

MARSHALL MUNICIPAL UTILITIES
ANNUAL REPORT
2018/2019

TO: Board of Public Works
City Council

January 2, 2020

This annual report summarizes many of the accomplishments and improvements to Marshall's publicly owned utility systems during the fiscal year ending September 30, 2019. Many of the accomplishments made in 2019 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 governed by a 4 member Board of its customer/owners who 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.

The top story for fiscal year 2018/2019 is completion of a second 161kv tie (emergency tie) on Marshall's transmission system. This project began in 2017 and was triggered by the retirement of MMU coal fired generation. The project involved constructing approximately 4,500 feet of new 161kV transmission line, removal of 21,000 feet of old transmission line, a switching tower and was completed in August, 2019. We now have connections to Central Electric Power Coop and Evergy (formerly KCPL). This project will greatly improve the reliability of electric service to Marshall and its customers well into the future.

The second top story for of 2018/2019 is the formation of the Information Technology and Broadband department. MMU began offering fiber to the home broadband services following BPW approval in 2005 and service has grown to over 2,900 customers in 2019. In order support the continued growth in Marshall and surrounding areas the decision to form a separate department was made. MMU is now better positioned to maintain and expand broadband in the community of Marshall and the surrounding area.

The third top story is the dispatching/ operation of Marshall's gas turbine, Unit #6. This unit is entered as a resource in the Southwest Power Pool (SPP) and is dispatched by SPP for both reliability and economic issues. Records were set for all-time consecutive run hours (103), total annual run hours (454) and kilowatt hours generated (6,082,920) in 2019.

Also occurring in 2019 was a change in how our generation capacity and energy is paid by MoPEP. Energy payments changed to a cost plus method for fuel and we saw an increase in capacity payments for all units. Maintenance items for market units were submitted and approved by SPP. This will allow us to collect money for maintenance items that can be tied to run hours from the market (SPP). MMU and MoPEP had been covering these costs in the past.

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 and wastewater treatment, giving due consideration to conservation and environmental impacts; plan for the future to assure adequate resources with progressive but sound economic reasoning.

The following bulleted points provide a glimpse of some of the accomplishments and operations during this past year.

Wholesale Energy

MoPEP wholesale energy in fiscal year 2018/2019 averaged approximately \$68.00/mw. Compared to fiscal year 2017/2018, wholesale energy went up approximately \$2.25/mw. Most of the increase was due to lower consumption by our customers due to the cooler weather we experienced last year. Forecast energy prices by MoPEP management for this coming year are between \$68 - \$69/mw.

Electric Distribution

This is a summary of the accomplishments of the Electric Distribution Department for the fiscal year 2018/2019.

- Overhead to Underground Projects: The crews completed the overhead to underground project between Briarwood and N. Lake Dr. We buried approximately 3,500 ft of primary and secondary lines along with 26 house services.
- Street/Area light Conversion: We are continuing the conversion of high Pressure Sodium Street and Area lights to new LED fixtures. We installed 553 new LED fixtures in 2018/2019 bringing the total to approximately 2,434 new LED fixtures installed since the beginning of the project.

Miscellaneous:

