

Section: 1  
Title: Equivalent Residential Unit  
Reference: Secs. 17.103(9), 17.208, MMSD Rules, and Appendix A (1.)(A)

The residential user class accounts for a significant share of the total wastewater generated in the service area. In accordance with EPA regulations, user charges must be apportioned to each of these users or class of users on the basis of wastewater flow and strength discharged to the system. Since it would not be reasonable to monitor each user to determine this flow and strength due to the size of the class, the user charge will be based on the characteristics of a typical residential discharge, called an Equivalent Residential Unit (ERU).

The U. S. Environmental Protection Agency (EPA) has developed a standard ERU that should be adopted unless other values can be supported by the District. This standard ERU is a flow of 100 gallons per capita/day (including Infiltration/Inflow), a BOD of 0.167 pounds per capita/day (ppcd) (200 mg/l) and TSS of 0.209 ppcd (250 mg/l).

To determine the District's ERU, select portions of the service area were monitored during the dry months of July and August of 1976, as part of the UC Study conducted for the District. Sampling stations were chosen at points downstream of six strictly residential service areas that were believed to represent the typical user.

In each of the six study areas, wastewater samples were collected every 15 minutes for an average of 20 days. These samples were used to determine 24-hour composite values for BOD and TSS for each study area. Flow rates were calculated from measurements recorded at existing gauging stations.

The results were used to calculate average per capita wastewater characteristics. A detailed description of this activity can be found in Technical Memorandum 4A of the UC/ICR Study.

The study yielded an ERU consisting of 64 gallons/capita/day (excluding Infiltration/Inflow), with BOD of 0.166 pounds per capita/day (310 mg/l) and TSS of 0.197 pounds/capita/day (370 mg/l).

The calculated domestic flow rate compared very favorably with winter water consumption data. With allowance for I/I, BOD and TSS loadings compared favorably with EPA values. Consequently, the aforementioned ERU values were used in the formula for calculating MMSD's user charges to the constituent municipalities at start-up of the program in 1979.

Surveys conducted yearly of winter water consumption in municipalities with metered water, provide a basis for updating the calculations for the flow parameter. The most recent calculation supports an ERU of 53 gallons per capita per day.

The resultant EQUIVALENT RESIDENTIAL UNIT, effective January 2017, is as follows:

Domestic Flow	53 gallons/capita/day  ( <u>Excluding</u> Infiltration/Inflow)
B.O.D.	0.165 pounds capita/day (310 milligrams/liter)
T.S.S.	0.197 pounds/capita/day (370 milligrams/liter)

Section: 2  
 Title: Residential Occupancy Factors  
 Reference: Secs. 17.103(18), 17.208, MMSD Rules, and Appendix A(1.0)(A)

The residential occupancy factor means the average number of people residing in each residential housing unit. The 2017 residential occupancy factor assigned to each municipality is based on housing and population data as of January 1, 2016, and further explained in Section 5 of this manual.

MMSD relies on municipal user data transmissions and an annual housing unit survey to update the housing unit count reported in the 2010 census. Municipal reports are subject to verification by MMSD as explained in Section 8 of this manual.

Total municipal population as of January 1 is reported in October by the Wisconsin Department of Administration. To determine a residential occupancy factor, total population must be allocated between the residential and commercial sewer user classes. The residential allocation is derived by subtracting commercial population from total population. Commercial population is classified as follows:

- Apartments - Occupancy factors and vacancy rates for metered apartments are from the census. Occupancy factors for unmetered apartments served by MMSD are assigned as follows:

<u>Bedrooms</u>	<u>People/Unit</u>
1	1.5
2	2.5
3	Residential Occupancy Factor
Unknown	2.5

In lieu of using the assigned occupancy factor for apartments, a municipality may report the actual occupant count for each unmetered apartment. This occupant count must include all unmetered apartments and be updated at least once each year.

- Mixed Apartment/Business - Includes apartments in mercantile buildings such as stores or taverns. MMSD assigns an occupancy factor of 1.25 to these apartments. The rental vacancy rate from the census is used to estimate the number of vacant units.

- Mobile Home Parks - Includes all mobile homes not classified residential. Occupancy factors and vacancy rates are from the census.
- Group Quarters - Includes nursing homes, convents and monasteries, boarding houses, correctional institutions, college dormitories and other facilities without separate living and dining areas. Estimated population is based on the state report of institutional population and municipal reports of other group quarters facilities. A factor of .75 people per room is used to estimate boarding house population.
- Mixed Home/Business - Includes a business in the home classified as commercial for sewer billing. These units are assigned the residential occupancy factor.

The Residential Occupancy Factor for the District is 2.64 people per unit, computed as follows:

$$\begin{array}{rcccl} \text{2016 Population} & \div & \text{Occupied Units} & = & \text{People Per Unit} \\ 723,569 & & 273,700 & & 2.64 \end{array}$$

Occupied residential units represent residential units reported to MMSD on municipal data transmissions including mixed home/business units. An update of the residential occupancy factor for each municipality is listed in Table 2-1 on page 2-3.

**Table 2-1 -- RESIDENTIAL OCCUPANCY FACTORS**

<b><u>Residential Billing Alternative</u></b>	<b><u>Municipality</u></b>	<b><u>People per Unit for UC Billings In:</u></b>	
		<b><u>2016</u></b>	<b><u>2017</u></b>
1 - 2 Family	Bayside	2.45	2.44
	Brookfield	2.55	2.53
	Brown Deer	2.63	2.63
	Caledonia	1.97	1.97
	Fox Point	2.43	2.41
	Franklin	2.83	2.82
	Glendale	2.28	2.27
	Muskego	2.70	2.70
	New Berlin	2.64	2.63
	Oak Creek	2.88	2.92
	Thiensville	2.42	2.42
	Wauwatosa	2.33	2.34
	West Allis	2.31	2.29
	West Milwaukee	2.53	2.52
1 - 4 Family	Butler	2.08	2.07
	Cudahy	2.31	2.30
	Elm Grove	2.42	2.41
	Germantown	2.51	2.49
	Greendale	2.62	2.61
	Greenfield	2.47	2.46
	Hales Corners	2.51	2.50
	Menomonee Falls	2.52	2.56
	Mequon	2.56	2.48
	Milwaukee	2.75	2.74
	River Hills	2.40	2.39
	Shorewood	2.23	2.20
	St. Francis	2.66	2.65
	Whitefish Bay	2.70	2.69

Section: 3  
Title: Unit Process-Parameter Relationships  
Reference: Secs. 17.103(25), 17.204, MMSD Rules

Unit Process-Parameter Relationships provide the basis for allocating the O & M costs of each unit process to the cost allocation parameters of flow, BOD, TSS, and connections. The relationships presented in Table 3-1 are based on the User Charge Program alternative recommended by Milwaukee County's Task Force on Metropolitan Sewerage Commission Development and its User Charge subcommittee, which alternative was adopted by the Commissions on 13 July 1978.

In 1991, a User Charge Rate and Cost Allocation Study determined that the 1991 unit process-parameter relationships were consistent with the 1978 study, except for five modifications which were recommended and adopted. The study identified the Inline Storage System (ISS) as a unit process qualifying as new and different from other existing unit processes. On November 30, 1992, the Commission adopted an alternative which allocated ISS and I/I treatment costs to the parameters of flow and connections based on a percentage of each to their totals (cost net of revenues).

In 2000, a User Charge Rate and Cost Allocation Study determined that the current unit process-parameter relationships adequately and equitably reflect process changes and capital additions since 1992 and these relationships are consistent with the 1992 study. However, 5 revisions to the unit process cost allocation procedures were recommended and adopted.

Table 3-2 summarizes, under the appropriate charge parameters, the 2017 budget dollars that Table 3-1 assigned to each unit process. Non-specific activities and miscellaneous services are apportioned to the four parameters in the same proportion as specific parameter costs bear to the total. Administrative support is distributed to the four parameters on the basis of labor costs, as charged in the operating cost centers. Adjustments to account for the surplus or deficit on each parameter in 2013 are also shown.

On September 11, 1996, the Public Service Commission ruled that capital cost recovery charges related to watercourse improvement projects can only be collected from those extraterritorial municipalities which are tributary to the watercourse being improved.

Applying this determination to O&M costs, MMSD recovers operation and maintenance costs related to watercourses only from the extraterritorial municipalities which are tributary to the watercourses being maintained. Table 3-3 summarizes the 2017 budget dollars by watercourse and assigned to the flow parameter. Table 3-4 adds the base flow rate from Table 3-2 and the watercourse rate from Table 3-3 to show a total flow rate. In addition, Table 3-4 reports the volumetric charge and average household charge. Table 3-5 shows the current status of the user charge stabilization fund.

The Commission authorized the continuous use of this formula until further notice.

