Manhattan and Bronx Surface Transit Operating Authority Pension Plan

Financial Statements as of and for the
Years Ended December 31, 2022 and 2021,
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, 2022 and 2021, 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, 2022 and 2021, 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

September 27, 2023

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, 2022 and 2021. 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 -** provides 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, 2022, 2021 and 2020
(Dollars in thousands)

				Increase/Decrease			
				2022-2021		2021-2020	
	2022	2021	2020	$	%	$	%
Cash and investments	$ 3,293,020	$ 3,642,774	$ 3,281,332	$ (349,754)	(9.6)%	$ 361,442	11.0 %
Receivables and other assets	29,943	33,360	33,997	(3,417)	(10.2)	(637)	(1.9)
Total assets	**$ 3,322,963**	**$ 3,676,134**	**$ 3,315,329**	**$ (353,171)**	**(9.6)**	**$ 360,805**	**10.9**
Payable for investment securities purchased	3,592	5,620	4,317	(2,028)	(36.1)	1,303	30.2
Other liabilities	9,261	12,163	8,920	(2,902)	(23.9)	3,243	36.4
Total liabilities	**12,853**	**17,783**	**13,237**	**(4,930)**	**(27.7)**	**4,546**	**34.3**
Net position restricted for pensions	**$ 3,310,110**	**$ 3,658,351**	**$ 3,302,092**	**$ (348,241)**	**(9.5)%**	**$ 356,259**	**10.8 %**

December 31, 2022 versus December 31, 2021

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.

December 31, 2021 versus December 31, 2020

Cash and investments at December 31, 2021, were $3,642.8 million, an increase of $361.4 million or 11.0% from 2020. This increase is a result of investment activity in 2021 and plan contributions net of benefit payments and expenses during 2021.

Receivables and other assets less plan liabilities at December 31, 2021 decreased by $5.2 million or 25.0%. The decrease for 2021 compared with 2020 is a result of refunds owed for Tier 6 contribution overpayments and 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 increased by $356.3 million or 10.8% in 2021 as a result of the various changes noted above.

**Changes in Fiduciary Net Position
For the Years Ended December 31, 2022, 2021 and 2020
(Dollars in thousands)**

				Increase/Decrease			
				2022-2021		2021-2020	
	2022	2021	2020	$	%	$	%
Additions:							
Net investment (loss) / income	$ (273,627)	$ 420,811	$ 59,341	$ (694,438)	(165.0)%	$ 361,470	609.1 %
Transfers and contributions	184,166	181,139	184,195	3,027	1.7	(3,056)	(1.7)
Total net additions	**(89,461)**	**601,950**	**243,536**	**(691,411)**	**(114.9)**	**358,414**	**147.2**
Deductions:							
Benefit payments	257,974	243,252	237,930	$ 14,722	6.1	$ 5,322	2.2
Tier 6 remediation (Refund of employee contributions)	-	2,175	-	(2,175)	(100.0)	2,175	100.0
Administrative expenses	806	264	244	542	205.3	20	8.2
Total deductions	**258,780**	**245,691**	**238,174**	**13,089**	**5.3**	**7,517**	**3.2**
Net increase	**(348,241)**	**356,259**	**5,362**	**(704,500)**	**(197.7)**	**350,897**	**6,544.1**
Net position restricted for pensions:							
Beginning of year	3,658,351	3,302,092	3,296,730	356,259	10.8	5,362	0.2
End of year	**$ 3,310,110**	**$ 3,658,351**	**$ 3,302,092**	**$ (348,241)**	**(9.5)%**	**$ 356,259**	**10.8 %**

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.

December 31, 2021 versus December 31, 2020

Net investment income increased by $361.5 million in 2021 due to higher net investment gains of $420.8 million in 2021 versus net investment gains of $59.3 million in 2020.

Contributions decreased by $3.1 million or 1.7% in 2021 compared to 2020, as a result of the Actuarial Determined Contributions ("ADC") and member contributions.

Benefit payments increased by $5.3 million or 2.2% 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.