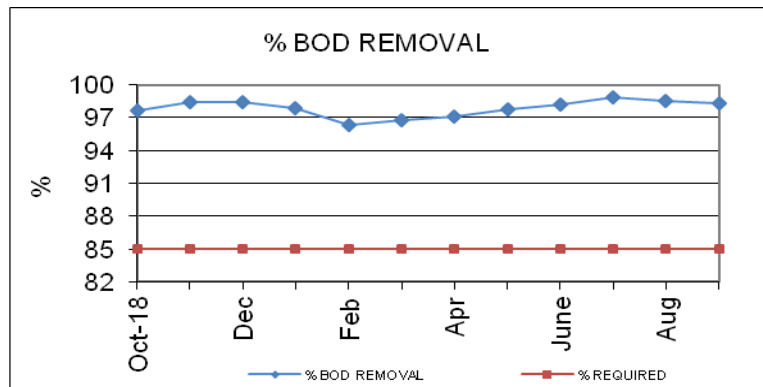
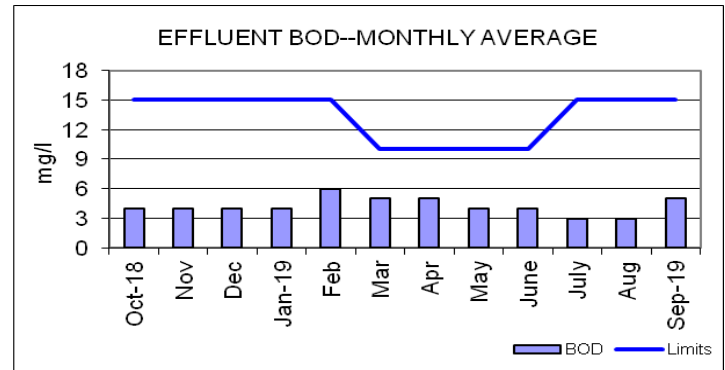
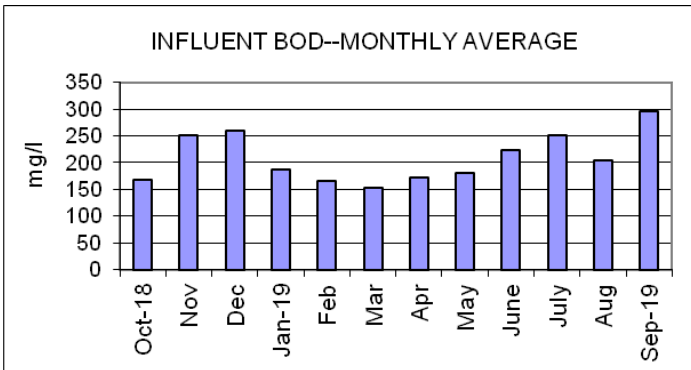
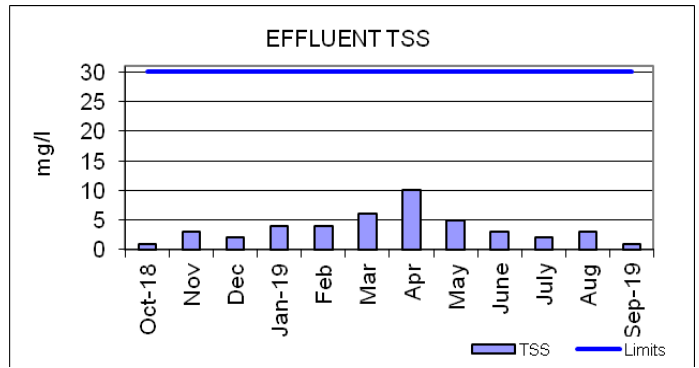
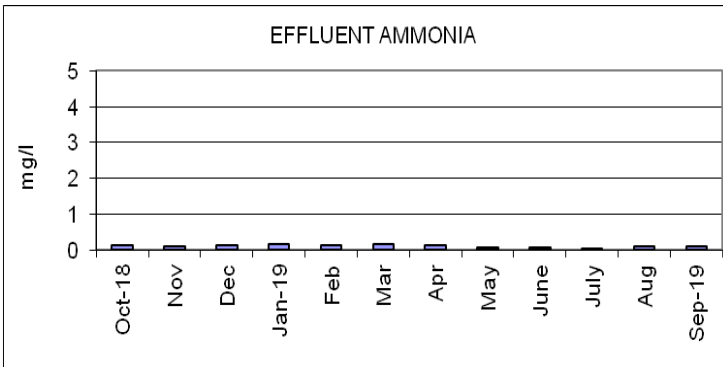
- Replaced or installed new 83 utility poles.
- Replaced underground feeders 207 and 208 at Miami Sub.
- Completed the three phase line extension to feed the old Hab. Center property. We installed 7 new poles and pulled in 1,700' of primary along with street lighting.
- Moved the electric service at the Hoot house and the Tudor house from the old Hab. Center distribution system to feed off MMU. We are currently working on moving the Spainhower building to feed off MMU then we will be able to de-energize the old Hab. Center distribution system and abandon it.
- We installed new electric services to the new RV Park located on W. Vest, the Walker Fletcher Athletic Complex at Missouri Valley College, and the new Bayer building at the Industrial Park.
- Assisted the City in removing several trees located at the old Hab. Center Property and along College St. for the sidewalk project.

Water Treatment Plant

- The plant produced 844,097,000 gallons of water down from 875,351,276 gallons in FY18. The daily average produced was 2.31 million gallons per day.
- We published and posted the annual consumer confidence report for 2018.

