New York City's Water And Sewer System

Examining Rate Setting And Billing Structures

New York City Independent Budget Office
Louisa Chafee, Director

110 William Street 14th Floor
New York, New York 10038

Tel. 212-442-0632
www.ibo.nyc.gov
press@ibo.nyc.gov

This report was prepared by Jordan Paige, with assistance from Valerie Gudino, Gianpaolo Defelice, and Jan Luis Mendez, and supervised by Brian Cain and Sarah Parker. Report production was done by Tara V. Swanson.

Please direct any inquiries on this report to press@ibo.nyc.gov.

Image by ImagesBG from Pixabay

Executive Summary

The New York City Department of Environmental Protection (DEP) is responsible for maintaining the water and wastewater infrastructure serving New York City. DEP supplies drinking water as well as collects, treats, and discharges wastewater and stormwater. DEP provides clean water and wastewater treatment to over 8.3 million New York City residents as well as more than 1 million people living in Westchester, Putnam, Orange, and Ulster counties. The City projects investing approximately $29 billion in capital improvements from fiscal years 2024 through 2033 on sewers, water pollution control, water distribution, water supply and transmission, and equipment. The City's water and sewer infrastructure is funded by revenue it collects from water and sewer bills, for which rates are reviewed and set annually by the New York City Water Board.

Most properties are charged a metered water and sewer bill based on water usage, meaning the more water a property uses, the higher the bill. Metered accounts are generally charged by individual building or housing unit, while city-owned properties have their bills bundled into an aggregate bill, called city charges. The remaining properties are billed using flat rate structures: the Multi-Family Conservation Program (MCP) is an opt-in program that applies to eligible multi-family residential buildings of four or more units which are billed a fixed charge per dwelling unit; frontage properties are billed based on square footage, occupancy, number of plumbing fixtures, and other physical attributes. Neither MCP nor frontage rates factor in actual water consumed at a property.

This study uses DEP data on water bills by account in fiscal year 2020, the most recent data available according to DEP. The New York City Independent Budget Office (IBO) seeks to enhance public understanding of the Water and Sewer System's revenues by examining the rate setting process, the different types of billing structures, and the distribution of bills among ratepayers.

IBO's analysis of 2020 water bill data revealed:

- **Metered water bills generated 70% of total bills, followed by MCP (24%), frontage (3%), and city charge (3%).** Therefore, over a quarter of water bill charges are not based on water consumption, raising water conservation concerns.
- **Manhattan and Brooklyn each generated about $1 billion, while Staten Island generated $160 million.** This largely reflects the permanent and daytime populations of each borough.
- **Residential and mixed properties produced the most in water bill charges.** Multi-family residential elevator buildings had a much higher median charge per property ($43,000) than the next highest property type (public facilities and institutions at $3,900).
- **On a per unit basis, 82% of metered bills were lower than the flat MCP rate.** MCP properties likely opt-in to the program because they would pay more under a metered structure, they are willing to pay a premium for the rate certainty that MCP provides over time, or both of these factors. Opponents may argue that because MCP is not tied to water usage, there is no incentive for MCP properties and residents to undertake water conservation measures after the initial investments required to qualify.

Table of Contents

Introduction

The New York City Water and Sewer System (hereafter referred to as the water system) serves the largest population and is the largest public source of unfiltered water in the United States.[1] Three separate entities control the operations, governance, and financing of the water system (see subsequent section for more). Although the City owns the water system, it is leased to the New York City Water Board (the Water Boad) pursuant to the 1985 lease agreement between the City and the Water Board. The City's water system is funded primarily by water and sewer bills paid by property owners, but there are several unique types of charges beyond the most common usage-based water bills. ("Water bills" in this report refers to water and sewer bills unless otherwise noted.) This paper is a review of how the water rates are set for accounts located in New York City, the different types of water charges, and an analysis of water bills charged in 2020.

The Water Board has an annual rate setting process to determine what ratepayers—the individual or entity remitting the water bill payments—will be charged for use of the water system in the following fiscal year (years in this report refer to city fiscal years unless noted otherwise). The Water Board can also implement rate increases at any time throughout the year—with a 30-day notice—if updated projections show revenues will not meet the requirements. The revenue generated from user payments is statutorily required to cover the costs of operations and maintenance of the water system, finance the capital program for improvements, and pay a rental fee to the City for the lease of the water system. The rental payment is paid by the Water Board only if requested by the mayor (see the Water Board Rental Payment section). The City currently projects that it will invest approximately $29 billion in capital improvements from 2024 through 2033, with funding being utilized for projects revolving around sewers, water pollution control, water distribution, water supply and transmission, and equipment.[2]

This report analyzes data provided by the Department of Environmental Protection (DEP) on New York City water bills from 2020. The data contains charges from the four types of water bills: metered, the Multi-Family Conservation Program (MCP), frontage, and city charge water bills. This report is intended to provide a view into the water system's operations and revenue by charge type, borough, property type, and council district.

Independent Governance Structures for New York City Water Services

New York City has three entities responsible for the operation and governance of the City's water system—DEP, Municipal Water Finance Authority (NYW), and the Water Board. This multi-tiered system can be traced to the New York City Municipal Water Finance Authority Act enacted by the New York State Legislature in 1984. Stemming from the 1970s fiscal crisis when the City struggled to cover the cost of basic municipal operations, investors were hesitant towards general obligation bonds backed by the City's general fund. Separating out bonds for the water and sewer system and backing them with fee revenue made water and sewer bonds more attractive.[3] The Koch Administration created the three part water system, wherein two semi-autonomous agencies—NYW and the Water Board—separated the bonds, revenues, and rate setting from the City government to create a fee-based revenue source independent of other City financial obligations to cover water bond debt service. This was enabled by the New York State Public Authorities Law §1045-f which states "A city water board may be created by a special act of the state legislature at the request of the City, as a body corporate and politic, consulting a corporate municipal instrumentality of the state."

The multi-tiered water system works as follows: NYW issues bonds to finance capital improvements to the water system; the Water Board sets the water and sewer rates to be charged for water consumption; DEP bills and collects the revenue from customers. DEP also manages the City's water supply, collects and treats wastewater, upgrades the City's wastewater treatment facilities, conducts daily operations that keep the water services functioning, and manages the capital improvement program for the water system (among other activities not related to the water system).

