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July 19, 2019

Via E-Mail and First Class Mail

Mr. Patrick Hopkins
City of Lancaster
120 North Duke Street
Lancaster, PA 17608

Dear Mr. Hopkins:

Industrial Surcharge Cost Analysis

In compliance with the Pennsylvania Public Utility Commission Order in Docket No. R-2012-2310366, we have prepared a cost analysis to determine the appropriate excess strength surcharges applicable to certain customers served by the sewer system. The study describes the methods used to calculate the surcharges, shows the threshold limits, and presents the detailed analysis in support of the calculations for the City of Lancaster (City) Sewer. Schedules providing a summary of the recommended fees as well as the supporting calculations are attached.

Assumptions

The assumptions used in the study are as follows:

- For the cost of service study, we used the City's annual financial report for the year ended December 31, 2018 including depreciation expense and interest expense as included in the City's budget each year. Schedule B shows the cost of service by account for the year ending December 31, 2018.
- The flows and loadings data used in developing the surcharges were from the year ending December 31, 2018.

Revenue Analysis

A revenue analysis was developed from the year ending December 31, 2018 flows and loadings data. This analysis determined the proforma surcharges revenues during the historic test year and the proposed surcharges revenues during the future test year and fully projected test year. The bill analysis is shown on Schedule D.

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Industrial Surcharge Cost Analysis

The results of the cost analysis are presented in Schedule A attached. The total costs by function in line (a) are developed in Schedule B.

Schedule B allocates each expense listed in column 3 to the appropriate function based on an allocation factor in column 2. The cost functions include Collection, Treatment, BOD, SS, Phosphorus, Nitrogen and Customer Costs. For example, those items related to the collection system are allocated based on Factor 1, which allocates costs to the collection system function in column 4. The factors used in the allocation and their summary descriptions are as follows:

	<u>Description</u>
Factor 1	Flow - Collection costs
Factor 2	Flow - Treatment Costs
Factor 3	Sludge Treatment Costs
Factor 4	Customer Costs
Factor 5	Purchased Power Expense
Factor 6	Administrative Expenses - Composite
Factor 7	Labor Related Expenses - Composite
Factor 8	Treatment Plant Allocation
Factor 9	Rate Base Allocation - Composite
Factor 10	Other Revenues Allocation - Composite
Factor 11	Chemicals Expense Allocation

A full description of these factors is included in Schedule C. Certain costs such as labor related costs, and administrative and general costs are allocated based on a composite of the allocation of other costs as shown in Factors 6, 7, 9 and 10.

The allocation is summarized in Schedule A. Schedule A shows the calculation of the surcharges related to BOD, SS, Phosphorus and Nitrogen based on the total amounts of the pollutants processed during the year ended December 31, 2018. Surcharges were calculated based on establishing threshold concentrations for BOD, SS, Phosphorus and Nitrogen. The loadings above the thresholds are subject to surcharges to account for the specific additional treatment necessary to bring those constituents into permit compliance.

Bio-Chemical Oxygen Demand (BOD)

The surcharge for excess Bio-Chemical Oxygen Demand or BOD is based on the cost analysis related to BOD divided by the total pounds of BOD processed by the City's treatment plant annually. It is calculated in Schedule A, based on the cost of service analysis detailed in Schedule B. A proposed threshold concentration of 250 mg/L was determined for BOD based on Medium Strength Domestic Wastewater (established in Table 3-15 of Metcalf & Eddy, 4th Edition).

The calculation results in a surcharge of \$0.38 per pound or \$3.17 per mg/L per million gallons (MG) (\$0.38 x conversion factor of 8.34).

Total Cost Per Original Report	\$ 3,089,312
Units in Pounds	8,209,145
Cost/Pound	\$ 0.38

The surcharge is applied to the BOD measured in excess of 250 mg/L calculated as follows:

$$(\text{Total BOD mg/l} - 250 \text{ mg/L}) \times \text{Monthly Flow (MG)} \times \$3.17$$

Suspended Solids (SS)

The surcharge for excess Suspended Solids or SS is based on the cost of service related to SS divided by the total pounds of SS processed by the City's treatment plant annually. It is calculated in Schedule A, based on the cost of service allocation detailed in Schedule B. Similar to BOD, a proposed threshold concentration of 250 mg/L was set for SS based on Medium Strength Domestic Wastewater (M&E 4th Ed.). The proposed threshold amount remains unchanged from the City's present rate structure.

Total Cost Per Original Report	\$ 2,505,618
Units in Pounds	11,011,574
Cost/Pound	\$ 0.23

The calculation results in a surcharge of \$0.23 per pound or \$1.92 per mg/L per MG (\$0.23 x conversion factor of 8.34). The surcharge is applied on the SS measured in excess of 250 mg/L and is calculated monthly as follows:

$$(\text{Total SS mg/L less 250 mg/L}) \times \text{Monthly Flow (MG)} \times \$1.92$$

Phosphorus

The surcharge for excess Phosphorus is based on the cost analysis related to treating Phosphorus in the influent divided by the total pounds of Phosphorus processed by the City's treatment plant.

The surcharge is calculated in Schedule A, based on the cost of service allocation detailed in Schedule B. The City's present threshold concentration of 10 mg/L is maintained.

The calculation results in a surcharge of \$0.78 per pound or \$6.51 per mg/L per MG (\$0.78 x conversion factor of 8.34).

Total Cost Per Original Report	\$ 187,954
Units in Pounds	241,279
Cost/Pound	\$ 0.78

The proposed surcharge per pound is \$0.675, up from the present rate of \$0.45 per pound, as the City wanted to limit the rate increase of the Phosphorus surcharge to 50%.

The surcharge is applied to the total Phosphorus measured in excess of 10 mg/L calculated as follows:

$$(\text{Total Phosphorus mg/L} - 10 \text{ mg/L}) \times \text{Monthly Flow (MG)} \times \$5.67$$

Nitrogen

Surcharge for excess Nitrogen (TKN) is based on the cost analysis to process Nitrogen in the influent divided by the total pounds of Nitrogen processed by the Authority's treatment plant.

The surcharge is calculated in Schedule A based on the cost analysis allocation detailed in Schedule B.

The City's present threshold concentration of 30 mg/L was maintained.

The calculation results in a surcharge of \$0.94 per pound or \$7.84 per mg/L per MG (\$0.87 x conversion factor of 8.347).