Wastewater Treatment Plant

- The plant treated 1,002,734,000 gallons of wastewater, an approximate 32% increase from the 757,942,000 gallons for FY 17/18. We applied roughly 319 tons of sludge to local farmland.
- Following are charts showing the wastewater treatment plant's effluent sampling results for FY 18/19 computed against the effluent limits set by DNR.
- Worked on Pre-treatment ordinance. Work started in 2015, but should be complete in early 2020.



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

- One of the big accomplishments in Electric Production was the completion of our bi-annual capacity test. This test consists of running all units at maximum load for two hours at the same time to determine our generating capacity. The amount of our generating capacity determines the amount of our monthly capacity payment. Our previous total generation was 29 megawatts. On our recent bi-annual test we generated 30 megawatts. The additional 1 megawatt will add a significant amount to our monthly capacity payment over the next two years.
- Another improvement was the addition of an AMOT valve to our unit 6 lubricating oil system. Unit 6 was used mainly for peaking during the heat of the summer. Recently it has been dispatched often during the coldest days of winter as a winter peaking unit. The oil temperature was greatly compromised during winter starts because the oil cooler sets outside which caused several issues. The addition of an AMOT thermostatically controlled valve resolved these issues. The AMOT valve circulates the warm oil and gradually opens as the oil heats introducing the cold oil into the system slowly maintaining a very consistent oil temperature making cold weather starts a lot less problematic.

Recycle:

- A new GEHL R165 skid steer loader was purchased using a 15% matching grant from the West Central Missouri Solid Waste Management District Region F.
- The old metal halide lighting was replaced with much brighter energy efficient LED lighting.
- The antiquated GE controls were replaced with new Direct Logic PLC components on the American auto-tie baler.
- Dock locks and dock levelers were installed on the dock at the Recycle Center. This was a big safety improvement.

Underground Facilities

- Approximately 11,000 feet of sewer main was reconditioned with cured-in-place pipe (CIPP) method. This type of trenchless main replacement consists of a flexible, resin saturated fabric liner that is installed inside the old main. The liner takes the shape of the old pipe and is cured with hot water or steam. There were different sections throughout the collection system. In some of the areas the mains were located in backyards in an easement. To replace the mains in these areas by the traditional open excavation method would take many months to complete. The main liner should last for 50 years and possibly up to 100 years. This was the twelfth year that repairs were made to the collection system using the CIPP method.
- Inspection and cleaning of the sewer mains continue throughout the collection system. Water from a high pressure sewer cleaner was used to clean over thirteen miles of sewer main. The sewer camera was used to videotape over sixteen miles 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.
- MMU personnel have also made thirty-four sewer main repairs this last year. There were eight new water services installed.
- Improvements and maintenance in the wastewater collection system are an on-going process. A sewer main replacement project was completed on North Ellsworth from High Street to Ohio Street. The existing 6" clay main was in poor condition and unable to be cured-in-place. The project consisted of approximately 700' of 8" PVC sewer main and two new precast manholes.
- A second sewer main replacement project on West Jackson St was completed in October of 2019. The existing 6" clay was in poor condition and unable to be cured-in-place. The project consisted of approximately 380' of 8" PVC sewer main and one new precast manhole.

- During the Missouri Public Service Commission's (PSC) annual inspection of MMU's 20 miles of 10" high pressure natural gas transmission line, it was discovered that the Panhandle Eastern natural gas lines were negatively affecting the cathodic protection of MMU's line at two separate locations where lines crossed. Panhandle installed 8 anodes at both locations and a data measuring probe to remedy this interference. The readings have shown the problem is cured.
- A new water main project was completed in the spring of 2019, on the campus of Missouri Valley College on East Morrow Street. The project consisted of three segments of 8" PVC (C900) water main, totaling approximately 1,500' and three new fire hydrants. This main eliminated two dead ends and provides service to new construction on the MVC campus.
- MMU has approximately 100 miles of distribution mains, some of which are over 100 years old. Last year we had a total of 15 main failures in the distribution system and 6 on the transmission line. 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.

Broadband and Internet Department

This department was split off from Administrative Services into its own department this year. It includes the computer group, which handles technical support for internal needs and for internet customers, as well as the fiber group, which takes care of installing and maintaining our fiber optic system.

