Manhattan and Bronx Surface Transit Operating Authority Pension Plan

Financial Statements as of and for the
Years Ended December 31, 2023 and 2022,
Supplemental Schedules, and
Independent Auditor’s Report

MANHATTAN AND BRONX SURFACE TRANSIT OPERATING AUTHORITY PENSION PLAN

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INDEPENDENT AUDITOR'S REPORT

To the Board of Administration of
The Manhattan and Bronx Surface Transit Operating Authority Pension Plan:

Opinion

We have audited the accompanying statements of fiduciary net position of the Manhattan and Bronx Surface Transit Operating Authority Pension Plan (the "Plan") as of December 31, 2023 and 2022, and the related statements of changes in fiduciary net position for the years then ended, and the related notes to the financial statements, which collectively comprise the Plan's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the fiduciary net position as of December 31, 2023 and 2022, and the respective changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Plan and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Plan's ability to continue as a going concern for one year after the date that the financial statements are available to be issued.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Plan's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis; Schedule of Changes in the Employers' Net Pension Liability and Related Ratios-Schedule I; Schedule of Employer Contributions and Notes to Schedule-Schedule II; and Schedule of Investment Returns-Schedule III be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Deloitte & Touche LLP

October 22, 2024

This management's discussion and analysis of The Manhattan and Bronx Surface Transit Operating Authority Pension Plan (the "Plan") financial performance provides an overview of the Plan's financial activities for the years ended December 31, 2023 and 2022. It is meant to assist the reader in understanding the Plan's financial statements by providing an overall review of the financial activities during the year and the effects of significant changes, as well as a comparison with the prior year's activity and results. This discussion and analysis may contain opinions, assumptions, or conclusions by MTA management that should not be considered a replacement for and is intended to be read in conjunction with the plan's financial statements which begin on page 9.

Overview of Basic Financial Statements

The following discussion and analysis is intended to serve as an introduction to the Plan's financial statements. The basic financial statements are:

- **The Statement of Fiduciary Net Position -** presents the financial position of the Plan at fiscal year-end. It provides information about the nature and amounts of resources with present service capacity that the Plan presently controls (assets), consumption of net assets by the Plan that is applicable to a future reporting period (deferred outflow of resources), present obligations to sacrifice resources that the Plan has little or no discretion to avoid (liabilities), and acquisition of net assets by the Plan that is applicable to a future reporting period (deferred inflow of resources) with the difference between assets/deferred outflow of resources and liabilities/deferred inflow of resources being reported as net position. Investments are shown at fair value. All other assets and liabilities are determined on an accrual basis.

- **The Statement of Changes in Fiduciary Net Position -** presents the results of activities during the year. All changes affecting the assets and liabilities of the Plan are reflected on an accrual basis when the activity occurred regardless of the timing of the related cash flows. In that regard, changes in the fair values of investments are included in the year's activity as net appreciation (depreciation) in fair value of investments.

- **The Notes to Financial Statements -** provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes present information about the Plan's accounting policies, significant account balances and activities, material risks, obligations, contingencies, and subsequent events, if any.

- **Required Supplementary Information -** as required by the Government Accounting Standards Board ("GASB") includes the Schedule of Changes in the Employer's Net Pension Liability and Related Ratios, Schedule of Employer Contributions, and Schedule of Investment returns.

The accompanying financial statements of the Plan are presented in conformity with accounting principles generally accepted in the United States of America as prescribed by the GASB.

CONDENSED FINANCIAL INFORMATION AND ANALYSIS

FINANCIAL ANALYSIS

Fiduciary Net Position
As of December 31, 2023, 2022 and 2021
(Dollars in thousands)

				Increase/Decrease			
				2023-2022		2022-2021	
	2023	2022	2021	$	%	$	%
Cash and investments	$ 3,793,831	$ 3,293,020	$ 3,642,774	$ 500,811	15.2 %	$ (349,754)	(9.6)%
Receivables and other assets	33,940	29,943	33,360	3,997	13.3	(3,417)	(10.2)
Total assets	**$ 3,827,771**	**$ 3,322,963**	**$ 3,676,134**	**$ 504,808**	**15.2**	**$ (353,171)**	**(9.6)**
Payable for investment securities purchased	9,290	3,592	5,620	5,698	158.6	(2,028)	(36.1)
Other liabilities	8,006	9,261	12,163	(1,255)	(13.6)	(2,902)	(23.9)
Total liabilities	**17,296**	**12,853**	**17,783**	**4,443**	**34.6**	**(4,930)**	**(27.7)**
Net position restricted for pensions	**$ 3,810,475**	**$ 3,310,110**	**$ 3,658,351**	**$ 500,365**	**15.1 %**	**$ (348,241)**	**(9.5)%**

<u>December 31, 2023 versus December 31, 2022</u>

Cash and investments at December 31, 2023, were $3,793.8 million, an increase of $500.8 million or 15.2% from 2022. This increase is a result of an improved financial markets performance in 2023 and plan contributions which included prepaid 2024 actuarially determined contributions ("ADC") of $158.4 million net of benefit payments and expenses during 2023.

Receivables and other assets less plan liabilities at December 31, 2023 decreased by $0.5 million or 2.6%. The decrease for 2023 compared with the increase in 2022 is a result of payable for investment securities purchased and additional members contribution liabilities for Tiers 3 and 4 – 25 year and age 55 retirement programs.

The plan net position restricted for pensions increased by $500.4 million or 15.1% in 2023 as a result of the various changes noted above.

<u>December 31, 2022 versus December 31, 2021</u>

Cash and investments at December 31, 2022, were $3,293.0 million, a decrease of $349.8 million or 9.6% from 2021. This decrease is a result of an underperformance of financial markets in 2022 and plan contributions net of benefit payments and expenses during 2022.

Receivables and other assets less plan liabilities at December 31, 2022 increased by $1.5 million or 9.7%. The increase for 2022 compared with 2021 is a result of payable for investment securities purchased, continued payments on post-retirement death benefits and additional members contribution liabilities for Tiers 3 and 4 – 25 year and age 55 retirement programs.

The plan net position restricted for pensions decreased by $348.2 million or 9.5% in 2022 as a result of the various changes noted above.

Changes in Fiduciary Net Position
For the Years Ended December 31, 2023, 2022 and 2021
(Dollars in thousands)

				Increase/Decrease			
				2023-2022		2022-2021	
	2023	2022	2021	$	%	$	%
Additions:							
Net investment (loss) / income	$ 413,734	$ (273,627)	$ 420,811	$ 687,361	251.2 %	$ (694,438)	(165.0)%
Transfers and contributions	353,820	184,166	181,139	169,654	92.1	3,027	1.7
Total net additions	**767,554**	**(89,461)**	**601,950**	**857,015**	**958.0**	**(691,411)**	**(114.9)**
Deductions:							
Benefit payments	266,622	257,974	243,252	$ 8,648	3.4	$ 14,722	6.1
Tier 6 remediation (Refund of employee contributions)	-	-	2,175	-	-	(2,175)	(100.0)
Administrative expenses	567	806	264	(239)	(29.7)	542	205.3
Total deductions	**267,189**	**258,780**	**245,691**	**8,409**	**3.2**	**13,089**	**5.3**
Net increase	**500,365**	**(348,241)**	**356,259**	**848,606**	**243.7**	**(704,500)**	**(197.7)**
Net position restricted for pensions:							
Beginning of year	3,310,110	3,658,351	3,302,092	(348,241)	(9.5)	356,259	10.8
End of year	**$ 3,810,475**	**$ 3,310,110**	**$ 3,658,351**	**$ 500,365**	**15.1 %**	**$ (348,241)**	**(9.5)%**

<u>December 31, 2023 versus December 31, 2022</u>

Net investment income increased by $687.4 million in 2023 due to net investment gains from market appreciation versus net investment losses of $273.6 million in 2022.

Contributions increased by $169.6 million or 92.1% in 2023 compared to 2022, primarily due to the prepayment of 2024 ADC in the amount of $158.4 million.

Benefit payments increased by $8.6 million or 3.4% over the prior year due to a continuing trend of an increase in the number of retirees and cost-of-living adjustments provided to retirees and beneficiaries.

In 2021, the Plan accrued $2.2 million as part of the Tier 6 – refund of employee contributions which includes statutory interest of 5% due to a business process coding error relating to overtime cap limit for 2021 and prior years. No payments were made in 2023 and 2022 respectively.

Administrative expenses decreased by $239 thousand or 29.7% in 2023 compared to 2022. This decrease is in line with the custodian services provided to the Plan going forward.

December 31, 2022 versus December 31, 2021

Net investment income decreased by $694.4 million in 2022 due to net investment losses of $273.6 million in 2022 versus net investment gains of $420.8 million in 2021.

Contributions increased by $3.0 million or 1.7% in 2022 compared to 2021, as a result of the Actuarial Determined Contributions ("ADC") and member contributions.

Benefit payments increased by $14.7 million or 6.1% over the prior year due to a continuing trend of an increase in the number of retirees and cost-of-living adjustments provided to retirees and beneficiaries.

In 2021, the Plan accrued $2.2 million as part of the Tier 6 – refund of employee contributions which includes statutory interest of 5% due to a business process coding error relating to overtime cap limit for 2021 and prior years. No payment was done in 2022.

Administrative expenses increased by $542 thousand or 205.3% compared to 2021. This increase was due to an increase in fees on the new custodial contract for services provided to the Plan.

Economic Factors

Market Overview 2023

The year 2023 was a surprisingly strong year for markets and was characterized by disinflation, hawkish central banks, stronger than expected global GDP growth, the AI technological boom, and U.S. equity outperformance driven by the Magnificent 7. These positive developments came about despite three significant shocks. The first was higher than expected short-term and long-term interest rates due to central bank reaction functions (Four 25pb rate hikes in the U.S.) to better than expected growth data. Second was the U.S. and European banking sector instability early in the year. And third was the heightened geopolitical risk arising from the Israel-Hamas war. Following the tumultuous conditions of 2022, the economic conditions in 2023 brought with it strong increases in global economic growth rate forecasts, declines in unemployment projections, and suppressed recession concerns. In the US, disinflation, increased interest income, and steady real wages supported above trend line consumption. U.S. household credit usage increased, while debt service ratios still had room to expand, and the unemployment rate remained favorable. Global assets broadly increased, treasury yield volatility increased, the dollar remained strong, and the yield curve has remained sharply inverted for the longest period on record.

Except for commodities, global risk assets had strong performance across the board. The strong shift upwards in correlations between equity and fixed income markets that was experienced in 2022 remained positive in 2023, which resulted in one of the better years for the 60/40 equity bond mix portfolio. In foreign exchange markets, the U.S. Dollar remained strong due to high interest rate differentials, posting gains against the Yen, and losses against the Euro.

Macro Themes

- Higher interest rates for longer

- Geopolitical risk and deglobalization
- Innovation and AI
- Priced in rate cutting for the Fed in 2024

United States

The U.S. economy surprised to the upside, a 2.5% increase in Real GDP growth in 2023, compared to a 1.9% increase in 2022. The unemployment rate increased but remained low, finishing 2023 at 3.7% compared to 3.5% in 2022. Consumer Prices rose only 3.4% in 2023 compared to 6.5% in 2022, while core inflation, which excludes the volatile food and energy components, rose 3.9% in 2023 compared to 5.7% in 2022.

U.S. equities were positive across the board, with the S&P 500 (26.3%) and Russell 1000 (26.5%) indices posting double digit returns. Across capitalizations, Large Cap (S&P 500 Index: 26.3%), Mid Cap (S&P 400 Index: 16.4%), and Small Cap (Russell 2000 Index:16.9%) also posted double digit returns. Across styles, Growth (Russell 1000 Growth Index: 42.7%) significantly outperformed Value (Russell 1000 Value Index: 11.5%). Growth was driven by unprecedented concentration and outperformance from the Magnificent 7 (AAPL, AMZN, GOOGL, META, MSFT, NVDA, and TSLA). In 2023, the Mag 7 returned 104.7% which accounted for 62.2% of the S&P 500's total return for the year.

U.S. Treasury yields were volatile in 2023 and the yield curve remained inverted amid the Federal Reserve's four rate hikes. Credit spreads broadly tightened in 2023 except for securitized credit. Diversified fixed income posted positive returns (Bloomberg U.S. Aggregate Index: 5.5%) with strong performance from Convertibles (Bloomberg US Convertibles Index: 14.6%), High Yield (Bloomberg High Yield Index: 13.4%) and Credit (Bloomberg Credit Index: 8.2%). Positive returns were also realized in Treasuries (Bloomberg US Treasury Index: 4.1%) and Treasury Inflation Protected Securities (Bloomberg TIPS Index: 3.9%).

International Developed

International developed equity markets (MSCI EAFE Index: 18.2%) posted strong results in 2023 but underperformed the U.S. large cap equity markets. Leading the way was the Japanese (MSCI Japan Index: 20.8%) and European (MSCI Europe Index: 20.7%) markets. The International developed Small Cap (MSCI EAFE SC Index: 13.2%) market also posted double digit returns, but not as high as the International large cap counterpart.

Emerging Markets

Emerging markets posted positive but weaker relative returns in 2023 compared to both the U.S. and international developed equity markets. The broad EM Market (MSCI EM Index: 9.8%) garnished high single digit returns, despite having negative returns from Chinese (MSCI EM China Index: -11.2%) equities. Geopolitical risk, weak demand, and high unemployment dampened sentiment in the Chinese market. However, the EM Small Cap (MSCI EM Small Cap Index: 23.9%) market posted much better returns compared to EM large cap market.

