



---

## **METROPOLITAN TRANSIT AUTHORITY UNION PENSION PLAN**

### **GASB 67 and 68 DISCLOSURE**

**Fiscal Year: October 1, 2020 to September 30, 2021**

#### **Prepared by**

**James Tumlinson, Jr., EA, MAAA**  
Principal and Consulting Actuary

**Katherine Pitzinger, ASA, EA, MAAA**  
Actuarial Associate

Milliman, Inc.  
1415 Louisiana Street, Suite 500  
Houston, TX 77002  
Tel +1 713 658 3000  
Fax +1 713 658 8454  
milliman.com

## Table of Contents

<b>Executive Summary</b>	<b>ES-1</b>
<b>Certification</b>	<b>1</b>
<b>Overview of GASB 67 and GASB 68</b>	<b>3</b>
<b>Statement of Fiduciary Net Position</b>	<b>4</b>
<b>Statement of Changes in Fiduciary Net Position</b>	<b>5</b>
<b>Money-Weighted Rate of Return</b>	<b>6</b>
<b>Net Pension Liability</b>	<b>7</b>
<b>Long-Term Expected Rate of Return</b>	<b>8</b>
<b>Depletion Date Projection</b>	<b>9</b>
<b>Projection of Contributions</b>	<b>10</b>
<b>Projection of Fiduciary Net Position</b>	<b>11</b>
<b>Actuarial Present Value of Projected Benefit Payments</b>	<b>12</b>
<b>Changes in Net Pension Liability</b>	<b>13</b>
<b>Pension Expense</b>	<b>14</b>
<b>Schedule of Deferred Inflows and Outflows of Resources</b>	<b>15</b>
<b>Schedule of Changes in Net Pension Liability and Related Ratios</b>	<b>16</b>
<b>Schedule of Employer Contributions</b>	<b>17</b>
<b>Actuarial Methods and Assumptions Used for Funding Policy</b>	<b>18</b>
<b>Summary Chart</b>	<b>19</b>
<b>Glossary</b>	<b>20</b>

## Executive Summary

### A. Summary of Key Results

Valuation Date	January 1, 2019	January 1, 2020
<b>Participant Data</b>		
Number of participants		
Active participants	1,591	1,469
Terminated vested participants	574	582
Retired participants	1,248	1,354
Disabled participants	192	185
Beneficiaries	<u>351</u>	<u>350</u>
Total participants	3,956	3,940
Covered payroll	\$94,602,405	\$90,601,821
Measurement Date	December 31, 2019	December 31, 2020
<b>Assets</b>		
Fiduciary net position	\$294,629,862	\$321,865,241
Money-weighted rate of return	17.63%	11.55%
<b>Net Pension Liability</b>		
Total pension liability	\$429,293,243	\$434,712,038
Fiduciary net position	<u>294,629,862</u>	<u>321,865,241</u>
Net Pension liability	\$134,663,381	\$112,846,797
Discount rate	6.25%	6.25%
Fiduciary net position as of % total pension liability	68.63%	74.04%
Net pension liability as of % covered payroll	142.35%	124.55%
Reporting Date	September 30, 2020	September 30, 2021
<b>Pension Expense</b>		
Service cost	\$4,955,904	\$5,230,632
Interest on total pension liability	27,493,889	26,440,458
Effect of plan changes	0	0
Administrative expenses	337,196	388,021
Member contributions	(199,644)	(184,148)
Expected investment return net of investment expenses	(16,399,557)	(18,216,427)
Recognition of deferred inflows/outflows of resources	<u>1,214,597</u>	<u>(6,933,222)</u>
Pension expense	\$17,402,385	\$6,725,314

## B. Purpose of this Report

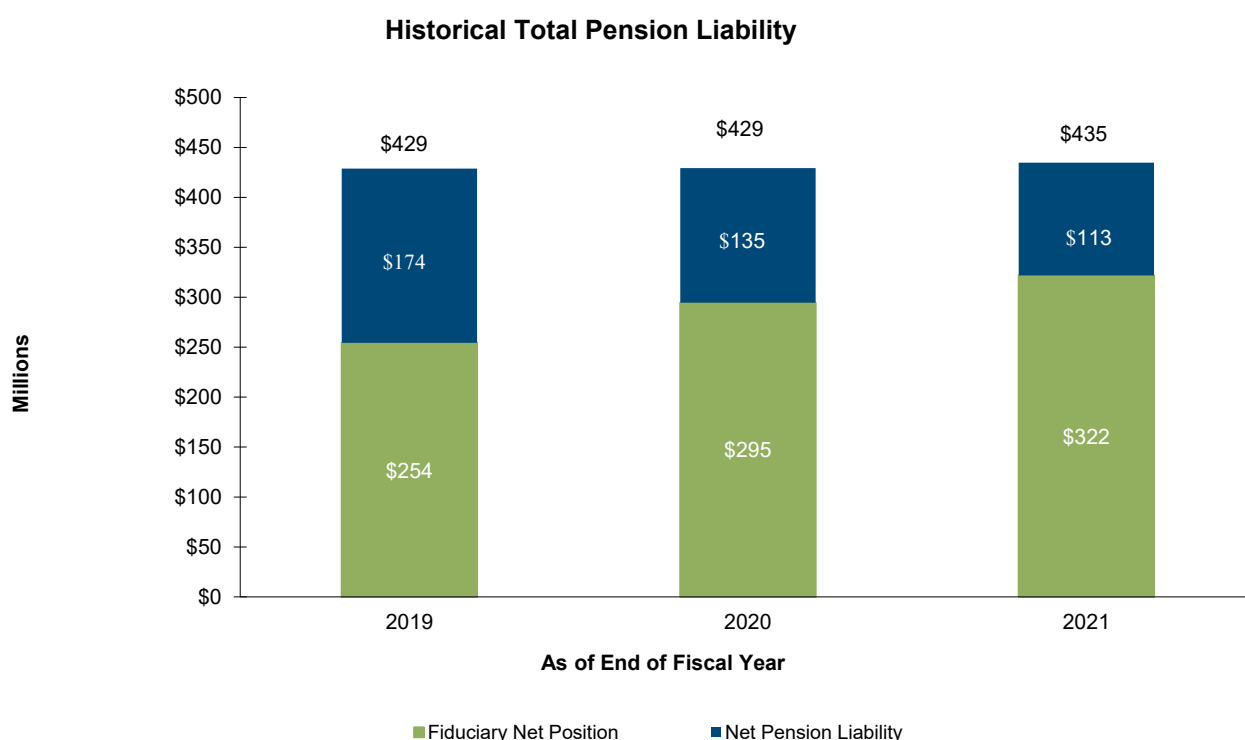
This accounting report has been prepared for the Metropolitan Transit Authority Union Pension Plan for the fiscal year October 1, 2020 to September 30, 2021 to:

