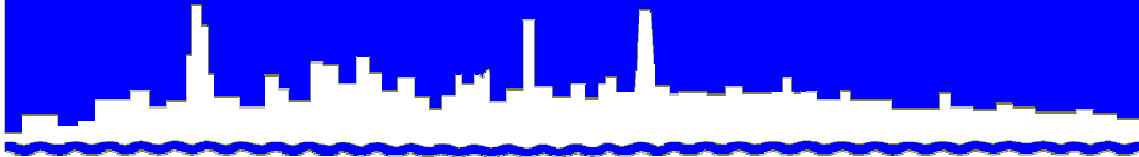


Protecting Our Water Environment



Metropolitan Water Reclamation District of Greater Chicago

***MONITORING AND RESEARCH
DEPARTMENT***

REPORT NO. 09-74

CALCULATION OF 2010 USER CHARGE RATES

DECEMBER 2009

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**CALCULATION OF 2010
USER CHARGE RATES**

**Monitoring and Research Department
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ACRONYMS

ACR	Administrative Cost Recovery
BOD	Biochemical Oxygen Demand
EAV	Equalized Assessed Valuation
HVAC	Heating Ventilation and Air Conditioning
I/I	Infiltration / Inflow
Klbs	Thousand Pounds
M&O	Maintenance and Operations
M&R	Monitoring and Research
MG	Million Gallons
MGD	Million Gallons per Day
MPR	Minimum Pretreatment Requirements
NCE	Noncompliance Enforcement
NSA	North Side Service Area
OM&R	Operations, Maintenance and Replacement
OPEB	Other Post-Employment Benefits
R&SNC-I	Residential and Small Nonresidential Commercial-Industrial
SS	Suspended Solids
SSA	Stickney Service Area
SWCO	Sewage and Waste Control Ordinance
TARP	Tunnel and Reservoir Plan
UCO	User Charge Ordinance
UCS	User Charge System
UCV	User Charge Verification
USEPA	United States Environmental Protection Agency
WRP	Water Reclamation Plant

CALCULATION OF 2010 USER CHARGE RATES

Determination of Total Operations, Maintenance and Replacement Costs

The 2009 Metropolitan Water Reclamation District of Greater Chicago (District) Corporate Fund appropriates \$395,000,000 for the support of operations and maintenance to carry out wastewater treatment and other functions. After subtracting the appropriations of those items disallowed by the USEPA in 1979 and other items not related to OM&R, it was determined that \$377,570,891 of the 2009 budget is OM&R related. A breakdown of this total is shown in Table 1.

The segregation of costs associated with wastewater treatment from costs associated with other functions was based on discussions regarding the District's dedicated ad valorem tax revenues, which were held in September and October 1978 between District staff and USEPA staff. In these discussions, non-OM&R budgeted line items were identified and disallowed.

For example, the non-OM&R items disallowed include the following Programs:

- 4200 Waterways Control and Stormwater Retention Reservoirs
- 4700 Flood and Pollution Control Design
- 4800 Flood and Pollution Control Construction

These Programs relate to corporate expenditures for waterways operation and maintenance and flood control design and construction. The total of these disallowed Program 4000 expenditures is \$5,019,821. In addition to this amount, a prorated portion of Program 7000, General Support, was also disallowed because it is the overhead support of the items disallowed under Program 4000. The portion of Program 7000 thus disallowed was \$2,409,288. The total of the disallowed funds considered to be non-OM&R related was \$7,429,109. Three additional funds - portions of the Annuity and Benefit Fund, the Reserve Claim Fund, and the Construction and Working Cash Fund - were added to the OM&R costs raising the total OM&R cost from \$377,570,891 to \$425,444,642. These funds were added because they relate to OM&R costs. The Annuity and Benefit Fund provides for the District's pension program for retired employees and employee disability payments. The Reserve Claim Fund is used for the payment of worker's compensation, liability claims, and other associated costs. This fund is also used to pay for repair costs if a catastrophe were to strike the District's facilities.

Up until the 1960s, the Construction Fund had been used as a repair and replacement funding mechanism. The use of this fund was suspended because the District embarked on a major program to upgrade its infrastructure, consisting primarily of expansion and improvement of WRPs, construction of new WRPs and collection systems and implementation of TARP, the District's solution to combined sewer overflows. Funding for these major capital improvement projects in the Capital Improvements Bond Fund included issuance of long-term debt as authorized by the state of Illinois.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 1

TOTAL OM&R COSTS FOR 2008 & 2009

Budgeted Corporate Fund Programs Directly Related to OM&R Costs		2008 Budget	2009 Budget
1000	Collection	\$ 60,000,000	\$ 64,200,000 ¹
2000	Treatment	81,400,000	87,900,000 ¹
3000	Solids Processing	39,400,000	39,900,000 ¹
4000	Flood and Pollution Control	33,268,560	35,980,179 ^{1, 2}
5000	Solids Utilization	32,900,000	33,900,000 ¹
7000	General Support	<u>121,666,780</u>	<u>115,690,712</u> ^{1, 3, 7}
Sub-Total		\$367,635,340	\$377,570,891
Retirement Fund		28,524,945	29,453,243 ⁴
Reserve Claim Fund		8,408,281	19,626,464 ⁵
Construction & Working Cash Fund		<u>0.00</u>	<u>(1,205,956)</u> ⁶
Total OM&R Cost		\$404,568,566	\$425,444,642

¹ See Pages 55, 248, 334 and 335 of the District's 2009 Budget.

