Maryland Transit Administration Pension Plan

GASB68 Actuarial Information for the Measurement Period Ending June 30, 2018

Submitted by:

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Employee Benefits, Actuarial & Investment Consulting

September 18, 2018

Heidi Tarleton
Deputy Chief Financial Officer
Maryland Transit Administration
6 St. Paul Street, 8th floor
Baltimore, MD 21202

Re: MTA Pension Plan – GASB68 Actuarial Information for the Measurement Period Ending June 30, 2018

Dear Heidi,

The following report contains the GASB67 and GASB68 actuarial information to be included with the MTA's financial statements for FYE 2018. The GASB68 information has been provided as of the June 30, 2018 measurement date for FYE 2018.

Methodology, Reliance and Certification

This report is prepared for the Maryland Transit Administration (MTA). The report contains the actuarial information to be included with the MTA's financial statements for the year ending June 30, 2018 (the MTA's fiscal year end date) as required by GASB68. This information has been prepared for use in the financial statements of the MTA. This information is not intended for, nor should it be used for, any additional purposes.

The total pension liability is based on the July 1, 2017 actuarial valuation rolled forward to June 30, 2018. The methods, assumptions, and participant data used are detailed in the July 1, 2017 actuarial valuation report with the exception of the actuarial cost method. These calculations are based on the Entry Age Normal cost method as required by GASB68.

The included calculations are based on a blended discount rate of 4.52%. The plan's expected gross rate of investment return of 8.20% has been blended with the 3.62% yield corresponding to the 20-year maturity on a municipal general obligation AA bond yield curve published on Fidelity's Fixed Income Market Data webpage as of June 30, 2018. The development of the blended discount rate is included within this report. The projected benefits for purposes of this report include expected Cost-of-Living Adjustments (COLAs) to benefits for pensioners and beneficiaries of 2.50% per year. Although there is not a firm promise to provide COLAs, there is a pattern of providing annual increases and, as such, they have been included as part of the substantive plan. For purposes of this report, the employer is assumed to make future contributions based on MTA's actual contributions over the prior three fiscal years.

The calculation of the actuarially determined contribution (ADC) for the fiscal year ended June 30, 2018 is contained in the July 1, 2017 actuarial valuation report. The included calculations assume that the MTA will continue to make contributions based on the FY18 results and are not adjusted to reflect any future increases in benefits for pensioners and beneficiaries (COLAs) beyond FY18. Accordingly, the plan's fiduciary net position is not expected to be available to make all future benefit payments of current plan members.

Methodology, Reliance and Certification (cont.)

The long-term nominal expected rate of return on pension plan investments was determined using a building-block method where return expectations are established for each asset class. The building-block approach uses the current underlying fundamentals, not historical returns. For example, spread and the risk free rate are used for fixed income; and dividends, earnings growth and valuation are used for equity. These return expectations are weighted based on asset/target amounts.

These calculations and comparisons with assets are applicable for the valuation date only. The future is uncertain, and the plan may become better funded or more poorly funded in the future. This valuation does not provide any guarantee that the plan will be able to provide the promised benefits in the future.

This is a deterministic valuation in that it is based on a single set of assumptions. This set of assumptions is one possible basis for our calculations. Other assumptions may be equally valid. The future is uncertain and the plan's actual experience will differ from those assumptions; these differences may be significant or material because these results are very sensitive to the assumptions made and, in some cases, to the interaction between the assumptions. We may consider that some factors are not material to the valuation of the plan and may not provide a specific assumption for those factors. We may have used other assumptions in the past. We will likely consider changes in assumptions at a future date.

The MTA is responsible for selecting the plan's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies, methods and assumptions used in this valuation are those that have been so prescribed and are described in this report. The MTA is solely responsible for communicating to Bolton Partners, Inc. any changes required thereto.

The MTA could reasonably ask how the valuation would change if we used a different assumption set or if plan experience exhibited variations from our assumptions. This report does not contain such an analysis. This type of analysis would be a separate assignment.