The EM fixed income markets were positive in 2023. Both hard currency bonds, which are bonds predominately issued in U.S. Dollars, and local currency bonds, posted double digit returns. Local currency bonds (JPMorgan GBI-EM Global Diversified Index: 12.7%) outperformed hard currency bonds (JPMorgan EMBI Global Diversified Index: 11.1%).

Commodities

Commodities (S&P Goldman Sachs Commodity Index: -4.3%) were the laggards and had negative performance in 2023. The index was largely influenced by a -28.6% change in Natural Gas Prices. Commodity futures remain backwardated, although the roll yield has declined. Precious Metals and Softs (agricultural products) were the best performers in this category, with Gold spot prices up 13.4% and Cocoa spot prices up 61.4% for the year.

Market Outlook – 2024

Through the first quarter of 2024, equity markets were mostly higher with gains in the low double digits. Growth equities have continued to lead the way, adding on to their 2023 gains. Despite the hawkish Fed, growth and momentum continued to outperform in 2024 driven by strong earnings and the AI secular growth theme. Fixed income markets had a mixed start to 2024, with returns flat to slightly negative for the quarter. Fed speak has been hawkish as inflation has been stickier than expected going into 2024, but rate cuts are still expected towards the end of the year. The only negative area was in the Real Estate asset class due to continued pressure from high interest rates. Markets are expected to be more volatile this year than in 2023, but participants appear to be cautiously optimistic.

2024's macroeconomic backdrop will likely be dominated by private consumption, the Fed's willingness to cut rates, geopolitical tensions, tight credit markets, artificial intelligence, and the 2024 U.S. presidential race. Coming out of 2023, a positive year for risk assets, market participants are optimistic for 2024. Several roadblocks to high growth still loom such as the staggering Commercial Real Estate maturity wall, tight credit markets with low deal flow in private markets, the inverted yield curve, high U.S. government debt, and high equity multiples. Global growth optimism stems from real disposable income growth in a lower inflation environment, strong labor markets, pain from hawkish monetary policy being behind us, global manufacturing activity expected to recover, and that the central banks have proven that they do not need a recession to bring inflation down.

Contact Information

This financial report is designed to provide a general overview of the Manhattan and Bronx Surface Transit Operating Authority Pension Plan's finances. Questions concerning any data provided in this report or requests for additional information should be directed to the Metropolitan Transportation Authority, Deputy Chief, Controller's Office, 2 Broadway, 15th Floor, New York, NY 10004.

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MANHATTAN AND BRONX SURFACE TRANSIT OPERATING AUTHORITY PENSION PLAN

STATEMENTS OF FIDUCIARY NET POSITION
AS OF DECEMBER 31, 2023 AND 2022
(In thousands)

	2023	2022
ASSETS:		
Cash	$ 3,583	$ 3,694
Receivables:		
Investment securities sold	2,928	1,634
Interest and dividends	2,996	1,787
Employee loans	28,016	26,522
Total receivables	33,940	29,943
Investments at fair market value (Notes 2 and 3):		
Investments measured at readily determinable fair value	1,072,288	753,868
Investments measured at net asset value	2,717,960	2,535,458
Total investments	3,790,248	3,289,326
Total assets	3,827,771	3,322,963
LIABILITIES:		
Accounts payable	317	474
Payable for investment securities purchased	9,290	3,592
Accrued benefits payable	21	75
Tier 6 remediation (Refund of employee contributions) payable	443	466
Accrued Post Retirement Death Benefits (PRDB) payable	5,720	5,719
Accrued 55/25 Additional Members Contribution (AMC) payable	1,505	2,527
Total liabilities	17,296	12,853
NET POSITION RESTRICTED FOR PENSIONS	$ 3,810,475	$ 3,310,110

See notes to financial statements.

MANHATTAN AND BRONX SURFACE TRANSIT OPERATING AUTHORITY PENSION PLAN

STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEARS ENDED DECEMBER 31, 2023 AND 2022
(In thousands)

	2023	2022
ADDITIONS:		
Investment income:		
Interest income	$ 20,357	$ 10,719
Dividend income	40,027	45,924
Net appreciation /(depreciation) in fair value of investments	382,998	(307,355)
Total investment (loss) / income	443,382	(250,712)
Less investment expenses	29,648	22,915
Net investment income / (loss)	413,734	(273,627)
Contributions (Note 4):		
Employer contributions	328,430	158,618
Employee contributions	25,390	25,548
Total contributions	353,820	184,166
Total additions / (subtractions)	767,554	(89,461)
DEDUCTIONS:		
Benefit payments and withdrawals	266,622	257,974
Administrative expenses	567	806
Total deductions	267,189	258,780
NET INCREASE / (DECREASE) IN NET POSITION	500,365	(348,241)
NET POSITION RESTRICTED FOR PENSIONS:		
Beginning of year	3,310,110	3,658,351
End of year	$ 3,810,475	$ 3,310,110

See notes to financial statements.

1. PLAN DESCRIPTION

Effective January 1, 1989, the Manhattan and Bronx Surface Transit Operating Authority (MaBSTOA) adopted a defined benefit qualified pension plan known as the MaBSTOA Pension Plan (the “Plan”). Prior to the adoption of the Plan, MaBSTOA pension benefits were funded on a pay-as-you-go basis.

The Plan is a multi-employer cost sharing public employee retirement system. The Plan now have employees who are on Metropolitan Transportation Authority Head Quarter’s (“MTAHQ”) payroll. MaBSTOA and MTAHQ employees are specifically excluded from participating in the New York City Employees’ Retirement System (NYCERS). Effective January 1, 1999, MaBSTOA Pension Plan membership is optional for managerial and non-represented MaBSTOA employees. They were afforded the same pension rights as similarly situated employees in the Transit Authority.

The Board of Administration, established in 1963, determines eligibility of employees and beneficiaries for retirement and death benefits. The Board is composed of five members: two representatives from the Transport Workers Union, Local 100 (TWU) and three employer representatives.

Membership of the Plan consisted of the following as of January 1, 2023 and 2022, the date of the latest actuarial valuation:

	2023	2022
Active and inactive members	8,393	8,363
Retirees and beneficiaries currently receiving benefits	6,307	6,192
Vested formerly active members not yet receiving benefits	1,230	1,172
Total members	15,930	15,727

The Plan provides retirement, death, accident and disability benefits. The benefits provided by the Plan are generally similar to the benefits provided to participants in NYCERS. A participant may receive a vested benefit in accordance with the requirements of his or her Tier.

NYCERS has determined that Tier 4 employees are and have been eligible for a post-retirement death benefit retroactive to members who retired no earlier than 1986. In June 2012, the Metropolitan Transportation Authority (“MTA”) Board approved an amendment to the MaBSTOA Plan to provide for incorporation of this benefit. As of December 31, 2012, the Plan had estimated that $6 million is owed to beneficiaries of retirees who were deceased prior to January 1, 2013. As of December 31, 2023 and 2022, the Plan paid $21.4 million and $19.5 million in post-retirement benefits and accrued an additional $5.7 million for both years, based on the updated valuation.

Funding Policy - Contribution requirements of Plan members are established and may be amended only by the MaBSTOA Board in accordance with Article 10.01 of the MaBSTOA Plan. MaBSTOA’s funding policy for periodic employer contributions provides for actuarially determined amounts that are designed to accumulate sufficient assets to pay benefits when due. It is MaBSTOA’s policy to fund to the pension trust, at a minimum, the current year's normal cost plus amortization of the unfunded actuarial accrued liability.

The MaBSTOA Pension Plan includes the following retirement programs: (i) Tier 1 Age 50 and 20 Year, Age 55 and 1/100; (ii) Tier 2 Age 55 and 25 Year, Tier 2 Age 55 and 1/100; (iii) Tier 3 and Tier 4 Age 62 and 5 Year; (iv) Tier 6 Age 63 and 10 Year; (v) Tier 4 and Tier 6 25 Year and Age 55; (vi) Tier 4 25 Year Early Retirement; (vii) Tier 4 Age 57 and 5 Year, and (viii) the Year 2000 amendments, which are all under the same terms and conditions as NYCERS.

The Plan may require mandatory employee contributions, depending on the date of entry into service. Employees entering qualifying service on or before July 26, 1976, are non-contributing (Tiers 1 and 2). Prior to adoption of Tier 6, operating employees entering qualifying service on or after July 27, 1976, are required to contribute 2% of their salary and non-operating employees pay 3% of their salary for a 10-year period plus an additional member contribution of 1.85% of their salary. (See Note 4 for 2000 Plan amendments).

Individuals joining the MaBSTOA Pension Plan on or after April 1, 2012 are members of Tier 6. Highlights of Tier 6 include:

- Increases in employee contribution rates. The rate varies depending on salary, ranging from 3% to 6% of gross pensionable wages. Contributions are made until retirement or separation from service.

- The retirement age is 63 and includes early retirement penalties, which reduce pension allowances by 6.5 percent for each year of retirement prior to age 63 (excluding Transit Operating Employees).

- Vesting after 5 years of credited service; similar to Tiers 3 and Tier 4.

- Changes to the pension multiplier for calculating pension benefits (excluding Transit Operating Employees) for participants who retire with greater than 20 years of credited service is 35% of FAS for the first 20 years of credited service plus 2% times FAS for each year of credited service in excess of 20.

- The Final Average Salary ("FAS") calculation is an average of the final 3 years. Pensionable overtime capped at $15,000 per year plus an inflation factor ($19,729 for 2023 and $18,233 for 2022).

- Pension buyback in Tier 6 at a rate of 6% of the wages earned during the period of buyback, plus 5% compounded annually from the date of service until date of payment.

SUMMARY OF PRINCIPAL PLAN PROVISIONS ELIGIBILITY AND BENEFITS

All Tiers

1. Type of Plan	The Plan is a contributory, defined benefit plan. Contributions are not required for Tier 1 and Tier 2 members and vary for other members. Details can be found in the following sections.
2. Effective Date of Plan Qualification	January 1, 1989.
3. Compensation	The wages earned by the employee. Compensation is limited by Section 401(a)(17) of the Code. This limit is $305,000 for 2022 and $330,000 for 2023. In addition, the government plan limit applies to members hired prior to January 1, 1996 and is $450,000 for 2022 and $490,000 for 2023.
4. Credited Service	Credited Service is credited full-time employment from date of hire with MaBSTOA and may include part-time service for certain applicable represented employees.
5. Pensioner Supplementations	
(a) 1998 Supplement	Eligibility: Date of retirement is prior to 1993 for all disability pensioners and other pensioners who have attained (or will attain) age 62 or who have attained (or will attain) age 55 and have been retired for at least 10 years. Benefit: Commencing with the payment for the month of September 1998, the cost-of-living adjustment is applied to the first $13,500 of the maximum retirement allowance, computed without option modification. If not eligible by September 1998, payment will commence first of the month following eligibility.
(b) 1999 Supplement	Eligibility: Date of retirement is prior to 1994 for all disability pensioners and other pensioners who have attained (or will attain) age 62 or who have attained (or will attain) age 55 and have been retired for at least 10 years. Benefit: Commencing with the payment for the month of September 1999, the cost-of-living adjustment is applied to the first $14,000 of the maximum retirement allowance, computed without option modification. If not eligible by September 1999, payment will commence first of the month following eligibility.

(c) 2000 Supplement

Eligibility: Date of retirement is prior to 1997 and one of the following conditions is met:

(i) All disability pensioners who have been retired for at least 5 years,

(ii) Other pensioners who have attained (or will attain) age 62 and have been retired for at least 5 years,

(iii) Other pensioners who have attained (or will attain) age 55 and have been retired for at least 10 years and

(iv) All recipients of an accidental death benefit who have been in receipt of payments for at least 5 years.

Benefit: Commencing with the payment for the month of September 2000, the cost-of-living adjustment is applied to the first $18,000 of the maximum retirement allowance, computed without option modification. The cost-of-living adjustment is equal to the change in the CPI-U measured from year of retirement through 1997 multiplied by 50% (greater percentages exist if date of retirement is prior to 1968). If not eligible by September 2000, payment will commence first of the month following eligibility.

Surviving Spouse Eligibility: The surviving spouse of a deceased retired member who chose any joint and survivor option.

Surviving Spouse Benefit: Commencing with the payment for the month of September 2000, the benefit is equal to 50% of the 2000 supplementation which the pensioner would be receiving if living.

(d) Automatic Cost-of-Living Adjustment (COLA)

Eligibility: One of the following conditions is met:

(i) All disability pensioners who have been retired for at least 5 years,

(ii) Other pensioners who have attained (or will attain) age 62 and have been retired for at least 5 years,

(iii) Other pensioners who have attained (or will attain) age 55 and have been retired for at least 10 years and

(iv) All recipients of an accidental death benefit who have been in receipt of payments for at least 5 years.

Benefit: Commencing with the payment for the month of September 2001 and continuing each September thereafter, the COLA is applied to the first $18,000 of the maximum retirement allowance, computed without option modification plus any prior COLAs or supplementations. The cost-of-living adjustment is equal to the change in the CPI-U for the year ending March 31 multiplied by 50%. The resulting percentage is then rounded up to the next higher 0.1% and shall not exceed 3.0% nor be less than 1.0%. If not eligible by September 2001 or each September thereafter, payment will commence first of the month following eligibility.

Surviving Spouse Eligibility: The surviving spouse of a deceased retired member who chose any joint and survivor option.

Surviving Spouse Benefit: The benefit is equal to 50% of the automatic COLA benefit which the pensioner would be receiving if living and commence in the month following the death of the deceased member.

6. Normal and Optional Forms of Payment

The basic benefits described in the following sections are payable in the form of a life annuity. Other options are 100% and 50% contingent annuities with and without a popup feature, 5-year and 10-year certain and life annuities, and single life annuities with an insurance feature.