TABLE 3-1  
Page 1 of 22017 BUDGETED UNIT PROCESS-PARAMETER RELATIONSHIPS  
IN THOUSANDS OF DOLLARS

UNIT PROCESS OR ACTIVITY	BUDGET	FLOW	BOD	TSS	CONNECTIONS	NON-SPECIFIC	L.W.P.P.	PERMIT FEES	MI STORAGE COSTS	HOUSEHOLD HAZARDOUS WASTE	WATERCOURSE MAINTENANCE COSTS	GREEN INFRASTRUCTURE
<u>JONES ISLAND TREATMENT PLANT</u>												
PRIMARY TREATMENT:												
PUMPING, METERING AND SCREENING	\$2,744	\$906	\$0	\$0	\$1,838	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PRIMARY SEDIMENTATION	\$1,523	\$1,523	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DEBRIS/SCUM DISPOSAL	\$335	\$0	\$0	\$0	\$335	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SECONDARY TREATMENT:												
AERATION AND PROCESS AIR GENERATION	\$5,647	\$0	\$5,647	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CLARIFICATION	\$824	\$824	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SLUDGE RETURN	\$1,534	\$0	\$1,534	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ADVANCE WASTEWATER TREATMENT:												
DISINFECTION AND PHOSPHORUS REMOVAL	\$3,065	\$3,065	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
THICKENING	\$3,477	\$108	\$831	\$2,538	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OTHER SLUDGE HANDLING PROCESSES	\$18,514	\$574	\$4,424	\$13,516	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MILORGANITE PRODUCTS	\$930	\$29	\$222	\$679	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
INTERPLANT PIPELINE	\$904	\$61	\$136	\$707	\$0	\$0	\$0	\$476	\$0	\$0	\$0	\$0
PERMIT FEES	\$476	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OFF-PLANT FACILITIES AND PROGRAMS	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OTHER	\$374	\$354	\$8	\$11	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0
NON-SPECIFIC ALLOCATION	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL	\$40,347	\$7,444	\$12,802	\$17,451	\$2,174	\$0	\$0	\$476	\$0	\$0	\$0	\$0
<u>SOUTH SHORE TREATMENT PLANT</u>												
PRIMARY TREATMENT:												
PRECHLORINATION	\$235	\$235	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
COARSE SCREENING AND GRIT REMOVAL	\$1,245	\$0	\$0	\$0	\$1,245	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PRIMARY SEDIMENTATION AND METER VAULT	\$903	\$903	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DEBRIS/SCUM REMOVAL AND DISPOSAL	\$867	\$0	\$0	\$0	\$867	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SECONDARY TREATMENT:												
AERATION AND PROCESS AIR GENERATION	\$3,828	\$0	\$3,828	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CLARIFICATION	\$995	\$995	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SLUDGE RETURN	\$587	\$0	\$587	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
LAB ANALYSIS	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ADVANCE WASTEWATER TREATMENT:												
DISINFECTION AND PHOSPHORUS REMOVAL	\$1,721	\$1,721	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
EFFLUENT PUMPING	\$373	\$373	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SOLIDS PROCESSING:												
FLOATATION THICKENING	\$540	\$19	\$134	\$387	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OTHER SLUDGE HANDLING PROCESSES	\$2,865	\$195	\$335	\$2,335	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PRIMARY SLUDGE SCREENING	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
AGRICULTURAL USE OF AGRI-LIFE & POLYMER	\$8	\$1	\$1	\$6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
FILTER CAKE TO WPCO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
INTERPLANT PIPELINE	\$964	\$66	\$144	\$754	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PERMIT FEES	\$419	\$0	\$0	\$0	\$0	\$0	\$0	\$419	\$0	\$0	\$0	\$0
OTHER	\$408	\$402	\$3	\$2	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0
NON-SPECIFIC ALLOCATION	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL	\$15,958	\$4,910	\$5,032	\$3,454	\$2,113	\$0	\$0	\$419	\$0	\$0	\$0	\$0



2017 BUDGETED UNIT PROCESS-PARAMETER RELATIONSHIPS  
IN THOUSANDS OF DOLLARS

MILORGANITE	BUDGET	FLOW	BOD	ISS	CONNECTIONS	NON-SPECIFIC	I.W.P.P.	PERMIT FEES	VI STORAGE COSTS	HOUSEHOLD HAZARDOUS WASTE	WATERCOURSE MAINTENANCE COSTS	GREEN INFRASTRUCTURE
REVENUE	(\$8,350)	\$0	(\$8,350)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MARKETING	\$4,200	\$0	\$4,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL	(\$4,070)	\$0	(\$4,070)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<u>OTHER ALLOCABLE COST CENTERS</u>												
INLINE STORAGE SYSTEM	\$3,073	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,073	\$0	\$0	\$0
HOUSEHOLD HAZARDOUS WASTE PROGRAM	\$1,196	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,196	\$0	\$0
ENGINEERING:												
LOCAL SEWER INSPECT/APPROVAL & MONIT. MIS/MUNI. SEWI	\$261	\$261	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OTHER	\$6,851	\$12	\$0	\$0	\$0	\$5,931	\$0	\$0	\$0	\$0	\$0	\$908
RESEARCH AND CENTRAL LAB:												
ANALYSIS OF I.W.P.P.	\$93	\$0	\$0	\$0	\$0	\$0	\$93	\$0	\$0	\$0	\$0	\$0
OTHER SERVICES	\$779	\$0	\$0	\$0	\$0	\$779	\$0	\$0	\$0	\$0	\$0	\$0
FIELD OPERATIONS:												
SEWER CLEANING, INSPECTION AND MAINTENANCE	\$2,045	\$2,045	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PUMP STATION AND INTERCEPTOR FACILITY	\$1,773	\$1,773	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MAINTENANCE-WATER COURSE AND VEHICLES	\$2,252	\$1,407	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$845	\$0
MAINTENANCE-BUILDINGS AND GROUNDS	\$1,571	\$1,571	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CENTRAL CONTROL SYSTEM	\$884	\$884	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OFF-PLANT FACILITIES AND PROGRAMS	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OTHER SERVICES	\$3,663	\$3,318	\$0	\$0	\$0	\$345	\$0	\$0	\$0	\$0	\$0	\$0
INDUSTRIAL WASTE PRETREATMENT PROGRAM:												
PRETREATMENT PROGRAM MANAGEMENT	\$339	\$0	\$0	\$0	\$0	\$0	\$339	\$0	\$0	\$0	\$0	\$0
SAMPLE COLLECTION AND ANALYSIS-LABOR	\$571	\$0	\$0	\$0	\$0	\$0	\$571	\$0	\$0	\$0	\$0	\$0
OFF-PLANT FACILITIES AND PROGRAMS	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OTHER SERVICES	\$2,245	\$0	\$0	\$0	\$0	\$2,245	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL	\$27,596	\$11,271	\$0	\$0	\$0	\$9,300	\$1,003	\$0	\$3,073	\$1,196	\$845	\$908
SUBTOTAL	\$79,831	\$23,625	\$13,764	\$20,935	\$4,287	\$9,300	\$1,003	\$695	\$3,073	\$1,196	\$845	\$908
<u>OTHER ALLOCABLE COSTS AND REVENUES</u>												
ALLOCATION OF NON-SPECIFIC COSTS	\$0	\$3,463	\$2,017	\$3,068	\$628	(\$9,300)	\$0	\$0	\$0	\$0	\$124	\$0
EQUIPMENT REPLACEMENT FUND	\$300	\$112	\$65	\$99	\$20	\$0	\$0	\$0	\$0	\$0	\$4	\$0
UNALLOCATED RESERVE	\$2,213	\$825	\$480	\$730	\$149	\$0	\$0	\$0	\$0	\$0	\$29	\$0
INDUSTRIAL WASTE PRETREATMENT PROGRAM	(\$983)	\$0	\$0	\$0	\$0	(\$983)	\$0	\$0	\$0	\$0	\$0	\$0
HOUSEHOLD HAZARDOUS WASTE PROGRAM	(\$1,196)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$1,196)	\$0	\$0
WATERCOURSE MAINTENANCE	(\$961)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$961)	\$0
OTHER REVENUE	(\$1,387)	(\$510)	(\$297)	(\$452)	(\$92)	\$0	(\$18)	\$0	\$0	\$0	\$0	\$0
2015 SURPLUS APPLIED	(\$7,831)	(\$1,430)	(\$1,061)	(\$3,185)	(\$1,759)	\$0	(\$2)	\$27	\$148	\$0	(\$23)	(\$546)
USER CHARGE RATE STABILIZATION FUND	\$4,165	\$1,250	\$300	\$1,750	\$865	\$0	\$0	\$0	\$0	\$0	\$0	\$0
IWPP RATE STABILIZATION FUND	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL	(\$5,680)	\$3,710	\$1,504	\$2,010	(\$189)	(\$9,300)	(\$1,003)	\$27	\$148	(\$1,196)	(\$845)	(\$546)
2017 BILLABLE COSTS	\$74,151	\$27,335	\$15,268	\$22,945	\$4,098	\$0	\$0	\$922	\$3,221	\$0	\$0	\$362

TABLE 3-2  
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2017 BUDGETED UNIT PROCESS-PARAMETER RELATIONSHIPS  
IN THOUSANDS OF DOLLARS

	BUDGET	FLOW	BOD	ISS	CONNECTIONS	NON-SPECIFIC	L.W.P.P.	PERMIT FEES	VI STORAGE COSTS	HAZARDOUS WASTE	WATERCOURSE MAINTENANCE COSTS	GREEN INFRASTRUCTURE
<u>JONES ISLAND TREATMENT PLANT</u>												
BUDGETED COSTS	\$40,347	\$7,444	\$12,802	\$17,451	\$2,174	\$0	\$0	\$476	\$0	\$0	\$0	\$0
NON-SPECIFIC ALLOCATION	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SUBTOTAL	\$40,347	\$7,444	\$12,802	\$17,451	\$2,174	\$0	\$0	\$476	\$0	\$0	\$0	\$0
<u>SOUTH SHORE TREATMENT PLANT</u>												
BUDGETED COSTS	\$15,958	\$4,910	\$5,032	\$3,484	\$2,113	\$0	\$0	\$419	\$0	\$0	\$0	\$0
NON-SPECIFIC ALLOCATION	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SUBTOTAL	\$15,958	\$4,910	\$5,032	\$3,484	\$2,113	\$0	\$0	\$419	\$0	\$0	\$0	\$0
<u>MILORGANITE</u>												
MILORGANITE REVENUE	(\$8,350)	\$0	(\$8,350)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MARKETING COST CENTER	\$4,280	\$0	\$4,280	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SUBTOTAL	(\$4,070)	\$0	(\$4,070)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<u>OTHER ALLOCABLE COST CENTERS</u>												
INLINE STORAGE SYSTEM	\$3,073	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,073	\$0	\$0	\$0
HOUSEHOLD HAZARDOUS WASTE PROGRAM	\$1,196	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,196	\$0	\$0
ENGINEERING	\$7,112	\$273	\$0	\$0	\$0	\$5,031	\$0	\$0	\$0	\$0	\$0	\$908
RESEARCH AND CENTRAL LAB	\$872	\$0	\$0	\$0	\$0	\$779	\$93	\$0	\$0	\$0	\$0	\$0
INDUSTRIAL WASTE PRETREATMENT	\$3,155	\$0	\$0	\$0	\$0	\$2,245	\$910	\$0	\$0	\$0	\$0	\$0
FIELD OPERATIONS	\$12,188	\$10,998	\$0	\$0	\$0	\$345	\$0	\$0	\$0	\$0	\$845	\$0
SUBTOTAL	\$27,596	\$11,271	\$0	\$0	\$0	\$9,300	\$1,003	\$0	\$3,073	\$1,196	\$845	\$908
TOTAL	\$79,831	\$23,625	\$13,764	\$20,935	\$4,287	\$9,300	\$1,003	\$895	\$3,073	\$1,196	\$845	\$908
<u>OTHER ALLOCABLE COSTS AND REVENUES</u>												
NON-SPECIFIC ALLOCATION	\$0	\$3,463	\$2,017	\$3,068	\$628	(\$9,300)	\$0	\$0	\$0	\$0	\$124	\$0
EQUIPMENT REPLACEMENT FUND	\$300	\$112	\$65	\$99	\$20	\$0	\$0	\$0	\$0	\$0	\$4	\$0
UNALLOCATED RESERVE	\$2,213	\$925	\$480	\$730	\$149	\$0	\$0	\$0	\$0	\$0	\$29	\$0
I.W.P.P.	(\$983)	\$0	\$0	\$0	\$0	(\$983)	\$0	\$0	\$0	\$0	\$0	\$0
HOUSEHOLD HAZARDOUS WASTE PROGRAM	(\$1,196)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$1,196)	\$0	\$0
WATERCOURSE MAINTENANCE	(\$961)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$961)	\$0
INTEREST AND OTHER REVENUE	(\$1,387)	(\$510)	(\$297)	(\$452)	(\$92)	\$0	(\$18)	\$0	\$0	\$0	(\$18)	\$0
2015 SURPLUS APPLIED	(\$7,831)	(\$1,430)	(\$1,061)	(\$3,185)	(\$1,759)	\$0	(\$2)	\$27	\$148	\$0	(\$23)	(\$546)
USER CHARGE RATE STABILIZATION FUND	\$4,165	\$1,250	\$300	\$1,750	\$865	\$0	\$0	\$0	\$0	\$0	\$0	\$0
IWPP RATE STABILIZATION FUND	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SUBTOTAL	(\$5,680)	\$3,770	\$1,504	\$2,010	(\$189)	(\$9,300)	(\$1,003)	\$27	\$148	(\$1,196)	(\$845)	(\$546)
ESTIMATED 2017 BILLABLE COSTS	\$74,151	\$27,335	\$15,268	\$22,945	\$4,098	\$0	\$0	\$922	\$3,221	\$0	\$0	\$382
% ALLOCATION FOR VI COSTS		86.96%			13.04%							