Administrative expenses increased by $20 thousand or 8.2% compared to 2020. This increase was due to an increase in fees for services provided to the Plan.

Economic Factors

Market Overview – 2022

The year 2022 was a tumultuous year for markets and was characterized by heightened inflation, tightened monetary policies, skyrocketing interest rates, and geopolitical tensions such as Russia's invasion of Ukraine and China's aggressive posturing towards Taiwan. Following the strong global economic recovery of the previous year, the economic conditions in 2022 brought with it historically volatile oil and gas prices, suppression of global economic growth rate forecasts, and tremendous uncertainty. Heightened interest rates and hawkish policy adopted by the Federal Reserve gave people far less access to money and reduced buying power. Personal income decreased, while personal consumption expenditures and the U.S unemployment rate remained favorable. Global assets broadly declined, volatility metrics increased, home affordability fell materially, and a sharply inverted yield curve echoed the market's stagflation and recession concerns.

While initially expected to be transitory by the Federal Reserve, U.S. inflation reached a 40-year high in 2022, as large consumer demand was curbed by pandemic and geopolitical related supply constraints. The Federal Reserve raised the federal funds rate by a total of 425 bps throughout the year, such a pace has not been seen since the 1980s, leading to an unprecedented decline in bond prices. The European Central Bank, which was formed in 1998, hiked rates at such a pace that have never been seen in its history as well. Energy prices rose by over 35% for the year, driven by export sanctions on Russia as a result of the Russia-Ukraine war.

Except for commodities, global risk assets plummeted across the board. The strong shift upwards in correlations between equity and fixed income markets resulted in the one of the worst years for the 60/40 equity bond mix portfolio that we have ever seen. With few places to hide in 2022, investors may look to expand alternative asset allocations moving forward. In foreign exchange markets, the U.S. Dollar strengthened considerably, posting very significant gains against the Euro, the Yen, and most other currencies.

Macro Themes

- Stagflation Trends
- Recession Outlook
- European Energy Transition
- China's Reopening
- U.S. Dollar Trajectory

United States

The U.S. economy tumbled from a 5.9% increase in Real GDP in 2021 to a 2.1% increase in 2022. The unemployment rate continued to fall, finishing 2022 at 3.5% compared to 3.9% in 2021. Consumer Prices rose 6.5% in 2022 and CPI peaked at 9.1% in June 2022, while core inflation, excluding the volatile food and energy components, rose 5.7%.

U.S. equities were negative across the board, with the S&P 500 and Russell 1000 indices posting returns of (-18.1%) and (-19.1%), respectively. Across market caps, Large Cap, as measured by the S&P 500 (-18.1%), Mid Cap, as measured by the S&P 400 (-13.1%), and Small Cap, as measured by the Russell 2000 (-20.4%) all posted double digit negative returns. Across styles, Growth, as measured by the Russell 1000 Growth (-29.1%) significantly underperformed Value, as measured by the Russell 1000 Value (-7.5%).

U.S. Treasury yields drastically increased in 2022 and the yield curve inverted amid elevated inflation and the shift to a hawkish Federal Reserve policy. Credit spreads were volatile in 2022 and slightly widened for the year. Diversified fixed income returned (-13.0%) (Bloomberg U.S. Aggregate Index), with losses dominated by long U.S. Treasuries at (-29.3%) (Bloomberg Long Treasury Index) and Credit at (-15.3%) (Bloomberg Credit Index). Negative returns of (-11.8%) were realized in Treasury Inflation Protected Securities (Bloomberg TIPS Index) and of (-11.2%) in High Yield (Bloomberg High Yield Index).

International Developed

International developed equity markets posted weak results in 2022, but outperformed the U.S. equity markets, returning (-14.5%) as measured by the MSCI EAFE Index. Both European and Japanese equities had negative performance in 2022 with the MSCI Europe Index returning (-14.5%) and the MSCI Japan Index returning (-16.3%). The Small Cap portion of international developed markets posted far weaker returns in 2022 (-21.0%) as compared to 2021 (+10.5%).

