

# Oklahoma Firefighters Pension and Retirement System

GASB 67 Accounting Supplement

For the Fiscal Year ending June 30, 2017

April 2018

April 30, 2018

Mr. Chase Rankin  
Executive Director  
Oklahoma Firefighters Pension and Retirement System  
6601 Broadway Extension, Suite 100  
Oklahoma City, OK 73116

Dear Mr. Rankin:

This report has been prepared by Conduent HR Consulting, LLC (f/k/a Buck Consultants, LLC) to complete this actuarial valuation of the Oklahoma Firefighters Pension and Retirement System. This report presents the results of the GASB 67 accounting valuation for the fiscal year ending June 30, 2017.

#### **Purpose of this Report**

The Board of Trustees of the Fund may use this report for the review of the operation of the plan, and in the preparation of the plan's audited financial statements.

Use of this report for any other purpose or by anyone other than the Board may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. This report should not be provided except in its entirety. Because of the risk of misinterpretation of actuarial results, you should ask Conduent to review any statement you wish to make on the results contained in this report. Conduent will not accept any liability for any such statement made without review by Conduent.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of such future differences is beyond the scope of this report.

#### **Data Used**

Conduent performed the valuation using participant and financial data supplied by the Board of Trustees. Conduent did not audit the data, although they were reviewed for reasonableness and consistency with the prior year data. The results of the valuation are dependent on the accuracy of the data.

#### **Actuarial Certification**

The Board of Trustees selected the actuarial methods and assumptions used in this valuation. The Board has sole authority to determine the expected investment return and other actuarial assumptions. In our opinion, the actuarial assumptions used are appropriate for purposes of the valuation and are reasonably related to the experience of the Fund and to reasonable long-term expectations.

I am a Member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions about it.



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Michael A. Ribble, FSA, EA, MAAA  
Principal, Wealth

**Net Pension Liability**

The components of the net pension liability at June 30, 2017, were as follows:

Total pension liability	\$ 3,767,195,100
Plan fiduciary net position	<u>(2,509,471,449)</u>
<b>Net pension liability</b>	<b>1,257,723,651</b>
Plan fiduciary net position as a percentage of the total pension liability	66.61%

**Actuarial assumptions**

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

**Actuarial Assumptions**

Inflation	3.00%
Investment rate of return	7.50%, net of pension plan investment expenses. This is based on an average inflation rate of 3.00% and a real rate of return of 4.50%.

Please see Section 3 of the July, 1, 2017, funding valuation report for a description of the other assumptions used.

**Discount rate**

The discount rate used to measure the total pension liability was 7.50%. The projection of cash flows used to determine the discount rate assumed that the Fund's contributions will continue to follow the current funding policy. Total covered employee payroll is assumed to grow at 4% per year. The total statewide insurance premium tax is assumed to grow at 3% per year. In addition, the allocation of the tax to the System is assumed to be 36% for the entire projection period. The Normal Cost Rate for future members is assumed to be 20.86% for all years. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members for all future years and hence, the blended GASB discount rate is equal to the long-term rate of return of 7.50%. Therefore, the long-term expected rate of return on pension plan investments of 7.50% was applied to all periods of projected benefit payments to determine the total pension liability. The long-term expected rate of return remained at 7.50% to reflect the expected asset allocation.

If the fiduciary net position was not projected to be available to make all projected future benefit payments of current plan members for all future years, the municipal bond rate of 3.13% would have been used during the period that the plan was projected to have no fiduciary net position. The 3.13% rate is based on the S&P Municipal Bond 20 Year High Grade Rate Index as of June 30, 2017.