- Calculate the Net Pension Liability.
- Prepare the Plan's Pension Expense.
- Review the Plan's depletion date projection.

The Valuation Date is January 1, 2020. This is the date as of which the actuarial valuation is performed. The Measurement Date is December 31, 2020. This is the date as of which the net pension liability is determined. The Reporting Date is September 30, 2021. This is the employer's fiscal year ending date.

## C. Total Pension Liability and Net Pension Liability

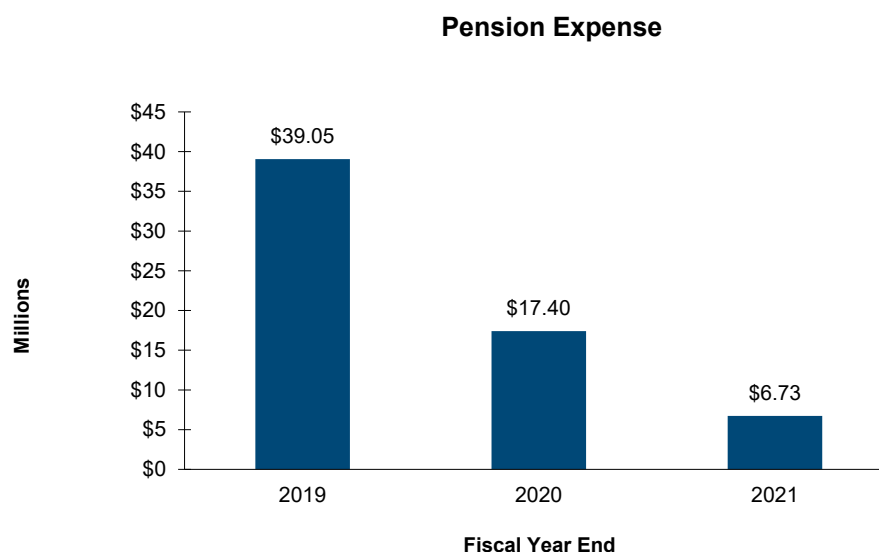
The graph below illustrates the total pension liability and the net pension liability (funded status) for the current and preceding two years.



## D. Pension Expense for the 2021 Fiscal Year End

The Pension Expense measured for the plan year ending December 31, 2020 and reported for the fiscal year ending September 30, 2021 is \$6,725,314.

The graph below illustrates the Pension Expense for the current and preceding two fiscal years.



## E. Depletion Date

As of December 31, 2020, our projections show the plan will have enough assets to make projected benefit payments under the assumptions outlined on page 9 and developed on page 12 of the report.

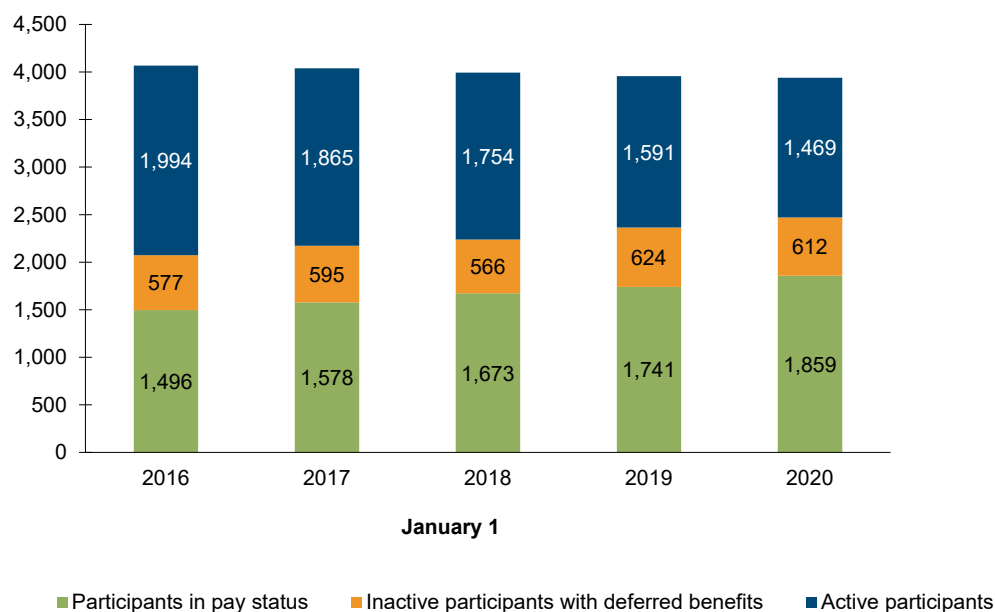
## F. Plan Experience

### Change in Demographics

From January 1, 2019 to January 1, 2020, the number of active participants in the Plan decreased by 7.7% from 1,591 to 1,469; while the total number of participants decreased by 0.4% from 3,956 to 3,940.