Emerging Markets

Emerging markets posted weak returns in 2022, underperforming both the U.S. and international developed equity markets. The broad MSCI Emerging Market Index returned (-20.1%) for the year. The underperformance was led by Asian Markets and the removal of Russia from the Index, given that major index providers deemed Russia not investable following the Russian invasion of Ukraine. Geopolitical tensions, inflationary pressures, and a strong US dollar dampened sentiment in developing countries despite higher commodity prices.

The bond markets of emerging markets underperformed in 2022. Both hard currency and local currency bonds posted negative returns. Hard currency bonds, predominately issued in U.S. Dollars, as represented by the JPMorgan EMBI Global Diversified Index, returned (-17.8%) in 2022. Local currency bonds, represented by the JPMorgan GBI-EM Global Diversified Index, returned (-11.7%) for the year.

Commodities

The S&P Goldman Sachs Commodity Index (GSCI) jumped 26.0%, largely influenced by a 20% increase in natural gas prices. Commodity prices were extremely volatile in 2022 with the GSCI surging 52.1% from January through May and then cooling for the rest of the year. Industrial metals were the laggards in this category, with Aluminum being down over 16% for 2022.

Market Outlook – 2023

Through the first quarter of 2023, equity markets were mostly higher with gains in the low to mid-single digits. Growth equities and Developed International equities have led the way, recovering some of their 2022 losses. Fixed income markets also had a good start to the year with most markets up low single digits. The Fed was still increasing rates, but at a slower pace. The only negative spot was in the commodities markets, with the GSCI down (-4.9%). This year is expected to be less tumultuous than 2022, but an unfavorable macroeconomic backdrop still looms.

2023's macroeconomic backdrop will likely be dominated by recession risk, the Russia-Ukraine war, tight monetary policy, elevated inflation pressure and the regional bank failures, all of which are expected to impact economic growth negatively. With global central banks no longer accommodative, a "V" shaped recovery seems unlikely. Global growth expectations have a high degree of uncertainty as investors weigh the possibilities of more banking failures, the U.S raising its debt limit, China's re-opening with the abandonment of the "Zero-COVID" policy, and the escalation of the Russia-Ukraine war.

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, 2022 AND 2021
(In thousands)

	2022	2021
ASSETS:		
Cash	$ 3,694	$ 11,821
Receivables:		
Investment securities sold	1,634	5,532
Interest and dividends	1,787	1,746
Employee loans	26,522	26,082
Total receivables	29,943	33,360
Investments at fair market value (Notes 2 and 3):		
Investments measured at readily determinable fair value	753,868	871,835
Investments measured at net asset value	2,535,458	2,759,118
Total investments	3,289,326	3,630,953
Total assets	3,322,963	3,676,134
LIABILITIES:		
Accounts payable	474	1,565
Payable for investment securities purchased	3,592	5,620
Accrued benefits payable	75	50
Tier 6 remediation (Refund of employee contributions) payable	466	1,296
Accrued Post Retirement Death Benefits (PRDB) payable	5,719	5,405
Accrued 55/25 Additional Members Contribution (AMC) payable	2,527	3,847
Total liabilities	12,853	17,783
NET POSITION RESTRICTED FOR PENSIONS	$ 3,310,110	$ 3,658,351

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, 2022 AND 2021 (In thousands)

	2022	2021
ADDITIONS:		
Investment income:		
Interest income	$ 10,719	$ 8,197
Dividend income	45,924	42,762
Net (depreciation) / appreciation in fair value of investments	(307,355)	401,057
Total investment (loss) / income	(250,712)	452,016
Less investment expenses	22,915	31,205
Net investment (loss) / income	(273,627)	420,811
Contributions (Note 4):		
Employer contributions	158,618	156,204
Employee contributions	25,548	24,935
Total contributions	184,166	181,139
Total (subtractions) / additions	(89,461)	601,950
DEDUCTIONS:		
Benefit payments and withdrawals	257,974	243,251
Tier 6 remediation (Refund of employee contributions)	-	2,175
Administrative expenses	806	265
Total deductions	258,780	245,691
NET (DECREASE) / INCREASE IN NET POSITION	(348,241)	356,259
NET POSITION RESTRICTED FOR PENSIONS:		
Beginning of year	3,658,351	3,302,092
End of year	$ 3,310,110	$ 3,658,351

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.