Total Cost Per Original Report	\$ 645,197
Units in Pounds	685,943
Cost/Pound	\$ 0.94

The proposed surcharge per pound is \$0.675, up from the present rate of \$0.45 per pound, as the City wanted to limit the rate increase of the Nitrogen surcharge to 50%. The surcharge is applied to the Nitrogen measured in excess of 30 mg/l calculated as follows:

$$(\text{Total TKN mg/L} - 30 \text{ mg/L}) \times \text{Monthly Flow (MG)} \times \$5.67$$

Summary

The proposed excess strength sewer surcharges developed in this report are as follows:

BOD in excess of 250 mg/L -	\$0.380 per LB
SS in excess of 250 mg/L -	\$0.230 per LB
Phosphorus in excess of 10 mg/L -	\$0.675 per LB
Nitrogen (TKN) in excess of 30 mg/L -	\$0.675 per LB

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

CONSTANCE E. HEPPENSTALL
Senior Project Manager, Rate Studies

GREGORY R. HERBERT
Rate Analyst

CEH:mle

Attachments

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CITY OF LANCASTER

DEVELOPMENT OF UNIT COSTS - INDUSTRIAL SURCHARGES

	BOD (1)	Pollutant Treatment		
		SS (2)	Phosphorus (3)	Nitrogen (4)
Total Cost Per Original Report	\$ 3,089,312	\$ 2,505,618	\$ 187,954	\$ 645,197
Units in Pounds	8,209,145	11,011,574	241,279	685,943
Cost/Pound	\$ 0.38	\$ 0.23	\$ 0.78	\$ 0.94
2019 Present Rates	\$ 0.30	\$ 0.30	\$ 0.45	\$ 0.45
2019 Proposed Rates	0.38	0.23	0.68	0.68
Percentage Change over 2019 Rates	27%	-23%	50%	50%

CITY OF LANCASTER - SEWER FUND
COST OF SERVICE FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2020
ALLOCATED TO COST FUNCTIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Flow Costs		BOD (6)	SS (7)	Phosphorus (8)	Nitrogen (9)	Customer Costs (10)
			Collection (4)	Treatment (5)					
OPERATION AND MAINTENANCE EXPENSES									
SEWAGE TREATMENT									
PAYROLL-PLANT	8	\$ 905,374	\$ -	\$ 226,343	\$ 362,149	\$ 253,505	\$ 18,107	\$ 45,269	\$ -
MAINTENANCE-BUILDING	8	39,941	-	9,985	15,976	11,183	799	1,997	-
MAINTENANCE-COMMUNICATION	8	403,004	-	100,751	161,202	112,841	8,060	20,150	-
MAINTENANCE-EQUIPMENT	8	-	-	-	-	-	-	-	-
MAINTENANCE-VEHICLES	8	11,867	-	2,967	4,747	3,323	237	593	-
METER EXPENSE	4	293,557	-	-	-	-	-	-	293,557
WATER UTILITY EXPENSE	2	129,461	-	129,461	-	-	-	-	-
SLUDGE DISPOSAL	3	1,560,000	-	-	624,000	748,800	31,200	156,000	-
POWER ELECTRIC	5	1,001,564	-	250,391	400,625	280,438	20,031	50,078	-
OPERATING SUPPLIES	8	32,155	-	8,039	12,862	9,003	643	1,608	-
LABORATORY SUPPLIES	8	57,004	-	14,251	22,801	15,961	1,140	2,850	-
CHEMICALS	11	648,982	-	220,020	95,917	100,253	38,592	194,201	-
GASOLINE	2	16,434	-	16,434	-	-	-	-	-
FUEL OIL	2	70,900	-	70,900	-	-	-	-	-
MINOR EQUIPMENT	2	5,371	-	5,371	-	-	-	-	-
CAPITAL OUTLAY	2	74,466	-	74,466	-	-	-	-	-
TOTAL SEWAGE TREATMENT EXPENSE		5,250,080	0	1,129,379	1,700,279	1,535,307	118,809	472,746	293,557
PUMPING									
PAYROLL - PUMPING	1	819,133	819,133	-	-	-	-	-	-
MAINT. BUILDINGS	1	1,937	1,937	-	-	-	-	-	-
MAINT. EQUIPMENT	1	67,587	67,587	-	-	-	-	-	-
POWER ELECTRIC	1	46,253	46,253	-	-	-	-	-	-
POWER ELECTRIC - MAPLE GROVE PUMP STATION	1	85,344	85,344	-	-	-	-	-	-
POWER ELECTRIC - NORTH PUMP STATION	1	227,727	227,727	-	-	-	-	-	-
POWER ELECTRIC - STEVENS PUMP STATION	1	66,971	66,971	-	-	-	-	-	-
OPERATING SUPPLIES	1	2,159	2,159	-	-	-	-	-	-
FUEL OIL	1	22,335	22,335	-	-	-	-	-	-
MINOR EQUIPMENT	1	5,274	5,274	-	-	-	-	-	-
TOTAL PUMPING STATIONS		1,344,721	1,344,720	0	0	0	0	0	0

CITY OF LANCASTER - SEWER FUND
COST OF SERVICE FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2020
ALLOCATED TO COST FUNCTIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Flow Costs		BOD (6)	SS (7)	Phosphorus (8)	Nitrogen (9)	Customer Costs (10)
			Collection (4)	Treatment (5)					
COLLECTION									
PAYROLL-COLLECTION LINE	1	460,755	\$ 460,755	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PAYROLL-COLLECTION LINE -WET WEATHER	1	460,755	\$ 460,755	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MAINT. VEHICLES	1	123,868	123,868	-	-	-	-	-	-
CONTRACT SERVICES	1	60,657	60,657	-	-	-	-	-	-
TRENCH PAVING	1	102,269	102,269	-	-	-	-	-	-
OPERATING SUPPLIES	1	308,280	308,280	-	-	-	-	-	-
GASOLINE	1	54,200	54,200	-	-	-	-	-	-
TOTAL COLLECTIONS		1,570,785	1,570,784	0	0	0	0	0	0
ADMINISTRATION									
SALARY BUREAU CHIEF	6	109,912	60,419	15,992	14,069	9,848	703	1,759	7,122
SALARY PERSONNEL	6	201,379	110,698	29,301	25,776	18,044	1,289	3,222	13,049
SALARY PERSONNEL - BILLING RELATED	6	114,153	62,750	16,609	14,612	10,228	731	1,826	7,397
SALARY TEMPORARY	6	4,401	2,419	640	563	394	28	70	285
OVERTIME	6	129	71	19	16	12	1	2	8
VESTED ABSENCES	7	486	312	46	66	46	3	8	4
OPEB ARC EXPENSE	7	100,411	64,534	9,429	13,616	9,529	683	1,707	914
EDUCATIONAL INCENTIVE	7	14,308	9,196	1,344	1,940	1,358	97	243	130
MEDICAL INSURANCE	7	850,000	546,295	79,815	115,260	80,665	5,780	14,450	7,735
DENTAL/VISION	7	34,033	21,873	3,196	4,615	3,230	231	579	310
SOCIAL SECURITY	7	235,313	151,236	22,096	31,908	22,331	1,600	4,000	2,141
LIFE INSURANCE	7	7,576	4,869	711	1,027	719	52	129	69
PENSION CONTRIBUTION	7	18,905	12,150	1,775	2,564	1,794	129	321	172
UNEMPLOYMENT COMPENSATION	7	-	-	-	-	-	-	-	-
WORKERS COMP	7	22,712	14,597	2,133	3,080	2,155	154	386	207
ADMINISTRATION - SALARY/BENEFITS		1,713,716	1,061,419	183,106	229,112	160,353	11,481	28,702	39,543