- Added approximately 250 customers
- Converted overhead to underground in areas where Electric Distribution had installed conduit
- Made service available to Buttonwood Apartments. Service is now available almost everywhere in the city limits. Exceptions include two trailer parks, a handful of multi-tenant buildings (residential or commercial) where we don't have permission from the owner yet and a couple small areas that are in the city limits, but not in our electric service area.
- Applied for a federal grant to pay for half the cost of extending service into areas in the county adjacent to Marshall, including fiber to the Water Treatment Plant

Administration/Public Relations

Communicating with our customer owners and getting involved with the community is becoming more important than ever. With all of the social media platforms it is critical that Municipal Utilities participate and provide accurate information to their community. MMU took several steps in 2019 to engage customers in the community and provide a presence on social media. This effort should be continued and expanded as we move forward.

- MMU launched a Facebook page in the fall of 2019. This will provide an additional way to provide accurate information and communicate with our customers.
- Staff attended KMMO Homeshow as an opportunity to interact with customers and provide information about MMU.
- Held first Public Power Week event at Marshall Power Plant. The event was well received and had close to 100 people in attendance.

HR/Personnel

In fiscal year 2019, a total of 11 people were hired. All 11 people were hired to fill vacancies created by departing personnel. During the year, four people were hired for Underground Facilities (3 General Maintenance/Meter Readers and 1 GIS/Records Associate), two for Administrative Services (Bilingual Customer Service Rep and Controller), two for Water Treatment (Plant Superintendent and Operator), one for Electric Distribution (Lineman), one for Electric Production (Custodian), and one for IT & Broadband (IT Support). The IT & Broadband department was created in February 2019 and included the restructuring of several positions in

order to better serve technology needs. Prior to the creation of the department, existing IT and fiber personnel were part of the Administrative Services department. This restructuring included the elimination of two Administrative Services positions (one Meter Reader and one part-time Janitor). Each of these positions were already vacant due to departing personnel. At year's end, we have 10 vacancies created by personnel who have departed or retired. Eight of these vacancies will remain unfilled indefinitely. December 1, 2018, started year four of the HSA-qualified high deductible health plan (HDHP) the number of employees using this plan has grown to 82%, in lieu of the traditional PPO option.

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 2018-2019

WATER:

Fire Hydrant Maintenance	\$	3,764
Depreciation of Fire Hydrants	\$	6,724
Labor and Material Donated	\$	7,966
Utilities Donated to City	\$	<u>41,570</u>
	\$	60,024

ELECTRIC:

Street Lighting Energy	\$	95,991
Street Lighting Maintenance	\$	2,125
Depreciation of Street Lighting	\$	34,771
Labor and Material Donated	\$	12,086
Marshall-Saline Development Corp.	\$	30,000
Utilities Donated to City	\$	<u>132,943</u>
	\$	307,916

WASTEWATER:

Utilities Donated to City	\$	<u>17,660</u>
	\$	17,660

INTERNET:

Utilities Donated to City		<u>6,172</u>
		6,172

		<u>=====</u>
TOTAL	\$	391,772

Payments in Lieu of Taxes

Water Transfers to City General Fund	\$	191,108
Electric Transfers to City General Fund	\$	<u>1,788,628</u>
	\$	1,979,736

TABLE B

Operating Statistics

	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
Average # Elec. Customers	5,933	5,949	5,957	5,934	5,919
Average # Water Customers	4,933	4,957	4,974	4,980	4,984
Average # Internet Customers	1,456	1,821	2,131	2,403	2,691
Average Residential Bill (monthly)					
Water	\$27.48	\$29.92	\$30.45	\$31.03	30.79
Electric	\$92.91	\$98.93	\$95.72	\$105.05	101.22
Wastewater	\$37.84	\$37.60	\$37.31	\$37.25	37.23
Uncollectables (Bad Debts)	\$60,930	\$77,665	\$69,528	\$79,395	\$66,058
Customers Assisted	456	474	500	474	434
MVCAA	\$49,956	\$68,433	\$59,634	\$66,072	\$62,016
Other*	\$15,430	0	0	0	0
Peak Day Water (on production)	8/13	8/20	6/13	8/14	7/20
(1,000,000 gal.)	5.37	4.75	4.65	4.7	4.7
Water Sold (1,000,000 gal.)					
Residential	209	216	211	214	201
Commercial	68	59	64	72	54
Small General	44	42	42	44	40
Large General	48	54	58	54	50
Industrial	234	212	201	201	215
Wholesale	239	243	231	227	220
TOTAL	842	830	807	812	780
Total Annual Water from Wells	927	913	886	885	869
(1,000,000 gal.)					
Water % Losses	9.17	9.10	8.92	8.25	10.24
Tons Waste Lime (land applied)	2,300	0	7,693	7,326	0
# Acres	1,040	0	3,847	3,240	0