Benefits payable under the optional forms are actuarially adjusted to reflect the anticipated longer payment stream.

7. Maximum Benefit

Maximum benefits payable conforms to those legislated by the Tax Reform Act of 1986. For 2022, the maximum benefit is $245,000 and for 2023 it is $265,000.

8. Changes in Plan Provisions Since Prior Valuation

Chapter 55 of the Laws of 2024 extended the expiration date of the New York COVID-19 Accidental Death Benefit until December 31, 2026, and it is anticipated that the extension will be adopted for the Plan. Chapter 716 of the Laws of 2023 changed the pre-retirement and postretirement ordinary death benefits applicable to Tier 2, 3, 4 and 6 members effective July 1, 2021, and it is anticipated that these benefits will be adopted for the plan. The impact of these changes will be reflected in the 2024 valuation.

I. Tier 1 Employees

1. Eligibility

Members hired before July 1, 1973.

2. Pensionable Compensation

(a) Compensation

Greater of earned or earnable salary during the year prior to retirement.

(b) Final Compensation

Highest average earnings over five consecutive years.

(c) Compensation Limit

If hired after June 17, 1971, earnings in a year are limited to 120% of the preceding year.

3. Benefits

(a) Service Retirement

Eligibility: Attainment of age 50 and completion of 20 years of credited service.

Benefit:

1.5% for service before March 1, 1962, plus

2.0% for service from March 1, 1962 to June 30, 1970, plus

2.5% for service after June 30, 1970

The accumulated percentage above, up to a maximum of 50%, is multiplied by the member’s Compensation. Once the accumulated percentage reaches 50%, the percentage for each further year of service reverts back to 1.5%. The percentage in excess of 50% is multiplied by the Final Compensation.

(b) Termination Benefits

Eligibility: Completion of 20 years of credited service.

Benefit: The Service Retirement Benefit with compensation and service calculated as of the date of termination. The benefit is deferred until age 50.

	(c) Ordinary Death Benefits	Active Members Eligibility: Completion of 6 months of credited service, but the benefit described below requires completion of 20 years of credited service. Benefit: A lump sum equal to the present value of the retirement benefit under the Return of Reserve option. Terminated Vested Members: If a member dies before age 50, a lump sum equal to the present value of the retirement benefit under the Return of Reserve option is payable (Death Gamble).
	(d) Accidental Death Benefits	Eligibility: Death caused by on-the-job accident. World Trade Center Presumption may apply if certain criteria are met. Benefit: The benefit equals 50% of Final Compensation.
	(e) Ordinary Disability Benefits	Eligibility: Completion of 10 years of credited service. Benefit: The benefit equals the greater of the Service Retirement percentages described (a) above or 25% multiplied by Final Compensation. If eligible for a service retirement benefit, the greater of this benefit and the Service Retirement benefit is payable.
	(f) Accidental Disability Benefits	Eligibility: Disability caused by on-the-job accident. World Trade Center Presumption may apply if certain criteria are met. Benefit: The benefit equals 75% of the Final Compensation reduced by 100% of any worker's compensation payments. If eligible for a service retirement benefit, the greater of this benefit and the Service Retirement benefit is payable.
4.	Member Contributions	None
5.	Changes in Plan Provisions Since Prior Valuation	None

II. Tier 2 Employees

1. Eligibility	Members hired on or after July 1, 1973, and before July 27, 1976.
2. Final Average Compensation	
(a) Final 3-Year Average Compensation:	Highest average earnings over three consecutive years.
(b) Final 5-Year Average Compensation:	Highest average earnings over five consecutive years.
(c) Compensation Limit:	Earnings in a year cannot exceed 120% of the average of the two preceding years.
3. Benefits	
(a) Service Retirement	Eligibility: Attainment of age 55 and completion of 25 years of credited service. Benefit: The benefit equals 50% of Final 3-Year Average Compensation for the first 20 years of credited service, plus 1.5% of Final 5-Year Average Compensation per year of credited service in excess of 20 years.
(b) Early Retirement	Eligibility: Attainment of age 50 and completion of 20 years of credited service. Benefit: Determined in the same manner as the Service Retirement benefit but no greater than 2.0% of the Final 3-Year Average Compensation per year of credited service.
(c) Termination Benefits	Eligibility: Completion of 20 years of credited service. Benefit: The benefit equals the Early Retirement benefit, with compensation and service calculated as of the date of termination. The benefit is deferred until age 50. If a member dies before age 50, 50% of the ordinary death benefit (below) is payable.
(d) Ordinary Death Benefit	Eligibility: Completion of 90 days of credited service. Benefit: The benefit equals a lump sum equal to 3 times salary, raised to the next multiple of $1,000.
(e) Accidental Death Benefit	Eligibility: Death caused by on-the-job accident. World Trade Center Presumption benefits may apply if certain criteria are met. Benefit: The benefit equals 50% of the Final 5-Year Average Compensation.

	(f) Ordinary Disability Benefits	Eligibility: Completion of 10 years of credited service Benefit: The benefit equals the greater of the Service Retirement percentage calculated in (a) above and 25% multiplied by Final 5-Year Average Compensation. If eligible for an Early or Service Retirement benefit, the greater of this benefit and the Early or Service Retirement benefit is payable.
	(g) Accidental Disability Benefits	Eligibility: Disability caused by on-the-job accident. World Trade Center Presumption may apply if certain criteria are met. Benefit: The benefit equals 75% of the Final 5-Year Average Compensation reduced by any worker's compensation payments. If eligible for an Early or Service Retirement benefit, the greater of this benefit and the Early or Service Retirement benefit is payable.
4.	Member Contributions	None
5.	Changes in Plan Provisions Since Prior Valuation	None

III. Tier 3 and Tier 4—Basic Age

62 & 5 Year Retirement Program

1. Eligibility

Non-operating Members hired prior to June 28, 1995, who have not elected the 55 & 25 Plan. Members hired on or after July 27, 1976, and before September 1, 1983, are in Tier 3. Members hired on or after September 1, 1983 and before April,1, 2012, are in Tier 4.

2. Final Average Compensation

Highest average earnings during any three consecutive calendar-year~~s~~ periods, or the final 36 months immediately preceding the member's retirement date. Earnings used in the calculation cannot exceed 110% of the average of the two preceding years.

3. Benefits

(a) Service Retirement

Eligibility: Attainment of age 62 and completion of at least 5 years of credited service.

Benefit: If at least 20 years of credited service is completed, the benefit equals 2.0% of Final Average Compensation for first 30 years of credited service plus 1.5% of Final Average Compensation for years of credited service in excess of 30. If completed less than 20 years of credited service, the benefit equals 1-2/3% of Final Average Compensation multiplied by years of credited service.

(b) Early Retirement

Eligibility: Attainment of age 55 and completion of at least 5 years of credited service.

Benefit: The benefit equals the Service Retirement benefit reduced by 6% for each of the first two years prior to age 62, and by 3% for years prior to age 60.

(c) Termination Benefits

(i) Refund of Contributions

Eligibility: Completion of less than 10 years of Credited Service.

Benefit: The benefit equals a refund of the member's contributions accumulated with interest at a rate of 5.0%.

(ii) Vested Benefit

Eligibility: Completion of at least 5 years of credited service.

Benefit: The benefit equals the Service Retirement benefit with compensation and service calculated as of the date of termination. The benefit is deferred until age 62. A vested participant with less than 10 years of credited service may elect to receive the benefit in (i) above in lieu of this benefit. If a member with at least 10 years of credited service dies before commencing benefits, 50% of the ordinary death benefit (below) is payable. All accumulated regular contributions with interest are payable.

(d) Ordinary Death Benefits

Eligibility: all members.

Pre-retirement Death Benefit: The benefit equals a lump sum of annual salary times completed years of credited service up to 3 years of service. After age 60, the benefit is reduced 3% per year, to a maximum reduction of 30. Accumulated regular member contributions with interest and one-half of accumulated additional member contributions with interest are also payable.

Post-retirement Death Benefit: Upon retirement, the benefit, calculated in the same manner as the pre-retirement death benefit, shall be reduced by 50% in the first year after retirement and reduced an additional 25% in the second year of retirement. In the third year of retirement and thereafter, the benefit equals 10% of the pre-retirement benefit in force at time of retirement.

Spouse Benefit (Tier 3 only).

Eligibility: Vested and spouse is beneficiary.

Benefit: In lieu of the ordinary death benefit above, the spouse may elect 1/3 of the ordinary death benefit plus an annuity of 1.0% of Final Average Compensation per year of credited service, payable for life, or until remarriage. If the surviving spouse is more than 10 years younger, the annuity is actuarially reduced. The total of all payments will at least equal the amount of the full lump sum benefit.

(e) Accidental Death Benefits	Eligibility: Death caused by on-the-job accident. World Trade Center Presumption may apply if certain criteria are met. Benefit: The benefit equals 50% of compensation paid to eligible beneficiary as defined by priority: (i) Spouse, until remarriage (ii) Children, to age 25 (iii) Dependent parents (iv) Any other dependent survivors, to age 21. Total of all payments will at least equal the amount of the full ordinary death lump sum benefit.
(f) Ordinary and Accidental Disability Benefits	Eligibility: Completion of 10 years of credited service for ordinary. No minimum years of credited service required for accidental. Benefit: The benefit equals the greater of 1-2/3% of Final Average Compensation per year of credited service and 1/3 of Final Average Compensation. If eligible for a Service Retirement benefit, the greater of this benefit and the Service Retirement benefit is payable.
4. Member Contributions	Regular contribution rate of 3.0%. Regular contributions cease at the later of October 1, 2000, or the later of 10 years of membership or 10 years of credited service.
5. Changes in Plan Provisions Since Prior Valuation	Chapter 716 of the Laws of 2023 reduced the maximum reduction for pre-retirement death benefits from 50% to 30% and adjusted the salary to be used for postretirement ordinary death benefits applicable effective July 1, 2021. It is anticipated that these benefits will be adopted for the plan. The impact of these changes will be reflected in the 2024 valuation.

IV. Tier 3 and Tier 4—25 Year and Age 55 Retirement Programs

1. Eligibility

All operating members hired prior to April 1, 2012 and non-operating members hired prior to July 26, 1994 , who elected this program. Members hired on or after July 27, 1976, and before September 1, 1983, are in Tier 3. Members hired on or after September 1, 1983 and before April 1, 2012 are in Tier 4.

2. Final Average Compensation

Highest average earnings during any three consecutive calendar-year~~s~~ periods, or the final 36 months immediately preceding the member's retirement date. Earnings used in the calculation cannot exceed 110% of the average of the two preceding years.

3. Benefits

(a) Service Retirement

Eligibility: Attainment of age 55 and completion of at least 25 years of credited service, or attainment of age 62 and completion of at least 5 years of credited service.

Benefit: If at least 20 years of credited service is completed, the benefit equals 2.0% of Final Average Compensation for first 30 years of credited service plus 1.5% of Final Average Compensation for years of credited service in excess of 30. If completed less than 20 years of credited service, the benefit equals 1-2/3% of Final Average Compensation multiplied by years of credited service. For non-operating employees who have attained age 62, a refund of one-half of the member's additional contributions accumulated at a rate of 5.0% is also payable.

(b) Termination Benefits

(i) Refund of Contributions

Eligibility: Less than 5 years of credited service.

Benefit: The benefit equals a refund of the basic member's accumulated contributions. All contributions are refunded with interest at a rate of 5.0% also payable.

(ii) Vested Benefit

Eligibility: Completion of at least 5 years of credited service.

Benefit: The benefit equals the Service Retirement benefit with compensation and service calculated as of the date of termination. The benefit is deferred until age 62. For operating members with at least 25 years of credited service, the benefit is deferred until age 55. A vested participant with less than 10 years of credited service may elect to receive a refund of contributions in lieu of this benefit. If a member with at least 10 years of credited service dies before commencing benefits, 50% of the salary-related ordinary death benefit (below) plus accumulated regular contributions with interest and one-half of accumulated additional member contributions with interest are payable.

(c) Ordinary Death Benefits

Eligibility: All members.

Pre-retirement Death Benefit: The benefit equals a lump sum of annual salary times the lesser of completed years of credited service up to 3 years of service. After age 60, the benefit is reduced 3% per year, to a maximum reduction of 30%. Accumulated regular member contributions with interest and one-half of accumulated additional member contributions with interest are also payable.

Post-retirement Death Benefit: Upon retirement, the pre-retirement benefit shall be reduced by 50% and reduced, an additional 25% after completion of one year of retirement. After completion of two years of retirement, the benefit equals 10% of the pre-retirement benefit in force at time of retirement.

Spouse Benefit (Tier 3 only)

Eligibility: Vested and spouse is beneficiary.

Benefit: In lieu of the ordinary death benefit above, the spouse may elect 1/3 of the ordinary death benefit plus an annuity of 1.0% of Final Average Compensation per year of credited service, payable for life, or until remarriage. If the surviving spouse is more than 10 years younger, the annuity is actuarially reduced. The total of all payments will at least equal the amount of the full lump sum benefit.