CITY OF LANCASTER - SEWER FUND
COST OF SERVICE FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2020
ALLOCATED TO COST FUNCTIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Flow Costs		BOD (6)	SS (7)	Phosphorus (8)	Nitrogen (9)	Customer Costs (10)
			Collection (4)	Treatment (5)					
PC LEASE	6	10,983	6,037	1,598	1,406	984	70	176	712
RENTAL OF PARKING LOT	6	3,457	1,900	503	443	310	22	55	224
RENTAL OF UNIFORMS	6	11,154	6,131	1,623	1,428	999	71	178	723
MAINTENANCE OF EQUIPMENT	6	7,276	4,000	1,059	931	652	47	116	471
ADVERTISING	6	-	-	-	-	-	-	-	-
POSTAGE	6	23,212	12,760	3,377	2,971	2,080	149	371	1,504
PRINTING	6	4,261	2,342	620	545	382	27	68	276
TELEPHONE	6	34,465	18,946	5,015	4,412	3,088	221	551	2,233
TRAVEL	6	6,603	3,630	961	845	592	42	106	428
PROFESSIONAL SERVICES	6	654,033	359,522	95,162	83,716	58,601	4,186	10,465	42,381
RATE CASE EXPENSE	9	86,667	37,067	32,448	8,788	6,205	442	1,144	563
BANK SERVICE CHARGES	6	9,157	5,034	1,332	1,172	821	59	147	593
CREDIT CARD FEES	6	6,930	3,810	1,008	887	621	44	111	449
BAD DEBT EXPENSE	4	2,014,835	-	-	-	-	-	-	2,014,835
CONTRACT SERVICES	6	42,320	23,263	6,158	5,417	3,792	271	677	2,742
TRAINING - SCHOOL	6	18,896	10,387	2,749	2,419	1,693	121	302	1,224
OFFICE SUPPLIES	6	1,830	1,006	266	234	164	12	29	119
INSURANCE PACKAGE	6	220,000	120,934	32,010	28,160	19,712	1,408	3,520	14,256
ADMINISTRATION - OPERATING EXPENSES		3,156,079	616,769	185,889	143,774	100,696	7,192	18,016	2,083,733
MINOR EQUIPMENT	6	4,382	2,409	638	561	393	28	70	284
SAFETY EQUIPMENT	6	6,821	3,750	992	873	611	44	109	442
COMPUTER APPLICATIONS	6	6,060	3,331	882	776	543	39	97	393
ADMINISTRATION-CAPITAL EXPENSE		17,263	9,490	2,512	2,210	1,547	111	276	1,119
ADMIN. INDIRECT COSTS PAYING AGENT	6 6	557,812 782	306,629 430	81,162 114	71,400 100	49,980 70	3,570 5	8,925 13	36,146 51
ADMINISTRATION - INTER-GOVERNMENTAL		558,594	307,059	81,276	71,500	50,050	3,575	8,938	36,197
TOTAL ADMINISTRATION		5,445,653	1,994,737	452,783	446,596	312,646	22,359	55,932	2,160,592

CITY OF LANCASTER - SEWER FUND
COST OF SERVICE FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2020
ALLOCATED TO COST FUNCTIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Flow Costs		BOD (6)	SS (7)	Phosphorus (8)	Nitrogen (9)	Customer Costs (10)
			Collection (4)	Treatment (5)					
GROUND MAINTENANCE									
FRINGE	6	3,011	1,655	438	385	270	19	48	195
OPERATING SUPPLIES	6	12,225	6,720	1,779	1,565	1,095	78	196	792
GROUND MAINT. - OPERATING EXPENSES		15,235	8,375	2,217	1,950	1,365	97	244	987
TOTAL OPERATION AND MAINTENANCE EXPENSE		13,626,474	4,918,616	1,584,379	2,148,825	1,849,318	141,265	528,922	2,455,136
DEPRECIATION EXPENSE									
STRUCTURES AND IMPROVEMENTS - COLL									
MAIN PUMP STATION	1	27,158	-	-	-	-	-	-	-
STEVENS PUMP STATION	1	53,141	-	-	-	-	-	-	-
NORTH PUMP STATION	1	394,694	-	-	-	-	-	-	-
MAPLE GROVE PUMP STATION	1	23,652	-	-	-	-	-	-	-
MUNICIPAL PARTNERS	1	520,697	-	-	-	-	-	-	-
OTHER PUMP STATIONS AND AIR RELIEF PITS	1	50,773	-	-	-	-	-	-	-
STRUCTURES AND IMPROVEMENTS - WWTP - TREATMENT	8	925,197	-	231,299	370,079	259,055	18,504	46,260	-
STRUCTURES AND IMPROVEMENTS - WWTP - GENERAL	8	1,294	-	324	518	362	26	65	-
STRUCTURES AND IMPROVEMENTS - WWTP - MP's	8	1,982	-	496	793	555	40	99	-
STRUCTURES AND IMPROVEMENTS - WWTP - OTHER	8	280	-	70	112	78	6	14	-
STRUCTURES AND IMPROVEMENTS - WWTP - MP's	8	562	-	141	225	157	11	28	-
STORMWATER MAINS	1	29,670	29,670	-	-	-	-	-	-
GRAVITY MAINS	1	273,152	273,152	-	-	-	-	-	-
PUMPING EQUIPMENT	1	72,662	72,662	-	-	-	-	-	-
PUMPING EQUIPMENT - MUNICIPAL PARTNERS	1	88,132	88,132	-	-	-	-	-	-
TREATMENT AND DISPOSAL EQUIPMENT	8	596,540	-	149,135	238,616	167,031	11,931	29,827	-
OFFICE FURNITURE AND EQUIPMENT	6	8,247	4,533	1,200	1,056	739	53	132	534
OFFICE FURNITURE AND EQUIPMENT - MUNI. PARTNERS	6	1,343	738	195	172	120	9	21	87
TRANSPORTATION EQUIPMENT - SMALL TRUCKS	6	68,137	37,455	9,914	8,722	6,105	436	1,090	4,415
TRANSPORTATION EQUIPMENT - LARGE TRUCKS	6	69,754	38,344	10,149	8,929	6,250	446	1,116	4,520
TOOLS, SHOP AND GARAGE EQUIPMENT	6	11,453	6,296	1,666	1,466	1,026	73	183	742
TOOLS, SHOP AND GARAGE EQUIPMENT - MP	6	928	510	135	119	83	6	15	60
POWER OPERATED EQUIPMENT	6	38,405	21,111	5,588	4,916	3,441	246	614	2,489
TOTAL DEPRECIATION EXPENSE		3,257,853	1,642,718	410,312	635,723	445,002	31,787	79,464	12,847
DEPRECIATION EXPENSE - CONTRIBUTED CAPITAL									
STRUCTURES AND IMPROVEMENTS - COLL									
MAIN PUMP STATION	1	(41,256)	(41,256)	-	-	-	-	-	-
STEVENS PUMP STATION	1	(84,783)	(84,783)	-	-	-	-	-	-
NORTH PUMP STATION	1	(328,206)	(328,206)	-	-	-	-	-	-
OTHER PUMPING STATIONS	1	(66,452)	(66,452)	-	-	-	-	-	-

