



Consulting Engineer's Annual Report

OPERATION AND MAINTENANCE OF WATERWORKS SYSTEM CALENDAR YEAR 2019

Prepared for:

**Municipal Authority of the
Borough of Lewistown**

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TABLE OF CONTENTS

		Page
PART I:	EXTENSIONS, REPAIRS AND IMPROVEMENTS	
	A. Transmission Mains/Water Supply	1
	B. Distribution Mains	1
	C. Maintenance of Mains and Valves	3
	D. Service Lines	4
	E. Meters	5
	F. Fire Hydrants and Fire Line Service	5
	G. Filtration Plant, Intake, Water Supply and Dam Structures	6
	H. Control and Pumping Stations	6
	I. Reservoirs, Storage Tanks and Standpipe	7
	J. Fill Stations	7
	K. Automotive Equipment On Hand	8
 PART II:	 OPERATIONS	
	A. Consumers	9
	B. Use of Water	10
	C. Operating Revenues and Expenses	12
	D. Additions and Retirements – Fixed Assets and Capital	13
	E. Budget for Year 2020	15
	F. Employment and Labor Relations	16
 PART III:	 QUALITY OF WATER	
	A. Bacteriological Analysis	17
	B. Purification	17
	C. Laurel Run Filtration Plant	19
 PART IV:	 INSURANCE	
	A. Schedule of Insurances in Effect as of December 31, 2019	20
 PART V:	 ADEQUACY OF RATES AND STATUS OF FUNDS	
	A. Adequacy of Rates	21
	B. Status of Funds	23

LIST OF TABLES

	Page	
Table 1	Main Extensions Installed by Main Extension Developer's Agreements During 2019	2
Table 2	Water Supplied to Metered Consumers Over the Past 10 Years	10
Table 3	2020 Capital Budget Additions and Improvements	16
Table 4	2019 Annual Report – Colilert	18
Table 5	Schedule of Insurance in Effect as of December 31, 2019	20
Table 6	Statement of Estimated Revenues and Expenditures for the Period January 1, 2020 to December 31, 2020	21

PART I EXTENSIONS, REPAIRS AND IMPROVEMENTS

A. TRANSMISSION MAINS/WATER SUPPLY

The Municipal Authority of the Borough of Lewistown (MABL) serves residents in Mifflin County, Pennsylvania by providing potable drinking water, through a complex maze of almost 300 miles of transmission and distribution mains. MABL also provides fire protection with approximately 600 fire hydrants throughout the service area. MABL served approximately 30,000 residents in the county and maintained over 11,000 billable accounts in 2019.

B. DISTRIBUTION MAINS

Two (2) distribution mains were replaced in 2019:

- 1) Installed 2900' of 20" cement lined ductile iron pipe on Old US HWY 322, Armagh Township.
Project 125064
The cost of 2900' of installed pipe was \$495,697 (\$171/ft.)
Replaced aged and deteriorated infrastructure – 2900' of cement lined ductile iron pipe.
Transferred 45 service line connections to the installed pipe.

- 2) Installed 1300' of 6" cement lined ductile iron pipe on Fox Avenue and Lincoln Avenue, Derry Township.
Project 125011
The cost of 1300' of installed pipe was \$90,814 (\$70/ft.)
Replaced aged and deteriorated infrastructure – 1300' of cast iron pipe.
Transferred 22 service line connections to the installed pipe and installed pressure reducing valves.

Average installation costs 2019:

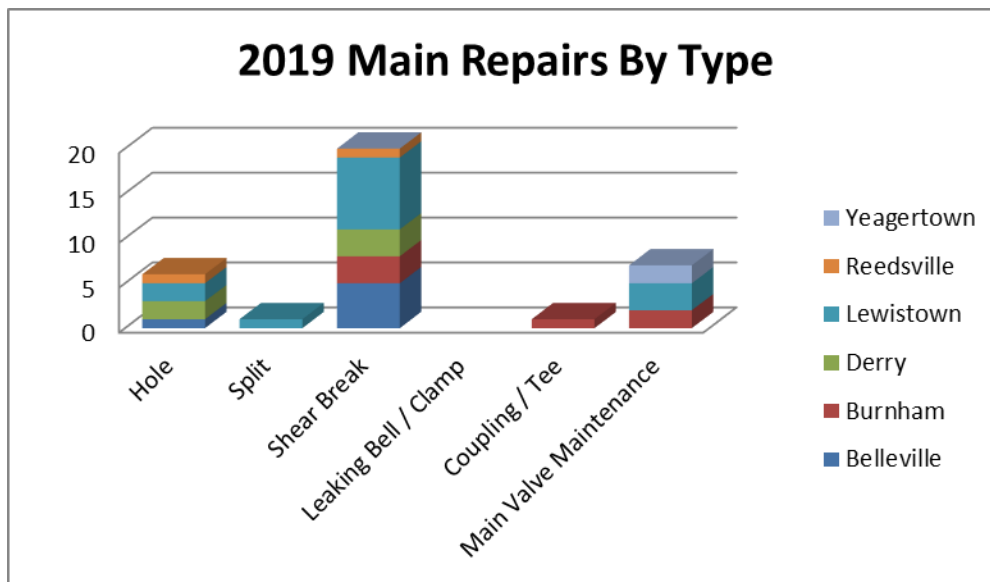
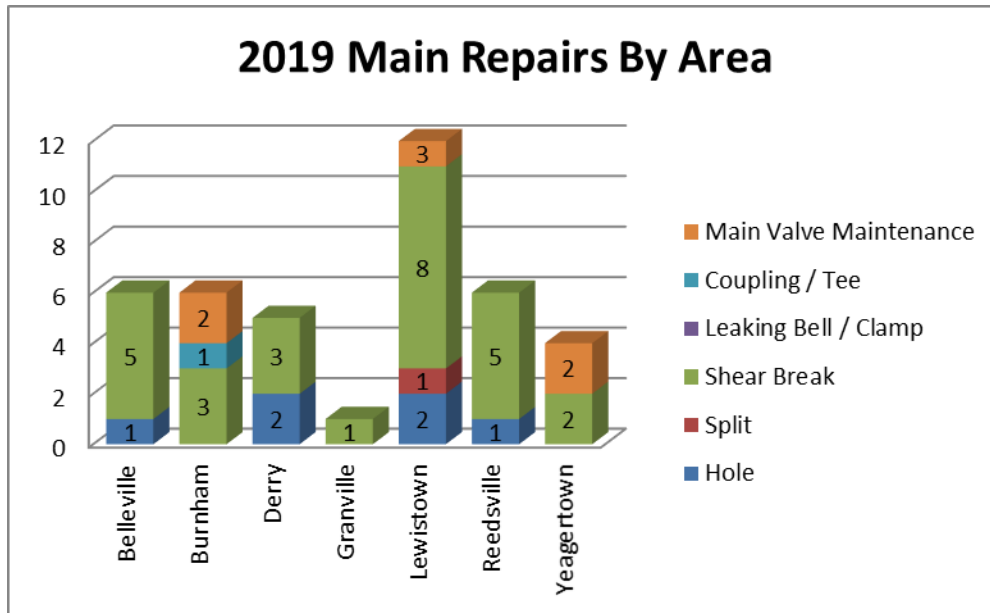
Material	\$ Cost / Foot 2019	\$ Cost / Foot Historically
2" Polyethylene	-	\$19
6" Cement Lined Ductile Iron	\$70	\$80
8" Cement Lined Ductile Iron	-	\$74
10" Cement Lined Ductile Iron	-	\$125
12" Cement Lined Ductile Iron	-	-
20" Cement Lined Ductile Iron	\$171	\$225
4" DR 18 PVC	-	\$27
6" DR 18 PVC	-	\$45
8" DR 18 PVC	-	\$48
Cement Lined Ductile Iron / Mixed DR 18 PVC	-	\$79

