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## **TULSA COUNTY EMPLOYEES' RETIREMENT SYSTEM**

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

**Fiscal Year: July 1, 2018 to June 30, 2019**

**Prepared by**

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## Table of Contents

<b>Certification</b>	<b>1</b>
<b>Overview of GASB 67 and GASB 68</b>	<b>3</b>
<b>Executive Summary</b>	<b>4</b>
<b>Schedule of Employer Contributions</b>	<b>5</b>
<b>Actuarial Methods and Assumptions Used for Funding Policy</b>	<b>6</b>
<b>Statement of Fiduciary Net Position</b>	<b>7</b>
<b>Statement of Changes in Fiduciary Net Position</b>	<b>8</b>
<b>Money-Weighted Rate of Return</b>	<b>9</b>
<b>Long-Term Expected Rate of Return</b>	<b>10</b>
<b>Depletion Date Projection</b>	<b>11</b>
<b>Projection of Contributions</b>	<b>12</b>
<b>Projection of Fiduciary Net Position</b>	<b>13</b>
<b>Actuarial Present Value of Projected Benefit Payments</b>	<b>14</b>
<b>Net Pension Liability</b>	<b>15</b>
<b>Changes in Net Pension Liability</b>	<b>16</b>
<b>Schedule of Changes in Net Pension Liability and Related Ratios</b>	<b>17</b>
<b>Pension Expense</b>	<b>18</b>
<b>Schedule of Deferred Inflows and Outflows of Resources</b>	<b>19</b>
<b>Summary Chart</b>	<b>20</b>
<b>Schedule of Pension Amounts by Entity for the Year Ended June 30, 2019</b>	<b>21</b>
<b>Glossary</b>	<b>25</b>

## Certification

Actuarial computations presented in this report under Statements No. 67 and 68 of the Governmental Accounting Standards Board are for purposes of assisting Tulsa County in fulfilling its financial accounting requirements. No attempt is being made to offer any accounting opinion or advice. This report is for fiscal year July 1, 2018 to June 30, 2019. The reporting date for determining plan assets and obligations is June 30, 2019. 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 July 1, 2019 and June 30, 2019 furnished by Tulsa County. This information includes, but is not limited to, statutory provisions, member census data, and financial information. Please see Milliman's funding valuation report dated October, 2019 for more information on the plan's participant group as of July 1, 2019 as well as a summary of the plan provisions and a summary of the actuarial methods and assumptions used for funding purposes.

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.

Statements No. 67 and 68 of the Governmental Accounting Standards Board (GASB) require that the discount rate assumption be the estimated long-term yield on the investments that are expected to finance the benefits. We have used a 6.75% discount rate assumption to determine the Plan's Total Pension Liability as of June 30, 2019. 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, or prescribed by the System's Board, 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's work is prepared solely for the internal use and benefit of Tulsa County. 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 Tulsa County; 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 retirement 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.



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## 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.

## Executive Summary

### Relationship Between Valuation Date, Measurement Date, and Reporting Date

The Valuation Date is July 1, 2019. This is the date as of which the actuarial valuation is performed. The Measurement Date is June 30, 2019. This is the date as of which the net pension liability is determined. The Reporting Date is June 30, 2019. This is the plan's and/or employer's fiscal year ending date.

### Significant Changes

There have been no significant changes between the valuation date and fiscal year end.

### Participant Data as of July 1, 2019

Actives	1,803
Terminated vested & other inactives	653
Retirees and beneficiaries	<u>1,297</u>
Total	3,753

## Schedule of Employer Contributions

Fiscal Year Ending June 30	Actuarially Determined Contribution	Actual Employer Contribution	Contribution Deficiency (Excess)	Covered Payroll	Contribution as a % of Covered Payroll
2010	\$12,690,233	\$8,519,675	\$4,170,558	\$70,954,995	12.01%
2011	11,578,384	9,691,440	1,886,944	68,385,214	14.17%
2012	9,905,465	9,594,837	310,628	68,009,247	14.11%
2013	10,013,191	9,540,702	472,489	67,099,126	14.22%
2014	8,694,876	9,678,256	(983,380)	72,406,610	13.37%
2015	8,657,780	10,459,118	(1,801,338)	76,834,455	13.61%
2016	8,925,910	10,892,672	(1,966,762)	76,560,913	14.23%
2017	10,839,414	10,846,636	(7,222)	76,796,017	14.12%
2018	10,568,348	10,817,651	(249,303)	76,499,726	14.14%
2019	12,161,561	11,103,394	1,058,167	80,413,486	13.81%

## Actuarial Methods and Assumptions Used for Funding Policy

The following actuarial methods and assumptions were used in the July 1, 2019 funding valuation. Please see the valuation report dated October, 2019 for further details.