² Program total in Corporate Fund is \$41,000,000. USEPA disallowed costs (Programs 4200, 4700 and 4800) are \$5,019,821, leaving a net of \$35,980,179.

³ Program total in Corporate Fund is \$128,100,000. USEPA disallowed costs are \$2,409,288, leaving a net of \$125,690,712. A prorated portion of Program 7000, General Support, was disallowed as it was determined in the 1979 User Charge Proposal that this was related to the overhead support of items disallowed from Program 4000. This prorated portion is the ratio of the disallowed amount (\$5,019,821) to the total for Programs 1000 through 5000 (\$266,900,000) in the 2009 Budget.

⁴ The 2009 Budget allocates \$31,385,921 on Page 58 to the Retirement Fund. Approximately 6.16% of the District's employee salaries are not chargeable to OM&R costs leaving a net of \$29,453,243. The 6.16 percent number represents the ratio of the salaries budgeted under Programs 4200, 4210, 4300, 4700 and 4800 for the corporate, construction, bond and stormwater management funds against the total salaries budgeted under Programs 1000, 2000, 3000, 4000 and 5000.

⁵ From Table 1A on Page 3.

⁶ From Table 1C on Page 6.

⁷ The 2009 Budget allocates \$10,000,000 for the OPEB Trust. This amount was deemed inappropriate for inclusion in the OM&R costs for 2009 and was therefore excluded from the total for Program 7000.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 1A

RESERVE CLAIM FUND

2009 Budgeted Cost	\$67,500,000
Less 2008 Budgeted Cost	(55,500,000)
Plus 2008 Actual Claims	7,626,464
Total	<u>\$19,626,464</u>

Note: Included for the User Charge System are actual expenditures in 2008 plus the amount added to the fund which is the difference in the budget appropriations for 2008 (Page 51 of 2008 Budget) and 2009 (Page 58 of 2009 Budget). The total represents the funding required to bring the fund up to the 2009 appropriated amount. The data for actual claims was provided by the Finance Department.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 1B

CONSTRUCTION FUND COSTS

Budgeted Programs Directly Related to OM&R Cost	2009 Budget
1000 Collection	\$ 5,539,154
2000 Treatment	17,235,488
3000 Solids Processing	3,440,153
4000 Flood and Pollution Control	7,262,674
5000 Solids Utilization	389,361
Sub-total of Programs 1000 through 5000	<u>\$33,866,830</u>
Less Ineligible Portion of OM&R Cost Applicable to Programs 4200, 4210, 4700 and 4800	(7,262,674)
Total Eligible OM&R Cost from Programs 1000 through 5000	<u>\$26,604,156</u>
<p>Ratio of eligible to total program cost</p> $\frac{\$26,604,156.00}{\$33,866,830.00} = 0.7856$	
7000 General Support (eligible portion) = 0.7856 x \$1,716,970.00	1,348,769
Total Eligible OM&R Cost	<u>\$27,952,925</u>

Sources: Information from District's Budget Preparation Tool Functional Area Summary Report for 2009 Budget.

Suspending use of the Construction Fund was appropriate at the time, since funding for capital improvement projects came through the issuance of long-term debt recovered under ad valorem taxes, and replacement costs were recovered by way of the designated fixed asset replacement set aside in the Corporate Fund. The designation for fixed asset replacement funding was negotiated with the USEPA in the original UCS as a mechanism for identifying and recovering infrastructure replacement costs, etc.

Beginning with 1997, it was determined that the eligible portions of the Construction Fund and the Financing Charges for related working cash funds would be included in the OM&R cost as shown in Table 1C. The eligible portion of the Construction Fund, etc., is now designated for “fixed asset replacement.”

The Engineering Department has determined that the eligible portion of the Construction Fund from the 2009 budget is a negative \$10,035,350.00, as shown in Table 1D (eligible appropriation and in-house cost grand totals). Adjustments from prior years appropriation amounts resulted in an overall negative number for construction fund costs. The 2009 Budget did not allocate construction working cash funds. (See Page 102 of the 2009 Budget.) The Construction Fund was adjusted for the Construction Fund revenues and ineligible Program 4000 costs. The eligible portion to be included in the OM&R costs was determined to be a negative \$1,205,956, as shown in Table 1C.