**TABLE NO. 1
 MAIN EXTENSIONS INSTALLED UNDER NO-REFUND AGREEMENTS
 DURING THE YEAR 2019**

<u>EXTENSION#</u> <u>NAME & ADDRESS</u>	<u>LINE SIZE</u>	<u>LENGTH</u>	<u>COST</u>
5-2016			
Central PA Clinic – CPAC, Belleville, PA	8"	2783'	\$159,097.56
1-2019			
Centre Lime & Stone Co Inc – Reedsville, PA	8"	1855'	\$179,953.76
2-2019			
Valley View Retirement Community – Belleville, PA	8"	450'	\$77,534.00
	TOTAL	5088'	\$416,585.32

C. MAINTENANCE OF MAINS AND VALVES

In addition to the preceding improvements, the following graphs summarize the repairs made by area and the type of repairs:



Maintenance and other general repairs that were completed throughout the system during the report year:

<ul style="list-style-type: none"> Semi-annual leak detection Flushing 	Entire System Entire System
<ul style="list-style-type: none"> Blow off maintenance 	Converted a 2" service to a blow off, Lewistown
<ul style="list-style-type: none"> Valve installation 	8" – 2 at S Main St bridge, Lewistown

D. SERVICE LINES

New Service Lines Installed 2019:

- 5 ¾" Copper Line
- 1 ¾" Copper Line with Meter Pit
- 1 ¾" Polyethylene Line
- 5 ¾" Polyethylene Line with Meter Pit
- 1 Meter Pit Only
- 1 6" DR18 PVC Line
- 2 8" Ductile Iron Line

Service Lines Renewed 2019:

- 4 ¾" Copper Replacing ¾" Galvanized
- 1 ¾" Copper Replacing ¾" Copper
- 6 ¾" Polyethylene Replacing ¾" Galvanized

The total expenditure of \$21,774.37 for service line installations can be categorized as follows:

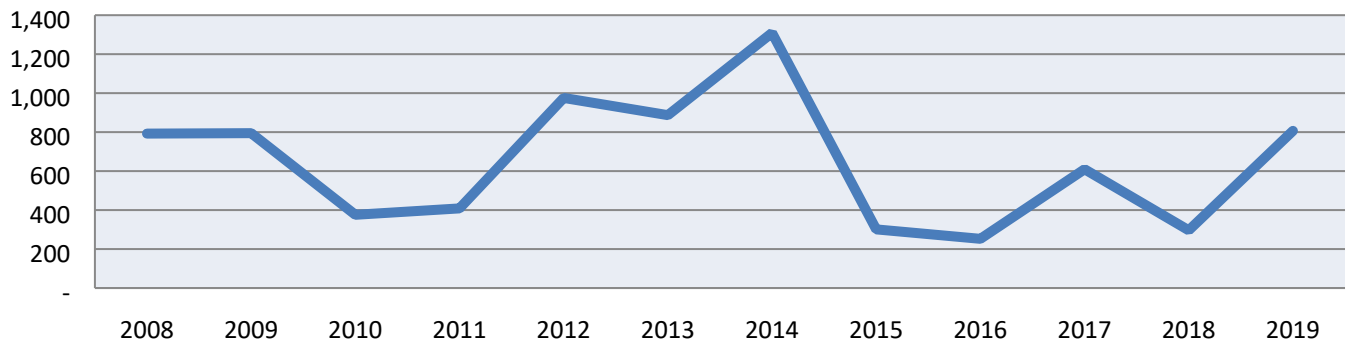
- 12,481.78 Labor
- 9,292.59 Materials, Permits, Restoration
- \$21,774.37 Total

The following tabulation shows the breakdown of the costs of Authority service lines from 2008 to 2019 inclusive:

HISTORICAL ANALYSIS OF ANNUAL SERVICE LINE COSTS

YEAR	NEW SERVICES	SERVICES RENEWED	TOTAL	TOTAL COST OF SERVICE LINES (\$)	COST OF LABOR PER SERVICE (\$)	MATERIAL & PERMITS PER SERVICE (\$)	TOTAL COST PER SERVICE (\$)
2008	26	6	32	25,357.20	335.69	456.72	792.41
2009	26	4	30	23,840.89	637.91	156.78	794.70
2010	31	12	43	16,159.35	267.88	107.92	375.80
2011	11	7	18	7,355.40	257.30	151.34	408.63
2012	16	3	19	18,532.57	409.12	566.27	975.40
2013	19	2	21	18,628.28	572.89	314.17	887.06
2014	20	7	27	35,344.84	629.14	679.93	1,309.07
2015	93	1	94	28,285.33	186.45	114.46	300.91
2016	117	7	124	31,307.75	104.68	147.80	252.48
2017	53	10	63	38,399.13	295.43	314.08	609.51
2018	29	4	33	9,775.11	232.18	64.03	296.22
2019	16	11	27	21,774.37	462.29	344.17	806.46

Total Cost Per Service 2008 - 2019



The unit cost of service line installation was \$806.46, an increase of \$510.24 or a 172% increase compared to 2018.

E. METERS

New Meters and ERT's purchased in 2019:

No. Purchased	Meter Size & Type
24	5/8 x 3/4 Badger Meter
-	5/8 x 3/4" Sensus IPerl Meter
-	5/8 x 1/2" Sensus IPerl Meter
-	3/4" Sensus IPerl Meter
-	1" M55 Badger Meter
5	1" Sensus Meter
-	2" Sensus Meter
1	3" Sensus Meter
-	6" Sensus Meter
144	100W+ Itron Pit ERT
144	Badger HR-E Register

Meters Scrapped

- 1 5/8"x1/2", 5/8"x3/4"
- 1 2" Badger
- 1 6" Badger

ERT's Scrapped:

154 Itron 50W & 60W

During 2019, there were 2009 service calls made. A 19% decrease compared to 2019.