The graph below illustrates the count of participants, by category, as of the valuation date for the current and preceding four plan years.

### Historical Participation



### Total Pension Liability

Under the Entry Age Normal actuarial cost method, and prior to reflecting any plan, method or assumption changes, liability experience for the 2019 plan year was more favorable than expected, generating a net actuarial gain as follows:

- Demographic experience different from that assumed, which resulted in an actuarial gain of approximately \$1.1 million.

In addition, the actuarial assumption changes resulted in an overall gain of approximately \$1.9 million as follows:

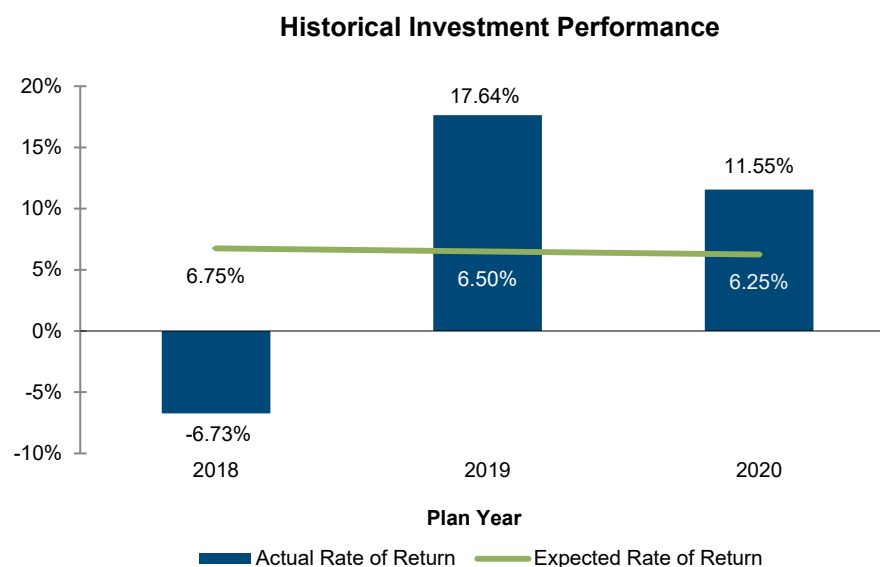
- The revised mortality assumption resulted in a decrease of the total pension liability of approximately \$1.9 million.

### Change in Assets

Asset experience for the 2020 plan year was more favorable than expected.

- The 2020 rate of return on the market value of plan assets was approximately 11.55%, which exceeded the assumed rate of 6.25%, resulting in an investment gain of approximately \$15.5 million.

The graph below illustrates the investment performance on a market value basis for the preceding two plan years.



## G. Actuarial Methods and Assumptions

The actuarial methods and assumptions used in this measurement are the same as those used in the prior measurement except as follows:

- The mortality table assumption for the prior valuation was the PubG-2010 projected forward (fully generational) with MP-2019. The mortality table was updated to PubG-2010 projected forward (fully generational) with MP-2020. Pub-2010 tables for disabled lives and Contingent Survivors were used.

These changes were made to better reflect anticipated future plan experience.

## H. Plan Provisions

None.

## Certification

Actuarial computations presented in this report under Statements No. 67 and 68 of the Governmental Accounting Standards Board are for purposes of assisting METRO in fulfilling its financial accounting requirements. No attempt is being made to offer any accounting opinion or advice. This report is for fiscal year October 1, 2020 to September 30, 2021. The reporting date for determining plan assets and obligations is December 31, 2020. The calculations enclosed in this report have been made on a basis consistent with our understanding of the plan provisions. Determinations for purposes other than meeting financial reporting requirements may be significantly different than the results contained in this report. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security or meeting employer funding requirements.

In preparing this report, we relied, without audit, on information as of January 1, 2020 and December 31, 2020 furnished by METRO. This information includes, but is not limited to, statutory provisions, member census data, and financial information. Please see Milliman's funding valuation report dated July 31, 2020 for more information on the plan's participant group as of January 1, 2020 as well as a summary of the plan provisions and a summary of the actuarial methods used for funding purposes. Please see Milliman's December 31, 2020 valuation assumptions report dated May 17, 2021 for a summary of the assumptions used in this measurement. Please also note that this report is based on an expected rate of return on plan assets of 6.25% and a salary increase assumption of 3.0% per annum.

We performed a limited review of the census and financial information used directly in our analysis and have found them to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

We hereby certify that, to the best of our knowledge, this report, including all costs and liabilities based on actuarial assumptions and methods, is complete and accurate and determined in conformance with generally recognized and accepted actuarial principles and practices, which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions and supporting Recommendations of the American Academy of Actuaries.

Each of the assumptions used in this valuation with the exception of those set by law was set based on industry standard published tables and data, the particular characteristics of the plan, relevant information from the plan sponsor or other sources about future expectations, and our professional judgment regarding future plan experience. We believe the assumptions are reasonable for the contingencies they are measuring, and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

This valuation report is only an estimate of the Plan's financial condition as of a single date. It can neither predict the Plan's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of Plan benefits, only the timing of Plan contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.



## Certification

Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as, but not limited to, the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuarial assignment, we did not perform an analysis of the potential range of such future measurements.

Milliman has developed certain models to estimate the values included in this report. The valuation results were developed using models intended for valuations that use standard actuarial techniques. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice (ASOP).

There is substantial uncertainty regarding the impact of the COVID-19 pandemic on projected plan costs. Therefore, for purposes of this report, we have chosen not to make any adjustments to these costs. However, please be aware that the COVID-19 pandemic could have a material cost impact in future valuations.

