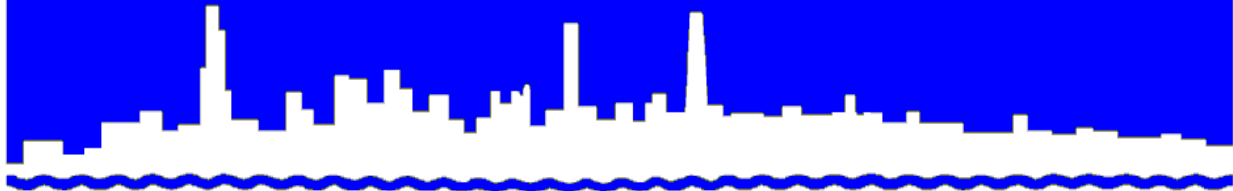


*Protecting Our Water Environment*



*Metropolitan Water Reclamation District of Greater Chicago*

***MONITORING AND RESEARCH  
DEPARTMENT***

***REPORT NO. 21-22***

***CALCULATION OF 2022***

***USER CHARGE RATES***

***December 2021***

**Metropolitan Water Reclamation District of Greater Chicago**  
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**Calculation of 2022 User Charge Rates**

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## **Acronyms**

BOD	5-Day Biochemical Oxygen Demand
District	Metropolitan Water Reclamation District of Greater Chicago
EAV	Equalized Assessed Value
I/I, R & R	Inflow/Infiltration, Rain, and Recycle
klbs	Thousand Pounds
LCIU	Large Commercial-Industrial User
MG	Million Gallons
MJA	Multi-Jurisdictional Agreement
OM&R	Operations, Maintenance, and Replacement
Ordinance	User Charge Ordinance
R-SNCIU	Residential, Small Non-Residential Commercial-Industrial User
RD-925	User Charge Annual Certified Statement
SIU	Significant Industrial User
SS	Suspended Solids
TXE	Tax-Exempt User
USEPA	United States Environmental Protection Agency
User	A facility classified as a Large Commercial-Industrial or Tax-Exempt User
WRP	Water Reclamation Plant

## Introduction

The District operates a User Charge program approved effective January 1, 1980, by the USEPA. This program recovers the OM&R Costs from facilities discharging to the District's WRPs and within MJAs administered by the District under its Ordinance.

This report contains details regarding the calculation of the User Charge rates for the reporting year 2022.

## Operations, Maintenance, and Replacement Costs

The District appropriates money in the Corporate, Construction, Reserve Claim, and Retirement Funds to fund the OM&R Costs associated with WRP operations. These costs are offset by revenues, such as the Personal Property Replacement Tax, investments, land rentals, and permit fees, in addition to net assets appropriable from the prior year, resulting in net OM&R Costs associated with the User Charge Rates. The OM&R Costs and Revenues are shown in Table 1.

Fund	Costs	Revenues	Balance
Corporate <sup>1</sup>	\$378,320,927	\$197,853,116	\$180,467,811
Construction <sup>2</sup>	2,546,910	--	2,546,910
Reserve Claim <sup>3</sup>	2,597,000	--	2,597,000
Retirement <sup>4</sup>	94,584,518	--	94,584,518
Net OM&R Costs	\$478,049,355	\$197,853,116	\$280,196,239

Based on budgeted costs and revenues from the 2021 District Budget Book, the net OM&R Costs of \$280,196,239 will be used in the calculation of the User Charge rates.

## Administrative Costs

The costs for administering the District's industrial waste programs are applied to portions of the User Charge rates based on the resources necessary to monitor and regulate its User classifications and categories. These administrative costs are shown in Table 2.

Table 2: Administrative Costs<sup>5</sup>

Program	Cost
User Charge (LCIU and TXE)	\$ 6,500,900
Pretreatment (SIU)	4,734,700
User Charge and Pretreatment (Miscellaneous)	2,010,600
Total	\$13,246,200

The costs associated with administering the User Charge program to LCIUs will be applied to the calculation of those Users' rates. Pretreatment costs for SIUs will be used in determining the minimum pretreatment requirement charges. Finally, miscellaneous costs associated with the User Charge and Pretreatment Programs not associated directly to the LCIUs, TXEs or SIUs will be part of the costs used in the calculation of the OM&R Factor.

### Wastewater Loading

Wastewater treated at the District's WRPs come from three sources: Users (LCIU and TXE), facilities not classified as a User (R-SNCIU), and the environment (I/I, R & R). The sum of the wastewater from these three sources is the total wastewater treated annually by the District.