Meter Vault Maintenance:

- Pumping as needed

F. FIRE HYDRANTS AND FIRE LINE SERVICE

Eight (8) fire hydrants were replaced:

- 2nd St & Highland Ave – Derry Township
- W 6th St & Silversand Ave – Lewistown Borough
- N Beech St & Third Ave – Burnham Borough
- S Main St & Fleming Ave – Lewistown Borough
- S Main St & Susquehanna Ave – Lewistown Borough
- Old US HWY 322 & Oak St – Armagh Township
- Old US HWY 322 & Lingle Valley Rd – Armagh Township
- Old US HWY 322 & Sims Ln – Armagh Township

Seven (7) new fire hydrants were installed:

- Lincoln Ave & Ridge Ave – Derry Township
- Fox Ave & SR 522 N – Derry Township
- Westfield Dr – Union Township
- Sheetz Dr (2) – Brown Township
- Front Mountain Rd (2) – Union Township

Twelve (12) hydrants were repaired during the report period.

G. LAUREL CREEK FILTRATION PLANT, INTAKE, WATER SUPPLY AND DAM STRUCTURES

During 2019, regular maintenance was performed at the Laurel Creek Filtration Plant intakes and dam as well as the following items:

Laurel Creek Filtration Plant

- Tested media in all four (4) filters
- Installed catwalks over filters #2 and #4
- Contact tank #1 painted by Utility Service
- Cleaned the contact segment #1 tank
- Powerwashed contact basin #2
- Backwash tank #1 re-painted (inside and outside)

Ozone Generator/Contact Room

- Installed new ozone generators, oxygen concentrators, compressors, chillers, sidestream flow and VFD pumps
- Installed a new ozone monitor on contact tank train #2

Sodium Hypo Room

- Installed three (3) new storage tanks
- Installed a new room exhaust fan
- Installed a new motor on tank exhaust fan
- Built secondary containment
- Epoxy coated walls and floors

Electrical Room

- Installed new phase loss controller and test switch

Lower Pump House

- Installed two (2) new backwash pumps

Laboratory

- Installed new benchtop turbidimeter
- Installed new benchtop spectrophotometer
- Installed a new PH probe

Other

- Pumped sludge from lagoons to drying bed

H. CONTROL AND PUMPING STATIONS

Transmission mains deliver water from the Laurel Creek Filtration Plant to twenty-three (23) individual pressure control stations located throughout the distribution system. Valve operation and flow values were recorded quarterly. Closing speeds were inspected and adjustments were made accordingly. Maintenance performed during the report year:

Hartman's Center & RT 322 – Milroy

Electric Avenue & RT 322 – Milroy

Treaster Valley – Milroy

- Replaced the 2" meter chamber

RT 322 – Milroy

- Installed a new entrance hatch

Coopers Gap – Reedsville

Tea Creek – Reedsville

Reedsville Mill – Reedsville

- Installed a new electric entrance cable

Lumber City – Reedsville

- Installed 2" master meter for Lumber City
- Replaced pressure gauges
- Cleaned the 2" pressure reducing valve and pilot controls

Bender Park – Reedsville

- Repaired the pilot control plumbing

East Belleville PRV/Altitude Valve – Belleville

Ferguson Valley Road (Police Station) – Yeagertown

Ferguson Valley Road – Lewistown

Freedom Avenue – Burnham

- Replaced the 8" pressure relief valve
- Cleaned the 3" pressure reducing valve and pilot controls
- Cleaned the 6" pressure reducing valve and pilot controls

East Lewistown Parcheytown – Lewistown
 Rolling Hills/Derry Tank – Lewistown
 Amy Lane – Lewistown
 3rd Avenue & Highland Avenue (Ort Valley) – Lewistown
 Sandy Lane – Lewistown
 Ard's Ridge – Lewistown

- Cleaned the 6" pressure reducing valve

 Helen Street – Lewistown
 West 4th Street – Lewistown
 US 22/522 N (Lowes) – Lewistown
 Industrial Park Road – Lewistown

There are four (4) pumping stations that are used to increase water pressure or to fill storage tanks. The pumping stations, the pumping capacities - gallons per minute (GPM) and maintenance for the report year:

- Route 655 Woolen Mills – Reedsville
 Capacity (GPM): 700
 - Quarterly inspection
- Mechanic Street – Belleville
 Capacity (GPM): 240
 - Quarterly inspection
- Oak Street – Milroy
 Capacity (GPM): 100
 - Quarterly inspection
- Oakridge Road – Lewistown
 Capacity (GPM): 100
 - Quarterly inspection

I. RESERVOIRS, STORAGE TANKS AND STANDPIPE

In addition, the distribution system provides water from two (2) clear well tanks and six (6) storage tanks. The tanks and their capacities are outlined below. Maintenance consisted of quarterly inspections and the following:

Location/Tank:	Capacity	Maintenance
Laurel Creek Filtration Plant Clear Well Tank #1	1,250,000	Drained and cleaned
Laurel Creek Filtration Plant Clear Well Tank #2	1,250,000	Drained and cleaned
North Walnut Street – Lewistown	2,000,000	
West End – Lewistown	1,322,000	Cleaned and inspected
Derry Township – Lewistown	250,000	
Swarey Lane – Belleville	250,000	Roof joints repaired
Juniata Terrace – Lewistown	135,000	Cleaned and inspected Installed a tank circulating mixer
Rockville – Belleville	97,000	

J. FILL STATIONS

Normal preventative maintenance and quarterly inspections were completed throughout the year at the following locations:

- Depot Street, Lewistown
- Parcheytown Road, Lewistown
 - Replaced fill station controller
- Mill Street, Reedsville

K. AUTOMOTIVE EQUIPMENT ON HAND - DECEMBER 31, 2019

YEAR	MAKE (ID #)	MILEAGE
	VEHICLES	
1998	International Dump Truck (#3-08928)	141,909
2006	Ford F350 Crew Cab (#16-53140)	RETIRED
2006	Ford Ranger (#4A-54390)	RETIRED
2007	Ford F-750 Dump Truck (#9-74129)	92,312
2008	Ford Escape (#5-12921)	93,369
2011	Ford Dump Body (#14-20023)	60,408
2013	Ford F350 Utility Body (#11-80880)	103,997
2013	Ford F150 (#1-92111)	76,072
2015	Chevrolet Silverado 1500 Crew Cab (#12-97523)	82,402
2015	Chevrolet Silverado 1500 (# 4B-96545)	66,073
2017	International Dump Truck (#8-01892)	19,354
2018	Chevrolet 3500 Utility Body (#2-61926)	18,208
2018	Chevrolet Silverado 1500 Crew Cab (#6-39602)	27,883
2018	Ford F150 (#17-93363)	11,847
2019	Ford F350 (#16-18666)	3,026
	MACHINERY	HOURS
1995	John Deere Backhoe (14263)	9,493
2006	Mustang Skid Loader	2,874
2010	Case 590 Backhoe (32401)	3,158
2013	Takeuchi 285 Excavator	1,862
2017	Mustang Excavator 350Z	354
2003	Moritz Trailer (08868)	N/A
2008	Landscape Trailer (80196)	N/A
2010	Hudson Trailer 12 Ton (00006)	N/A
2015	12 Ton Hudson Trailer (00029)	N/A
2016	Homesteader Job Trailer	N/A
	Trailer, Boat (7323018)	N/A
	Trailer Mounted Water Buffalo (13686)	N/A
	Trailer Mounted Generator	N/A