Determination of Total Revenue to be Generated by UCS in 2010

As shown in Table 2, revenues contained in the 2009 budget derived from sources other than the UCS total \$138,266,842. The revenue derived from the sale or use of the District's assets and other sources is itemized in Table 2. Such revenues are used in the District's budget preparation process to offset the overall tax levy and the amount to be generated by the UCS.

Determination of 2010 User Charge Administrative Cost for Each User Charge Classification

Table 3 presents the costs for administration of the UCS, which will be recovered by direct charges to Large Commercial-Industrial Users and by inclusion in the User Charge rates for other classifications. The actual administrative cost to be recovered in 2010 is \$6,679,716. Subtracting the total of revenue to be generated from other sources and the ACR from the total OM&R cost of \$425,444,642 leaves a net OM&R cost of \$280,538,000, which must be collected by the UCS (Table 2).

Unit Costs of Treatment

District operating records indicate that 512,632 MG of flow, 793,649 Klbs of BOD and 1,311,228 Klbs of SS were treated during 2008 (data from 2008 WRP operating records as compiled by the M&R Department). Operating cost accounting data were used to determine the allocation of OM&R costs by parameter, i.e., flow, BOD and SS. The result is that 28.34 percent of the cost was attributed to flow, 39.22 percent to BOD, and 32.44 percent to SS. This allocation was based on 2008 cost data and the M&O Department memorandum dated May 28, 2009. Using the foregoing data, the unit costs of treatment were derived, as shown in Table 4.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 1C

DETERMINATION OF TOTAL OM&R COST CONSTRUCTION FUND PORTION
ADJUSTED FOR REVENUES FROM OTHER SOURCES

Revenue/Cost Item	For 2010 from 2009 Budget
Net Assets Appropriable	\$21,480,800.00
Revenue from Personal Property Replacement Tax	2,010,000.00
Revenue from Money and Property Investment Income, etc. (Page 101, 2009 Budget)	903,000.00
Connection Impact Fees	200,000.00
Total Revenues Derived from Other Sources for Construction Fund	<u>\$24,593,800.00</u>
Total Costs (from <u>Table 1B</u> on Page 4)	\$27,952,926.00
Ratio of Construction Fund Revenue vs. Total Construction Fund Costs (\$24,593,800)/(\$27,952,926) = 0.8798 ¹	
Eligible Construction Fund as Furnished by Engineering Dept. (From <u>Table 1D</u>) ²	(\$10,035,350.00)
Less Proportionate Share for Construction Fund Revenues (0.8798 x -\$10,035,350)	(\$ 8,829,393.78)
Net Eligible Construction Fund	(\$ 1,205,956.22)
Plus Net Eligible Portion of Construction Working Cash Fund. ³	<u>\$ 0.00</u>
OM&R Cost to be Recovered for Construction Fund Under the User Charge Ordinance	(\$ 1,205,956.22)

¹ 87.98% of the Construction Fund is funded by revenue from sources other than the User Charge System.

² Due to delayed project awards accounted for in the previous year's calculation, the total amount is zero.

³ No appropriation has been made for Construction Working Cash Fund in the 2009 Budget.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 1D

2009 CONSTRUCTION FUND REPLACEMENT COST

Project No.	Project Title/Description	Eligible Appropriation	% Eligible	In-House Cost
<u>2009 Budget Awards</u>				
08-173-2V	Aquatic Ecology & Water Quality Equipment Storage Building	0	100	0
05-147-2M	HVAC Improvements Stickney WRP	0	100	0
07-162-2S	Westdale Gardens Pumping Station and Force Main, Northwest 8A	0	0	0
05-834-2D	Touhy Avenue Bridge Rehabilitation and Repairs of Other Bridges on the North Shore Channel, NSA	1,116,000	80	56,000
07-364-2M	Underground Potable and Effluent Water Piping Upgrades	0	0	0
	Total 2009 Awards*	\$1,116,000	80	\$56,000
<u>2009 Projects Under Construction</u>				
00-809-1E	Remote Unmanned Sites, Smoke Annunciation	-1,840,500	50	-92,030
00-473-1D	Replace Casework, Fume Hoods and Miscellaneous Work at the Egan WRP	-1,094,500	74	-54,720
99-169-2M	Improve Sluice Gates and Miscellaneous Work, Racine Avenue PS	-2,647,000	100	-132,000
02-110-2E	Electrical Distribution System and Conduit and Cable Replacement, SSA	-5,316,000	100	-265,800
02-818-2P	Cleaning of Anaerobic Digesters and Other Rehabilitation, SWRP, CWRP	224,000	20	112,000
	Total Projects Under Construction	<u>(\$10,674,000)</u>		<u>(\$533,350)</u>
	Grand Total	<u>(\$ 9,558,000)</u>		<u>(\$477,350)</u>