Lien Sales

The City's main enforcement mechanism to compel ratepayers to pay their water bills is the lien sale. A lien is a legal claim against real property for unpaid property taxes, water, sewer, or other property charges, as well as the interest due on the taxes and charges. All unpaid water bill charges that have been delinquent for more than a year are considered a lien against a property giving the City the authority to sell the lien to a third party or lienholder. This provides revenue to the City through the lien sale and encourages property owners to pay their taxes and charges to avoid the lien being sold to a third party that may act on the lien. There has not been a water or sewer lien sale since 2019; they were paused at the beginning of the Covid pandemic.

The New York City Council passed Local Law 82 in June 2024 which allows the City to reauthorize an enforcement program for property tax, water, and other charges. Under this bill, the Department of Finance must notify the owners of real property regarding liens DEP may have issued for nonpayment of water bills. The first lien sale since 2019 is scheduled for May 2025. According to the NYW in their April 2024 bond offering statement, before Local Law 82 reauthorized lien sales, if lien sales were to be reauthorized in a similar manner to past lien sales and if all other assumptions remained unchanged, it is likely that water bill payments will be greater than currently projected. Since delinquent ratepayers have had little incentive to pay overdue water bills, accounts receivable—the past due amounts that ratepayers owe—has continued to increase. Separately, in March 2024, Mayor Eric Adams and DEP announced enforcement actions against roughly 2,400 delinquent water accounts that owe a total of $102 million.

The Water Board sets rates sufficient for generating revenue to meet the debt obligations of NYW and the operations and maintenance costs of the water system. DEP collects this revenue which is then deposited in bank accounts controlled by the Water Board (or a "lockbox") and prepares an annual budget for operations and maintenance. Revenues are transferred from the Water Board to NYW, which pays debt service on its bonds, DEP's operating and maintenance expenses, and, when requested, the rental payment to the City. Surplus funds at the end of each fiscal year are rolled forward into the next fiscal year. In this way, revenues and expenditures are part of a governance funding structure that is separate from the City's general fund. (The notable exception to this closed-loop funding setup is the Water Board rental payment, which is discussed in a later section of this report.)

The Water Board consists of seven members who are appointed by the mayor and serve two-year terms. NYW also has seven members, five of which are appointed by the mayor and the remaining two by the governor.[4]

Water Billing Structures

New York City has four billing structures for water and sewer ratepayers. Metered billing makes up 95% of ratepaying properties in the City. Figure 1 presents the number of property lots by billing structure for 2020, per the water bill data provided by DEP used in this analysis. The four water bill rate structures include:

- **Metered:** Properties are assessed for water and sewer services based upon the amount of water consumed between water meter readings. Metered billing is the most common way municipalities charge for water and matches consumption to billing. In 1988, DEP initiated the Universal Metering Program with the goals of promoting water conservation, water supply system management, and rate equity.[5] In 2008, DEP announced the Automated Meter Reading (AMR) network that provides multiple meter readings per day to provide more accurate bills and promote water conservation.

- **MCP:** Qualified multi-family residential buildings of four or more units can opt-in to this program and are billed based on a fixed charge per dwelling unit. As the City moved to phase out frontage (see below), MCP was created to assuage concerns residential property owners had about metered billing leading to unpredictability in their water bills. Many of these properties are affordable housing.
- **Frontage:** Properties are billed based on square footage, occupancy, number of plumbing fixtures, and other physical attributes. Prior to 1985, a large portion of properties were billed using frontage. Local Law 53 of 1985 required the installation of water meters as part of building renovation projects or new construction. Although the existence of the frontage billing structure remains for some properties, DEP has been working to phase out this type of billing.
- **City Charge:** DEP sends an annual bill to the Office of Management and Budget (OMB) for all water and sewer charges related to City-owned properties. These charges are estimates that are informed by past metered usage.

Figure 1
Number of Property Lots Per Water Billing Type

Billing Type	Number of Property Lots	Share of Total Lots
Metered	759,161	96%
MCP	21,991	3%
Frontage	5,794	1%
City Charge	2,609	0.3%

SOURCE: IBO analysis of 2020 DEP water bill data
NOTE: Each property lot (identified by borough-block-lot number, or BBL) was counted once by IBO from the DEP data; however, some properties have multiple water bill accounts, potentially reflecting multiple structures or multiple meters on that lot. For such properties, the account with the greatest water bill determined the billing type used for Figure 1. Percents may not total to 100% due to rounding.

New York City Independent Budget Office

Water Rate Setting Process

The Water Board sets water and sewer rates annually at a level sufficient to pay principal and interest on NYW's debt, to provide for maintenance and operations of the water system, and to make the rental payment to the City (discussed in a later section). The 2020 water rate (alone) was $3.99 per one hundred cubic feet.[6] While the water rate often changes, the sewer rate has remained at 159% of the water rate since 1993.[7] Therefore, when the water rate changes, the dollar value of the sewer rate changes too. This ratio is based on the long-term relationship between the cost of the wastewater system and the water supply and delivery system. With a water rate of $3.99, the sewer rate is effectively set at $6.34, which brings the total water and sewer rate in 2020 to $10.33 per one hundred cubic feet. In practice, if a metered ratepayer uses 11 hundred cubic feet for a billing period—bills can be sent monthly or quarterly—the total bill would be $113.68. This is comprised of a water consumption charge of $43.89 and sewer charge of $69.79.