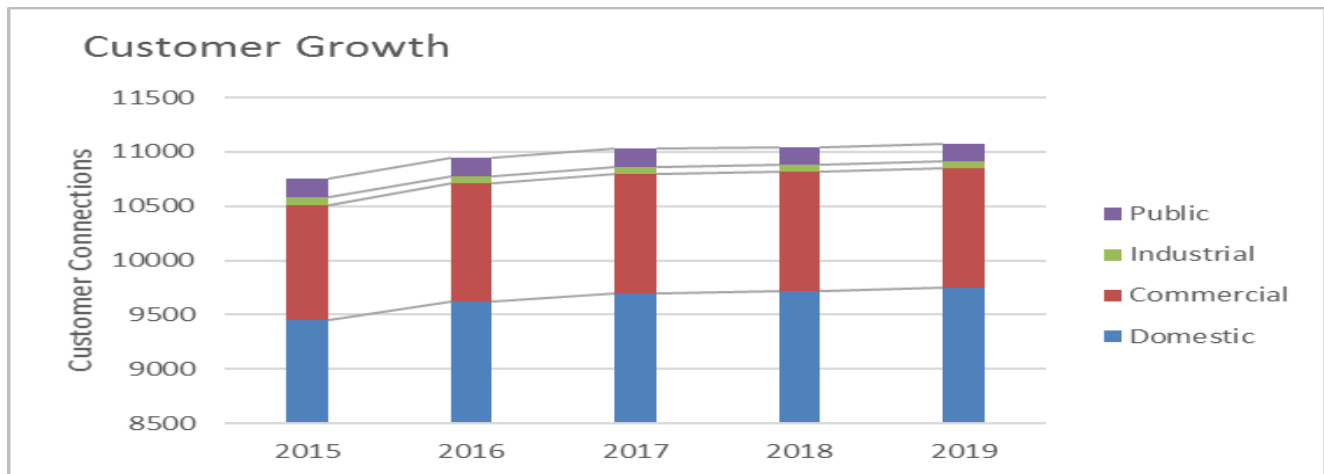
PART II OPERATIONS

A. CONSUMERS

The number of metered consumers served by the Authority totaled 11,073 as of December 31, 2019. The total number of metered consumers increased by 32 compared to 2018. Multiple dwelling units totaled 297.

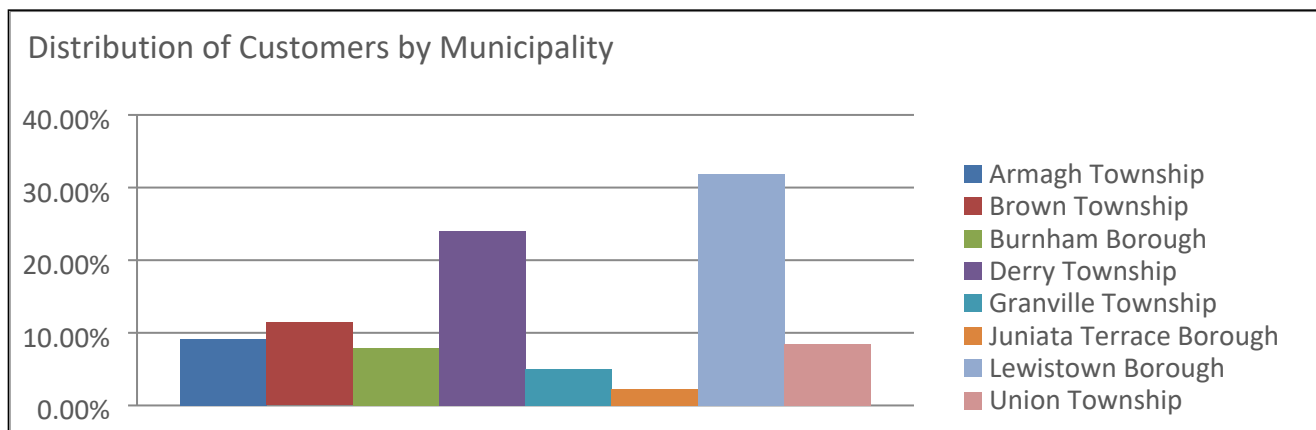
The following tabulation of metered consumers for the past five (5) years is shown for comparative purposes:

<u>Classification</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
Domestic	9,446	9,619	9,693	9,720	9,745
Commercial	1,059	1,089	1,101	1,097	1,104
Industrial	80	67	66	69	69
Public	165	169	176	155	155
TOTAL	10,750	10,944	11,036	11,041	11,073



Average Daily Water Consumption - As of December 31, 2019

<u>Customer Type</u>	<u># of Customers</u>	<u>Percentage</u>	<u>Consumption GPD</u>
Domestic	9,745	88.0%	1,036,271
Commercial	1,104	10.0%	398,329
Industrial	69	0.6%	478,537
Public	155	1.4%	74,748
Total, Existing Service Area	11,073	100.0%	1,987,885



B. USE OF WATER

The total water consumption by metered customers for the year 2019 was 725,578,000; average daily metered consumption was 1,988,000 gallons. All categories of metered consumption increased. The total industrial metered consumption increased by 12% or 18,869,000 for 2019.

The metered non-consumption water category has been added (2018). The non-consumption represents metered water used throughout the distribution system to maintain water quality.

A tabulation of the water usage by metered customers for the last 10 years (2010 - 2019) is presented in the following table.