CITY OF LANCASTER - SEWER FUND
COST OF SERVICE FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2020
ALLOCATED TO COST FUNCTIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Flow Costs		BOD (6)	SS (7)	Phosphorus (8)	Nitrogen (9)	Customer Costs (10)
			Collection (4)	Treatment (5)					
STRUCTURES AND IMPROVEMENTS - WWTP - TREATMENT STRUCTURES AND IMPROVEMENTS - WWTP - GENERAL	8	(258,814)	-	(64,704)	(103,526)	(72,468)	(5,176)	(12,941)	-
STRUCTURES AND IMPROVEMENTS - WWTP - OTHER	8	(1,982)	-	(496)	(793)	(555)	(40)	(99)	-
MAINS	8	(562)	-	(141)	(225)	(157)	(11)	(28)	-
PUMPING EQUIPMENT	1	(105,756)	(105,756)	-	-	-	-	-	-
TREATMENT AND DISPOSAL EQUIPMENT	1	(88,132)	(88,132)	-	-	-	-	-	-
OFFICE FURNITURE AND EQUIPMENT	2	(305,606)	-	(305,606)	-	-	-	-	-
TOOLS, SHOP AND GARAGE EQUIPMENT	6	(1,343)	(738)	(195)	(172)	(120)	(9)	(21)	(87)
TOTAL DEPRECIATION EXP. - CONTRIBUTED	6	(928)	(510)	(135)	(119)	(83)	(6)	(15)	(60)
		(1,283,820)	(715,833)	(371,277)	(104,835)	(73,383)	(5,242)	(13,104)	(147)
NET DEPRECIATION EXPENSE		1,974,033	926,885	39,035	530,888	371,619	26,545	66,360	12,700
OPERATING INCOME	9	4,466,419	1,910,287	1,672,227	452,895	319,796	22,779	58,957	29,032
TOTAL COST OF SERVICE		20,066,926	7,755,788	3,295,641	3,132,608	2,540,733	190,589	654,239	2,496,868
LESS OTHER SEWER REVENUES									
LIEN COSTS	10	1,025	396	168	160	130	10	33	127
RENTAL INCOME	10	32,394	12,520	5,319	5,057	4,101	308	1,056	4,030
REFUND OF PRIOR YEAR EXPENDITURES	10	16,874	6,522	2,771	2,634	2,136	160	550	2,099
INTEREST INCOME	10	1,902	735	312	297	241	18	62	237
MISC. INCOME	10	64,562	24,953	10,601	10,078	8,174	613	2,105	8,032
INDUSTRIAL WASTE PERMITS	10	10,000	3,865	1,642	1,561	1,266	95	326	1,244
SLSA OPERATING CHARGES	10	150,605	58,209	24,729	23,509	19,067	1,431	4,910	18,735
TOTAL OTHER SEWER REVENUES		277,361	107,200	45,542	43,296	35,115	2,635	9,042	34,504
TOTAL COST OF SERVICE RELATE TO SALES OF WASTEWATER SERVICES		19,789,566	7,648,588	3,250,099	3,089,312	2,505,618	187,954	645,197	2,462,364

CITY OF LANCASTER - SEWER FUND

FACTORS FOR ALLOCATING COST OF SERVICE TO COST FUNCTIONS

FACTOR 1. ALLOCATION OF COSTS ASSOCIATED WITH COLLECTION COSTS.

These cost are assigned directly to the Flow-Collection cost function.

<u>Cost Function</u> (1)	<u>Allocation Factor</u> (2)
Flow - Collection	1.0000

FACTOR 2 ALLOCATION OF COSTS ASSOCIATED WITH THE VOLUME OF WASTEWATER TREATED.

These cost are assigned directly to the Flow-Treatment cost function.

<u>Cost Function</u> (1)	<u>Allocation Factor</u> (2)
Flow - Treatment	1.0000

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH SLUDGE TREATMENT.

Identified sludge specific expenses are allocated to the pollutants as follows:

<u>Cost Function</u> (1)	<u>Allocation Factor</u> (2)
BOD	0.4000
TSS	0.4800
Phosphorus	0.0200
Nitrogen	0.1000
Total*	<u>1.0000</u>

CITY OF LANCASTER - SEWER FUND

FACTORS FOR ALLOCATING COST OF SERVICE TO COST FUNCTIONS

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH CUSTOMER ACCOUNTING

These cost are assigned directly to the Customer cost function.

<u>Cost Function</u> (1)	<u>Factor</u> (2)
Customer	1.0000

FACTOR 5. ALLOCATION OF PURCHASED POWER EXPENSES

Factors are based on the estimated power usage for the Authority's system.

<u>Cost Function</u> (1)	<u>Allocation Factor</u> (2)
Flow - Treatment	0.2500
BOD	0.4000
TSS	0.2800
Phosphorus	0.0200
Nitrogen	0.0500
Total	<u><u>1.0000</u></u>

FACTOR 6. ALLOCATION OF ADMINISTRATION EXPENSES.

Factors are based on the allocation of operation and maintenance expenses excluding power and chemicals, as follows:

<u>Cost Function</u> (1)	<u>O & M Expenses</u> (2)	<u>Allocation Factor</u> (3)
Flow - Collection	\$ 4,918,625	0.5497
Flow - Treatment	1,584,379	0.1455
BOD	2,148,825	0.1280
TSS	1,849,318	0.0896
Phosphorus	141,265	0.0064
Nitrogen	528,922	0.0160
Customer	<u>2,455,136</u>	<u>0.0648</u>
Total	<u><u>\$ 13,626,470</u></u>	<u><u>1.0000</u></u>

CITY OF LANCASTER - SEWER FUND

FACTORS FOR ALLOCATING COST OF SERVICE TO COST FUNCTIONS

FACTOR 7. ALLOCATION OF LABOR RELATED TAXES AND BENEFITS.

Factors are based on the allocation of all salaries and wages, as follows:

<u>Cost Function</u> (1)	<u>Salaries and Wages</u> (2)	<u>Allocation Factor</u> (3)
Flow - Collection	\$ 1,976,929	0.6427
Flow - Treatment	288,885	0.0939
BOD	417,169	0.1356
TSS	292,019	0.0949
Phosphorus	20,858	0.0068
Nitrogen	-	0.0170
Customer	<u>27,853</u>	<u>0.0091</u>
Total	<u>\$ 3,023,713</u>	<u>1.0000</u>

FACTOR 8. ALLOCATION OF TREATMENT PLANT

Factors are based on the allocation of the treatment plant as to function as follows:

<u>Cost Function</u> (1)	<u>Allocation Factor</u> (3)
Collection	0.0000
Flow - Treatment	0.2500
BOD	0.4000
TSS	0.2800
Phosphorus	0.0200
Nitrogen	0.0500
Total	<u>1.0000</u>

CITY OF LANCASTER - SEWER FUND

FACTORS FOR ALLOCATING COST OF SERVICE TO COST FUNCTIONS

FACTOR 9. ALLOCATION OF RATE BASE

Factors are based on the allocation of total plant investment, as follows and shown on the following page:

<u>Cost Function</u> (1)	<u>Total Plant Investment</u> (2)	<u>Allocation Factor</u> (3)
Flow - Collection	\$ 26,537,883	0.4278
Flow - Treatment	23,228,066	0.3744
BOD	6,288,125	0.1014
TSS	4,445,002	0.0716
Phosphorus	318,655	0.0051
Nitrogen	818,784	0.0132
Customer	405,126	0.0065
 Total	 <u>\$ 62,041,641</u>	 <u>1.0000</u>

FACTOR 10. ALLOCATION OF OTHER REVENUES.