(d) Accidental Death Benefits	Eligibility: Death caused by on-the-job accident. World Trade Center Presumption may apply if certain criteria are met. Benefit: The benefit equals 50% of compensation paid to eligible beneficiary as defined by priority: (i) Spouse, until remarriage (ii) Children, to age 25 (iii) Dependent parents (iv) Any other dependent survivors, to age 21. Total of all payments will at least equal the amount of the full ordinary death lump sum benefit.
(e) Ordinary and Accidental Disability Benefits	Eligibility: Completion of 10 years of credited service for ordinary. No minimum years of credited service requirement for accidental. Benefit: The benefit equals the greater of 1-2/3% of Final Average Compensation per year of credited service and 1/3 of Final Average Compensation. If eligible for a Service Retirement benefit, the greater of this benefit and the Service Retirement benefit is payable. For non-operating employees, a refund of one-half of the member's additional contributions accumulated plus interest at a rate of 5.0% is also payable.
4. Member Contributions	Operating Employees: Regular contribution rate of 2.0%. Additional 55/25 contributions were made through 2000. These contributions may be refunded effective November 2007 for TWU Local 100 and April 2008 for TSO Local 106. Non-operating Employees: Regular contribution rate of 3.0%. Regular contributions cease at the later of October 1, 2000 or after the later of 10 years of membership or 10 years of credited service. Additional contribution rates were 4.35%, 2.85% and 1.85%, of which 1.85% ceases after 30 years of credited service.
5. Changes in Plan Provisions Since Prior Valuation	Chapter 716 of the Laws of 2023 reduced the maximum reduction for pre-retirement death benefits from 50% to 30% and adjusted the salary to be used for postretirement ordinary death benefits applicable effective July 1, 2021. It is anticipated that these benefits will be adopted for the plan. The impact of these changes will be reflected in the 2024 valuation.

V. Tier 4—Age 57 & 5 Year

Retirement Program

1. Eligibility

Non-operating members hired on or after June 28, 1995 and prior to April 1, 2012. Members hired on or after September 1, 1983 and before April 1, 2012 are in Tier 4.

2. Final Average Compensation

Highest average earnings during any three consecutive calendar-year~~s~~ periods, or the final 36 months immediately preceding the member's retirement date. Earnings used in the calculation cannot exceed 110% of the average of the two preceding years.

3. Benefits

(a) Service Retirement

Eligibility: Attainment of age 57 and completion of at least 5 years of credited service.

Benefit: If less than 20 years of credited service are completed, the benefit equals 1.67% of Final Average Compensation multiplied by years of credited service. If between 20 and 30 years of credited service are completed, the benefit equals 2% of Final Average Compensation multiplied by years credited service. If more than 30 years are completed, 2% of Final Average Compensation multiplied by years of credited service plus 1.5% of Final Average Compensation multiplied by years of credited service in excess of 30. For non-operating employees who have attained age 62, a refund of one-half of the member's additional contributions accumulated plus interest at a rate of 5.0% is also payable.

(b) Termination Benefits

(i) Refund of Contributions

Eligibility: Completion of less than 5 years of credited service.

Benefit: The benefit equals a refund of the member's basic accumulated contributions and 50% of additional member contributions plus interest at a rate of 5.0%.

(ii) Vested Benefit

Eligibility: Completion of at least 5 years of credited service.

Benefit: The benefit equals the Service Retirement benefit with compensation and service calculated as of the date of termination. The benefit is deferred until age 57. A vested participant with less than 10 years of credited service may elect to receive the benefit in (i) above in lieu of this benefit. If a member with at least 10 years of credited service dies before commencing benefits, 50% of the salary-related ordinary death benefit (below) is payable. All accumulated regular contributions with interest and one-half of accumulated additional member contributions with interest are payable.

(c) Ordinary Death Benefits

Eligibility: All members

Pre-retirement Death Benefit: The benefit equals a lump sum of annual salary times completed years of credited service up to 3 years of service. After age 60, the benefit is reduced 3% per year, to a maximum reduction of 30%. Accumulated regular member contributions with interest and one-half of accumulated additional member contributions with interest are also payable.

Post-retirement Death Benefit: Upon retirement, the pre-retirement benefit shall be reduced by 50% and reduced an additional 25% after completion of one year of retirement. After completion of two years of retirement, the benefit equals 10% of the pre-retirement benefit in force at time of retirement.

(d) Accidental Death Benefits

Eligibility: Death caused by on-the-job accident. World Trade Center Presumption may apply if certain criteria are met.

Benefit: The benefit equals 50% of final 1-year compensation paid to eligible beneficiary as defined by priority:

(i) Spouse, until remarriage

(ii) Children, to age 25

(iii) Dependent parents

(iv) Any other dependent survivors, to age 21.

Total of all payments will at least equal the amount of the full ordinary death lump sum benefit.

(e) Ordinary and Accidental Disability Benefits

Eligibility: Completion of 10 years of credited service for ordinary. No minimum years of credited service requirement for accidental.

Benefit: The benefit equals the greater of 1-2/3% of Final Average Compensation per year of credited service and 1/3 of Final Average Compensation. If eligible for Service Retirement benefit, the greater of this benefit and the Service Retirement benefit is payable. For non-operating employees, a refund of one-half of the member's additional contributions accumulated at a rate of 5.0% is also payable.

4. Member Contributions

Regular contribution rate of 3.0%. Regular contributions cease at the later of October 1, 2000, or after the later of 10 years of membership or 10 years of credited service. Additional contribution rates were 4.35%, 2.85% and 1.85% of which 1.85%, ceases after 30 years of credited service.

5. Changes in Plan Provisions Since Prior Valuation	Chapter 716 of the Laws of 2023 reduced the maximum reduction for pre-retirement death benefits from 50% to 30% and adjusted the salary to be used for postretirement ordinary death benefits applicable effective July 1, 2021. It is anticipated that these benefits will be adopted for the plan. The impact of these changes will be reflected in the 2024 valuation

VI. Tier 6—25 and
Age 55 Retirement Program

1. Eligibility	All operating members hired on or after April 1, 2012.
2. Final Average	Highest average pensionable earnings over five consecutive years. Pensionable earnings exclude any overtime earnings, defined as compensation paid at a rate greater than the standard rate, in excess of the overtime cap. The overtime cap is indexed annually and is $19,729 for 2023. Pensionable earnings also exclude wages in excess of the annual salary paid to the Governor of New York, lump sum payments for sick leave, accumulated vacation and other credits for time not worked, termination pay, and any additional compensation paid in anticipation of retirement. Pensionable earnings in a year cannot exceed 110% of the average of the four preceding years.
3. Benefits	
(a) Service Retirement	Eligibility: Attainment of age 55 and completion of at least 25 years of credited service, or attainment of age 63 and completion of at least 5 years of credited service. Benefit: If completed at least 25 years of credited service, the benefit equals 2.0% of Final Average Salary for the first 30 years of credited service plus 1.5% of Final Average Salary for years of credited service in excess of 30. If completed at least 20 years, but less than 25 years of credited service, 35% of Final Average Salary plus 2% of Final Average Salary for years of credited service in excess of 20. If completed less than 20 years of credited service, the benefit equals 1-2/3% of Final Average Salary multiplied by years of credited service.

(b) Termination Benefits

(i) Refund of Contributions

Eligibility: Completion of less than 5 years of credited service.

Benefit: The benefit equals a refund of the member's contributions accumulated plus interest at a rate of 5.0%.

(ii) Vested Benefit

Eligibility: Completion of at least 5 years of credited service.

Benefit: The benefit equals the Service Retirement benefit with compensation and service calculated as of the date of termination. The benefit is deferred until age 63. A vested participant with less than 10 years of credited service may elect to receive a refund of contributions in lieu of this benefit. If a member with at least 10 years of credited service dies before commencing benefits, 50% of the salary-related ordinary death benefit (below) plus accumulated regular contributions with interest are payable.

(c) Ordinary Death Benefits

Eligibility: All members

Pre-retirement Death Benefit: The benefit equals a lump sum of annual salary times completed years of credited service up to 3 years of service. After age 60, the benefit is reduced 3% per year, to a maximum reduction of 30%. Accumulated regular member contributions with interest and one-half of accumulated additional member contributions with interest are also payable.

Post-retirement Death Benefit: Upon retirement, the pre-retirement benefit shall be reduced by 50% and reduced an additional 25% after completion of one year of retirement. After completion of two years of retirement, the benefit equals 10% of the pre-retirement benefit in force at time of retirement.

(d) Accidental Death Benefits

Eligibility: Death caused by on-the-job accident. World Trade Center Presumption may apply if certain criteria are met.

Benefit: The benefit equals 50% of wages earned during last year of service or annual wage rate if less than one year of service, paid to eligible beneficiary as defined by priority:

(i) Spouse, until remarriage

(ii) Children, to age 25

(iii) Dependent parents

(iv) Any other dependent survivors, to age 21.

Total of all payments will at least equal the amount of the full ordinary death lump sum benefit.

(e) Ordinary and Accidental Disability Benefits

Eligibility: Completion of 10 years of credited service for ordinary. No minimum years of credited service requirement for accidental.

Benefit: The benefit equals the greater of 1-2/3% of Final Average Salary per year of credited service and 1/3 of Final Average Salary. If eligible for a Service Retirement benefit, the greater of this benefit and the Service Retirement benefit is payable.

4. Member Contributions

Regular contribution rate varies based on gross pensionable wages earned during two plan years (April 1 to March 31 but calendar year effective January 1, 2017) prior to the applicable plan year based on the following table. Overtime is eliminated overtime from the determination of pensionable wages for purposes of determining the applicable contribution rate from April 1, 2022 to December 31, 2026. For first three years of a member's career, a projection of annual wages is used. The rate for the plan year ending March 31, 2013 for all Tier 6 employees is 2%.

Annual Wages Earned During Plan Year	Contribution Rate
Up to $45,000	3.00%
$45,001–$55,000	3.50%
$55,001–$75,000	4.50%
$75,001–$100,000	5.75%
Greater than $100,000	6.00%

5. Changes in Plan Provisions Since Prior Valuation

Chapter 716 of the Laws of 2023 reduced the maximum reduction for pre-retirement death benefits from 50% to 30% and adjusted the salary to be used for postretirement ordinary death benefits applicable effective July 1, 2021. It is anticipated that these benefits will be adopted for the plan. The impact of these changes will be reflected in the 2024 valuation.

Part KK of Chapter 55 of the Laws of 2024 ("Chapter 55/2024") extended Chapter 56 of the Laws of 2022's elimination of overtime from the determination of pensionable wages for purposes of determining the applicable contribution rate; the exclusion now applies from April 1, 2022 to December 31, 2026. It is anticipated that Chapter 55/2024 will be adopted for the Plan for Tier 6 members. The impact of these changes will be reflected in the 2024 valuation.

Part QQ of Chapter 56 of the Laws of 2024 ("Chapter 56/2024") reduced the number of years used to calculate the Final Average Salary (FAS), from 5 years to 3 years, for Tier 6 members of NYCERS. It is anticipated that Chapter 56/2024 will be adopted for the Plan for Tier 6 members. The impact of these changes will be reflected in the 2024 valuation.

VII. Tier 6—Age 63 and 5 Year Retirement Program

1. Eligibility	All non-operating members hired on or after April 1, 2012.
2. Final Average Compensation	Highest average pensionable earnings over three consecutive years. Pensionable earnings exclude any overtime earnings, defined as compensation paid at a rate greater than the standard rate, in excess of the overtime cap. The overtime cap is indexed annually and is $19,729 for 2023. Pensionable earnings also exclude wages in excess of the annual salary paid to the Governor of New York ($250,000), lump sum payments for sick leave, accumulated vacation and other credits for time not worked, termination pay, and any additional compensation paid in anticipation of retirement. Pensionable earnings in a year cannot exceed 110% of the average of the four preceding years for purposes of determining the Final Average Compensation.
3. Benefits	
(a) Service Retirement	Eligibility: Attainment of age 63 and completion of at least 5 years of credited service. Benefit: If completed at least 20 years of credited service, 35% of Final Average Salary plus 2% of Final Average Salary for years of credited service in excess of 20. If completed less than 20 years of credited service, the benefit equals 1-2/3% of Final Average Salary multiplied by years of credited service.
(b) Early Retirement	Eligibility: Attainment of age 55 and completion of at least 5 years of credited service. Benefit: The benefit equals the Service Retirement benefit reduced by 6.5% for each year prior to age 63.

(c) Termination Benefits

(i) Refund of Contributions

Eligibility: Completion of less than 5 years of credited service.

Benefit: The benefit equals a refund of the member's contributions accumulated plus interest at a rate of 5.0%.

(ii) Vested Benefit

Eligibility: Completion of at least 5 years of credited service.

Benefit: The benefit equals the Service Retirement benefit with compensation and service calculated as of the date of termination. The benefit is deferred until age 63. A vested participant with less than 10 years of credited service may elect to receive a refund of contributions in lieu of this benefit. If a member with at least 10 years of credited service dies before commencing benefits, 50% of the salary-related ordinary death benefit (below) plus accumulated regular contributions with interest are payable.

(d) Ordinary Death Benefits

Eligibility: All members

Pre-retirement Death Benefit: The benefit equals a lump sum of annual salary times the completed years of credited service up to 3 years of service. After age 60, the benefit is reduced 3% per year, to a maximum reduction of 30%. Accumulated regular member contributions with interest and one-half of accumulated additional member contributions with interest are also payable.

Post-retirement Death Benefit: Upon retirement, the pre-retirement benefit shall be reduced by 50% and reduced an additional 25% after completion of one year of retirement. After completion of two years of retirement, the benefit equals 10% of the pre-retirement benefit in force at time of retirement.

(e) Accidental Death Benefits

Eligibility: Death caused by on-the-job accident. World Trade Center Presumption may apply if certain criteria are met.

Benefit: The benefit equals 50% of wages participant earned during last year of service or annual wage rate if less than one year of service, paid to eligible beneficiary as defined by priority:

(i) Spouse, until remarriage

(ii) Children, to age 25

(iii) Dependent parents

(iv) Any other dependent survivors, to age 21.

Total of all payments will at least equal the amount of the full ordinary death lump sum benefit.