*Includes churches and Salvation Army.

TABLE B - Operating Statistics (cont.)

	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
Peak Day Wastewater (1,000,000 gal.)	7/9 12.03	8/1 18.31	4/30 18.88	3/20 13.53	5/25 10.31
Total Annual Wastewater (1,000,000 gal.)	1,057	1,124	861	759	1,002
Tons Wastewater Sludge # Acres	384 643	378 673	284 277	362 726	319 820
Golf Course Irrigation Water (1,000,000 gal.)					
Effluent	0	0	0	0	0
Potable	10,643	11,452	12,939	20,559	5,925
Peak Load KW Date	38,351 7/28	38,600 7/20	37,200 7/20	38,200 7/12	36,800 7/19
MWH sold					
General Lighting	138	122	100	118	125
Residential	48,121	48,439	46,684	51,929	49,848
Commercial	14,497	13,140	13,068	14,085	13,767
Small General	17,376	18,601	17,911	17,543	18,097
Large General	22,283	22,032	24,880	25,373	25,439
Industrial	70,222	67,898	65,443	65,831	64,004
Interruptible	37	38	57	80	81
Area Light	632	693	525	450	276
TOTAL	173,316	170,963	168,668	175,409	175,334
Total MWH Purchased	185,042	179,472	176,710	180,581	179,064
Total MWH Generated *	4,527	249	121	521	3,695
% Losses	6.34	4.74	4.55	2.87	2.08
Natural Gas Burned (MCF)	4,368	3,260	2,715	7,654	80,761
#2 Fuel Oil Burned (gal)	1,680	2,272	2,040	3,050	51,953
Coal Burned (tons)	2,896	0	0	0	0
Paper Sold (tons)	879	893	659	583	237
Cardboard Sold (tons)	534	544	2,324	3,086	3,558