Factors are based on the allocation of total cost of service, as follows:

<u>Cost Function</u> (1)	<u>Total Cost of Service</u> (2)	<u>Allocation Factor</u> (3)
Flow - Collection	\$ 7,756,244	0.3866
Flow - Treatment	3,295,641	0.1642
BOD	3,132,608	0.1561
TSS	2,540,733	0.1266
Phosphorus	190,589	0.0095
Nitrogen	654,239	0.0326
Customer	2,496,868	0.1244
 Total	 <u>\$ 20,066,922</u>	 <u>1.0000</u>

CITY OF LANCASTER - SEWER FUND

FACTORS FOR ALLOCATING COST OF SERVICE TO COST FUNCTIONS

FACTOR 11. ALLOCATION OF CHEMICALS EXPENSE

<u>Cost Function</u> (1)	<u>Allocation Factor</u> (2)
Flow - Treatment	0.3390
BOD	0.1478
TSS	0.1545
Phosphorus	0.0595
Nitrogen	<u>0.2992</u>
Total	<u><u>1.0000</u></u>

CITY OF LANCASTER - SEWER FUND
COST OF SERVICE FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2020
ALLOCATED TO COST FUNCTIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Flow Costs		BOD (6)	SS (7)	Phosphorus (8)	Nitrogen (9)	Customer Costs (10)
			Collection (4)	Treatment (5)					
RATE BASE									
UTILITY PLANT IN SERVICE									
LAND - WWTP	2	1,116,600	0	1,116,600	0	0	0	0	0
LAND - PUMPING	1	360,624	360,624	0	0	0	0	0	0
LAND - PUMPING - MAPLE GROVE	1	7,600	7,600	0	0	0	0	0	0
STRUCTURES AND IMPROVEMENTS - COLL									
MAIN PUMP STATION	1	659,881	659,881	0	0	0	0	0	0
STEVENS PUMP STATION	1	1,574,170	1,574,170	0	0	0	0	0	0
NORTH PUMP STATION	1	11,923,970	11,923,970	0	0	0	0	0	0
MAPLE GROVE PUMP STATION	1	587,221	587,221	0	0	0	0	0	0
OTHER PUMP STATIONS AND AIR RELIEF PITS									
MUNICIPAL PARTNERS	1	2,468,443	2,468,443	0	0	0	0	0	0
	1	15,084,323	15,084,323	0	0	0	0	0	0
STRUCTURES AND IMPROVEMENTS - WWTP - TREATMENT									
STRUCTURES AND IMPROVEMENTS - WWTP - GENERAL	8	32,297,143	0	8,074,286	12,918,857	9,043,200	645,943	1,614,857	0
STRUCTURES AND IMPROVEMENTS - WWTP - MP's	8	26,394	0	6,599	10,558	7,390	528	1,320	0
STRUCTURES AND IMPROVEMENTS - WWTP - OTHER	8	40,442	0	10,111	16,177	11,324	809	2,022	0
STRUCTURES AND IMPROVEMENTS - WWTP - MP's	8	4,471	0	1,118	1,788	1,252	89	224	0
STORMWATER MAINS	8	8,964	0	2,241	3,586	2,510	179	448	0
GRAVITY MAINS	1	948,239	948,239	0	0	0	0	0	0
PUMPING EQUIPMENT	1	6,670,150	6,670,150	0	0	0	0	0	0
PUMPING EQUIPMENT - MUNICIPAL PARTNERS	1	2,455,195	2,455,195	0	0	0	0	0	0
TREATMENT AND DISPOSAL EQUIPMENT	1	2,469,500	2,469,500	0	0	0	0	0	0
OFFICE FURNITURE AND EQUIPMENT	2	18,057,138	0	18,057,138	0	0	0	0	0
OFFICE FURNITURE AND EQUIPMENT - MP	6	122,150	67,146	17,773	15,635	10,945	782	1,954	7,915
TRANSPORTATION EQUIPMENT - SMALL TRUCKS/AUTOS	6	23,510	12,923	3,421	3,009	2,106	150	376	1,523
TRANSPORTATION EQUIPMENT - LARGE TRUCKS	6	465,191	255,715	67,685	59,544	41,681	2,977	7,443	30,144
TOOLS, SHOP AND GARAGE EQUIPMENT	6	306,163	168,298	44,547	39,189	27,432	1,959	4,899	19,839
TOOLS, SHOP AND GARAGE EQUIPMENT - MP	6	180,764	99,366	26,301	23,138	16,196	1,157	2,892	11,714
POWER OPERATED EQUIPMENT	6	19,962	10,973	2,904	2,555	1,789	128	319	1,294
	6	412,102	226,532	59,961	52,749	36,924	2,637	6,594	26,704
TOTAL UTILITY PLANT IN SERVICE		98,290,310	46,050,269	27,490,685	13,146,785	9,202,749	657,338	1,643,348	99,133

CITY OF LANCASTER - SEWER FUND

COST OF SERVICE FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2020
ALLOCATED TO COST FUNCTIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Flow Costs		SS (7)	Phosphorus (8)	Nitrogen (9)	Customer Costs (10)
			Collection (4)	Treatment (5)				
STRUCTURES AND IMPROVEMENTS - COLL								
MAIN PUMP STATION	1	1,010,138	1,010,138	0	0	0	0	0
STEVENS PUMP STATION	1	2,491,563	2,491,563	0	0	0	0	0
NORTH PUMP STATION	1	9,798,321	9,798,321	0	0	0	0	0
OTHER PUMP STATIONS	1	1,784,301	1,784,301	0	0	0	0	0
STRUCTURES AND IMPROVEMENTS - WWTP - TREATMENT	8	8,770,461	0	2,192,615	2,455,729	175,409	438,523	0
STRUCTURES AND IMPROVEMENTS - WWTP - GENERAL	8	40,442	0	10,111	11,324	809	2,022	0
STRUCTURES AND IMPROVEMENTS - WWTP - OTHER	8	8,964	0	2,241	2,510	179	448	0
MAINS	1	2,548,710	2,548,710	0	0	0	0	0
PUMPING EQUIPMENT	1	2,469,500	2,469,500	0	0	0	0	0
TREATMENT AND DISPOSAL EQUIPMENT	8	8,986,104	0	2,246,526	2,516,109	179,722	449,305	0
OFFICE FURNITURE AND EQUIPMENT	6	23,510	12,923	3,421	2,106	150	376	1,523
TOOLS, SHOP AND GARAGE EQUIPMENT	6	19,962	10,973	2,904	1,789	128	319	1,294
TOTAL CONTRIBUTED CAPITAL		37,951,976	20,126,429	4,457,818	4,989,567	356,397	890,993	2,817
TOTAL UTILITY PLANT IN SERVICE		60,338,334	25,923,840	23,032,867	4,213,182	300,941	752,355	96,316
OTHER RATE BASE ITEM								
CASH WORKING CAPITAL	12	1,703,309	614,043	195,199	231,820	17,714	66,429	308,810
TOTAL RATE BASE		62,041,643	26,537,883	23,228,066	4,445,002	318,655	818,784	405,126