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 2

DETERMINATION OF TOTAL OM&R COST FOR 2008 AND 2009
ADJUSTED FOR REVENUES FROM OTHER SOURCES
AND FOR ADMINISTRATIVE COST

Revenue/Cost Item	For 2009 From 2008 Budget	For 2010 From 2009 Budget
Total OM&R Cost ¹	\$404,568,566	\$425,444,642
Less:		
Net Assets Appropriable ²	(105,741,361)	(90,572,842)
Revenue from Investments, Land Rentals, Sewer Permit Fees, Service Agreements, and Electricity Generation	(22,175,500)	(20,025,000)
Revenue from Personal Property Replacement Tax ²	(26,002,200)	(25,780,000)
Revenue from Miscellaneous Sources of Administrative Penalties but not including Village of Glenview Payment ²	(1,624,000)	(1,624,000)
Village of Glenview Payment	(225,000)	(225,000)
Subtotals of Revenues from Other Sources	<u>(155,768,061)</u>	<u>(138,226,842)</u>
Administrative Costs to be Recovered through Charges Under the UCS ³	(6,071,457)	(6,679,716)
Revenues from Other Sources and Administrative Costs	<u>(161,839,518)</u>	<u>(144,906,558)</u>
Adjusted Total OM&R Cost	<u>\$242,729,048</u>	<u>\$280,538,084</u>
Rounded Off Figure	\$242,729,000	\$280,538,000

¹ From Table 1 on page 2.

² From pages 85 and 86 of 2008 Budget and pages 93 and 94 of 2009 Budget.

³ From Table 3 on page 11.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 3

ADMINISTRATIVE COSTS
OF USER CHARGE AND SEWAGE AND WASTE CONTROL ORDINANCES
TO BE RECOVERED UNDER THE UCS

Small Nonresidential Commercial-Industrial Users ¹	\$ 127,944
Tax-Exempt Users ¹	\$ 408,772
Large Commercial-Industrial Users ^{2,3,4}	\$6,143,000
Total Administrative Costs to be Recovered from Users	<u>\$6,679,716</u>

¹ Based on information provided by the District's Finance Department for 2008 expenditures and the District's financial records.

² This Administrative Cost is the total estimated revenue for MPR Charges and UCV Charges that will be recovered under the UCS in 2010.

³ The assessed ACR Charges for the Large Commercial-Industrial Users are in accordance with Appendix E to the District's User Charge Ordinance.

⁴ This amount also includes non-compliance expenditures to be recovered under the District's Sewage and Waste Control Ordinance.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 4

UNIT COST OF TREATMENT

Total District Loadings for 2008¹

Volume	=	512,632 MG
BOD	=	793,649 Klbs
SS	=	1,311,228 Klbs

Total OM&R Cost = \$280,538,000

Allocation of Cost According to Parameters of Flow, BOD & SS²

Flow	=	28.34% x \$280,538,000 = \$ 79,504,469
BOD	=	39.22% x \$280,538,000 = \$110,027,004
SS	=	32.44% x \$280,538,000 = \$ 91,006,527

Unit Costs of Treatment

Volume	=	\$ 79,504,469 / 512,632 MG = \$155.09/MG
BOD	=	\$110,027,004 / 793,649 Klbs = \$138.63/Klbs
SS	=	\$ 91,006,527 / 1,311,228 Klbs = \$ 69.41/Klbs

¹ The 2008 District loadings are used in the calculation of 2010 rates because this is the latest full year's operating data at the time the calculations were made. (Source: M&R Department WRP 2008 Operating Records).

² Percent distribution of cost-to-load parameters derived from the M&O Department memorandum dated May 28, 2009.

These unit costs of treatment will be used in the subsequent analysis for distributing costs by classification and in distributing the costs of treating I/I and stormwater. The basis of the District's UCS is its cost to treat each gallon of flow, each pound of BOD and each pound of SS.

Distribution of Equalized Assessed Valuations and Quantities by Source

The sources of loadings to the District and the assessed valuations for these sources are shown in Table 5.

The District utilized the 2007 total EAV for its service area of \$155,970,000,000 (see Page 48 of the 2009 Budget). This included railroad property. Through a review and evaluation of all tax credits claimed by Large Commercial-Industrial and Tax-Exempt Users in 2008, based on their 2007 real estate property taxes paid in 2008, it was established that the EAV of the Large Commercial-Industrial sources was \$9,701,711,027 (see Table 5). This is based on the most recently verified User data in the District's files and was for tax year 2007 payable in 2008. Some Tax-Exempt Users pay property taxes on their facilities which they utilize for commercial purposes. This EAV was \$388,404,563 (see Table 5). Subtracting the EAV of the Large Commercial-Industrial Users (\$9,701,711,027) and the EAV of the Tax-Exempt Users (\$388,404,563) on city property leaves a total EAV of \$145,879,884,410 for the R&SNC-I Users.