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

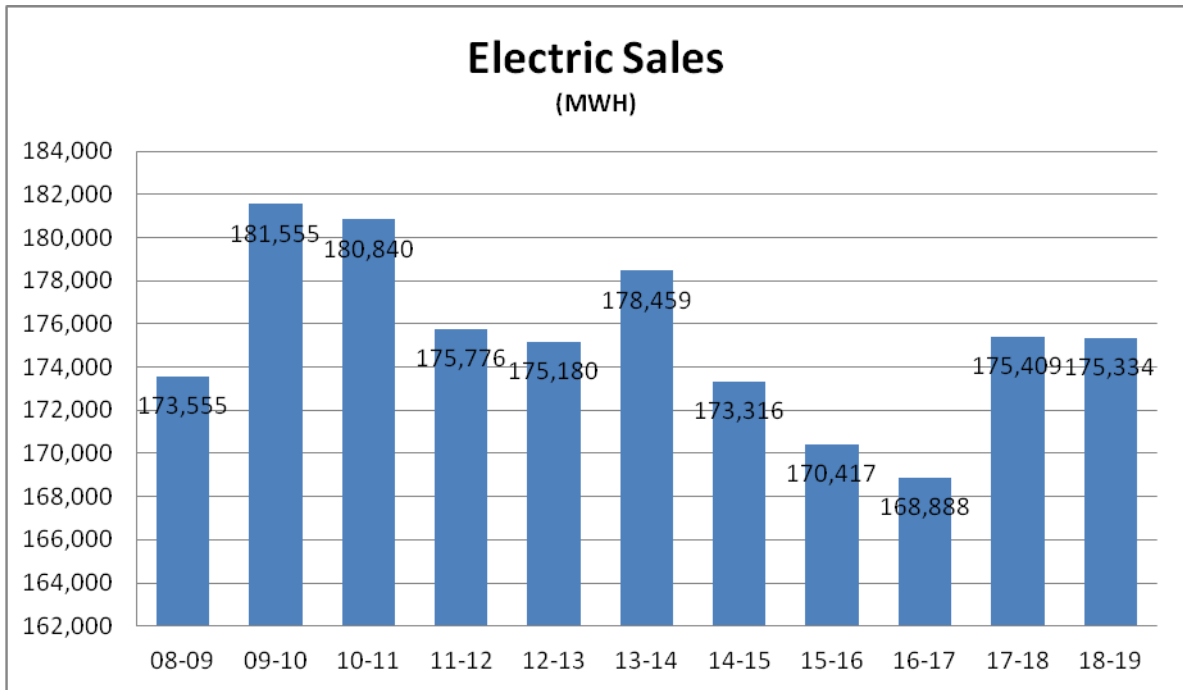
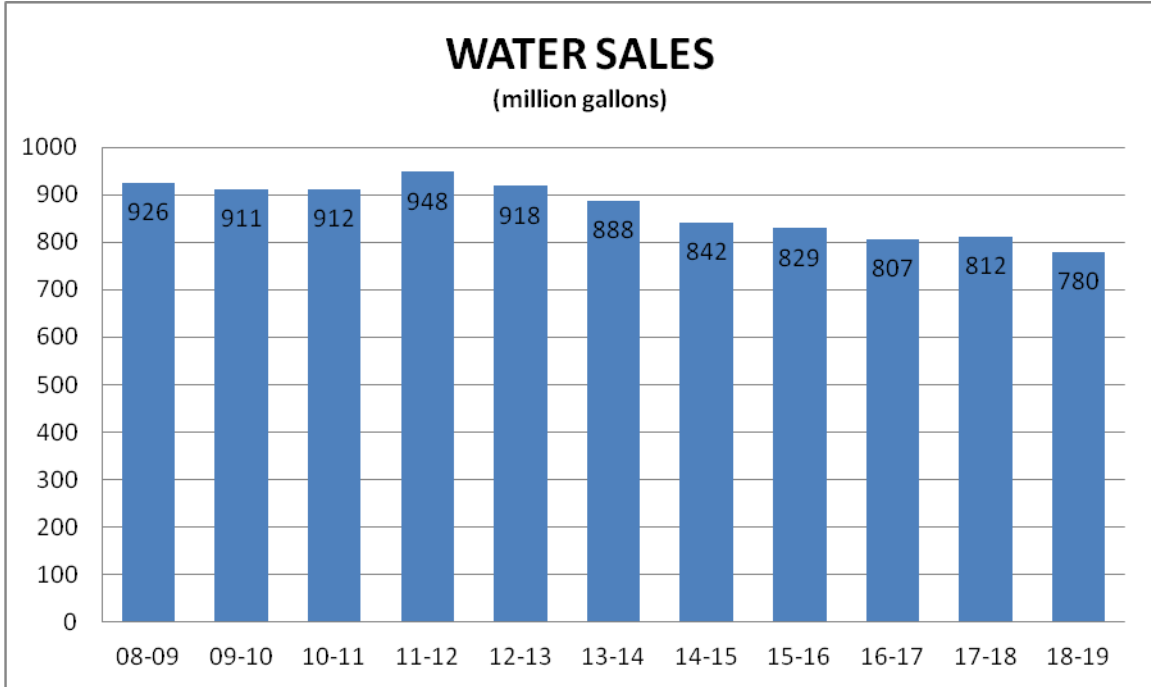


TABLE C

Cash Transaction Report

Fiscal Year 2018/2019

	<u>WATER</u>	<u>ELECTRIC</u>	<u>SEWER</u>	<u>INTERNET</u>	<u>GAS</u>	<u>TOTAL</u>
Fund Balance (10/1/18)*	\$ 1,354,428	\$ 20,516,797	\$ 2,550,696	\$ 537,090	\$ 2,869,069	\$ 27,828,080
Revenues	\$ 4,092,659	\$ 21,948,511	\$ 2,996,118	\$ 1,259,196	\$ 257,966	\$ 30,554,450
Disbursements	\$ 4,177,241	\$ 21,035,497	\$ 2,876,682	\$ 875,879	\$ 57,101	\$ 29,022,400
Net Transfers	\$ (316,179)	\$ 838,005	\$ (401,826)	\$ (120,000)	\$ -	\$ -
Fund Balance (9/30/19)*	\$ 953,667	\$ 22,267,816	\$ 2,268,306	\$ 800,407	\$ 3,069,934	\$ 29,360,130
Investments (9/30/19)	\$ -	\$ 14,834,304	\$ 1,235,541	\$ -	\$ 2,476,745	\$ 18,546,590
* Includes Investments						