2017 BUDGETED UNIT PROCESS-PARAMETER RELATIONSHIPS

2017 CONNECTIONS & PROJECTED WASTELoads:

FLOW M.G.D.	BOD LBS./DAY	TSS LBS./DAY	CONNECTIONS
\$171.3	\$332,712	\$390,797	\$304,358

2017 UNIT COSTS (DOES NOT INCLUDE WATERCOURSE COSTS):

FLOW CENTS/1000 GAL.	BOD CENTS/LBS.	TSS CENTS/LBS.	DOLLARS/CONN.
-------------------------	-------------------	-------------------	---------------

BILLABLE COSTS	\$0.43719	\$0.12572	\$0.16086	\$13.46
W/ ALLOCATION	\$0.64343	\$0.00000	\$0.00000	\$10.22
	\$1.08062	\$0.12572	\$0.16086	\$23.68
PERMIT FEE SURCHARGE	\$0.01362	\$0.00158	\$0.00203	\$0.30
	\$1.09424	\$0.12730	\$0.16289	\$23.98

UNITS OF SERVICE BY CLASS OF USER:

CLASS OF USER	ESTIMATED BILLABLE FLOW (1000 GAL.)	ESTIMATED CONNECTIONS	ESTIMATED BOD LBS.	ESTIMATED TSS LBS.
RESIDENTIAL	16,472,945	264,500	42,582,561	50,835,509
NON-CERTIFIED COMMERCIAL	10,336,270	37,193	26,723,392	31,895,662
CERTIFIED COMMERCIAL	1,636,429	1,968	3,525,106	4,214,490
CERTIFIED INDUSTRIAL	3,790,507	697	39,476,426	19,166,184
TOTALS	32,236,151	304,358	112,307,485	106,111,845

ESTIMATED BILLABLE WASTELoads PER DAY  
ESTIMATED INFILTRATION/INFLOW PER DAY  
TOTAL DAILY WASTELoads

88,318,222	307,692	290,717
83,000,000	25,020	100,080
<u>171,318,222</u>	<u>332,712</u>	<u>390,797</u>

TOTAL W COSTS

INFILTRATION/INFLOW COSTS (INCLUDES ISS)

\$5,876,087	\$23,851,871
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PERMIT FEES SURCHARGE:

PERMIT FEES	\$922,000
TOTAL BUDGET W/O PERMIT FEES	\$73,229,000
SURCHARGE	1.26%

TABLE 3-3  
Page 1 of 2

ALLOCATION OF 2017 OAM WATERCOURSE COSTS					2017 PROJECTED BILLABLE FLOWS (Q) BY COMMUNITY										BILLABLE FLOWS FOR WATERCOURSE RATE (PER 1000 GAL.)		
WATERCOURSE	ALLOCATION PERCENTAGES	2017 BUDGETED COSTS	2015 (SURPLUS) DEFICIT	2017 TOTAL COSTS	2017 PROJECTED BILLABLE FLOW(Q) MMSD (1000 GAL.)										WATERCOURSE (1000 GAL.)		WATERCOURSE RATE (PER 1000 GAL.)
					BROOKFIELD	BUTLER	CALEDONIA	ELM GROVE	GERMANTOWN	MENOMONEE FALLS	MEQUON	MUSKEGO	NEW BERLIN	THIENSVILLE			
LINCOLN CREEK	4.8%	\$47,232	(\$7,126)	\$40,106	\$28,030,496											28,030,496	\$0.00143
MILWAUKEE RIVER	0.0%	\$0	\$0	\$0	\$28,030,496							\$554,744			\$89,813	28,674,053	\$0.00000
SOUTH BRANCH CREEK	0.0%	\$0	(\$92)	(\$92)	\$28,030,496											28,030,496	\$0.00000
HONEY CREEK	17.5%	\$173,184	(\$1,633)	\$171,551	\$28,030,496											28,030,496	\$0.00612
MENOMONEE RIVER	25.7%	\$252,808	(\$6,396)	\$246,488	\$28,030,496	422,588	94,221		149,711	645,075	878,669	554,744		870,648		31,646,152	\$0.00779
LITTLE MENOMONEE RIVER	0.0%	\$0	(\$23)	(\$23)	\$28,030,496							554,744				29,230,315	\$0.00000
UNDERWOOD CREEK	0.1%	\$984	(\$1,495)	(\$511)	\$28,030,496	422,588			149,711					870,648		29,473,443	(\$0.000002)
UNDERWOOD CREEK S.BRANCH	0.1%	\$984	(\$161)	\$823	\$28,030,496	422,588			149,711					870,648		29,473,443	\$0.00003
WHITNALL PARK CREEK	0.0%	\$0	\$0	\$0	\$28,030,496								491,000	870,648		29,392,144	\$0.00000
BEAVER CREEK	2.1%	\$20,664	\$387	\$21,051	\$28,030,496							554,744				28,595,240	\$0.00074
ROOT RIVER	2.8%	\$27,552	(\$1,218)	\$26,333	\$28,030,496											29,382,144	\$0.00080
ROOT RIVER EAST BRANCH	0.0%	\$0	(\$138)	(\$138)	\$28,030,496											28,030,496	\$0.00000
OAK CREEK	0.0%	\$0	\$0	\$0	\$28,030,496											28,030,496	\$0.00000
OAK CREEK N. BRANCH	0.0%	\$0	\$0	\$0	\$28,030,496											28,030,496	\$0.00000
WILSON PARK CREEK	8.9%	\$87,576	(\$2,921)	\$84,655	\$28,030,496											28,030,496	\$0.00302
KINNICKINNIC	7.8%	\$76,752	(\$2,530)	\$74,222	\$28,030,496											28,030,496	\$0.00265
LYONS CREEK	17.0%	\$167,280	(\$23)	\$167,257	\$28,030,496											28,030,496	\$0.00587
EDGERTON CHANNEL	1.0%	\$9,840	(\$23)	\$9,817	\$28,030,496											28,030,496	\$0.00035
INDIAN CREEK	12.1%	\$119,054	\$387	\$119,451	\$28,030,496											28,030,496	\$0.00426
TOTAL	100.0%	\$384,000	(\$23,000)	\$361,000													
					WATERCOURSE RATES BY COMMUNITY												
					MMSD	\$0.03324											
					BROOKFIELD	\$0.00780											
					BUTLER	\$0.00779											
					CALEDONIA	\$0.00000											
					ELM GROVE	\$0.00780											
					GERMANTOWN	\$0.00779											
					MENOMONEE FALLS	\$0.00779											
					MEQUON	\$0.00853											
					MUSKEGO	\$0.00090											
					NEW BERLIN	\$0.00870											
					THIENSVILLE	\$0.00000											

WATERCOURSE RATES BY COMMUNITY

MMSD	\$0.03324
BROOKFIELD	\$0.00780
BUTLER	\$0.00779
CALEDONIA	\$0.00000
ELM GROVE	\$0.00780
GERMANTOWN	\$0.00779
MENOMONEE FALLS	\$0.00778
MEQUON	\$0.00853
MUSKEGO	\$0.00090
NEW BERLIN	\$0.00870
THIENSVILLE	\$0.00000

2017 FLOW RATE AND VOLUMETRIC CHARGES BY COMMUNITY

FLOW-CENTS/1000 GAL.	MMSD	BROOKFIELD	BUTLER	CALEDONIA	ELM GROVE	GERMANTOWN	MENOMONEE FALLS	MEQUON	MUSKEGO	NEW BERLIN	THIENSVILLE
BASE FLOW RATE-PER TABLE 3-2	\$1.09424	\$1.09424	\$1.09424	\$1.09424	\$1.09424	\$1.09424	\$1.09424	\$1.09424	\$1.09424	\$1.09424	\$1.09424
WATERCOURSE RATES	\$0.03324	\$0.00780	\$0.00779	\$0.00000	\$0.00780	\$0.00779	\$0.00779	\$0.00853	\$0.00090	\$0.00870	\$0.00000
2017 FLOW RATE BY COMMUNITY	\$1.12748	\$1.10204	\$1.10203	\$1.09424	\$1.10204	\$1.10203	\$1.10203	\$1.10277	\$1.09514	\$1.10284	\$1.09424

VOLUMETRIC CHARGES:  
(PER THOUSAND GALLONS)

FLOW	\$1.127480	\$1.102040	\$1.102030	\$1.094240	\$1.102040	\$1.102030	\$1.102030	\$1.102770	\$1.095140	\$1.102840	\$1.094240
BOD	\$0.329071	\$0.329071	\$0.329071	\$0.329071	\$0.329071	\$0.329071	\$0.329071	\$0.329071	\$0.329071	\$0.329071	\$0.329071
TSS	\$0.502679	\$0.502679	\$0.502679	\$0.502679	\$0.502679	\$0.502679	\$0.502679	\$0.502679	\$0.502679	\$0.502679	\$0.502679
TOTAL	\$1.959230	\$1.933790	\$1.933780	\$1.925990	\$1.933790	\$1.933780	\$1.933780	\$1.934520	\$1.926890	\$1.934690	\$1.925990

AVERAGE HOUSEHOLD CHARGE:

ANNUAL VOLUMETRIC CHARGE	\$100.06	\$94.65	\$77.44	\$73.40	\$90.16	\$93.15	\$95.77	\$92.81	\$100.64	\$98.43	\$90.17
CONNECTION CHARGE	\$23.98	\$23.98	\$23.98	\$23.98	\$23.98	\$23.98	\$23.98	\$23.98	\$23.98	\$23.98	\$23.98
	\$124.04	\$118.63	\$101.42	\$97.38	\$114.14	\$117.13	\$119.75	\$116.79	\$124.62	\$122.41	\$114.15