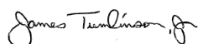
Milliman's work is prepared solely for the internal use and benefit of Metropolitan Transit Authority of Harris County, Texas. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions: (a) the Plan Sponsor may provide a copy of Milliman's work, in its entirety, to the Plan Sponsor's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit METRO; and (b) the Plan Sponsor may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their specific needs.

The consultants who worked on this assignment are employee benefit actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and has been prepared in accordance with generally recognized accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.



---

James Tumlinson, Jr., EA, MAAA  
Principal and Consulting Actuary



---

Katherine Pitzinger, ASA, EA, MAAA  
Actuarial Associate

## Overview of GASB 67 and GASB 68

The Governmental Accounting Standards Board (GASB) released new accounting standards for public pension plans and participating employers in 2012. These standards, GASB Statements No. 67 and 68, have substantially revised the accounting requirements previously mandated under GASB Statements No. 25 and 27. The most notable change is the distinct separation of funding from financial reporting. The Annual Required Contribution (ARC) has been eliminated under GASB 67 and 68 and is no longer relevant for financial reporting purposes. As a result, plan sponsors have been encouraged to establish a formal funding policy that is separate from financial reporting calculations.

GASB 67 applies to financial reporting for public pension plans and is required to be implemented for plan fiscal years beginning after June 15, 2013. Note that a plan's fiscal year might not be the same as the employer's fiscal year. Even if the plan does not issue standalone financial statements, but rather is considered a pension trust fund of a government, it is subject to GASB 67. Under GASB 67, enhancements to the financial statement disclosures are required, along with certain required supplementary information.

GASB 68 governs the specifics of accounting for public pension plan obligations for participating employers and is required to be implemented for employer fiscal years beginning after June 15, 2014. GASB 68 requires a liability for pension obligations, known as the Net Pension Liability, to be recognized on the balance sheets of participating employers. Changes in the Net Pension Liability will be immediately recognized as Pension Expense on the income statement or reported as deferred inflows/outflows of resources depending on the nature of the change.

## Statement of Fiduciary Net Position

	December 31, 2019	December 31, 2020
<b>Assets</b>		
Cash and cash equivalents	\$902,903	\$674,998
Receivables and prepaid expenses:		
Receivable contributions	0	0
Receivable investment income	30,129	38,522
Receivables from brokers for unsettled trades	0	138,455
Prepaid expenses	0	0
Total receivables	30,129	176,977
Investments:		
Fixed income	93,448,448	88,084,872
Stocks	161,568,388	195,306,542
Short-term investments	0	0
Real estate	38,964,726	37,893,490
Alternative investments	0	0
Total investments	293,981,562	321,284,904
Invested securities lending cash collateral	0	0
Capital assets net of accumulated depreciation	0	0
Total assets	294,914,594	322,136,879
<b>Liabilities</b>		
Accrued expenses and benefits payable	284,732	271,638
Securities lending cash collateral	0	0
Payable to brokers for unsettled trades	0	0
Total liabilities	284,732	271,638
<b>Net position restricted for pensions</b>	<b>\$294,629,862</b>	<b>\$321,865,241</b>

## Statement of Changes in Fiduciary Net Position

December 31, 2020

### Additions

Pick-Up contributions	\$184,148
Employer contributions	17,078,683
Total contributions	17,262,831
Investment income (loss):	
Interest	2,017
Dividends	3,819,772
Equity fund income, net	0
Net increase in fair value of investments	30,524,775
Securities lending income	0
Less investment expenses:	
Direct investment expense	679,664
Securities lending management fees	0
Securities lending borrower rebates	0
Net investment income	33,666,900
Other income	0
Total additions	50,929,731

### Deductions

Service benefits	23,306,331
Disability benefits	0
Death benefits	0
Refunds of member contributions	0
Administrative expenses	388,021
Total deductions	23,694,352
Net increase (decrease)	27,235,379

### Net position restricted for pensions

Beginning of year (December 31, 2019)	294,629,862
End of year (December 31, 2020)	\$321,865,241

## Money-Weighted Rate of Return

Measurement Year Ending December 31	Net Money-Weighted Rate of Return
2011	0.11%
2012	16.23%
2013	16.91%
2014	4.24%
2015	(3.38%)
2016	7.91%
2017	16.90%
2018	(6.73%)
2019	17.63%
2020	11.55%

### Calculation of 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 an annual basis and are assumed to occur at the middle of the year. External cash inflows are netted with external cash outflows, resulting in a net external cash flow in each year. The money-weighted rate of return is calculated net of investment expenses.

	Net External Cash Flows
Beginning Value - January 1, 2020	\$294,629,862
Annual net external cash flows:	
Employer contributions	17,078,683
Employee contributions	184,148
Benefit payments	(23,306,331)
Administrative expenses	(388,021)
Total	(6,431,521)
Investment Income	33,666,900
Ending Value - December 31, 2020	321,865,241
Money-Weighted Rate of Return	11.55%

## Net Pension Liability

Net Pension Liability	December 31, 2019	December 31, 2020
Total pension liability	\$429,293,243	\$434,712,038
Fiduciary net position	<u>294,629,862</u>	<u>321,865,241</u>
Net pension liability	\$134,663,381	\$112,846,797
Fiduciary net position as a % of total pension liability	68.63%	74.04%
Covered payroll	94,602,405	90,601,821
Net pension liability as a % of covered payroll	142.35%	124.55%

The total pension liability was determined by an actuarial valuation as of the valuation date, calculated based on the discount rate and actuarial assumptions below, and was then projected forward to the measurement date. Any significant changes during this period have been reflected as prescribed by GASB 67 and 68.

### Discount Rate

Discount rate	6.25%	6.25%
Long-term expected rate of return, net of investment expense	6.25%	6.25%
Municipal bond rate	N/A	N/A

The plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the discount rate for calculating the total pension liability is equal to the long-term expected rate of return.

