

**Hamilton County, Ohio
The Metropolitan Sewer District of
Greater Cincinnati
Idea Matrix Supplement**

February 17, 2016





Volume Charge Only – Item 3

Black and Veatch has performed an analysis of removing the base charge and recovering revenue strictly by using a volumetric charge.

- Reflects 2016 projected revenue increase required.
- The analysis assumes that surcharge rates are held constant.
- Under existing rates, the base charge generates approximately \$136 million. This charge will need to be recovered entirely by volume charges under this scenario.
- Currently the two volume charges are \$5.879 per CCF and \$4.701 per CCF. Removing the base charge and would result in a volume charge of \$8.9608 per CCF.
 - This would reduce bills for customers with low usage, while increasing costs to large volume customers.
 - The impact of this potential change to quarterly customers is shown in the table on the following slide.

Source: MSD



Volume Charge Only – Item 3

Volume Charge Only Typical Customer Sewer Bills (Quarterly)

<u>Meter Size</u>	<u>Usage (CCF)</u>	<u>Existing Bill</u>	<u>Proposed 2016</u>		
			<u>Bill</u>	<u>Increase</u>	<u>Increase</u>
5/8"	0	117.35	0.00	(117.35)	(100.00%)
5/8"	3	117.35	26.88	(90.47)	(77.09%)
5/8"	6	117.35	53.76	(63.59)	(54.18%)
5/8"	9	117.35	80.65	(36.70)	(31.28%)
5/8"	12	134.99	107.53	(27.46)	(20.34%)
5/8"	15	152.62	134.41	(18.21)	(11.93%)
5/8"	20	182.02	179.22	(2.80)	(1.54%)
5/8"	25	211.41	224.02	12.61	5.96%
3/4"	30	274.78	268.82	(5.96)	(2.17%)
3/4"	50	392.36	448.04	55.68	14.19%
1"	75	595.45	672.06	76.61	12.86%
1"	100	742.43	896.08	153.65	20.70%
1 1/2"	150	1,181.45	1,344.11	162.66	13.77%
2"	200	1,563.32	1,792.15	228.83	14.64%
2"	300	2,033.42	2,688.23	654.81	32.20%
3"	500	3,755.78	4,480.38	724.60	19.29%
3"	1,000	6,106.28	8,960.76	2,854.48	46.75%
4"	5,000	25,751.09	44,803.79	19,052.70	73.99%
6"	10,000	51,272.96	89,607.58	38,334.62	74.77%
8"	20,000	100,400.57	179,215.17	78,814.60	78.50%
10"	20,000	102,504.54	179,215.17	76,710.63	74.84%
12"	20,000	103,797.03	179,215.17	75,418.14	72.66%

Projected Revenue (Existing Rates) – Item 4



Line No.	Meter Size	Revenue Under Existing Rates				
		Residential	Commercial	Industrial	Multifamily	Total
MINIMUM CHARGE - \$/Bill						
1	5/8"	\$ 83,153,636	\$ 1,952,463	\$ 0	\$ 8,264	\$ 85,114,363
2	3/4"	2,711,943	865,654	0	7,705,566	11,283,163
3	1"	2,382,597	2,009,364	0	3,771,349	8,163,310
4	1 1/2"	1,044,462	2,776,421	0	3,371,152	7,192,034
5	2"	60,248	7,625,265	0	1,312,257	8,997,770
6	3"	31,541	4,964,057	0	2,247,617	7,243,215
7	4"	0	0	2,800,469	1,270,608	4,071,077
8	6"	122,038	0	1,831,868	1,298,136	3,252,041
9	8"	25,914	0	418,743	340,438	785,096
10	10"	0	0	105,224	0	105,224
11	12"	0	0	0	0	0
12	Total	\$ 89,532,379	\$ 20,193,223	\$ 5,156,303	\$ 21,325,386	\$ 136,207,292
COMMODITY CHARGE - \$/CCF						
13	Block 1*	26,270,683	16,587,820	1,487,040	16,555,597	60,901,140
14	Block 2**	1,997,847	14,521,631	24,139,027	13,927,628	54,586,133
15	Total	28,268,529	31,109,451	25,626,067	30,483,225	115,487,273
Total Revenue		\$ 117,800,909	\$ 51,302,673	\$ 30,782,371	\$ 51,808,612	251,694,565
% Rev. From Min. Chg.		76%	39%	17%	41%	54%

* Block 1 includes volume from 9 to 150 CCF (quarterly), 5 to 50 CCF (monthly)

** Block 2 includes volume above 150 CCF (quarterly), 50 CCF (monthly)



No Minimum Volume – Item 4

As part of Black and Veatch’s 2015 Rate study, the option of removing the volumetric allowance was examined.