The cost of this plan is determined by the benefits promised by the plan, the plan's participant population, the investment experience of the plan and many other factors. An actuarial valuation is a budgeting tool for the MTA or, in this case, a measure of accounting expense. It does not affect the cost of the plan. As the experience of the plan evolves, it is normal for the level of contributions and expense of the plan to change. If a contribution is not made for a particular year, either by deliberate choice or because of an error in a calculation, that contribution can be made in later years. We will not be responsible for contributions that are made at a future time rather than an earlier time. The plan sponsor is responsible for funding the cost of the plan.

We make every effort to ensure that our calculations are accurately performed. These calculations are complex. Despite our best efforts, we may make a mistake. We reserve the right to correct any potential errors by amending the results of this report or by including the corrections in a future valuation report.

Methodology, Reliance and Certification (cont.)

Because modeling all aspects of a situation is not possible or practical, we may use summary information, estimates, or simplifications of calculations to facilitate the modeling of future events in an efficient and cost-effective manner. We may also exclude factors or data that are immaterial in our judgment. Use of such simplifying techniques does not, in our judgment, affect the reasonableness of valuation results for the plan.

This report is based on plan provisions, census data, and asset data submitted by the MTA. We have relied on this information for purposes of preparing this report, but have not performed an audit. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information. The plan sponsor is solely responsible for the validity and completeness of this information.

The MTA is solely responsible for selecting the plan's investment policies, asset allocations and individual investments. Bolton Partners, Inc.'s actuaries have not provided any investment advice to the MTA.

The information in this report was prepared for the internal use of the MTA, the plan and their auditors in connection with our actuarial valuations of the pension plan as required by GASB68. This report may not be used for any other purpose; Bolton Partners, Inc. is not responsible for the consequences of any unauthorized use or the reliance on this information by any other party.

The calculation of actuarial liabilities for valuation purposes is based on a current estimate of future benefit payments. The calculation includes a computation of the "present value" of those estimated future benefit payments using an assumed discount rate; the higher the discount rate assumption, the lower the estimated liability will be. For purposes of estimating the liabilities (future and accrued) in this report, you selected an assumption based on the expected long-term rate of return on plan investments. Using a lower discount rate assumption, such as a rate based on long-term bond yields, could substantially increase the estimated present value of future and accrued liabilities.

This report provides certain financial calculations for use by the auditor. These values have been computed in accordance with our understanding of generally accepted actuarial principles and practices and fairly reflect the actuarial position of the plan. The various actuarial assumptions and methods which have been used are, in our opinion, appropriate for the purposes of this report.

The report is conditioned on the assumption of an ongoing plan and is not meant to present the actuarial position of the plan in the case of plan termination. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as 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.

The undersigned credentialed actuary meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. The July 1, 2017 actuarial valuation report contains information that is integral to the results contained herein and a copy may be provided upon request.

Sincerely,

Kevin Binder, FSA, EA, MAAA

Jordan McClane, ASA, EA

Maryland Transit Administration Pension Plan

Actuarial Information to Include in the Financial Statements for the June 30, 2018 Measurement Date

Net Pension Liability

The components of the net pension liability at June 30, 2018, were as follows:

Total pension liability	$ 1,271,782,218
Plan fiduciary net position	(298,446,827)
Employer's net pension liability	$ 973,335,391
Plan fiduciary net position as a percentage of the total pension liability	23.47%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of July 1, 2017 rolled forward to June 30, 2018 using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.2 percent
Salary increases	Rates vary by participant service
Investment rate of return	7.55 percent, net of pension plan investment expense, including inflation for funded benefits.
Mortality	RP-2014 Blue Collar tables with MP-2014. The RP-2014 Disabled Retiree table is used for disabled members.

The above is a summary of key actuarial assumptions. Full descriptions of the actuarial assumptions are available in the July 1, 2017 actuarial valuation report.