To determine the water rate, the Water Board coordinates a multi-step review, involving multiple other entities, as shown in Figure 2. First, DEP collaborates with OMB to project the water system's operating and

Figure 2
Steps in the Water Rate Setting Process

1. **DEP projects operating and maintenance expenses, which is then reviewed and approved by OMB.**
2. **NYW projects debt service on bonds.**
3. **Engineering consultant certifies expenses are sufficient to maintain services.**
4. **Rate consultant certifies revenues are sufficient cover expenses.**
5. **Water Board holds public hearing in each borough of the City.**
6. **Water Board adopts the rate.**

SOURCE: New York City Water Board's Rate Adoption Process

New York City Independent Budget Office

maintenance expenses, which OMB certifies in the Mayor's Executive Budget. The second step involves NYW projecting debt service on bonds. NYW funds most of DEP's capital projects primarily by selling bonds in the debt capital markets. Regular payments made to bond investors, including both principal and interest, are known as debt service payments. Due to timely payments made on debt service, plus the strong legal protections that are provided to bondholders, NYW has garnered high credit ratings from Moody's, Standard & Poors, and Fitch.[8] Strong bond ratings reflect a high level of confidence that NYW will collect sufficient revenue to cover debt service costs. Strong bond ratings keep the cost of borrowing low, allowing the water system access to necessary capital for system maintenance and improvement while minimizing rate increases. As of the 2025 Adopted Budget, the debt service payment is $1.9 billion.[9]

The next two steps involve consultations from various firms to certify revenue and expense estimates. Consultants AECOM USA and Macan Deve Engineers produce an annual engineering report for NYW that addresses the condition and operation of the water system and the adequacy of capital and operating programs for the current and upcoming fiscal year. AECOM has been consulting NYW since its creation in 1984, and Macan Deve Engineers have been co-consultors since 2021. The findings of the 2024 report stated that the water system is adequate and is being managed in a professional and prudent manner by DEP.[10] A rating of "adequate" is the highest that can be given.

Water System Consultants

In addition to the city-specific consultants, Amawalk Consulting Group is NYW's rate consultant responsible for submitting a report on the cost of supplying water to upstate customers of the water system. Based on the New York State Water Supply Act of 1905, the City was required, upon request, to furnish fresh water to municipalities and water districts in eight counties directly north of the City. Water is supplied to more than 1 million residents in Westchester, Putnam, Orange, and Ulster County.[11] Water is supplied to these customers on a wholesale basis, meaning the City delivers water to a central location, then municipalities or water districts are responsible for distributing the water to users. Amawalk's current report states that the cost of water supply service will increase each year at least through 2028, which is consistent with IBO's expectations given rising costs.

The final two steps in the process involve a public comment period and a vote by the Water Board on the final rate for the upcoming fiscal year. During the comment period, the public gets an opportunity to testify on the proposed rate and offer support or disapproval. After public hearings in all five boroughs, the Water Board decides on their final rate, which would go into effect on July 1st. This rate setting model was designed to take politics out of the rate setting process. The Water Board vote for the 2025 rates occurred on June 13, 2024.

DEP proposed an 8.5% increase for 2025 in order generate sufficient revenues to cover projected costs of operating and financing the system. After the public comment period, the proposed increase of 8.5% was adopted, resulting in a water and sewer rate of $12.61 per one hundred cubic feet, up from $11.63 per one hundred cubic feet seen the year before. This is the greatest increase since the period of 2008 through 2011 when annual increases were between 11.5% and 14.3%, respectively, each year. (See Figure 3 for a recent history of water rates back to the beginning of the Great Recession.) Notably, the 2025 rate setting process occurred prior to the lien sale reauthorization, which could lead to greater revenues than originally projected.

In 2024, the typical annual metered water and sewer bill for a single-family homeowner in New York City, is $1,088. The rates in New York City are approximately 21% below the average for the 30 largest U.S. cities.[12]

Although the population of New York City has steadily increased since the 1980s, the City has seen a decrease in annual water usage. Up until the 1960s, the City's approach to water was to increase supply to meet

demand.[13] Since then and with increasing efficiency, DEP has focused on decreasing consumption through programs such as the Residential and Non-Residential Water Efficiency Program, water reuse incentives, and other initiatives and projects to keep water consumption low. For example, the City ran a successful Toilet Rebate Program from 1994 through 1997. The purpose of this program was to incentivize high-efficiency toilets, which use less gallons of water per flush. During the three-year period, 1.3 million toilets were replaced, which cut water usage by 90 million gallons per day. New York City has invested billions of dollars to improve its water operations and has been able to reduce total citywide water usage by 35% between 1979 and 2021.[14] From an environmental perspective, conserving water helps protect water supplies and ecosystems. Lower levels of demand for water reduces energy used for water treatment and distribution, lowering greenhouse gas emissions. Water conservation also reduces wastewater flows during precipitation events such as heavy rain that can lead to overflowing gutters and stormwater runoff that contaminates the environment.

Figure 3
New York City Metered Water and Sewer Rates

Fiscal Year	Water & Sewer Rate	Percentage Change from Prior Year
2008	$5.23	11.5%
2009	5.98	14.3%
2010	6.76	13.0%
2011	7.64	13.0%
2012	8.21	7.5%
2013	8.78	6.9%
2014	9.27	5.6%
2015	9.58	3.3%
2016	9.87	3.0%
2017	9.87	0.0%
2018	9.87	0.0%
2019	10.10	2.3%
2020	10.33	2.3%
2021	10.33	0.0%
2022	10.61	2.7%
2023	11.12	4.8%
2024	11.63	4.6%
2025	12.61	8.4%

SOURCE: New York City Water Board rates
NOTE: Dollar amounts reflect the combined total of the water and sewer rates. Percent changes were calculated by IBO. These rates are multiplied by a property's water usage (per 100 cubic feet of water) to calculate its water bill.
New York City Independent Budget Office

DEP has made concerted efforts to reduce water consumption, but the amount of water that buildings in the City use largely determines the rates adopted by the Water Board. The cost of operating and maintaining the water system does not decrease proportionately with decreased water usage. Because most properties are billed based on metered consumption, citywide reductions in consumption mean that the cost of maintaining the system needs to be spread out across fewer gallons of water, contributing to the need to raise the water and sewer rates over time. In other words, decreasing one's consumption will not always lead to a decrease in water bill because the general conservation practices across the City can lead to higher rates per gallon. Despite this, ratepayers are still better off, all else equal, if they conserve water.

Water Board Rental Payment

The rate set by the Water Board must cover the costs of the water system for the budget year, which includes the annual rental payment that the Water Board remits to the City for use of the water system. Under the 1985 lease agreement between the City and the Water Board, the City—at the mayor's discretion—may request an amount not to exceed the greater of: (a) the principal and interest payable on general obligation bonds issued by the City for water and sewer purposes; or (b) 15% of the amount of the principal and interest payable on the bonds of NYW. Since 2005, the latter has been the basis for the rental payment, because the City paid off the principal and interest on general obligation debt related to water and sewer purposes.

