Metropolitan Transportation Authority Defined Benefit Pension Plan

Financial Statements as of and for the
Years Ended December 31, 2017 and 2016,
Supplemental Schedules, and
Independent Auditors' Report

METROPOLITAN TRANSPORTATION AUTHORITY
DEFINED BENEFIT PENSION PLAN

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INDEPENDENT AUDITORS' REPORT

To the Board of Managers of Pensions
Metropolitan Transportation Authority Defined Benefit Pension Plan

Report on the Financial Statements

We have audited the accompanying statements of plan net position of the Metropolitan Transportation Authority Defined Benefit Pension Plan (the "Plan") as of December 31, 2017 and 2016, and the related statements of changes in plan 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.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes 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.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Plan's preparation and fair presentation of the financial statements 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, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the plan net position as of December 31, 2017 and 2016, and the respective changes in plan net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis on pages 3 through 8 and the Schedule of Changes in the Employers' Net Pension Liability and Related Ratios-Schedule I on page 49; Schedule of Employer Contributions-Schedule II on page 50-51; and Schedule of Investment Returns-Schedule III on page 52 be presented to supplement the basic financial statements. Such information, 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

January 31, 2019

This management's discussion and analysis of the Metropolitan Transportation Authority Defined Benefit Pension Plan (the "Plan") financial performance provides an overview of the Plan's financial activities for the years ended December 31, 2017 and 2016. 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 two years 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 the MTA's 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 Statements of Plan 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 Statements of Changes in Plan Net Position** - present 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

Plan Net Position
December 31, 2017, 2016 and 2015
(Dollars in thousands)

				Increase / Decrease			
				2017-2016		2016-2015	
	2017	2016	2015	$	%	$	%
Cash and investments	$ 4,056,780	$ 3,433,122	$ 3,096,159	$ 623,658	18.2	$ 336,963	10.9
Receivables and other assets	3,778	1,753	2,243	2,025	115.5	(490)	(21.8)
Total assets	**$ 4,060,558**	**$ 3,434,875**	**$ 3,098,402**	**$ 625,683**	**18.2**	**$ 336,473**	**10.9**
Due to broker for securities purchased	3,575	2,391	18,771	1,184	49.5	(16,380)	(87.3)
Other liabilities	5,449	12,513	4,854	(7,064)	(56.5)	7,659	157.8
Total liabilities	**9,024**	**14,904**	**23,625**	**(5,880)**	**(39.5)**	**(8,721)**	**(36.9)**
Plan net position restricted for pensions	**$ 4,051,534**	**$ 3,419,971**	**$ 3,074,777**	**$ 631,563**	**18.5**	**$ 345,194**	**11.2**

December 31, 2017 versus December 31, 2016

Cash and investments at December 31, 2017 were $4,056.8 million representing an increase of $623.7 million or 18.2% from 2016. This increase is a result of investment activity and plan contributions net of benefit payments and expenses during 2017.

Receivables and other assets net of liabilities at December 31, 2017 decreased by $7.9 million or 60.1% from 2016. The is due primarily to an increase in interest and dividend receivables in the amount of $2.0 million, offset by a decrease in liabilities of $6.2 in millions related to the reversal of employer contributions due to the Long Island Railroad Additional Pension Plan, and other net liabilities of $0.4 million.

The plan net position held in trust for pension benefits increased by $631.6 million or 18.5% in 2017 as a result of the changes noted above.

December 31, 2016 versus December 31, 2015

Cash and investments at December 31, 2016 were $3,433.1 million representing an increase of $337.0 million or 10.9% from 2015. This increase is a result of investment activity and plan contributions net of benefit payments and expenses during 2016.

Receivables and other assets net of liabilities at December 31, 2016 decreased by $8.2 million or 35.8% from 2015. The is due primarily to a decrease in interest and dividend receivables in the amount of $0.5 million, and a decrease in net securities sold at the end of 2015 in the amount of $16.4 million, offset by an increase in liabilities related to investment management fees of $2.0 million, administrative expenses of $0.5 million and amounts due for employer contribution to the Long Island Railroad Additional Plan in the amount of $6.2 million.

The plan net position held in trust for pension benefits increased by $345.2 million or 11.2% in 2016 as a result of the changes noted above.

Changes in Plan Net Position
For the Years Ended December 31, 2017, 2016 and 2015
(Dollars in thousands)

				Increase / Decrease			
				2017-2016		2016-2015	
	2017	**2016**	**2015**	**$**	**%**	**$**	**%**
Additions:							
Net investment income	$ 516,153	$ 247,708	$ (45,122)	$ 268,445	108.4	$ 292,830	649.0
Contributions	352,855	310,160	256,213	42,695	13.8	53,947	21.1
Total net additions	**869,008**	**557,868**	**211,091**	**311,140**	**55.8**	**346,777**	**164.3**
Deductions:							
Benefit payments	231,321	209,623	199,572	$ 21,698	10.4	$ 10,051	5.0
Tranfer to NYSLERs	1,622	-	-	1,622	100.0	-	-
Administrative expenses	4,502	3,051	1,962	1,451	47.6	1,089	55.5
Total deductions	**237,445**	**212,674**	**201,534**	**24,771**	**11.6**	**11,140**	**5.5**
Net increase in Plan net position	**631,563**	**345,194**	**9,557**	**286,369**	**83.0**	**335,637**	**3511.9**
Plan net position restricted for pensions:							
Beginning of year	3,419,971	3,074,777	3,065,220	345,194	11.2	9,557	0.3
End of year	**$ 4,051,534**	**$ 3,419,971**	**$ 3,074,777**	**$ 631,563**	**18.5**	**$ 345,194**	**11.2**

December 31, 2017 versus December 31, 2016

Net investment income increased by $268.4 million in 2017 due to net investment gains of $516.2 million in 2017 versus net gains of $247.7 million experienced in 2016.

Contributions increased by $42.7 million or 13.8% in 2017 compared to 2016 as required by the Actuarial Determined Contributions ("ADC") and member contributions from 2016 to 2017.

Benefit payments increased by $21.7 million or 10.4% over the prior year due to a continuing trend of increases in the number of retirees and cost-of-living adjustments provided to retirees and beneficiaries.

Administrative expenses increased by $1.5 million, or 47.6% over 2016. This increase is due primarily to expenses charged in 2017 for various services provided to the Plan.

In 2017 the Plan transferred $1.6 million to New York State and Local Police and Fire Retirement System as required by New York State law due to transfers of membership.

December 31, 2016 versus December 31, 2015

Net investment income increased by $292.8 million in 2016 due to net investment gains of $247.7 million in 2016 versus net losses of $45.1 million experienced in 2015.

Contributions increased by $53.9 million or 21.1% in 2016 compared to 2015 as required by the Actuarial Determined Contributions ("ADC") and member contributions from 2015 to 2016.

Benefit payments increased by $10.1 million or 5.0% over the prior year due to a continuing trend of increases in the number of retirees and cost-of-living adjustments provided to retirees and beneficiaries.

Administrative expenses increased by $1.1 million, or 55.5% over 2015. This increase is due primarily to expenses charged in 2016 for various services provided to the Plan.

Economic Factors

Market Overview and Outlook – 2017

The equity markets continued to outperform in 2017, with foreign equities finally joining the decade-long success enjoyed by United States ("U.S.") markets. Arriving at new highs, the S&P 500 Index generated positive performance for the ninth straight year and has posted 14 consecutive months of gains with only one of the last 20 quarters in negative territory. Outside the U.S., developed market equities were up 25% in 2017, according to the Morgan Stanley Country Index Europe Australasia Far East. And after a somewhat disappointing stretch over the past 5 years, it was emerging market equities that really outperformed last year, with returns of 38%. Not to be left out, high-yield debt and dollar-denominated emerging market bonds outperformed within credit investment space. Thus, transcending that risk-taking remained a rewarding proposition for investors.

2017 was another banner year for global equities amid optimism that U.S. corporate tax cuts would spur further fundamental performance in corporate America and that the acceleration and synchronization of global economic growth would continue unabated. Investors would be well reminded that eventually the Bull markets end and that investors have not completely abandoned the caution and vigilance necessary to survive the next downturn, whenever it may occur.

Macro Themes

- Headwinds in Emerging Markets
- Rising interest rates
- Trade uncertainty
- High valuations and increasing leverage

The macro picture was framed by higher global growth in 2017. Developed and emerging markets all saw an uptick in growth for the year. Developed markets remained mired in relatively weak growth, with Gross Domestic Product ("GDP") growth posting its highest level (+2.5%) since 2010. This may indicate a peak level of growth as the International Monetary Fund ("IMF") forecasts lower economic performance over the coming five years. Emerging markets posted their best GDP performance since 2013, with +4.9% growth for the year. Unlike developed markets, the IMF expects growth in emerging markets to remain buoyant through the next five years. Inflation remains subdued across the developed markets while currency depreciation and devaluations in emerging markets have led to spikes in inflation.

In 2017, a continued rise in populism globally led to a continued backlash against globalization and the liberal economic tenets that underpinned the global economy since World War II. Discontent over economic policies that produced an uneven economic recovery led to a continued questioning of the viability of the institutions of the European Union and the euro. The political stability that Europe has largely enjoyed since World War II has been eroded by elections in key countries where populist parties, on both the right and the left, have gained influence at the expense of the established broad, centrist political parties. The global trade and political regime seems to have shifted from one of cooperation and coordination to one of confrontation and competition. Large scale trade agreements, such as Trans-Pacific Partnership and North American Free Trade Agreement, will be replaced by bi-lateral agreements, raising the risk of weak implementation, confusion, and non-compliance.

The U.S. is now entering its ninth year of economic expansion following the financial crisis. Measured gains in GDP and robust job growth provided strong underpinnings for domestic equities. The U.S. economy will likely continue to grow, supported by accommodative financial conditions, including tax cuts and regulatory changes. At the same time, the excess economic capacity will provide fuel to the ongoing expansion. There is no doubt that the U.S. Federal Bank Reserve ("Fed's") slow pace of raising interest rates has bolstered easy financial conditions. The Fed's will likely remain relatively accommodative, barring surprises in inflation or the labor market. The moderate unwinding of the Fed's balance sheet and the untested impact on capital markets will continue to influence investors' calculus of risk and reward.

Outside the United Sates, gradualism is the policy of choice for other major central banks: The European Central Bank's quantitative easing program continues to expand (now at a slower rate), while the Bank of Japan is carrying on its accommodative monetary policy. Europe continues to be impacted by high levels of public debt, fractious politics and low economic growth. Like emerging markets, a significant portion of Europe's export engine is tied to Chinese demand and growth. Lower growth in China will place pressures on Europe, in particular net exporters, such as Germany. Debt levels have not yet moderated post-financial crisis and flare-ups in periphery countries, such as in Greece, Portugal, Italy, and Spain, are likely to continue as growth remains challenged and reforms and austerity lose support. Banks will continue their deleveraging cycle should new rules (Basel III) on risk capital are implemented. In Japan, where banks are in better health, high public debt, low growth, a weakening regional economic picture, and aging demographics will challenge the government in delivering their growth and inflation targets.

Emerging markets posted solid returns in 2017 as the impact of capital flows due to the U.S. interest rate increases were much lower than expected. All eyes will continue to be on China. So far, China's move towards an economy emphasizing services and innovation over manufacturing has taken place with minimal disruptions. We expect the country's careful restraint over its monetary and fiscal policies to offer a smooth path for China's massive economic evolution. That said, the world's second largest economy remains at risk to world markets due to its sizable contribution to global growth.