Sensitivity of the net pension liability to changes in the discount rate

	1% Decrease 3.52%	*Current Discount Rate* 4.52%	*1% Increase* 5.52%
Employer's net pension liability	$ 1,171,589,548	$ 973,335,391	$ 811,708,138

Maryland Transit Administration Pension Plan

Actuarial Information to Include in the Financial Statements for the June 30, 2018 Measurement Date

Changes in the Net Pension Liability

	Total Pension Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at 6/30/17	$ 1,233,298,843	$ 273,000,325	$ 960,298,518
Changes for the year:			
Service cost	37,194,586		37,194,586
Interest	54,904,314		54,904,314
Changes of benefit terms	3,105,575		3,105,575
Differences between expected and actual experience	17,384,864		17,384,864
Changes of assumptions	(36,902,711)		(36,902,711)
Contributions - employer		40,997,059	(40,997,059)
Contributions - member		3,315,683	(3,315,683)
Net investment income		20,550,290	(20,550,290)
Benefit payments, including refunds of member contributions	(37,203,253)	(37,203,253)	-
Administrative expense		(2,213,277)	2,213,277
Other		-	-
Net Changes	38,483,375	25,446,502	13,036,873
Balances at 6/30/18	$ 1,271,782,218	$ 298,446,827	$ 973,335,391

Maryland Transit Administration Pension Plan

Actuarial Information to Include in the Financial Statements
for the June 30, 2018 Measurement Date

Components of Employer's Pension Expense for the Fiscal Year Ended June 30, 2018

Note	Description	Amount
A	Service cost	$ 37,194,586
B	Interest on the total pension liability	54,904,314
A	Changes of benefit terms	3,105,575
C	Differences between expected and actual experience	(5,014,862)
C	Changes of assumptions	26,681,543
A	Employee contributions	(3,315,683)
D	Projected earnings on pension plan investments	(22,586,772)
C	Differences between expected and actual earnings on plan investments	(2,852,937)
A	Pension plan administrative expense	2,213,277
A	Other changes in fiduciary net position	-
	Total Pension Expense	**$ 90,329,041**

Notes:

A Provided in the Changes in Net Pension Liability exhibit.

B Based on the following calculation:

	Amount for Period (a)	Portion of Period (b)	Discount Rate (c)	Interest on the Pension Liabilty (a) x (b) x (c)
Beginning total pension liability	$ 1,233,298,843	100%	4.52%	$ 55,745,108
Service cost (end of year)	37,194,586	0%	4.52%	-
Benefit payments, including refunds of employee contributions	(37,203,253)	50%	4.52%	(840,794)
Total interest on the total pension liability				**$ 54,904,314**

C Provided in the Schedules of Deferrals.

D Based on the following calculation:

	Amount for Period (a)	Portion of Period (b)	Projected Rate of Return (c)	Projected Earnings (a) x (b) x (c)
Beginning plan fiduciary net position	$ 273,000,325	100%	8.20%	$ 22,386,027
Employer contributions	40,997,059	50%	8.20%	1,680,879
Employee contributions	3,315,683	50%	8.20%	135,943
Benefit payments, including refunds of employee contributions	(37,203,253)	50%	8.20%	(1,525,333)
Administrative expense and other	(2,213,277)	50%	8.20%	(90,744)
Total Projected Earnings				**$ 22,586,772**

Maryland Transit Administration Pension Plan

Actuarial Information to Include in the Financial Statements for the June 30, 2018 Measurement Date

Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At June 30, 2018, the Employer reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 14,487,387	$ 31,809,331
Changes of assumptions	216,605,507	146,899,186
Net difference between projected and actual earnings on pension plan investments	1,629,186	7,262,682
Total	**$ 232,722,080**	**$ 185,971,199**

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

Year ended June 30:	
2019	$ 18,813,742
2020	19,601,431
2021	20,544,078
2022	17,237,000
2023	(29,445,370)
Thereafter	-

Maryland Transit Administration Pension Plan

Actuarial Information to Include in the Financial Statements for the June 30, 2018 Measurement Date

Changes in the Net Pension Liability and Related Ratios

Last 10 Fiscal Years (Dollars amounts in thousands)