CITY OF LANCASTER
APPLICATION OF DECEMBER 31, 2018 AND PRESENT SURCHARGE RATES TO CONSUMPTION ANALYSIS

Customer	Bill Date	Output	Flow	Present Threshold	2018 Rate	Charges Under 2018 Rates	2019 Rate	Charges Under Present Rates
<u>BOD SURCHARGES</u>								
Environmental Recovery Corp.	4/24/2018	5,152.00	4.980000	300.00	\$ 0.172200	\$ 34,701.59	\$ 0.300000	\$ 60,455.73
Environmental Recovery Corp.	8/1/2018	4,336.00	5.750000	300.00	0.172200	33,328.69	0.300000	58,063.91
Environmental Recovery Corp.	11/5/2018	5,176.00	6.317000	300.00	0.172200	44,235.79	0.300000	77,065.83
Environmental Recovery Corp.	12/31/2018	3,931.00	6.540000	300.00	0.172200	34,103.83	0.300000	59,414.34
Intelligencer Printing	4/24/2018	360.00	0.086000	300.00	0.172200	7.41	0.300000	12.91
Intelligencer Printing	8/1/2018	359.00	0.138000	300.00	0.172200	11.69	0.300000	20.37
Intelligencer Printing	11/5/2018	311.00	0.164000	300.00	0.172200	2.59	0.300000	4.51
International Paper	8/1/2018	1,020.00	0.138000	300.00	0.172200	142.70	0.300000	248.60
Kunzler & Company	4/24/2018	2,580.00	3.783000	250.00	0.300000	22,053.60	0.300000	22,053.60
Kunzler & Company	8/1/2018	4,997.00	5.355000	250.00	0.300000	63,601.30	0.300000	63,601.30
Kunzler & Company	11/5/2018	2,977.00	4.536000	250.00	0.300000	30,948.92	0.300000	30,948.92
Kunzler & Company	12/31/2018	3,243.30	6.056000	250.00	0.300000	45,354.82	0.300000	45,354.82
Lancaster Brewing Company	4/24/2018	7,700.00	0.080545	250.00	0.300000	1,500.00	0.300000	1,500.00
Lancaster Brewing Company	8/1/2018		0.008400	250.00	0.300000	1,500.00	0.300000	1,500.00
Lancaster Brewing Company	11/5/2018		0.080545	250.00	0.300000	1,500.00	0.300000	1,500.00
Lancaster Brewing Company	12/31/2018		0.080545	250.00	0.300000	1,500.00	0.300000	1,500.00
Lancaster General Hospital	8/1/2018	328.00	1.379217	250.00	0.300000	269.16	0.300000	269.16
Lancaster General Hospital	11/5/2018	314.00	1.950844	250.00	0.300000	312.38	0.300000	312.38
LSC Communications	4/24/2018	411.00	0.549470	250.00	0.300000	221.34	0.300000	221.34
LSC Communications East	12/31/2018	723.00	1.266015	250.00	0.300000	1,498.26	0.300000	1,498.26
O.J. Tankwash	4/24/2018	1,260.00	0.308997	300.00	0.172200	426.01	0.300000	742.19
O.J. Tankwash	8/1/2018	509.00	0.331682	300.00	0.172200	99.56	0.300000	173.44
Package Corp of America	4/24/2018	1,430.00	0.251430	300.00	0.172200	408.03	0.300000	710.86
Package Corp of America	8/1/2018	2,100.00	0.221783	300.00	0.172200	573.32	0.300000	998.82
Package Corp of America	11/5/2018	2,500.00	0.186198	300.00	0.172200	588.30	0.300000	1,024.91
Package Corp of America	12/31/2018	2,260.00	0.307315	300.00	0.172200	865.05	0.300000	1,507.05
Sauder Foods	4/24/2018	590.00	3.217000	300.00	0.172200	1,339.83	0.300000	2,334.19
Sauder Foods	8/1/2018	328.00	3.217200	300.00	0.172200	129.37	0.300000	225.38
Sauder Foods	11/5/2018	442.00	3.217200	300.00	0.172200	656.09	0.300000	1,143.02
Sauder Foods	12/31/2018	47.00	3.217200	179.00 *	0.172200	827.05	0.300000	1,440.85
The Standard Group	4/24/2018	351.00	0.138060	300.00	0.172200	10.11	0.300000	17.62
The Standard Group	11/5/2018	463.00	0.138060	300.00	0.172200	32.32	0.300000	56.30
The Standard Group	12/31/2018	547.00	0.138060	300.00	0.172200	48.97	0.300000	85.32
Tree House Foods	4/24/2018	791.00	0.332260	300.00	0.172200	234.29	0.300000	408.18
Tree House Foods	8/1/2018	1,460.00	0.305320	300.00	0.172200	508.64	0.300000	886.14
Tree House Foods	11/5/2018	364.00	0.332260	300.00	0.172200	30.54	0.300000	53.20
Tree House Foods	12/31/2018	999.00	0.266000	300.00	0.172200	267.03	0.300000	465.21
Total BOD Surcharge						<u>\$ 323,838.59</u>		<u>\$ 437,818.67</u>
<u>TSS SURCHARGES</u>								
Armstrong World Industries	8/1/2018	432.00	3.100000	360.00	\$ 0.161500	\$ 300.63	\$ 0.300000	558.45
Donnelley Financial Solutions	12/31/2018	261.00	1.253161	250.00	0.300000	34.49	0.300000	34.49
International Paper	12/31/2018	687.00	0.138000	360.00	0.161500	60.78	0.300000	112.91
Kunzler & Company	4/24/2018	438.00	3.783000	250.00	0.300000	1,779.43	0.300000	1,779.43
Kunzler & Company	8/1/2018	875.00	5.355000	250.00	0.300000	8,373.88	0.300000	8,373.88
Kunzler & Company	11/5/2018	389.00	4.536000	250.00	0.300000	1,577.52	0.300000	1,577.52
Kunzler & Company	12/31/2018	589.30	6.056000	250.00	0.300000	5,141.11	0.300000	5,141.11
LSC Communications	4/24/2018	302.00	0.549470	250.00	0.300000	71.49	0.300000	71.49
LSC Communications East	12/31/2018	456.00	1.266015	250.00	0.300000	652.52	0.300000	652.52
O.J. Tankwash	4/24/2018	620.00	0.308997	360.00	0.161500	108.21	0.300000	201.01
O.J. Tankwash	8/1/2018	522.00	0.331682	360.00	0.161500	72.37	0.300000	134.44
Package Corp of America	8/1/2018	680.00	0.221783	360.00	0.161500	95.59	0.300000	177.57
Thermal Soutions	4/24/2018	684.00	0.007290	360.00	0.161500	3.18	0.300000	5.91
Thermal Soutions	11/5/2018	422.00	0.007995	360.00	0.161500	0.67	0.300000	1.24
Tree House Foods	4/24/2018	1,020.00	0.138000	360.00	0.161500	122.68	0.300000	227.88
Tree House Foods	8/1/2018	1,020.00	0.305320	360.00	0.161500	271.42	0.300000	504.18
Tree House Foods	11/5/2018	1,030.00	0.332260	360.00	0.161500	299.84	0.300000	556.98
Tree House Foods	12/31/2018	804.00	0.266000	360.00	0.161500	159.08	0.300000	295.50
Lancaster Water	3/31/2018	1,315.69	16.723000	250.00	0.300000	44,589.66	0.300000	44,589.66
Lancaster Water	6/30/2018	1,503.08	14.642000	250.00	0.300000	45,905.58	0.300000	45,905.58
Lancaster Water	9/30/2019	1,771.28	15.334000	250.00	0.300000	58,365.00	0.300000	58,365.00
Lancaster Water	12/31/2018	1,031.41	18.206500	250.00	0.300000	35,595.32	0.300000	35,595.32
Total TSS Surcharge						<u>\$ 203,580.45</u>		<u>\$ 204,862.06</u>