United States

Markets in the U.S. were strong for the year and were amongst the best performers in 2017. U.S. equities outperformed in 2017 achieving new highs, the S&P 500 Index spent its ninth straight year in the black. The flagship U.S. index has posted 14 consecutive months of gains with only one of the last 20 quarters in negative territory.

Large Cap stocks were strongly positive, with the S&P 500 and Russell 1000 indices posting returns of (+21.8%) and (+21.7%), respectively. Small Cap and Mid Cap indices underperformed large cap. Small Cap, as measured by the Russell 2000 Index, returned (+14.6%). The Russell Mid Cap Index lagged but still posted a (+18.5%) return. Of note, growth oriented investments outperformed the value counterpart with the Russell 1000 Growth (+30.2%) outpacing the Russell 1000 Value (+13.6%).

Fixed income markets took the three rate hikes by the Fed's in stride in 2017. Treasuries returned (+2.3%) for the year, with the assets strongest quarter coming in second quarter of 2017. Credit outperformed Treasuries for the year, with (+6.2%), posting positive returns for four straight quarters. Following strong results in 2016, high yield high yield continued its upward trend and performing well in 2017, returning (+7.5%).

International Developed

International equity markets posted strong results in 2017 and outpaced U.S. equity markets for the first time since 2012. In U.S. dollars, both Europe and Japan equities posted positive performance in 2017 with MSCI Europe returning (+25.5%) and MSCI Japan returning (+24.0%). Strong returns in Europe were driven by positive market performance and a weakening US dollar. The small cap portion of international developed markets posted even stronger returns in 2017, (+33.0%).

Fixed income markets in Europe and Japan are largely centered on government bonds, with corporate and asset-backed issuance making up a fraction of the overall markets. Global Treasuries were positive in 2017, following a slightly positive year in 2016.

Emerging Markets

Emerging markets posted strong performance in 2017 and outpaced both U.S. and international developed markets across equity and debt. The broad emerging markets index returned (+37.3%) for the year. China, a significant exposure within the emerging market index, was a strong performer, returning (+54.3%) for the year. Performance of the bond markets of emerging markets was encouraging. Both hard currency and local currency bond posted solid years in performance. Hard currency bonds, which are predominately issued in U.S. dollar, returned (+10.3%) in 2017. Local currency bonds, which are issued in the local currency, returned (+15.2%) for the year.

Commodities

Commodities posted positive performance in 2017, with the broad Bloomberg Commodity Index up (+1.7%). Industrial metals and precious metals posted strong performance for the year while agriculture was negative. Oil continued its positive rebound from 2016 with another positive year in 2017.

Contact Information

This financial report is designed to provide a general overview of the Metropolitan Transportation Authority Defined Benefit Pension Plan's finances. Questions concerning any data provided in this report or requests for additional information should be directed to the Comptroller, Metropolitan Transportation Authority, 2 Broadway, 16^{th} Floor, New York, NY 10004.

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METROPOLITAN TRANSPORTATION AUTHORITY
DEFINED BENEFIT PENSION PLAN

STATEMENTS OF PLAN NET POSITION
AS OF DECEMBER 31, 2017 AND 2016

	2017	2016
ASSETS:		
Cash	$ 11,812	$ 5,437
Investments at fair value (Notes 2 and 3):		
Investments measured at readily determined fair value	675,779	579,271
Investments measured at net asset value	3,369,189	2,848,414
Total investments	4,044,968	3,427,685
Receivables:		
Accrued interest and dividends	1,882	1,516
Other receivable	1,896	237
Total receivables	3,778	1,753
Total assets	4,060,558	3,434,875
LIABILITIES:		
Due to broker for securities purchased	3,575	2,391
Due to broker for investment fee	1,909	3,535
Due to broker for administrative expenses	306	181
Due to MTA for administrative expenses	2,515	2,458
Due to MTA Long Island Railroad Additional Plan - Employer contribution	-	6,186
Other liabilities	719	153
Total liabilities	9,024	14,904
PLAN NET POSITION RESTRICTED FOR PENSIONS	$ 4,051,534	$ 3,419,971

See notes to financial statements.

METROPOLITAN TRANSPORTATION AUTHORITY
DEFINED BENEFIT PENSION PLAN

STATEMENTS OF CHANGES IN PLAN NET POSITION
FOR THE YEARS ENDED DECEMBER 31, 2017 AND 2016

	2017	2016
ADDITIONS:		
Investment income:		
Net realized and unrealized gains	$ 527,182	$ 252,282
Dividends	35,211	28,874
Interest	6,522	5,747
Total investment income	568,915	286,903
Less:		
Investment expenses	(52,762)	(39,195)
Net investment income	516,153	247,708
Contributions:		
Employer:		
Metro-North Commuter Railroad Company	120,515	99,083
Long Island Rail Road Company	111,459	99,800
Metropolitan Transportation Authority Headquarters	33,276	31,700
MTA Bus Company	50,479	44,300
Staten Island Rapid Transit Operating Authority	6,132	5,885
Employee	30,994	29,392
Total contributions	352,855	310,160
Total additions	869,008	557,868
DEDUCTIONS:		
Benefits paid to participants	231,321	209,623
Transfer of MTA Police Employer & Employee Contributions to NYSLERs	1,622	-
Administrative expenses	4,502	3,051
Total deductions	237,445	212,674
NET INCREASE IN PLAN NET POSITION	631,563	345,194
PLAN NET POSITION RESTRICTED FOR PENSIONS		
Beginning of year	3,419,971	3,074,777
End of year	$ 4,051,534	$ 3,419,971

See notes to financial statements.

1. PLAN DESCRIPTION

The following brief description of the Metropolitan Transportation Authority (the "Authority") Defined Benefit Pension Plan (the "Plan") is provided for general information purposes only. Participants should refer to the Plan document for more complete information.

General — The Plan represents a cost-sharing employer defined benefit pension plan sponsored by the Authority and administered by the Board of Managers of Pensions, covering:

(a) management employees of the Long Island Rail Road Company ("MTA Long Island Rail Road") hired after January 1, 1988 not governed by collective bargaining agreements;

(b) management employees of the Metro-North Commuter Railroad Company ("MTA Metro-North Railroad") not governed by collective bargaining agreements;

(c) represented MTA Long Island Rail Road employees hired after January 1, 1988, covered by collective bargaining agreements which provide for participation in the plan effective January 1, 2004;

(d) certain represented MTA Metro-North Railroad employees covered by collective bargaining agreements which provide for participation in the plan effective on or after January 1, 2004;

(e) represented and non-represented MTA Long Island Rail Road employees hired prior to January 1, 1988;

(f) Metropolitan Suburban Bus Authority ("MTA Long Island Bus") provided public service in Nassau and Queens Counties. The Authority's Lease and Operating Agreement with Nassau County, dated January 15, 1973, as amended, was terminated effective December 31, 2011. As of January 1, 2012, the MTA Long Island Bus is no longer a member of the MTA Group. Represented and management Metropolitan Suburban Bus Authority ("MTA Long Island Bus") employees hired prior to January 24, 1983 and any MTA Long Island Bus person employed by the MSBA Employees' Pension Trust prior to July 29, 1998 under the MSBA Employees' Pension Plan remained vested employees in the plan;

(g) represented and management employees of the Staten Island Rapid Transit Operating Authority ("MTA Staten Island Railway") effective January 1st, 2005;

(h) certain represented and management employees of MTA Bus Company ("MTA Bus"), including represented and non-represented employees who were formerly employed by Liberty Lines Express, Inc., New York Bus Tours, Inc., Command Bus Company, Green Bus Lines Inc., Jamaica Buses Inc., Triboro Coach Corporation and represented and most non-represented employees formerly employed by Queens Surface Corporation; and

(i) participants in the MTA Defined Benefit Pension Plan 20 Year Police Retirement program ("MTA Police").

The Plan contains multiple and distinct benefit structures for MTA Metro-North Railroad and MTA Long Island Rail Road management employees, for MTA Metro-North Railroad and MTA Long Island

Rail Road represented employees, MTA Police, MTA Long Island Bus employees and MTA Staten Island Railway employees. In addition, there are multiple but distinct benefit structures for the employees of MTA Bus which are based on the plans covering those employees prior to their becoming MTA Bus employees. MTA Bus non-represented employees and employees represented by the UTLO are covered by separate programs. Assets and liabilities are pooled and a single cash contribution amount and annual pension cost is determined. The Plan is designed to satisfy the applicable requirements for governmental plans under Section 401(a) and 501(b) of the Internal Revenue Code. Accordingly, the Plan is tax-exempt and is not subject to the provisions of the Employee Retirement Income Security Act ("ERISA") of 1974.

Membership of the Plan consisted of the following as of January 1, 2017 and 2016, respectively, the date of the latest actuarial valuations:

	2017	**2016**
Active Plan Members	18,048	17,670
Retirees and beneficiaries receiving benefits	10,861	10,701
Vested formerly active members not yet receiving benefits	1,433	1,439
Total	30,342	29,810

Funding for the Plan is provided by the Authority, MTA Metro-North Railroad, MTA Long Island Rail Road, MTA Bus and MTA Staten Island Railway which are public benefit corporations that receive a significant portion of their operating and capital financing requirements from New York City, New York State, federal and regional governmental units and from the sale of bonds to the public. Certain funding is made on a discretionary basis. The continuance of funding for the Plan has been, and will continue to be, dependent upon the receipt of adequate funds.

Plan Administration – The Defined Benefit Plan is administered by the Board of Managers of Pensions which comprised of:

(a) the persons holding the following positions:
  (j) the Chairman of the MTA;
  (ii) the MTA Chief Financial Officer;
  (iii) the MTA Director of Labor Relations; and
  (iv) the agency head of each participating Employer.

(b) Designation of Others – Any member of the Board of Managers, serving as such by virtue of holding a position described in (a) of this section, may, by written authorization filed with the Secretary who shall notify the other members of the Board of Managers, designate another individual, not then a member of the Board of Managers, to serve in that member's stead, in accordance with procedures established with the approval of the Executive Director. Any such authorization may be revoked by the designating member at any time in writing filed in the same manner.

(c) The Board of Managers shall be the agent for the service of legal process with respect to the Plan. No bond or other security is required in any jurisdiction of the Board of Managers or any member thereof except as required by law.

Pension Benefits — Retirement benefits are paid from the Plan to covered MTA Metro-North Railroad, MTA Staten Island Railway and post —1987 MTA Long Island Rail Road employees as service retirement allowances or early retirement allowances. A participant is eligible for a service retirement allowance upon termination if the participant satisfied both age and service requirement. A participant is eligible for an early retirement allowance upon termination if the participant has attained age 55 and completed at least 10 years of credited service. Terminated participants with 5 or more years of credited service who are eligible for a deferred vested benefit are not eligible to receive a service retirement allowance or early retirement allowance. Deferred vested benefits are payable on an unreduced basis on the first day of the month following the participant sixty-second birthday. Effective in 2007, members and certain former members who become (or became) employed by another MTA agency which does not participate in the Plan continue to accrue service credit based on such other employment. Upon retirement, the member's vested retirement benefit from the Plan will be calculated on the final average salary of the subsequent MTA agency, if higher. Moreover, the Plan benefit will be reduced by the benefit, if any, payable by the other plan based on such MTA agency employment. Such member's disability and ordinary death benefit will be determined in the same way.

Retirement benefits are paid from the Plan under the MTA 20-Year Police Retirement Program. A participant is eligible for service retirement at the earlier of completing 20 years of credited Police service or attainment of age 62. Terminated participants with five years of credited police service, who are not eligible for retirement, are eligible for a deferred benefit. Deferred vested benefits are payable on the first of the month following the participant's attainment of age 55.