- Reflects 2016 projected revenue increase required.
- Base charge decreases, but impact on customers at or below minimum allowance depends on actual volume used.
- Changes to the base charge for different meter sizes under this option are shown in the following table.

Meter Size	Minimum Charge					
	Existing		No Minimum Volume		Change	
	Monthly	Quarterly	Monthly	Quarterly	Monthly	Quarterly
5/8"	\$57.11	\$117.35	\$29.17	\$78.98	(48.92%)	(32.70%)
3/4"	68.49	151.31	41.15	114.73	(39.92%)	(24.18%)
1"	88.14	207.44	61.83	173.80	(29.85%)	(16.22%)
1 1/2"	135.90	352.51	112.09	326.49	(17.52%)	(7.38%)
2"	187.29	499.33	166.18	481.01	(11.27%)	(3.67%)
3"	459.03	1,281.49	452.19	1,304.24	(1.49%)	1.78%
4"	760.08	2,122.30	769.04	2,189.19	1.18%	3.15%
6"	1,487.10	4,193.17	1,534.23	4,311.95	3.17%	2.83%
8"	2,210.47	6,256.78	2,295.58	6,540.73	3.85%	4.54%
10"	2,970.50	8,360.75	3,095.51	8,755.16	4.21%	4.72%
12"	3,458.83	9,653.24	3,609.48	10,115.51	4.36%	4.79%



No Minimum Volume – Item 4

Option 3: "Across-the-Board" Increase – No Minimum Volume Typical Customer Sewer Bills (Quarterly)

<u>Meter Size</u>	<u>Usage (CCF)</u>	<u>Existing Bill</u>	<u>Proposed 2016</u>		
			<u>Bill</u>	<u>Increase</u>	<u>Increase</u>
5/8"	0	117.35	78.98	(38.37)	(32.70%)
5/8"	3	117.35	97.03	(20.32)	(17.32%)
5/8"	6	117.35	115.07	(2.28)	(1.94%)
5/8"	9	117.35	133.12	15.77	13.44%
5/8"	12	134.99	151.17	16.18	11.99%
5/8"	15	152.62	169.21	16.59	10.87%
5/8"	20	182.02	199.29	17.27	9.49%
5/8"	25	211.41	229.37	17.96	8.49%
3/4"	30	274.78	295.20	20.42	7.43%
3/4"	50	392.36	415.51	23.15	5.90%
1"	75	595.45	624.97	29.52	4.96%
1"	100	742.43	775.36	32.93	4.44%
1 1/2"	150	1,181.45	1,228.83	47.38	4.01%
2"	200	1,563.32	1,630.74	67.42	4.31%
2"	300	2,033.42	2,125.52	92.10	4.53%
3"	500	3,755.78	3,938.31	182.53	4.86%
3"	1,000	6,106.28	6,412.21	305.93	5.01%
4"	5,000	25,751.09	27,088.36	1,337.27	5.19%
6"	10,000	51,272.96	53,950.12	2,677.16	5.22%
8"	20,000	100,400.57	105,656.90	5,256.33	5.24%
10"	20,000	102,504.54	107,871.33	5,366.79	5.24%
12"	20,000	103,797.03	109,231.68	5,434.65	5.24%



Multifamily Billing by Meter Size – Item 5

Multifamily customers are currently charged at the greater of meter size or number of family units under the existing rate structure. Following is a summary of Quarterly rates:

Minimum Quarterly Charge		
Meter Size	Family Units	Rate
5/8"	1	\$117.35
3/4"	2-3	\$151.31
1"	4-5	\$207.44
1 1/2"	6-12	\$352.51
2"	13-20	\$499.33
3"	21-50	\$1,281.49
4"	51-115	\$2,122.30
6"	116-250	\$4,193.17
8"	Over 250	\$6,256.78
10"		\$8,360.75
12"		\$9,653.24

- If this billing convention were changed, it would result in a loss of approximately \$3.7 million in revenue that would need to be captured by increasing the minimum charges. This \$3.7 million represents 1.4% of total rate revenue.