### Other Key Actuarial Assumptions

The actuarial assumptions that determined the total pension liability as of December 31, 2020 were based on the results of an actuarial experience study for the period January 1, 2015 - December 31, 2018.

Valuation date	January 1, 2019	January 1, 2020
Measurement date	December 31, 2019	December 31, 2020
Actuarial cost method	Entry Age Normal	Entry Age Normal
Inflation	2.20%	2.20%
Salary increases including inflation	3.00%	3.00%
Mortality	Pub-2010 Mortality, projected forward (fully generational) with MP-2019	Pub-2010 Mortality, projected forward (fully generational) with MP- 2020

Please see Milliman's final Assumption Selection and Methodology Report dated May 17, 2021 for more detail.

## Long-Term Expected Rate of Return

The assumption 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 January 1, 2021 based on a 30-year investment horizon.

Asset Class	Index	Actual Allocation*	Long-Term Expected Arithmetic Real Rate of Return	Long-Term Expected Geometric Real Rate of Return
US Cash	BAML 3-Mon Tbill	0.12%	-0.54%	-0.52%
US Core Fixed Income	Barclays Aggregate	18.47%	0.73%	0.66%
Global Bonds	Citi WGBI	8.88%	-0.03%	-0.27%
US Large & Mid Caps	Russell 1000	19.32%	3.94%	2.68%
US Small Caps	Russell 2000	5.92%	5.00%	2.98%
US Large Value	Russell 1000 Value	4.21%	4.12%	2.94%
US MidCap Growth	Russell MidCap Growth	5.43%	4.70%	2.42%
US MidCap Value	Russell MidCap Value	3.34%	4.20%	2.74%
Global Equity	MSCI ACWI NR	4.02%	4.58%	3.23%
Non-US Equity	MSCI ACWI xUS NR	12.83%	5.48%	3.86%
Non-US Small Cap	S&P EPAC EMI	5.66%	5.83%	4.01%
US REITs	FTSE NAREIT Equity REIT	11.80%	5.12%	3.42%
		100.00%		
Assumed Inflation - Mean			2.20%	2.20%
Assumed Inflation - Standard Deviation			1.65%	1.65%
Portfolio Real Mean Return			3.58%	2.87%
Portfolio Nominal Mean Return			5.79%	5.13%
Portfolio Standard Deviation				12.10%
<b>Long-Term Expected Rate of Return</b>				<b>6.25%</b>

\* Actual allocation as of December 31, 2020.

## Depletion Date Projection

In order to determine if the plan's fiduciary net position is projected to be sufficient to make projected benefit payments, we have prepared a depletion date projection using the following techniques and assumptions:

- Pick-up contributions which began October 1, 2018 have been reflected in this projection.
- The employer contributes the actuarially determined contribution amounts.
- Benefit payments are projected based on the actuarial assumptions and the current plan provisions.
- Members are assumed to receive pay increases, terminate, retire, become disabled, die, and so forth according to the actuarial assumptions used for the December 31, 2020 measurement.
- Terminating and retiring members will not be replaced with new employees.
- Current administrative expenses are assumed to increase by 1.00% per year.
- All cash flows are assumed to occur on average halfway through the year.
- The long-term expected rate of return on pension plan investments is 6.25%.
- The tax-exempt, high-quality general obligation municipal bond index rate is N/A.
- The funding policy used to determine actuarially determined contributions does not change. See the last page of this report for details.
- The actuarial assumptions do not change.
- The plan provisions do not change except if any material future changes have been agreed upon as of the measurement date.

Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

In accordance with ASOP 51, please refer to Appendix C of the valuation report dated July 31, 2020 which identifies, assesses, and provides illustrations of risks that are significant to the Plan, and in some cases to the Plan's participants.



## Projection of Contributions

Year	Projected Payroll Current Employees	Projected Payroll Future Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions from Future Employees	Total Contributions
1	\$78,232,333	\$0	\$78,232,333	\$206,544	\$15,858,178	\$0	\$16,064,722
2	73,254,508	0	73,254,508	187,980	14,854,874	0	15,042,854
3	68,063,580	0	68,063,580	171,132	14,331,774	0	14,502,906
4	63,073,460	0	63,073,460	155,532	13,140,518	0	13,296,050
5	58,317,973	0	58,317,973	140,556	12,539,103	0	12,679,659
6	53,479,076	0	53,479,076	126,672	12,250,397	0	12,377,069
7	49,302,008	0	49,302,008	113,724	11,975,856	0	12,089,580
8	45,122,662	0	45,122,662	101,868	11,745,351	0	11,847,219
9	41,201,040	0	41,201,040	90,948	11,518,961	0	11,609,909
10	37,478,039	0	37,478,039	80,964	11,313,078	0	11,394,042

Note: Years subsequent to year 10 have been omitted from this table.

## Projection of Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings	Projected Ending Fiduciary Net Position
1	\$321,865,241	\$16,064,722	\$25,665,524	\$391,901	\$19,804,306	\$331,676,844
2	331,676,844	15,042,854	27,281,049	395,820	20,334,990	339,377,819
3	339,377,819	14,502,906	28,668,527	399,778	20,755,945	345,568,365
4	345,568,365	13,296,050	30,025,655	403,776	21,062,605	349,497,589
5	349,497,589	12,679,659	31,320,220	407,814	21,248,338	351,697,552
6	351,697,552	12,377,069	32,442,750	411,892	21,341,173	352,561,152
7	352,561,152	12,089,580	33,462,345	416,011	21,354,173	352,126,549
8	352,126,549	11,847,219	34,206,942	420,171	21,296,038	350,642,693
9	350,642,693	11,609,909	34,858,876	424,373	21,175,376	348,144,729
10	348,144,729	11,394,042	35,386,941	428,617	20,995,873	344,719,086

Note: Years subsequent to year 10 have been omitted from this table.