Retirement benefits paid from the Plan to covered represented MTA Bus employees include service retirement allowances or early retirement allowances. Under the programs covering all represented employees at Baisley Park, Eastchester, La Guardia, Spring Creek, and Yonkers Depots and the represented employees at College Point Depot, JFK, Far Rockaway a participant is eligible for a service retirement allowance upon termination if the participant has attained age 65 and completed at least 5 years of credited service or if the participant has attained age 57 and completed at least 20 years of credited service. A participant hired prior to June 2009 from Baisley Park, College Point, and La Guardia Depots is eligible for an early retirement allowance if the participant has attained age 55 and completed 20 years of credited service. Terminated participants with 5 or more years of credited service who are not eligible to receive a service retirement allowance or early retirement allowance are eligible for a deferred vested benefit. Deferred vested benefits are payable on an unreduced basis on or after the participant attains age 65.

The MTA Bus retirement programs covering TWU, ATU and TSO represented employees are fixed dollar plans, i.e., the benefits are a product of credited service and a specific dollar amount.

The retirement benefits for certain former employees of the Alliance Companies are based on a participant's service and final average salary. A normal retirement benefit is payable when the participant attains age 62 with 5 years of service. An early retirement benefit is payable when the participant attains age 55 with 15 years of service. The retirement benefit is payable as a single life annuity or, for married participants, as an unreduced 75% joint and survivor annuity.

MTA Bus non-represented employees and employees represented by the UTLO as of January 1, 2017 will earn benefits under a new set of programs. For service prior to 2017, a component calculated by a flat monthly dollar rate multiplied by years of credited service will be added to a final average salary (FAS) component, based on the platforms provided to similarly situated MaBSTOA Pension Plan members. For service on or after January 1, 2017, the final average salary component platform will be based on date of hire, years of credited service and whether the participant holds an operating or non-operating title. Certain former Liberty Lines employees assigned to the former Liberty Lines bus routes also are eligible for a supplemental plan benefit of 0.75% of final average salary per year of Plan service.

An MTA Bus non-represented or UTLO operating employee hired prior to April 1, 2012 participates in a Tier 4 25/55 operating retirement platform. A Tier 4 25/55 operating retirement platform participant with 25 years of Allowable Service receives upon retirement at age 55 a flat rate benefit equal to $1,380.00 ($115 x 12) for each year of service prior to January 1, 2017, plus a FAS benefit equal to 2% multiplied by FAS multiplied by service accrued after January 1, 2017, up to 30 years of total service, plus 1.5% multiplied by FAS multiplied by service accrued after January 1, 2017 in excess of 30 years of total service.

An MTA Bus non-represented non-operating employee hired prior to April 1, 2012 participates in a Tier 4 57/5 non-operating retirement platform. A Tier 4 57/5 non-operating retirement platform participant receives upon retirement at age 57 a flat rate benefit equal to $1,380.00 ($115 x 12) for each year of service prior to January 1, 2017, plus a FAS benefit equal to, for those with less than 20 years of total service, 1 2/3% multiplied by FAS multiplied by total service accrued after January 1, 2017, or, for those with 20 or more years of total service, 2% multiplied by FAS multiplied by total service accrued after January 1, 2017, up to 30 years of total service, plus 1.5% multiplied by FAS multiplied by total service accrued after January 1, 2017 in excess of 30 years of total service.

An MTA Bus non-represented or UTLO operating employee hired on or after April 1, 2012 participates in a Tier 6 25/55 operating retirement platform. A Tier 6 25/55 operating retirement platform participant with 25 years of Allowable Service receives upon retirement at age 55 a flat rate benefit equal to $1,380.00 ($115 x 12) for each year of service prior to January 1, 2017, plus a FAS benefit equal to 2% multiplied by FAS multiplied by service accrued after January 1, 2017 up to 30 years of total service, plus 1.5% multiplied by FAS multiplied by service accrued after January 1, 2017 in excess of 30 years of total service. The flat rate benefit is vested after the completion of five years of total service and the FAS benefit is vested after the completion of ten years of total service.

An MTA Bus non-represented non-operating employee hired on or after April 1, 2012 participates in a Tier 6 63/10 non-operating retirement platform. A Tier 6 63/10 non-operating retirement platform participant receives upon retirement at age 63 a flat rate benefit equal to $1,380.00 ($115 x 12) for each year of service prior January 1, 2017, plus a FAS benefit equal to, for those with less than 20 years of total service, 1.67% multiplied by FAS multiplied by total service accrued after January 1, 2017, or, for those with 20 or more years of total service, 1.75% multiplied by FAS multiplied by total service accrued after January 1, 2017, up to 20 years of such service, plus 2% multiplied by FAS multiplied by total service accrued after January 1, 2017 in excess of 20 years of total service. The flat rate benefit is vested after the completion of five years of total service and the FAS benefit is vested after the completion of ten years of total service.

Reduced early retirement benefits are payable under all platforms. The Tier 6 definition of wages includes an overtime ceiling which limits overtime compensation for pension purposes to no more than $15,721 for 2016, and $16,048 for 2017, indexed annually thereafter. Any overtime compensation earned in excess of the overtime ceiling is excluded from the final average salary calculation. The Tier 6 definition of wages also excludes wages in excess of the annual salary paid to the New York State Governor, lump-sum payments for deferred compensation, sick leave, accumulated vacation or other credits for time not worked.

TWU, ATU and TSO members who retire after November 16, 2016, and UTLO members and non-represented employees who retire after January 1, 2017 will have their pension benefit increased by a Cost of Living Adjustment (COLA). The COLA is an annual adjustment to the retirement benefit based on the Consumer Price Index (CPI). The following retirees are eligible to receive a COLA: disability retirees, regardless of age, who have been retired for at least 5 years; retirees who are at least age 62 and have been retired for at least 5 years; and retirees who are at least age 55 and have been retired for at least 10 years. Surviving spouses receiving a joint-and-survivor option benefit are eligible to receive 50% of the monthly COLA that would have been paid to the retiree. For TWU, ATU and TSO members, the COLA calculation is based on the first $18,000 of the retiree's normal retirement benefit. For UTLO members and non-represented employees, the COLA calculation is based on the first $18,000 of the retiree's final average salary benefit component. The COLA amount may not be less than 1% nor more than 3% in any year. Once COLA payments begin, they continue automatically and increase each September.

Pre-1988 MTA Long Island Rail Road participants are eligible for a service retirement allowance upon termination if the participants have either: (a) attained age 65 and completed at least 5 years of credited service, or if an employee on January 1, 1988 completed at least 10 years of credited service, or (b) attained age 50 and has completed at least 20 years of credited service. Terminated participants who were not employees on January 1, 1988 with 5 or more years of credited service are eligible for a deferred vested benefit. Pension benefits payable to age 65, where eligible, are calculated as 2% of the employee's applicable final average earnings for each year of qualifying service up to 25 years plus 1.5% of applicable final average earning of each year of qualifying service in excess of 25 years. For pension benefits payable at and after age 65 regardless of whether benefits commenced before or after the employee attained age 65, benefits are calculated in the same manner as pension benefits payable prior to age 65 except that the amount so determined is reduced by a percentage of the employee's annuity (not including supplemental annuity) value at age 65 under the Federal Railroad Retirement Act.

The reduction of pension benefits for amounts payable under the Federal Railroad Retirement Act is 50%.

Death and Disability Benefits — In addition to service retirement benefits, participants of the Plan are eligible to receive disability retirement allowances and death benefits. Participants who become disabled may be eligible to receive disability retirement allowances after 10 years of covered MTA Bus service; 10 years of credited service for covered MTA Metro-North Railroad and MTA Long Island Rail Road management and represented employees, covered MTA Staten Island Railway employees and covered MTA police participants.

The disability retirement allowance for covered MTA Metro-North Railroad and MTA Long Island Rail Road management and represented covered MTA Staten Island Railway employees is calculated based on the participant's credited service and final average salary ("FAS") but not less than ⅓ of FAS. Under the MTA 20 Year Police Retirement Program, a disabled participant may be eligible for one of three forms of disability retirement: (a) ordinary disability which is payable if a participant has 10 years of credited Police service and is calculated based on the participant's credited Police service and FAS but not less than ⅓ of FAS; (b) performance of duty, which is payable if a participant is disabled in the performance of duty and is ½ of FAS, and (c) accidental disability, which is payable if a participant is disabled as the result of an on-the-job accidental injury and is ¾ of FAS subject to an offset of Workers' Compensation benefits. Pursuant to the MTA Bus programs, the disability benefit is the same as the service retirement benefit.

Pre-1988 MTA Long Island Rail Road participants who become disabled after accumulating 10 years of credited service and who meet the requirements as described in the Plan may be eligible to receive a disability benefit. Disability pension benefits are calculated based on the participant's qualified service and a percentage of final average compensation reduced by the full amount of the disability benefit under the Federal Railroad Retirement Act.

Survivorship benefits for pre-1988 MTA Long Island Rail Road participants are paid to the spouse when a survivorship option is elected or when an active participant has not divested their spouse of benefits. The survivorship benefit is payable at the time of death or when the vested participant would have attained an eligible age. The amount payable is in the form of an annuity. A lump sum death benefit no greater than $5,000 is payable upon death on behalf of a non-vested participant or vested participant whose pension rights were waived.

Death benefits are paid to the participant's beneficiary in the event of the death of a covered MTA Metro-North Railroad, post-1987 MTA Long Island Rail Road or MTA Staten Island Railway employee after completion of one year of credited service. The death benefit payable is calculated based on a multiple of a participant's salary based on years of credited service up to three years and is reduced beginning at age sixty-one. There is also a post-retirement death benefit which, in the 1st year of retirement, is equal to 50% of the pre-retirement death benefit amount, 25% the 2nd year and 10% of the death benefit payable at age 60 for the 3rd and later years. For the Police 20 Year Retirement Program, the death benefit is payable after ninety days of credited MTA Police service, and is equal to three times their salary. For non-Police groups, this death benefit is payable in a lump sum distribution while for Police, the member or the beneficiary can elect to have it paid as an annuity. The MTA Police do not have a post retirement benefit.

In the MSBA Employees' Pension Plan, there are special spousal benefits payable upon the death of a participant who is eligible for an early retirement benefit, or a normal service retirement benefit, or who is a vested participant or vested former participant. To be eligible, the spouse and participant must have been married at least one year at the time of death. Where the participant was eligible for an early service retirement benefit or was a vested participant or former participant, the benefit is a pension equal to 40% of the benefit payable to the participant as if the participant retired on the date of death. Where the participant was eligible for a normal service retirement benefit, the eligible spouse can elect either the benefit payable as a pension, as described in the prior sentence, or a lump sum payment based on an actuarially determined pension reserve. If there is no eligible spouse for this pension reserve benefit, a benefit is payable to the participant's beneficiary or estate.

Moreover, an accidental death benefit is payable for the death of a participant who is a covered MTA Metro-North Railroad or post-1987 MTA Long Island Rail Road employee, a covered MTA Staten Island Railway employee or a covered MTA Police member and dies as the result of an on-the-job accidental injury. This death benefit is paid as a pension equal to 50% of the participant's salary and is payable to the spouse for life, or, if none, to children until age 18 (or 23, if a student), or if none, to a dependent parent.

For MTA Bus employees, there is varied death benefit coverage under the Plan. For all represented and non-represented MTA Bus employees at Eastchester and Yonkers Depots and represented MTA Bus employees at Baisley Park, College Point, Far Rockaway, JFK, La Guardia and Spring Creek Depots, if a participant dies prior to being eligible for a retirement benefit, the participant's beneficiary may elect to receive a refund of the participant's contributions plus interest.