Allocation of I/I, Rain and Recycle

As stated earlier, the total quantities of flow, BOD and SS are determined from District operating records. The following is an explanation of how these quantities were allocated to the four sources of R&SNC-I, Large Commercial-Industrial, Tax-Exempt, and I/I, Rain and Recycle, as shown in Table 5.

The Recycle item was introduced in the 1987 User Charge rate calculations for BOD and SS because failure to include this item results in disproportionately high and improper assignment of BOD and SS concentrations and total loadings to the R&SNC-I class. This item was designated "Recycle" because currently, samples of plant loadings include substantial "loadings" due to recycle of in-plant wastestreams and thus do not adequately reflect User-generated loadings. In the 2010 calculations, the recycle flow volume was established as 14,301 MG for 2008, based on the May 28, 2009 memorandum from the M&O Department providing the 2008 recycle flow volume.

The initial BOD and SS loadings assigned to the R&SNC-I classifications in Table 5 prior to the allocation of I/I, Rain and Recycle in Table 6, were computed based on the volume for the R&SNC-I classifications listed in Table 5 (computed as in prior years), and the standard domestic waste strength concentrations of 119 mg/L for BOD and 168 mg/L for SS. I/I, Rain and Recycle flows were determined to be 209,695 MG for 2008 (see Table 6).

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 5

DISTRIBUTION OF EQUALIZED ASSESSED VALUATIONS AND QUANTITIES
BY SOURCES

Source	EAV (\$)	Volume (MG)	BOD (Klbs)	SS (Klbs)
R&SNC-I	\$145,879,884,410 ³	272,478	270,423	381,774
Large Commercial- Industrial ¹	\$ 9,701,711,027 ²	19,067	116,192	35,574
Tax-Exempt ¹ (and Gov- ernmental)	\$ 388,404,563 ³	11,392	19,853	36,958
I/I, Rain and Recycle (See <u>Table 6</u>)		209,695	387,181	856,922
Total (Approximate Due to Roundoff)	<u>\$155,970,000,000⁴</u>	<u>512,632</u>	<u>793,649</u>	<u>1,311,228</u>

¹ The quantities shown on these lines constitute the billable flows and loads for the classes indicated.

² EAV is based on actual tax credits reported by District Users. The tax credit data was taken from the 2008 annual statements filed by the Users. This data is verified by real estate property tax bills submitted with the 2008 annual statements. \$25,515,500 in 2007 real estate taxes were claimed by Large Commercial-Industrial Users in 2008, and the District's 2007 real estate property tax rate was 0.263 cents per \$100.00 of EAV. Therefore, $(\$25,515,500/0.263) \times \$100 = \$9,701,711,027$, the computed EAV of the Large Commercial-Industrial Class.

³ Similarly, Users in the City of Chicago airports and a religious organization paid real estate taxes of \$1,021,504 for properties which were utilized for commercial usage. Based on this tax paid, the EAV of the tax-exempt class was $(\$1,021,504/0.263) \times \$100 = \$388,404,563$. The EAV of the R&SNC-I Class is computed by deducting all other figures from the total EAV.

⁴ Total EAV is for the year 2007 as supplied by the Cook County Assessor. Equalization Factor for 2007 = 2.8439.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 6

ALLOCATION OF I/I, RAIN AND RECYCLE

Class Loadings	Volume (MG)	%	BOD (Klb)	%	SS (Klb)	%
<u>Dry-Weather Loadings</u>						
R&SNC-I ¹	272,478	89.95	270,423	66.53	381,774	84.03
Large Commercial-Industrial ²	19,067	6.29	116,192	28.59	35,574	7.83
Tax-Exempt (and Governmental) ²	<u>11,392</u>	<u>3.76</u>	<u>19,853</u>	<u>4.88</u>	<u>36,958</u>	<u>8.14</u>
TOTAL	302,937	100.00	406,468	100.00	454,306	100.00
<u>Allocating I/I, Rain and Recycle</u>						
R&SNC-I	188,611		257,591		720,110	
Large Commercial-Industrial	13,198		110,678		67,100	
Tax-Exempt (and Governmental)	<u>7,886</u>		<u>18,911</u>		<u>69,711</u>	
TOTAL ³	<u>209,695</u>		<u>387,181</u>		<u>856,922</u>	
GRAND TOTAL ⁴	512,632		793,649		1,311,228	

¹ R&SNC-I flows are derived by subtracting I/I, Rain and Recycle figures as well as known Large Commercial-Industrial and Tax-Exempt loads from the grand totals. Standard domestic sewage concentrations of 119 mg/L for BOD and 168 mg/L for SS are used (as specified in Section 7g of the User Charge Ordinance) and have been applied to the volume so derived to establish the R&SNC-I BOD and SS loadings, respectively.

