	<u>-</u>
WASTEWATER			
Operating	690,424	690,424	-
Inflow & Infiltration	2,016,742	1,771,742	245,000
Main Replacement	1,387,799	1,387,799	-
Equipment Reserve	295,681	295,681	-
	<u>4,390,646</u>	<u>4,145,646</u>	<u>245,000</u>
INTERNET			
Operating	983,760	983,760	-
Equipment Reserve	610,212	610,212	-
	<u>1,593,972</u>	<u>1,593,972</u>	<u>-</u>
NATURAL GAS			
Operating	382,312	382,312	-
Equipment Fund	6,080	6,080	-
	<u>388,392</u>	<u>388,392</u>	<u>-</u>
	\$ 16,266,100	\$ 13,099,284	\$ 3,166,816

TABLE E-2
(Detail of Table E-1)

Investments
9/30/2024

	<u>COST</u>	<u>FACE VALUE</u>	<u>% YIELD</u>
ELECTRIC (Wood & Huston) 12/5/2024	\$ 2,921,816	\$ 3,000,000	5.366%
WASTEWATER (Community Bank) Certificate of Deposit 12/17/2024	\$ 245,000	\$ 245,000	2.75%
	<u><u>\$ 3,166,816</u></u>	<u><u>\$ 3,245,000</u></u>	

MMU RECYCLE CENTER

	<u>9/30/2024</u>
Operating Revenue	
Sales - Cardboard	\$ 44,061
Sales - Mixed Paper	9,910
Sales - Other	<u>9,928</u>
	63,899
 Operating Expense	
Salaries & Benefits	75,109
Utilities	15,969
Maintenance	6,665
Supplies	14,297
Depreciation	<u>20,739</u>
	132,779
 Net Income Surplus (Deficit)	 <u><u>\$ (68,880)</u></u>