## Actuarial Present Value of Projected Benefit Payments

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments*	Present Value of "Unfunded" Benefit Payments**	Present Value of Total Benefit Payments***
1	\$321,865,241	\$25,665,524	\$25,665,524	\$0	\$24,899,216	\$0	\$24,899,216
2	331,676,844	27,281,049	27,281,049	0	24,909,652	0	24,909,652
3	339,377,819	28,668,527	28,668,527	0	24,636,728	0	24,636,728
4	345,568,365	30,025,655	30,025,655	0	24,285,173	0	24,285,173
5	349,497,589	31,320,220	31,320,220	0	23,842,104	0	23,842,104
6	351,697,552	32,442,750	32,442,750	0	23,243,873	0	23,243,873
7	352,561,152	33,462,345	33,462,345	0	22,564,113	0	22,564,113
8	352,126,549	34,206,942	34,206,942	0	21,709,370	0	21,709,369
9	350,642,693	34,858,876	34,858,876	0	20,821,758	0	20,821,758
10	348,144,729	35,386,941	35,386,941	0	19,893,816	0	19,893,816
95	61,695	0	0	0	0	0	0
96	62,326	0	0	0	0	0	0
97	62,964	0	0	0	0	0	0
98	63,610	0	0	0	0	0	0
99	64,151	0	0	0	0	0	0
Total					464,506,845	0	464,506,845

Note: Years 11-94 have been omitted from this table.

\* Discounted at the long-term expected rate of return, 6.25%.

\*\* Discounted at the municipal bond rate, N/A.

\*\*\* Discounted at the single interest rate that produces a total actuarial present value equal to the sum of the actuarial present values of "funded" and "unfunded" benefit payments, 6.25%.

## Changes in Net Pension Liability

Changes in Net Pension Liability	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a) - (b)
Balances as of December 31, 2019	\$429,293,243	\$294,629,862	\$134,663,381
Changes for the year:			
Service cost	5,230,632		5,230,632
Interest on total pension liability	26,440,458		26,440,458
Effect of plan changes	0		0
Effect of economic/demographic gains or losses	(1,065,945)		(1,065,945)
Effect of assumptions changes or inputs	(1,880,019)		(1,880,019)
Benefit payments	(23,306,331)	(23,306,331)	0
Employer contributions		17,078,683	(17,078,683)
Member contributions		184,148	(184,148)
Net investment income		33,666,900	(33,666,900)
Administrative expenses		(388,021)	388,021
Balances as of December 31, 2020	\$434,712,038	\$321,865,241	\$112,846,797

### Sensitivity Analysis

The following presents the net pension liability of METRO, calculated using the discount rate of 6.25%, as well as what METRO's net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower (5.25%) or 1 percentage point higher (7.25%) than the current rate.

	1% Decrease 5.25%	Current Discount Rate 6.25%	1% Increase 7.25%
Total pension liability	\$482,098,631	\$434,712,038	\$394,446,689
Fiduciary net position	<u>321,865,241</u>	<u>321,865,241</u>	<u>321,865,241</u>
Net pension liability	\$160,233,390	\$112,846,797	\$72,581,448

## Pension Expense

Pension Expense	October 1, 2019 to September 30, 2020	October 1, 2020 to September 30, 2021
Service cost	\$4,955,904	\$5,230,632
Interest on total pension liability	27,493,889	26,440,458
Effect of plan changes	0	0
Administrative expenses	337,196	388,021
Member contributions	(199,644)	(184,148)
Expected investment return net of investment expenses	(16,399,557)	(18,216,427)
Recognition of Deferred Inflows/Outflows of Resources		
Recognition of economic/demographic gains or losses	(5,346,290)	(3,198,841)
Recognition of assumption changes or inputs	5,449,281	2,925,436
Recognition of investment gains or losses	<u>1,111,606</u>	<u>(6,659,817)</u>
Pension Expense	\$17,402,385	\$6,725,314

As of September 30, 2021, the deferred inflows and outflows of resources are as follows:

Deferred Inflows / Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources
Differences between expected and actual experience	(\$2,217,463)	\$0
Changes of assumptions	(4,920,073)	2,908,572
Net difference between projected and actual earnings	(19,230,808)	0
Contributions made subsequent to measurement date	<u>0</u>	<u>0</u>
Total	(26,368,344)	2,908,572

Amounts currently reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year ended September 30:	
2022	(\$7,590,580)
2023	(3,885,701)
2024	(8,893,398)
2025	(3,090,093)
2026	0
Thereafter*	0

\* Note that additional future deferred inflows and outflows of resources may impact these numbers.