<b>Valuation Timing</b>	Actuarially determined contribution rates are calculated as of June 30 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 percent	
Closed, open, or layered periods	Layered	
Amortization period at 07/01/2019	20 years (14 year closed period for unfunded accrued liability as of 07/01/2017)	
Amortization growth rate	2.50%	
<b>Asset Valuation Method</b>		
Smoothing period	5 years	
Recognition method	Non-asymptotic	
Corridor	80%-120%	
<b>Inflation</b>	2.50%	
<b>Salary Increases</b>	5% grading down to 2.5%	
<b>Investment Rate of Return</b>	7.25%	
<b>Cost of Living Adjustments</b>	None	
<b>Retirement Age</b>	<u>Age</u>	<u>Rate</u>
	Under 55	0%
	55-64	20%
	65-69	30%
	70 and Over	100%
<b>Turnover</b>	Crocker, Sarason and Straight T-7 Table increased by 0.2 in the first year of employment and 0.1 in the second year of employment	
<b>Mortality</b>	RP-2014 Mortality for Employees, Healthy Annuitants, and Disabled Annuitants with generational projection from 2006 using Scale MP-2017 for healthy participants	



## Statement of Fiduciary Net Position

	June 30, 2018	June 30, 2019
<b>Assets</b>		
Cash	\$468,191	\$392,839
Receivables:		
Interest and dividends	1,066,366	959,818
Due from brokers for unsettled trades	640,269	942,806
Contributions from employer/employees	1,048,870	1,064,719
Total receivables	2,755,505	2,967,343
Investments:		
Money market mutual funds	7,685,659	10,882,676
Government and Agency obligations	61,293,960	66,939,656
Corporate bonds	78,399,388	70,115,935
Domestic equities	108,091,378	109,202,733
International equities	27,359,739	25,974,705
Judgments	6,874,122	4,581,667
Total investments	289,704,246	287,697,372
Total assets	292,927,942	291,057,554
<b>Liabilities</b>		
Accounts payable and accrued expenses	162,583	145,474
Due to brokers for unsettled trades	1,313,014	1,830,887
Total liabilities	1,475,597	1,976,361
<b>Net position restricted for pensions</b>	\$291,452,345	\$289,081,193

## Statement of Changes in Fiduciary Net Position

	<b>June 30, 2019</b>
<b>Additions</b>	
Member contributions	\$1,974,991
Employer contributions	11,103,394
Total contributions	13,078,385
Investment income (loss):	
Interest	3,633,673
Dividends	4,968,437
Net increase in fair value of investments	(916,690)
Less investment expenses:	
Direct investment expense	1,073,375
Net investment income	6,612,045
Total additions	19,690,430
<b>Deductions</b>	
Service benefits	21,805,708
Refunds of member contributions	159,875
Administrative expenses	95,999
Total deductions	22,061,582
Net increase (decrease)	(2,371,152)
<b>Net position restricted for pensions</b>	
Beginning of year (June 30, 2018)	291,452,345
End of year (June 30, 2019)	\$289,081,193

## Money-Weighted Rate of Return

Fiscal Year Ending June 30	Net Money-Weighted Rate of Return
2010	N/A
2011	N/A
2012	N/A
2013	N/A
2014	17.29%
2015	0.19%
2016	0.08%
2017	9.36%
2018	5.66%
2019	2.31%

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

	Net External Cash Flows	Periods Invested	Period Weight	Net External Cash Flows With Interest
Beginning Value - July 1, 2018	\$291,452,345	12.00	1.00	\$298,175,368
Monthly net external cash flows:				
July	(746,280)	12.00	1.00	(763,495)
August	(742,022)	11.00	0.92	(757,755)
September	(712,018)	10.00	0.83	(725,624)
October	(764,063)	9.00	0.75	(777,244)
November	(758,637)	8.00	0.67	(770,318)
December	(722,315)	7.00	0.58	(731,933)
January	(768,754)	6.00	0.50	(777,570)
February	(737,421)	5.00	0.42	(744,518)
March	(739,891)	4.00	0.33	(745,480)
April	(632,291)	3.00	0.25	(635,906)
May	(872,722)	2.00	0.17	(876,112)
June	(786,783)	1.00	0.08	(788,220)
Ending Value - June 30, 2019				289,081,193
Money-Weighted Rate of Return				2.31%