Moreover, the spouses of the above employees who are vested are entitled to a presumed retirement survivor annuity which is based on a 50% Joint and Survivor annuity. The date as of which such annuity is determined and on which it commences varies among the different programs depending on whether the participants are eligible for retirement and for payment of retirement benefits.

In addition, the spouse of a non-represented MTA Bus employee at Spring Creek, JFK, La Guardia, Baisley Park and Far Rockaway, if such employee is age 55 and has 15 years of service and is a terminated member with a vested benefit which is not yet payable, may elect the presumed retirement survivor annuity or 1/2 the participant's accrued benefit paid monthly and terminating on the 60th payment or the spouse's death. The spouse of a non-represented MTA Bus employee at Yonkers Depot may also receive a pre-retirement survivor annuity from the supplemental plan. If there is no such spouse, the actuarial equivalent of such annuity is payable.

The dependent children of MTA Bus TWU employees of College Point, Baisley Park, and La Guardia hired prior to June 9, 2009 are also entitled to an annuity based on the spouse's pre-retirement survivor annuity (1/2 of the spouse's annuity is payable to each child, but no more than 100% of the spouse's annuity is payable). In addition, the dependent children of retirees who were MTA Bus employees at these Depots are entitled to an annuity based on the presumed retirement survivor's annuity (25% of the spouse's annuity; but no more than 50% of the spouse's annuity is payable).

Retirement benefits establishment and changes for represented employees are collectively bargained and must be ratified by the respective union and the MTA Board. For non-represented employees, retirement benefit adopted and modifications thereto, are presented to the MTA Board and must be accepted and approved by the MTA Board.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting — The Plan's financial statements are prepared 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. Investment purchases and sales are recorded as of trade date.

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

New Accounting Standards Adopted – The Plan adopted GASB Statement 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*. The requirements of GASB Statement No. 73, extend the approach to accounting and financial reporting established in Statement No. 68 to all pensions, with modifications as necessary to reflect that for accounting and financial reporting purposes, any assets accumulated for pensions that are provided through pension plans that are not administered through trusts that meet the criteria specified in Statement No. 68 should not be considered pension plan assets. It also requires that information similar to that required by Statement No. 68 be included in notes to financial statements and required supplementary information by all similarly situated employers and nonemployer contributing entities. This Statement also clarifies the application of certain provisions of Statement Nos. 67 and 68 with regard to the following issues: 1) Information that is required to be presented as notes to the 10-year schedules of required supplementary information about investment-related factors that significantly affect trends in the amounts reported; 2) Accounting and financial reporting for separately financed specific liabilities of individual employers and nonemployer contributing entities for defined benefit pensions; 3) Timing of employer recognition of revenue for the support of nonemployer contributing entities not in a special funding situation. There was no material impact on the Plan's financial statements as a result of the implementation of GASB Statement No. 73.

Recent Accounting Pronouncements — Not yet adopted

GASB Statement No.	GASB Accounting Standard	MTA Pension Plan Required Year of Adoption
84	*Fiduciary Activities*	2019
85	*Omnibus 2017*	2018

Use of Estimates — The preparation of the Plan's financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Estimates include fair market value of investments, the annual required contribution and the unfunded actuarial accrued liability.

Benefits — Benefits are recorded when paid.

Contributions - As a condition of participation in the MTA Defined Benefit Pension Plan ("MTADBPP" or the "Plan"), employers and employees are required to contribute to the Plan. The amount of the employer contributions is determined by the Plan actuaries. Employee contribution rates for represented employees are determined by collective bargaining. Employee contribution rates for non-represented employees are set forth in the Plan document as adopted by the MTA Board. If an employee terminates employment with less than 10 (ten) years of credited service in the Plan, the employee may request a refund of his employee contributions with interest. Upon receipt of this refund of contributions, the employee has no claim on any future benefit from the Plan. Employees with more than 10 years of credited service, except for a small group of MTA Bus participants, cannot withdraw their contributions.

Members of the MTA Police Program who have transferred pursuant to Retirement and Social Security Law Section 343 and have not been employed in the MTA Police Program for 15 years may, upon termination of employment, withdraw member contributions. The withdrawal of such transferred police service member contributions shall not terminate membership and rights in the MTA Police Program attributable to Credited Police Service.

Income - Dividend and interest income are recorded when earned.

Securities - Purchases and sales of securities are recorded on a trade-date basis.

Asset Transfers — No assets were transferred to the MTA Defined Benefit Pension Plan for the years 2017 and 2016 respectively.

Administrative Expenses — Administrative expenses of the Plan are paid for by the Plan.

3. CASH AND INVESTMENTS

Investment Policy – 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 MTA Defined Benefit Pension Plan Board adopted asset allocation policy as at December 31, 2017.

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

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

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

The overall capital structure targets and permissible ranges for eligible asset classes of the Trust are detailed within the Investment Policy Statement. Full discretion, within the parameters of the guidelines described herein and in any individual investment policy associated with that allocation, is granted to the investment managers regarding the asset allocation, the selection of securities, and the timing of transactions. 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 whose policies are already established; therefore, the Board is relying on the investment consultant to assess and monitor the investment policies of any funds used by the Plan to ascertain whether they are appropriate.

Investment Valuation and Income Recognition — Investments are presented at fair value based on information provided by JP Morgan Chase (the "trustee"), New England Pension Consultant ("NEPC"), and the investment managers. The fair value of investments is based on published market prices and quotations from major investment brokers at current exchange rates, as available, or net asset value, which is determined to be a practical expedient for measuring fair value. Many factors are considered in arriving at that value. Corporate debt securities are valued based on yields currently available on comparable securities of issuers with similar credit ratings. All investments are registered, with securities held by the Plan's trustee, in the name of the Plan. Gains and losses on investments that were sold during the year are included in in the statement of plan net position.

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.

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

	December 31, 2017	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	$ 261,754	261,754	$ -	$ -
Separate account small-cap equity funds	180,105	180,105	-	-
Separate account small-Real Estate Investments Trusts	41,206	41,206	-	-
Total equity investments	483,065	483,065	-	-
Debt Securities				
Separate account debt funds	192,714	-	192,714	-
Total debt investments	192,714	-	192,714	-
Total investments by fair value	$ 675,779	483,065	192,714	$ -

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

	December 31, 2017	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Equity Securities:				
Commingled large cap equity funds	$ 128,693	$ -	Daily	None
Commingled international equity funds	539,445	-	Daily	None
Commingled emerging market equity funds	138,634	-	Daily, monthly	None
Total equity investments measured at the NAV	806,772	-		
Debt Securities				
Commingled debt funds	347,412	-	Daily, monthly, quarterly	None
Mutual fund	63,601	-	Daily	None
Total debt investments measured at the NAV	411,013	-		
Absolute return:				
Directional	111,615	-	Monthly	3-60 days
Direct lending	158,246	11,201	Bi-annually	60 plus days
Distressed securities	41,882	-	Not eligible	N/A
Credit long	63,562	-	Quarterly	3-30 days
Credit long/short	73,602	-	Quarterly	3-60 days
Equity long/short	59,718	-	Quarterly	3-60 days
Event driven	89,310	1,872	Quarterly, Bi-annually	60-120 days
Global macro	84,451	-	Monthly	3-30 days
Global tactical asset allocation	271,887	-	Daily, monthly	3-30 days
Multistrategy	117,063	-	Monthly	3-30 days
Risk parity	365,708	-	Not eligible	N/A
Structured credit	16,029	-	Not eligible	N/A
Total absolute return measured at the NAV	1,453,073	13,073	Not eligible	N/A
Private equity - private equity partnerships	276,850	189,147		
Real assets				
Commingled real estate funds	215,313	-	Not eligible	N/A
Energy	56,951	17,863	Not eligible	N/A
Infrastructure	23,995	7,879	Not eligible	N/A
Total real assets measured at the NAV	296,259	25,742		
Short term investments measured at the NAV	125,222			
Total investments measured at the NAV	3,369,189	$ 227,962		
Total investments at fair value	$ 4,044,968			

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

	December 31, 2016	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	$ 223,862	$ 223,862	$ -	$ -
Separate account small-cap equity funds	152,722	152,722	-	-
Separate acount real estate investment trust	34,456	34,456	-	-
Total equity investments	411,040	411,040	-	-
Debt Securities				
Separate account debt funds	168,231	-	168,231	-
Total debt investments	168,231	-	168,231	-
Total investments at readily determined FV	$ 579,271	$ 411,040	$ 168,231	$ -

	2016	Commitments	Frequency	Notice Period
Equity Securities:				
Commingled large cap equity funds	$ 99,078	$ -	Daily	None
Commingled international equity funds	392,792	-	Daily	None
Commingled emerging market equity funds	102,928	-	Daily, monthly	None
Total equity investments measured at the NAV	594,798	-		
Debt Securities				
Commingled debt funds	328,325	-	Daily, monthly, quarterly	None
Mutual funds	45,969	-	Daily	None
Total debt investments measured at the NAV	374,294	-		
Absolute return:				
Directional	94,619		Monthly	3-60 days
Direct lending	150,769	10,371	Bi-annually	60 plus days
Distressed securities	34,332	-	Not eligible	N/A
Credit long	55,796	-	Quarterly	3-30 days
Credit long/short	67,705	-	Quarterly	3-60 days
Equity long/short	67,891	-	Quarterly	3-60 days
Event driven	85,468	1,893	Quarterly, Bi-annually	60-120 days
Global macro	84,803	-	Monthly	3-30 days
Global tactical asset allocation	205,446	-	Daily, monthly	3-30 days
Market neutral	154	-	Quarterly	3-60 days
Multistrategy	106,269	-	Quarterly	3-60 days
Risk parity	331,439	-	Monthly	3-30 days
Structured credit	17,871	44,613	Not eligible	N/A
Total absolute return measured at the NAV	1,302,562	56,877		
Private equity - private equity partnerships	216,042	183,553	Not eligible	N/A
Real assets				N/A
Commingled commodities fund	98,087	-	Not eligible	N/A
Commingled real estate funds	102,127	-	Not eligible	N/A
Energy	44,762	28,025	Not eligible	N/A
Infrastructure	13,849	18,292	Not eligible	N/A
Total real assets measured at the NAV	258,825	46,317		
Short term investments measured at the NAV	101,893	-		
Total investments measured at the NAV	2,848,414	$ 286,746		
Total investments at fair value	$ 3,427,685			

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, 2017 and 2016 are as follows:

(In Thousands)	**2017**	**2016**
Investments at fair value as determined by quoted market prices:		
GAM Unconstrained Bond Fund	$ -	$ 174,184

Credit Risk — At December 31, 2017 and 2016, the following credit quality rating has been assigned by a nationally recognized rating organization:

(In Thousands) **Quality Rating**	**2017 Fair Value**	**Percentage of Fixed Income Portfolio**	**2016 Fair Value**	**Percentage of Fixed Income Portfolio**
AAA	$ 158,310	19.05 %	$ 57,582	7.07 %
AA	28,001	3.37	18,098	2.22
A	85,769	10.32	63,204	7.77
BBB	119,714	14.41	148,521	18.25
BB	93,143	11.21	89,104	10.95
B	60,596	7.29	57,947	7.12
CCC	7,443	0.90	9,812	1.21
CC	956	0.11	1,516	0.19
C	84	0.01	3,592	0.44
D	17	-	-	-
Not Rated	138,278	16.64	132,234	16.24
Credit risk debt securities	692,311	83.31	581,610	71.46
U.S. Government bonds	138,715	16.69	232,312	28.54
Total fixed income securities	831,026	100.00 %	813,922	100.00 %
Other securities not rated — equity, international funds and foreign corporate bonds	3,213,942		2,613,763	
Total investments	$ 4,044,968		$ 3,427,685	

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 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. Duration is an indicator of bond price's sensitivity to 100 basis point change in interest rates.