The wastewater associated to I/I, R & R is not directly measured by the District. Instead, a low flow wastewater volume is calculated using the lowest continuous 7-day flow at each WRP and the sum of BOD and SS loadings from Users and domestic sources. The remaining volume, BOD, and SS are associated to I/I, R & R and are then proportionally divided between different classifications based on contributing flow volumes as shown in [Table 3](#).

Table 3: Wastewater Loadings

Source	Volume (MG)	BOD (klbs)	SS (klbs)
WRP (Total) <sup>6</sup>	454,535	828,269	1,809,414
WRP (7-day Low Flow) <sup>7</sup>	265,543	372,272	404,752
I/I, R & R <sup>8</sup>	203,651	455,997	1,404,662
LCIU and TXE <sup>9</sup>	25,796	134,333	68,837
R-SNCIU <sup>10</sup>	239,747	237,940	335,915

## Unit Cost of Treatment

Prior to calculating the User Charge Rates, a unit cost of treatment is determined. This is how much it costs the District to treat wastewater based on flow volume, BOD, and SS. The allocations are determined annually by the District's Operations and Maintenance Department and presented in [Table 4](#).

Using the net OM&R Costs determined in [Table 1](#) less the administrative costs from [Table 2](#), the individual unit cost of treatment for each parameter is calculated using total wastewater at all the District's WRPs.

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Table 4: Unit Cost of Treatment

Source	Volume	BOD	SS
OM&R Cost Allocations <sup>11</sup>	28.20%	39.44%	32.36%
OM&R Costs	\$75,279,911	\$105,285,096	\$86,385,033
WRP (Total and Recycle)	469,194 MG	828,269 klbs	1,809,414 klbs
Unit Cost of Treatment	\$160.45/MG	\$127.11/klbs	\$47.74/klbs

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## User Charge Rates

For LCIUs and TXEs, User Charge Rates for wastewater treated by the District are used in the calculation of each User's user charge liability, as reported on their RD-925. The User Charge Rates are shown in [Table 5](#).

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Table 5: User Charge Rates

Source	Volume	BOD	SS
Unit Cost of Treatment	\$160.45/MG	\$127.11/klbs	\$47.74/klbs
LCIU and TXE Loadings	25,796 MG	134,333 klbs	68,837 klbs
I/I, R & R	11,558 MG	25,879 klbs	79,718 klbs
Administrative Costs <sup>12</sup>	\$1,164,732	\$3,957,828	\$1,378,339
User Charge Rates	\$277.48/MG	\$181.07/klbs	\$123.05/klbs

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## Ad Valorem Tax Credit and OM&R Factor

A proportion of property taxes associated with the District's OM&R Costs is paid directly by all taxpayers in the District's service area with their property taxes. Users who pay property taxes may claim this payment as an ad valorem tax credit when calculating their User Charges owed.



This credit is the percentage of taxes paid to the District, called the OM&R Factor. To calculate this factor, the total EAV of facilities in the District’s service area, less the EAV of the District’s Users is applied to the net OM&R Costs associated with any facilities in the District not classified as either a LCIU or TXE. This classification, called Residential, Small Non-Residential Commercial Industrial User, is not required to pay User Charges directly to the District.

The OM&R Factor is adjusted by 3.5% to account for uncollectable property taxes annually as shown in Table 6.

Equalized Assessed Value (EAV) <sup>13</sup>	\$158,118,902,121
OM&R Costs	\$209,296,043
Administrative Costs	\$2,010,600
Total Costs	\$211,306,643
OM&R Rate (per \$100 EAV)	\$0.1336
District Tax Rate (per \$100 EAV) <sup>14</sup>	\$0.3784
OM&R Factor	0.353
OM&R Factor adjusted by 3.5% <sup>15</sup>	0.341

## Conclusions

Based upon these calculations, the 2022 User Charge Rates and OM&R Factor will be:

Volume	\$277.48 per million gallons of wastewater
BOD	\$181.07 per thousand pounds of 5-day biochemical oxygen demand
SS	\$123.05 per thousand pounds of suspended solids
OM&R Factor	0.341

These Rates and Factor were presented on October 20, 2021, to representatives of the User community and on November 18, 2021, to the District’s Board of Commissioners for final approval. The Rates and Factor are published in the 2022 User Charge Ordinance, the District’s 2022 Final Budget Book, and will be used in the calculation of User Charges owed to the District by LCIUs and TXEs.