As of January 1, 2022, 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, in order to afford managerial and non-represented MaBSTOA employees the same pension rights as like title employees in the Transit Authority, membership in the MaBSTOA Plan is optional.

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, 2022 and 2021, the date of the latest actuarial valuation:

	2022	2021
Active and inactive members	8,363	8,533
Retirees and beneficiaries currently receiving benefits	6,192	6,020
Vested formerly active members not yet receiving benefits	1,172	1,125
Total members	15,727	15,678

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, 2022 and 2021, the Plan paid $19.5 million and $17.4 million in post-retirement benefits and accrued an additional $5.7 million and $5.4 million 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 10 years of credited service; increased from 5 years of credited service under Tier 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.

- Adjustments to the Final Average Salary ("FAS") calculation changed from an average of the final 3 years to an average of the final 5 years. Pensionable overtime capped at $15,000 per year plus an inflation factor ($18,233 for 2022 and $17,301 for 2021).

- 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 \$290,000 for 2021 and \$305,000 for 2022. In addition, the government plan limit applies to members hired prior to January 1, 1996 and is \$430,000 for 2021 and \$450,000 for 2022.
4. Credited Service	Credited Service is credited full-time employment from date of hire.

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 2021, the maximum benefit is $230,000 and for 2022 it is $245,000.

8. Changes in Plan Provisions Since Prior Valuation

Chapter 783 of the Laws of 2022 extended the expiration date of the New York COVID-19 Accidental Death Benefit until December 31, 2024, and it is anticipated that the extension will be adopted for the Plan.

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, 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 5% per year, to a maximum reduction of 50% at age 70 or later. Accumulated regular member contributions with interest. 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 age 60.

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	None

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 completed less than 20 years of credited service, the benefit upon attainment of age 62 equals 1-2/3% of Final Average Compensation multiplied by years of credited service. If completed between 20 and 25 years of service, the benefit upon attainment of age 62 equals 2% of Final Average Compensation multiplied by years of credited service. If at least 25 years of credited service is completed, the benefit equals 2.0% of Final Average Compensation for the first 30 years of credited service plus 1.5% of Final Average Compensation for years of credited service in excess of 30. If age 62 with at least 20 years of credited service is completed, the benefit equals 2.0% of Final Average Compensation for the first 30 years of credited service plus 1.5% of Final Average Compensation for 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 at a rate of 5.0% is also payable.

(b) Termination Benefits

(i) Refund of Contributions

Eligibility: Less than 10 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 if credited service is less than 25 years, else the benefit is deferred until age 55 for operating employees only. For non-operating employees the benefit is payable at age 62 with less than 25 years or if both age and service has not been fulfilled. 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) 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 completed years of credited service up to 3 years of service. After age 60, the benefit is reduced 5% per year, to a maximum reduction of 50% at age 70 or later. 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 age 60.

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	None

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 10 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 5% per year, to a maximum reduction of 50% at age 70 or later. 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 age 60.
(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	None

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 $18,233 for 2022. 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 10 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 5% per year, to a maximum reduction of 50% at age 70 or later. 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 age 60.

(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 applicable plan year based on following table. For first three years, a projection of annual wages will be 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

Passage of Chapter 56 of the Laws of 2022 decreased the vesting requirement. Chapter 56 of the Laws of 2022 also eliminated overtime from the determination of pensionable wages for purposes of determining the applicable contribution rate from April 1, 2022 to December 31, 2024. It is anticipated that Chapter 56 of the Laws of 2022 will be adopted for the Plan for Tier 6 members.

VII. Tier 6—Age 63 and 10 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 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 $17,301 for 2021. 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 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 10 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 5% per year, to a maximum reduction of 50% at age 70 or later. 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 age 60.