Various groups, including elected officials, criticize the rental payment because water bill revenue finances the City's general fund instead of being used for water-related services or projects. Every year since the enactment of the lease agreement in 1985, the sitting mayor had requested the rental payment until 2016. In

Figure 4
Water Board Rental Payments
Dollars in Millions

Fiscal Year	Rental Payment
2011	$205
2012	196
2013	207
2014	214
2015	205
2016	137
2017	0
2018	0
2019	0
2020	128
2021	137
2022	0
2023	0
2024	145
2025	289
2026	313
2027	325
2028	369

SOURCE: IBO analysis of Office of Management and Budget data
NOTE: The 2025 through 2028 rental payments are the amounts requested by the City, as reflected in the City's 2025 Adopted Budget (released in June 2024). All prior year amounts reflect the actual payments in those years.
New York City Independent Budget Office

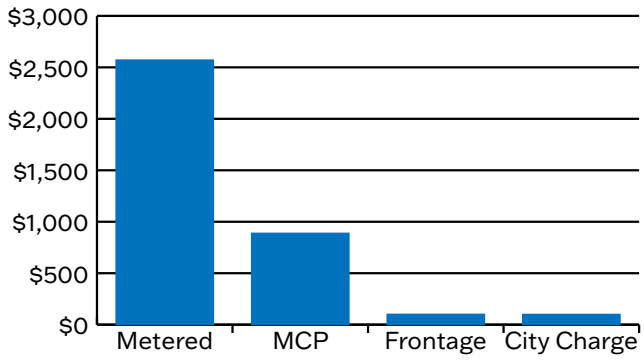
April 2016, Mayor de Blasio announced his decision to not request the rental payment stating "the City has been using the water bill as a cash cow for the general treasury. The water bill should be for one thing and one thing only, the cost of water."[15] Not requesting the rental payment in 2017 saved the water system (and thereby ratepayers) $244 million in lease payments and thus water bills; similar amounts were saved in both 2018 and 2019 because the de Blasio administration did not request the rental payment. Figure 4 shows the rental payment each year since 2011; partial rental payments were requested in 2020 and 2021 ostensibly due to budgetary needs during the Covid-19 pandemic. The Adams administration also reintroduced the rental payment in 2024 purportedly to fund rising costs of caring for asylum seekers. From 2024 through 2028, the City plans to charge the Water Board more than $1.4 billion in rent over four years to lease the water system from the City.

Water Bill Dataset

The primary dataset used in this analysis includes the water bills charged to each property in the City in 2020, provided by DEP. According to DEP, 2020 was the most recent year for which data was available when IBO received it in December 2023. The DEP data was at the account level, and included charge type (metered, MCP, frontage, and city charge), geographic identifiers at the borough, block, and property tax lot level (also known as borough-block-lot number, or BBL), and the amount paid in water bills for fiscal 2020. The dataset contains the amounts billed to—rather than the amounts paid by—each property. Therefore, the data precludes IBO from analyzing delinquent ratepayers. The April 2024 NYW Bond Offering Statement includes discussion of the increasing accounts receivable (i.e., the water bills that are more than 30 days outstanding) and the lack of a lien sale.

According to DEP, in some cases the actual meter readings are not available when calculating a property's water bill, so DEP estimates water consumption using Average Daily Flow (ADF)—a measure of water usage from automated meter readings—from past periods to estimate the water bill for the current period. Because these estimates are based on past consumption levels at each property, DEP indicated the estimates are a good proxy for actual consumption in IBO's analysis.

Figure 5
Water Bill by Charge Type
Dollars in Millions



SOURCE: IBO analysis of 2020 DEP water bill data
New York City Independent Budget Office

IBO merged the water bill data set with the Primary Land Use Tax Output (PLUTO) dataset from the Department of City Planning by BBL. The addition of PLUTO allowed IBO to assign a land use type, such as commercial and office building, or one- and two-unit residential houses, to each property parcel. By analyzing this combined dataset, IBO seeks to enhance public understanding of water bills. Specifically, the findings present the data by charge type, property type, and location, allowing readers to understand which ratepayers are charged the most and least for use of the water system.

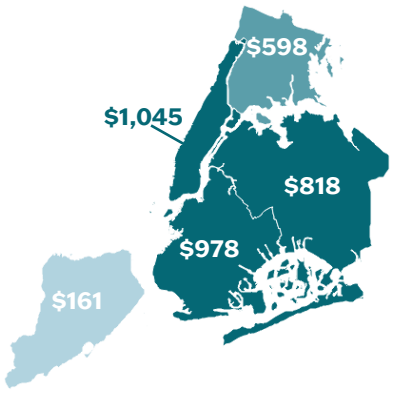
Findings

Metered Water Bills Make Up 70% of Total Water Bills. In 2020, water bills totaled $3.7 billion, per the DEP data. Figure 5 presents the total by charge type. Most ratepayers in the City pay metered water bills (see Figure 1) and as shown in Figure 5, metered bills generate the greatest total charges. This charge type generated $2.5 billion of water bills in 2020 accounting for 70% of the total. Proponents of metered billing argue that tying water bills directly to usage is more fair than flat rates because one's billing amount reflects one's use of the water system. Metered billing is also seen as encouraging water conservation practices, because reducing one's water consumption will reduce one's bill. The second largest contributor to total water bills is the MCP charge, which generated $889 million in 2020 accounting for 24% of water bills. The frontage and city charge billing structures each generated about $100 million, which is 3% of the total bills, respectively.

Manhattan Generates Over $1 Billion in Water Bills. Figure 6 details the total water bills by borough (including all four charge types). While Manhattan generates the most at over $1 billion, it has the fewest properties receiving water bills at about 39,000. IBO attributes this high bill-low property count ratio to a substantial daytime population and greater density of residents per property. For comparison, Queens has the most properties in the dataset with over 305,000 followed by Brooklyn at close to 255,000.

Most Water Bill Charges are to Residential Properties, Which are Primarily Metered by Building, not Unit. Figure 7 presents the total water bills produced by property type. Residential properties—including multi-family elevator buildings, mixed residential and commercial buildings, one- & two-family residential buildings, and multi-family walk-up buildings—generate the highest total bills by property type ranging from $926 million to $663 million.