(f) Ordinary and Accidental Disability Benefits

Eligibility: Completion of 10 years of credited service for ordinary. No minimum years of credited service requirement for accidental.

Benefit: The benefit equals the greater of 1-2/3% of Final Average Salary per year of credited service and 1/3 of Final Average Salary. If eligible for Service Retirement benefit, the greater of this benefit and the Service Retirement benefit is payable.

4. Member Contributions

Regular contribution rate varies based on gross pensionable wages earned during two plan years (April 1 to March 31 but calendar year effective January 1, 2017) prior to applicable plan year based on following table. Overtime is eliminated from the determination of pensionable wages for purposes of determining the applicable contribution rate from April 1, 2022 to December 31, 2026. For first three years of a member's career, a projection of annual wages is used. The rate for the year ending March 31, 2013 for all Tier 6 employees is 3%.

Annual Wages Earned During Plan Year	Contribution Rate
Up to $45,000	3.00%
$45,001–$55,000	3.50%
$55,001–$75,000	4.50%
$75,001–$100,000	5.75%
Greater than $100,000	6.00%

5. Changes in Plan Provisions Since Prior Valuation

Chapter 716 of the Laws of 2023 reduced the maximum reduction for pre-retirement death benefits from 50% to 30% and adjusted the salary to be used for postretirement ordinary death benefits applicable effective July 1, 2021. It is anticipated that these benefits will be adopted for the plan. The impact of these changes will be reflected in the 2024 valuation.

Chapter 55/2024 extended Chapter 56 of the Laws of 2022's elimination of overtime from the determination of pensionable wages for purposes of determining the applicable contribution rate; the exclusion now applies from April 1, 2022 to December 31, 2026. It is anticipated that Chapter 55/2024 will be adopted for the Plan for Tier 6 members. The impact of these changes will be reflected in the 2024 valuation.

Chapter 56/2024 reduced the number of years used to calculate the Final Average Salary (FAS), from 5 years to 3 years, for Tier 6 members of NYCERS. It is anticipated that Chapter 56/2024 will be adopted for the Plan for Tier 6 members. The impact of these changes will be reflected in the 2024 valuation.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND PLAN ASSET MATTERS

Basis of Accounting - The Plan is accounted for on the accrual basis of accounting under which deductions are recorded when the liability is incurred and additions are recognized in the accounting period in which they are earned. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan. Contributions from members are recorded when the employer makes payroll deductions from plan members. Employer contributions are recognized when due in accordance with the terms of the Plan. Additions to the Plan consist of contributions (member and employer) and net investment income.

The accounting and reporting policies of the Plan conform to accounting principles generally accepted in the United States of America (GAAP).

GASB Statement No. 72, *Fair Value Measurement and Application* ("GASB 72"), requires the Funds to use valuation techniques which are appropriate under the circumstances and are either a market approach, a cost approach, or an income approach. GASB 72 establishes a hierarchy of inputs used to measure fair value consisting of three levels. Level 1 inputs are quoted prices in active markets for identical assets or liabilities. Level 2 inputs are inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs, and typically reflect management's estimates of assumptions that market participants would use in pricing the asset or liability. GASB 72 also contains note disclosure requirements regarding the hierarchy of valuation inputs and valuation techniques that were used for the fair value measurements.

New Accounting Standards Adopted - The Plan adopted the following GASB Statement for the year ended December 31, 2023:

GASB Statement No. 96, *Subscription-Based Information Technology Arrangements*, was issued to provide guidance on the accounting and financial reporting for subscription-based information technology arrangements (SBITAs) for government end users (governments). This Statement (1) defines a SBITA; (2) establishes that a SBITA results in a right-to-use subscription asset—an intangible asset—and a corresponding subscription liability; (3) provides the capitalization criteria for outlays other than subscription payments, including implementation costs of a SBITA; and (4) requires note disclosures regarding a SBITA. To the extent relevant, the standards for SBITAs are based on the standards established in Statement No. 87, *Leases*, as amended.

The adoption of this Statement has no material impact on the net position of the Plan.

GASB Statement No. 99, *Omnibus 2022*. The objectives of this Statement are to enhance comparability in accounting and financial reporting and to improve the consistency of authoritative literature by addressing (1) practice issues that have been identified during implementation and application of certain GASB Statements and (2) accounting and financial reporting for financial guarantees.

The adoption of this Statement has no material impact on the net position of the Plan.

Accounting Standards Issued but Not Yet Adopted

GASB Statement No.	GASB Accounting Standard	MaBSTOA Pension Plan Required Year of Adoption
100	*Accounting Changes and Error Corrections*	2024
101	*Compensated Absences*	2024
102	*Certain Risk Disclosures*	2025
103	*Financial Reporting Model Improvements*	2025

Methods Used to Value Investments—Investments are stated at fair value or Net Asset Value ("NAV") which approximates fair value. Fair value is the amount that the Plan can reasonably expect to receive for an investment in a current sale between a willing buyer and a willing seller, that is, other than a forced or liquidation sale. All investments, with the exception of alternative investments are valued based on closing market prices or broker quotes.

Traded securities are stated at the last reported sales price on a national securities exchange on the last business day of the fiscal year. Securities purchased pursuant to agreements to resell are carried at the contract price, exclusive of interest, at which the securities will be resold. Alternative investments are valued based on the most current net asset values.

Purchases and sales of securities are reflected on the trade date.

Dividend income is recorded on the ex-dividend date. Interest income is recorded as earned on an accrual basis.

Use of Estimates—The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the Authority to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and reported amounts of revenues and expenses during the reporting period. Accordingly, actual results could differ from these estimates.

Risks and Uncertainties—The Plan's investments are exposed to various risks, such as interest rate, market, and credit risk. Due to the level of risk associated with certain investment securities and level of uncertainty related to changes in the value of investment securities, it is possible that changes in risks in the near term would materially affect the amounts reported in the Plan's financial statements.

Income Taxes - The Plan is designed to satisfy the applicable requirements for governmental plans under Section 401(a) of the Internal Revenue Code. Accordingly, the Plan is tax-exempt and is not subject to the provisions of ERISA. Therefore, income retained by the Plan is not subject to Federal income tax.

3. CASH AND INVESTMENTS

Investment Committee - The Plan's policy statement is issued for the guidance of fiduciaries, including the members of the Board and investment managers, in the course of investing the assets of the Trust. The investments of the Trust will be made for the exclusive benefit of the Plan participants and their beneficiaries. Policy guidelines may be amended by the Board upon consideration of the advice and recommendations of the investment professionals.

In order to have a reasonable probability of achieving the target return at an acceptable risk level, the Board has adopted the asset allocation policy outlined below. The actual asset allocation will be reviewed on, at least, a quarterly basis and will be readjusted when an asset class weighting is outside its target range. The following was the MaBSTOA Pension Plan Board adopted asset allocation policy as of December 31, 2023.

Asset Class	Target Allocation (%)	Target Range (%)	Policy Benchark
Equities	**43.0**	**33-53**	
Domestic Large Cap	21.0	16-26	S&P 500
Domestic Small Cap	5.0	0-10	Russell 2000
International Developed Markets Equities	11.0	6-16	MSCI EAFE
Emerging Markets Equities	6.0	1-11	MSCI Emerging Markets
Fixed Income	**21.0**	**16-26**	Manager Specific
Global Asset Allocation*	**4.0**	**0-10**	50% World Equity/ 50% Citigroup WGBI unhedged
Private Fixed Income	**7.0**	**0-10**	Manager Specific
Absolute Return	**8.0**	**0-10**	Manager Specific
Real Assets	**5.0**	**0-10**	Manager Specific
Real Estate	**5.0**	**0-10**	Manager Specific
Private Equity	**7.0**	**0-10**	C/A Global all P/E
Total	**100.0**		

* The Global Asset Allocation managers will invest across numerous liquid asset classes including: stocks, bonds, commodities, TIPS and REITs.

Investment Objective - The investment objective of the funds is to achieve consistent positive real returns and to maximize long-term total return within prudent levels of risk through a combination of income and capital appreciation.

Investment Guidelines - The Board of Pension Managers executes investment management agreements with professional investment management firms to manage the assets of the Plan. The fund managers must adhere to guidelines that have been established to limit exposure to risk.

All Securities managers shall be registered advisors under the Investment Advisors Act of 1940.

The overall capital structure targets and permissible ranges for eligible asset classes of the Trust are detailed within the Investment Policy Statement. Full discretion, within the parameters of the guidelines described herein and in any individual investment policy associated with that allocation, is granted to the investment managers regarding the asset allocation, the selection of securities, and the timing of transactions. Investment managers will be funded through commingled funds or separate account vehicles. For separate accounts, individual manager guidelines and/or exemptions are specified in each approved investment management agreement ("IMA"). Should there be conflicts, the individual manager guidelines set forth in the IMA supersede the general guidelines in the Investment Policy Statement. For commingled funds, investment guidelines and/or exemptions are specified in such vehicle's offering documents. Should there be conflicts, the individual vehicle's investment guidelines supersede the general guidelines in the Investment Policy Statement.

Individual investment manager benchmarks and performance requirements are specified within the Investment Policy Statement. Performance of the Trust will be evaluated on a regular basis. Evaluation will include the degree to which performance results meet the goals and objectives as herewith set forth. Toward that end, the following standards will be used in evaluating investment performance:

1. The compliance of each investment manager with the guidelines as expressed herein, and
2. The extent to which the total rate of return performance of the Trust achieves or exceeds the targeted goals.

Fixed Income Managers - Investment managers may not purchase inverse floating rate bonds, structured notes, commodities, securities on margin, sell short, lend securities, invest in private placements (other than 144A Privates), real estate investments, and oil, gas and mineral exploration investments without the written consent of the Board of Managers. The fixed-income portion of the Additional Plan's assets shall be invested in marketable, fixed income securities. The following are acceptable:

- Domestic fixed income investments are permitted, subject to the guidelines reflected in Investment Policy Statement. Yankee bonds, which are dollar denominated foreign securities, may be held by each domestic manager in proportions which each manager shall deem appropriate.

- International fixed income securities are permitted, subject to the guidelines reflected in Investment Policy Statement. Generally defined, the Citigroup World Government Bond Index represents the opportunity set for international developed markets. The J.P. Morgan Emerging Markets Bond Index-Global represents the opportunity set for international emerging markets denominated in USD. The J.P. Morgan GBI-EM Global Diversified Index represents the opportunity set for international emerging markets denominated in local currency. These index references are guidelines and do not prohibit investment in securities outside those indexes.

- Investment managers are responsible for making an independent analysis of the credit worthiness of securities and their suitability as investments regardless of the classifications provided by rating agencies.

- The average duration (interest rate sensitivity) of an actively managed fixed income portfolio shall range within two years of the benchmark's duration.

- For domestic fixed income portfolios, individual managers account for the securities of an individual issuer, excepting the U.S. government and U.S. government agencies, shall not constitute more than 5% at market at any time.

- For international bond portfolios, individual managers account for the securities of any non-governmental issuer shall not constitute more than 5% at market at any time.

Equity Investment Managers - The equities investment managers may not purchase commodities, securities on margin, sell short, lend securities, invest in private placements, real estate investments, oil, gas and mineral exploration investments, and nominally public issues without the written consent of the Board of Managers. The manager may purchase Rule 144A securities provided such securities are judged by the manager to be liquid and don't in the aggregate exceed 10% of the market value of the portfolio. The manager shall also be able to purchase securities if such securities are convertible into publicly traded equities.

- Domestic equity investments are permitted, subject to the guidelines. American Depository Receipts (ADRs), which are dollar denominated foreign securities traded on the domestic U.S. stock exchanges (e.g., Reuters, Nestle, Sony) may be held by each domestic stock manager in proportions which each manager shall deem appropriate.

- International equities are permitted, subject to the guidelines. Generally defined, the Morgan Stanley EAFE (Europe, Australasia, and the Far East) Index represents the opportunity set for international developed markets. The Morgan Stanley Emerging Markets Free Index represents the opportunity set for international emerging markets. These index references are guidelines and do not prohibit investment in securities outside those indexes.

- The equity specialists may vary equity commitment from 90% to 100% of assets under management.

- Individual managers' account may hold no more than 10% at market or 1.5x the manager's benchmark weight (whichever is greater) of any single company's stock.

Overlay Managers

- For a variety of reasons, the investment program may carry large amounts of cash throughout the year. In order to achieve the actuarial assumed returns on the total investment program, the Board may retain an overlay manager. The overlay manager shall use exchange traded securities to expose the cash to the long-term target asset allocation.

- In addition, the overlay manager may be utilized for the following:
  a) Expose un-invested assets of domestic and international equity investment managers to their respective equity benchmarks,
  b) Assist the Board in rebalancing, transitions, and/or gaining exposure to approved asset classes,
  c) Provide the market (or "beta") exposures in a portable alpha program.

d) The overlay manager shall ensure that all futures positions are fully collateralized, and the manager is prohibited from leveraging any portion of the portfolio.

Alternative Investments Managers

Alternative investments are broadly categorized into the following categories:

- Private fixed income
- Real assets
- Real estate
- Absolute return
- Private equity

Common features of alternative investments are limited liquidity, the use of derivatives, leverage and shorting, lower regulatory oversight, limited transparency, and high fees. Compensating for these risks, these investments offer the potential of diversification and/or higher rates of return over time.

Derivatives Policy

Where appropriate, investment managers may use derivative securities for the following reasons:

- Hedging. To the extent that the portfolio is exposed to clearly defined risks and there are derivative contracts that can be used to reduce those risks, the investment managers are permitted to use such derivatives for hedging purposes, including cross-hedging of currency exposures.