**Table 3-5****User Charge Stabilization Fund**

	Flow	BOD	TSS	Connections	Total by Year
Fund Balance at December 31, 2015	\$ 4,580,730	\$ 108,856	\$ 3,080,279	\$ 877,088	\$ 8,646,953
Additions/(Withdrawals) net of interest earned in the year 2016	\$ (500,000)	\$ -0-	\$ (500,000)	\$ -0-	\$ (1,000,000)
Fund Balance at December 31, 2016	\$ 4,080,730	\$ 108,856	\$ 2,580,279	\$ 877,088	\$ 7,646,953
Additions/(Withdrawals) in the year 2017	\$ 1,250,000	\$ 300,000	\$ 1,750,000	\$ 865,000	\$ 4,165,000
Fund Balance at December 31, 2017	\$ 4,830,730	\$ 408,856	\$ 3,830,279	\$ 1,742,088	\$ 10,811,953

**TABLE 5-1**  
**SCHEDULES FOR TRANSMISSION OF USER DATA AND USER CHARGES**

<u>Municipality</u>	<u>Class or District</u>	<u>User Data to MMSD</u>	<u>Period Covered</u>
Bayside	All	7 Apr. 3 July 3 Oct. 6 Jan.	(Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept) (Oct-Nov-Dec)
Brookfield	All	7 Mar. 9 June 12 Sept. 8 Dec.	(Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept) (Oct-Nov-Dec)
Brown Deer	All	17 Feb. 19 May 22 Aug. 28 Nov.	(Dec-Jan-Feb) (Mar-Apr-May) (June-July-Aug) (Sept-Oct-Nov)
Butler	All	3 Mar. 2 June 6 Sept. 1 Dec.	(Dec)(Jan-Feb) (Mar-Apr-May) (June-July-Aug) (Sept-Oct-Nov)
Caledonia	All	6 Jan. 7 Apr. 7 July 10 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Crystal Ridge	All	2 Feb. 5 May 8 Aug. 7 Nov.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Cudahy	Industries	27 Jan. 24 Feb. 28 Mar. 28 Apr. 31 May 27 June 1 Aug. 6 Sept. 26 Sept. 31 Oct. 28 Nov. 4 Jan.	(December) (January) (February) (March) (April) (May) (June) (July) (August) (September) (October) (November)

**TABLE 5-1 (cont)**  
**SCHEDULES FOR TRANSMISSION OF USER DATA AND USER CHARGES**

<u>Municipality</u>	<u>Class or District</u>	<u>User Data to MMSD</u>	<u>Period Covered</u>
Cudahy	#1	24 Feb. 27 June 31 Oct.	(Oct-Nov-Dec) (Jan) (Feb thru May) (June thru Sept)
Cudahy	#2	28 Mar. 1 Aug. 28 Nov.	(Nov-Dec) (Jan-Feb) (Mar thru June) (July thru Oct)
Cudahy	#3	28 Apr. 6 Sept. 4 Jan.	(Dec thru Mar) (Apr thru July) (Aug thru Nov)
Cudahy	#4	27 Jan. 31 May 26 Sept.	(Sept thru Dec) (Jan thru Apr) (May thru Aug)
Cudahy	#5	28 Mar. 27 June 26 Sept. 4 Jan.	(Nov-Dec) (Jan) (Feb-Mar-Apr) (May-June-July) (Aug-Sept-Oct)
Elm Grove	All	28 Dec. 28 Mar. 03 July 26 Sept.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Fox Point	All	17 Feb. 5 May 8 Aug. 7 Nov.	(Nov-Dec) (Jan) (Feb-Mar-Apr) (May-June-July) (Aug-Sept-Oct)
Franklin	All	6 Jan. 7 Apr. 7 July 5 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Germantown	All	20 Jan. 11 Apr. 11 July 13 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)



**TABLE 5-1 (cont)**  
**SCHEDULES FOR TRANSMISSION OF USER DATA AND USER CHARGES**

<u>Municipality</u>	<u>Class or District</u>	<u>User Data to MMSD</u>	<u>Period Covered</u>
Glendale	#1	20 Feb. 22 May 21 Aug. 20 Nov.	(Dec) (Jan-Feb) (Mar-Apr-May) (June-July-Aug) (Sept-Oct-Nov)
Glendale	#2	20 Mar. 22 June 21 Sept. 19 Dec.	(Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept) (Oct-Nov-Dec)
Glendale	#3	23 Jan. 24 Apr. 24 July 23 Oct.	(Nov-Dec) (Jan) (Feb-Mar-Apr) (May-June-July) (Aug-Sept-Oct)
Greendale	#22	31 Jan. 30 Apr. 31 July 31 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Greenfield	All	18 Jan. 19 Apr. 18 July 11 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Hales Corners	All	14 Mar. 16 June 15 Sept. 15 Dec.	(Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept) (Oct-Nov-Dec)
Menomonee Falls	"A"	6 Jan. 6 Apr. 7 July 6 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Menomonee Falls	"B"	3 Feb. 5 May 4 Aug. 20 Nov.	(Nov-Dec) (Jan) (Feb-Mar-Apr) (May-June-July) (Aug-Sept-Oct)

**TABLE 5-1 (cont)**  
**SCHEDULES FOR TRANSMISSION OF USER DATA AND USER CHARGES**

<u>Municipality</u>	<u>Class or District</u>	<u>User Data to MMSD</u>	<u>Period Covered</u>
Menomonee Falls	"C"	3 Mar. 6 June 7 Sept. 7 Dec.	(Dec)(Jan-Feb) (Mar-Apr-May) (June-July-Aug) (Sept-Oct-Nov)
Mequon	All	23 Jan. 21 Apr. 21 July 20 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Milwaukee (Residential Non-Certified)	#1	17 Jan. 14 Apr. 14 July 13 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Milwaukee	#2	10 Feb. 16 May 15 Aug. 14 Nov.	(Nov-Dec) (Jan) (Feb-Mar-Apr) (May-June-July) (Aug-Sept-Oct)
Milwaukee	#3	14 Mar. 16 June 15 Sept. 15 Dec.	(Dec) (Jan-Feb) (Mar-Apr-May) (June-July-Aug) (Sept-Oct-Nov)
Milwaukee (Certified Users)	#1		
	11-12	28 Feb.	(Jan-Feb-Mar)
	13-14	7 Mar.	(Jan-Feb-Mar)
	15-16	14 Mar.	(Jan-Feb-Mar)
	17-19	21 Mar.	(Jan-Feb-Mar)
	99	27 Mar.	(March)
	11-12	30 May	(Apr-May-June)
	13-14	6 June	(Apr-May-June)
	15-16	13 June	(Apr-May-June)
	17-19	20 June	(Apr-May-June)
	99	26 June	(June)
	11-12	29 Aug.	(July-Aug-Sept)
	13-14	5 Sept.	(July-Aug-Sept)
	15-16	12 Sept.	(July-Aug-Sept)
	17-19	19 Sept.	(July-Aug-Sept)
	99	25 Sept.	(September)

**TABLE 5-1 (cont)**  
**SCHEDULES FOR TRANSMISSION OF USER DATA AND USER CHARGES**

<u>Municipality</u>	<u>Class or District</u>	<u>User Data to MMSD</u>	<u>Period Covered</u>
	11-12	28 Nov.	(Oct-Nov-Dec)
	13-14	5 Dec.	(Oct-Nov-Dec)
	15-16	12 Dec.	(Oct-Nov-Dec)
	17-19	19 Dec.	(Oct-Nov-Dec)
	99	21 Dec.	(December)
Milwaukee (Certified Users)	#2		
	21-22	27 Dec.	(Nov-Dec-Jan)
	23-24	10 Jan.	(Nov-Dec-Jan)
	25-26	17 Jan.	(Nov-Dec-Jan)
	27-29	24 Jan.	(Nov-Dec-Jan)
	99	25 Jan.	(January)
	21-22	28 Mar.	(Feb-Mar-Apr)
	23-24	4 Apr.	(Feb-Mar-Apr)
	25-26	11 Apr.	(Feb-Mar-Apr)
	27-29	18 Apr.	(Feb-Mar-Apr)
	99	25 Apr.	(April)
	21-22	27 June	(May-June-July)
	23-24	5 July	(May-June-July)
	25-26	11 July	(May-June-July)
	27-29	18 July	(May-June-July)
	99	26 July	(July)
	21-22	3 Oct.	(Aug-Sept-Oct)
	23-24	10 Oct.	(Aug-Sept-Oct)
	25-26	17 Oct.	(Aug-Sept-Oct)
	27-29	24 Oct.	(Aug-Sept-Oct)
	99	25 Oct.	(October)
Milwaukee (Certified Users)	#3		
	31-32	31 Jan.	(Dec-Jan-Feb)
	33-34	7 Feb.	(Dec-Jan-Feb)
	35-36	14 Feb.	(Dec-Jan-Feb)
	37-39	21 Feb.	(Dec-Jan-Feb)
	99	22 Feb.	(February)
	31-32	25 Apr.	(Mar-Apr-May)
	33-34	2 May	(Mar-Apr-May)
	35-36	9 May	(Mar-Apr-May)
	37-39	16 May	(Mar-Apr-May)
	99	24 May	(May)

**TABLE 5-1 (cont)**  
**SCHEDULES FOR TRANSMISSION OF USER DATA AND USER CHARGES**

<u>Municipality</u>	<u>Class or District</u>	<u>User Data to MMSD</u>	<u>Period Covered</u>
	31-32	25 July	(June-July-Aug)
	33-34	1 Aug.	(June-July-Aug)
	35-36	8 Aug.	(June-July-Aug)
	37-39	15 Aug.	(June-July-Aug)
	99	24 Aug.	(August)
	31-32	31 Oct.	(Sept-Oct-Nov)
	33-34	7 Nov.	(Sept-Oct-Nov)
	35-36	14 Nov.	(Sept-Oct-Nov)
	37-39	20 Nov.	(Sept-Oct-Nov)
	99	22 Nov.	(November)
Milwaukee Water Department	2 Plants	16 Jan. 17 Apr. 17 July 16 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Muskego	All	6 Jan. 7 Apr. 7 July 6 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Muskego	LF	17 Feb. 12 May 11 Aug. 14 Nov.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
New Berlin	All	14 Mar. 13 June 12 Sept. 11 Dec.	(Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept) (Oct-Nov-Dec)
Oak Creek	#1	17 Feb. 12 May 11 Aug. 7 Nov.	(Nov-Dec-Jan) (Feb-Mar-Apr) (May-June-July) (Aug-Sept-Oct)
Oak Creek	#2	10 Mar. 9 June 8 Sept. 8 Dec.	(Dec-Jan-Feb) (Mar-Apr-May) (June-July-Aug) (Sept-Oct-Nov)
Oak Creek	#3	7 Apr. 7 July 13 Oct. 23 Jan.	(Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept) (Oct-Nov-Dec)