² These numbers were arrived at from the District's records of all 2008 User Charge Annual Certified Statements.

³ Daily M&O Department records for the District's seven WRPs for the year 2008 show a total volume treated of 512,632 MG. The projected annual dry-weather volume is 866.77 x 366 days = 317,238 MG. I/I, Rain and Recycle flows are equal to Total Flow (512,632 MG) minus Dry-Weather Flow (317,238 MG), or 195,394 MG plus Recycle (14,301 MG) = 209,695 MG. See Page 11 for an explanation of the Recycle item as first introduced in the 1987 User Charge rate calculations.

⁴ Grand totals come from 2008 operating records as explained on Page 5. Totals may not equal the sum of individual components due to rounding.

Analysis of Dry- and Wet-Weather Flows

The method of determining dry- and wet-weather flows in the 2001 through 2004 rate-setting process was revised from the method used in the rate calculations for 2000 and previous years. For rate settings prior to 1982, rain-attributed loads were derived by extracting all loads received at a WRP on a day with 0.10 inches of precipitation or more, projecting the remaining loads over 365 days, and subtracting this value from total WRP flows. This method, however, does not account for rain loads received days after a storm due to the lag time required for flows to arrive from the perimeter of a collection area.

In the 1982 through 1989 rate calculations, rain-attributed flows were determined by an analysis of the daily plant operating records for a previous year. For the 1986 through 1989 rate calculations, the records for 1985 were used. Because the dry-weather flow is thought to be relatively stable, it was felt that a separate determination each year was not warranted. The month in 1985 exhibiting the lowest total precipitation was identified as January.

The month of January 1985 was chosen because it has these characteristics and, therefore, represented a baseline condition. The flow and pollutant loadings for each day during this month were calculated and totaled for the month. The monthly sums were then divided by the number of days in the month.

The difference between total dry-weather load and the total load was considered to be the wet-weather or rain load. For the 1990 through 1998 rate calculations, the Rain and I/I flows were determined by using 1988 plant operating data. The operating records from each WRP were screened to find the five lowest flow days. These days were averaged and used as dry-weather flow for each of the seven WRPs. The seven WRPs were tabulated to give a District-wide daily dry-weather flow quantity of 911 MGD. The tabulated daily dry-weather flow was converted into an annual volume.

However, for the 1999 and 2000 rate calculations, it was decided to update the dry-weather flow quantity and methodology, because the 1988 data was then ten years old and the method did not account for changes which may reasonably occur over time. Therefore, for 1999 and 2000, the User Charge rate calculation utilized the average of the five lowest flow days for each of the previous five years for which flow data was available to identify the average dry-weather flow. WRP flow data was available for 1994 through 1998 for the 2000 rate calculations. For each WRP the five lowest flow days for each year were averaged for each of the five available years.

Based on 1994 through 1998 WRP operating data, the average daily dry-weather flow was 923.34 MGD (rounded off to 923 MGD). The highest year was 1997 with an average dry weather flow of 939.90 MGD, while the lowest year was 1995 with 890.73 MGD.

Beginning with the 2001 rate calculations, the District determined that it would utilize the total of the seven consecutive lowest flow days recorded in 1999 at each of the District's WRPs for identifying the average daily dry-weather flow. This method accounts for a complete normal workweek for each WRP along with weekends. Utilizing this method, the dry-weather flow for 1999 was 941 MGD.

However, in subsequent years there was a significant reduction in dry-weather flows. This reduction may be due to general reduction in Commercial-Industrial activities. Since significant variations in dry-weather flow from year-to-year have an impact on the User Charge rates, a moving average of the dry-weather flow from the most recent five years is now being used in the User Charge rate calculations. This insures a greater stability to the User Charge rates.

For the 2010 User Charge rate calculations, the average of the total dry-weather flow from 2004 through 2008 is utilized. The five year average is 866.77 MGD with a high of 906.90 MGD observed in 2006 and a low of 839.78 MGD seen in 2005. This information is shown in Table 7.

Distribution of I/I, Rain and Recycle OM&R Costs

As shown in Table 5, there are four sources of loadings to the District's WRPs. However, under the ad valorem tax system, there are three sources which contribute toward the payment of OM&R costs: the R&SNC-I User classifications, the Large Commercial-Industrial User classification and the Tax-Exempt User classification. The OM&R costs to treat flows and loads from the I/I, Rain and Recycle must be distributed to the R&SNC-I, Large Commercial-Industrial and Tax-Exempt classifications in proportion to the dry-weather loads and flows contributed by these three regulated classifications. The results of the distribution of loads and flows are shown in Table 6.