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

The following presents the net pension liability, calculated using the discount rate of 7.50%, as well as what the Fund's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.50%) or 1-percentage-point higher (8.50%) than the current rate:

	1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
Net Pension Liability	\$ 1,649,949,319	\$ 1,257,723,651	\$ 925,321,337

Schedule of Changes in the Fund's Net Pension Liability and Related Ratios

	2017
<b>Total pension liability</b>	
Service cost	\$ 61,489,198
Interest	257,914,126
Changes of benefit terms	0
Differences between expected and actual experience	170,533,239
Changes of assumptions	0
Benefit payments	<u>(200,214,567)</u>
Net change in total pension liability	\$ 289,721,996
Total pension liability-beginning	\$ 3,477,473,104
Total pension liability-ending (a)	\$ 3,767,195,100
<b>Plan fiduciary net pension</b>	
Contributions-employer	\$ 128,459,393
Contributions-employee	25,236,243
Net investment income	302,619,557
Benefit payments, including refunds of employee contributions	(200,214,567)
Administrative expense	(2,387,774)
Other ( Professional services)	<u>0</u>
Net change in plan fiduciary net position	\$ 253,712,852
Plan fiduciary net position-beginning	\$ 2,255,758,597
Plan fiduciary net position-ending (b)	<u>2,509,471,449</u>
Net pension liability-ending (a)-(b)	\$ 1,257,723,651
Plan fiduciary net position as a percentage of the total pension liability	66.61%
Covered-employee payroll	\$ 285,073,253
Net pension liability as a percentage of covered-employee payroll	441.19%

**Schedule of Fund Contributions**

	2017
Actuarially determined contribution	\$ 141,509,975
Contributions related to the actuarially determined contribution	<u>\$ 122,700,844</u>
Contribution deficiency (excess)	\$ 18,809,131

**Plan membership**

Please see Section 3 of the July, 1, 2017, funding valuation report for a description of the plan membership.

**Benefits provided**

Please see Section 3 of the July, 1, 2017, funding valuation report for a summary of plan provisions.

**Table 1 - Projection of Fiduciary Net Position**

Fiscal Year Ending 6/30	Beginning Fiduciary Net Position	Member Contributions	Employer Contributions	Benefit Payments	Expenses	Investment Earnings	Ending Fiduciary Net Position
2017	\$2,255,758,597	24,076,094	\$132,551,880	\$233,296,819	\$3,097,637	\$166,244,728	\$2,342,236,843
2018	2,342,236,843	24,157,515	135,741,170	245,757,407	3,190,566	172,388,784	2,425,576,339
2019	2,425,576,339	24,284,842	139,085,703	259,059,667	3,286,283	178,273,746	2,504,874,680
2020	2,504,874,680	24,363,444	142,463,712	273,825,695	3,384,871	183,801,056	2,578,292,326
2021	2,578,292,326	24,350,036	145,821,183	289,965,815	3,486,417	188,832,463	2,643,843,776
2022	2,643,843,776	24,276,284	149,202,963	307,194,191	3,591,010	193,232,394	2,699,770,216
2023	2,699,770,216	24,182,139	152,664,919	325,436,563	3,698,740	196,875,198	2,744,357,169
2024	2,744,357,169	24,081,249	156,228,352	345,348,522	3,809,702	199,609,432	2,775,117,978
2025	2,775,117,978	23,911,905	159,815,366	367,509,546	3,923,993	201,222,115	2,788,633,825
2026	2,788,633,825	23,584,619	163,311,568	391,466,946	4,041,713	201,465,994	2,781,487,347
2027	2,781,487,347	23,192,572	166,843,386	229,952,971	4,162,964	206,988,435	2,944,395,805
2028	2,944,395,805	22,732,594	170,410,400	238,662,141	4,287,853	218,995,689	3,113,584,494
2029	3,113,584,494	22,231,942	174,052,400	247,971,271	4,416,489	231,452,993	3,288,934,069
2030	3,288,934,069	21,656,303	177,728,159	258,229,863	4,548,984	244,335,743	3,469,875,427
2031	3,469,875,427	20,986,137	181,416,049	268,949,169	4,685,454	257,617,731	3,656,260,721
2032	3,656,260,721	20,263,239	185,175,396	280,691,591	4,826,018	271,270,881	3,847,452,628
2033	3,847,452,628	19,342,268	188,819,048	293,372,319	4,970,799	285,238,267	4,042,509,093
2034	4,042,509,093	18,299,209	192,451,659	307,597,077	5,119,923	299,433,578	4,239,976,539
2035	4,239,976,539	17,210,357	196,178,428	322,189,824	5,273,521	313,797,779	4,439,699,758
2036	4,439,699,758	16,166,991	200,124,447	337,063,303	5,431,727	328,330,405	4,641,826,571
2037	4,641,826,571	15,114,327	204,222,481	347,721,970	5,594,679	343,203,578	4,851,050,308
2038	4,851,050,308	13,983,443	208,386,817	356,055,379	5,762,519	358,694,023	5,070,296,693
2039	5,070,296,693	12,775,745	212,624,586	364,703,134	5,935,395	374,924,281	5,299,982,776
2040	5,299,982,776	11,589,207	217,070,335	373,741,993	6,113,457	391,931,362	5,540,718,230
2041	5,540,718,230	10,291,417	221,555,184	382,008,905	6,296,861	409,792,717	5,794,051,782
2042	5,794,051,782	8,994,537	226,232,728	390,878,061	6,485,767	428,583,680	6,060,498,899
2043	6,060,498,899	7,755,828	231,184,396	401,540,592	6,680,340	448,304,152	6,339,522,343
2044	6,339,522,343	6,562,164	236,399,047	408,351,346	6,880,750	469,120,806	6,636,372,264
2045	6,636,372,264	5,498,929	241,995,553	412,184,135	7,087,173	491,402,742	6,955,998,180