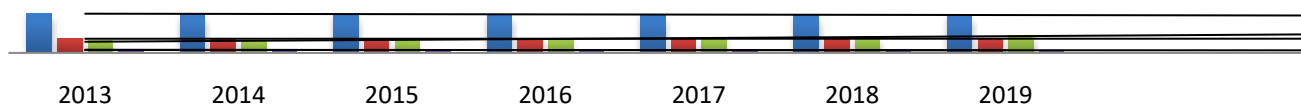
**TABLE NO. 2
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF LEWISTOWN
WATER SUPPLIED TO METERED CONSUMERS – 10 YEAR HISTORY**

METERED CONSUMPTION '000 GALS	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Domestic	378,239	373,608	379,696	383,824	377,856	382,597	393,730	397,316	406,553	467,657
Commercial	145,390	141,323	137,232	137,219	136,100	138,323	147,156	144,575	147,475	128,728
Industrial	174,666	155,797	141,671	131,192	121,319	121,782	118,716	118,028	107,186	103,253
Public	27,283	25,635	27,211	31,235	28,765	29,346	29,709	28,561	27,003	10,234
ANNUAL METERED CONSUMPTION	725,578	696,363	685,810	683,470	664,040	672,048	736,253	730,091	729,382	750,693
DAILY METERED CONSUMPTION (MGD)	1,988	1,908	1,879	1,873	1,819	1,841	1,889	1,886	1,886	1,945
METERED – NON-CONSUMPTION	43,018	39,411	-	-	-	-	-	-	-	-
ANNUAL PLANT PRODUCTION	887,175	869,002	787,699	849,859	843,760	859,195	935,775	905,884	905,077	937,419
DAILY PLANT PRODUCTION (MGD)	2,431	2,381	2,158	2,328	2,312	2,354	2,564	2,482	2,480	2,568
TOTAL METERED CONSUMPTION	768,596	735,804	685,810	683,470	664,040	672,048	783,195	771,702	770,547	791,514
UNACCOUNTED WATER (MG/Year)	118,579	133,198	101,889	166,389	179,720	187,147	199,522	175,793	175,695	186,726
UNACCOUNTED WATER (MGD)	0.325	0.365	0.279	0.456	0.492	0.513	0.547	0.482	0.481	0.512
UNACCOUNTED WATER (%)	13.37%	15.33%	12.94%	19.58%	21.30%	21.78%	21.32%	19.41%	19.41%	19.92%

Based on total finished water production at the filtration plant released to the system of 887,175,000 gallons and the total metered consumption of 725,578,000 gallons the total percentage of unaccounted for water is 13.37% or 118,579,000 gallons (0.325 MGD). Unaccounted for water is the difference between the amount of water produced and delivered from the source of supply, and the amount of metered consumption. Unaccounted for water includes unmetered uses such as hydrant flushing, firefighting, leakage from pipeline joints and broken pipes and under registration of customer meters. The acceptable standard adopted by the DEP for modern water distribution systems is 20% maximum unaccounted for water. Active water leak detection is completed semi-annually, at a minimum, as a remedy to reduce unaccounted for water.

Annual Water Consumption History 2 Year Trend Projection

■ Domestic
 ■ Industrial
 ■ Commercial
 ■ Public



Total Water Produced, Sold and Unaccounted For

Period	# of Water Customers	Water Produced 000's Gallons	Water Consumption 000's Gallons	Unaccounted for 000's Gallons	% of Loss
2007	10,629	999,871	810,045	189,826	19.0
2008	10,680	1,027,221	771,058	256,163	24.9
2009	10,709	1,012,971	732,383	280,588	27.7
2010	10,755	937,419	750,693	186,726	19.9
2011	10,728	905,077	729,382	175,695	19.4
2012	10,723	905,884	730,091	175,793	19.4
2013	10,724	935,775	736,253	199,522	21.3
2014	10,732	859,195	672,048	187,147	21.8
2015	10,750	843,760	664,040	179,720	21.3
2016	10,944	849,859	683,470	166,389	19.6
2017	11,036	787,699	685,810	101,889	12.94
2018	11,041	869,002	735,804	133,198	15.33
2019	11,073	887,175	768,596	118,579	13.37

The following tabulation illustrates changes in water consumption and the number of consumers between 2018 and 2019 and presents the average daily usage per consumer during 2019:

Classification	2018 vs. 2019 Change in Gallons	2018 vs. 2019 Change by Percent	Consumer Change 2019	2019 Avg Daily Use Per Consumer GPD
Domestic	4,631,000	1.24%	25	106
Commercial	4,067,000	2.88%	7	361
Industrial	18,869,000	12.11%	0	6,935
Public	1,648,000	6.43%	0	482
TOTAL	29,215,000	22.7%	32	

C. OPERATING REVENUES AND EXPENSES

In accordance with the Trust Indenture dated as of June 11, 1998, an operating budget of \$4,858,910 was recommended by the Consulting Engineer for the year 2019 and was adopted by the Authority Board on December 19, 2018.

A tabulation of the actual operating revenues and maintenance expenses incurred during 2019 and a comparison to the actual budget adopted December 19, 2018 is shown below. The actual revenues were under the adopted budget by \$10,717 and the operating expenses were under the adopted budget by \$294,257.

	2019 Actual Revenues	2019 Approved Budget	Over (Under) Budget
Metered	5,604,407	5,609,093	(4,686)
Unmetered	365,469	371,500	(6,031)
TOTAL	\$5,969,876	\$5,980,593	(10,717)

	2019 Actual Expenses	2019 Approved Budget	Under (Over) Budget
Water Collection System	11,299	51,200	39,901
Purification System	187,403	172,000	(15,403)
Filtration Plant	387,119	465,000	77,881
Control/Pumping Stations	45,110	43,800	(1,310)
Distribution System	357,453	416,000	58,547
Security	2,926	6,000	3,074
Timber Management	0	2,500	2,500
General & Administration	3,573,343	3,702,410	129,067
TOTAL	\$4,564,653	\$4,858,910	\$294,257

The following tabulation is a comparison between 2017, 2018 and 2019 revenues billed and the changes by dollar amount and percent:

	2017	2018	2019	Compare 2018 to 2017		Compare 2019 to 2018	
				\$\$\$'s	%	\$\$\$'s	%
Domestic	3,489,444	3,558,868	3,582,929	69,424	2.0%	24,061	0.7%
Commercial	982,879	1,024,579	1,044,563	41,700	4.2%	19,984	2.0%
Industrial	370,762	408,191	450,320	37,429	10.1%	42,129	10.3%
Public	254,465	258,134	254,896	3,669	1.4%	(3,238)	-1.3%
TOTAL	\$5,097,550	\$5,249,772	\$5,332,708	152,222	3.0%	82,936	1.6%

D. 2019 ADDITIONS AND RETIREMENTS TO FIXED ASSETS/CAPITAL

The following capital additions were recorded in 2019.