Calculation of Rates for the Large Commercial-Industrial and Tax-Exempt Classifications

After allocating the I/I, Rain and Recycle-attributed flows to the three classifications, a cost for each classification was calculated by multiplying each classification parameter quantity by the unit cost generated in Table 4. The results of these calculations are shown in Table 8. Please note that the totals shown include the administrative cost for the R&SNC-I classification and the Tax-Exempt classification. For the Tax-Exempt classification, the administrative costs have been distributed to volume, BOD and SS in proportion to the total treatment costs for each parameter. The administrative cost is not included for the Large Commercial-Industrial User classification. These costs, totaling \$281,076,709, must be recovered by the District through the ad valorem (real estate) tax system and User surcharges.

In summary, the total OM&R cost by classification is:

R&SNC-I	221,318,717
Large Commercial-Industrial	43,581,715
Tax-Exempt	<u>16,176,277</u>
TOTAL	\$281,076,709

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 7

DRY-WEATHER FLOW IN MGD

WRP	2004	2005	2006	2007	2008
Calumet	159.00	146.00	177.00	161.00	168.00
Stickney	494.00	474.00	495.00	457.00	470.00
Northside	186.00	173.00	184.00	182.00	158.00
Lemont	1.44	1.42	1.63	1.60	1.75
Kirie	21.64	20.01	23.19	21.59	26.39
Egan	19.0	19.5	20.30	20.20	22.20
Hanover	4.44	5.85	5.78	5.86	6.05
Totals	885.52	839.78	906.90	849.25	852.39

Five year average is 866.77 MGD

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

TABLE 8

COST PER PARAMETER AND TOTAL COST PER USER CLASSIFICATION
FOR 2010 RATES

Classification	Volume (MG)	BOD (Klbs)	SS (Klbs)	Total
R&SNC-I	461,089	528,015	1,101,938	
Unit Cost	\$ 155.09	\$ 138.63	\$ 69.41	
Treatment Cost	\$71,510,300	\$73,198,662	\$76,481,810	\$221,190,773
+ Administration Cost				<u>\$ 127,944</u>
Classification Total				\$221,318,717
Large Commercial-Industrial	32,265	226,870	102,674	
Unit Cost	\$ 155.09	\$ 138.63	\$ 69.41	
Treatment Cost	<u>\$ 5,004,029</u>	<u>\$31,451,054</u>	<u>\$ 7,126,633</u>	<u>\$ 43,581,715</u>
Classification Total	\$ 5,004,029	\$31,451,054	\$ 7,126,633	\$ 43,581,715
Tax-Exempt (and Governmental)	19,278	38,764	106,669	
Unit Cost	\$ 155.09	\$ 138.63	\$ 69.41	
Treatment Cost	\$ 2,989,768	\$ 5,373,845	\$ 7,403,893	\$ 15,767,505
+ Administration Cost	<u>\$ 77,510</u>	<u>\$ 139,317</u>	<u>\$ 191,946</u>	<u>\$ 408,772</u>
Classification Total	\$ 3,067,277	\$ 5,513,162	\$ 7,595,839	\$ 16,176,277
Total Cost				\$281,076,709

The R&SNC-I classifications' OM&R costs are collected through the District's dedicated ad valorem tax system. Using the equalized assessed classification value of \$145,879,884,410 for the R&SNC-I classifications, as shown in Table 5, and the classification OM&R cost of \$221,318,717 for the R&SNC-I classifications, as shown in Table 8, the ad valorem residential OM&R rate was determined as follows:

$$\$221,318,717 / \$145,879,884,410 = 0.152/\$100 \text{ EAV}$$

This constitutes the OM&R rate for all user classifications under the ad valorem tax system and represents a 2.7 percent increase from the 2009 rate of 0.148/\$100 EAV.

In the collection of ad valorem tax revenues, the Cook County Treasurer has experienced a shortfall over the years due to delinquencies. The actual extent of this shortfall is unknown. To compensate for this shortfall, however, it is customary for taxing bodies to increase their tax levies by an amount which approximates the shortfall. The District's budget for 2009 included a 3.5 percent allowance for tax revenues uncollected in the year of levy.

The calculation of the ad valorem residential OM&R rate of 0.152/\$100 EAV is without the allowance for uncollectibles. This rate adjusted downward by 3.5 percent for uncollectibles would be 0.146/\$100 EAV. The adjusted ad valorem OM&R rate is 55.7 percent (0.146/0.263) of the District's total 2007 ad valorem tax rate.