## 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 June 30, 2019.

Asset Class	Index	Current Allocation	Long-Term Expected Arithmetic Real Rate of Return	Long-Term Expected Geometric Real Rate of Return
US Cash	BAML 3-Mon Tbill	3.10%	0.68%	0.68%
US Core Fixed Income	Barclays Aggregate	22.60%	1.70%	1.61%
US Intermediate Bonds	Barclays IT Gvt/Credit	16.00%	1.40%	1.33%
US High Yield Bonds	BAML High Yield	9.70%	3.91%	3.45%
US Large Caps	S&P 500	14.00%	4.45%	3.34%
US Mid Caps	Russell MidCap	19.00%	4.85%	3.42%
Foreign Developed Equity	MSCI EAFE NR	9.70%	6.14%	4.63%
Master Limited Partnerships	Alerian MLP	5.90%	3.81%	2.59%
Assumed			2.50%	2.50%
Assumed Inflation - Standard Deviation			1.65%	1.65%

**Long-Term Expected Rate of Return** **6.75%**

Historical Fund Returns, net of expenses, for the last 20 plan years:

Year Ended June 30	Net Return	Year Ended June 30	Net Return
2000	5.2%	2010	17.8%
2001	2.7%	2011	18.3%
2002	0.5%	2012	1.0%
2003	4.8%	2013	13.0%
2004	13.3%	2014	17.2%
2005	7.4%	2015	0.1%
2006	9.6%	2016	0.0%
2007	16.4%	2017	9.3%
2008	-6.2%	2018	5.6%
2009	-11.2%	2019	2.3%

20 Year Geometric Rate of Return, net of expenses: 6.1%  
 10 Year Geometric Rate of Return, net of expenses: 8.2%

## 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:

- Current active members contribute 2.5% of base pay through 12/31/2019 and 3.5% of base pay effective 01/01/2020.
- The employer contributes 15% of pay.
- 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 07/01/2019 valuation.
- Terminating and retiring members will be replaced with new employees so that total employee payroll increases by 2.50% per year.
- Current administrative expenses are assumed to increase by 2.50% 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 6.75%.
- 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.

## 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	\$81,458,307	\$0	\$81,458,307	\$2,443,749	\$12,218,746	\$0	\$14,662,495
2	74,026,744	9,468,021	83,494,764	2,590,936	11,104,012	862,537	14,557,485
3	69,068,768	16,513,365	85,582,134	2,417,407	10,360,315	1,504,368	14,282,090
4	64,990,225	22,731,462	87,721,687	2,274,658	9,748,534	2,070,836	14,094,028
5	61,015,460	28,899,269	89,914,729	2,135,541	9,152,319	2,632,723	13,920,583
6	56,957,539	35,205,058	92,162,597	1,993,514	8,543,631	3,207,181	13,744,326
7	53,321,448	41,145,214	94,466,662	1,866,251	7,998,217	3,748,329	13,612,797
8	49,807,653	47,020,676	96,828,329	1,743,268	7,471,148	4,283,584	13,498,000
9	46,328,104	52,920,933	99,249,037	1,621,484	6,949,216	4,821,097	13,391,797
10	42,932,641	58,797,622	101,730,263	1,502,642	6,439,896	5,356,463	13,299,001

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

\* Contributions from future employees that are above service cost and, therefore, can be allocated to payment of benefits of current employees under GASB rules.

## 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	\$289,081,193	\$14,662,495	\$23,253,010	\$98,399	\$19,219,730	\$299,612,009
2	299,612,009	14,557,485	24,237,272	100,859	19,893,714	309,725,077
3	309,725,077	14,282,090	25,209,227	103,380	20,534,163	319,228,723
4	319,228,723	14,094,028	26,196,943	105,965	21,135,889	328,155,732
5	328,155,732	13,920,583	27,152,175	108,614	21,700,280	336,515,807
6	336,515,807	13,744,326	28,033,245	111,329	22,228,809	344,344,367
7	344,344,367	13,612,797	28,919,773	114,112	22,722,783	351,646,062
8	351,646,062	13,498,000	29,813,462	116,965	23,181,515	358,395,149
9	358,395,149	13,391,797	30,712,449	119,889	23,603,054	364,557,662
10	364,557,662	13,299,001	31,659,528	122,886	23,983,827	370,058,077