Account #	Account	Description	Itemized	Total \$
1.00.104000	Filtration Plant	Monitoring Equipment	11,378	228,583
		Cat Walk	18,726	
		Bk Wash Pumps	11,150	
		Dehumidifier (2)	7,244	
		SCADA System Upgrade	180,085	
1.00.106000	Reservoirs, Water Supply & Tanks	Milroy/McCoy Well Level Sensor	4,462	21,101
		Tank Mixer (2)	15,725	
		West End Tank Matl	914	
1.00.108000	Chemical Treatment Plant	Treatment Tank	608	1,777,585
		Containment Tanks	7,866	
		Ozone Upgrade	1,769,111	
1.00.110000	Control Facilities & Equipment	4" CLA Valve	4,389	4,389
1.00.113000	Distribution Mains	Lincoln Ave - Lewistown	82,141	571,084
		Old US Hwy 322 20" Main - Milroy	482,688	
		Central PA Clinic Connection Matl - Belleville	3,273	
		Dutchess St - Reedsville	906	
		Taylor Dr - Reedsville	2,076	
1.00.114000	Service Lines 3/4"	Labor/Material & Supplies	11,839	11,839
1.00.114020	Service Lines >1"	Labor/Material & Supplies	9,935	9,935
1.00.115000	Meters	New Meters 5/8 x 3/4"	1,458	31,929
		New Meters 1", 2" or Larger & Installation Matl	7,597	
		Badger HRE Registers	10,891	
		Itron ERTs	11,983	
1.00.116000	Fire Hydrants	New System Hydrants	43,365	43,365
1.00.119000	General Office Equipment	Board Room Chairs	1,251	1,251
1.00.120000	Other General Equipment	2019 Ford F350 & Accessories	34,894	88,886
		Fill Station Controller	5,650	
		Magnum Pump	44,396	
		Line Locator	3,946	
		Total		2,789,947

The following fully depreciated items were recorded as of 12/31/19 per policy. The assets have been removed from service or retired after five (5) years of full depreciation.

Account - Description	Asset Retired	Depreciation \$	Gain/(Loss)
1.00.106000 - Reservoirs Water Supply & Tanks	Reservoirs & Water Supply	718	0
1.00.108000 - Chemical Treatment Plant	KWH Meters for Ozone	2,091	0
	Materials & Supplies	4,940	0
1.00.110000 - Control Facilities & Equipment	Materials & Supplies	4,277	0
1.00.113000 - Distribution Mains	1963 & 1964 Additions	46,656	0
	Materials & Supplies	39,560	0
1.00.114000 - Service Lines 3/4 Inch	1972, 1973, 1974 Additions	59,816	0
	Materials & Supplies	14,641	0
1.00.114100 - Service Lines 1 Inch	Materials & Supplies	619	0
1.00.115000 - Meters & Meter Boxes	Meters	23,040	0
	Materials & Supplies	22,137	0
1.00.116000 - Fire Hydrants	Labor, Materials & Supplies	6,002	0
1.00.119000 - General Office Equipment	Office Equipment	822	0
1.00.120000 - Other General Equipment	Equipment	3,546	0
	2006 Ford Ranger	18,739	0
	2006 Ford F-350	32,028	0
TOTAL VALUE:		\$279,632	0

E. BUDGET FOR YEAR 2020

In compliance with the Trust Indenture, an operating budget for the year 2020 was submitted on December 18, 2019. The budget with a 0% increase was adopted by the Authority on December 18, 2019 and submitted to the Trustee, Bank of New York Mellon as follows:

<u>REVENUES</u>		
Metered	5,596,607	
Unmetered	384,500	
Total Revenues:		\$5,981,107
<u>OPERATING EXPENSES</u>		
Water Collection System	51,200	
Purification System	182,000	
Filtration Plant	507,000	
Control Stations	43,800	
Distribution System	416,000	
Security	8,000	
Timber Management	2,500	
General Expenses	3,527,126	
Total Operating Expenses:		\$4,737,626
<u>MANAGEMENT EXPENSES</u>		
Board Salaries & Expenses	16,200	
Consulting Engineer Fees	73,000	
Legal Services	35,000	
Audit Fees	65,000	
Total Management Expenses:		\$189,200
Total 2020 Operating Budget Expenses:		\$4,926,826

The operating budget for 2020, which according to the Trust Indenture must be prepared prior to the closing of the books for the previous year, shows an increase of \$67,919 compared to the operating budget for the year 2019. For 2020, the interest expense and depreciation has been added to the operating budget.

**TABLE NO. 3
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF LEWISTOWN
2020 CAPITAL BUDGET ADDITIONS AND IMPROVEMENTS**

General Equipment		
F350 Truck w/Utility Body (#11)	45,000	
F150 Truck (#1)	33,000	78,000
Control Facilities and Equipment		
South Hills Pump Station	25,000	25,000
Filtration Plant		
Lab Refrigerator	3,500	
Sump Pit (Concrete Lagoon)	5,000	
Monitoring Equipment	15,000	
Lab Counter and Sink	6,000	
Engineering/Design - PLC Replacement	125,000	
Beck Acuators	100,000	
Sed Basin Planning/Design	10,000	264,500
Reservoirs Water Supply and Storage Tanks		
VFD's - McCoy Wells	30,000	
Tank Mixer (Belleville Tank)	7,000	37,000
General Office Structure		
Office Renovation Plan	25,000	25,000
General Office Equipment		
Office PC / Printer	2,500	
Itron Field Collection System (FCS)	15,000	17,500
Fire Hydrants		
Fire Hydrants	35,000	35,000
Mains		
Mann Ave - Ferguson Valley Rd to 4th St and N Main St 2800'	100,000	
8" RR crossing at Granville Twp to Juniata Terrace 1200'	150,000	250,000
Meters		
Meters and ERT Replacements	55,000	55,000
	TOTAL	787,000

F. EMPLOYMENT AND LABOR RELATIONS

The following table shows the Authority employees by classification as of December 31, 2019:

Classification	Total Employees	Employees Represented by AFSCME Local 213
Administrative/Service	7	2
Filter Plant	7	5
Distribution	9	5
TOTAL	23	12

The Authority has not experienced a labor union strike since 1976. Current union relations are characterized as very good. The current contract with the Union expires on December 31, 2022.

PART III QUALITY OF WATER

A. BACTERIOLOGICAL ANALYSIS

Bacteriological analysis of samples of the treated water from various points on the distribution system were made weekly throughout 2019. The samples were tested at our Laurel Creek Water Treatment Plant Lab using Colilert testing. These samples were incubated at 34.5 – 35.5 degrees Celsius for 24 hours. The samples were then analyzed for growth. The Authority is required by law to report any growth of total coliforms as a “presence” while no growth is reported as “absence”.

The series of analysis consisted of 402 samples at predetermined locations. The number of 100ml samples showing growth as well as the percentage of positive samples is represented in Table 4. Thirty-one (31) samples are required monthly from predetermined locations. In a five (5) week month, thirty-seven (37) samples from predetermined locations are required monthly.

The number of positive results of coliform growth, which is determined by the presence of at least one colony, has been shown.

Standards of the US EPA stipulate that for treated water of acceptable quality, not more than 10% of all standard 100ml portions examined per month by the Colilert procedure shall show the presence of coliform organisms.