**TABLE 5-1 (cont)**  
**SCHEDULES FOR TRANSMISSION OF USER DATA AND USER CHARGES**

<u>Municipality</u>	<u>Class or District</u>	<u>User Data to MMSD</u>	<u>Period Covered</u>
Oak Creek-Ash	LF	30 Jan. 28 Apr. 28 July 31 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Oak Creek	Industries	20 Jan. 20 Feb. 20 Mar. 20 Apr. 19 May 20 June 20 July 18 Aug. 20 Sept. 20 Oct. 20 Nov. 20 Dec.	(Dec-Jan) (Jan-Feb) (Feb-Mar) (Mar-Apr) (Apr-May) (May-June) (June-July) (July-Aug) (Aug-Sept) (Sept-Oct) (Oct-Nov) (Nov-Dec)
River Hills	All	14 Apr. 15 Aug. 19 Dec.	(Jan thru Apr) (May thru Aug) (Sept thru Dec)
Shorewood	All	7 Mar. 6 June 6 Sept. 5 Dec.	(Dec) (Jan-Feb) (Mar-Apr-May) (June-July-Aug) (Sept-Oct-Nov)
St. Francis	All	7 Mar. 6 June 6 Sept. 5 Dec.	(Dec) (Jan-Feb) (Mar-Apr-May) (June-July-Aug) (Sept-Oct-Nov)
Thiensville	All	23 Jan. 21 Apr. 21 July 20 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)

**TABLE 5-1 (cont)**  
**SCHEDULES FOR TRANSMISSION OF USER DATA AND USER CHARGES**

<u>Municipality</u>	<u>Class or District</u>	<u>User Data to MMSD</u>	<u>Period Covered</u>
Wauwatosa	#1	17 Feb. 16 May 15 Aug. 28 Nov.	(Nov-Dec) (Jan) (Feb-Mar-Apr) (May-June-July) (Aug-Sept-Oct)
Wauwatosa	#2	14 Mar. 16 June 15 Sept. 19 Dec.	(Dec) (Jan-Feb) (Mar-Apr-May) (June-July-Aug) (Sept-Oct-Nov)
Wauwatosa	#3	20 Jan. 18 Apr. 18 July 17 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)
Wauwatosa	#4	23 Jan. 17 Feb. 14 Mar. 18 Apr. 16 May 16 June 18 July 15 Aug. 15 Sept. 17 Oct. 28 Nov. 19 Dec.	(December) (January) (February) (March) (April) (May) (June) (July) (August) (September) (October) (November)
West Allis	#1	24 Feb. 31 May 29 Aug. 28 Nov.	(Nov-Dec) (Jan) (Feb-Mar-Apr) (May-June-July) (Aug-Sept-Oct)
West Allis	#2	28 Mar. 27 June 26 Sept. 29 Dec.	(Dec) (Jan-Feb) (Mar-Apr-May) (June-July-Aug) (Sept-Oct-Nov)
West Allis	#3	27 Jan. 28 Apr. 28 July 27 Oct.	(Oct-Nov-Dec) (Jan-Feb-Mar) (Apr-May-June) (July-Aug-Sept)

**TABLE 5-1 (cont)**  
**SCHEDULES FOR TRANSMISSION OF USER DATA AND USER CHARGES**

<u>Municipality</u>	<u>Class or District</u>	<u>User Data to MMSD</u>	<u>Period Covered</u>
West Milwaukee	All	17 Feb. 05 May 11 Aug. 7 Nov.	(Nov-Dec) (Jan) (Feb-Mar-Apr) (May-June-July) (Aug-Sept-Oct)
West Milwaukee	Industries	26 Jan. 23 Feb. 27 Mar. 25 Apr. 24 May 26 June 26 July 24 Aug. 25 Sept. 26 Oct. 22 Nov. 21 Dec.	(January) (February) (March) (April) (May) (June) (July) (August) (September) (October) (November) (December)
Whitefish Bay	31	17 Feb. 13 June 13 Oct.	(Oct-Nov-Dec) (Jan) (Feb thru May) (June thru Sept)
Whitefish Bay	32	14 Mar. 14 July 14 Nov.	(Nov-Dec)(Jan-Feb) (Mar thru June) (July thru Oct)
Whitefish Bay	33	20 Jan. 16 May 12 Sept.	(Sept thru Dec) (Jan thru Apr) (May thru Aug)

Section: 8  
Title: Data Verification Procedures  
Reference: Secs. 17.203 and 17.405, MMSD Rules

The Milwaukee Metropolitan Sewerage District (District) has developed numerous procedures which it uses to periodically verify the validity of data submitted by certified commercial and industrial customers.

The District audits municipal user charge programs to test the accuracy of municipal data transmissions, verify compliance with District Rules, and update information required for wholesale billing.

The District verifies the data submitted by commercial and industrial users on Discharge Factor Certification Forms by comparing this information with other sources of data available to the District.

The District routinely samples wastestrength certified industrial and commercial users to verify the certified analytical data submitted by that user. The main objectives of this program are to assure that user charges are being assessed for the true waste characteristics and that this assurance is achieved with a minimum of effort and expense and that user discharges are in compliance with applicable pretreatment standards. The costs associated with the collection and laboratory analysis of these samples is billed to the certified user in accordance with procedures established in Section 11 of this manual.

The District classifies wastestrength certified users based upon the amount of sewer user charge paid. The classification determines how often the District samples. Table 8-1 shows the various classes as well as the sample type and minimum sample frequency assigned to each individual class. The District may sample more frequently than shown in Table 8-1 when results of previous verification samples indicate that the certified data may be inaccurate. As with the routine verification monitoring, the costs involved with the collection and analysis of additional samples will be assessed to the individual users.



Table 8-1

## Wastestrength Certified User Classes

<u>Class</u>	<u>Sewer User Charge (\$/Year)</u>	<u>Sampling Periods/year</u>	<u>Duration (Days)</u>	<u>Sample Type</u>
1	>1,000,000	3	7	24 hr FPC
2	> 200,000	2	7	24 hr FPC
3	> 100,000	3	1	24 hr FPC
4	> 10,000	2	1	24 hr FPC
5	< 10,000	1	1	24 hr FPC/TC

FPC = Flow Proportioned Composite

TC = Time Composite

As products, materials, operations, and treatment systems change, biochemical oxygen demand (BOD) and total suspended solids (TSS) concentrations in a user's discharge may change. In response, for all waste strength certified users, the District needs to periodically review whether the BOD and TSS concentrations the District currently uses for billing continue to represent actual concentrations. The District will review this information at least once per year for each waste strength certified user.

To analyze trends, the District will use the Cumulative Sum Control Test (CUSUM), a statistical procedure that detects long-term significant deviations from a particular value. The sensitivity of CUSUM depends upon two variables: "g", the shift to be detected, expressed as a multiple of the standard deviation, and "a", the probability of detecting a shift when one has not occurred (false alarm). For purposes of the District's verification program, "g" will be equal to 1.0 and "a" will be equal to 0.1. To identify trends, CUSUM requires at least eight values. If CUSUM shows a significant deviation from the concentrations currently in use, then recertification is appropriate.

After the District performs this analysis, the District will provide to the user a summary of recent sample results and the results of the analysis. The analysis may indicate that the current concentrations remain representative. Alternatively, the analysis may indicate that the current concentrations should be replaced with either higher or lower concentrations. If replacement is appropriate, then the District will calculate flow-weighted average concentrations for both BOD and TSS, using recent sample results. If flow data is not available, then the District may use an arithmetic average.

If concentrations are increasing, then the notice will indicate that the user has two options.

1. If the user does nothing, then the District will implement the flow-weighted averages calculated by the District.
2. The user may self-monitor, calculate flow-weighted average concentrations using only the new self-monitoring results, and submit the sample results and calculated averages to the District. In this case, the District will implement the averages produced by the new monitoring. Users must sample as described below.

If concentrations are decreasing, then the notice will indicate that the user has two options.

1. The user may do nothing. In this case, the District will continue using the existing concentrations.
2. The user may self-monitor, calculate flow-weighted average concentrations using only the new self-monitoring results, and submit the sample results and calculated averages to the District. In this case, the District will implement the averages produced by the new monitoring. Users must sample as described below.

At the request of a user, the District may adjust BOD and TSS concentrations using other procedures, as long as the alternative procedures produce results that are equally or more representative. Very large users are likely to be the users most interested in alternative procedures because even small changes in the billing basis will cause large changes to user charges. An important consideration is whether the increased accuracy is worth the increased sampling cost. The following procedures are examples of approaches developed at the request of users and approved by the District.

1. The District samples for seven consecutive days every three months. The District updates the billing concentrations after each sampling event.
2. The user samples for BOD weekly and TSS daily. The District updates the certified values monthly, while also performing occasional sampling to confirm the user's values.

To ensure efficiency during implementation and record keeping, the District will always analyze and adjust BOD and TSS together.

#### Self-Monitoring Requirements

When a user is sampling according to this section, the user must sample on days that represent normal operations. If a user intends to sample, then the user must notify the District of the user's intent to sample within 30 days after receiving a notice described above. Users must complete self-monitoring within 60 days after receiving a notice described above. A laboratory certified

or registered according to ch. NR 149, Wis. Adm. Code, must analyze the samples. The laboratory must use methods listed in ch. NR 219, Wis. Adm. Code. Users must report results before the end of the month following the month in which the user sampled. For example, if sampling occurs in March, then results are due before the end of April. Users must sample for at least three consecutive days, unless some other period would be more representative and the District approves or requires the other period before sampling. For each day of sampling, users must report both the measured concentrations for BOD and TSS and the measured flow.

#### BOD Results Outside of the Analytical Range

In some cases, discharges are highly variable. This variability complicates BOD analysis because BOD analysis requires an initial estimate of the result. If the actual BOD is very different from the estimate, then the result may be outside the range of the analysis. In this case, the reported result is less than or greater than a certain value.

When the District is using this type of result in user charge calculations, the District will use the limit of the method. For example, if the reported result is "<100 mg/l", then the District will use 100 mg/l. If the reported result is ">5,000 mg/l", then the District will use 5,000 mg/l.

In cases of a less-than, this approach benefits the District. In the case of a greater-than, this approach benefits the user. Results reported as a greater-than are more common, so the user will benefit most of the time.

This approach is better than simply disregarding the result because even if a result was outside of the analytical range, the result does show the general magnitude of the concentration and user charge calculations benefit from using as many measurements as possible.