Figure 6
Total Water Bills by Borough
Dollars in Millions



Location Not Specified: $54

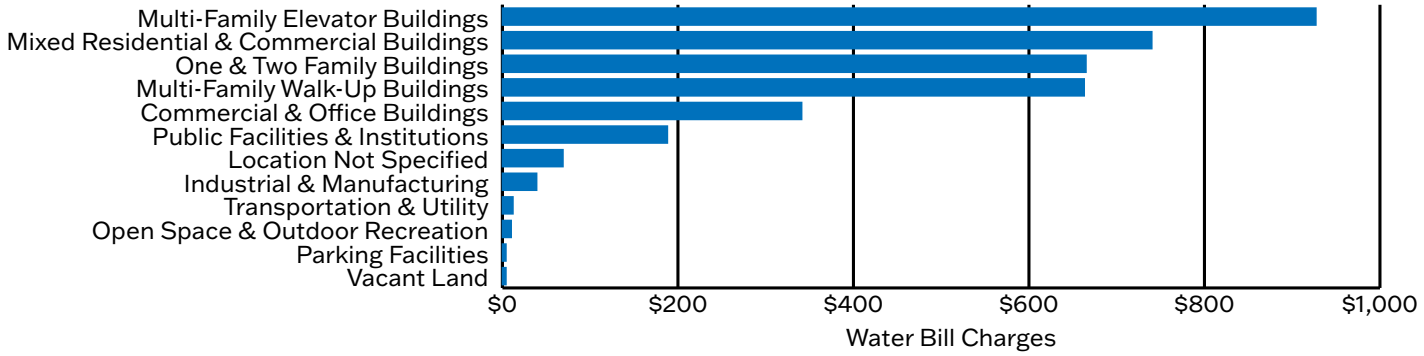
SOURCE: IBO analysis of 2020 DEP water bill data
NOTE: Location Not Specified represents water bill accounts that aren't linked to a specific property in the dataset. This primarily includes city charge water bills because the City is billed centrally for many properties.

New York City Independent Budget Office

Parking facilities generated $4 million in 2020, which was the lowest property type other than vacant land. IBO's November 2023 stormwater fee analysis mentions that parking lots with large impervious surfaces contribute to stormwater runoff but use little or no metered water and are therefore paying almost nothing towards the costs of stormwater management; IBO's finding in this analysis supports that statement.

Figure 8 presents the data by property type, with bars for the water bills charged from the median property, and points to represent the number of properties in the City. Multi-family elevator buildings have the highest median charge at about $43,000 but account for only 11,900 properties.

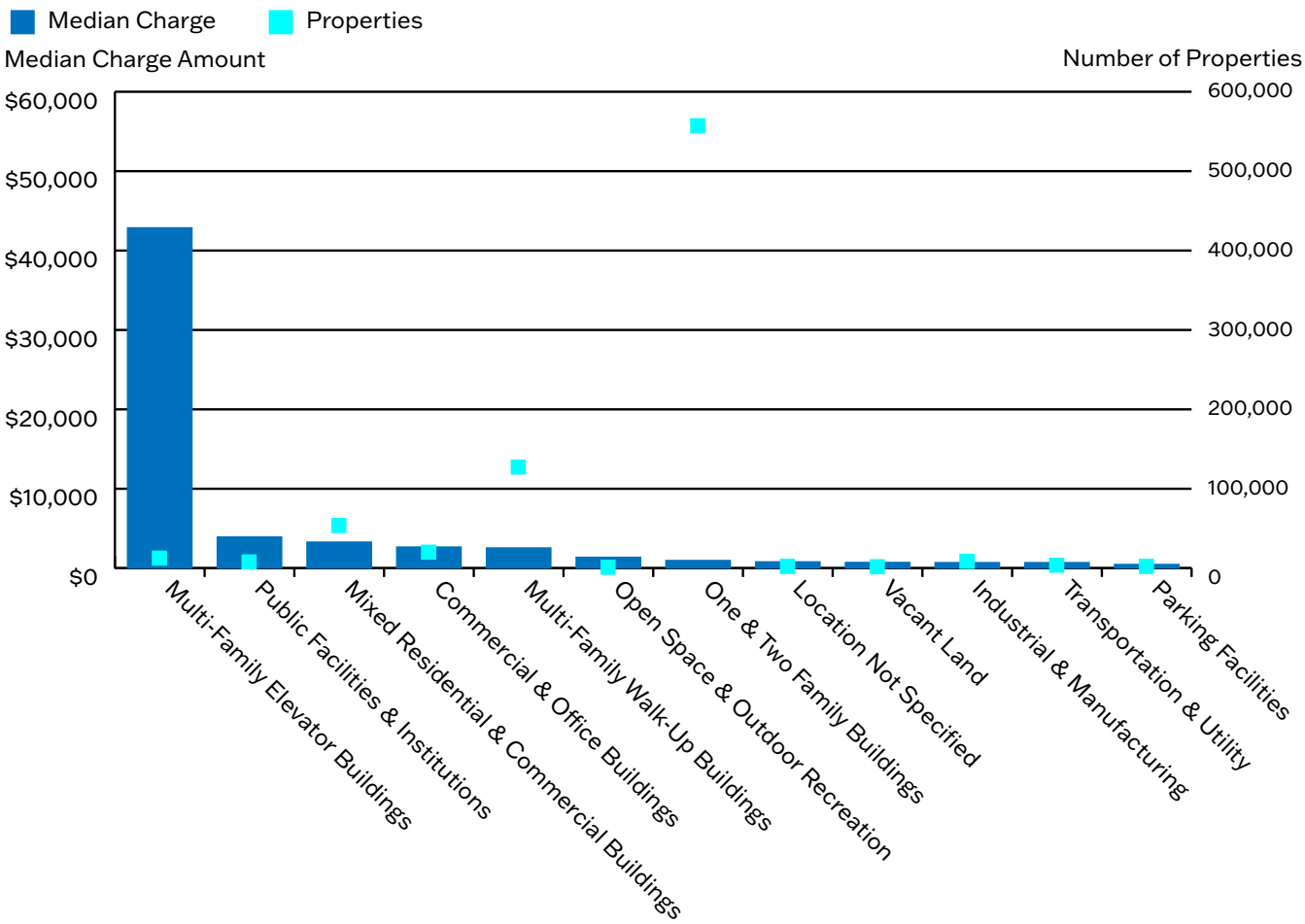
Figure 7
Total Water Bills by Property Tax
Dollars in Millions



SOURCE: IBO analysis of 2020 DEP water bill data
NOTE: The Location Not Specified column represents water bill accounts that aren't linked to a specific property in the dataset. This primarily includes city charge water bills because the City is billed centrally for many properties.