B. PURIFICATION

Treatment Plant Chemicals Consumed:

Chemical	2015 Chemical Feed (lbs)	2016 Chemical Feed (lbs)	2017 Chemical Feed (lbs)	2018 Chemical Feed (lbs)	2019 Chemical Feed (lbs)
Soda Ash (dry)	79,900	80,600	76,850	80,111	25,550
Ultra Flocc	0	0	0	0	0
Alum (dry)	0	0	0	0	0
Del PAC 2020	88,712	81,888	91,556	136,480	88,712
Polymer (dry)	0	0	0	0	0
Corrosion Inhibitor	21,417	23,364	29,369	21,737	15,623
Fluoride (dry)	5,350	6,950	6,850	7,250	7,300
Salt (Purex)	47,900	47,960	48,580	46,250	59,325
Sodium Hypo-Chlorite Gal	126,241	145,509	174,894	209,821	194,473

TABLE NO. 4
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF LEWISTOWN
2019 ANNUAL REPORT – COLILERT

Bacteriological Test Results Showing Coliform Organisms per 100ml. For Required Water Samples and Percent of 100ml. Portions of Treated Water Showing Coliform Organisms

	Total Monthly Tests	Coopers Gap	Knob Mountain Road	Schrader Church	Track Lane	Derry Township	Rolling Hills	Rt 522 N – Log Cabin Inn	Oakridge Road	Apron Green Lane	Belleville Lane	Rockville Tank	Mechanic Street Pump Station	Belleville Tank	Walnut Street Tank	Juniata Terrace Tank	Locust Drive, Reedsville	Laurel Creek Filtration Plant	Ferguson Valley Road	Rt 522 S – Lerch	Granville Industrial Park Rd	Greenbriar Road	Geisinger Lewistown Hospital	Derry Tank	West End Tank	Lewistown Waste Water Plant	70 Chestnut St – MABL	Burnham Borough Office	West Railroad Street	Tollgare Hill	Oak Street Pump Station	Number Positive	% Positive	
JAN	37	1	1	1	1	1	2	1	1	3	1	1	2	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	0	0
FEB	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
MAR	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
APR	37	1	1	1	1	1	2	1	1	3	1	1	2	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	0	0
MAY	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
JUN	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
JUL	37	1	1	1	1	1	2	1	1	3	1	1	2	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	0	0
AUG	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
SEP	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
OCT	37	1	1	1	1	1	2	1	1	3	1	1	2	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	0	0
NOV	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
DEC	37	1	1	1	1	1	2	1	1	3	1	1	2	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	0	0
Total	402	12	12	12	12	12	17	12	12	29	12	12	17	12	12	12	17	12	17	12	17	12	12	12	12	12	12	12	12	12	12	0	0	

C. LAUREL RUN FILTRATION PLANT

During the year 2019, the Filtration Plant was operated on a “tank fill” mode of operation, where the clearwells were allowed to draw down overnight and then refilled during the next 12-16 hours of operation. The estimated total finished, treated water produced by the Filtration Plant was 954,650,850 gallons. 887,174,553 gallons went directly to the distribution system while the remainder was used to backwash the four mixed media gravity filters as well as for various processes within the plant.

Rainfall recorded at the plant for 2019 totaled 37.05 inches. This was 23.45 inches less than the amount recorded for 2018. The four (4) wettest months were January, February, May, and June. The four (4) driest months were July, August, September and October. Rainfall recorded at the Filtration Plant from 2012 to 2019 follows:

Month	2012	2013	2014	2015	2016	2017	2018	2019
January	4.40	3.15	1.50	1.55	2.35	3.15	2.65	4.35
February	1.00	1.20	2.80	.25	4.05	1.35	6.00	3.95
March	2.10	1.70	1.85	1.50	.90	2.50	1.35	2.85
April	1.35	1.30	2.30	2.35	1.25	2.15	3.75	3.40
May	5.35	1.20	5.50	.85	2.25	6.15	3.90	6.45
June	2.20	4.50	5.50	7.85	1.70	1.50	4.65	3.75
July	2.39	3.50	4.15	2.95	1.15	6.65	6.75	2.15
August	3.45	1.75	6.25	2.95	3.00	4.00	8.00	2.45
September	4.80	1.10	0.50	3.10	2.00	1.50	10.05	1.20
October	4.40	4.10	4.65	3.50	1.05	7.05	3.10	1.05
November	0.35	2.95	1.45	1.55	1.90	1.95	5.15	2.55
December	3.60	3.60	2.25	4.80	2.75	1.40	5.15	2.90
Total	35.39	30.05	38.70	33.20	24.35	39.35	60.50	37.05

Average annual rainfall for the period 2012-2019 is 37.32 inches.

PART IV INSURANCE

A. SCHEDULE OF INSURANCES

The properties of the Authority are insured in compliance with the Trust Indenture. The amount of fire insurance coverage is adequate and in accordance with the recommendation of the Authority's Consulting Engineer.

It is recommended that all existing annual policies for public liability, automobiles, and employees compensation expiring during the year be renewed with the limits of coverage as now exists.

A complete list of all insurance policies in effect as of December 31, 2019 is presented in Table No. 5. Certificates of Insurance covering all policies are on file with the Trustee in accordance with the Trust Indenture.

Under terms of the agreement with the union representing the employees, the Authority has provided life insurance for all its employees. This insurance is under the group plan of Mutual of Omaha Life Insurance Company and has coverage of \$20,000 for all of the regular employees, Office Manager, Operations Manager, Distribution Foreman, Maintenance Foreman; coverage of \$25,000 on the Executive Director.

**TABLE NO. 5
THE MUNICIPAL AUTHORITY OF THE BOROUGH OF LEWISTOWN
SCHEDULE OF INSURANCE IN EFFECT AS OF 12/31/2019**

POLICY NUMBER	EFFECTIVE DATE	COMPANY	COVERAGE	LIMITS	PREMIUMS
PA B0686PC2014-1	06/13/19 to 06/13/20	PIRMA	General Liability & Legal Liability Defense & Claim Payment	\$10,000,000	
			Building & Personal Property Value	21,269,836	
			Inland Marine	Included	
			Boiler & Machinery	Included	
			Automobile Physical Damage	ACV	
			Extensions of Coverage:		
			Data Processing Equipment & Media	100,000	
			Errors & Omissions	500,000	
			Employee Benefits	100,000	
			Pollution	500,000	
				Total Premium	\$52,163

A complete re-appraisal and report of the buildings, fixed contents and movable contents of the Authority's various locations was effective October 24, 2012. The inspection and analysis were completed by Industrial Appraisal Company personnel in accordance with a formal agreement authorizing the appraisal.

PART V
ADEQUACY OF RATES AND STATUS OF FUNDS

A. ADEQUACY OF RATES

The rates charged for services rendered by The Municipal Authority of the Borough of Lewistown are adequate to meet calendar year 2020 financial obligations as required by Trust Indenture Section 5.01. The rate tests required by the Indenture were conducted as part of preparing the 2020 Operating Budget and were submitted to the Trustee along with the approved 2020 Operating Budget.