(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. For first three years, a projection of annual wages will be used. The rate for the plan 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

Passage of Chapter 56 of the Laws of 2022 decreased the vesting requirement. Chapter 56 of the Laws of 2022 also eliminated overtime from the determination of pensionable wages for purposes of determining the applicable contribution rate from April 1, 2022 to December 31, 2024. It is anticipated that Chapter 56 of the Laws of 2022 will be adopted for the Plan for Tier 6 members.

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, 2022:

GASB Statement No. 92, *Omnibus 2020.*The objectives of this Statement are to enhance comparability in accounting and financial reporting and to improve the consistency of authoritative literature by addressing practice issues that have been identified during implementation and application of certain GASB Statements. This Statement addresses a variety of topics and includes specific provisions about the following:

- Reporting of intra-entity transfers of assets between a primary government employer and a component unit defined benefit pension plan or defined benefit other postemployment benefit (OPEB) plan
- The applicability of Statements No.73, Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68, as amended, and No. 74, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans, as amended, to reporting assets accumulated for postemployment benefits
- The applicability of certain requirements of Statement No. 84, Fiduciary Activities, to postemployment benefit arrangements
- Measurement of liabilities (and assets, if any) related to asset retirement obligations (AROs) in a government acquisition
- Reporting by public entity risk pools for amounts that are recoverable from reinsurers or excess insurers
- Reference to nonrecurring fair value measurements of assets or liabilities in authoritative literature
- Terminology used to refer to derivative instruments.

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

Recent Accounting Pronouncements - Not yet adopted but currently being reviewed

GASB Statement No.	GASB Accounting Standard	MTA Pension Plan Required Year of Adoption
96	*Subscription-based Information Technology Arrangements*	2023
99	*Omnibus 2022*	2023
100	*Accounting Changes and Error Corrections*	2024
101	*Compensated Absences*	2024

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, 2022.

Asset Class	Target Allocation (%)	Target Range (%)	Policy Benchark
Equities	**29.0**	**24-34**	
Domestic Large Cap	10.0	5-15	S&P 500
Domestic Small Cap	5.5	2-10	Russell 2000
International Developed Markets Equities	10.0	5-15	MSCI EAFE
Emerging Markets Equities	3.5	2-6	MSCI Emerging Markets
Fixed Income	**15.0**	**9-21**	Manager Specific
Global Asset Allocation*	**20.0**	**15-33**	50% World Equity/ 50% Citigroup WGBI unhedged
Opportunistic Investments	**6.0**	**0-15**	Manager Specific
Absolute Return	**15.0**	**10-22**	Manager Specific
Real Assets	**5.0**	**0-10**	Manager Specific
Real Estate	**3.0**	**0-10**	Manager Specific
Private Equity	**7.0**	**0-10**	Venture Economics
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 Plan is to achieve the actuarial return target with an appropriate risk position.

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.

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. It is anticipated that the majority of investment managers will be funded through commingled funds, however, in some cases (likely equity and fixed income mandates) separate account vehicles may be utilized. 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 Investment Managers

- 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 manager 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 manager account for the securities of any non-governmental issuer shall not constitute more than 5% at market at any time.

Equity Investment Managers

- 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 manager account may hold no more than 8% at market or 1.5x the manager's benchmark weight (whichever is greater) of any single company's stock.

Overlay Manager(s)

- 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 a futures overlay manager. The overlay manager shall use exchange traded futures contracts 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 through the use of futures contracts,
    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:

- Opportunistic
- 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,
- 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; therefore, the Board, with assistance of the investment advisor, will assess and monitor the investments 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.

Impact of COVID-19 - In March 2020, the World Health Organization classified the COVID-19 outbreak as a pandemic. As a result, global financial markets have experienced, and may continue to experience, significant volatility resulting from the spread of COVID-19. The values of the Plan's individual investments have and will fluctuate in response to changing market conditions and therefore, the amount of losses that will be recognized in subsequent periods, if any, cannot be determined. The extent of the impact of COVID-19 on the Plan's net assets available for benefits and contributions will depend on future developments, including the duration and continued spread of the outbreak. The full impact of the COVID-19 outbreak continues to evolve as of the date of this report.