New York City Independent Budget Office

Figure 8
Median Water Bill Charge by Property Type



SOURCE: IBO analysis of 2020 DEP water bill data
NOTE: Location Not Specified represents water bill accounts that aren't linked to a specific property in the dataset. This primarily includes City charge water bills because the City is billed centrally for many properties.

New York City Independent Budget Office

These properties have a larger number of residents and are therefore using more water per property, and property owners are able to spread the cost among many households. In contrast, one- & two-family buildings account for the greatest number of properties in the City at over 556,000, yet the median charge amount in 2020 was relatively low at $975.

Water Bill Balances by Council District. Figures 9 through 12 show each of the water bill charge types by council district. Each map presents the water bills charged to properties in each council district, with one map for each charge type.

As shown in Figure 9, Manhattan districts produce more metered charges than the rest of the City. This can potentially be attributed to high daytime population and greater density of residents per property. Brooklyn, Queens, and Staten Island however still generate considerable bills in certain districts on a metered basis. Notably, many New York City Housing Authority properties are charged MCP.

Figure 10 shows that districts in the Bronx have the highest share of MCP water bills in the City. When the City sought to convert properties from frontage payments in 2012, multi-family residential buildings with 4 or more units, the type of property that qualifies for MCP, were automatically converted from frontage to MCP.[16] MCP was also promoted as a way for property owners to have certainty on what their billing would be, rather than depending on residents' water usage. It is likely many large apartment buildings in these neighborhoods were part of this conversion.

Figure 11 shows that frontage properties are spread across the City without a high concentration in any one borough, likely reflecting properties that have been grandfathered into the frontage rate structure rather than converting to metered or MCP billing, like most properties. Figure 12 shows that Lower Manhattan has the highest share of city charge bills, since the area has a high concentration of City-owned properties (e.g., City Hall, City agency buildings, etc.).

MCP Flat Rate is Higher Than 82% of Metered Bills Per Unit in Similar Buildings. Following a decades-long plan to install water meters and to convert most properties to metered water bills, the Water Board announced plans to phase out frontage properties by July 2012.[17] Property owners of many large residential buildings were concerned that moving from flat-rate frontage billing to metered would substantially increase their water bills because the entire building would be metered rather than submetering individual apartments, meaning individual tenants would not see the direct benefits of water conservation, and therefore would have little incentive to conserve. Property owners also cited that residential buildings with older plumbing more prone to leaks would see water costs driven up by metered bills (however proponents of metered billing would argue that conversion is an incentive to make improvements therefore conserving water and lessening their water bill payment). MCP was established as a flat rate program to allow frontage ratepayers to convert to another flat rate system, thus allowing ratepayers the certainty of knowing their water bill in advance. Frontage properties that qualified for MCP were automatically enrolled effective July 1, 2012.[18]

MCP rates are a flat fee per residential unit that does not change based on the amount of water consumed. The 2020 MCP rate per dwelling unit was $1,052.29. For example, a 9-unit property in 2020 would have a total bill of $9,470.61. MCP properties must have an Automated Meter Reading device installed, along with high efficiency water fixtures in 70% of all units.[19] These fixtures can include faucets, shower heads, toilets, and spray valves.

Figure 13 presents a histogram of metered charges per residential unit just for property types that are potentially eligible for the MCP: multi-family residential buildings (walk-ups and elevator buildings).[20] The orange vertical line is the 2020 per unit rate for MCP, $1,052.29. The figure reveals that on a per unit basis, metered ratepayers are often paying less than the MCP rate. In total, 82% of metered properties pay less