CITY OF LANCASTER
APPLICATION OF DECEMBER 31, 2018 AND PRESENT SURCHARGE RATES TO CONSUMPTION ANALYSIS

Customer	Bill Date	Output	Flow	Present Threshold	2018 Rate	Charges Under 2018 Rates	2019 Rate	Charges Under Present Rates
<u>NITROGEN SURCHARGES</u>								
Donnelley Financial Solutions	4/24/2018	136.00	1.366675	30.00	\$ 0.450000	\$ 543.69	\$ 0.450000	543.69
Donnelley Financial Solutions	8/1/2018	65.00	2.205345	30.00	0.450000	289.68	0.450000	289.68
Donnelley Financial Solutions	11/5/2018	71.70	2.148632	30.00	0.450000	336.26	0.450000	336.26
Donnelley Financial Solutions	12/31/2018	79.30	1.253161	30.00	0.450000	231.86	0.450000	231.86
Kunzler & Company	4/24/2018	93.93	3.783000	30.00	0.450000	907.65	0.450000	907.65
Kunzler & Company	8/1/2018	113.60	5.355000	30.00	0.450000	1,680.14	0.450000	1,680.14
Kunzler & Company	11/5/2018	107.50	4.536000	30.00	0.450000	1,319.33	0.450000	1,319.33
Kunzler & Company	12/31/2018	141.00	6.056000	30.00	0.450000	2,522.83	0.450000	2,522.83
Lancaster General Hospital	12/31/2018	45.40	1.496980	30.00	0.450000	86.52	0.450000	86.52
Total Nitrogen Surcharge						<u>\$ 7,917.96</u>		<u>\$ 7,917.96</u>
<u>PHOSPHORUS SURCHARGES</u>								
Kunzler & Company	4/24/2018	67.0	3.783000	10.00	\$ 0.450000	\$ 809.26	\$ 0.450000	809.26
Kunzler & Company	8/1/2018	83.5	5.355000	10.00	0.450000	1,477.15	0.450000	1,477.15
Kunzler & Company	11/5/2018	61.9	4.536000	10.00	0.450000	883.53	0.450000	883.53
Kunzler & Company	12/31/2018	66.4	6.056000	10.00	0.450000	1,281.87	0.450000	1,281.87
Donnelley Financial Solutions	4/24/2018	10.4	1.366675	10.00	0.450000	2.05	0.450000	2.05
Total Phosphorus Surcharge						<u>\$ 4,453.86</u>		<u>\$ 4,453.86</u>
Total Surcharges						<u>\$ 539,790.86</u>		<u>\$ 655,052.55</u>

CITY OF LANCASTER
APPLICATION OF PRESENT AND PROPOSED SURCHARGE RATES TO CONSUMPTION ANALYSIS

Customer	Bill Date	Output	Flow	Present Threshold	Present Rate	Charges Under Present Rates	Proposed Threshold	Proposed Rate	Charges Under Proposed Rates	Increase
BOD SURCHARGES										
Environmental Recovery Corp.	4/24/2018	5,152.00	4.980000	300.00	\$ 0.300000	\$ 60,455.73	250.00	\$ 0.380000	\$ 77,366.38	\$ 16,910.66
Environmental Recovery Corp.	8/1/2018	4,336.00	5.750000	300.00	0.300000	58,063.91	250.00	0.380000	74,458.77	16,394.86
Environmental Recovery Corp.	11/5/2018	5,176.00	6.317000	300.00	0.300000	77,065.83	250.00	0.380000	98,617.71	21,551.88
Environmental Recovery Corp.	12/31/2018	3,931.00	6.540000	300.00	0.300000	59,414.34	250.00	0.380000	76,294.50	16,880.15
Intelligencer Printing	4/24/2018	360.00	0.086000	300.00	0.300000	12.91	250.00	0.380000	29.98	17.07
Intelligencer Printing	8/1/2018	359.00	0.138000	300.00	0.300000	20.37	250.00	0.380000	47.67	27.30
Intelligencer Printing	11/5/2018	311.00	0.164000	300.00	0.300000	4.51	250.00	0.380000	31.70	27.19
International Paper	8/1/2018	1,020.00	0.138000	300.00	0.300000	248.60	250.00	0.380000	336.76	88.16
Kunzler & Company	4/24/2018	2,580.00	3.783000	250.00	0.300000	22,053.60	250.00	0.380000	27,934.56	5,880.96
Kunzler & Company	8/1/2018	4,997.00	5.355000	250.00	0.300000	63,601.30	250.00	0.380000	80,561.65	16,960.35
Kunzler & Company	11/5/2018	2,977.00	4.536000	250.00	0.300000	30,948.92	250.00	0.380000	39,201.96	8,253.05
Kunzler & Company	12/31/2018	3,243.30	6.056000	250.00	0.300000	45,354.82	250.00	0.380000	57,449.43	12,094.62
Lancaster Brewing Company	4/24/2018	7,700.00	0.080545	250.00	0.300000	1,500.00	250.00	0.380000	1,500.00	-
Lancaster Brewing Company	8/1/2018		0.080400	250.00	0.300000	1,500.00	250.00	0.380000	1,500.00	-
Lancaster Brewing Company	11/5/2018		0.080545	250.00	0.300000	1,500.00	250.00	0.380000	1,500.00	-
Lancaster Brewing Company	12/31/2018		0.080545	250.00	0.300000	1,500.00	250.00	0.380000	1,500.00	-
Lancaster General Hospital	8/1/2018	328.00	1.379217	250.00	0.300000	269.16	250.00	0.380000	340.94	71.78
Lancaster General Hospital	11/5/2018	314.00	1.950844	250.00	0.300000	312.38	250.00	0.380000	395.69	83.30
LSC Communications	4/24/2018	411.00	0.549470	250.00	0.300000	221.34	250.00	0.380000	280.36	59.02
LSC Communications East	12/31/2018	723.00	1.266015	250.00	0.300000	1,498.26	250.00	0.380000	1,897.80	399.54
O.J. Tankwash	4/24/2018	1,260.00	0.308997	300.00	0.300000	742.19	250.00	0.380000	989.07	246.88
O.J. Tankwash	8/1/2018	509.00	0.331682	300.00	0.300000	173.44	250.00	0.380000	272.25	98.81
Package Corp of America	4/24/2018	1,430.00	0.251430	300.00	0.300000	710.86	250.00	0.380000	940.26	229.40
Package Corp of America	8/1/2018	2,100.00	0.221783	300.00	0.300000	998.82	250.00	0.380000	1,300.32	301.50
Package Corp of America	11/5/2018	2,500.00	0.186198	300.00	0.300000	1,024.91	250.00	0.380000	1,327.72	302.81
Package Corp of America	12/31/2018	2,260.00	0.307315	300.00	0.300000	1,507.05	250.00	0.380000	1,957.62	450.58
Sauder Foods	4/24/2018	590.00	3.217000	300.00	0.300000	2,334.19	250.00	0.380000	3,466.41	1,132.22
Sauder Foods	8/1/2018	328.00	3.217200	300.00	0.300000	225.38	250.00	0.380000	795.28	569.90
Sauder Foods	11/5/2018	442.00	3.217200	300.00	0.300000	1,143.02	250.00	0.380000	1,957.62	814.60
Sauder Foods	12/31/2018	47.00	3.217200	179.00	0.300000	1,440.85	250.00	0.380000	(2,069.78)	(3,510.63)
The Standard Group	4/24/2018	351.00	0.138060	300.00	0.300000	17.62	250.00	0.380000	44.19	26.57
The Standard Group	11/5/2018	463.00	0.138060	300.00	0.300000	56.30	250.00	0.380000	93.20	36.89
The Standard Group	12/31/2018	547.00	0.138060	300.00	0.300000	85.32	250.00	0.380000	129.95	44.63
Tree House Foods	4/24/2018	791.00	0.332260	300.00	0.300000	408.18	250.00	0.380000	569.67	161.50
Tree House Foods	8/1/2018	1,460.00	0.305320	300.00	0.300000	886.14	250.00	0.380000	1,170.82	284.68
Tree House Foods	11/5/2018	364.00	0.332260	300.00	0.300000	53.20	250.00	0.380000	120.04	66.84
Tree House Foods	12/31/2018	999.00	0.266000	300.00	0.300000	465.21	250.00	0.380000	631.41	166.21
Total BOD Surcharge						\$ 437,818.67			\$ 554,941.94	\$ 117,123.27
TSS SURCHARGES										
Armstrong World Industries	8/1/2018	432.00	3.100000	360.00	\$ 0.300000	558.45	250.00	\$ 0.230000	\$ 1,082.25	\$ 781.62
Donnelley Financial Solutions	12/31/2018	261.00	1.253161	250.00	0.300000	34.49	250.00	0.230000	26.44	(8.05)
International Paper	12/31/2018	687.00	0.138000	360.00	0.300000	112.91	250.00	0.230000	115.68	54.90
Kunzler & Company	4/24/2018	438.00	3.783000	250.00	0.300000	1,779.43	250.00	0.230000	1,364.23	(415.20)
Kunzler & Company	8/1/2018	875.00	5.355000	250.00	0.300000	8,373.88	250.00	0.230000	6,419.98	(1,953.91)
Kunzler & Company	11/5/2018	389.00	4.536000	250.00	0.300000	1,577.52	250.00	0.230000	1,209.43	(368.09)
Kunzler & Company	12/31/2018	589.30	6.056000	250.00	0.300000	5,141.11	250.00	0.230000	3,941.52	(1,199.59)
LSC Communications	4/24/2018	302.00	0.549470	250.00	0.300000	71.49	250.00	0.230000	54.81	(16.68)
LSC Communications East	12/31/2018	456.00	1.266015	250.00	0.300000	652.52	250.00	0.230000	500.26	(152.25)
O.J. Tankwash	4/24/2018	620.00	0.308997	360.00	0.300000	201.01	250.00	0.230000	219.31	111.10
O.J. Tankwash	8/1/2018	522.00	0.331682	360.00	0.300000	134.44	250.00	0.230000	173.06	100.68
Package Corp of America	8/1/2018	680.00	0.221783	360.00	0.300000	177.57	250.00	0.230000	182.93	87.34
Thermal Solutions	4/24/2018	684.00	0.007290	360.00	0.300000	5.91	250.00	0.230000	6.07	2.89
Thermal Solutions	11/5/2018	422.00	0.007995	360.00	0.300000	1.24	250.00	0.230000	2.64	1.97
Tree House Foods	4/24/2018	1,020.00	0.138000	360.00	0.300000	227.88	250.00	0.230000	203.83	81.15
Tree House Foods	8/1/2018	1,020.00	0.305320	360.00	0.300000	504.18	250.00	0.230000	450.96	179.54
Tree House Foods	11/5/2018	1,030.00	0.332260	360.00	0.300000	556.98	250.00	0.230000	497.13	197.28
Tree House Foods	12/31/2018	804.00	0.266000	360.00	0.300000	295.50	250.00	0.230000	282.67	123.60
Lancaster Water	3/31/2018	1,315.69	16.723000	250.00	0.300000	44,589.66	251.00	0.230000	34,153.33	(10,436.33)
Lancaster Water	6/30/2018	1,503.08	14.642000	250.00	0.300000	45,905.58	252.00	0.230000	35,138.10	(10,767.47)
Lancaster Water	9/30/2019	1,771.28	15.334000	250.00	0.300000	58,365.00	253.00	0.230000	44,658.26	(13,706.74)
Lancaster Water	12/31/2018	1,031.41	18.206500	250.00	0.300000	35,595.32	254.00	0.230000	27,150.05	(8,445.27)
Total TSS Surcharge						\$ 204,862.06			\$ 157,832.93	\$ (45,747.51)

