

Oklahoma Firefighters Pension and Retirement System

GASB 67 Accounting Supplement

For the Fiscal Year ending
June 30, 2016

October 2016





David Kent
Director, Retirement

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October 2016

Mr. Robert E. Jones, Jr.
Executive Director
Oklahoma Firefighters Pension and Retirement System
6601 Broadway Extension, Suite 100
Oklahoma City, OK 73116

Dear Mr. Jones:

Buck Consultants, LLC (Buck) was retained 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, 2016.

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 Buck to review any statement you wish to make on the results contained in this report. Buck will not accept any liability for any such statement made without review by Buck.

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

Buck performed the valuation using participant and financial data supplied by the Board of Trustees. Buck 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.



We are Members 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 we are available to answer questions about it.

Respectfully submitted,

BUCK CONSULTANTS, LLC

A handwritten signature in black ink, appearing to read "David Kent".

David Kent, FSA, EA, MAAA
Director, Consulting Actuary

A handwritten signature in black ink, appearing to read "Janie Shaw".

Janie Shaw, ASA, MAAA
Consultant

DK/JS/km

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Net Pension Liability

The components of the net pension liability at June 30, 2016, were as follows:

Total pension liability	\$ 3,477,473,104
Plan fiduciary net position	<u>(2,255,758,597)</u>
Net pension liability	1,221,714,507
Plan fiduciary net position as a percentage of the total pension liability	64.87%

Actuarial assumptions

The total pension liability was determined by an actuarial valuation as of June 30, 2016, 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, 2016, 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 20.82% 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 2.71% would have been used during the period that the plan was projected to have no fiduciary net position. The 2.71% rate is based on the S&P Municipal Bond 20 Year High Grade Rate Index as of June 30, 2016.

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	\$ 1,546,589,343	\$ 1,221,714,507	\$ 949,335,448

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

2016

Total pension liability

Service cost	\$	60,823,560
Interest		248,081,554
Changes of benefit terms		0
Differences between expected and actual experience		19,681,640
Changes of assumptions		0
Benefit payments		<u>(196,088,281)</u>
Net change in total pension liability	\$	132,498,473

Total pension liability-beginning	\$	3,344,974,631
Total pension liability-ending (a)	\$	3,477,473,104

Plan fiduciary net pension

Contributions-employer	\$	131,503,931
Contributions-employee		24,531,971
Net investment income		14,238,895
Benefit payments, including refunds of employee contributions		(196,088,281)
Administrative expense		(1,994,301)
Other (Professional services)		<u>0</u>
Net change in plan fiduciary net position	\$	(27,807,785)

Plan fiduciary net position-beginning	\$	2,283,566,382
Plan fiduciary net position-ending (b)		<u>2,255,758,597</u>
Net pension liability-ending (a)-(b)	\$	1,221,714,507

Plan fiduciary net position as a percentage of the total pension liability 64.87%

Covered-employee payroll	\$	273,621,126
Net pension liability as a percentage of covered-employee payroll		446.50%

Schedule of Fund Contributions

	2016
Actuarially determined contribution	\$ 139,226,348
Contributions related to the actuarially determined contribution	<u>\$ 125,000,954</u>
Contribution deficiency (excess)	\$ 14,225,394

Plan membership

Please see Section 3 of the July, 1, 2016, funding valuation report for a description of the plan membership.