	2017		2016	
Investment Fund (In Thousands)	**Fair Value**	**Duration**	**Fair Value**	**Duration**
Chase	$ 192,071	11.44	$ 170,836	11.54
Allianz Structured Alpha Fund	111,615	0.13	92,480	0.25
Wellington Blended Emerging Market Debt	78,753	5.70	47,716	5.55
Bridgewater All Weather Fund	86,942	7.70	96,686	9.00
Wellington Opportunistic Fund	34,515	1.70	23,202	1.91
Bridgewater Pure Alpha Fund	(121,986)	(7.90)	2,174	(3.54)
Bridgewater Markets Fund	(13,934)	(6.80)	9,137	1.40
GAM Unconstrained Bond Fund	168,253	(0.17)	174,184	0.25
Northern Trust William Capital	8,341	-	8,373	-
Park Square Capital Credit Opportunities Fund	33,041	-	33,504	0.54
Libremax Partners Fund	15,677	3.87	5,498	5.02
Gramercy Distressed Opportunistic Fund	12,765	(0.05)	9,605	(0.48)
Makuria Credit Fund	31,449	5.50	14,118	1.05
Crescent Capital High Income Fund	30,205	2.43	28,697	2.61
Fir Tree realization Value Fund	6	-	100	-
Wellington Global Managed Risk Fund	103,617	10.60	52,670	6.70
State Stree Real Asset Fund	25,237	5.84	-	-
EIG Energy Fund XV	4,109	-	-	-
EIG Energy Fund XVI	5,638	-	-	-
Wellington rust Collective Investment Fund and Diversified Inflation Fund	-	-	23,384	0.88
Canyon Value Realization Fund	24,712	2.50	21,558	1.90
Total fixed income securities	831,026		813,922	
Portfolio modified duration		7.06		4.60
Investments with no duration reported	$ 3,213,942		$ 2,613,763	
Total investments	$ 4,044,968		$ 3,427,685	

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. Each investment manager, through the purchase of units in a commingled investment trust fund or international equity mutual fund establishes investments in international equities. The Plan also holds investments in American Depository Receipts ("ADRs") which are not included in the below schedule since they are denominated in U.S. dollars and accounted for at fair market value.

In addition, the Plan has investments in foreign stocks and/or bonds denominated in foreign currencies. The Plan's foreign currency exposures as of December 31, 2017 and 2016 are as follows (amounts in U.S. dollars, in thousands):

Foreign Currency Holdings in US $ (In Thousands)	**December 31, 2017**	**December 31, 2016**
Argentina Peso	$ 3,930	$ 363
Dollar (Australian)	28,143	58,400
Bahraini Dinar	432	358
Bangladesh (Taka)	425	390
Bermuda Dollar	837	-
Botswana Pula	160	94
Brazil Cruzeiro Real	15,263	10,503
Bulgarian Lev	17	7
Dollar (Canadian)	19,021	26,236
Chilean Peso	5,975	1,361
China (Yuan Renminbi)	17,595	10,295
Colombian Peso	4,206	2,870
Croatia Kuna	536	374
Czech Koruna	(1,015)	2,888
Krone (Danish)	2,495	1,780
Egyptian Pound	2,801	421
Euro	76,248	115,900
Ghanaian Cedi	302	36
Geogian Lari	2,114	1,543
Dollar (Hong Kong)	15,402	14,804
Hungary (Forint)	1,344	357
Icelandic Krona	4,254	416
Indian Rupee	26,221	23,028
Indonesia Rupiah	15,783	15,133
Israeli (Shekel)	1,299	933
Yen (Japan)	9,483	40,601
Jordanian Dinar	458	360
Kazakhstani Tenge	638	345
Kenyan Shilling	419	804
Kuwait Dinar	862	777
Lebanese Pound	120	111
Malaysian (Ringgit)	7,775	3,962
Mauritius (Rupee)	926	706
Mexican New Peso	6,784	5,419
Morocco Dirham	431	382
Dollar (New Zealand)	5,465	4,191
Nigerian Naira	423	668
Krone (Norwegian)	5,452	(893)
Omanian Rial	434	376
Pakistani Rupee	2,142	2,852
Panama Balboa	163	163
Peru Sol	2,655	2,051
Philippines Peso	2,215	1,559
Polish (New Zloty)	2,944	1,371
Pound (Sterling)	73,238	97,920
Qatar Riyal	1,164	715
Romanian Leu	590	349
Russian Federation Rouble	5,393	2,655
Saudi Riyal	430	420
Singapore Dollar	5,758	1,260
South African Rand	9,652	5,724
South Korean Won	30,450	10,671
Sri Lankan Rupee	421	346
Krona (Swedish)	22,321	4,488
Franc (Swiss)	10,449	11,516
Thai (Bhat)	4,937	5,184
Dollar (Taiwan, New)	24,812	24,917
Tunisian Dinar	175	136
Turkish Lira	4,774	1,343
UAE Dirham	2,175	1,491
Uruguayan Pesos	513	-
Vietnam Dong	689	362
Other	(14,625)	3,294
Total	$ 476,893	$ 527,086

Additional Information — The Plan holdings are part of the MTA Master Trust of which the MTA Defined Benefit Plan participates on a percentage basis. The percentage of the Plan ownership for the year ended December 31, 2017 and December 31, 2016 was 82.54% and 83.48% respectively.

	Master Trust Total Plan	MTA Defined Benefit Plan	Master Trust Total Plan	MTA Defined Benefit Plan
	December 31, 2017		December 31, 2016	
	(In thousands)			
Total Investments:				
Investments measured at readily determined fair value	$ 818,745	$ 675,779	$ 693,868	$ 579,271
Investments measured at the NAV	4,074,473	3,369,189	3,411,910	2,848,414
Total investments measured at fair value	$ 4,893,218	$ 4,044,968	$ 4,105,778	$ 3,427,685

4. NET PENSION LIABILITY

The components of the net pension liability of the Plan at December 31, 2017 and 2016 were as follows (in thousands):

	December 31, 2017	December 31, 2016
Total pension liability	$ 5,072,814	$ 4,761,877
Fiduciary net position	4,051,534	3,419,971
Net pension liability	1,021,280	1,341,906
Fiduciary net position as a percentage of the total pension liability	79.87%	71.82%

Actuarial Methods and Assumptions

The total pension liability as of December 31, 2017 was determined by an actuarial valuation date of January 1, 2017, that was updated to roll forward the total pension liability to the respective year-end. Actuarial valuations are performed annually as of January 1.

Discount Rate

The discount rate used to measure the total liability as of December 31, 2017 and 2016 was 7.0%. The projection of cash flows used to determine the discount rate assumed that plan contributions will be made in accordance with the Employer funding policy as projected by the Plan's 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 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 of 7.00 percent; 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 (6.00 percent) or 1-percentage point higher (8.00 percent) than the current rate:

2017
(in thousands)

	1% Decrease 6.00%	Current Discount Rate 7.00%	1% Increase 8.00%
Net pension liability	$1,648,216	$1,021,280	$492,284

2016
(in thousands)

	1% Decrease 6.00%	Current Discount Rate 7.00%	1% Increase 8.00%
Net pension liability	$1,936,639	$1,341,906	$840,176

Additional Important Actuarial Valuation Information

Valuation date	January 1, 2017
Valuation timing	Actuarially determined contributions calculated as of December 31, for the fiscal year and discounted to expected payment dates (July 1 for these projections).
Actuarial cost method	Frozen Initial Liability
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 FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population for each group.
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 members reflecting mortality improvement ona generational basis using Scale AA
Actuarial assumptions:	
Investment rate of return	7.0%
Projected salary increases	Varies by years of employment, and employee group; 3.0% GWI increases for TWU Local 100 MTA Bus hourly employees
COLAs	55% of inflation assumption or 1.375%, if applicable
Inflation/Railroad Retirement wage base	2.5%; 3.5%

Valuation date	January 1, 2016
Valuation timing	Actuarially determined contributions calculated as of December 31, for the fiscal year and discounted to expected payment dates (July 1 for these projections).
Actuarial cost method	Frozen Initial Liability
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 FIL cost method amortized based on expected working lifetime, weighted by salary, of the projected population for each group.
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 members reflecting mortality improvement ona generational basis using Scale AA
Actuarial assumptions:	
Investment rate of return	7.0%
Projected salary increases	Varies by years of employment, and employee group; 3.5% for MTA Bus hourly employees
COLAs	55% of inflation assumption or 1.375%, if applicable
Inflation/Railroad Retirement wage base	2.5%; 3.5%

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.

2017 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, 2017	$3,419,971	12.00	1.00	$3,931,053
Monthly net external cash flows:				
January	(8,619)	12.00	1.00	(9,907)
February	6,311	11.00	0.92	7,174
March	6,275	10.00	0.83	7,044
April	7,808	9.00	0.75	8,667
May	6,830	8.00	0.67	7,498
June	9,802	7.00	0.58	10,626
July	9,802	6.00	0.50	10,509
August	9,802	5.00	0.42	10,392
September	8,180	4.00	0.33	8,564
October	9,802	3.00	0.25	10,149
November	9,802	2.00	0.17	10,037
December	39,617	0.25	0.02	39,728
Ending Value - December 31, 2017				$4,051,534
Money-Weighted Rate of Return	14.94%			

2016 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, 2016	$3,074,777	12.00	1.00	$3,319,713
Monthly net external cash flows:				
January	(7,049)	12.00	1.00	(7,610)
February	6,605	11.00	0.92	7,087
March	6,605	10.00	0.83	7,038
April	6,605	9.00	0.75	6,995
May	8,618	8.00	0.67	9,072
June	8,678	7.00	0.58	9,073
July	8,695	6.00	0.50	9,035
August	8,622	5.00	0.42	8,904
September	8,622	4.00	0.33	8,843
October	8,622	3.00	0.25	8,789
November	8,622	2.00	0.17	8,735
December	24,241	0.36	0.03	24,297
Ending Value - December 31, 2016				$3,419,971
Money-Weighted Rate of Return	7.97%			

Calculation on Long-Term Expected Rate of Return

The best-estimate range for the long-term expected rate of return is determined by adding expected inflation to expected long-term real returns and reflecting expected volatility and correlation. The capital market assumptions are per Milliman's investment consulting practice as of December 31, 2017 and 2016.