- Creation of Market Exposures. Investment managers are permitted to use derivatives to replicate the risk/return profile of an asset or asset class provided that the guidelines for the investment manager allow for such exposures to be created with the underlying assets themselves.

- Management of Country and Asset Allocation Exposure. Investment managers charged with tactically changing the exposure of their portfolio to different countries and/or asset classes are permitted to use derivative contracts for these purposes.

- Additional uses of derivatives shall be approved by the Board or set forth in the individual investment guidelines or the offering documents prior to implementation and shall be restricted to those specific investment managers.

Ineligible Investments (Separately Managed Accounts) - Unless specifically approved by the Board or set forth in the individual investment guidelines, certain securities, strategies, and investments are ineligible for inclusion within separately managed accounts. Among these are:

- Privately placed or other non-marketable debt, except securities issued under Rule 144a,
- Lettered, legend or other so-called restricted stock,
- Russian securities
- Commodities
- Short sales, and,
- Direct investments in private placements, real estate, oil and gas and venture capital, or funds comprised thereof.

Exceptions:

The Board of Managers, in recognition of the benefits of commingled funds as investment vehicles (i.e., the ability to diversify more extensively than in a small, direct investment account and the lower costs which can be associated with these funds) may, from time to time, allow investment in such funds. The Board recognizes that it cannot give specific policy directives to a fund whose policies are already established; therefore, the Board is relying on the investment consultant to assess and monitor the investment policies of any funds used by the Plan to ascertain whether they are appropriate.

Investment Valuation - Investments primarily include money market funds, equity securities, United States government securities, corporate bonds and debentures, asset backed securities, mortgage and commercial backed securities, mutual and commingled funds. All investments are registered with securities held by the trustee under a grantor trust, in the name of the Additional Plan. The values of Additional Plan investments are adjusted to fair value as of the last business day of each month based on quoted market prices or net asset value, which is determined to be a practical expedient for measuring fair value, except for certain cash equivalents, which are stated at cost and approximate market value. Purchases and sales of securities are recorded on a trade-date basis.

Income Recognition - Gains or losses from investment transactions are recognized on a trade date basis. Such investment gains or losses are determined using the average cost method. Dividend income is recorded on the ex-dividend date and interest income is recorded on the accrual basis.

Risks and Uncertainties - The Plan's investments are exposed to various risks, such as interest rate, market, and credit risk. Due to the level of risk associated with certain investment securities and level of uncertainty related to changes in the value of investment securities, it is possible that changes in risks in the near term would materially affect the amounts reported in the Plan's financial statements.

The financial markets, both domestically and internationally, have demonstrated significant volatility on a daily basis, which affects the valuation of investments. The Plan utilizes asset allocation strategies that are intended to optimize investment returns over time in accordance with investment objectives and with acceptable levels of risk.

GASB Statement No. 72 - In year 2015, the Plan adopted GASB Statement No. 72 ("GASB 72"), *Fair Value Measurement and Application*. The Plan categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. The Plan have the following recurring fair value measurements as of December 31, 2023 and 2022:

Investments measured at readily determined fair value (FV)
(In thousands)

	December 31, 2023	Quoted Price in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
Equity Securities:				
Separate account large-cap equity funds	$ 165,239	$ 165,239	$ -	$ -
Separate account small-cap equity funds	249,183	249,183	-	-
Separate account international equity funds	137,161	137,161	-	-
Separate account small-Real Estate Investments Trusts	35,263	35,263	-	-
Total equity investments	586,846	586,846	-	-
Debt Securities				
Mutual funds	136,849	136,849	-	-
Separate account - opportunistic credit/Private debt	42,456	-	42,456	-
Separate account debt funds	306,137	-	306,137	-
Total debt investments	485,442	136,849	348,593	-
Total investments by fair value	$ 1,072,288	$ 723,695	$ 348,593	$ -

Investments measured at the net asset value (NAV)
(In thousands)

	December 31, 2023	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Equity Securities:				
Commingled large cap equity funds	$ 661,298	$ -	Daily	None
Commingled international equity funds	313,644	-	Daily	None
Commingled emerging market equity funds	170,585	-	Daily, monthly	None
Total equity investments measured at the NAV	1,145,527	-		
Debt Securities				
Commingled debt funds	376,238	-	Daily, monthly, quarterly	None
Total debt investments measured at the NAV	376,238	-		
Absolute return:				
Direct lending	56,438	50,612	Bi-annually	60 plus days
Distressed securities	15,552	-	Not eligible	N/A
Credit long	36,090	-	Quarterly	3-30 days
Hedge funds of funds	289,947	-	Quarterly	3-60 days
Event driven	303	2,094	Quarterly	60-120 days
Risk parity	88,662	-	Monthly	3-30 days
Total absolute return measured at the NAV	486,992	52,706		
Venture capital	44	4,900	Not eligible	N/A
Private equity - private equity partnerships	318,946	137,184	Not eligible	N/A
Commingled real estate funds	90,590	-	Not eligible	N/A
Real assets:				
Commingled commodities fund	77,244	-	Not eligible	N/A
Energy	72,626	24,882	Not eligible	N/A
Infrastructure	7,299	48,082	Not eligible	N/A
Shipping	2,826	678	Not eligible	N/A
Total real assets measured at the NAV	159,995	73,642		
Short term investments measured at the NAV	139,628	-		
Total investments measured at the NAV	2,717,960	$ 268,432		
Total investments at fair value	$ 3,790,248			

Investments measured at readily determined fair value (FV)
(In thousands)

	December 31, 2022	Quoted Price in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
Equity Securities:				
Separate account large-cap equity funds	$ 142,100	$ 142,100	$ -	$ -
Separate account small-cap equity funds	218,754	218,754	-	-
Separate account small-Real Estate Investments Trusts	31,674	31,674	-	-
Total equity investments	392,528	392,528	-	-
Debt Securities				
Mutual funds	136,105	136,105	-	-
Separate account - opportunistic credit/Private debt	37,341	-	37,341	-
Separate account debt funds	187,894	-	187,894	-
Total debt investments	361,340	136,105	225,235	-
Total investments by fair value	$ 753,868	$ 528,633	$ 225,235	$ -

Investments measured at the net asset value (NAV)
(In thousands)

	December 31, 2022	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Equity Securities:				
Commingled large cap equity funds	$ 391,249	$ -	Daily	None
Commingled international equity funds	409,274	-	Daily	None
Commingled emerging market equity funds	145,115	-	Daily, monthly	None
Total equity investments measured at the NAV	945,638	-		
Debt Securities				
Commingled debt funds	319,165	-	Daily, monthly, quarterly	None
Total debt investments measured at the NAV	319,165	-		
Absolute return:				
Direct lending	102,112	45,652	Bi-annually	60 plus days
Distressed securities	19,358	-	Not eligible	N/A
Credit long	33,193	-	Quarterly	3-30 days
Credit long/short	568	-	Quarterly	3-60 days
Hedge funds of funds	268,611	-	Quarterly	3-60 days
Event driven	943	2,094	Quarterly	60-120 days
Global tactical asset allocation	59,909	-	Daily, monthly	3-30 days
Multistrategy	3,114	-	Quarterly	3-60 days
Risk parity	80,136	-	Monthly	3-30 days
Total absolute return measured at the NAV	567,944	47,746		
Private equity - private equity partnerships	295,856	186,849	Not eligible	N/A
Commingled real estate funds	106,412	-	Not eligible	N/A
Real assets:				
Commingled commodities fund	76,303	-	Not eligible	N/A
Energy	90,813	27,228	Not eligible	N/A
Infrastructure	12,295	3,082	Not eligible	N/A
Shipping	5,540	1,356	Not eligible	N/A
Total real assets measured at the NAV	184,951	31,666		
Short term investments measured at the NAV	115,492	-		
Total investments measured at the NAV	2,535,458	$ 266,261		
Total investments at fair value	$ 3,289,326			

Concentration of Credit Risk – Individual investments held by the Plan that represents 5.0% or more of the Plan's net assets available for benefits at December 31, 2023 and 2022 are as follows:

(In thousands)	**2023**	**2022**
Investments at fair value as determined by quoted market prices:		
Independent Franchise Partners	$ 198,616	$ 164,212
Robert W. Baird and Company	200,275	187,894
Blackrock Hedge Index Fund	225,722	210,534
Rhumbline S & P 500 Index Fund	462,682	227,037

Credit Risk — At December 31, 2023 and 2022, the following credit quality rating has been assigned by a nationally recognized rating organization:

(In thousands) **Quality Rating**	**2023 Fair Value**	**Percentage of Fixed Income Portfolio**	**2022 Fair Value**	**Percentage of Fixed Income Portfolio**
AAA	$ 19,900	5.92 %	$ 19,114	8.69 %
AA	51,139	15.21	47,759	21.70
A	17,826	5.30	16,943	7.70
BBB	63,492	18.89	59,355	26.98
BB	8,941	2.66	4,956	2.25
B	26,034	7.74	-	-
CCC	10,493	3.12	448	0.20
Not Rated	45,839	13.64	35,114	15.96
Credit risk debt securities	243,664	72.48	183,689	83.48
U.S. Government bonds	92,496	27.52	36,353	16.52
Total fixed income securities	336,160	100.00 %	220,042	100.00 %
Other securities not rated — equity, international funds and foreign corporate bonds	3,454,088		3,069,284	
Total investments	$ 3,790,248		$ 3,289,326	

Interest Rate Risk Exceptions — Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of the investment. Duration is a measure of sensitivity to interest rate risk. The greater the duration of a bond or portfolio of bonds, the greater its price volatility will be in response to a change in interest rate risk and vice versa. Modified duration is an indicator of bond price's sensitivity to a parallel 100 basis point change in interest rates.

Investment Fund (In Thousands)	2023 Fair Value	2023 Duration	2022 Fair Value	2022 Duration	
Chase	$ 336,160	5.24	$ 220,042	7.20	*
Total fixed income securities	336,160		220,042		
Portfolio modified duration		5.24		7.20	
Investments with no duration reported	$ 3,454,088		$ 3,069,284		
Total investments	$ 3,790,248		$ 3,289,326		

* 2022 Modified Duration was revised from 7.20 to 6.70

Foreign Currency Risk - Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. Some of the Plan's investment managers will have foreign currency exposure through holdings of foreign securities, currency derivatives or private investments whose revenue will be non-USD based. The Plan also holds investments in American Depository Receipts ("ADRs") which are denominated in U.S. dollars and accounted for at fair value.

The Plan did not have any foreign currency exposures as of December 31, 2023 and 2022.

4. CONTRIBUTIONS

The financial objective of the Plan is to fund, on an actuarial basis, the retirement and death benefits for eligible MaBSTOA employees and beneficiaries. MaBSTOA contributions to the fund are made annually. Contributions to MaBSTOA require the approval of the MaBSTOA Board.

Employer contributions amounted to $328.4 and $158.6 million for the years ended December 31, 2023 and 2022, respectively. Employee contributions amounted to $25.4 million and $25.5 million for the years ended December 31, 2023 and 2022, respectively. Contributions made by employees are accounted for in separate accounts maintained for each employee. Annually, these accounts are credited with interest at 5%. Effective April 1, 1990, MaBSTOA began to deduct employee contributions as pretax contributions under Section 414(h) of the Internal Revenue Code.

Pursuant to Section 7.03 of the MaBSTOA Plan, active plan members are permitted to borrow up to 75% of their contributions with interest. In addition, the maximum allowable outstanding loan amount for a vested employee cannot exceed 50% of the present value of the Accrued Vested Benefit (AVB) less the highest outstanding balances of any pension loan (s) within the previous one-year period from the day a new loan is issued. Their total contributions and interest remain intact and interest continues to accrue on the full balance. The participant's accumulated contribution account is used as collateral against the loan. The Plan granted $6.0 million and $7.4 million in loans to members during 2023 and 2022, respectively. Loan repayments by members amounted to $8.1 and $9.3 million in 2023 and 2022, respectively.

Upon termination of employment before retirement, certain participants are entitled to refunds of their own contributions including accumulated interest less any loans outstanding.

5. NET PENSION LIABILITY

The components of the net pension liability of the Plan at December 31, 2023 and 2022 was as follows (in thousands):

	December 31, 2023	December 31, 2022
Total pension liability	$ 4,685,055	$ 4,526,353
Fiduciary net position	3,810,475	3,310,110
Net pension liability	$ 874,580	$ 1,216,243
Fiduciary net position as a percentage of the total pension liability	81.33 %	73.13 %

Actuarial Methods and Assumptions - The total pension liability as of December 31, 2023 and 2022 was determined by actuarial valuations as of January 1, 2023 and January 1, 2022, respectively, that was updated to roll forward the total pension liability to year-end. Actuarial valuations are performed annually as of January 1.