The User Charge rates for the Large Commercial-Industrial class are equal to the total cost per parameter for this classification divided by the billable flow and loads, as shown in Table 5 and Table 8. Using this data, the following rates were established for the Large Commercial-Industrial User classification:

Volume:	\$ 5,004,029 / 19,067	MG	=	\$262.44/MG
BOD:	\$31,451,054 / 116,192	Klbs	=	\$270.68/Klbs
SS:	\$ 7,126,633 / 35,574	Klbs	=	\$200.33/Klbs

The Tax-Exempt classification OM&R costs must be fully collected by the UCS. Using the total cost per parameter for this classification, divided by the billable flow as shown in Table 5 and Table 8, the following rates were established for the Tax-Exempt User classification:

Volume:	\$3,067,277 / 11,392	MG	=	\$269.25/MG
BOD:	\$5,513,162 / 19,853	Klbs	=	\$277.70/Klbs
SS:	\$7,595,839 / 36,958	Klbs	=	\$205.53/Klbs

A comparison of the 2010 rates with the current 2009 rates is presented below:

<u>Classification Parameters</u>	<u>2010</u>	<u>2009</u>	<u>% Change</u>
Large Commercial-Industrial			
Volume \$/MG	\$262.44	\$229.37	+ 14.42
BOD \$/Klbs	\$270.68	\$231.90	+ 16.72
SS \$/Klbs	\$200.33	\$174.25	+ 14.97
Tax-Exempt			
Volume \$/MG	\$269.25	\$235.96	+ 14.11
BOD \$/Klbs	\$277.70	\$238.56	+ 16.41
SS \$/Klbs	\$205.53	\$179.25	+ 10.45
OM&R Factor	0.557	0.504	+ 10.45

The comparison above shows an approximately 14 percent increase in the rate for flow for both the Large Commercial-Industrial and Tax-Exempt User classifications. For both classifications, the BOD rate increased by greater than 16 percent and the SS rate increased greater than 14 percent.

The loadings for the Large Commercial-Industrial User classification for 2008 versus 2007 varied as follows: flow decreased by 6.2 percent, BOD decreased by 1.2 percent and SS decreased by 11.2 percent. The increased seven day average dry-weather flows observed for 2004 through 2008 and the increase in the total flow to our WRPs observed in 2008 resulted in an I/I Rain and Recycle volume of 209,695 for the 2010 rate calculations. This represents a 13.1 percent increase over the I/I Rain and Recycle volume observed in 2007.

The increase in User Charge rates is attributable to an increase in total OM&R costs. The major sources of these increased costs were an approximately \$10 million increase in operations and maintenance costs and an approximately \$11 million increase in the Reserve Claim Fund. There was also a significant decrease in Net Assets Appropriable over 2008 which caused an increase in the adjusted OM&R cost. These increases will be partially offset by the 10.45 percent increase in the OM&R Factor which is the portion of the Ad Valorem Taxes that Large Commercial-Industrial Users can claim as a credit against their Gross User Charges.

Administrative Cost Recovery

The costs incurred by the District in 2008 to administer the SWCO and the UCO were considered in determining the 2010 User Charges for the R&SNC-I User classification, the Large Commercial-Industrial User classification and the Tax-Exempt User classification.

Prior to 2001, the Administrative Costs were included in determining the User Charge rates for flow, BOD and SS for the three classifications of Users listed above and/or were recovered from Users subject to federal categorical pretreatment standards. However, on December 7, 2000, the District's Board of Commissioners (Board) amended the UCO, which altered the method of recovery of the Administrative Costs. Under these amendments, the cost for administering the MPR and the cost for administering the NCE of the SWCO were segregated from the Administrative Costs. Similarly, the cost for administering the UCV requirements of the UCO was also segregated from the Administrative Costs.

Beginning in 2001, the MPR charges were recovered from the Significant Industrial Users in the Large Commercial-Industrial User classification. The NCE charges were recovered from Users who are found in noncompliance with the SWCO. The UCV charges are recovered from the Large Commercial-Industrial User classification.

A portion of the costs associated with MPR, NCE, and UCV were recovered under Section 10 and Appendix F to the UCO. On November 4, 2004 the Board amended the UCO to remove the recovery of the NCE charges from the UCO. Since the NCE charges are incurred by a User for violations of effluent limitations specified in the SWCO, it was determined that the collection of the NCE charges under the SWCO was more fair, efficient and equitable. The collection of the NCE charges under the SWCO was also approved by the Board on November 4, 2004. These changes became effective January 1, 2005. Appendix F to the UCO was redesignated as Appendix E and the MPR and UCV charges applicable to 2005 and subsequent years are now incorporated therein. The NCE charges for 2005 and subsequent years are now incorporated in Appendix F, Enforcement Response Procedure, Paragraph I of the SWCO.

The portion of the MPR and UCV costs that are recovered through the UCS are subject to change every year to reflect District expenses. As shown in Table 1 of this report, the total OM&R cost has been increased from \$404,568,566 in 2008 to \$425,444,642 in 2009, representing an increase of 5.16 percent. The 2010 MPR, UCV and NCE charges were increased by 5 percent over 2009 rates in order to keep pace with this increase.