## End Notes

- <sup>1</sup> Appendix A
- <sup>2</sup> Appendix B
- <sup>3</sup> 2021 Comprehensive Annual Financial Report (CAFR)
- <sup>4</sup> 2021 District Budget Book (page 108) and Employee Salary Data
- <sup>5</sup> 2021 District Budget Book (pages 149 & 150)
- <sup>6</sup> 2020 Annual Loading Data provided by the District's Maintenance and Operations Department
- <sup>7</sup> 5-year average of the lowest 7 consecutive volume days at each WRP
- <sup>8</sup> Difference of 2020 WRP Total, 2020 WRP 7-day Low Flow, and the sum of 2020 LCIU, TXE, and R-SNCIU loadings with the addition of 2020 Recycle flow as reported by the District's Maintenance and Operations Department
- <sup>9</sup> As reported on LCIU and TXE 2020 RD-925s or approved estimates
- <sup>10</sup> Difference of 2020 WRP 7-day Low Flow and LCIU and TXE flows with loadings are based on standard domestic concentrations (UCO Sec. 7g)
- <sup>11</sup> Provided by the District's Maintenance and Operations Department
- <sup>12</sup> Administrative Costs (Prog. Nos. 4662 and 4663) distributed based on cost allocations as provided by the District's Maintenance and Operations Department
- <sup>13</sup> 2021 District Budget Book (page 47)
- <sup>14</sup> 2021 District Budget Book (page 47)
- <sup>15</sup> 2021 District Budget Book (page 68)

**Appendix A**  
**Corporate Fund**

Corporate Fund data is provided by the 2021 District Budget Book, pages 109 – 316. Ineligible costs are determined as either program costs designated as unrelated to OM&R or a percent of General Support program costs unrelated to OM&R activities.

<b>Fund</b>	<b>Total</b>	<b>Eligible</b>	<b>Ineligible</b>
Collection	\$ 58,455,595	\$ 58,455,595	\$ 0
Treatment	91,332,358	91,332,358	0
Solids Processing	46,962,797	46,962,797	0
Flood & Pollution Control	41,820,734	35,630,934	6,189,800
Solids Utilization	25,159,032	25,159,032	0
General Support	135,596,184	120,780,211	14,815,973
Total Costs	\$ 399,326,700	\$ 378,320,927	\$ 21,005,773

<b>Revenue</b>	<b>Total</b>	<b>Eligible</b>	<b>Ineligible</b>
Net Assets Appropriable	\$ 131,373,116	\$ 131,373,116	\$ 0
Personal Property Replacement Tax	16,000,000	16,000,000	0
Investment Income	860,000	860,000	0
Land Rentals	25,000,000	25,000,000	0
Sewer Service Agreement Revenue	1,750,000	1,750,000	0
Lockport Electricity Generation	800,000	800,000	0
Miscellaneous	22,070,000	22,070,000	0
Total Revenues	\$ 197,853,116	\$ 197,853,116	\$ 0

<b>Net Corporate Fund Costs</b>	\$ 201,473,584	\$ 180,467,811	\$ 21,005,773
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**Appendix B**  
**Construction Fund**

Construction Fund data is provided by the District’s Engineering and Maintenance and Operations Departments’ annual budget reports, reflecting projects under construction or to be awarded. Construction Fund costs and revenues are provided in the 2021 District Budget Book (pages 98, 100, and 354). Total Costs to Recover are the total of Construction Fund projects less a proportional amount based on the Construction Fund Revenue.

<b>Department</b>	<b>Under Construction</b>	<b>To Be Awarded</b>	<b>Total</b>
Engineering	\$ 0	\$ 150,000	\$ 150,000
Maintenance and Operations	6,307,200	3,856,800	10,164,000
<b>Total</b>	<b>\$ 6,307,200</b>	<b>\$ 4,006,800</b>	<b>\$ 10,314,000</b>

<b>Costs</b>	<b>Total</b>	<b>Eligible</b>	<b>Ineligible</b>
Collection	\$ 2,002,000	\$ 2,002,000	\$ 0
Treatment	5,053,300	5,053,300	0
Solids Processing	150,000	150,000	0
Flood & Pollution Control	4,696,200	1,096,200	3,600,000
Solids Utilization	2,947,700	2,947,700	0
General Support	622,000	471,204	150,796
<b>Total Costs</b>	<b>\$ 15,471,200</b>	<b>\$ 11,720,404</b>	<b>\$ 3,750,796</b>

<b>Revenue</b>	<b>Total</b>	<b>Eligible</b>	<b>Ineligible</b>
Net Assets Appropriable	\$ 8,723,200	\$ 8,723,200	\$ 0
Money and Property Investment Income	103,000	103,000	0
<b>Total Revenues</b>	<b>\$ 8,826,200</b>	<b>\$ 8,826,200</b>	<b>\$ 0</b>

<b>Total Costs to Recover</b>	<b>\$ 10,314,000</b>	<b>\$ 2,546,910</b>	<b>\$ 7,767,090</b>
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