Additional information of the latest actuarial valuation follows:

Valuation date	January 1, 2023
Actuarial cost method	Frozen initial liability (FIL) (1)
Amortization method	For FIL bases, 15 years for Fresh Start base as of January 1, 2020 and subsequent changes in actuarial assumptions and plan provisions. Future gains/ losses are amortized through the calculation of the normal cost in accordance with FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population
Actuarial asset valuation method	Actuarial value equals market value less unrecognized gains/losses over a 5-year period. Gains/losses are based on market value of assets
Mortality	Based on experience of all MTA-sponsored pension plan members from January 1, 2015 - December 31, 2020 reflecting mortality improvement on a generational basis using Scale MP-2021.
Actuarial Assumptions:	
Investment rate of return	6.50%, net of investment related expenses
Projected salary increases	Reflecting general wage, merit and promotion increases for operating and nonoperating members. Varies by years of employment.
Overtime	For operating employees, rates of overtime vary by years of service and are applied to base salary. For non-operating employees, assumed overtime is 3% of base pay regardless of years of the years of service. Overtime is for scheduled and unscheduled overtime. No overtime is applied to members receiving benefits upon death or disability or to members identified as managers.
Cost-of-living adjustments	60% of inflation assumption or 1.35% per annum, if applicable
Inflation	2.25% per annum

Valuation date	January 1, 2022
Actuarial cost method	Frozen initial liability (FIL) [(1)]
Amortization method	For FIL bases, 15 years for Fresh Start base as of January 1, mortality change and recognition of Chapter 56 laws of 2022. Future gains/ losses are amortized through the calculation of the normal cost in accordance with FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population
Actuarial asset valuation method	Actuarial value equals market value less unrecognized gains/losses over a 5-year period. Gains/losses are based on market value of assets
Mortality	Based on experience of all MTA-sponsored pension plan members from January 1, 2015 - December 31, 2020 reflecting mortality improvement on a generational basis using Scale MP-2021.
Actuarial Assumptions:	
Investment rate of return	6.50%, net of investment related expenses
Projected salary increases	Reflecting general wage, merit and promotion increases for operating and nonoperating members. Varies by years of employment.
Overtime	For operating employees, rates of overtime vary by years of service and are applied to base salary. For non-operating employees, assumed overtime is 3% of base pay regardless of years of the years of service. Overtime is for scheduled and unscheduled overtime. No overtime is applied to members receiving benefits upon death or disability or to members identified as managers.
Cost-of-living adjustments	60% of inflation assumption or 1.35% per annum, if applicable
Inflation	2.25% per annum

(1) Under this actuarial method, the initial liability has been established by the Entry Age Actuarial Cost Method for determining changes in the Unfunded Actuarial Accrued Liability (UAAL) due to plan provision and assumption changes.

Until the inception of the Tier 6 provisions in 2012, amendments enacted by State legislation in 2000 reflected the most significant changes to the plan and are summarized as follows:

For operating employees (Chapter 10 of the Laws of 2000):

- All operating employees are automatically included in the 2000 55/25 plan.
- Elimination of the 2.3% additional employees' contributions applicable to members of the 55/25 plan.
- Reduction in the Tier 3 and 4 employee contribution rates from 3.0% to 2.0%.

For managerial and non-operating employees (Chapter 126 of the Laws of 2000):

- Vesting under the Age 57 plan required only five years of service versus ten.
- As of October 1, 2000, regular Tier 3 and 4 employee contributions ceased after the completion of ten years of service.

For retired members (Chapter 125 of the Laws of 2000):

- Automatic cost-of-living adjustments (COLAs). The COLAs apply to retired members as follows:

Retirees at Least age	Retired or Receiving Benefits for at Least
62	5 years
55	10
Disabled retirees	5
Accidental death beneficiaries	5

- Initial COLA payable September 30, 2000, based on the first $18,000 of the maximum retirement allowance.
- Thereafter, annual COLAs of 50% of the increase in the consumer price index (CPI), but not less than 1% or more than 3%, of the first $18,000 of maximum retirement allowance will be payable.

The benefit enhancements, as well as the automatic COLA for retirees, were reflected in the actuarial valuation beginning with the January 1, 2000, valuation.

The Plan adopted several amendments during 2002 as a result of state legislation. Amendments included changes to the definition of active service for Tier 1 and Tier 2 members, extension of the phase-in period from five years to ten years for funding liabilities created by Chapter 125 of the Laws of 2000 and increased accidental disability benefits for Tier 3 and Tier 4 members.

The Plan also adopted the legislative provisions of Chapter 379, which allow current and former members of the Transport Workers Union, Local 100 and Transit Supervisors Organization, Local 106, with an accumulated balance of additional member contributions ("AMC") made in accordance with the MaBSTOA 55/25 Plan enacted in 1994, to apply for a refund of such contributions. The MaBSTOA Board additionally adopted legislative provisions of Chapter 428 of 2016, which provided eligible members a refund of the employee Additional Member Contributions made in the Tier 4 Age 57 and 5 Year Program and the Tier 4 Age 25 and Year 55 Early Retirement Program. AMC refunds amounted to approximately $1.0 million and $1.3 million for the years ended December 31, 2023 and 2022.

At December 31, 2023 and 2022, assets were available to fund 81.3% and 73.1%, of the unfunded actuarial accrued liability (UAAL) when measured using the Entry Age Normal Cost Method per GASB 67 and the market value of assets.

Calculation on Money-Weighted Rate of Return

The money-weighted rate of return considers the changing amounts actually invested during a period and weights the amount of pension plan investments by the proportion of time they are available to earn a return during that period. External cash flows are determined on a monthly basis and are assumed to occur at the middle of each month. External cash inflows are netted with external cash outflows, resulting in a net external cash flow in each month.

Schedule of Calculations of Money-Weighted Rate of Return

(In thousands)	Net External Cash Flows	Periods Invested	Period Weight	Net External Cash Flows With Interest
Beginning Value - January 1, 2023	$3,310,110	12.00	1.00	$3,702,406
Monthly net external cash flows:				
January	(20,150)	11.50	0.96	(22,437)
February	308,280	11.00	0.88	341,740
March	(20,150)	9.50	0.79	(22,014)
April	(20,150)	8.50	0.71	(21,818)
May	(20,150)	7.50	0.63	(21,623)
June	(20,150)	6.50	0.54	(21,406)
July	(20,150)	5.50	0.46	(21,215)
August	(20,150)	4.50	0.38	(21,026)
September	(20,150)	3.50	0.29	(20,815)
October	(20,150)	2.50	0.21	(20,630)
November	(20,150)	1.50	0.13	(20,446)
December	(20,150)	0.50	0.04	(20,241)
Ending Value - December 31, 2023				$3,810,475
Money-Weighted Rate of Return	11.85%			

Schedule of Calculations of Money-Weighted Rate of Return

(In thousands)	Net External Cash Flows	Periods Invested	Period Weight	Net External Cash Flows With Interest
Beginning Value - January 1, 2022	$3,658,351	12.00	1.00	$3,381,696
Monthly net external cash flows:				
January	(6,596)	11.50	0.96	(6,116)
February	(6,596)	10.50	0.88	(6,155)
March	(6,596)	9.50	0.79	(6,198)
April	(6,596)	8.50	0.71	(6,238)
May	(6,596)	7.50	0.63	(6,277)
June	(6,596)	6.50	0.54	(6,322)
July	(6,596)	5.50	0.46	(6,361)
August	(6,596)	4.50	0.38	(6,402)
September	(6,596)	3.50	0.29	(6,447)
October	(6,596)	2.50	0.21	(6,488)
November	(6,596)	1.50	0.13	(6,529)
December	(2,059)	0.50	0.04	(2,053)
Ending Value - December 31, 2022				$3,310,110
Money-Weighted Rate of Return	-7.56%			

Expected Rate of Return on Investments - The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of the December 31, 2023 and 2022 actuarial valuations are summarized in the following table:

SCHEDULE OF LONG TERM EXPECTED RATE OF RETURN FOR 2023

Asset Class	Index	Target Allocation*	Long-Term Expected Real Rate of Return
US Core Fixed Income (Aggregate)	Bloomberg Barclays Aggregate	10.50%	2.21%
US Long (11-30 Year) Treasury Bonds	Bloomberg US Treasury Long Treasury	2.00%	2.65%
US TIPS (Inflation-Indexed Bonds)	Bloomberg US Treasury US TIPS	2.00%	1.82%
US High Yield Bonds	ICE BofA US High Yield	3.00%	4.02%
US Bank/Leveraged Loans	Credit Suisse Leveraged Loan	1.50%	3.55%
Private Credit	CDL Index	7.00%	6.64%
Emerging Market Bonds	JPM EMBI Plus	2.00%	4.81%
US Large Caps	S&P 500	18.00%	5.38%
US Small Caps	Russell 2000	7.00%	6.94%
Foreign Developed Equity	MSCI EAFE NR	12.00%	6.92%
Emerging Market Equity	MSCI EM NR	4.50%	9.59%
Emerging Markets Small Cap Equity	MSCI EM Small NR	1.50%	9.78%
US REITs	FTSE Nareit All Equity REITs	1.00%	6.63%
Private Real Estate Property	NCREIF Property	4.00%	5.14%
Private Equity	Cambridge Associates US Private Equity	7.00%	10.46%
Commodities	Bloomberg Commodity	4.00%	3.11%
Hedge Funds - MultiStrategy	HFRI: Fund Wtd Composite	13.00%	4.39%
Total		100.00%	
Assumed Inflation - Mean			2.31%
Assumed Inflation - Standard Deviation			1.44%
Portfolio Nominal Mean Return			7.92%
Portfolio Standard Deviation			12.47%
Long-Term Expected Rate of Return selected by MTA			6.50%

* Based on October 2021 Investment Policy

SCHEDULE OF LONG TERM EXPECTED RATE OF RETURN FOR 2022

Asset Class	Index	Target Allocation*	Long-Term Expected Real Rate of Return
US Core Fixed Income (Aggregate)	Bloomberg Barclays Aggregate	10.50%	2.27%
US Long (11-30 Year) Treasury Bonds	Bloomberg US Treasury Long Treasury	2.00%	2.51%
US TIPS (Inflation-Indexed Bonds)	Bloomberg US Treasury US TIPS	2.00%	1.58%
US High Yield Bonds	ICE BofA US High Yield	3.00%	4.40%
US Bank/Leveraged Loans	Credit Suisse Leveraged Loan	1.50%	3.79%
Private Credit	CDL Index	7.00%	6.99%
Emerging Market Bonds	JPM EMBI Plus	2.00%	4.99%
US Large Caps	S&P 500	18.00%	5.64%
US Small Caps	Russell 2000	7.00%	7.25%
Foreign Developed Equity	MSCI EAFE NR	12.00%	6.90%
Emerging Market Equity	MSCI EM NR	4.50%	9.58%
Emerging Markets Small Cap Equity	MSCI EM Small NR	1.50%	9.81%
US REITs	FTSE Nareit All Equity REITs	1.00%	6.71%
Private Real Estate Property	NCREIF Property	4.00%	4.86%
Private Equity	Cambridge Associates US Private Equity	7.00%	10.74%
Commodities	Bloomberg Commodity	4.00%	2.96%
Hedge Funds - MultiStrategy	HFRI: Fund Wtd Composite	13.00%	4.52%
Total		100.00%	
Assumed Inflation - Mean			2.33%
Assumed Inflation - Standard Deviation			1.41%
Portfolio Nominal Mean Return			8.08%
Portfolio Standard Deviation			12.42%
Long-Term Expected Rate of Return selected by MTA			6.50%

* Based on October 2021 Investment Policy

Discount Rate—The discount rate used to measure the total liability as of December 31, 2023 and 2022 was 6.5%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that the Plans' contributions will be made in accordance with the statutory contributions determined by the Actuary. Based on those assumptions, the Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current and inactive plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate - The following presents the net pension liability of the Plan, calculated using the discount rate as of 2023 and 2022; as well as what the Plan's net pension would be if it were calculated using a discount rate that is 1-percentage point lower or 1-percentage point higher than the current rate for 2023 and 2022:

2023 (in thousands)	**1% Decrease 5.50%**	**Current Discount Rate 6.50%**	**1% Increase 7.50%**
Net pension liability	$ 1,403,484	$ 874,580	$ 426,535

2022 (in thousands)	**1% Decrease 5.50%**	**Current Discount Rate 6.50%**	**1% Increase 7.50%**
Net pension liability	$ 1,729,790	$1,216,243	$ 781,314

6. CUSTODIAL AND OTHER PROFESSIONAL SERVICES

JP Morgan Chase Bank is custodian and trustee of plan assets with the exception of Mellon asset management investments in which Mellon Bank N.A. is the custodian. JP Morgan Chase also provides cash receipt and cash disbursement services to the Plan. NEPC reviews the Plan's portfolio, the investment policies as adopted by the Investment Committee and the performance of the Investment Managers. NEPC also provides audit services for the Plan's equity portfolios. Actuarial services were provided to the Plan by Milliman Inc.

7. SUBSEQUENT EVENTS

As of October 22, 2024, a total payment of $133.2 million has been made for the 2025 projected ADC for MaBSTOA Pension Plan.

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REQUIRED SUPPLEMENTARY INFORMATION
(UNAUDITED)

MANHATTAN AND BRONX SURFACE TRANSIT OPERATING AUTHORITY PENSION PLAN

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
SCHEDULE OF CHANGES IN THE EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS
(in millions)

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total pension liability:										
Service cost	$ 100	$ 96	$ 94	$ 96	$ 90	$ 87	$ 85	$ 82	$ 77	$ 72
Interest	292	285	274	267	265	256	246	237	232	224
Changes of benefit terms	3	2	-	-	-	-	6	-	-	-
Differences between expected and actual experience	31	(21)	(19)	(1)	9	6	12	14	(69)	(2)
Changes of assumptions	-	-	72	-	169	-	-	-	-	-
Benefit payments and withdrawals	(267)	(258)	(246)	(238)	(221)	(214)	(209)	(188)	(180)	(175)
Net change in total pension liability	159	104	175	124	312	135	140	145	60	119
Total pension liability—beginning	4,526	4,422	4,246	4,123	3,811	3,676	3,536	3,391	3,331	3,212
Total pension liability—ending (a)	4,685	4,526	4,422	4,247	4,123	3,811	3,676	3,536	3,391	3,331
Plan fiduciary net position:										
Employer contributions	328	159	156	159	206	205	203	221	215	226
Employee contributions	26	26	25	25	24	22	20	18	16	15
Net investment income	414	(274)	416	56	447	(88)	350	212	(24)	105
Benefit payments and withdrawals	(267)	(258)	(246)	(238)	(221)	(214)	(209)	(188)	(180)	(175)
Administrative expenses	(1)	(1)	-	-	-	-	-	-	-	-
Net change in plan fiduciary net position	500	(348)	351	2	456	(75)	364	263	27	171
Plan fiduciary net position—beginning	3,310	3,658	3,307	3,300	2,844	2,919	2,555	2,292	2,265	2,094
Plan fiduciary net position—ending (b)	3,810	3,310	3,658	3,302	3,300	2,844	2,919	2,555	2,292	2,265
Employer's net pension liability—ending (a)-(b)	$ 875	$ 1,216	$ 765	$ 945	$ 823	$ 967	$ 757	$ 981	$ 1,099	$ 1,066
Plan fiduciary net position as a percentage of the total pension liability	81.33 %	73.13 %	82.73 %	77.76 %	80.05 %	74.63 %	79.40 %	72.26 %	67.58 %	68.00 %
Covered payroll	820	776	808	814	771	767	748	713	686	672
Employer's net pension liability as a percentage of covered payroll	106.60 %	156.83 %	94.54 %	116.01 %	106.67 %	126.11 %	101.32 %	137.54 %	160.30 %	158.74 %

Note: 2021 Plan fiduciary net position - beginning is adjusted for the Plan's 2020 Q4 Private Markets values.