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Total pension liability										
Service cost	$ 37,195	$ 36,334	$ 48,499	$ 24,718	$ 19,438					
Interest	54,904	57,881	31,181	39,237	43,472					
Changes of benefit terms	3,106	2,133	82,510	-	-					
Differences between expected and actual experience	17,385	(20,741)	(15,024)	(19,621)	4,025					
Changes of assumptions	(36,903)	(162,606)	338,950	53,480	38,643		Information for FY2013 and earlier is not available			
Benefit payments, including refunds of member contributions	(37,203)	(39,062)	(35,283)	(30,636)	(32,598)					
Net change in total pension liability	38,483	(126,062)	450,833	67,177	72,980					
Total pension liability - beginning	**1,233,299**	**1,359,361**	**908,528**	**841,351**	**768,371**					
Total pension liability - ending (a)	**$ 1,271,782**	**$ 1,233,299**	**$ 1,359,361**	**$ 908,528**	**$ 841,351**					
Plan fiduciary net position										
Contributions - employer	$ 40,997	$ 40,997	$ 40,997	$ 35,400	$ 39,749					
Contributions - member	3,316	3,094	-	-	-					
Net investment income	20,550	27,741	12,768	14,045	15,783					
Benefit payments, including refunds of member contributions	(37,203)	(39,062)	(35,283)	(30,636)	(32,598)					
Administrative expense	(2,213)	(1,914)	(1,967)	(1,851)	(1,587)					
Other	-	(2,631)	-	-	-					
Net change in plan fiduciary net position	$ 25,447	$ 28,225	$ 16,515	$ 16,958	$ 21,347					
Plan fiduciary net position - beginning	273,000	244,776	228,261	211,303	189,957					
Plan fiduciary net position - ending (b)	$ 298,447	$ 273,000	$ 244,776	$ 228,261	$ 211,303					
Net pension liability - ending (a)-(b)	$ 973,335	$ 960,299	$ 1,114,585	$ 680,267	$ 630,048					
Plan fiduciary net position as a percentage of the total pension liability	23.47%	22.14%	18.01%	25.12%	25.11%					
Covered payroll	$ 145,834	$ 137,154	$ 137,427	$ 135,545	$ 137,596					
Net pension liability as a percentage of covered payroll	667.43%	700.16%	811.04%	501.88%	457.90%					
Expected average remaining service years of all participants	6	7	7	7	7					

Notes to Schedule:

Benefit changes: For Local 2 employees hired after July 1, 2016, FY18 reflects the increased vesting requirement to 10 years, the cap on pensionable earnings to 2,392 pay hours per year, 2% employee contributions, and COLA awards granted for retirees and beneficiaries who were recieving payments for at least 13 months on August 1, 2014, August 1, 2015, August 1, 2016, and August 1, 2017.

Changes of assumptions: FY18 reflects an increase to the effective discount rate from 4.32% to 4.52%.

Maryland Transit Administration Pension Plan

Actuarial Information to Include in the Financial Statements
for the June 30, 2018 Measurement Date

Schedule of Employer Contributions
Last 10 Fiscal Years (Dollar amounts in thousands)

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Actuarially determined contribution	$ 66,495	$ 62,217	$ 44,736	$ 40,807	$ 39,749					
Contributions in relation to the actuarially determined contribution	40,997	40,997	40,997	35,400	39,749	Information for FY2013 and earlier is not available				
Contribution deficiency (excess)	$ 25,498	$ 21,220	$ 3,739	$ 5,407	$ -					
Covered payroll	$ 145,834	$ 137,154	$ 137,427	$ 135,545	$ 137,596					
Contributions as a percentage of covered payroll	28.11%	29.89%	29.83%	26.12%	28.89%					

Notes to Schedule

Valuation date:
Actuarially determined contribution amounts are calculated as of the beginning of the fiscal year (July 1) for the current fiscal year. Actuarial valuations are performed every year.