**Table 1 - Projection of Fiduciary Net Position**

Fiscal Year Ending 6/30	Beginning Fiduciary Net Position	Member Contributions	Employer Contributions	Benefit Payments	Expenses	Investment Earnings	Ending Fiduciary Net Position
2046	6,955,998,180	4,619,991	248,051,453	415,940,820	7,299,788	515,419,154	7,300,848,170
2047	7,300,848,170	3,730,328	254,316,510	419,370,602	7,518,782	541,346,481	7,673,352,105
2048	7,673,352,105	2,774,965	260,725,252	420,931,420	7,744,345	569,419,303	8,077,595,860
2049	8,077,595,860	1,928,050	267,514,365	420,683,204	7,976,675	599,956,973	8,518,335,369
2050	8,518,335,369	1,380,080	274,942,301	424,801,276	8,215,975	633,105,324	8,994,745,823
2051	8,994,745,823	811,886	282,596,118	430,297,585	8,462,454	668,885,554	9,508,279,342
2052	9,508,279,342	140,525	290,374,414	406,052,302	8,716,328	708,545,673	10,092,571,324
2053	10,092,571,324	0	299,120,816	392,637,847	8,977,818	753,168,777	10,743,245,252

**Table 2: Actuarial Present Value of Projected Benefit Payments**

Fiscal Year Ending 6/30	Beginning Fiduciary Net Position	Benefit Payments	Benefit Payments		Present Value of Benefit Payments		
			Funded Portion	Unfunded Portion	Funded Portion at 7.50%	Unfunded Portion at 3.13%	Using a Single Discount Rate of 7.50%
2017	\$2,255,758,597	\$233,296,819	\$233,296,819	\$0	\$225,011,433	\$0	\$225,011,433
2018	2,342,236,843	245,757,407	245,757,407	0	220,492,550	0	220,492,550
2019	2,425,576,339	259,059,667	259,059,667	0	216,211,427	0	216,211,427
2020	2,504,874,680	273,825,695	273,825,695	0	212,590,853	0	212,590,853
2021	2,578,292,326	289,965,815	289,965,815	0	209,415,446	0	209,415,446
2022	2,643,843,776	307,194,191	307,194,191	0	206,379,448	0	206,379,448
2023	2,699,770,216	325,436,563	325,436,563	0	203,381,444	0	203,381,444
2024	2,744,357,169	345,348,522	345,348,522	0	200,767,828	0	200,767,828
2025	2,775,117,978	367,509,546	367,509,546	0	198,745,214	0	198,745,214
2026	2,788,633,825	391,466,946	391,466,946	0	196,931,273	0	196,931,273
2027	2,781,487,347	229,952,971	229,952,971	0	107,609,385	0	107,609,385
2028	2,944,395,805	238,662,141	238,662,141	0	103,892,978	0	103,892,978
2029	3,113,584,494	247,971,271	247,971,271	0	100,414,300	0	100,414,300
2030	3,288,934,069	258,229,863	258,229,863	0	97,272,975	0	97,272,975
