

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



March 23, 2016





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# Billing and Rates





# No Minimum Volume – Monthly – Idea 4

## No Minimum Volume Typical Customer Sewer Bills (Monthly)

<u>Meter Size</u>	<u>Usage (CCF)</u>	<u>Existing Bill</u>	<u>Under Proposed Structure</u>	
			<u>Increase</u>	<u>Increase</u>
5/8"	0	39.12	(14.84)	(37.95%)
5/8"	3	39.12	(8.83)	(22.56%)
5/8"	6	39.12	(2.81)	(7.19%)
5/8"	9	39.12	3.20	8.19%
5/8"	12	45.00	3.03	6.74%
5/8"	15	50.87	2.86	5.62%
5/8"	20	60.67	2.57	4.24%
5/8"	25	70.47	2.29	3.24%
3/4"	30	91.59	2.00	2.18%
3/4"	50	130.79	0.85	0.65%
1"	75	198.48	(0.58)	(0.29%)
1"	100	247.48	(2.01)	(0.81%)
1 1/2"	150	393.82	(4.88)	(1.24%)
2"	200	521.11	(4.88)	(0.94%)
2"	300	677.81	(4.88)	(0.72%)
3"	500	1,251.93	(4.88)	(0.39%)
3"	1,000	2,035.43	(4.88)	(0.24%)
4"	5,000	8,583.70	(4.88)	(0.06%)
6"	10,000	17,090.99	(4.88)	(0.03%)
8"	20,000	33,466.86	(4.88)	(0.01%)
10"	20,000	34,168.18	(4.88)	(0.01%)
12"	20,000	34,599.01	(4.88)	(0.01%)



# Multifamily Billing by Meter Size – Idea 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

# Multifamily by Meter Size – Monthly – Idea 5



## Multifamily Billing by Meter Size Typical Customer Sewer Bills (Monthly)

<u>Meter Size</u>	<u>Usage (CCF)</u>	<u>Existing Bill</u>	<u>Under Proposed Structure</u>	
			<u>Increase</u>	<u>Increase</u>
5/8"	0	39.12	1.16	2.96%
5/8"	3	39.12	1.16	2.96%
5/8"	6	39.12	1.16	2.96%
5/8"	9	39.12	1.16	2.96%
5/8"	12	45.00	1.16	2.57%
5/8"	15	50.87	1.16	2.27%
5/8"	20	60.67	1.16	1.91%
5/8"	25	70.47	1.16	1.64%
3/4"	30	91.59	1.49	1.63%
3/4"	50	130.79	1.49	1.14%
1"	75	198.48	2.05	1.03%
1"	100	247.48	2.05	0.83%
1 1/2"	150	393.82	3.48	0.88%
2"	200	521.11	4.92	0.94%
2"	300	677.81	4.92	0.73%
3"	500	1,251.93	12.63	1.01%
3"	1,000	2,035.43	12.63	0.62%
4"	5,000	8,583.70	20.92	0.24%
6"	10,000	17,090.99	40.81	0.24%
8"	20,000	33,466.86	61.68	0.18%
10"	20,000	34,168.18	82.42	0.24%
12"	20,000	34,599.01	95.17	0.28%



# Single Volume Charge – Idea 6

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- 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 monthly customers is shown in the table on the following slide.

Source: MSD



# Single Volume Charge Monthly – Idea 6

## Single Volume Charge Typical Customer Sewer Bills (Monthly)

<u>Meter Size</u>	<u>Usage (CCF)</u>	<u>Existing Bill</u>	<u>Under Proposed Structure</u>	
			<u>Increase</u>	<u>Increase</u>
5/8"	0	39.12	(2.05)	(5.25%)
5/8"	3	39.12	(2.05)	(5.25%)
5/8"	6	39.12	(2.05)	(5.25%)
5/8"	9	39.12	(2.05)	(5.25%)
5/8"	12	45.00	(2.75)	(6.12%)
5/8"	15	50.87	(3.46)	(6.79%)
5/8"	20	60.67	(4.62)	(7.61%)
5/8"	25	70.47	(5.79)	(8.21%)
3/4"	30	91.59	(7.55)	(8.24%)
3/4"	50	130.79	(12.22)	(9.34%)
1"	75	198.48	(19.03)	(9.59%)
1"	100	247.48	(24.87)	(10.05%)
1 1/2"	150	393.82	(39.08)	(9.92%)
2"	200	521.11	(32.65)	(6.27%)
2"	300	677.81	(14.67)	(2.16%)
3"	500	1,251.93	7.62	0.61%
3"	1,000	2,035.43	97.55	4.79%
4"	5,000	8,583.70	802.30	9.35%
6"	10,000	17,090.99	1,666.34	9.75%
8"	20,000	33,466.86	3,427.95	10.24%
10"	20,000	34,168.18	3,391.13	9.92%
12"	20,000	34,599.01	3,368.51	9.74%

# Inflow and Infiltration (Stormwater)





# Inflow and Infiltration – Ideas 7 and 9

As part of Black and Veatch's October 2015 presentation to the task force, the data in the following table was presented.