MANHATTAN AND BRONX SURFACE TRANSIT OPERATING AUTHORITY PENSION PLAN

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
SCHEDULE OF EMPLOYER CONTRIBUTIONS
(in thousands)

Fiscal Year Ending December 31,	Actuarially Determined Contribution	Actual Employer Contribution	Contribution Deficiency/ (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2014	$ 226,374	$ 226,374	$ -	$ 671,633	33.70 %
2015	214,881	214,881	-	685,998	31.32
2016	220,486	220,697	(211)	713,280	30.94
2017	202,897	202,684	213	747,651	27.11
2018	202,509	205,433	(2,924)	766,562	26.80
2019	209,314	206,390	2,924	771,201	26.76
2020	159,486	159,486	-	813,994	19.59
2021	156,204	156,204	-	807,756	19.34
2022	158,618	158,618	-	775,512	20.45
2023	170,033	328,430	(158,397)	820,468	40.03

(continued)

MANHATTAN AND BRONX SURFACE TRANSIT OPERATING AUTHORITY PENSION PLAN **SCHEDULE II**

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
SCHEDULE OF EMPLOYER CONTRIBUTIONS

Note to Schedule II:
The more significant actuarial assumptions and methods used in the calculation of employer contributions to the Plan are as follows:

Valuation Dates	January 1, 2023	January 1, 2022	January 1, 2021	January 1, 2020	January 1, 2019
Actuarial cost method	Frozen initial liability (FIL) (1)	Frozen initial liability (FIL) (1)	Frozen initial liability (FIL) (1)	Frozen initial liability (FIL) (1)	Frozen initial liability (FIL) (1)
Amortization method	For FIL bases, 15 years for Fresh Start base as of January 1, 2020 and subsequent changes in actuarial assumptions and plan provisions. Future gains/ losses are amortized through the calculation of the normal cost in accordance with FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population	For FIL bases, 15 years for Fresh Start base as of January 1, mortality change and recognition of Chapter 56 laws of 2022. Future gains/ losses are amortized through the calculation of the normal cost in accordance with FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population	For FIL bases, 15 years for Fresh Start base as of January 1, 2020. Future gains/ losses are amortized through the calculation of the normal cost in accordance with FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population	For FIL bases, period specified in current valuation report. Future gains/losses are amortized through the calculation of the normal cost in accordance with the FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population	For FIL bases, period specified in current valuation report. Future gains/losses are amortized through the calculation of the normal cost in accordance with the FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population
Actuarial asset valuation method	Actuarial value equals market value less unrecognized gains/losses over a 5-year period. Gains/losses are on market value of assets	Actuarial value equals market value less unrecognized gains/losses over a 5-year period. Gains/losses are on market value of assets	Actuarial value equals market value less unrecognized gains/losses over a 5-year period. Gains/losses are on market value of assets	Actuarial value equals market value less unrecognized gains/losses over a 5-year period. Gains/losses are based on market value of assets	Actuarial value equals market value less unrecognized gains/losses over a 5-year period. Gains/losses are based on market value of assets
Interest rate	Net rate of 6.5% for 2023, per annum, net of investment expenses	Net rate of 6.5% for 2022, per annum, net of investment expenses	Net rate of 6.5% for 2021, per annum, net of investment expenses	Net rate of 6.5% for 2020, per annum, net of investment expenses	Net rate of 6.5% for 2019, per annum, net of investment expenses
Inflation	2.25% per annum	2.25% per annum	2.25% per annum	2.25% per annum	2.25% per annum
Deaths after retirement	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience
Separations other than for normal retirement	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience
Rates of normal retirement	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan. All members are assumed to retire by age 80	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan. All members are assumed to retire by age 80	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan. All members are assumed to retire by age 80	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan. All members are assumed to retire by age 80	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan. All members are assumed to retire by age 80
Salary increases	Reflecting general wage, merit and promotion increases for operating and nonoperating members. Varies by years of employment.	Reflecting general wage, merit and promotion increases for operating and nonoperating members. Varies by years of employment.	Reflecting general wage, merit and promotion increases for operating and nonoperating members. Varies by years of employment.	Reflecting general, merit and promotion increases of 3.5% to 4.0% per year for operating and non-operating employees, repectively. Larger increases are assured in the first 5 years of a member's career.	Reflecting general, merit and promotion increases of 3.5% to 4.0% per year for operating and non-operating employees, repectively. Larger increases are assured in the first 5 years of a member's career.
Overtime	For operating employees, rates of overtime vary by years of service. For non-operating employees, assumed overtime is 3% of base pay regardless of the years of service. Overtime is for scheduled and unscheduled overtime. No overtime is applied to members receiving benefits upon death or disability or to members identified as managers.	For operating employees, rates of overtime vary by years of service. For non-operating employees, assumed overtime is 3% of base pay regardless of the years of service. Overtime is for scheduled and unscheduled overtime. No overtime is applied to members receiving benefits upon death or disability or to members identified as managers.	Except for managerial employees, 8.5% of base salary for operating employees and 2.0% of base salary for nonoperating employees, with different assumptions used in the year before retirement. For Tier 6 members, all overtime was assumed to be less than overtime cap	Except for managerial employees, 8.5% of base salary for operating employees and 2.0% of base salary for nonoperating employees, with different assumptions used in the year before retirement. For Tier 6 members, all overtime was assumed to be less than overtime cap	Except for managerial employees, 8.5% of base salary for operating employees and 2.0% of base salary for nonoperating employees, with different assumptions used in the year before retirement. For Tier 6 members, all overtime was assumed to be less than overtime cap
Cost-of-living adjustments	60% of inflation assumption or 1.35% per annum if applicable (2)	60% of inflation assumption or 1.35% per annum if applicable (2)	60% of inflation assumption or 1.35% per annum if applicable (2)	60% of inflation assumption or 1.35% per annum if applicable (2)	60% of inflation assumption or 1.35% per annum if applicable (2)
Provision for expenses	An average of the prior two years' administrative charges added to the normal cost	An average of the prior two years' administrative charges added to the normal cost	An average of the prior two years' administrative charges added to the normal cost	An average of the prior two years' administrative charges added to the normal cost	An average of the prior two years' administrative charges added to the normal cost

(1) Under this actuarial method, the initial liability has been established by the Entry Age Actuarial Cost Method for determining changes in the Unfunded Actuarial Accrued Liability (UAAL) due to plan provision and assumption changes.
(2) Assumes a long-term consumer price inflation assumption of 2.5% per annum, compounded annually.

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
SCHEDULE OF EMPLOYER CONTRIBUTIONS

Note to Schedule II:
The more significant actuarial assumptions and methods used in the calculation of employer contributions to the Plan are as follows:

Valuation Dates	January 1, 2018	January 1, 2017	January 1, 2016	January 1, 2015	January 1, 2014
Actuarial cost method	Frozen initial liability (FIL) (1)	Frozen initial liability (FIL) (1)	Frozen initial liability (FIL) (1)	Frozen initial liability (FIL) (1)	Frozen initial liability (FIL) (1)
Amortization method	For FIL bases, period specified in current valuation report. Future gains/losses are amortized through the calculation of the normal cost in accordance with the FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population	For FIL bases, period specified in current valuation report. Future gains/losses are amortized through the calculation of the normal cost in accordance with the FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population	For FIL bases, period specified in current valuation report. Future gains/losses are amortized through the calculation of the normal cost in accordance with the FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population	For FIL bases, period specified in current valuation report. Future gains/losses are amortized through the calculation of the normal cost in accordance with the FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population	For FIL bases, period specified in current valuation report. Future gains/losses are amortized through the calculation of the normal cost in accordance with the FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population
Actuarial asset valuation method	Actuarial value equals market value less unrecognized gains/losses over a 5-year period. Gains/losses are based on market value of assets	Actuarial value equals market value less unrecognized gains/losses over a 5-year period. Gains/losses are based on market value of assets	Actuarial value equals market value less unrecognized gains/losses over a 5-year period. Gains/losses are based on market value of assets	Actuarial value equals market value less unrecognized gains/losses over a 5-year period. Gains/losses are based on market value of assets	Actuarial value equals market value less unrecognized gains/losses over a 5-year period. Gains/losses are based on market value of assets
Interest rate	Net rate of 7.0% for 2018, per annum, net of investment expenses	Net rate of 7.0% for 2017, per annum, net of investment expenses	Net rate of 7.0% for 2016, per annum, net of investment expenses	Net rate of 7.0% for 2015, per annum, net of investment expenses	Net rate of 7.0% for 2014, per annum, net of investment expenses
Inflation	2.5% per annum	2.5% per annum	2.5% per annum	2.5% per annum	2.5% per annum
Deaths after retirement	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience
Separations other than for normal retirement	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience
Rates of normal retirement	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan. All members are assumed to retire by age 80	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan. All members are assumed to retire by age 80	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan. All members are assumed to retire by age 80	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan. All members are assumed to retire by age 80	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan. All members are assumed to retire by age 80
Salary increases	Reflecting general, merit and promotion increases of 3.5% to 4.0% per year for operating and non-operating employees, repectively. Larger increases are assured in the first 5 years of a member's career.	Reflecting general, merit and promotion increases of 3.5% to 4.0% per year for operating and non-operating employees, repectively. Larger increases are assured in the first 5 years of a member's career.	In general, merit and promotion increases plus assumed general wage increases of 3.5% to 15.0% for operating employees and 4.0% to 7.0% for nonoperating employees per year, depending on years of service	In general, merit and promotion increases plus assumed general wage increases of 3.5% to 15.0% for operating employees and 4.0% to 7.0% for nonoperating employees per year, depending on years of service	In general, merit and promotion increases plus assumed general wage increases of 3.5% to 15.0% for operating employees and 4.0% to 7.0% for nonoperating employees per year, depending on years of service
Overtime	Except for managerial employees, 8.5% of base salary for operating employees and 2.0% of base salary for nonoperating employees, with different assumptions used in the year before retirement. For Tier 6 members, all overtime was assumed to be less than overtime cap	Except for managerial employees, 8.5% of base salary for operating employees and 2.0% of base salary for nonoperating employees, with different assumptions used in the year before retirement. For Tier 6 members, all overtime was assumed to be less than overtime cap	Except for managerial employees, 8.5% of base salary for operating employees and 2.0% of base salary for nonoperating employees, with different assumptions used in the year before retirement. For Tier 6 members, all overtime was assumed to be less than overtime cap	Except for managerial employees, 8.5% of base salary for operating employees and 2.0% of base salary for nonoperating employees, with different assumptions used in the year before retirement. For Tier 6 members, all overtime was assumed to be less than overtime cap	Except for managerial employees, 8.5% of base salary for operating employees and 2.0% of base salary for nonoperating employees, with different assumptions used in the year before retirement. For Tier 6 members, all overtime was assumed to be less than overtime cap
Cost-of-living adjustments	55% of inflation assumption or 1.375% per annum if applicable (2)	55% of inflation assumption or 1.375% per annum if applicable (2)	55% of inflation assumption or 1.375% per annum if applicable (2)	55% of inflation assumption or 1.375% per annum if applicable (2)	55% of inflation assumption or 1.375% per annum if applicable (2)
Provision for expenses	An average of the prior two years' administrative charges added to the normal cost	An average of the prior two years' administrative charges added to the normal cost	An average of the prior two years' administrative charges added to the normal cost	An average of the prior two years' administrative charges added to the normal cost	An average of the prior two years' administrative charges added to the normal cost

(1) Under this actuarial method, the initial liability has been established by the Entry Age Actuarial Cost Method for determining changes in the Unfunded Actuarial Accrued Liability (UAAL) due to plan provision and assumption changes.
(2) Assumes a long-term consumer price inflation assumption of 2.5% per annum, compounded annually.

MANHATTAN AND BRONX SURFACE TRANSIT OPERATING AUTHORITY PENSION PLAN

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
SCHEDULE OF INVESTMENT RETURNS

The money-weighted rate of return considers the changing amounts actually invested during a period and weights the amount of pension plan investments by the proportion of time they are available to earn a return during that period. The following table displays the annual money-weighted rate of return calculated net of investment expense for the Plan for:

Fiscal Year Ended December 31	Annual Money-Weighted Rate of Return
2014	4.95
2015	(1.05)
2016	9.16
2017	13.67
2018	(3.01)
2019	15.71
2020	1.84
2021	12.71
2022	(7.56)
2023	11.85