2031	3,469,875,427	268,949,169	268,949,169	0	94,242,647	0	94,242,647
2032	3,656,260,721	280,691,591	280,691,591	0	91,495,178	0	91,495,178
2033	3,847,452,628	293,372,319	293,372,319	0	88,956,866	0	88,956,866

**Table 2: Actuarial Present Value of Projected Benefit Payments**

Fiscal Year Ending 6/30	Beginning Fiduciary Net Position	Benefit Payments	Benefit Payments		Present Value of Benefit Payments		
			Funded Portion	Unfunded Portion	Funded Portion at 7.50%	Unfunded Portion at 3.13%	Using a Single Discount Rate of 7.50%
2034	4,042,509,093	307,597,077	307,597,077	0	86,762,904	0	86,762,904
2035	4,239,976,539	322,189,824	322,189,824	0	84,538,635	0	84,538,635
2036	4,439,699,758	337,063,303	337,063,303	0	82,270,932	0	82,270,932
2037	4,641,826,571	347,721,970	347,721,970	0	78,951,178	0	78,951,178
2038	4,851,050,308	356,055,379	356,055,379	0	75,203,070	0	75,203,070
2039	5,070,296,693	364,703,134	364,703,134	0	71,655,421	0	71,655,421
2040	5,299,982,776	373,741,993	373,741,993	0	68,308,223	0	68,308,223
2041	5,540,718,230	382,008,905	382,008,905	0	64,948,049	0	64,948,049
2042	5,794,051,782	390,878,061	390,878,061	0	61,819,496	0	61,819,496
2043	6,060,498,899	401,540,592	401,540,592	0	59,075,193	0	59,075,193
2044	6,339,522,343	408,351,346	408,351,346	0	55,885,768	0	55,885,768
2045	6,636,372,264	412,184,135	412,184,135	0	52,474,709	0	52,474,709
2046	6,955,998,180	415,940,820	415,940,820	0	49,258,575	0	49,258,575
2047	7,300,848,170	419,370,602	419,370,602	0	46,199,771	0	46,199,771
2048	7,673,352,105	420,931,420	420,931,420	0	43,136,482	0	43,136,482
2049	8,077,595,860	420,683,204	420,683,204	0	40,103,298	0	40,103,298
2050	8,518,335,369	424,801,276	424,801,276	0	37,670,576	0	37,670,576

**Table 2: Actuarial Present Value of Projected Benefit Payments**

Fiscal Year Ending 6/30	Beginning Fiduciary Net Position	Benefit Payments			Present Value of Benefit Payments		
		Benefit Payments	Funded Portion	Unfunded Portion	Funded Portion at 7.50%	Unfunded Portion at 3.13%	Using a Single Discount Rate of 7.50%
2051	8,994,745,823	430,297,585	430,297,585	0	35,495,794	0	35,495,794
2052	9,508,279,342	406,052,302	406,052,302	0	31,158,855	0	31,158,855
2053	10,092,571,324	392,637,847	392,637,847	0	28,027,426	0	28,027,426



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