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	\$289,081,193	\$23,253,010	\$23,253,010	\$0	\$22,582,613	\$0	\$22,582,613
2	299,612,009	24,237,272	24,237,272	0	22,050,116	0	22,050,116
3	309,725,077	25,209,227	25,209,227	0	21,484,180	0	21,484,180
4	319,228,723	26,196,943	26,196,943	0	20,914,235	0	20,914,235
5	328,155,732	27,152,175	27,152,175	0	20,306,174	0	20,306,174
6	336,515,807	28,033,245	28,033,245	0	19,639,435	0	19,639,435
7	344,344,367	28,919,773	28,919,773	0	18,979,406	0	18,979,406
8	351,646,062	29,813,462	29,813,462	0	18,328,725	0	18,328,725
9	358,395,149	30,712,449	30,712,449	0	17,687,498	0	17,687,498
10	364,557,662	31,659,528	31,659,528	0	17,080,025	0	17,080,025
Total					472,509,234	+ 0	= 472,509,234

Note: Years 11-99 have been omitted from this table.

\* Discounted at the long-term expected rate of return, 6.75%

\*\* 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, 6.75%



## Net Pension Liability

Net Pension Liability	June 30, 2018	June 30, 2019
Total pension liability	\$379,190,526	\$412,726,939
Fiduciary net position	291,452,345	289,081,193
Net pension liability	87,738,181	123,645,746
Fiduciary net position as a % of total pension liability	76.86%	70.04%
Covered payroll	76,499,726	80,413,486
Net pension liability as a % of covered payroll	114.69%	153.76%

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	7.25%	6.75%
Long-term expected rate of return, net of investment expense	7.25%	6.75%
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 June 30, 2019 were based on the results of an actuarial experience study for the period July 1, 2012 - June 30, 2017.

Valuation date	July 1, 2018	July 1, 2019
Measurement date	June 30, 2018	June 30, 2019
Actuarial cost method	Entry Age Normal	Entry Age Normal
Inflation	2.50%	2.50%
Salary increases including inflation	5% grading down to 2.5%	5% grading down to 2.5%
Mortality	RP-2014 Mortality for Employees, Healthy Annuitants, and Disabled Annuitants with generational projection from 2006 using Scale MP-2017 for healthy participants	RP-2014 Mortality for Employees, Healthy Annuitants, and Disabled Annuitants with generational projection from 2006 using Scale MP-2017 for healthy participants

Please see Milliman's funding valuation report dated October, 2019 for more detail.

## Changes in Net Pension Liability

Changes in Net Pension Liability	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances as of June 30, 2018	\$379,190,526	\$291,452,345	\$87,738,181
Changes for the year:			
Service cost	6,788,221		6,788,221
Interest on total pension liability	27,201,138		27,201,138
Effect of plan changes	14,758		14,758
Effect of economic/demographic gains or losses	(1,408,671)		(1,408,671)
Effect of assumptions changes or inputs	22,906,550		22,906,550
Benefit payments	(21,965,583)	(21,965,583)	0
Employer contributions		11,103,394	(11,103,394)
Member contributions		1,974,991	(1,974,991)
Net investment income		6,612,045	(6,612,045)
Administrative expenses		(95,999)	95,999
Balances as of June 30, 2019	412,726,939	289,081,193	123,645,746

### Sensitivity Analysis

The following presents the net pension liability of the Tulsa County, calculated using the discount rate of 6.75%, as well as what the Tulsa County's net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower (5.75%) or 1 percentage point higher (7.75%) than the current rate.

	1% Decrease 5.75%	Current Discount Rate 6.75%	1% Increase 7.75%
Total pension liability	\$465,767,148	\$412,726,939	\$368,959,742
Fiduciary net position	289,081,193	289,081,193	289,081,193
Net pension liability	176,685,955	123,645,746	79,878,549