## Schedule of Deferred Inflows and Outflows of Resources

	Original Amount	Date Established	Original Rec. Period*	Amount Recognized in Pension Expense for FYE 09/30/2021	Amount Recognized in Pension Expense through 09/30/2021	Balance of Deferred Inflows as of 09/30/2021	Balance of Deferred Outflows as of 09/30/2021
<b>Economic/ demographic gains or losses</b>	(\$1,065,945)	9/30/2021	3.2	(\$333,108)	(\$333,108)	(\$732,837)	\$0
	(1,881,792)	9/30/2020	3.6	(522,720)	(1,045,440)	(836,352)	0
	(4,970,092)	9/30/2019	3.5	(1,440,606)	(4,321,818)	(648,274)	0
	(2,012,736)	9/30/2018	3.8	(423,735)	(2,012,736)	0	0
	(10,556,008)	9/30/2017	4.2	<u>(478,672)</u>	<u>(10,556,008)</u>	<u>0</u>	<u>0</u>
		Total		(3,198,841)	(21,049,677)	(2,217,463)	0
<b>Assumption changes or inputs</b>	(1,880,019)	9/30/2021	3.2	(587,506)	(587,506)	(1,292,513)	0
	(8,162,008)	9/30/2020	3.6	(2,267,224)	(4,534,448)	(3,627,560)	0
	22,299,060	9/30/2019	3.5	6,463,496	19,390,488	0	2,908,572
	(2,089,318)	9/30/2018	3.8	(439,855)	(2,089,318)	0	0
	(5,369,295)	9/30/2017	4.2	<u>(243,475)</u>	<u>(5,369,295)</u>	<u>0</u>	<u>0</u>
		Total		2,925,436	32,489,706	(4,920,073)	2,908,572
<b>Investment gains or losses</b>	(15,450,473)	9/30/2021	5.0	(3,090,095)	(3,090,095)	(12,360,378)	0
	(28,095,897)	9/30/2020	5.0	(5,619,179)	(11,238,358)	(16,857,539)	0
	37,090,779	9/30/2019	5.0	7,418,156	22,254,468	0	14,836,311
	(24,246,018)	9/30/2018	5.0	(4,849,204)	(19,396,816)	(4,849,202)	0
	(2,597,467)	9/30/2017	5.0	<u>(519,495)</u>	<u>(2,597,467)</u>	<u>0</u>	<u>0</u>
		Total		(6,659,817)	(14,068,268)	(34,067,119)	14,836,311
<b>Total for economic/demographic gains or losses and assumption changes or inputs</b>						(7,137,536)	2,908,572
<b>Net deferred (inflows)/outflows for investment gains or losses</b>						(19,230,808)	0
<b>Total deferred (inflows)/outflows</b>						(26,368,344)	2,908,572
<b>Total net deferrals</b>						(23,459,772)	

\* Investment (gains)/losses are recognized in pension expense over a period of five years; economic/demographic (gains)/losses and assumption changes or inputs are recognized over the average remaining service life for all active and inactive members.

## Schedule of Changes in Net Pension Liability and Related Ratios (in 1,000s)

	Fiscal Year Ending September 30									
	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>Total Pension Liability</b>										
Service cost	\$5,231	\$4,956	\$4,647	\$4,930	\$5,329	\$5,550	\$5,435	N/A	N/A	N/A
Interest on total pension liability	26,440	27,494	25,780	25,075	24,589	24,786	22,447	N/A	N/A	N/A
Effect of plan changes	0	0	13,851	0	0	0	0	N/A	N/A	N/A
Effect of economic/demographic gains or losses	(1,066)	(1,882)	(4,970)	(2,013)	(10,556)	(2,781)	0	N/A	N/A	N/A
Effect of assumption changes or inputs	(1,880)	(8,162)	22,299	(2,089)	(5,369)	25,680	0	N/A	N/A	N/A
Benefit payments	(23,306)	(21,934)	(19,795)	(18,800)	(17,657)	(16,567)	(15,924)	N/A	N/A	N/A
Net change in total pension liability	\$5,419	\$472	\$41,812	\$7,104	(\$3,664)	\$36,668	\$11,958	N/A	N/A	N/A
Total pension liability, beginning	\$429,293	\$428,821	\$387,010	\$379,906	\$383,569	\$346,901	\$334,943	N/A	N/A	N/A
Total pension liability, ending (a)	\$434,712	\$429,293	\$428,821	\$387,010	\$379,906	\$383,569	\$346,901	N/A	N/A	N/A
<b>Fiduciary Net Position</b>										
Employer contributions	\$17,079	\$17,806	\$15,631	\$15,414	\$16,565	\$19,062	\$13,477	N/A	N/A	N/A
Pick-up contributions	184	200	0	0	0	0	0	N/A	N/A	N/A
Net investment income	33,667	44,495	(18,517)	40,370	17,696	(7,810)	9,448	N/A	N/A	N/A
Benefit payments	(23,306)	(21,934)	(19,795)	(18,800)	(17,657)	(16,567)	(15,924)	N/A	N/A	N/A
Administrative expenses	(388)	(337)	(326)	(315)	(278)	(314)	(1,333)	N/A	N/A	N/A
Net change in plan fiduciary net position	\$27,235	\$40,230	(\$22,957)	\$36,669	\$16,327	(\$5,629)	\$5,668	N/A	N/A	N/A
Fiduciary net position, beginning	\$294,630	\$254,400	\$277,357	\$240,688	\$224,361	\$229,990	\$224,322	N/A	N/A	N/A
Fiduciary net position, ending (b)	\$321,865	\$294,630	\$254,400	\$277,357	\$240,688	\$224,361	\$229,990	N/A	N/A	N/A
Net pension liability, ending = (a) - (b)	\$112,847	\$134,663	\$174,421	\$109,652	\$139,217	\$159,208	\$116,911	N/A	N/A	N/A
Fiduciary net position as a % of total pension liability	74.04%	68.63%	59.33%	71.67%	63.35%	58.49%	66.30%	N/A	N/A	N/A
Covered payroll	\$90,602	\$94,602	\$97,251	\$103,246	\$106,575	\$93,228	\$92,277	N/A	N/A	N/A
Net pension liability as a % of covered payroll	124.55%	142.35%	179.35%	106.21%	130.63%	170.77%	126.70%	N/A	N/A	N/A

This schedule is presented to illustrate the requirement to show information for 10 years. However, recalculations of prior years are not required, and if prior years are not reported in accordance with the current GASB standards, they should not be reported.