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Level Dollar Entry Age Normal
Amortization method	Level Payments (Closed)
Remaining amortization period	Remaining payments range from 2 to 25 years
Asset valuation method	5-year smoothed market
Inflation	3.2 percent
Salary increases	Rates vary by participant service
Investment rate of return	7.55 percent, net of pension plan investment and administrative expenses, including inflation
Retirement age	Rates vary by participant age
Mortality	RP-2014 Blue Collar tables with MP-2014. The RP-2014 Disabled Retiree table is used for disabled members.

Maryland Transit Administration Pension Plan

Actuarial Information to Include in the Financial Statements for the June 30, 2018 Measurement Date

Schedule of Differences between Projected and Actual Earnings on Pension Plan Investments

In conformity with paragraph 33b of Statement 68, the effects of differences between projected and actual earnings on pension plan investments are recognized in pension expense using a systematic and rational method over a closed five-year period, beginning in the current reporting period. The following table illustrates the application of this requirement.

Year	Differences between Projected and Actual Earnings on Pension Plan Investments	Recognition Period (Years)	Increase (Decrease) in Pension Expense Arising from the Recognition of Differences between Projected and Actual Earnings on Plan Investments: 2014	2015	2016	2017	2018	2019	2020	2021	2022
2014	$ -	5	$ -	-	-	-	-				
2015	(3,938,427)	5		$ (787,685)	(787,685)	(787,685)	(787,685)	(787,687)			
2016	(4,713,228)	5			$ (942,646)	(942,646)	(942,646)	(942,646)	(942,644)		
2017	(7,649,509)	5				$ (1,529,902)	(1,529,902)	(1,529,902)	(1,529,902)	(1,529,901)	
2018	2,036,482	5					$ 407,296	407,296	407,296	407,296	407,298
Net increase (decrease) in pension expense			$ -	$ (787,685)	$ (1,730,331)	$ (3,260,233)	$ (2,852,937)	$ (2,852,939)	$ (2,065,250)	$ (1,122,605)	$ 407,298

Deferred Outflows of Resources and Deferred Inflows of Resources Arising from Differences between Projected and Actual Earnings on Pension Plan Investments

Year	Investment Earnings Less than Projected (a)	Investment Earnings Greater Than Projected (b)	Amounts Recognized in Pension Expense Through June 30, 2018 (c)	Balances at June 30, 2018: Deferred Outflows of Resources (a) - (c)	Balances at June 30, 2018: Deferred Inflows of Resources (b) - (c)
2014	$ -	$ -	$ -	$ -	$ -
2015	-	3,938,427	3,150,740	-	787,687
2016	-	4,713,228	2,827,938	-	1,885,290
2017	-	7,649,509	3,059,804	-	4,589,705
2018	2,036,482	-	407,296	1,629,186	-
				$ 1,629,186	**$ 7,262,682**

Schedule of Differences between Expected and Actual Experience

In conformity with paragraph 33a of Statement 68, the effects of differences between expected and actual experience are recognized in pension expense, beginning in the current reporting period, using a systematic and rational method over a closed period equal to the average of the remaining service lives of all employees that are provided with pensions through the pension plan (active and inactive employees), determined as of the beginning of the measurement period. The following table illustrates the application of this requirement.

			Increase (Decrease) in Pension Expense Arising from the Recognition of Differences between Expected and Actual Experience												
Year	Differences between Expected and Actual Experience	Recognition Period (Years)	Prior	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Thereafter
Prior	$ -		$ -	-	-	-	-	-	-	-	-	-	-	-	-
2013	-	1		$ -											
2014	-	7			$ -	-	-	-	-	-	-				
2015	(19,621,279)	7				$ (2,803,040)	(2,803,040)	(2,803,040)	(2,803,040)	(2,803,040)	(2,803,040)	(2,803,039)			
2016	(15,023,996)	7					$ (2,146,285)	(2,146,285)	(2,146,285)	(2,146,285)	(2,146,285)	(2,146,285)	(2,146,286)		
2017	(20,741,099)	7						$ (2,963,014)	(2,963,014)	(2,963,014)	(2,963,014)	(2,963,014)	(2,963,014)	(2,963,015)	-
2018	17,384,864	6							$ 2,897,477	2,897,477	2,897,477	2,897,477	2,897,477	2,897,479	-
Net increase (decrease) in pension expense			$ -	$ -	$ -	$ (2,803,040)	$ (4,949,325)	$ (7,912,339)	$ (5,014,862)	$ (5,014,862)	$ (5,014,862)	$ (5,014,861)	$ (2,211,823)	$ (65,536)	$ -