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

	Fiscal Year Ending June 30									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
<b>Total Pension Liability</b>										
Service cost	\$6,788	\$6,422	\$6,409	\$6,073	\$5,714	\$5,636	N/A	N/A	N/A	N/A
Interest on total pension liability	27,201	25,420	24,721	24,740	23,398	22,703	N/A	N/A	N/A	N/A
Effect of plan changes	15	0	(238)	(470)	0	0	N/A	N/A	N/A	N/A
Effect of economic/demographic gains or losses	(1,409)	6,401	(1,046)	438	(2,337)	(294)	N/A	N/A	N/A	N/A
Effect of assumption changes or inputs	22,907	7,494	0	18,308	7,382	(2,894)	N/A	N/A	N/A	N/A
Benefit payments	(21,966)	(21,128)	(19,342)	(18,165)	(17,208)	(16,252)	N/A	N/A	N/A	N/A
Net change in total pension liability	33,536	24,610	10,504	30,924	16,949	8,898	N/A	N/A	N/A	N/A
Total pension liability, beginning	379,191	354,581	344,077	313,153	296,204	287,306	N/A	N/A	N/A	N/A
Total pension liability, ending (a)	412,727	379,191	354,581	344,077	313,153	296,204	N/A	N/A	N/A	N/A
<b>Fiduciary Net Position</b>										
Employer contributions	\$11,103	\$10,818	\$10,847	\$10,893	\$10,459	\$9,678	N/A	N/A	N/A	N/A
Member contributions	1,975	1,922	1,542	969	743	688	N/A	N/A	N/A	N/A
Net investment income	6,612	15,830	24,595	222	523	41,471	N/A	N/A	N/A	N/A
Benefit payments	(21,966)	(21,128)	(19,342)	(18,165)	(17,208)	(16,252)	N/A	N/A	N/A	N/A
Administrative expenses	(96)	(140)	(119)	(120)	(128)	(128)	N/A	N/A	N/A	N/A
Net change in plan fiduciary net position	(2,371)	7,301	17,523	(6,202)	(5,611)	35,457	N/A	N/A	N/A	N/A
Fiduciary net position, beginning	291,452	284,151	266,628	272,830	278,441	242,984	N/A	N/A	N/A	N/A
Fiduciary net position, ending (b)	289,081	291,452	284,151	266,628	272,830	278,441	N/A	N/A	N/A	N/A
Net pension liability, ending = (a) - (b)	\$123,646	\$87,738	\$70,430	\$77,449	\$40,323	\$17,763	N/A	N/A	N/A	N/A
Fiduciary net position as a % of total pension liability	70.04%	76.86%	80.14%	77.49%	87.12%	94.00%	N/A	N/A	N/A	N/A
Covered payroll	\$80,413	\$76,500	\$76,796	\$76,561	\$76,834	\$72,407	N/A	N/A	N/A	N/A
Net pension liability as a % of covered payroll	153.76%	114.69%	91.71%	101.16%	52.48%	24.53%	N/A	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.

## Pension Expense

Pension Expense	July 1, 2017 to June 30, 2018	July 1, 2018 to June 30, 2019
Service cost	\$6,421,661	\$6,788,221
Interest on total pension liability	25,420,194	27,201,138
Effect of plan changes	0	14,758
Administrative expenses	140,364	95,999
Member contributions	(1,922,350)	(1,974,991)
Expected investment return net of investment expenses	(20,297,204)	(20,810,352)
Recognition of Deferred Inflows/Outflows of Resources		
Recognition of economic/demographic gains or losses	609,644	364,276
Recognition of assumption changes or inputs	5,504,052	9,898,326
Recognition of investment gains or losses	3,518,630	10,931,916
Pension Expense	<u>19,394,991</u>	<u>32,509,291</u>

As of June 30, 2019, 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	(\$1,899,750)	\$4,149,906
Changes of assumptions	0	29,283,045
Net difference between projected and actual earnings	0	15,970,672
Contributions made subsequent to measurement date	0	0
Total	<u>(1,899,750)</u>	<u>49,403,623</u>

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 June 30:	
2020	\$17,155,854
2021	10,695,458
2022	10,210,056
2023	7,850,071
2024	1,592,434
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 06/30/2019	Amount Recognized in Pension Expense through 06/30/2019	Balance of Deferred Inflows as of 06/30/2019	Balance of Deferred Outflows as of 06/30/2019
<b>Economic/ demographic gains or losses</b>	(\$1,408,671)	06/30/2019	5.4	(\$260,865)	(\$260,865)	(\$1,147,806)	\$0
	6,401,433	06/30/2018	5.4	1,185,451	2,370,902	0	4,030,531
	(1,046,118)	06/30/2017	5.4	(193,726)	(581,178)	(464,940)	0
	437,715	06/30/2016	5.5	79,585	318,340	0	119,375
	(2,337,029)	06/30/2015	5.7	(410,005)	(2,050,025)	(287,004)	0
	(294,469)	06/30/2014	5.7	(36,164)	(294,469)	0	0
		Total		364,276	(497,295)	(1,899,750)	4,149,906
<b>Assumption changes or inputs</b>	22,906,550	06/30/2019	5.4	4,241,954	4,241,954	0	18,664,596
	7,494,421	06/30/2018	5.4	1,387,856	2,775,712	0	4,718,709
	0	06/30/2017	0.0	0	0	0	0
	18,308,081	06/30/2016	5.5	3,328,742	13,314,968	0	4,993,113
	7,382,522	06/30/2015	5.7	1,295,179	6,475,895	0	906,627
	(2,894,030)	06/30/2014	5.7	(355,405)	(2,894,030)	0	0
		Total		9,898,326	23,914,499	0	29,283,045
<b>Investment gains or losses</b>	14,198,307	06/30/2019	5.0	2,839,661	2,839,661	0	11,358,646
	4,467,439	06/30/2018	5.0	893,488	1,786,976	0	2,680,463
	(5,512,606)	06/30/2017	5.0	(1,102,521)	(3,307,563)	(2,205,043)	0
	20,683,038	06/30/2016	5.0	4,136,608	16,546,432	0	4,136,606
	20,823,392	06/30/2015	5.0	4,164,680	20,823,392	0	0
		Total		10,931,916	38,688,898	(2,205,043)	18,175,715
<b>Total for economic/demographic gains or losses and assumption changes or inputs</b>						(1,899,750)	33,432,951
<b>Net deferred (inflows)/outflows for investment gains or losses</b>						0	15,970,672
<b>Total deferred (inflows)/outflows</b>						(1,899,750)	49,403,623
<b>Total net deferrals</b>							47,503,873