SCHEDULE OF LONG TERM EXPECTED RATE OF RETURN FOR 2017

Asset Class	Index	Target Allocation*	Real Rate of Return
US Core Fixed Income	Barclays Aggregate	10.00%	1.96%
US High Yield Bonds	BAML High Yield	8.00%	4.62%
Global Bonds	Citi WGBI	10.00%	0.34%
Emerging Market Bonds	JPM EMBI Plus	3.00%	3.30%
US Large Caps	S&P 500	10.00%	4.31%
US Small Caps	Russell 2000	5.50%	5.57%
Global Equity	MSCI ACWI NR	10.00%	4.99%
Foreigh Developed Equity	MSCI EAFE NR	10.00%	5.57%
Emerging Market Equity	MSCI EM NR	3.50%	7.91%
Global REITS	FTSE EPRA/NAREIT Developed	5.00%	5.62%
Private Real Estate Property	NCREIF Property	3.00%	3.64%
Private Equity	Cambridge Private Equity	7.00%	8.99%
Hedge Funds - MultiStrategy	HFRI: Fund Wtd Composite	15.00%	3.35%
Assumed Inflation - Mean			2.50%
Assumed Inflation - Standard Deviation			1.85%
Portfolio Nominal Mean Return			6.80%
Portfolio Standard Deviation			11.54%
Long-Term Expected Rate of Return selected by MTA			7.00%

* Based on March 2014 Investment Policy

SCHEDULE OF LONG TERM EXPECTED RATE OF RETURN FOR 2016

Asset Class	Index	Target Allocation*	Real Rate of Return
US Core Fixed Income	Barclays Aggregate	10.00%	1.67%
US High Yield Bonds	BAML High Yield	8.00%	5.04%
Global Bonds	Citi WGBI	10.00%	0.28%
Emerging Market Bonds	JPM EMBI Plus	3.00%	3.78%
US Large Caps	S&P 500	10.00%	4.80%
US Small Caps	Russell 2000	5.50%	6.06%
Global Equity	MSCI ACWI NR	10.00%	5.49%
Foreigh Developed Equity	MSCI EAFE NR	10.00%	6.06%
Emerging Market Equity	MSCI EM NR	3.50%	8.39%
Global REITS	FTSE EPRA/NAREIT Developed	5.00%	5.77%
Private Real Estate Property	NCREIF Property	3.00%	3.64%
Private Equity	Cambridge Private Equity	7.00%	8.99%
Hedge Funds - MultiStrategy	HFRI: Fund Wtd Composite	15.00%	3.45%
Assumed Inflation - Mean			2.50%
Assumed Inflation - Standard Deviation			1.85%
Portfolio Nominal Mean Return			7.03%
Portfolio Standard Deviation			11.54%
Long-Term Expected Rate of Return selected by MTA			7.00%

* Based on March 2014 Investment Policy

5. CONTRIBUTIONS

Employer contributions are actuarially determined on an annual basis. Amounts recognized as receivables for contributions include only those due pursuant to legal requirements. Employee contributions to the Plan are recognized in the period in which the contributions are due. There are no contributions required under the Metropolitan Suburban Bus Authority Employee's Pension Plan.

The following summarizes the types of employee contributions made to the Plan.

Effective January 1, 1994, covered MTA Metro-North Railroad and MTA Long Island Rail Road non-represented employees are required to contribute to the Plan to the extent that their Railroad Retirement Tier II employee contribution is less than the pre-tax cost of the 3% employee contributions. Effective October 1, 2000, non-represented employee contributions, if any, were eliminated after 10 years of making contributions to the Plan. MTA Metro-North Railroad employees may purchase prior service from January 1, 1983 through December 31, 1993 and MTA Long Island Rail Road employees may purchase prior service from January 1, 1988 through December 31, 1993 by paying the contributions that would have been required of that employee for the years in question, calculated as described in the first sentence, had the Plan been in effect for those years.

Police Officers who became participants of the MTA Police Program prior to January 9, 2010 contribute to that program at various rates. Police Officers who became participants on or after January 9, 2010 but before April 1, 2012 contribute 3% up to the completion of 30 years of service, the maximum amount of service credit allowed. Police Officers who become participants on or after April 1, 2012 contribute 3%, with additional new rates starting April 2013, ranging from 3.5%, 4.5%, 5.75%, to 6%, depending on salary level, for their remaining years of service.

MTA Bus represented participants make contributions in accordance with their respective collective bargaining agreements and arbitration awards. MTA Bus non-represented employees are accessed contributions for their flat rate benefit of $10.33 for each week for the period from January 1, 2012 through December 31, 2016. Effective January 1, 2017, MTA Bus non-represented operating employee hired prior to April 1, 2012 contribute 2% of gross wages. MTA Bus non-represented non-operating employee hired prior to April 1, 2012 contribute 4.85% of gross wages for ten years of service after January 1, 2017, and then 1.85% gross salary thereafter until retirement. Contributions levels for MTA Bus non-represented employees hired on or after April 1, 2012, which are required until retirement, are determined every year at the beginning of the calendar year, and are based on annual wages during the prior year and the following schedule:

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

In 2017, a reserve was established for fifteen former MTA employees in accordance with Chapter 533 of the Laws of 2015. The transfer of this reserve in the amount of $1.6 million, to the New York State and Local Police and Fire Retirement System allowed former MTA Police employees to transfer membership and contributions to the New York State and Local Police and Fire Retirement System from the MTA Defined Benefit Plan.

Covered MTA Metro-North Railroad represented employees and MTA Long Island Rail Road represented employees who first became eligible to be Plan participants prior to January 30, 2008 contribute 3% of salary. MTA Staten Island Railway employees contribute 3% of salary except for represented employees hired on or after June 1, 2010 who contribute 4%. MTA Long Island Rail Road represented employees who became participants after January 30, 2008 contribute 4% of salary. For the MTA Staten Island Railway employees, contributions are not required after the completion of 10 years of credited service. MTA Long Island Rail Road represented employees are required to make the employee contributions for 10 years, or 10 years if hired after certain dates in 2014 as per collective bargaining agreements. Certain Metro-North represented employees, depending on their collective bargaining agreements, are required to make the employee contributions until January 1, 2014, January 1, 2017, June 30, 2017, or the completion of required years of credited service as per the relevant collective bargaining agreements.

Covered MTA Bus represented employees and certain non-represented employees are required to contribute a fixed dollar amount, which varies, by Depot. Currently, non-represented employees at certain Depots, contribute $21.50 per week. Non-represented employees at Eastchester hired prior to 2007 contribute $25 per week. Represented employees at Baisley Park, College Point, Eastchester, Far Rockaway, JFK, LaGuardia and Yonkers Depots contribute $29.06 per week; Spring Creek represented employees contribute $32.00 per week. Certain limited number of represented employees promoted prior to the resolution of a bargaining impasse continue to participate in the plan that was in effect before their promotion. Certain MTA Bus non-represented employees who are formerly employed by the private bus companies (Jamaica, Green, Triboro and Command) at Baisley Park, Far Rockaway, JFK, LaGuardia and Spring Creek Depots who are in the pension program covering only such employees make no contributions to the program.

MTA Bus is required to make significant annual contributions to the MTA Plan on a current basis. Pursuant to the January 1, 2017 and January 1, 2016 actuarial valuations for the MTA Plan, which included amounts for actuarial assets and liabilities relating to both active and retired members for most portions of the former private plans (excepting, for example, members of the Transport Workers Union — New York City Private Bus Lines Pension Trust who were working on school bus routes which did not become part of MTA Bus service), MTA Bus recorded pension expense equal to the valuation annual required contribution of $50.5 and $44.3 for the calendar years ended December 31, 2017 and

2016, respectively. Both of these employer contributions were paid to the MTA Plan in their respective years.

6. ACTUARIAL METHODS AND ASSUMPTIONS

A. Actuarial Valuation Method

The Frozen Initial Liability method was used for determining normal costs and the unfunded actuarial accrued liability. Entry Age Normal method is used for determining changes in the unfunded actuarial accrued liability due to plan provision and assumption changes. For MTA Bus members with benefits that are not pay-related, the Entry Age Level Dollar method is used. After establishment of the plan change base, for MTA Bus members with benefits indexed to general wage increases, assumed general wage increases is used rather than payroll to conform to a method compliant for GASB 67 purposes. For groups where service was reported as of the valuation date, Entry Age is based on an effective date of hire equal to the valuation date less provided service plus any purchased service, but not reflecting any military service purchased.

The Normal Cost equals the present value of future employer normal contributions divided by the average future working lifetime factor. This factor equals the present value of future compensation or service divided by current compensation or the member count (less certain retirements), depending if benefits are pay-related, and weighted by the present value of benefits. Service is used for MTA Bus members with hourly benefits and benefits indexed to general wage increases.

B. Asset Valuation Method

The Asset Valuation method smooths gains and losses over a 5-year period. The formula for the asset valuation method is as follows:

Actuarial Value of Assets = $MV_t - .8UR_1 - .6UR_2 - .4UR_3 - .2UR_4$

Where

MV_t = Market Value of assets as of the valuation date.

UR_n = Unexpected return during the n^{th} year preceding the valuation date. The unexpected return for a year equals the total investment return minus the total expected return. The total expected return equals the market value of assets at the beginning of the year plus the weighted net cash flow during the year multiplied by the expected rate of return.

The resulting value cannot be less than 80% or greater than 120% of the market value of assets.

C. Actuarial Assumptions Universal to all Groups

Interest — 7.00% per annum, compounded annually.

Railroad Retirement Wage Base — 3.50% per year.

Consumer Price Index — 2.50% per year.

Provision for Expenses — Estimated administrative expenses are added to the normal cost. Administrative expenses are based on the average of the prior three year's reported administrative expenses and are assumed payable in the middle of the plan year.

Valuation Compensation: The valuation compensation is equal to the annualized base salary as of December 31, 2016 as provided by MTA multiplied by the overtime assumption and assumed salary increases for the year. Salary increases are assumed to occur at mid-year on average.

Mortality — Preretirement and postretirement healthy annuitant rates are projected on a generational basis using Scale AA. As a generational table, it reflects mortality improvements both before and after the measurement date.

Preretirement — RP-2000 Employee Mortality Table for Males and Females with Blue collar adjustments.

Postretirement Healthy Lives — 95% of RP-2000 Healthy Annuitant mortality table for males with Blue Collar adjustments and 116% of the rates from the RP-2000 Healthy Annuitant mortality table for females.

Postretirement Disabled Lives — RP-2014 Disabled Annuitant mortality table for males and females.

Post-termination Death Benefits - For current inactive participants eligible for post-retirement death benefits, an amount of $25,000 ($10,000 for certain M.S.B.A. inactive participants) is assumed to be payable at death. For current terminated vested members, $100,000 is assumed to be payable at death prior to retirement, except for Police officers. A load of 8.75% is applied to the liability for Police officers.

Participant Data — Service for MTA Police, Metro-North Railroad and Long Island Rail Road represented and management members is based on the sum of credited service, purchased service and military service provided by MTA. Retirement status and benefits based on information provided in JP Morgan file as of the valuation date, except if reported as disability retirement previously, continued to treat as a disability retirement. For inactive participants, future offsets for Railroad Retirement benefits are estimated and assumed to occur at age 62 unless disabled or it appears offset has occurred. Benefits, net of any Railroad Retirement benefits, are estimated for vested members who terminated during the past year if not provided by the Authority.

Retroactive Wage Adjustments - Based on calculations completed by the MTA, adjustments to benefits were determined based on year of retirement: 2% for retirements prior to 2013, 5% for 2013 retirements, 8% for 2014 retirements and 11% for 2015 retirements. These adjustments were applied to liabilities of Metro-North and Long Island Rail Road represented members provided by the MTA who received a retroactive wage adjustment and a calculation was not finalized during 2016. Additional liabilities equal to the accumulated amount of estimated retroactive payments as of the valuation date were also included.

D. Changes in Actuarial Assumptions Universal to all Groups

The disability mortality table has been updated since the prior valuation.