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, 2022 and 2021:

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			

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

	December 31, 2021	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	$ 174,438	$ 174,438	$ -	$ -
Separate account small-cap equity funds	240,548	240,548	-	-
Separate account small-Real Estate Investments Trusts	42,161	42,161	-	-
Total equity investments	457,147	457,147	-	-
Debt Securities				
Mutual funds	155,122	155,122	-	-
Separate account - opportunistic credit/Private debt	43,921	-	43,921	-
Separate account debt funds	215,645	-	215,645	-
Total debt investments	414,688	155,122	259,566	-
Total investments by fair value	$ 871,835	$ 612,269	$ 259,566	$ -

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

	December 31, 2021	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Equity Securities:				
Commingled large cap equity funds	$ 338,686	$ -	Daily	None
Commingled international equity funds	511,245	-	Daily	None
Commingled emerging market equity funds	187,871	-	Daily, monthly	None
Total equity investments measured at the NAV	1,037,802	-		
Debt Securities				
Commingled debt funds	159,687	-	Daily, monthly, quarterly	None
Total debt investments measured at the NAV	159,687	-		
Absolute return:				
Direct lending	126,001	23,384	Bi-annually	60 plus days
Distressed securities	23,025	-	Not eligible	N/A
Credit long	33,286	-	Quarterly	3-30 days
Credit long/short	805	-	Quarterly	3-60 days
Hedge funds of funds	261,982	-	Quarterly	3-60 days
Event driven	2,616	2,094	Quarterly	60-120 days
Global tactical asset allocation	66,591	-	Daily, monthly	3-30 days
Multistrategy	6,227	-	Quarterly	3-60 days
Risk parity	102,732	-	Monthly	3-30 days
Total absolute return measured at the NAV	623,265	25,478		
Private equity - private equity partnerships	303,928	150,793	Not eligible	N/A
Commingled real estate funds	83,863	-	Not eligible	N/A
Real assets:				
Commingled commodities fund	73,789	-	Not eligible	N/A
Energy	87,955	26,387	Not eligible	N/A
Infrastructure	14,749	3,082	Not eligible	N/A
Shipping	14,546	1,355	Not eligible	N/A
Total real assets measured at the NAV	191,039	30,824		
Short term investments measured at the NAV	359,534	-		
Total investments measured at the NAV	2,759,118	$ 207,095		
Total investments at fair value	$ 3,630,953			

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, 2022 and 2021 is as follows:

(In thousands)	2022	2021
Investments at fair value as determined by quoted market prices:		
Johnston International	$ -	$226,448
Independent Franchise Partners	164,212	183,997
Robert W. Baird and Company	187,894	215,645
JPM - Short Term Investment Fund	-	297,390
Blackrock Hedge Index Fund	210,534	-
Rhumbline S & P 500 Index Fund	227,037	-

Credit Risk — At December 31, 2022 and 2021, the following credit quality rating has been assigned by a nationally recognized rating organization:

(In thousands) Quality Rating	2022 Fair Value	Percentage of Fixed Income Portfolio	2021 Fair Value	Percentage of Fixed Income Portfolio
AAA	$ 19,114	8.69 %	$ 19,309	7.67 %
AA	47,759	21.70	42,655	16.93
A	16,943	7.70	22,488	8.93
BBB	59,355	26.98	74,508	29.58
BB	4,956	2.25	8,173	3.24
B	-	-	453	0.18
CCC	448	0.20	1,497	0.60
Not Rated	35,114	15.96	32,378	12.85
Credit risk debt securities	183,689	83.48	201,461	79.98
U.S. Government bonds	36,353	16.52	50,435	20.02
Total fixed income securities	220,042	100.00 %	251,896	100.00 %
Other securities not rated — equity, international funds and foreign corporate bonds	3,069,284		3,379,057	
Total investments	$ 3,289,326		$ 3,630,953	

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)	2022 Fair Value	2022 Duration	2021 Fair Value	2021 Duration
Chase	$ 220,042	7.20	$ 251,896	6.21
Total fixed income securities	220,042		251,896	
Portfolio modified duration		7.20		6.21
Investments with no duration reported	$ 3,069,284		$ 3,379,057	
Total investments	$ 3,289,326		$ 3,630,953	

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, 2022 and 2021.