\* 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.

## Milliman Financial Reporting Valuation

	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 June 30, 2018</b>	(\$379,190,526)	\$291,452,345	(\$87,738,181)	(\$1,747,244)	\$22,045,168	\$12,704,281	\$33,002,205	(\$54,735,976)	
Service cost	(6,788,221)		(6,788,221)						6,788,221
Interest on total pension liability	(27,201,138)		(27,201,138)						27,201,138
Effect of plan changes	(14,758)		(14,758)						14,758
Effect of liability gains or losses	1,408,671		1,408,671	(1,408,671)			(1,408,671)		
Effect of assumption changes or inputs	(22,906,550)		(22,906,550)		22,906,550		22,906,550		
Benefit payments	21,965,583	(21,965,583)	0						
Administrative expenses		(95,999)	(95,999)						95,999
Member contributions		1,974,991	1,974,991						(1,974,991)
Expected net investment income		20,810,352	20,810,352						(20,810,352)
Investment gains or losses		(14,198,307)	(14,198,307)			14,198,307	14,198,307		
Employer contributions		11,103,394	11,103,394					11,103,394	
Recognition of liability gains or losses				900,760	(1,265,036)		(364,276)		364,276
Recognition of assumption changes or inputs				355,405	(10,253,731)		(9,898,326)		9,898,326
Recognition of investment gains or losses						(10,931,916)	(10,931,916)		10,931,916
Annual expense								(32,509,291)	32,509,291
<b>Balances as of June 30, 2019</b>	(412,726,939)	289,081,193	(123,645,746)	(1,899,750)	33,432,951	15,970,672	47,503,873	(76,141,873)	

Schedule of Pension Amounts by Entity as of the Year Ended June 30, 2019

Entity	Deferred Outflows of Resources					Deferred Inflows of Resources					Pension Expense			
	Net Pension Liability	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Pension Plan Earnings on Investments	Change of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Pension Plan Earnings on Investments	Change of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
Health Department	\$22,627,171	\$758,241	\$2,903,318	\$5,300,134	\$596,267	\$9,557,960	(\$340,240)	\$0	\$0	(\$25,371)	(\$365,611)	\$5,839,735	\$139,123	\$5,978,858
Public Facilities Authority	3,956,664	132,320	503,336	913,109	238,506	1,787,271	(57,676)	0	0	(19,493)	(77,169)	993,282	42,303	1,035,585
Other	97,061,911	3,259,345	12,564,018	23,069,802	44,864	38,938,029	(1,501,834)	0	0	(834,773)	(2,336,607)	25,676,274	(181,426)	25,494,848
Total for all Entities	\$123,645,746	\$4,149,906	\$15,970,672	\$29,283,045	\$879,637	\$50,283,260	(\$1,899,750)	\$0	\$0	(\$879,637)	(\$2,779,387)	\$32,509,291	\$0	\$32,509,291