Deferred Outflows of Resources and Deferred Inflows of Resources Arising from Differences between Expected and Actual Experience

				Balances at June 30, 2018	
Year	Experience Losses (a)	Experience Gains (b)	Amounts Recognized in Pension Expense Through June 30, 2018 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
Prior	$ -	$ -	$ -	$ -	$ -
2013	-	-	-	-	-
2014	-	-	-	-	-
2015	-	19,621,279	11,212,160	-	8,409,119
2016	-	15,023,996	6,438,855	-	8,585,141
2017	-	20,741,099	5,926,028	-	14,815,071
2018	17,384,864	-	2,897,477	14,487,387	-
				$ 14,487,387	**$ 31,809,331**

Schedule of Changes of Assumptions

In conformity with paragraph 33a of Statement 68, the effects of changes of assumptions should be recognized in pension expense, beginning in the current reporting period, using a systematic and rational method over a closed period equal to the average of the remaining service lives of all employees that are provided with pensions through the pension plan (active and inactive employees), determined as of the beginning of the measurement period. The following table illustrates the application of this requirement.

			Increase (Decrease) in Pension Expense Arising from the Effects of Changes of Assumptions												
Year	Changes of Assumptions	Recognition Period (Years)	Prior	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Thereafter
Prior	$ -		$ -	-	-	-	-	-	-	-	-	-	-	-	-
2013	-	1		$ -											
2014	-	7			$ -	-	-	-	-	-	-				
2015	53,480,106	7				$ 7,640,015	7,640,015	7,640,015	7,640,015	7,640,015	7,640,015	7,640,016			
2016	338,949,559	7					$ 48,421,366	48,421,366	48,421,366	48,421,366	48,421,366	48,421,366	48,421,363		
2017	(162,605,699)	7						$ (23,229,386)	(23,229,386)	(23,229,386)	(23,229,386)	(23,229,386)	(23,229,386)	(23,229,383)	-
2018	(36,902,711)	6							$ (6,150,452)	(6,150,452)	(6,150,452)	(6,150,452)	(6,150,452)	(6,150,451)	-
Net increase (decrease) in pension expense			$ -	$ -	$ -	$ 7,640,015	$ 56,061,381	$ 32,831,995	$ 26,681,543	$ 26,681,543	$ 26,681,543	$ 26,681,544	$ 19,041,525	$ (29,379,834)	$ -

Deferred Outflows of Resources and Deferred Inflows of Resources Arising from Changes of Assumptions

				Balances at June 30, 2018	
Year	Increases in the Total Pension Liability (a)	Decreases in the Total Pension Liability (b)	Amounts Recognized in Pension Expense Through June 30, 2018 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
Prior	$ -	$ -	$ -	$ -	$ -
2013	-	-	-	-	-
2014	-	-	-	-	-
2015	53,480,106	-	30,560,060	22,920,046	-
2016	338,949,559	-	145,264,098	193,685,461	-
2017	-	162,605,699	46,458,772	-	116,146,927
2018	-	36,902,711	6,150,452	-	30,752,259
				$ 216,605,507	**$ 146,899,186**

Projection of Contributions (Dollar amounts in thousands)