Source: MSD



Single Volume Charge – Item 6

- If MSD were to implement a single volume charge for all customers regardless of volume, the result would be a volume charge equal to \$5.361 per CCF necessary to produce revenue equal to revenue under existing rates (currently the two volume charges are \$5.879 per CCF and \$4.701 per CCF).
 - This would reduce bills for many residential customers, while increasing costs to large volume customers.
 - The impact of this potential change to quarterly customers is shown in the table on the following slide.

Source: MSD



Single Volume Charge – Item 6

Single Volume Charge

<u>Meter Size</u>	<u>Usage (CCF)</u>	<u>Existing Bill</u>	<u>Proposed 2016</u>			
			<u>Bill</u>	<u>Increase</u>	<u>Increase</u>	<u>Increase</u>
5/8"	0	117.35	117.35	0.00	0.00%	
5/8"	3	117.35	117.35	0.00	0.00%	
5/8"	6	117.35	117.35	0.00	0.00%	
5/8"	9	117.35	117.35	0.00	0.00%	
5/8"	12	134.99	133.81	(1.17)	(0.87%)	
5/8"	15	152.62	150.27	(2.36)	(1.54%)	
5/8"	20	182.02	177.71	(4.31)	(2.37%)	
5/8"	25	211.41	205.15	(6.26)	(2.96%)	
3/4"	30	274.78	266.56	(8.22)	(2.99%)	
3/4"	50	392.36	376.30	(16.06)	(4.09%)	
1"	75	595.45	569.61	(25.84)	(4.34%)	
1"	100	742.43	706.79	(35.64)	(4.80%)	
1 1/2"	150	1,181.45	1,126.23	(55.22)	(4.67%)	
2"	200	1,563.32	1,547.42	(15.90)	(1.02%)	
2"	300	2,033.42	2,096.16	62.74	3.09%	
3"	500	3,755.78	3,975.80	220.02	5.86%	
3"	1,000	6,106.28	6,719.50	613.22	10.04%	
4"	5,000	25,751.09	29,509.91	3,758.82	14.60%	
6"	10,000	51,272.96	58,963.78	7,690.82	15.00%	
8"	20,000	100,400.57	115,955.39	15,554.82	15.49%	
10"	20,000	102,504.54	118,059.36	15,554.82	15.17%	
12"	20,000	103,797.03	119,351.85	15,554.82	14.99%	

Demographic Information – Item 11



Selected Demographic and Housing Estimates				
Subject	Hamilton County, OH			
	Estimate	Margin of Error	Percent	Percent Margin of Error
SEX AND AGE				
Total Population	803,272	*****	803,272	(X)
65 years and older	109,876	+/-13	13.7%	+/-0.1

Hamilton County, OH						
Subject	Occupied Housing Units		Owner-occupied housing units		Renter-occupied housing units	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
	Occupied housing units	329,062	+/-1,560	194,184	+/-1,901	134,878
HOUSEHOLD SIZE						
1-person household	34.3%	+/-0.4	25.7%	+/-0.5	46.6%	+/-0.8
2-person household	32.4%	+/-0.5	37.5%	+/-0.6	25.2%	+/-0.8
3-person household	14.4%	+/-0.4	15.3%	+/-0.5	13.1%	+/-0.6
4-or-more-person household	18.9%	+/-0.4	21.6%	+/-0.5	15.1%	+/-0.5