CITY OF LANCASTER
APPLICATION OF PRESENT AND PROPOSED SURCHARGE RATES TO CONSUMPTION ANALYSIS

Customer	Bill Date	Output	Flow	Present Threshold	Present Rate	Charges Under Present Rates	Proposed Threshold	Proposed Rate	Charges Under Proposed Rates	Increase
<u>NITROGEN SURCHARGES</u>										
Donnelley Financial Solutions	4/24/2018	136.00	1.366675	30.00	\$ 0.450000	543.69	30.00	\$ 0.675000	\$ 815.53	\$ 271.84
Donnelley Financial Solutions	8/1/2018	65.00	2.205345	30.00	0.450000	289.68	30.00	0.675000	434.52	144.84
Donnelley Financial Solutions	11/5/2018	71.70	2.148632	30.00	0.450000	336.26	30.00	0.675000	504.39	168.13
Donnelley Financial Solutions	12/31/2018	79.30	1.253161	30.00	0.450000	231.86	30.00	0.675000	347.80	115.93
Kunzler & Company	4/24/2018	93.93	3.783000	30.00	0.450000	907.65	30.00	0.675000	1,361.48	453.83
Kunzler & Company	8/1/2018	113.60	5.355000	30.00	0.450000	1,680.14	30.00	0.675000	2,520.20	840.07
Kunzler & Company	11/5/2018	107.50	4.536000	30.00	0.450000	1,319.33	30.00	0.675000	1,978.99	659.66
Kunzler & Company	12/31/2018	141.00	6.056000	30.00	0.450000	2,522.83	30.00	0.675000	3,784.24	1,261.41
Lancaster General Hospital	12/31/2018	45.40	1.496980	30.00	0.450000	86.52	30.00	0.675000	129.78	43.26
Total Nitrogen Surcharge						<u>\$ 7,917.96</u>			<u>\$ 11,876.94</u>	<u>\$ 3,958.98</u>
<u>PHOSPHORUS SURCHARGES</u>										
Kunzler & Company	4/24/2018	67.0	3.783000	10.00	\$ 0.450000	809.26	10.00	\$ 0.675000	\$ 1,213.89	\$ 404.63
Kunzler & Company	8/1/2018	83.5	5.355000	10.00	0.450000	1,477.15	10.00	0.675000	2,215.73	738.58
Kunzler & Company	11/5/2018	61.9	4.536000	10.00	0.450000	883.53	10.00	0.675000	1,325.29	441.76
Kunzler & Company	12/31/2018	66.4	6.056000	10.00	0.450000	1,281.87	10.00	0.675000	1,922.80	640.93
Donnelley Financial Solutions	4/24/2018	10.4	1.366675	10.00	0.450000	2.05	10.00	0.675000	3.08	1.03
Total Phosphorus Surcharge						<u>\$ 4,453.86</u>			<u>\$ 6,680.79</u>	<u>\$ 2,226.93</u>
Total Surcharges						<u>\$ 655,052.55</u>			<u>\$ 731,332.61</u>	<u>\$ 77,561.67</u>