Benefits provided

Please see Section 3 of the July, 1, 2016, 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
2016	\$2,283,566,382	23,845,345	\$131,065,641	\$218,891,509	\$3,590,553	\$168,779,372	\$2,384,774,678
2017	2,384,774,678	23,782,072	134,032,762	231,895,704	3,698,270	175,994,112	2,482,989,650
2018	2,482,989,650	23,789,480	137,186,530	245,507,416	3,809,218	182,971,339	2,577,620,365
2019	2,577,620,365	23,813,864	140,459,316	259,947,774	3,923,495	189,654,120	2,667,676,396
2020	2,667,676,396	23,787,811	143,765,584	275,961,384	4,041,200	195,935,118	2,751,162,325
2021	2,751,162,325	23,638,809	147,013,192	293,107,743	4,162,436	201,674,831	2,826,218,978
2022	2,826,218,978	23,456,995	150,323,709	311,178,022	4,287,309	206,749,302	2,891,283,653
2023	2,891,283,653	23,274,226	153,742,261	330,152,524	4,415,928	211,044,885	2,944,776,573
2024	2,944,776,573	23,096,271	157,279,818	351,379,543	4,548,406	214,394,061	2,983,618,774
2025	2,983,618,774	22,788,394	160,762,919	374,561,402	4,684,858	216,565,515	3,004,489,342
2026	3,004,489,342	22,367,297	164,217,113	225,285,600	4,825,404	223,733,961	3,184,696,709
2027	3,184,696,709	21,881,785	167,710,213	234,407,638	4,970,166	237,019,037	3,371,929,940
2028	3,371,929,940	21,338,381	171,254,624	243,750,010	5,119,271	250,822,537	3,566,476,201
2029	3,566,476,201	20,767,610	174,894,391	253,727,454	5,272,849	265,153,468	3,768,291,367
2030	3,768,291,367	20,122,924	178,572,464	264,666,951	5,431,034	279,992,661	3,976,881,431
2031	3,976,881,431	19,397,141	182,283,618	276,201,875	5,593,965	295,316,104	4,192,082,454
2032	4,192,082,454	18,608,251	186,055,825	288,879,411	5,761,784	311,093,040	4,413,198,375
2033	4,413,198,375	17,617,725	189,711,625	302,626,283	5,934,638	327,262,322	4,639,229,126
2034	4,639,229,126	16,502,105	193,356,161	317,910,834	6,112,677	343,738,384	4,868,802,265
2035	4,868,802,265	15,353,777	197,115,535	333,735,724	6,296,057	360,463,056	5,101,702,852
2036	5,101,702,852	14,246,331	201,091,306	343,040,853	6,484,939	377,686,629	5,345,201,326
2037	5,345,201,326	13,162,367	205,265,689	350,196,445	6,679,487	395,792,162	5,602,545,612
2038	5,602,545,612	11,989,996	209,496,967	357,682,371	6,879,872	414,922,593	5,874,392,925
2039	5,874,392,925	10,733,100	213,795,630	365,599,268	7,086,268	435,124,029	6,161,360,148
2040	6,161,360,148	9,498,432	218,307,444	373,105,918	7,298,856	456,483,004	6,465,244,254
2041	6,465,244,254	8,213,572	222,943,034	380,041,094	7,517,822	479,134,263	6,787,976,207
2042	6,787,976,207	7,001,140	227,869,357	387,541,247	7,743,357	503,191,436	7,130,753,536
2043	7,130,753,536	5,891,879	233,132,898	394,991,413	7,975,658	528,769,821	7,495,581,063
2044	7,495,581,063	4,840,034	238,679,861	398,857,912	8,214,928	556,146,222	7,888,174,340

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
2045	7,888,174,340	3,919,219	244,613,423	400,551,974	8,461,376	585,703,844	8,313,397,476
2046	8,313,397,476	3,190,247	251,020,156	401,572,132	8,715,217	617,757,735	8,775,078,265
2047	8,775,078,265	2,501,441	257,707,768	402,416,857	8,976,674	652,563,951	9,276,457,894
2048	9,276,457,894	1,766,497	264,570,046	402,800,527	9,245,974	690,369,000	9,821,116,936
2049	9,821,116,936	1,094,689	271,757,860	401,836,288	9,523,353	731,483,653	10,414,093,497
2050	10,414,093,497	688,976	279,545,355	404,196,381	9,809,054	776,131,284	11,056,453,677
2051	11,056,453,677	271,087	287,574,897	398,510,518	10,103,326	824,787,103	11,760,472,920
2052	11,760,472,920	0	296,063,357	381,366,973	10,406,426	878,511,227	12,543,274,105