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 $158.6 and $156.2 million for the years ended December 31, 2022 and 2021, respectively. Employee contributions amounted to $25.5 million and $24.9 million for the years ended December 31, 2022 and 2021, 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 $7.4 million and $6.9 million in loans to members during 2022 and 2021, respectively. Loan repayments by members amounted to $9.3 and $10.9 million in 2022 and 2021, 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, 2022 and 2021 was as follows (in thousands):

	December 31, 2022	December 31, 2021
Total pension liability	$ 4,526,353	$ 4,422,018
Fiduciary net position	3,310,110	3,658,351
Net pension liability	$ 1,216,243	$ 763,667
Fiduciary net position as a percentage of the total pension liability	73.13 %	82.73 %

Actuarial Methods and Assumptions - The total pension liability as of December 31, 2022 and 2021 was determined by an actuarial valuation date of January 1, 2021, that was updated to roll forward the total pension liability to year-end. Actuarial valuations are performed annually as of January 1.

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

Additional information of the latest actuarial valuation follows:

Valuation date	January 1, 2021
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 period specified in current valu report for specific assumption changes. Future gain amortized through the calculation of the normal cos 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 pensio members from January 1, 2015 - December 31, 202 mortality improvement on a generational basis usin 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	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
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 $1.3 million and $796 thousand for the years ended December 31, 2022 and 2021.

At December 31, 2022 and 2021, assets were available to fund 73.1% and 82.7%, 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, 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%			

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, 2021	$3,306,615	12.00	1.00	$3,726,915
Monthly net external cash flows:				
January	(6,991)	11.50	0.96	(7,843)
February	(5,014)	10.50	0.88	(5,571)
March	(5,014)	9.50	0.79	(5,511)
April	(5,014)	8.50	0.71	(5,459)
May	(5,014)	7.50	0.63	(5,406)
June	(5,014)	6.50	0.54	(5,349)
July	(5,014)	5.50	0.46	(5,298)
August	(5,014)	4.50	0.38	(5,247)
September	(5,014)	3.50	0.29	(5,191)
October	(5,014)	2.50	0.21	(5,141)
November	(5,014)	1.50	0.13	(5,092)
December	(7,421)	0.50	0.04	(7,456)
Ending Value - December 31, 2021				$3,658,351
Money-Weighted Rate of Return	12.71%			

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, 2022 and 2021 actuarial valuations are summarized in the following table:

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

SCHEDULE OF LONG TERM EXPECTED RATE OF RETURN FOR 2021

Asset Class	Index	Target Allocation*	Long-Term Expected Real Rate of Return
US Core Fixed Income (Aggregate)	Bloomberg Barclays Aggregate	10.50%	1.39%
US Long (11-30 Year) Treasury Bonds	Bloomberg US Treasury Long Treasury	2.00%	1.16%
US TIPS (Inflation-Indexed Bonds)	Bloomberg US Treasury US TIPS	2.00%	0.60%
US High Yield Bonds	ICE BofA US High Yield	3.00%	3.92%
US Bank/Leveraged Loans	Credit Suisse Leveraged Loan	1.50%	3.49%
Private Credit	CDL Index	7.00%	6.93%
Emerging Market Bonds	JPM EMBI Plus	2.00%	3.98%
US Large Caps	S&P 500	18.00%	4.94%
US Small Caps	Russell 2000	7.00%	6.73%
Foreign Developed Equity	MSCI EAFE NR	12.00%	6.27%
Emerging Market Equity	MSCI EM NR	4.50%	8.82%
Emerging Markets Small Cap Equity	MSCI EM Small NR	1.50%	8.89%
US REITs	FTSE Nareit All Equity REITs	1.00%	5.60%
Private Real Estate Property	NCREIF Property	4.00%	4.61%
Private Equity	Cambridge Associates US Private Equity	7.00%	10.36%
Commodities	Bloomberg Commodity	4.00%	1.99%
Hedge Funds - MultiStrategy	HFRI: Fund Wtd Composite	13.00%	3.73%
Total		100.00%	
Assumed Inflation - Mean			2.30%
Assumed Inflation - Standard Deviation			1.23%
Portfolio Nominal Mean Return			7.39%
Portfolio Standard Deviation			12.15%
Long-Term Expected Rate of Return selected by MTA			6.50%