Cost Component	Operating Expense	Replacement Costs	Capital Costs	Total Cost of Service
<b>Volume Related Cost</b>	\$14,009,503	\$337,761	\$10,687,653	\$25,034,917
<b>Capacity Related Cost</b>	40,542,952	3,713,436	117,503,105	161,759,494
<b>Strength Related Cost</b>				
Suspended Solids	13,170,630	401,681	12,710,270	26,282,581
BOD	17,489,624	416,194	13,169,508	31,075,326
TKN	2,396,311	39,174	1,239,583	3,675,068
<b>Customer Cost</b>	5,638,646	--	--	5,638,646
<b>Industrial Monitoring &amp; Surveillance</b>				
Surcharge	941,787	--	--	941,787
Pretreatment	2,264,523	--	--	2,264,523
<b>Water in Basement</b>	13,735,225	64,453	2,039,481	15,839,159
<b>Total Cost of Service</b>	<b>110,189,200</b>	<b>4,972,700</b>	<b>157,349,600</b>	<b>272,511,500</b>

Inflow and Infiltration impacts volume related costs and capacity related costs.



# Inflow and Infiltration – Ideas 7 and 9

A summary of the MSD treatment flow for the last five available years of data is shown below.

Year	Total Treatment Flow (MGD)	Total Treatment Flow (CCF)	Billable Wastewater Flow (CCF)	Total Flow Treated but Not Billed	Percentage of Flow Treated but Not Billed
2010	58,746	78,537,433	34,444,304	44,093,129	56.14%
2011	73,008	97,604,278	33,504,893	64,099,385	65.67%
2012	54,785	73,241,979	32,542,971	40,699,008	55.57%
2013	70,149	93,782,086	34,799,087	58,982,999	62.89%
2014	61,118	81,708,556	34,709,453	46,999,103	57.52%

The five year average percentage of flow treated but not billed (Inflow and Infiltration) is 59.56%.

59.56% of the total volume and capacity related costs from the previous slide (\$186,794,411) equals \$111,253,818. This is the approximate cost of treating Inflow and Infiltration which would need to be recovered from rate revenues.

The 2015 MSD rate study states that the amount of Inflow and Infiltration averages 65% of the total wastewater flow reaching the treatment plants. 65% of \$186,794,411 equals \$121,416,367.



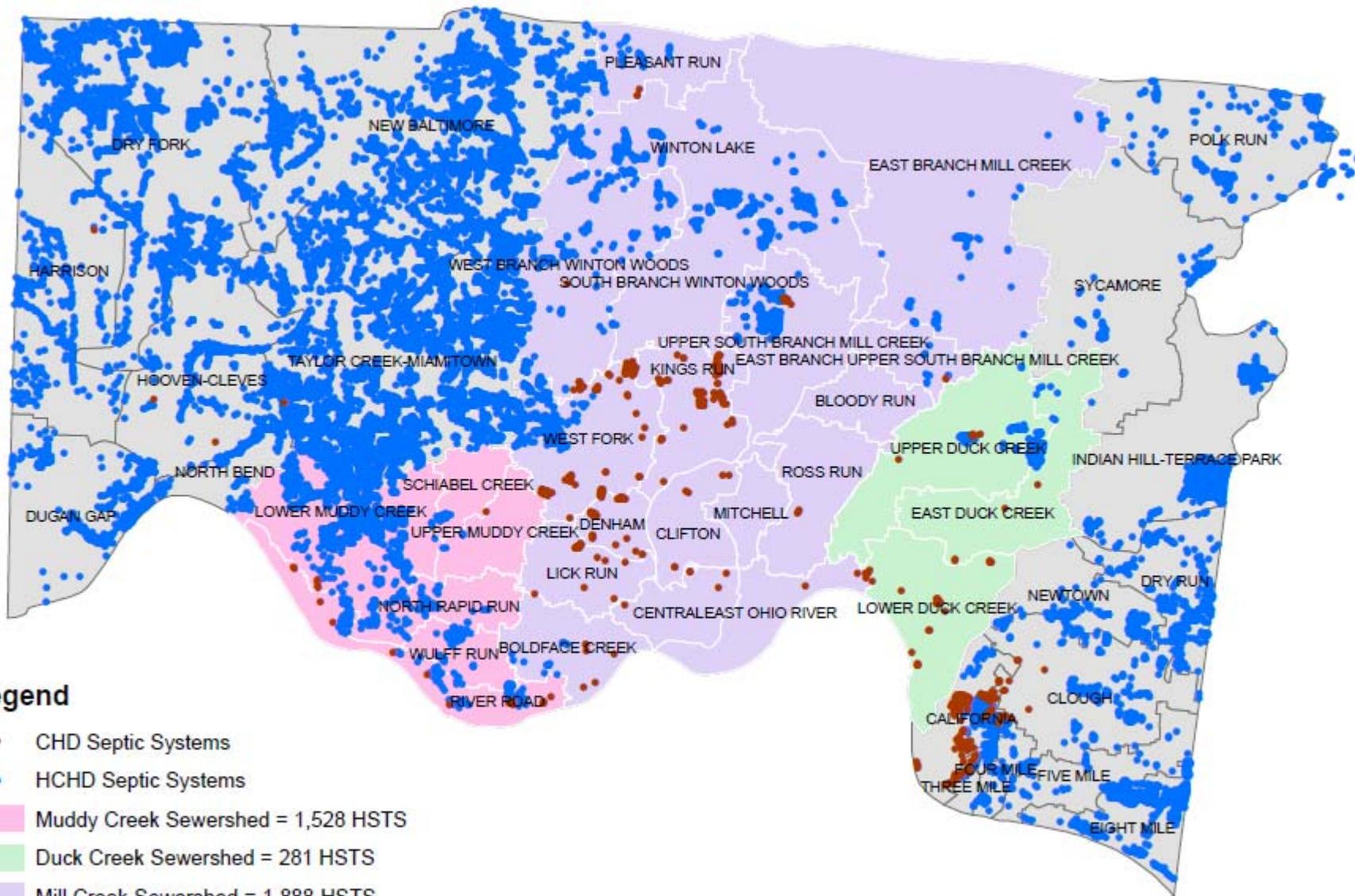
# Inflow and Infiltration – Ideas 7 and 9