Figure 9
Metered Water Bills by Council District

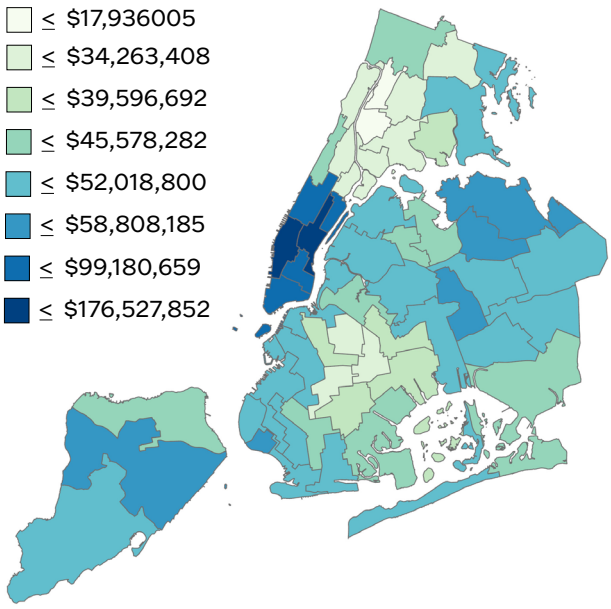


Figure 10
MCP Bills by Council District

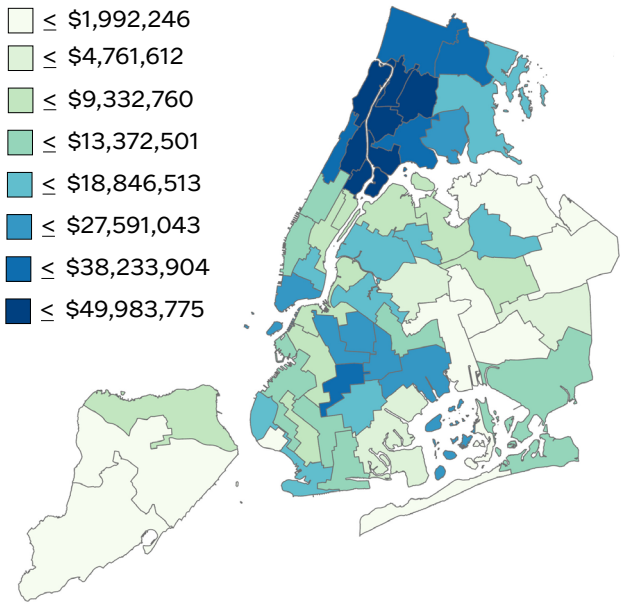


Figure 11
Frontage Bills by Council District

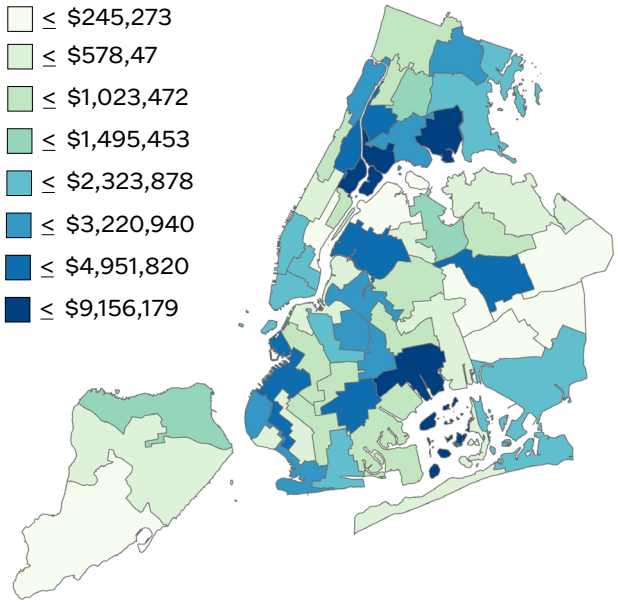
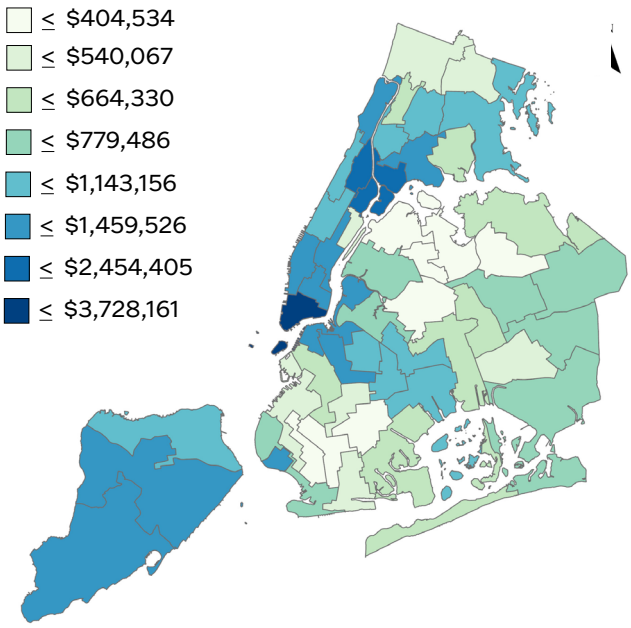


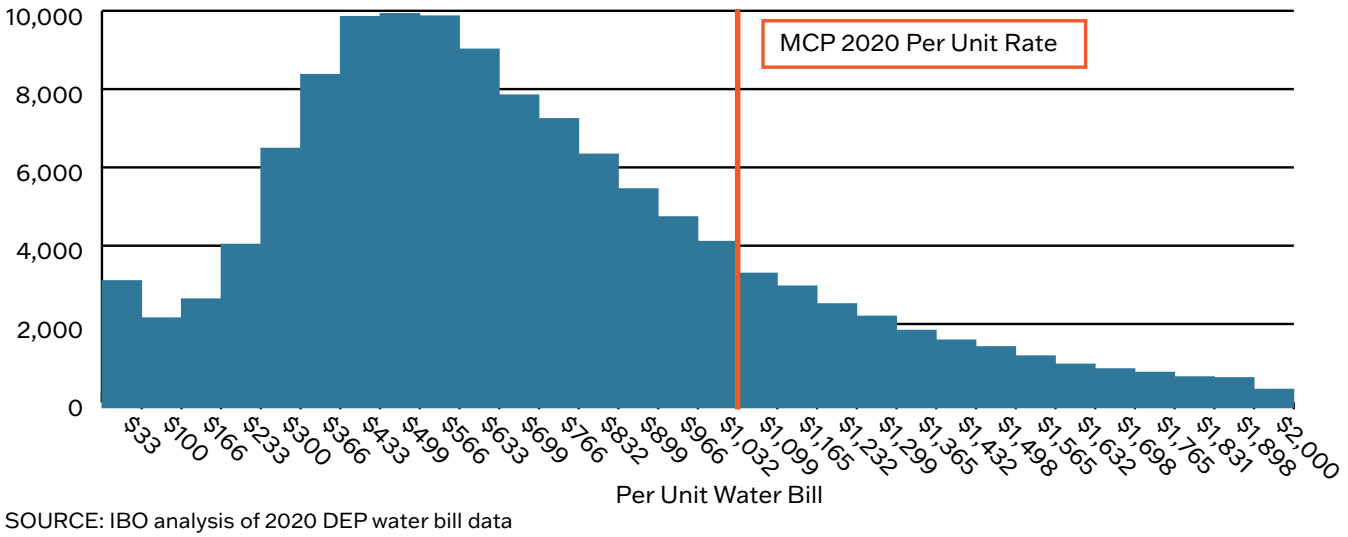
Figure 12
City Charge Water Bills by Council District



SOURCE: IBO analysis of 2020 DEP water bill data

Nerw York City Independent Budget Office

Figure 13
Histogram of Metered Charge per Unit – Multi-family Residential Properties



SOURCE: IBO analysis of 2020 DEP water bill data
NOTE: Histogram filters out outliers above the 97.5 percentile for visual purposes.

New York City Independent Budget Office

per unit than the flat MCP rate of $1,052.29. In other words, properties who opted in to MCP were charged more per unit in 2020 than most metered residential properties of a similar size. Without seeing metered data for these MCP properties, it is impossible to say whether they would pay more or less than the MCP rate per unit if these properties switched to metered billing. Opponents of MCP and frontage billing may claim that since MCP is not tied to water usage, there is no incentive for users to reduce water waste (beyond the initial measures to install high efficiency fixtures). In other words, the MCP either makes the enrolled properties worse off by charging them more than they would otherwise pay under metered billing or makes the City and environment worse off by failing to discourage the water conservation. On the other hand, some landlords like rate certainty and are willing to pay a premium to avoid unexpected bill shock.