## Schedule of Deferred Inflows and Outflows of Resources Health Department

	Original Amount	Date Established	Original Rec. Period	Amount Recognized in Pension Expense for FYE 06/30/2019	Amount Recognized in Pension Expense through 06/30/2019	Balance of Deferred Inflows as of 06/30/2019	Balance of Deferred Outflows as of 06/30/2019
<b>Economic/ demographic gains or losses</b>	(\$257,787)	06/30/2019	5.4	(\$47,738)	(\$47,738)	(\$210,049)	\$0
	1,171,462	06/30/2018	5.4	216,937	433,874	0	737,588
	(180,979)	06/30/2017	5.4	(33,515)	(100,545)	(80,434)	0
	75,725	06/30/2016	5.5	13,768	55,072	0	20,653
	(405,157)	06/30/2015	5.7	(71,080)	(355,400)	(49,757)	0
	(52,623)	06/30/2014	5.7	<u>(6,463)</u>	<u>(52,623)</u>	<u>0</u>	<u>0</u>
		Total		71,909	(67,360)	(340,240)	758,241
<b>Assumption changes or inputs</b>	4,191,899	06/30/2019	5.4	776,278	776,278	0	3,415,621
	1,371,479	06/30/2018	5.4	253,978	507,956	0	863,523
	0	06/30/2017	0.0	0	0	0	0
	3,167,298	06/30/2016	5.5	575,872	2,303,488	0	863,810
	1,279,865	06/30/2015	5.7	224,537	1,122,685	0	157,180
	(517,177)	06/30/2014	5.7	<u>(63,512)</u>	<u>(517,177)</u>	<u>0</u>	<u>0</u>
		Total		1,767,153	4,193,230	0	5,300,134
<b>Investment gains or losses</b>	2,598,290	06/30/2019	5.0	519,658	519,658	0	2,078,632
	817,541	06/30/2018	5.0	163,508	327,016	0	490,525
	(953,681)	06/30/2017	5.0	(190,736)	(572,208)	(381,473)	0
	3,578,166	06/30/2016	5.0	715,633	2,862,532	0	715,634
	3,610,030	06/30/2015	5.0	<u>722,006</u>	<u>3,610,030</u>	<u>0</u>	<u>0</u>
		Total		1,930,069	6,747,028	(381,473)	3,284,791
<b>Change in proportion</b>	0	06/30/2019	0.0	0	0	0	0
	947,011	06/30/2018	5.4	175,372	350,744	0	596,267
	0	06/30/2017	0.0	0	0	0	0
	0	06/30/2016	0.0	0	0	0	0
	(206,616)	06/30/2015	5.7	(36,249)	(181,245)	(25,371)	0
	0	06/30/2014	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
		Total		139,123	169,499	(25,371)	596,267
<b>Total for economic/demographic gains or losses, assumption changes or inputs and change in proportion</b>						(365,611)	6,654,642
<b>Net deferred (inflows)/outflows for investment gains or losses</b>						0	2,903,318
<b>Total deferred (inflows)/outflows</b>						(365,611)	9,557,960
<b>Total net deferrals</b>							9,192,349



## Schedule of Deferred Inflows and Outflows of Resources Public Facilities Authority

	Original Amount	Date Established	Original Rec. Period	Amount Recognized in Pension Expense for FYE 06/30/2019	Amount Recognized in Pension Expense through 06/30/2019	Balance of Deferred Inflows as of 06/30/2019	Balance of Deferred Outflows as of 06/30/2019
<b>Economic/ demographic gains or losses</b>	(\$45,077)	06/30/2019	5.4	(\$8,348)	(\$8,348)	(\$36,729)	\$0
	204,846	06/30/2018	5.4	37,935	75,870	0	128,976
	(29,291)	06/30/2017	5.4	(5,424)	(16,272)	(13,019)	0
	12,256	06/30/2016	5.5	2,228	8,912	0	3,344
	(64,543)	06/30/2015	5.7	(11,323)	(56,615)	(7,928)	0
	(9,341)	06/30/2014	5.7	<u>(1,146)</u>	<u>(9,341)</u>	<u>0</u>	<u>0</u>
		Total		13,922	(5,794)	(57,676)	132,320
<b>Assumption changes or inputs</b>	733,009	06/30/2019	5.4	135,742	135,742	0	597,267
	239,821	06/30/2018	5.4	44,411	88,822	0	150,999
	0	06/30/2017	0.0	0	0	0	0
	512,626	06/30/2016	5.5	93,205	372,820	0	139,806
	203,887	06/30/2015	5.7	35,770	178,850	0	25,037
	(91,800)	06/30/2014	5.7	<u>(11,275)</u>	<u>(91,800)</u>	<u>0</u>	<u>0</u>
		Total		297,853	684,434	0	913,109
<b>Investment gains or losses</b>	454,346	06/30/2019	5.0	90,869	90,869	0	363,477
	142,958	06/30/2018	5.0	28,592	57,184	0	85,774
	(154,353)	06/30/2017	5.0	(30,871)	(92,613)	(61,740)	0
	579,125	06/30/2016	5.0	115,825	463,300	0	115,825
	575,092	06/30/2015	5.0	<u>115,020</u>	<u>575,092</u>	<u>0</u>	<u>0</u>
		Total		319,435	1,093,832	(61,740)	565,076
<b>Change in proportion</b>	0	06/30/2019	0.0	0	0	0	0
	378,804	06/30/2018	5.4	70,149	140,298	0	238,506
	0	06/30/2017	0.0	0	0	0	0
	0	06/30/2016	0.0	0	0	0	0
	(158,723)	06/30/2015	5.7	(27,846)	(139,230)	(19,493)	0
	0	06/30/2014	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
		Total		42,303	1,068	(19,493)	238,506
<b>Total for economic/demographic gains or losses, assumption changes or inputs and change in proportion</b>						(77,169)	1,283,935
<b>Net deferred (inflows)/outflows for investment gains or losses</b>						0	503,336
<b>Total deferred (inflows)/outflows</b>						(77,169)	1,787,271
<b>Total net deferrals</b>							1,710,102