- The amount recovered under Idea 7 or Idea 9 based on impervious surface could be between the \$111,253,818 to \$121,416,367 estimates.
- The 2015 MSD rate study states that the major cost responsibility for Inflow and Infiltration is allocable on an individual connection basis. As such  $\frac{3}{4}$  of the Inflow and Infiltration volume is allocated to customer classes based on estimated customer equivalent units, with the remaining  $\frac{1}{4}$  allocated on the basis of contributed volume. The rate study provides estimated customer equivalent units of 331,790 within the system.
- The following table shows the allocation between equivalent connections (i.e., base charge) and volume charges for the Inflow and Infiltration costs.

<b>Inflow and Infiltration Costs</b>		
<b>Allocation</b>	<b>Average Rate for Last 5 Years 59.56%</b>	<b>2015 MSD Rate Study Average 65%</b>
Equivalent Connections (Base Charges)	83,440,363	91,062,275
<i>Base Charge per Month</i>	<i>20.96</i>	<i>22.87</i>
Volumetric Charges	27,813,454	30,354,092
<i>Volumetric Charge per CCF</i>	<i>0.92</i>	<i>1.00</i>
<b>Total Inflow and Infiltration Costs</b>	<b>111,253,817</b>	<b>121,416,367</b>



# Septic Tanks by Sewershed – Idea 9



## Legend

- CHD Septic Systems
- HCHD Septic Systems
- Muddy Creek Sewershed = 1,528 HSTS
- Duck Creek Sewershed = 281 HSTS
- Mill Creek Sewershed = 1,888 HSTS
- MSDGC Sewershed Boundaries

Source: CAGIS 2016

\*Caution - data has not been verified by Hamilton County Planning + Development for accuracy, taken as is from CAGIS

# Affordability Programs





# Customer Assistance – HEAP – Idea 11

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- Cincinnati-Hamilton County Action Agency (CAA) administers the federally funded Home Energy Assistance Program (HEAP) to help County residents who qualify by helping to pay a portion of their utility bills.
- 3,531 households assisted last year at a cost of about \$1 million.
  - Another 15,770 households were assisted through a Percentage of Income Payment Plan (PIPP)
- CAA has expressed the opinion that switching all MSD customers to a monthly bill would help to alleviate affordability problems.

# Customer Assistance – Columbus – Idea 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 – Idea 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

-Go with #11 on ideas

# Legal Aid Proposal

From Mark Lawson



1. Convert from quarterly to monthly billing
  2. Minimum charge equal to one-third the quarterly charge
  3. Make available to low-income households a one-time, annual credit toward the combined water / sewer bill of \$300.
    - a. Eligibility: Already receiving a benefit (HEAP, Food Stamps, etc.)
    - b. Not receiving benefit, but demonstrates income below 175% federal poverty level
    - c. Administered by CAA
  4. Tenants eligible provided they have arranged to receive the monthly bills (law doesn't permit tenants to be the "customer.")
  5. Applying the credit monthly rather than lump-sum. This is especially important for tenants, who have high transience.
  6. Annual reduction to be supplemented by an emergency assistance fund.
    - a. Can be accessed once in 24 months
    - b. Must demonstrate negative change in household circumstances
    - c. Up to \$300 available toward curing default and avoiding disconnection
  7. Continuing review and continuing consideration of more extensive, more equitable affordability program.
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