E. Actuarial Assumptions — MTA Defined Benefit Pension Plan — Management

Salary Scale — Salaries are assumed to increase in accordance with the following schedule:

Years of Service	Rate of Increase
0	6.00 %
1	5.00
2	4.25
3	4.00
4+	3.50

Termination — Withdrawal rates vary by years of service and sex. Illustrative rates are shown below:

Years of Service	Male	Female
0 - 1	5.00 %	7.50 %
2 - 3	3.25	4.00
4	2.50	4.00
5 - 9	2.25	3.50
10 - 19	1.50	3.00
20+	1.00	1.50

Retirement — Rates vary by age and type of retirement. Illustrative rates are shown below:

A. For Management employees hired prior to January 31, 2008.

Age	Reduced Early Retirement	Unreduced Early Retirement
55	5.00 %	10.00 %
56	5.00	7.50
57	5.00	5.00
58	5.00	5.00
59	5.00	5.00

B. For Management employees hired on or after January 31, 2008.

Age	Reduced Early Retirement	Unreduced Early Retirement
55	3.00 %	10.00 %
56	3.00	7.50
57	3.00	5.00
58	3.00	5.00
59	3.00	5.00
60	3.00	30.00
61	3.00	30.00

C. For all management employees.

Normal Retirement:

- 5% per year if members have fewer than 10 years of service
- 15% per year if members have 10 but fewer than 20 years of service
- 30% per year if member have 20 or more years of service
- Certain retirement age is age 80

Disability — Rates vary by age, sex and type of disability beginning at benefit eligibility. Illustrative rates are shown below:

	Ordinary		Accidental			Ordinary		Accidental	
Age	M	F	M	F	Age	M	F	M	F
20	0.015 %	0.020 %	0.010 %	0.005 %	45	0.176 %	0.147 %	0.039 %	0.010 %
25	0.020	0.020	0.010	0.005	50	0.240	0.221	0.044	0.010
30	0.024	0.024	0.015	0.005	55	0.245	0.245	0.049	0.010
35	0.039	0.029	0.024	0.005	60	0.245	0.245	0.049	0.010
40	0.103	0.069	0.034	0.010	64	0.245	0.245	0.049	0.010

Marriage — 85% of members are assumed to be married with wives 3 years younger than their husbands.

Employee Contributions — No employee contributions have been anticipated for future years.

Changes in Actuarial Assumptions — None.

F. Actuarial Assumptions — MTA Defined Benefit Pension Plan — Metro-North Represented Employees

Salary Scale — Salaries are assumed to increase in accordance with the following schedule:

Years of Service	Rate of Increase
0	3.25 %
1	10.50
2	10.00
3	9.75
4	9.25
5	14.75
6+	3.25

Overtime - Members hired on or prior to New Participant Date are assumed to earn overtime equal to 25% of their rate of pay for years when they are retirement eligible and for members on after New Participant Date are assumed to earn overtime equal to 20% of their rate of pay for years when they are retirement eligible. Otherwise, members are assumed to earn overtime equal to 18% of their rate of pay.

Termination — Withdrawal rates vary by years of service. Illustrative rates are shown below:

Years of Service	Termination Rate
0	3.50 %
1	3.25
2 - 3	2.50
4 - 9	2.25
10 - 19	1.50
20+	1.00

Retirement — Rates vary by age and type of retirement. Illustrative rates are shown below:

A. For represented employees hired prior on or prior to New Participant Date:

Age	Reduced Early Retirement	Unreduced Early Retirement
55	4.50 %	10.00 %
56	4.00	7.50
57	3.00	5.00
58	3.00	5.00
59	3.50	5.00

B. For represented employees hired after new Participant Date:

Age	Reduced Early Retirement	Unreduced Early Retirement
55	3.00 %	10.00 %
56	3.00	7.50
57	3.00	5.00
58	3.00	5.00
59	3.00	5.00
60	3.00	30.00
61	3.00	30.00

Unreduced early retirement is not available to non-ACRE represented employees hired after New Participant Date.

C. For all represented employees.

Normal Retirement:

- 5% per year if members have fewer than 10 years of service
- 15% per year if members have 10 but fewer than 20 years of service
- 30% per year if member have 20 or more years of service
- Certain retirement age is age 80

Disability — Rates vary by age, sex and type of disability beginning at benefit eligibility. Illustrative rates are shown below:

	Ordinary		Accidental			Ordinary		Accidental	
Age	**M**	**F**	**M**	**F**	**Age**	**M**	**F**	**M**	**F**
20	0.17 %	0.25 %	0.01 %	0.01 %	45	0.27 %	0.41 %	0.06 %	0.01 %
25	0.17	0.25	0.01	0.01	50	0.50	0.75	0.06	0.01
30	0.17	0.25	0.02	0.01	55	0.95	1.43	0.07	0.01
35	0.18	0.27	0.03	0.01	60	1.93	2.90	0.07	0.01
40	0.20	0.31	0.05	0.01	64	1.93	2.90	0.07	0.01

Marriage — 80% of members are assumed to be married with wives 3 years younger than their husbands.

Changes in Actuarial Assumptions — None.

G. Actuarial Assumptions — MTA Defined Benefit Pension Plan — Long Island Rail Road Represented Employees

Salary Scale — Salaries are assumed to increase in accordance with the following schedule:

Years of Service	Rate of Increase
0	3.25 %
1	10.50
2	10.00
3	9.75
4	9.25
5	14.75
6+	3.25

Overtime - Members hired prior to January 31, 2008 are assumed to earn overtime equal to 30% of their pay for years when they are retirement eligible. Otherwise, members are assumed to earn overtime equal to 20% of their rate of pay.

Termination — Withdrawal rates vary by years of service. Illustrative rates are shown below:

Years of Service	Termination Rate
0	4.25 %
1 - 4	2.75
5 - 9	2.25
10+	1.25

Retirement — Rates vary by age and type of retirement. Illustrative rates are shown below:

A. For represented employees hired prior to January 31, 2008:

Age	Reduced Early Retirement	Unreduced Early Retirement
55	4.50 %	10.00 %
56	4.00	7.50
57	3.00	5.00
58	3.00	5.00
59	3.50	5.00

B. For represented employees hired on or after January 31, 2008:

Age	Reduced Early Retirement	Unreduced Early Retirement
55	3.00 %	10.00 %
56	3.00	7.50
57	3.00	5.00
58	3.00	5.00
59	3.00	5.00
60	3.00	30.00
61	3.00	30.00

C. For all other represented employees.

Normal Retirement:

- 5% per year if members have fewer than 10 years of service
- 15% per year if members have 10 but fewer than 20 years of service
- 30% per year if member have 20 or more years of service
- Certain retirement age is age 80

Disability — Rates vary by age, sex and type of disability beginning at benefit eligibility. Illustrative rates are shown below:

	Ordinary		Accidental			Ordinary		Accidental	
Age	M	F	M	F	Age	M	F	M	F
20	0.17 %	0.25 %	0.01 %	0.01 %	45	0.27 %	0.41 %	0.06 %	0.01 %
25	0.17	0.25	0.01	0.01	50	0.50	0.75	0.06	0.01
30	0.17	0.25	0.02	0.01	55	0.95	1.43	0.07	0.01
35	0.18	0.27	0.03	0.01	60	1.93	2.90	0.07	0.01
40	0.20	0.31	0.05	0.01	64	1.93	2.90	0.07	0.01

Marriage — 80% of members are assumed to be married with wives 3 years younger than their husbands.

Changes in Actuarial Assumptions - None.

H. Actuarial Assumptions — MTA 20-Year Police Retirement Program

Salary Scale — Salary increases vary by years of Police Service. Illustrative rates are shown below.

Years of Service	Rate of Increase
1	12.5 %
2	14.5
3 – 4	15.5
5	39.5
6 – 9	3.5
10	4.5
11 – 14	3.5
15	5.5
16 – 19	3.5
20	4.5
21 – 24	3.5
25	4.5
26+	3.5

Overtime - Members are assumed to earn overtime equal to 30% of their rate of pay. Overtime for those hired on and after January 9, 2010 is limited to 15% of their rate of pay.

Termination — Withdrawal rates vary by length of service. Illustrative rates are shown below:

Years of Service	Termination Rate
0	6.50 %
1	2.50
2 – 4	2.00
5	0.50
6 – 9	0.35
10+	0.30

Retirement — Rates vary by year of eligibility. Illustrative rates are shown below:

Years of Eligibility	Retirement Rate
1	17.00 %
2	12.00
3 – 9	10.00
10+	50.00

Retirement rates at ages 62 and above are 100% regardless of year of eligibility.

Disability — Rates vary by age and type of disability beginning at benefit eligibility. Illustrative rates are shown below:

Age	Ordinary	Accidental	Age	Ordinary	Accidental
20	0.043 %	0.095 %	45	0.256 %	0.500 %
25	0.043	0.095	50	0.559	0.527
30	0.062	0.095	55	0.819	0.539
35	0.096	0.115	60	0.896	0.544
40	0.138	0.316			

Cost of Living Expenses — assumed to be 1.375% per annum, compounded annually.

Marriage — 85% of members are assumed to be married with wives 3 years younger than their husbands.

Changes in Actuarial Assumptions — None

I. Actuarial Assumptions — MSBA Employees Pension Plan

Benefit Estimates — Due to the insignificant number of active employees, benefits are estimated based on plan provisions and actuarial assumptions used for management benefits, except for the overtime assumption.

Overtime – Members are assumed to earn overtime equal to the following percentage of their rates of pay:

Years of Service	Rate
Under 25 years of service	17.00 %
25 to 29 years of service	20.00
30 or more years of service	23.00

Changes in Actuarial Assumptions - None.

J. Actuarial Assumptions — MTA Defined Benefit Plan — SIRTOA

Salary Scale — Salary increases vary by years of service. Illustrative rates are shown below.

Years of Service	Rate
0	10.00 %
1	9.50
2	9.25
3	9.00
4	8.75
5	6.00
6+	3.25

Overtime — Hourly employees are assumed to earn overtime equal to 7.50% of their rate of pay.

Termination — Withdrawal rates vary length of service. Illustrative rates are shown below:

Year of Service	Termination Rate
0	9.00 %
1 - 3	5.50
4 - 9	3.50
10 - 19	1.40
20+	0.50

Retirement — Rates vary by age and type of retirement. Illustrative rates are shown below:

		Normal Retirement	
Age	Reduced Early Retirement	First Year Eligible	After First Eligibility
55	3.00 %	30.00 %	20.00 %
56	3.00	30.00	20.00
57	3.00	30.00	20.00
58	3.00	30.00	20.00
59	3.00	30.00	20.00
60	3.00	30.00	20.00
61	3.00	30.00	20.00

For age 62 or age 60 if hired prior to June 1, 2010 and later:

- 5% per year if members have fewer than 10 years of service
- 15% per year if members have 10 but fewer than 20 years of service
- 30% per year if member have 20 or more years of service
- Certain retirement age is age 80

Disability — Rates vary by age, sex and type of disability. Illustrative rates are shown below:

Age	Ordinary	Accidental	Age	Ordinary	Accidental
20	0.15 %	0.03 %	45	0.44 %	0.05 %
25	0.17	0.03	50	0.54	0.06
30	0.19	0.03	55	0.61	0.07
35	0.24	0.03	60	0.81	0.08
40	0.33	0.04			

Marriage — 80% of members are assumed to be married with wives 3 years younger than their husbands.

Benefits Not Valued — Accidental death benefits.

Changes in Actuarial Assumptions — None.

K. Actuarial Assumptions — LIRR Pension Plan – Base Benefits

Salary Scale — Rates of pay are assumed to increase at a rate of 3.0% per annum.

Overtime/Unused Vacation Pay — Earnings in each year increased by 65% for represented employees to account for overtime and by 20% in the year prior to assumed retirement and by 10% in the year prior to termination (other than retirement) for non-represented employees to account for unused vacation pay.

Termination — Withdrawal rates vary by age. Illustrative rates are shown below:

Age	Rate	Age	Rate
20	2.12 %	45	0.96 %
25	1.64	50	0.80
30	1.44	55	0.60
35	1.36	60	0.00
40	1.16		

Retirement — Assumed retirement rate varies by year of eligibility.