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 2.71%	Using a Single Discount Rate of 7.50%
2016	\$2,283,566,382	\$218,891,509	\$218,891,509	\$ 0	\$211,117,718	\$ 0	\$211,117,718
2017	2,384,774,678	231,895,704	231,895,704	0	208,055,886	0	208,055,886
2018	2,482,989,650	245,507,416	245,507,416	0	204,900,706	0	204,900,706
2019	2,577,620,365	259,947,774	259,947,774	0	201,816,411	0	201,816,411
2020	2,667,676,396	275,961,384	275,961,384	0	199,301,343	0	199,301,343
2021	2,751,162,325	293,107,743	293,107,743	0	196,915,879	0	196,915,879
2022	2,826,218,978	311,178,022	311,178,022	0	194,470,575	0	194,470,575
2023	2,891,283,653	330,152,524	330,152,524	0	191,933,658	0	191,933,658
2024	2,944,776,573	351,379,543	351,379,543	0	190,022,281	0	190,022,281
2025	2,983,618,774	374,561,402	374,561,402	0	188,426,773	0	188,426,773
2026	3,004,489,342	225,285,600	225,285,600	0	105,425,230	0	105,425,230
2027	3,184,696,709	234,407,638	234,407,638	0	102,040,933	0	102,040,933
2028	3,371,929,940	243,750,010	243,750,010	0	98,704,929	0	98,704,929
2029	3,566,476,201	253,727,454	253,727,454	0	95,576,956	0	95,576,956
2030	3,768,291,367	264,666,951	264,666,951	0	92,742,112	0	92,742,112
2031	3,976,881,431	276,201,875	276,201,875	0	90,031,695	0	90,031,695
2032	4,192,082,454	288,879,411	288,879,411	0	87,594,519	0	87,594,519
2033	4,413,198,375	302,626,283	302,626,283	0	85,360,808	0	85,360,808
2034	4,639,229,126	317,910,834	317,910,834	0	83,415,881	0	83,415,881
2035	4,868,802,265	333,735,724	333,735,724	0	81,458,732	0	81,458,732
2036	5,101,702,852	343,040,853	343,040,853	0	77,888,318	0	77,888,318
2037	5,345,201,326	350,196,445	350,196,445	0	73,965,594	0	73,965,594
2038	5,602,545,612	357,682,371	357,682,371	0	70,276,009	0	70,276,009
2039	5,874,392,925	365,599,268	365,599,268	0	66,819,990	0	66,819,990
2040	6,161,360,148	373,105,918	373,105,918	0	63,434,389	0	63,434,389
2041	6,465,244,254	380,041,094	380,041,094	0	60,105,570	0	60,105,570
2042	6,787,976,207	387,541,247	387,541,247	0	57,015,591	0	57,015,591
2043	7,130,753,536	394,991,413	394,991,413	0	54,057,367	0	54,057,367
2044	7,495,581,063	398,857,912	398,857,912	0	50,778,162	0	50,778,162

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 2.71%	Using a Single Discount Rate of 7.50%
2045	7,888,174,340	400,551,974	400,551,974	0	47,436,122	0	47,436,122
2046	8,313,397,476	401,572,132	401,572,132	0	44,239,011	0	44,239,011
2047	8,775,078,265	402,416,857	402,416,857	0	41,239,134	0	41,239,134
2048	9,276,457,894	402,800,527	402,800,527	0	38,398,560	0	38,398,560
2049	9,821,116,936	401,836,288	401,836,288	0	35,634,084	0	35,634,084
2050	10,414,093,497	404,196,381	404,196,381	0	33,342,672	0	33,342,672
2051	11,056,453,677	398,510,518	398,510,518	0	30,580,129	0	30,580,129
2052	11,760,472,920	381,366,973	381,366,973	0	27,222,884	0	27,222,884