## Schedule of Employer Contributions

Fiscal Year Ending September 30	Actuarially Determined Contribution	Actual Employer Contribution*	Contribution Deficiency (Excess)	Covered Payroll	Contribution as a % of Covered Payroll
2012	\$13,493,650	\$13,493,650	\$0	\$93,675,000	14.40%
2013	14,444,476	14,444,476	0	94,043,000	15.36%
2014	14,335,058	14,335,058	0	91,830,000	15.61%
2015	13,477,182	13,477,182	0	92,277,465	14.61%
2016	15,410,109	19,062,423	(3,652,314)	93,227,967	20.45%
2017	16,565,280	16,565,280	0	106,574,630	15.54%
2018	15,413,823	15,413,823	0	103,245,714	14.93%
2019	15,631,361	15,680,817	(49,456)	97,250,761	16.12%
2020	17,805,961	17,805,961	0	94,602,405	18.82%
2021	17,078,683	17,078,683	0	90,601,821	18.85%

\*2019 includes \$49,456 in pick-up contributions, none shown for 2020 (valued as employee contributions going forward).



## **Actuarial Methods and Assumptions Used for Funding Policy**

The following actuarial methods and assumptions were used in the January 1, 2020 valuation. Please see Milliman's valuation report dated July 31, 2020 for more detail.

<b>Valuation Timing</b>	Actuarially determined contribution amounts are calculated based on valuations performed as of January 1st 20 months prior to the end of the fiscal year in which the contributions are reported.
<b>Actuarial Cost Method</b>	Entry Age Normal
<b>Amortization Method</b>	
Level percent or level dollar	Level dollar
Closed, open, or layered periods	Closed
Amortization period at 01/01/2020	23 years
Amortization growth rate	0.00%
<b>Asset Valuation Method</b>	
Smoothing period	5 years
Recognition method	Non-asymptotic
Corridor	80% - 120% of Market Value
<b>Inflation</b>	2.20%, adopted for December 31, 2019 measurement and beyond.
<b>Salary Increases</b>	3.00%, adopted for December 31, 2019 measurement and beyond.
<b>Investment Rate of Return</b>	6.25%, adopted for December 31, 2019 measurement and beyond (updated from 6.50% used for December 31, 2018 measurement).
<b>Cost of Living Adjustments</b>	None.
<b>Retirement Age</b>	See retirement rates in the January 1, 2020 valuation report.
<b>Turnover</b>	See turnover rates in the January 1, 2020 valuation report.
<b>Mortality</b>	Pub-2010 Mortality, projected forward (fully generational) with MP-2019 (updated from Pub-2010 Mortality, projected forward (fully generational) with MP-2018 used for December 31, 2019 measurement).

## Summary Chart

	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability	Deferred (Inflows)	Deferred Outflows	Net Investment (Inflows)/ Outflows	Net Deferrals	Net Pension Liability plus Net Deferrals	Annual Expense
<b>Balances as of September 30, 2020</b>	(\$429,293,243)	\$294,629,862	(\$134,663,381)	(\$10,928,473)	\$9,372,068	(\$10,440,152)	(\$11,996,557)	(\$146,659,938)	
Service cost	(5,230,632)		(5,230,632)						5,230,632
Interest on total pension liability	(26,440,458)		(26,440,458)						26,440,458
Effect of plan changes	0		0						0
Effect of liability gains or losses	1,065,945		1,065,945	(1,065,945)			(1,065,945)		
Effect of assumption changes or inputs	1,880,019		1,880,019	(1,880,019)			(1,880,019)		
Benefit payments	23,306,331	(23,306,331)	0						
Administrative expenses		(388,021)	(388,021)						388,021
Member contributions		184,148	184,148						(184,148)
Expected net investment income		18,216,427	18,216,427						(18,216,427)
Investment gains or losses		15,450,473	15,450,473			(15,450,473)	(15,450,473)		
Employer contributions		17,078,683	17,078,683					17,078,683	
Recognition of liability gains or losses				3,198,841			3,198,841		(3,198,841)
Recognition of assumption changes or inputs				3,538,060	(6,463,496)		(2,925,436)		2,925,436
Recognition of investment gains or losses						6,659,817	6,659,817		(6,659,817)
Annual expense								(6,725,314)	6,725,314
<b>Balances as of September 30, 2021</b>	(434,712,038)	321,865,241	(112,846,797)	(7,137,536)	2,908,572	(19,230,808)	(23,459,772)	(136,306,569)	

## Glossary

<b>Actuarially Determined Contribution</b>	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined based on the funding policy and most recent measurement available when the contribution for the reporting period was adopted.
<b>Deferred Inflows/Outflows of Resources</b>	Portion of changes in net pension liability that is not immediately recognized in Pension Expense. These changes include differences between expected and actual experience, changes in assumptions, and differences between expected and actual earnings on plan investments.
<b>Discount Rate</b>	<p>Single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the sum of:</p> <ol style="list-style-type: none"><li>1) The actuarial present value of benefit payments projected to be made in future periods where the plan assets are projected to be sufficient to meet benefit payments, calculated using the Long-Term Expected Rate of Return.</li><li>2) The actuarial present value of projected benefit payments not included in (1), calculated using the Municipal Bond Rate.</li></ol>
<b>Fiduciary Net Position</b>	Equal to market value of assets.
<b>Long-Term Expected Rate of Return</b>	Long-term expected rate of return on pension plan investments expected to be used to finance the payment of benefits, net of investment expenses.
<b>Money-Weighted Rate of Return</b>	The internal rate of return on pension plan investments, net of investment expenses.
<b>Net Pension Liability</b>	Total Pension Liability minus the Plan's Fiduciary Net Position (unfunded accrued liability).
<b>Projected Benefit Payments</b>	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and expected future service.
<b>Service Cost</b>	The portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<b>Total Pension Liability</b>	The portion of actuarial present value of projected benefit payments that is attributable to past periods of member service using the Entry Age Normal cost method based on the requirements of GASB 67 and 68.