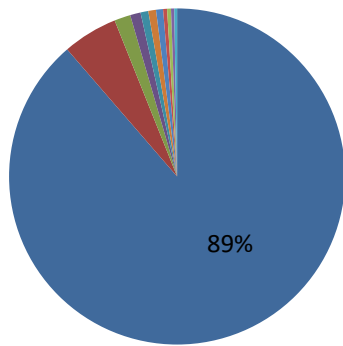
TABLE NO. 6
STATEMENT OF ESTIMATED REVENUES AND EXPENDITURES FOR THE PERIOD
JANUARY 1, 2020 TO DECEMBER 31, 2020

<u>REVENUES</u>		
Metered		5,596,607
Unmetered		384,500
	TOTAL REVENUES	\$ 5,981,107
<u>OPERATING EXPENSES</u>		
Water Collection System		51,200
Purification System		182,000
Filtration Plant		507,000
Control Stations		43,800
Distribution System		416,000
Security		8,000
Timber Management		2,500
General Expenses		3,527,126
	TOTAL OPERATING EXPENSES	\$ 4,737,626
<u>MANAGEMENT EXPENSES</u>		
Board Salaries & Expenses		16,200
Consulting Engineer Fees		73,000
Legal Services		35,000
Audit and Consulting Fees		65,000
	TOTAL MANAGEMENT EXPENSES	\$ 189,200
	TOTAL OPERATING AND MANAGEMENT EXPENSES	\$ 4,926,826
	NET OPERATING INCOME (EXPENSE)	\$ 1,054,281
<u>NON-OPERATING EXPENSES</u>		
Debt Service Principal		1,440,000
PennVest Loan Principal		99,957
	NET INCOME (EXPENSE)	\$ (485,676)
	LESS:	
	Depreciation	1,491,000
	NET CASH 2020	\$ 1,005,324

**THE MUNICIPAL AUTHORITY OF THE BOROUGH OF LEWISTOWN
10 LARGEST CUSTOMERS - 2019**

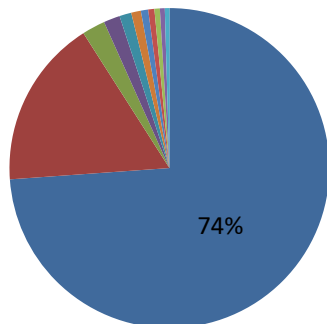
#	FIRM	BUSINESS	REVENUE
1	Standard Steel LLC	Steel Fabrications	298,752
2	Mifflin County Housing Authority	Apartment Complex	87,952
3	Mifflin County School District	Public School	56,715
4	Geisinger Lewistown Hospital	Health Care	42,409
5	First Quality Baby Products	Manufacturing	41,731
6	Kish Apartments	Apartment Complex	38,075
7	Valley View Haven	Nursing Home / Assisted Living	21,429
8	Belleville Commons	Housing Complex	21,162
9	Trinity Plastics Inc	Manufacturing	17,334
10	Philips	Manufacturing	15,448
		Total	\$641,007

2019 Top 10 Revenue - 11%



- OTHER USERS
- STANDARD STEEL LLC
- MIFFLIN CO HOUSING AUTHORITY
- MIFFLIN COUNTY SCHOOL DISTRICT
- GEISINGER LEWISTOWN HOSPITAL
- FIRST QUALITY BABY PRODUCTS
- KISH APARTMENTS
- VALLEY VIEW HAVEN
- BELLEVILLE COMMONS
- TRINITY PLASTICS INC
- PHILIPS

2019 Top 10 Consumption - 26%



- OTHER USERS
- STANDARD STEEL LLC
- FIRST QUALITY BABY PRODUCTS
- GEISINGER LEWISTOWN HOSPITAL
- MIFFLIN CO HOUSING AUTHORITY
- VALLEY VIEW HAVEN
- PHILIPS
- GUARDIAN ELDER CARE
- OHESSON MANOR
- MIFFLIN COUNTY PRISON
- MIFFLIN COUNTY SCHOOL DISTRICT

Minimum Monthly Water Charge – Current and Historic

Meter Size	Gallons	01/01/19	*01/01/18	01/01/17	01/01/16	01/01/15	01/01/14
5/8"	1,000	19.91	19.91	19.52	18.95	18.40	17.52
3/4"	6,000	53.44	53.44	52.39	50.86	49.38	47.02
1"	12,000	76.06	76.06	74.57	72.40	70.29	66.96
1 1/2"	30,000	145.72	145.72	142.86	138.70	134.66	128.25
2"	75,000	303.27	303.27	297.32	288.66	280.25	266.90
3"	130,000	506.87	506.87	496.93	482.46	468.41	446.11
4"	270,000	995.66	995.66	976.14	947.71	920.11	876.29
6"	500,000	1,584.33	1,584.33	1,553.26	1,508.02	1464.10	1,394.38
8"	600,000	1,855.06	1,855.06	1,818.69	1,765.72	1714.29	1,632.65
10"	800,000	2,429.81	2,429.81	2,382.17	2,312.79	2245.43	2,138.51
12"	1,000,000	3,168.65	3,168.65	3,106.52	3,016.04	2928.19	2,788.75

In addition to the minimum charge, the following charges were applied to all water consumed.
Water Usage Charge per 1,000 Gallons – Current and Historic

	Gallons/ Month	01/01/19	*01/01/18	01/01/17	01/01/16	01/01/15	01/01/14
First	7,000	4.92	4.92	4.82	4.68	4.54	4.33
Next	250,000	2.95	2.95	2.89	2.81	2.73	2.61
All Over	257,000	2.02	2.02	1.98	1.92	1.86	1.78

Where two or more customers are supplied through one meter, the sum of \$15.17 per month shall be added as an Additional Consumer charge to the total calculated water bill for each customer (see below for Fee History).

Year	Per Month	Per Quarter
2019	\$15.17	\$44.61
*2018	\$15.17	\$44.61
2017	\$14.87	\$44.61
2016	\$14.44	\$43.32
2015	\$14.02	\$42.06
2014	\$13.35	\$40.05

Dry Valley, Glenwood, Maitland and Granville service areas, the rate is equal to the applicable water usage charge plus a Capital Additions Component Charge. The charge is assessed to amortized costs relating to the extension of service to these areas.

*Corrected 2019

B. STATUS OF FUNDS

The Trust Indenture actual balances of funds as of December 31, 2019 were as follows:

Fund	Balance December 31, 2019
Debt Service Fund	1,612,710.70
2015 A Debt Service Fund	16,086.28
1998 Debt Service Reserve Fund	1,775,899.06
1998 Bond Redemption & Improvement Fund	1,440,363.12
Total	\$ 4,845,059.16