## Schedule of Deferred Inflows and Outflows of Resources Other

	Original Amount	Date Established	Original Rec. Period	Amount Recognized in Pension Expense for FYE 06/30/2019	Amount Recognized in Pension Expense through 06/30/2019	Balance of Deferred Inflows as of 06/30/2019	Balance of Deferred Outflows as of 06/30/2019
<b>Economic/ demographic gains or losses</b>	(\$1,105,807)	06/30/2019	5.4	(\$204,779)	(\$204,779)	(\$901,028)	\$0
	5,025,125	06/30/2018	5.4	930,579	1,861,158	0	3,163,967
	(835,848)	06/30/2017	5.4	(154,787)	(464,361)	(371,487)	0
	349,734	06/30/2016	5.5	63,589	254,356	0	95,378
	(1,867,329)	06/30/2015	5.7	(327,602)	(1,638,010)	(229,319)	0
	(232,505)	06/30/2014	5.7	<u>(28,555)</u>	<u>(232,505)</u>	<u>0</u>	<u>0</u>
		Total		278,445	(424,141)	(1,501,834)	3,259,345
<b>Assumption changes or inputs</b>	17,981,642	06/30/2019	5.4	3,329,934	3,329,934	0	14,651,708
	5,883,121	06/30/2018	5.4	1,089,467	2,178,934	0	3,704,187
	0	06/30/2017	0.0	0	0	0	0
	14,628,157	06/30/2016	5.5	2,659,665	10,638,660	0	3,989,497
	5,898,770	06/30/2015	5.7	1,034,872	5,174,360	0	724,410
	(2,285,053)	06/30/2014	5.7	<u>(280,618)</u>	<u>(2,285,053)</u>	<u>0</u>	<u>0</u>
		Total		7,833,320	19,036,835	0	23,069,802
<b>Investment gains or losses</b>	11,145,671	06/30/2019	5.0	2,229,134	2,229,134	0	8,916,537
	3,506,940	06/30/2018	5.0	701,388	1,402,776	0	2,104,164
	(4,404,572)	06/30/2017	5.0	(880,914)	(2,642,742)	(1,761,830)	0
	16,525,747	06/30/2016	5.0	3,305,150	13,220,600	0	3,305,147
	16,638,270	06/30/2015	5.0	<u>3,327,654</u>	<u>16,638,270</u>	<u>0</u>	<u>0</u>
		Total		8,682,412	30,848,038	(1,761,830)	14,325,848
<b>Change in proportion</b>	0	06/30/2019	0.0	0	0	0	0
	(1,325,815)	06/30/2018	5.4	(245,521)	(491,042)	(834,773)	0
	0	06/30/2017	0.0	0	0	0	0
	0	06/30/2016	0.0	0	0	0	0
	365,339	06/30/2015	5.7	64,095	320,475	0	44,864
	0	06/30/2014	0.0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
		Total		(181,426)	(170,567)	(834,773)	44,864
<b>Total for economic/demographic gains or losses, assumption changes or inputs and change in proportion</b>						(2,336,607)	26,374,011
<b>Net deferred (inflows)/outflows for investment gains or losses</b>						0	12,564,018
<b>Total deferred (inflows)/outflows</b>						(2,336,607)	38,938,029
<b>Total net deferrals</b>							36,601,422

## 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>	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:  <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>Municipal Bond Rate</b>	Yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.
<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.