	Projected Covered Payroll			Projected Contributions			
Year	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll[1] (c) = (a) + (b)	Contributions from Current Employees (d)	Projected Total Employer Contribution[2] (e)	Service Cost for Future Employees (f)	Total Contributions (g) = (d) + (e) - (f)
1	$ 147,086	$ -	$ 147,086	$ 2,942	$ 40,997	$ -	$ 43,939
2	144,237	7,556	151,793	2,885	40,997	435	43,447
3	141,480	15,170	156,650	2,830	40,997	874	42,953
4	138,288	23,375	161,663	2,766	40,997	1,346	42,417
5	135,023	31,814	166,836	2,700	40,997	1,832	41,865
6	131,432	40,743	172,175	2,629	40,997	2,346	41,279
7	127,233	50,451	177,685	2,545	40,997	2,905	40,636
8	122,678	60,693	183,371	2,454	40,997	3,495	39,956
9	118,025	71,213	189,238	2,361	40,997	4,101	39,257
10	113,243	82,051	195,294	2,265	40,997	4,725	38,537

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

[1] Total covered payroll increases 3.50% per year.

[2] Reflects the employer's contribution practices over the prior three fiscal years.

Maryland Transit Administration Pension Plan

Actuarial Information to Include in the Financial Statements for the June 30, 2018 Measurement Date

Projection of Pension Plan's Fiduciary Net Position (Dollar amounts in thousands)

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions[1] (b)	Projected Benefit Payments (c)	Projected Administrative Expense[2] (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
1	$ 298,447	$ 43,939	$ 42,652	$ 1,940	$ 24,446	$ 322,239
2	322,239	43,447	45,460	2,095	26,255	344,387
3	344,387	42,953	48,501	2,239	27,920	364,521
4	364,521	42,417	51,583	2,369	29,418	382,403
5	382,403	41,865	54,679	2,486	30,730	397,834
6	397,834	41,279	58,002	2,586	31,831	410,356
7	410,356	40,636	61,434	2,667	32,687	419,578
8	419,578	39,956	64,914	2,727	33,270	425,163
9	425,163	39,257	68,512	2,764	33,551	426,694
10	426,694	38,537	72,107	2,774	33,499	423,850

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

[1] From Projection of Contributions table; Column (g)

[2] Pension plan administrative expense equal to 0.65% of Projected Beginning Fiduciary Net Position

Maryland Transit Administration Pension Plan

Actuarial Information to Include in the Financial Statements for the June 30, 2018 Measurement Date

Actuarial Present Value of Projected Benefit Payments (Dollar amounts in thousands)

Year (a)	Projected Beginning Fiduciary Net Position[1] (b)	Projected Benefit Payments (c)	"Funded" Portion of Benefit Payments (d)	"Unfunded" Portion of Benefit Payments (e)	Present Value of "Funded" Benefit Payments (f) = (d) / (1 + 8.20%)^(a)		Present Value of "Unfunded" Benefit Payments (g) = (e) / (1 + 3.62%)^(a)		Present Value of Benefit Payments Using the Single Discount Rate (h) = (c) / (1 + 4.52%)^(a)
1	$ 298,447	$ 42,652	$ 42,652	$ -	$ 39,420		$ -		$ 40,808
2	322,239	45,460	45,460	-	38,831		-		41,613
3	344,387	48,501	48,501	-	38,289		-		42,477
4	364,521	51,583	51,583	-	37,636		-		43,223
5	382,403	54,679	54,679	-	36,871		-		43,835
6	397,834	58,002	58,002	-	36,147		-		44,488
7	410,356	61,434	61,434	-	35,385		-		45,083
8	419,578	64,914	64,914	-	34,556		-		45,577
9	425,163	68,512	68,512	-	33,707		-		46,023
10	426,694	72,107	72,107	-	32,787		-		46,343
20	150,729	102,123	102,123	-	21,114		-		42,183
21	87,726	104,202	-	104,202	-		49,381		41,180
22	16,980	106,104	-	106,104	-		48,526		40,119
98	-	-	-	-	-		-		-
99	-	-	-	-	-		-		-
Total					**$ 629,824**	**+**	**$ 1,024,868**	**=**	**$ 1,654,693**

Note: Years 11-19 and 23-97 have been omitted from this table

[1] From Projection of Pension Plan's Fiduciary Net Position table; Column (a)