Demographic Information – Item 11

Selected Housing Characteristics				
Subject	Hamilton County, OH			
	Estimate	Margin of Error	Percent	Percent Margin of Error
SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME(SMOCAPI)				
Housing units with a mortgage (excluding units where SMOCAPI cannot be computed)	137,833	+/-1719	137,388	(X)
Less than 20.0 percent	59,762	+/-1,270	43.4%	+/-0.8
20.0 to 24.9 percent	21,536	+/-964	15.6%	+/-0.6
25 to 29.9 percent	15,244	+/-819	11.1%	+/-0.6
30 to 34.9 percent	10,486	+/-582	7.6%	+/-0.4
35.0 percent or more	30,805	+/-1,194	22.3%	+/-0.8
Not computed	460	+/-127	(X)	(X)
Housing unit without a mortgage (excluding units where SMOCAPI cannot be computed)				
Less than 10.0 percent	20,868	+/-825	37.8%	+/-1.3
10.0 to 14.9 percent	11,532	+/-649	20.9%	+/-1.1
15.0 to 19.9 percent	6,583	+/-499	11.9%	+/-0.9
20.0 to 24.9 percent	4,649	+/-420	8.4%	+/-0.7
25.0 to 29.9 percent	2,806	+/-326	5.1%	+/-0.6
30.0 to 34.9 percent	2,061	+/-318	3.7%	+0.6
35.0 percent or more	6,754	+/-490	12.2%	+/-0.8
Not Computed	638	+/-147	(X)	(X)
GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME (GRAPI)				
Occupied units paying rent(excluding units where GRAPI cannot be computed)	125,204	+/-1,623	125,204	(X)
Less than 15.0 percent	16,166	+/-783	12.9%	+/-0.6
15.0 to 19.9 percent	15,162	+/-827	12.1%	+/-0.6
20.0 to 24.9 percent	14,767	+/-938	11.8%	+/-0.7
25.0 to 29.9 percent	13,770	+/-871	11.0%	+/-0.7
30.0 to 34.9 percent	10,816	+/-737	8.6%	+/-0.6
35.0 percent or more	54,523	+/-1,402	43.5%	+/-1.0
Not Computed	9,674	+/-612	(X)	(X)

Source: MSD



Customer Assistance – Akron – Item 11

- Akron currently provides assistance to homeowners who have been approved for the Ohio Home Energy Assistance Program (HEAP).
- If a resident homeowner provides their HEAP approval letter, they will receive a reduction on their sewer rate (currently this discount is approximately 36% per CCF).
- HEAP income guidelines vary based on the number of people living in a household. For example, 2 member households must have gross income less than \$27,527.50.

Customer Assistance – Cleveland – Item 11



- The Northeast Ohio Regional Sewer District currently offers a 40% discount on sewer charges to certain residents through a homestead exemption. In order to qualify for the homestead exemption residents must meet the following:
 - 65 years of age or older, or total disability
 - Total household income less than \$32,000
 - Homeowner
 - Property must lie within the District's service area

Customer Assistance – Cleveland – Item 11



- The Northeast Ohio Regional Sewer District also offers a low income customer assistance program which is not based on the age of the customer. The low income customer assistance program offers a 40% discount on sewer rates. To qualify for the low income customer assistance program customers must meet the following criteria:
 - Must be an eligible homeowner
 - Must have income that is less than 200% of the federal poverty income guideline level (varies by household size)

Customer Assistance – Cleveland – Item 11



- The Northeast Ohio Regional Sewer District also offers a crisis assistance program for customers. The crisis assistance program offers customers a sewer credit of up to \$300 dollars given the following criteria:
 - Must be an eligible homeowner
 - Verifiable financial hardship that has occurred within the last six months (e.g. major medical expenses, job loss, change in marital status)
 - No income restrictions
 - Must apply in person

Customer Assistance – Columbus – Item 11



- The City of Columbus offers a 20% discount on sewer usage charges to individuals who qualify for their low income discount program. Qualifications include:
 - Homeownership
 - Household income must be less than 150% of current U.S. Census federal poverty level
 - Must be enrolled in a qualifying low income program, such as:
 - Food stamp benefits
 - Ohio Medicaid
 - Low Income Energy Assistance
 - Home Energy Assistance (HEAP)
 - Ohio Works First
 - Public housing benefits

Customer Assistance – Columbus – Item 11



- In addition to the discount offered to individual low income discount program, the City of Columbus offers multifamily customers a 20% discount on sewer usage charges if 80% of the units meet the following requirements:
 - Household income must be less than 150% of current U.S. Census federal poverty level
 - Must be enrolled in a qualifying low income program, such as:
 - Food stamp benefits
 - Ohio Medicaid
 - Low Income Energy Assistance
 - Home Energy Assistance (HEAP)
 - Ohio Works First
 - Subsidized or public housing benefits



Customer Assistance – Toledo – Item 11

- The City of Toledo offers a discount of 25% under a homestead exemption to customers who meet the following criteria:
 - Homeowner
 - 65 years of age, or
 - Total disability
- The City of Toledo's exemption is not limited based on income levels of the household.