In the Brooklyn water rate hearing on June 4, 2024, DEP Chief Financial Officer Joseph Murin acknowledged some affordability considerations with MCP: "DEP is exploring pathways to align the [MCP] rate with affordability and conservation goals. MCP was introduced to provide billing certainty for affordable

Submetering and Water Conservation

While metered water bills are the most reflective of actual water consumption, most multi-family residential properties in the City pay their bills by building rather than by individual residential unit. Specifically, among multi-family elevator and walk-up buildings, 98% of properties (BBLs) have only one water bill account, suggesting that the building remits the water bill to DEP for all units. Some buildings are submetered, meaning that each residential unit has its own meter that the building can use to more accurately distribute water bills to individual units. Submetering encourages water conservation by residents, because they are solely responsible for their water bill. Other buildings, however, are not submetered and bills are divided between the residential units evenly or by factoring in unit characteristics like square footage and number of bedrooms, rather than tying the bill to actual consumption. There is no law requiring large multi-family buildings to submeter in New York City, and there is no public dataset that estimates the number of multi-family properties that have submetered residential units.

properties while incentivizing conservation-oriented billing improvements." CFO Murin went on to say that the MCP rate is not currently aligned with affordability and conservation goals, and requested a deferral from the Water Board for DEP to further analyze the MCP rate before reporting to the Water Board.[21]

Conclusion

Property owners, environmental advocacy groups, and elected officials describe water and sewer rate increases as burdensome for residents, and often call on the Water Board and DEP to prevent a rate increase from happening. While an 8-9% rate increase is on par with other large cities in the northeast and mid-Atlantic region in 2025, New York City has not seen an increase of this magnitude in over a decade causing ratepayers to question the cause of the increases. According to DEP at public hearings for the 8.5% rate increase, key drivers of the rate increase for 2025 include the resumption of the rental payment, DEP's new needs for operations and maintenance, salary and fringe benefit cost increases for DEP employees, and debt service related to ongoing and expanded capital program.

With 2020 DEP water bill data, IBO identified several notable takeaways. First, more than 25% of water bills are not tied to water usage: MCP is a flat rate per unit and frontage bills are based on physical characteristics of buildings. This raises concerns for water conservation efforts, because there is no incentive to reduce water usage in these properties. Even among metered properties, many multi-family residential properties are metered by building rather than submetering by unit, giving residents less incentive to conserve water in their homes. Second, the water bills generated by each borough likely reflects the permanent and daytime populations of each borough. Third, multi-family elevator buildings have a much higher median charge per property ($43,000) than the next highest property type (public facilities and institutions at $3,900) due to greater density. Fourth, 82% of metered bills per residential unit are less than the flat MCP rate per unit. This is raises concerns that properties enrolled in MCP may pay more per unit than traditional metered properties.

The DEP data used in this report only included amounts billed to each property to the City and not the amount paid, so IBO cannot provide information on delinquencies or outstanding bill amounts. The Adams Administration has recently announced the first lien sale since 2019, and a separate crackdown on unpaid water bills. According to DEP, this has led to an increase in unpaid water and sewer bills and, in turn, required greater rate increases.[22] Future analysis could analyze the types and locations of most delinquent properties to help policymakers determine how to address the increase in unpaid water and sewer bills.

Endnotes

[1]The New York City water supply is filtered by a natural watershed in southeastern New York State. It is preserved and monitored by NYC Department of Environmental Protection, and NY State Department of Environmental Conservation.
[2]New York City Water Board, "New York City Water and Wastewater Rate Report: Proposed Rates to Take Effect July 1, 2024," May 2024, P.9.
[3]New York Times, "FINANCE/NEW ISSUES; City Water Authority Increases Its Financing," November 14, 1985.
[4]Four members of the NYW Board of Directors are ex officio: the heads of DEP, Office of Management and Budget, Depart of Finance, and the state Department of Environmental Conservation; the first three of these are mayorally appointed positions and the latter is a gubernatorial appointment. Two of the remaining positions are appointed at the mayor's discretion, and the final one at the governor's discretion.
[5]New York State Comptroller Division of Government Accountability, "Universal Water Metering Program", P. 2.
[6]One hundred cubic feet is approximately equal to 748 gallons.
[7]New York City Water Board, "Rates & Regulations."
[8]The NYW has a bond rating of Aa1 with Moody's; AAA with S&P; AA+ with Fitch. These are for NYW's senior debt.
[9]New York City Water Board, "Annual Rate Adoption Meeting", June 13, 2024, P.10.
[10]New York City Municipal Water Finance Authority, "Fiscal Year 2024 Co-Consulting Engineering Report," March 2024, P. 1-1.
[11]The water system provides water to roughly 90% of residents in Westchester County and approximately 10% of the residents in Putnam, Orange, and Ulster Counties.
[12] "Typical" water bills are based on 70,000 gallons of water per year, per the New York City Water Board.
[13]New York City Department of Environmental Protection, "Water Demand Management Report," June 2016 Update, P.4.
[14]New York City consumption per day in 1979 was 1,512.4 million gallons per day. New York City Department of Environmental Protection, "Historical Drought and Water Consumption Data".
[15]New York City Mayor's Office "Mayor de Blasio Proposes $183 Credit on Water & Sewer Bills for Over 664,000 Homeowners," April 25, 2016.
[16]New York City Department of Environmental Protection, "Multi-Family Conservation Program Frequently Asked Questions," January 31, 2018.
[17]Arinsburg, Alexis, "Two Decades Later, City's Water Metering Still Not Universal," New York City Independent Budget Office Web Blog, October 5, 2009.
[18]New York City Water Board, "Water and Wastewater Rate Schedule, Effective July 1, 2024", P.24.
[19]New York City Department of Environmental Protection, "Resources for Homeowners: Multi-Family Conservation Program."
[20]IBO used the "residential unit" data from PLUTO to calculate the water bill prorated per unit.
[21]New York City Water Board, "Brooklyn Water Rate Hearing," June 4, 2024, 30:10-30:50.
[22]New York City Department of Environmental Protection, "Department of Environmental Protection Proposes Fiscal Year 2025 Water Rate" May 6, 2024.