Discount Rate—The discount rate used to measure the total liability as of December 31, 2022 and 2021 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 2022 and 2021; 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 2022 and 2021:

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

2021 (in thousands)	**1% Decrease 5.50%**	**Current Discount Rate 6.50%**	**1% Increase 7.50%**
Net pension liability	$ 1,269,778	$ 763,667	$ 335,355

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

On January 17, 2023 and January 24, 2023, MTA prepaid the 2023 and 2024 projected Actuarially Determined Contributions ("ADCs") to the MaBSTOA Pension Plan Trust. The prepayment amounts allocated to the MaBSTOA Pension Plan for each year were $166.83 million and $161.60 million, respectively.

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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)

	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total pension liability:									
Service cost	$ 96	$ 94	$ 96	$ 90	$ 87	$ 85	$ 82	$ 77	$ 72
Interest	285	274	267	265	256	246	237	232	224
Changes of benefit terms	2	-	-	-	-	6	-	-	-
Differences between expected and actual experience	(21)	(19)	(1)	9	6	12	14	(69)	(2)
Changes of assumptions	-	72	-	169	-	-	-	-	-
Benefit payments and withdrawals	(258)	(246)	(238)	(221)	(214)	(209)	(188)	(180)	(175)
Net change in total pension liability	104	175	124	312	135	140	145	60	119
Total pension liability—beginning	4,422	4,246	4,123	3,811	3,676	3,536	3,391	3,331	3,212
Total pension liability—ending (a)	4,526	4,422	4,247	4,123	3,811	3,676	3,536	3,391	3,331
Plan fiduciary net position:									
Employer contributions	159	156	159	206	205	203	221	215	226
Employee contributions	26	25	25	24	22	20	18	16	15
Net investment income	(274)	416	56	447	(88)	350	212	(24)	105
Benefit payments and withdrawals	(258)	(246)	(238)	(221)	(214)	(209)	(188)	(180)	(175)
Administrative expenses	(1)	-	-	-	-	-	-	-	-
Net change in plan fiduciary net position	(348)	351	2	456	(75)	364	263	27	171
Plan fiduciary net position—beginning	3,658	3,307	3,300	2,844	2,919	2,555	2,292	2,265	2,094
Plan fiduciary net position—ending (b)	3,310	3,658	3,302	3,300	2,844	2,919	2,555	2,292	2,265
Employer's net pension liability—ending (a)-(b)	$ 1,216	$ 764	$ 945	$ 823	$ 967	$ 757	$ 981	$ 1,099	$ 1,066
Plan fiduciary net position as a percentage of the total pension liability	73.13 %	82.73 %	77.76 %	80.05 %	74.63 %	79.40 %	72.26 %	67.58 %	68.00 %
Covered payroll	776	808	814	771	767	748	713	686	672
Employer's net pension liability as a percentage of covered payroll	156.83 %	94.54 %	116.01 %	106.67 %	126.11 %	101.32 %	137.54 %	160.30 %	158.74 %

Note: Information for periods prior to 2014 was not readily available.
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
2013	$ 234,474	$ 234,474	$ -	$ 582,081	40.28 %
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	158,618	158,618	-	775,512	20.45
2022					

(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, 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)
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	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 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 2021, 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
Deaths after retirement	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
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
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, 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	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	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)

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
2013	N/A
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)%

Note: Information for periods prior to 2014 was not readily available.