TABLE D

Water and Wastewater Debt
(Subject to interest rate change semi-annually)

Estimated payments due for year ending:		
Principal & Interest	<u>WATER</u>	<u>WASTEWATER</u>
9/30/2020	\$ 309,621	\$ 367,934
9/30/2021	\$ 307,259	\$ 365,127

TABLE E-1

Cash and Investments						
9/30/2019						
						INVESTMENTS
		<u>TOTAL</u>		<u>CASH</u>		<u>(at cost)</u>
WATER						
Operating		\$ 457,936		\$ 457,936		\$ -
Water Reserve		\$ 412,536		\$ 412,536		\$ -
Insurance Reserve		\$ 500,000		\$ 500,000		\$ -
		\$ 1,370,472		\$ 1,370,472		\$ -
ELECTRIC						
Operating		\$ 5,670,168		\$ 5,670,168		\$ -
Consumer Deposits		\$ 541,365		\$ 541,365		\$ -
Insurance Reserve		\$ 5,001,566		\$ 55,661		\$ 4,945,905
Equipment Reserve		\$10,273,175		\$ 384,776		\$ 9,888,399
		\$21,486,274		\$ 6,651,970		\$ 14,834,304
WASTEWATER						
Operating		\$ 351,805		\$ 351,805		\$ -
Inflow & Infiltration		\$ 1,206,186		\$ 465,915		\$ 740,271
Insurance Reserve		\$ 500,000		\$ 4,729		\$ 495,271
Main Replacement		\$ 611,672		\$ 611,672		\$ -
		\$ 2,669,663		\$ 1,434,121		\$ 1,235,542
INTERNET						
Operating		\$ 800,407		\$ 800,407		\$ -
NATURAL GAS						
Operating		\$ 566,202		\$ 566,202		\$ -
Equipment Fund		\$ 2,504,482		\$ 27,738		\$ 2,476,744
		\$ 3,070,684		\$ 593,940		\$ 2,476,744
		\$29,397,500		\$ 10,850,910		\$ 18,546,590

Investments					
9/30/2019					
			<u>COST</u>	<u>FACE VALUE</u>	<u>% YIELD</u>
ELECTRIC (Wood & Huston)					
Treasury Bill Maturing					
1/16/2020			\$ 2,969,515	\$ 3,000,000	2.064%
Treasury Bill Maturing					
10/31/2019			\$ 4,939,460	\$ 5,000,000	2.465%
Treasury Bill Maturing					
12/12/2019			\$ 4,945,906	\$ 5,000,000	2.546%
Treasury Bill Maturing					
1/30/2020			\$ 1,979,424	\$ 2,000,000	2.090%
			<u>\$ 14,834,305</u>	<u>\$ 15,000,000</u>	
WASTEWATER (Community Bank)					
Certificate of Deposit					
12/17/2019			\$ 245,000	\$ 245,000	0.50%
Treasury Bill Maturing					
1/16/2020			\$ 990,541	\$ 1,000,000	1.920%
			<u>\$ 1,235,541</u>	<u>\$ 1,245,000</u>	
NATURAL GAS (Wood & Huston)					
Treasury Bill Maturing					
2/20/2020			\$ 2,476,744	\$ 2,500,000	1.888%
			<u>\$ 18,546,590</u>	<u>\$ 18,745,000</u>	

RECYCLING		
9/30/2019		
		<u>TOTAL</u>
REVENUE		
Cardboard		\$ 153,472
Plastic		5,959
Mixed Paper		1,751
Misc Plastic		3,581
Metal		109
Aluminum		2,443
Glass		177
		<u>167,492</u>
EXPENSES		
Supplies		8,276
Fuel		8,170
Expenses		11,561
Labor		164,892
Benefits		82,446
Utilities		10,488
Depreciation		19,519
		<u>305,352</u>
	Net Income	<u>\$ (137,860)</u>

{insert org chart}