Eligibility Period	Rate of Retirement
First Year	40 %
Years 2–4	33
Years 5	37
Years 6–7	35
Years 8–9	33
Years 10–15	55
Years 16 and above	100

Terminated vested participants are assumed to retire upon first eligibility, or attained age if later.

Marriage — 80% of members are assumed to be married with wives 3 years younger than their husbands.

Interest on Employee Contributions — Assumed to be 3.5% per year for future years.

Tier 1 Railroad Offset — The Tier 1 Railroad offset, which is designed similar to a Social Security Benefit, was estimated by assuming that an individual would continue to earn compensation at the level in effect at his date of termination until his eligibility for Railroad Benefits and further increased by 2% per year from the date of termination to age 65.

Benefits Not Valued — Disability benefits since the majority of active plan participants are at or near retirement eligibility.

Changes in Actuarial Assumptions — None.

L. Actuarial Assumptions — MTA Defined Benefit Pension Plan – Former New York Bus Service Employees

Salary Scale - Salaries are assumed to increase in accordance with the following schedule for former Liberty Lines Bus non-represented employees (Article 13) and for Certain Former non-represented Employees of Alliance Companies (Article 18):

Years of Service	Rate
0	6.00 %
1	5.00
2	4.25
3	4.00
4+	3.50

General Wage Increase (GWI) - The benefit level and contribution rate is assumed to increase 3% each year for TWU Local 100 (Arbitration Award) employees.

Termination — Withdrawal rates vary by years of service. Illustrative rates are shown below:

Year of Service	Termination Rate
0	17.50 %
1	4.75
2 - 9	2.75
10+	2.25

Retirement — Rates vary by age, service, employee type and retirement eligibility. Illustrative rates are shown below:

For TWU Local 100 (Arbitration Award), TSO (Article 14), and ATU (Article 14) represented members:

	Years of Service at Retirement		
Age	<5	5-10	10+
57-64	N/A	N/A	30 %
65-79	0 %	5 %	30 %
80 +	100 %	100 %	100 %

For former New York Bus Service non-represented employees (Article 16):

Assumed to retire at age 62 or current age if later.

For former Queens Surface, Jamaica and Triboro Bus Service non-represented Employees (Article 15):

Age	Retirement Rate
55–56	10 %
57	20
58–60	15
61	20
62–63	45
64	40
65	100

For former Liberty Lines Bus non-represented employees (Article 14):

Age	Retirement Rate
60–61	7.50 %
62	40.00
63–64	20.00
65	100.00

For former Liberty Lines Bus non-represented employees (Article 13):

Assumed to retire at age 62 or current age if later.

For former Command Bus Service non-represented employees (Article 17):

Age	Retirment Rate	Age	Retirement Rate
50–52	5 %	59	34 %
53–54	10	60	35
55	30	61	36
56	31	62–64	40
57	32	65	100
58	33		

For former Green Bus Lines non-represented employees (Article 19):

Age	Rate of Retirement
55–59	5 %
60–61	10
62	100

For certain former non-represented employees of Alliance Companies (Article 18):

Age	Retirement Rate
55–56	6 %
57–58	8
59	9
60–61	13
62	25
63–64	15
65	100

Disability — Rates vary by age. Illustrative rates are shown below:

Age	Rate	Age	Rate
20	0.03 %	45	0.27 %
25	0.04	50	0.48
30	0.08	55	0.87
35	0.11	60	1.30
40	0.16		

Disability rates cease upon attainment of unreduced retirement eligibility.

Marriage — 80% of members are assumed to be married with wives 3 years younger than their husbands.

Interest on Employee Contributions — Future years assumed to be 3.5% per year.

Benefits Not Valued — The $2,500 post-retirement death benefit for TWU Local 100 (arbitration Award), TSO (Article 14), and ATU (Article 14) represented members is not valued since premiums are paid outside of the Plan trust.

The $10,000 post-retirement death benefit for former Queens Surface, Jamaica and Triboro Bus Service non-represented Employees (Article 15) is not valued since premiums are paid outside of the plan trust.

The accidental death and dismemberment benefit for former Queens Surface, Jamaica and Triboro Bus Service non-represented Employees (Article 15) is not valued as the costs are expected to be de minimis.

Form of payment - Normal Form, except for all former Liberty Lines Bus non-represented employees (Article 13) members are assumed to elect the lump sum payment option. Lump sums valued using the current (2017) lump sum mortality table published by the IRS and a 4.5% assumed interest rate.

Changes in Actuarial Assumptions — None.

7. CUSTODIAL AND OTHER PROFESSIONAL SERVICES

JP Morgan Chase Bank is the 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 stipulated 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.

8. SUBSEQUENT EVENTS

Subsequent to the measurement date, benefit modifications were implemented for MTA Bus represented members as described in the Impasse Award for ATU Local 1179 dated June 5, 2018 and the Memorandum of Understanding for ATU Local 1181 dated July 25, 2018. On October 24, 2018, the MTA Board approved a pension amendment for certain TWU Local 100 represented members of MTA Bus who are also participants in the TWU-Westchester Pension Plan as former employees of Liberty Lines, Inc. Such Plan participants will now receive pension credit for periods of employment prior to the MTA takeover date, and their Plan benefit will be offset by the benefit paid under the TWU-Westchester Pension Plan.

On August 2, 2018 GAM Investments announced the suspension of all subscriptions and redemptions in its Unconstrained/Absolute Return Bond Funds (“ARBF”) as at July 31, 2018, by the relevant fund boards of directors following high level of redemptions. The ARBF experienced a high level of redemption requests following the suspension of the Investment Director, Business Unit Head and leader of the Unconstrained Bond Fund portfolio management team after an internal review of the team’s risk controls and practices. GAM announced that although the funds have the necessary liquidity to meet these redemption requests, it believed that such actions would lead to a disproportional shift in their portfolio composition, which could compromise the interests of remaining investors.

On August 9, 2018, MTA Defined Benefit Pension Board of Managers approved the termination of the GAM Unconstrained Bond Fund. Since that time, GAM elected to formally close the fund and distribute the proceeds in an orderly manner. Sixty (60) percent of the Plan’s investment in the ARBF was returned on September 6, 2018 and an additional five (5) percent was received on October 4, 2018. GAM has indicated that it expects that twenty-five (25) percent will be returned during 2019. Ten (10) percent will be held back for some period, as the funds unwind.

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METROPOLITAN TRANSPORTATION AUTHORITY
DEFINED BENEFIT PENSION PLAN

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

		2017	2016	2015	2014
Total pension liability:					
Service cost	$	148,051	138,215	124,354	121,079
Interest		335,679	308,009	288,820	274,411
Changes of benefit terms		76,511	73,521	6,230	-
Differences between expected and actual experience		(27,059)	86,809	121,556	2,322
Changes of assumptions		10,731	-	(76,180)	-
Benefit payments and withdrawals		(232,976)	(209,623)	(199,572)	(191,057)
Net change in total pension liability		310,937	396,931	265,208	206,755
Total pension liability – beginning		4,761,877	4,364,946	4,099,738	3,892,983
Total pension liability – ending (a)		5,072,814	4,761,877	4,364,946	4,099,738
Plan fiduciary net position:					
Employer contributions		321,861	280,768	221,694	331,259
Member contributions		31,027	29,392	34,519	26,006
Net investment income		516,153	247,708	(45,122)	102,245
Benefit payments and withdrawals		(232,976)	(209,623)	(199,572)	(191,057)
Administrative expenses & Transfer to investments		(4,502)	(3,051)	(1,962)	(9,600)
Net change in plan fiduciary net position		631,563	345,194	9,557	258,853
Plan fiduciary net position – beginning		3,419,971	3,074,777	3,065,220	2,806,367
Plan fiduciary net position – ending (b)		4,051,534	3,419,971	3,074,777	3,065,220
Employer's net pension liability – ending (a)-(b)	$	1,021,280	1,341,906	1,290,169	1,034,518
Plan fiduciary net position as a percentage of the total pension liability		79.87%	71.82%	70.44%	74.77%
Covered-employee payroll	$	1,805,156	1,724,219	1,603,924	1,544,050
Employer's net pension liability as a percentage of covered-employee payroll		56.58%	77.83%	80.44%	67.00%

In accordance with GASB No. 67, paragraph 50, such information was not readily available for periods prior to 2014.

METROPOLITAN TRANSPORTATION AUTHORITY DEFINED BENEFIT PENSION PLAN

SCHEDULE II

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	Contribution as a % of covered Payroll
2008	$ 107,759	$ 107,759	$ -	$ -	N/A
2009	146,171	146,171	-	-	N/A
2010	155,318	155,318	-	-	N/A
2011	166,188	166,188	-	-	N/A
2012	212,397	212,397	-	-	N/A
2013	242,980	242,980	-	-	N/A
2014	271,523	331,259	(59,736) *	1,544,050	21.45%
2015	273,730	221,694	52,036	1,603,924	13.82%
2016	290,415	280,768	9,647	1,724,219	16.28%
2017	316,916	321,861	(4,945)	1,805,156	17.83%

* Excess for 2014 reflects a prepaid contribution toward the 2015 Actuarially Determined Contribution.

In accordance with GASB No. 67, paragraph 50, such information was not readily available for periods prior to 2014.

METROPOLITAN TRANSPORTATION AUTHORITY
DEFINED BENEFIT PENSION PLAN

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 for are as follows:

Valuation Dates	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)
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 each group	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 each group	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 each group	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 each group
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.
Interest rate	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 2015, per annum, net of investment expenses
Inflation	2.5% per annum	2.5% per annum	2.5% per annum	2.5% per annum
Railroad retirenment wage base	3.5% per year	3.5% per year	3.0% per year	3.0% per year
Mortality	Based on experience of all MTA members reflecting mortality improvement ona generational basis using Scale AA	Based on experience of all MTA members reflecting mortality improvement ona generational basis using Scale AA	Based on experience of all MTA members reflecting mortality improvement ona generational basis using Scale AA	Based on experience of all MTA members reflecting mortality improvement ona generational basis using Scale AA
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.	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan.	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan.	Tables based on recent experience. Rates vary by age, years of service at retirement and Tier/Plan.
Salary increases	Varies by years of employment, and employee group; 3.0% General Wage Increases ("GWI") for TWU MTA Bus hourly employees	Varies by years of employment, and employee group; 3.0% General Wage Increases ("GWI") for TWU MTA Bus hourly employees	Varies by years of employment, and employee group; 3.5% for MTA Bus hourly employees	Varies by years of employment, and employee group; 3.5% for MTA Bus hourly employees
Overtime	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience	Tables based on recent experience
Cost-of-living adjustments	1.375% per annum (2)	1.375% per annum (2)	1.375% per annum (2)	1.375% per annum (2)
Provision for expenses	An average of the prior three years' administrative charges added to the normal cost	An average of the prior three years' administrative charges added to the normal cost	An average of the prior three years' administrative charges added to the normal cost	An average of the prior three years' administrative charges added to the normal cost

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

Required Supplementary Information (Unaudited)
Schedule of Investment Returns

The following table displays annual money-weighted rate of return, net of investment expense.

Fiscal Year Ending December 31	Net Money-Weighted Rate of Return
2008	N/A
2009	N/A
2010	N/A
2011	N/A
2012	N/A
2013	N/A
2014	3.58%
2015	(1.47%)
2016	7.97%
2017	14.94%

In accordance with GASB No. 67, paragraph 50, such information was not readily available for periods prior to 2014.

Calculation on Long-Term Expected Rate of Return

The best-estimate range for the long-term expected rate of return is determined by adding expected inflation to expected long-term real returns and reflecting expected volatility and correlation. The capital market assumptions are per Milliman's investment consulting practice as of December 31, 2017.