#### Extreme Concentrations

The dataset for calculating the BOD and TSS averages may contain values that appear unusually high or unusually low. Generally, being unusual will not stop the District from using these values in its calculations. Even if a condition is unusual, as long as it actually occurred, then including it in the analysis makes the average more representative of all possible conditions.

However, in certain conditions, the District may disregard a result. If a user identifies a particular condition as the cause of an unusual result and that condition will not recur, then the District may disregard a result. Also, if quality assurance issues make precision or accuracy less than normal, then the District may disregard a result. The presence of a less-than sign or a greater-than sign, by itself, is not a quality assurance problem.

## CENTRALIZED WASTEWATER TREATMENT FACILITIES

Special procedures apply to commercial centralized wastewater treatment facilities. These facilities receive wastewater produced by others. Wastewater characteristics vary from shipment to shipment. Sources of wastewater may vary widely, from cheese manufacturing to organic chemical manufacturing and from metal finishing to catch basin cleaning. In response to this variability and unpredictability, sampling will be more frequent than sampling at other users. At minimum, commercial centralized waste treatment facilities will be sampled by the District once per month per outfall. This sampling will include both BOD and TSS, along with any pollutants of regulatory concern. The District will bill the user for the sampling.

In addition to sampling by the District, the District will require self-monitoring at least once per month at each outfall.

### Water Balance

Determining the volume discharged is another challenge. Unlike most other industrial users, most of the discharged wastewater is delivered by tank truck, rather than a metered public water supply. Water consumed from the public supply is usually limited to domestic uses and facility cleaning.

The District will use the following water balance equation for these facilities:

Water consumption + Hauled wastewater = Process wastewater discharge + Domestic wastewater discharge

The process wastewater discharge may have multiple components, depending upon the types of wastewater received.

In the absence of contrary information, for purposes of the water balance, annual water consumption will equal the annual domestic wastewater discharge. The District will determine these values by multiplying the annual average number of full-time equivalent people in the building by 5,120 gallons per person per year.

Generally, for purposes of the water balance, hauled wastewater will equal process wastewater discharges. To obtain information regarding the volume of process wastewater discharges, the District will require continuous monitoring and monthly reports.

As an alternative to these procedures, a facility may submit a detailed water balance showing actual measurements for these values. This balance may include water losses, such as wastewater hauled away or the water fraction of sludge or oil.

### Resetting BOD and TSS Concentrations

During September of each year, the District will calculate flow-weighted average BOD and TSS concentrations using sample results since September 1 of the preceding calendar year. On or before September 30, the District will provide a summary of the sample results and the calculated the averages.

Between September 30 and the end of the year, the user may obtain additional results for BOD and TSS, if desired, and request recalculation of the average. The user may provide other information showing why the averages calculated by the District will not represent future discharges. In this case, the user must propose alternative concentrations and explain why they are more representative.

The District will implement the new BOD and TSS concentrations starting with the first complete billing period in the next year.

The District will use flow-weighted average concentrations because they are most representative. If flow measurements are unavailable or if, for any other reason, an alternative would be more representative, then the District may use something other than a flow-weighted average.

#### Resetting the Water Balance

Each September, along with the recalculation of BOD and TSS concentrations, the District will update the water balance, using information from the preceding twelve months, except as provided below. The District will provide the new water balance with the new BOD and TSS concentrations. As with BOD and TSS concentrations, before the end of the year, the user may provide information to show that some other balance would be more representative of future discharges. The District will implement the new water balance starting with the first complete billing period in the next year.

If requested by the user, then the District will update the water balance every billing cycle.

An annual update makes user charges more predictable. However, an update every billing cycle may make user charges more accurate.

Section: 10  
Title: Unit Costs of Treatment  
Reference: Secs. 17.103(24) and 17.205, MMSD Rules

District unit costs of treatment for 2017 are:

Flow (Base Rate)	=	\$1.09424gal
Flow (Watercourse Rate)	=	See Table 3-4.
BOD	=	\$0.12730/pound
TSS	=	\$0.16289/pound
Connection Charge	=	\$23.98/year

The derivation of these charges is described herein, as follows.

The net portion of the adopted 2017 Operation and Maintenance (O&M) budget billable via the user charge program is \$75,113. This total amount has been distributed to the cost allocation parameters and is described in Section 3 of the Cost Recovery Procedures Manual under UNIT PROCESS-PARAMETER RELATIONSHIPS.

That distribution yields the following breakdown between the parameters for 2017:

Flow	\$27,335,000	
BOD	15,268,000	(Biochemical oxygen demand)
TSS	22,945,000	(Total suspended solids)
Connections	4,098,000	
Permit Fees	922,000	
I/I Storage Costs	3,221,000	
Green Infrastructure	362,000	
Watercourse Costs	<u>962,000</u>	
	\$75,113,000	

This total treatment cost is to be recovered through a formula that recognizes that billable wasteloads of Flow, BOD, and TSS are directly traceable to users on a unit basis, and the remaining treatment costs, excluding permit fees and I/I storage costs, are best shared equally by the total number of connections to the system.

The first portion consists of assorted wastewater discharges (intentional discharges of domestic wastes, process wastes or cooling waters) comprising 52 percent of the total annual flow, 92 percent of the BOD load, and 74 percent of the TSS observed at the plants. The balance consists of the infiltration/inflow components which are extremely variable in volume and of comparatively indeterminate origin.

Dividing the various treatment costs by the corresponding total expected wasteloads yields unit costs of treatment for the coming year. Total wasteloads have been forecasted by analyzing previous years' billed quantities and projecting observed trends into 2017. Quantities assignable to wastewater discharge and infiltration/inflow are based on characterization of system users by the District, as presented in Technical Memoranda 4A through 4E for the sample year 1975, supplemented by more recent data collected by the District.

Residential and Commercial Flows in 2017 is expected to be lower than that forecasted a year ago for 2016. Industrial flow is expected to increase. Sources of wastewater flow are anticipated to be as follows:

Residential	-	45.1 MGD
Commercial	-	28.3 MGD (non-certified)
		4.5 MGD (635 certified businesses)
Industrial	-	<u>10.4 MGD</u> (402 process waste dischargers)
		88.3 MGD

I/I flow is quite unpredictable. The projected amount for 2017 is 83 MGD. This is based on a five-year average. The projected sum of the wastewater and I/I flow is 171.3 MGD for 2017. Connections are expected to be 304,358.

BOD loading in the wastewater projection for 2017 is increased 1.1% and the TSS loading is decreased 0.6% from the previous year's projection. In making these projections, actual loadings for the first six months of 2017 were used along with historical trends, and a review of 100 of the largest users of the system.

The BOD and TSS assigned to infiltration/inflow is calculated from a sampling program which yielded strengths of 50 mg/l (417#/MGD) and 200 mg/l (1668#/MGD), respectively, for the inflow portion, estimated at 64 MGD; and zero strength for the 22 MGD infiltration portion.

The resultant estimated wasteloadings for 2017 are:

	Flow (MGD)	BOD (lbs/day)	TSS (lbs/day)
Wastewater	88.3	307,692	290,717
I/I	<u>83.0</u>	<u>25,020</u>	<u>100,080</u>
Total	171.3	332,712	390,797

### Unit Costs of Treatment Excluding Permit Fees and Watercourse:

$$\text{Flow} = \frac{\$27,335,000}{171.3 \text{ MGD}/1,000 \times 365} = \$0.43719/1,000 \text{ gal.}$$

$$\text{BOD} = \frac{\$15,268,000}{332,712 \text{ lbs.} \times 365} = \$0.12572/\text{pound}$$

$$\text{TSS} = \frac{\$22,945,000}{390,797 \text{ lbs.} \times 365} = \$0.16086/\text{pound}$$

### Infiltration/Inflow Costs:

The total cost is calculated herein, and allocated to the parameters of Flow (86.96%) and connections (13.04%) based on a percentage of each to their totals:

$$\text{I/I Flow} = \frac{83.0 \text{ MGD}}{1,000} \times \$0.43719 \times 365 \text{ days} = \$13,244,671$$

$$\text{I/I BOD} = 25,020 \times \$0.12572 \times 365 \text{ days} = 1,148,113$$

$$\text{I/I TSS} = 100,080 \times \$0.16086 \times 365 \text{ days} = 5,876,087$$

$$\text{I/I Storage Costs} = 3,221,000$$

$$\text{Green Infrastructure Costs} = \underline{362,000}$$

$$\text{Total I/I Costs} = \$23,851,871$$

Flow portion of I/I:

$$\frac{\$23,851,871 \times 86.96\%}{88,318,322/1,000 \times 365} = \$0.64343/1,000 \text{ gal.}$$

### District Unit Costs of Treatment Including Surcharge:

Flow =	Treatment Unit Costs	\$ 0.43719
	I/I Unit Costs	<u>0.64343</u>
		\$ 1.08062

Base Rate =	With 1.26% Surcharge	\$ 1.09424/1,000 gal.
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BOD =	Treatment Unit Costs	\$ 0.12572
	With 1.26% Surcharge	\$ 0.12730/pound

TSS =	Treatment Unit Costs	\$ 0.16086
	With 1.26% Surcharge	\$ 0.16289/pound



### Volumetric Charges:

From these three rates, the volumetric charge can be computed for a given wastewater contribution. For the most common concentration, domestic strength, they can be conveniently combined into a single rate, using the equivalencies of 310 mg/l BOD = 2.585 lb/1000 gal., and 370 mg/l TSS = 3.086 lb./1000 gal., as follows:

Flow			See Table 3-4.
BOD = 2.585 lb./1000 gal. x .12730c/lb.	=		\$.329071/1,000 gal.
TSS = 3.086 lb./1000 gal. x .16289c/lb.	=		\$.502679/1,000 gal.
Volumetric charge (domestic strength)			See Table 3-4.

### Connection Charge:

The cost of removing debris and other treatment costs that have not been assigned to Flow, BOD and TSS in addition to the I/I costs allocated to connection and the permit fee surcharge:

Debris and other treatment costs	=	$\frac{\$ 4,098,000}{304,358}$	=	\$ 13.46/year
I/I costs allocable to connection	=	$\frac{\$ 23,851,871 \times 13.04\%}{304,358}$	=	\$ 10.22/year
Permit fee surcharge @ 1.26%	=			$\frac{\$ 0.30/\text{year}}{\$23.98/\text{year}}$

### District Average Household Charge:

See Table 3-4.

Recapitulation:

	<u>Recoverable Via Volumetric Chg.</u>	<u>Recoverable Via Connection Chg.</u>	<u>Total</u>
Flow costs	\$ 25,607,895	\$ 1,727,105	\$ 27,335,000
BOD costs	15,118,286	149,714	15,268,000
TSS costs	22,178,758	766,242	22,945,000
Debris & other costs	0	4,098,000	4,098,000
Watercourse costs	962,000	0	962,000
I/I storage costs	2,801,958	419,042	3,221,000
Green Infrastructure	314,905	47,095	362,000
Permit Fees	<u>830,693</u>	<u>91,307</u>	<u>922,000</u>
 Budget	 \$ <u>67,814,495</u>	 \$ <u>7,298,505</u>	 \$ <u>75,113,000</u>

Since actual billings during the course of the year are dependent upon estimated wasteloads, reported water consumption (commercial and industrial) and number of units (residential), the revenue generated will not match the aforementioned budget figure. The surplus or deficit, as determined at the end of the yearly billing period, will enter into the computation of the future year's unit costs of treatment.

Section: 11  
Title: Pretreatment Program and Monitoring Charges  
Authority: Sections 17.103(15), 17.206, 17.207, and 17.211, MMSD Rules

In October, 1980, the Wisconsin Department of Natural Resources modified the District's WPDES discharge permits to include a schedule of compliance which required the development of an industrial waste pretreatment program. One requirement of this schedule was the development of a funding mechanism for financing the implementation and administration of this program. State and Federal regulations specified that the costs associated with the administration of such a program must be recovered solely from the industrial class. Since the user charge system adopted by the District on January 1, 1979, would recover these costs from all classes of users, it became necessary to establish a separate funding mechanism.

The funding method adopted by the District to accomplish this task also recovers the costs associated with the user charge verification sampling program (see Section 8) since both programs overlap in technical support and monitoring activities.

#### Technical Support Charge Derivation

The portion of the total program cost associated with technical support activities is recovered through a graduated schedule of flat fees which recognizes that users who are sampled more and have an Industrial Discharge Permit frequently are responsible for a greater percentage of these costs. This fee schedule is based on the class system for users established within the user charge wastestrength verification sampling program. This system classifies a user based upon the amount of sewer user charge paid (see Section 8), since this amount is a reflection of the wasteload contributed to the District by that user. The frequency at which the District samples a user is based upon this classification.

Based upon these sampling frequencies, a rating factor is assigned to each class which recognizes the anticipated level of effort to be expended by the District. Utilizing these rating factors and the number of users within each class, a total weight is assigned to each class. Summing the individual total weights and dividing the estimated technical costs by this total weight determines the dollar amount assigned to the base rating factor (1 X). It should be noted that Class 6 represents those users who are not sampled on a regular basis and do not have an Industrial Discharge permit but are still responsible for a portion of the overall program costs. The 2017 annual fees are as follows:

<u>Class</u>	<u>Rating Factor</u>	<u>Number of Facilities</u>	<u>Annual Fee</u>	
			<u>Permit</u>	<u>No Permit</u>
1	105X	1	\$18,700	\$ 12,467
2	70X	11	\$ 12,467	\$ 8,311
3	15X	2	\$ 2,671	\$ 1,781
4	10X	54	\$ 1,781	\$ 1,187
5	5X	98	\$ 890	\$ 594
6	1X	<u>208</u>		\$ 119
		<u>374</u>		

These annual fees are included on the sewer user charge billings for all users in the following classes:

- 30 Non-Certified Industrial
- 31 Discharge Certified Industrial
- 32 Wastestrength Certified Commercial
- 33 Wastestrength Certified Industrial

#### Notice of Intent to Discharge Fee

If the discharge from a site is contaminated groundwater, groundwater removed from an excavation during construction, or any other irregular non-domestic wastewater, then the District must receive a fee of \$250 when a Notice of Intent to Discharge is submitted, except as provided below. The fee is required once per calendar year per site.

If the site is already paying a technical support charge or will be paying a technical support charge in response to a new long-term discharge, then payment of the Notice of Intent fee is not required.

#### Monitoring Charge Derivation

Under the industrial waste program, samples are collected by District personnel for two basic purposes: 1) monitoring compliance with applicable effluent limitations; and 2) assuring that users are paying user charges which are representative of their true wastewater characteristics. The frequency at which the District conducts user charge sampling is identified within Section 8. The frequency at which the District conducts compliance sampling is prescribed by the approved pretreatment program or by a determination of the potential impact a given users discharges can have on District operations. In situations where compliance monitoring reveals that compliance with applicable effluent limitations is not being achieved, the District may increase its frequency of sampling until it is assured that consistent compliance is being achieved. The costs associated with the collection and analysis of these samples are recovered from the individual users.

The sample collection monitoring fee schedule is established annually and is based upon a series of rating factors which correspond to the level of effort involved in the collection of various types of samples. The District collects three different types of samples: 1) a grab sample, 2) time composite sample and 3) a flow proportioned composite sample.

Each of these three sample types is assigned a rating factor which represents the level of effort necessary to collect the particular type of sample. These rating factors are then multiplied by the estimated number of samples to be collected in 2017 to arrive at a total sampling weight.

The 2017 estimated monitoring costs (excluding lab analysis costs) are then divided by the total sampling weight to determine the sample collection fee for a grab sample. Multiplying this grab sample fee by the rating factors for the time composite and flow proportioned composite sample types establishes the corresponding sample collection fees for these sample types. Following are the 2017 sample collection fees.

<u>Sample Type</u>	<u>Rating Factor</u>	<u>Estimated No. of Samples</u>	<u>Weight</u>	<u>Fee</u>
Grab	1.5	937	1406	\$231
Time Composite	3.0	219	657	\$461
Flow Composite	4.5	353	1589	\$692
Continuous pH Monitoring				\$250 per event
Discrete pH Monitoring				\$20
Flow composite, facility equipment				\$231

When sampling is done on a daily basis and used for enforcement or to ensure compliance with state federal or local limits, then the costs will be as follows:

<u>Sample Type</u>	<u>Fee</u>
Flow Composite, starting with the second day	\$461.00

This cost will be used only after the initial set-up costs have been billed.

The schedule of laboratory analysis monitoring fees is established annually and consists of a charge per pollutant based upon the labor, chemicals and equipment needed to perform a given pollutant analysis. For 2017, the fee schedule is as follows:

Semivolatile Organics by GCMS	144.00
Semivolatile Organics by GCMS (Base/Neutrals Only)	121.00
BOD, 5-day Total	18.00
Cyanide, (Amenable)	42.00
Cyanide, (Total)	22.00

Fluoride	11.00
Mercury, (T)	19.00

Metals Analysis by ICP \$12.00/element

Elements analyzed include; Arsenic; Barium; Cadmium; Chromium; Cobalt; Copper; Iron; Lead; Manganese; Molybdenum; Nickel; Selenium; Silver; Tin; Titanium; Zinc. Other elements analyzed on request.

Oil and Grease, (HEM)	50.00
Total Hydrocarbons, (SGT-HEM)	52.00
Paper Fiber Count	64.00
Phenols, (T)	19.00
Phosphorus, (T)	17.00
PCBs as Aroclor	59.00
Sulfide, (T)	33.00
Suspended Solids, (T)	11.00
Volatile Organics by GCMS	62.00

Should it become necessary for the District to analyze for pollutants not listed above, representative charges for those pollutants will be developed by Laboratory Services.

The District at the conclusion of each sampling period bills the monitoring fees for both sample collection and laboratory analysis directly to the affected user.

In some cases, District monitoring will be only a visual inspection. The purpose of the inspection is to determine whether an obstruction is present. The District will charge for this inspection when (1) a particular user has caused the obstruction and (2) the District has previously notified the user of the obstruction and requested remedial action. The District will continue charging the user for inspections until the cause or source of the obstruction is eliminated. If an obstruction is large enough to cause an overflow, basement flooding, or other significant adverse effects, then the District may charge for the inspection without prior notice. The effort required for an inspection is similar to the effort required for a grab sample. Therefore, the inspection fee is equal to the grab sample fee, as established above.

Section: 12  
Title: Late Payment Penalty  
Reference: Sec. 17.105(3), MMSD Rules

The District may charge a late payment penalty when the payment of a bill is late or when an undercharge was caused by an error or omission of a municipality, user or other person receiving service from the District.

The late payment penalty for 2017 will be 12% of the amount due to the District compounded annually.

In cases of undercharges caused by fraud or other misrepresentation, the District will not waive the late payment penalty.

## Section: 13

### Title: Charges for Special Wastes

Reference: Secs. 17.210 and 17.211, MMSD Rules

#### Septic and Holding Tank Waste

At the South Shore Water Reclamation Facility, the District accepts septic and holding tank waste. This waste must comply with the requirements of MMSD Rules, Chapter 11, particularly secs. 11.701 to 11.708. This waste is limited to domestic wastewater. Any waste with a BOD that exceeds 2,500 mg/l or a TSS that exceeds 2,500 mg/l must be classified as septic tank waste.

Any vehicle that delivers septic or holding tank waste must have a license from the District. The hauler must renew the license annually, on a calendar year basis.

The following table shows the charges for holding tank waste, septic tank waste, and the vehicle license fee.

Item	Rate
Holding Tank Waste	\$25.19/thousand gallons
Septic Tank Waste	\$33.15/thousand gallons
Vehicle License Fee	\$250/vehicle per year

The charges for septic and holding tank waste include an operating component and a capital component. An owner of a septic or holding tank who is also subject to property taxation by the District may, on an annual basis, obtain a refund of the capital component. To obtain this refund, the owner must submit to the District copies of waste hauling bills for the year, a copy of the property tax bill, and the owner's social security number or tax identification number.

#### Groundwater Discharges

Generally, to conserve capacity within the sewerage system, the discharge of groundwater is prohibited. However, the District may occasionally approve discharges of groundwater when necessary for groundwater or soil remedial action, construction, or other special circumstances. The rate for discharging groundwater is \$2.50 per thousand gallons.

#### Beneficial High Strength Waste

At the South Shore Water Reclamation Facility, the District accepts high strength waste for anaerobic co-digestion. For this purpose, the preferred type of waste has a BOD concentration greater than 50,000 mg/l and a TSS concentration less than 1,000 mg/l. However, the District may accept wastes with a lower BOD or higher TSS, if these wastes will promote the best interests of the District. The District feeds this waste directly into digesters.



Generally, the rate for waste received for anaerobic co-digestion is \$0.035 per gallon. Based upon a consideration of the volume to be received, BOD or TSS concentrations other than the typical concentrations, or other factors, the District may establish an alternative rate by contract.

#### Miscellaneous Special Wastes

When appropriate to serve the best interests of the District, the District may accept miscellaneous special wastes for disposal. For each waste, the District will establish charges for these wastes according to MMSD Rules, sec. 17.211. Considerations will include, but are not limited to: treatment costs, monitoring costs, administration costs, risks to the sewerage system or the environment, and the generator's or hauler's avoided costs.

Section: 14  
Title: Household Hazardous Waste Program Costs

The District currently has contracts with 19 municipalities listed below who are participating in the Household Hazardous Waste Program. The actual costs incurred in operating the Household Hazardous Waste Program are to be billed to each community on the basis of residential units.

A residential unit is defined as an individual residence such as a house, condominium, an apartment or mobile home (example: 4 unit apartment will be classified as 4 residential units). Apartments or condominiums that are larger than 4 units will be classified as 4 residential units). Participation municipalities shall report to the District the number of residential units within the municipality by July 31 of each year.

The Household Hazardous Waste Program Charge for 2017 will be billed to each participating community on or before March 1, 2018 and payable by April 1, 2018.

Municipalities participating in 2017:

Bayside	Oak Creek
Brown Deer	River Hills
Cudahy	South Milwaukee
Fox Point	St. Francis
Franklin	Shorewood
Glendale	Wauwatosa
Greendale	West Allis
Greenfield	West Milwaukee
Hales Corners	Whitefish Bay
Milwaukee	

Schedule A

UPDATE OF THE COST RECOVERY PROCEDURES MANUAL

2017 User Charge Rates Analysis vs. Approved 2016 Rates

Total User Charge Billings Proposed for 2017: \$75,112,768

Total User Charge Billings Proposed for 2016: \$73,280,017

Change from 2016: \$1,832,751

Percentage Increase 2.5%

	Flow Cents/1000	BOD Cents/LBS.	TSS Cents/LBS.	Conn. Dollars	MMSD Average Household Charge Est.
2017	\$1.12748	\$0.12730	\$0.16289	\$23.98	\$124.04
2016	\$1.11377	\$0.11869	\$0.16275	\$21.71	\$122.42
% Change from 2016	1.2%	7.3%	0.1%	10.5%	1.3%

Update of Cost Recovery Procedures Manual  
Including 2017 User Charge Rate

ANNUAL SINGLE FAMILY HOUSEHOLD AVERAGE USER CHARGE				PEOPLE PER UNIT FOR USER CHARGE BILLING IN:			
2016	2017	PERCENT CHANGE		2016	2017	PERCENT CHANGE	
BAYSIDE	\$114.82		\$116.46	2.45	2.44	-0.41%	
BROOKFIELD	\$117.73	1.43%	\$118.63	2.55	2.53	-0.78%	
BROWN DEER	\$121.66	0.76%	\$123.66	2.63	2.63	0.00%	
BUTLER	\$99.99	1.64%	\$101.42	2.08	2.07	-0.48%	
CALEDONIA	\$95.75	1.43%	\$97.38	1.97	1.97	0.00%	
CUDAHY	\$109.50	1.70%	\$111.15	2.31	2.30	-0.43%	
ELM GROVE	\$112.84	1.51%	\$114.14	2.42	2.41	-0.41%	
FOX POINT	\$114.06	1.15%	\$115.32	2.43	2.41	-0.82%	
FRANKLIN	\$129.26	1.10%	\$130.86	2.83	2.82	-0.35%	
GERMANTOWN	\$116.18	1.24%	\$117.13	2.51	2.49	-0.80%	
GLENDAL	\$108.36	0.82%	\$110.02	2.28	2.27	-0.44%	
GREENDALE	\$121.28	1.53%	\$122.90	2.62	2.61	-0.38%	
GREENFIELD	\$115.58	1.34%	\$117.22	2.47	2.46	-0.40%	
HALES CORNERS	\$117.10	1.42%	\$118.73	2.51	2.50	-0.40%	
MENOMONEE FALLS	\$116.55	1.39%	\$119.75	2.52	2.56	1.59%	
MEQUON	\$118.06	2.75%	\$116.79	2.56	2.48	-3.13%	
MILWAUKEE	\$126.22	-1.08%	\$127.83	2.75	2.74	-0.36%	
MUSKEGO	\$123.23	1.13%	\$124.62	2.70	2.70	0.00%	
NEW BERLIN	\$121.17	1.02%	\$122.41	2.64	2.63	-0.38%	
OAK CREEK	\$131.16	2.66%	\$134.65	2.88	2.92	1.39%	
RIVER HILLS	\$112.92	1.45%	\$114.56	2.40	2.39	-0.42%	
SHOREWOOD	\$106.46	0.85%	\$107.36	2.23	2.20	-1.35%	
ST. FRANCIS	\$122.80	1.32%	\$124.42	2.66	2.65	-0.38%	
THIENSVILLE	\$112.66	1.32%	\$114.15	2.42	2.42	0.00%	
WAUWATOSA	\$110.26	2.19%	\$112.67	2.33	2.34	0.43%	
WEST ALLIS	\$109.50	1.16%	\$110.77	2.31	2.29	-0.97%	
WEST MILWAUKEE	\$117.86	1.38%	\$119.49	2.53	2.52	-0.40%	
WHITEFISH BAY	\$124.32	1.30%	\$125.93	2.70	2.69	-0.37%	
DISTRICT AVERAGE	\$122.42	1.32%	\$124.04	2.65	2.64	-0.38%	
THE ANNUAL SINGLE FAMILY HOUSEHOLD AVERAGE USER CHARGE IS CALCULATED AS FOLLOWS:				ANALYSIS OF CHANGE IN THE DISTRICT'S AVERAGE USER CHARGE:			
		2016	2017	2016	2017	PERCENT CHANGE	
DOMESTIC FLOW (EXCLUDING I/I) GAL/DAY		54	53	CHANGE IN VOLUMETRIC RATE	\$1,922,831	\$1,959,230	1.9%
TIMES				CHANGE IN CONNECTION CHARGE	\$21.71	\$23.98	10.5%
OCCUPANCY FACTOR		2.65	2.64	CHANGE IN OCCUPANCY FACTOR	2.65	2.64	-0.4%
TIMES				CHANGE IN DOMESTIC FLOW	54	53	-1.9%
NUMBER OF DAYS PER YEAR		366	365	CHANGE IN AVERAGE CHARGE	\$122.42	\$124.04	1.3%
TIMES							
VOLUMETRIC CHARGE PER 1,000 GAL.		\$1,922,831	\$1,959,230				
ADD							
ANNUAL CONNECTION CHARGE		\$21.71	\$23.98				
TOTAL ANNUAL USER CHARGE		\$122.42	\$124.04				

## Update of Cost Recovery Procedure Manual

## SUMMARY OF TOTAL ESTIMATED BILLINGS BY COMMUNITY

COMMUNITY	2016 BUDGET	2017 BUDGET	PERCENT CHANGE
BAYSIDE	\$227,677	\$232,979	2.3%
BROOKFIELD	\$944,612	\$975,161	3.2%
BROWN DEER	\$771,159	\$793,673	2.9%
BUTLER	\$178,254	\$202,958	13.9%
CALEDONIA	\$25,658	\$26,051	1.5%
CUDAHY	\$1,695,777	\$1,880,263	10.9%
ELM GROVE	\$332,545	\$339,972	2.2%
FOX POINT	\$367,325	\$365,456	-0.5%
FRANKLIN	\$2,119,212	\$2,165,235	2.2%
GERMANTOWN	\$1,458,138	\$1,563,019	7.2%
GLENDALE	\$932,425	\$973,762	4.4%
GREENDALE	\$896,840	\$797,056	-11.1%
GREENFIELD	\$2,047,682	\$2,080,442	1.6%
HALES CORNERS	\$454,574	\$464,408	2.2%
MENOMONEE FALLS	\$1,837,644	\$1,945,802	5.9%
MEQUON	\$1,284,956	\$1,244,326	-3.2%
MILWAUKEE	\$42,210,856	\$43,080,279	2.1%
MUSKEGO	\$1,122,283	\$1,128,923	0.6%
NEW BERLIN	\$1,938,171	\$1,988,367	2.6%
OAK CREEK	\$2,253,071	\$2,293,748	1.8%
RIVER HILLS	\$84,431	\$86,117	2.0%
SHOREWOOD	\$712,669	\$695,725	-2.4%
ST. FRANCIS	\$563,566	\$572,022	1.5%
THIENSVILLE	\$195,655	\$197,240	0.8%
WAUWATOSA	\$3,068,521	\$3,265,714	6.4%
WEST ALLIS	\$3,803,768	\$3,911,608	2.8%
WEST MILWAUKEE	\$1,023,041	\$1,030,813	0.8%
WHITEFISH BAY	\$712,145	\$719,584	1.0%
OTHER*	\$17,362	\$92,065	430.3%
	<u>\$73,280,017</u>	<u>\$75,112,768</u>	2.5%

\* Other includes Milwaukee County Land Fill, Oak Creek Ash, Valley Power Plant and Waste Management.

**Update of Cost Recovery Procedure Manual**  
**Including 2017 User Charge Rates**  
**Percent of Estimated Billings by Class Of User**

2017 BUDGET	2017 FLOW	2017 BOD	2017 TSS	2017 CONNECTIONS	2017 TOTAL	2017 PERCENT
RESIDENTIAL	\$18,507,886	\$5,420,755	\$8,280,595	\$6,342,699	\$38,551,935	51.3%
NONCERTIFIED COMMERCIAL	\$11,622,658	\$3,401,889	\$5,195,487	\$891,893	\$21,111,927	28.1%
CERTIFIED COMMERCIAL	\$1,843,834	\$448,747	\$686,497	\$47,196	\$3,026,274	4.0%
CERTIFIED INDUSTRIAL	\$4,258,584	\$5,025,352	\$3,121,979	\$16,717	\$12,422,632	16.5%
<b>TOTAL</b>	<b>\$36,232,962</b>	<b>\$14,296,743</b>	<b>\$17,284,558</b>	<b>\$7,298,505</b>	<b>\$75,112,768</b>	<b>100.0%</b>

2016 BUDGET	2016 FLOW	2016 BOD	2016 TSS	2016 CONNECTIONS	2016 TOTAL	2016 PERCENT
RESIDENTIAL	\$18,695,940	\$5,162,865	\$8,451,487	\$5,730,160	\$38,040,452	51.9%
NONCERTIFIED COMMERCIAL	\$11,546,008	\$3,187,148	\$5,216,137	\$806,440	\$20,755,733	28.3%
CERTIFIED COMMERCIAL	\$1,822,906	\$429,623	\$702,858	\$43,399	\$2,998,786	4.1%
CERTIFIED INDUSTRIAL	\$4,058,581	\$4,410,538	\$3,001,058	\$14,869	\$11,485,046	15.7%
<b>TOTAL</b>	<b>\$36,123,435</b>	<b>\$13,190,174</b>	<b>\$17,371,540</b>	<b>\$6,594,868</b>	<b>\$73,280,017</b>	<b>100.0%</b>

Rates include the rate for watercourse.