# OKLAHOMA FIREFIGHTERS PENSION AND RETIREMENT SYSTEM

ACTUARIAL VALUATION REPORT AS OF JULY 1, 2009

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This report has been prepared by Buck Consultants for the Oklahoma Firefighters Retirement Board to:

- Present the results of a valuation of the Oklahoma Firefighters Pension and Retirement System as of July 1, 2009;
- Review experience under the Plan for the year ended June 30, 2009; and
- Provide reporting and disclosure information for auditors' reports, governmental agencies and other interested parties.

#### The main financial highlights are:

• The funded status of the Plan, on a GASB No. 25 basis, has increased since the prior valuation as indicated by the table below:

GASB No. 25 Funded Status (\$000,000)		y 1, 2009	July 1, 2008		
Accrued Liability	\$	3,075.1	\$	2,941.2	
Actuarial Value of Assets	\$	1,668.0	\$	1,817.2	
Unfunded Accrued Liability	\$	1,407.1	\$	1,124.0	
Funded Ratio		54.2%		61.8%	

- The funded ratio on a SFAS No. 35 basis, measuring the market value of Plan assets versus the present value of benefits accrued as of the valuation date, decreased from 74.9% to 57.3%.
- The total required contribution for the System increased by 17.1% and the required State contribution increased by 22.0%.

Contribution Summary (\$000,000)		y 1, 2009	July 1, 2008		
Total Required Contribution	\$	206.9	\$	176.7	
Expected Employee Contributions		(19.7)		(18.8)	
Expected Municipality Contributions		(33.0)		(31.5)	
Required State Contribution	\$	154.2	\$	126.4	
As a Percentage of Active Payroll		62.5%		53.7%	

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or Plan provisions between the two valuations are described in the section titled "Effects of Changes."

	Actuarial Valuation as of	
	July 1, 2009 July 1, 2008	
Summary of Costs		
Total Contribution Requirement (1)	\$ 206,902,445	\$ 176,653,665
Total Contributions Received in Prior Year <sup>(2)</sup>	\$ 104,329,046	\$ 101,482,390

GASB No. 25 Funded Status		
Actuarial Accrued Liability	\$ 3,075,087,927	\$ 2,941,207,332
Actuarial Value of Assets	\$ 1,667,981,545	\$ 1,817,177,365
Unfunded Actuarial Accrued Liability	\$ 1,407,106,382	\$ 1,124,029,967

Market Value of Assets and Additional Liabilities		
Market Value of Assets	\$ 1,389,984,621	\$ 1,745,219,502
Actuarial Present Value of Accumulated Plan Benefits		
(SFAS No. 35)	\$ 2,424,635,255	\$ 2,329,618,002
Present Value of Projected Plan Benefits	\$ 3,717,002,134	\$ 3,563,123,605

Summary of Data		
Number of Members in Valuation		
Active Paid Members	4,079	4,003
Active Volunteer Members	7,994	7,781
Members with Deferred Benefits	1,142	1,208
Retired Members	5,662	5,486
Beneficiaries	1,877	1,838
Disabled Members	1,670	1,669
Deferred Option Plan Members	127	143
Total	22,551	22,128

Active Member Statistics		
Total Annual Compensation (Paid Members) <sup>(3)</sup>	\$ 246,816,498	\$ 235,371,501
Average Compensation (Paid Members) <sup>(3)</sup>	\$ 60,509	\$ 58,799
Average Age	38.1	38.0
Average Service	9.1	9.0

<sup>(1)</sup> Excluding Deferred Option Plan Contributions.

For the fiscal year beginning July 1, 2006 and each fiscal year thereafter, the System is scheduled to receive 34% of collected state-wide insurance premium taxes.

<sup>(3)</sup> Compensation is projected one year based on the salary increase assumptions

#### **Changes in Actuarial Assumptions and Methods**

There were no changes in actuarial assumptions or methods since the prior valuation.

### **Changes in System Benefits**

There were no changes in plan provisions or system benefits with an actuarial impact as of July 1, 2009.

### **Actuarial Experience During the Plan Year**

The actuarial gain/(loss) is shown in the table below:

	T	otal (000s)
Liability Gain	\$	41,195
Asset Gain	\$	(240,045)
Net Actuarial Gain/(Loss)	\$	(198,850)

The Oklahoma Firefighters Deferred Option Plan (DROP) allows members eligible for a normal retirement benefit to defer the receipt of retirement benefits while continuing employment. Participation in the Deferred Option Plan is limited to five years. During this time, the members' contributions stop, but the employer contributes half of the regular contribution on base salary to the Firefighters Pension and Retirement System and the other half to the members' accounts in the Deferred Option Plan equal to the retirement benefit accrued under the Plan. After the period of active participation, members must separate from active service as a firefighter and retire. After retirement, however, members may remain as inactive members in this plan and defer receipt of the account balance until payments are required under the minimum distribution rules. The DROP was modified effective July 1, 2003 to allow eligible members to retroactively elect to enter DROP as of a back-drop-date upon termination. The monthly retirement benefits and member contributions that would have been payable had the member elected to enter DROP are credited to the employee's account in the DROP.

The Deferred Option Plan accounts are credited with interest at a rate of 2.0% less than the total fund growth, with a guaranteed minimum interest rate equal to the valuation interest rate of 7.5%. The actual rate credited for the fiscal year ended June 30, 2009 was 7.5%.

Statistics regarding the number of Deferred Option Plan members and total account balances are shown in the table below:

DROP Statistics	July 1, 2009	July 1, 2008		
Number of Members				
Active	127	143		
Inactive	1,431	1,385		
Total	1,558	1,528		
Account Balances	\$ 293,390,473	\$ 273,872,784		
Annual Retirement Benefits of Active Members	\$ 3,106,680	\$ 3,413,844		

We have prepared an actuarial valuation of the Oklahoma Firefighters Pension and Retirement System as of July 1, 2009, for the plan year ending June 30, 2009. The results of the valuation are set forth in this report, which reflects the provisions of the System as amended and effective on July 1, 2009.

The valuation is based on employee and financial data which were provided by the Oklahoma Firefighters Pension and Retirement System and the independent auditor, respectively, and which are summarized in this report.

Any changes in benefit provisions since the last valuation of the System as of July 1, 2008 are summarized on page 3. There have been no changes in actuarial assumptions or methods since the last valuation.

#### **Actuarial Certification**

The Retirement Board selected the assumptions used for the results in this report. We believe that these assumptions are reasonable and comply with the requirements of GASB 25. We prepared this report's exhibits in accordance with the requirements of these standards.

We are Enrolled Actuaries, Fellows of the Society of Actuaries and Members of the American Academy of Actuaries. We 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.

(signed) RICHARD A. MACKESEY	October 14, 2009
RICHARD A. MACKESEY, FSA, EA, MAAA	
(signed) DAVID KENT	October 14, 2009
DAVID KENT, FSA, EA, MAAA	October 14, 2009

- Section 1.1 Calculation of Contribution Requirement
- Section 1.2 Liability Detail
- Section 1.3 Unfunded Actuarial Accrued Liability
- **Section 1.4** Actuarial Gain/(Loss)
- **Section 1.5** Contributions
- Section 1.6 Ten-Year Projected Cash Flow

### CALCULATION OF CONTRIBUTION REQUIREMENT

		Actuarial Valuation as of					
C	C. Summary of Contribution		July 1, 20	09	July 1, 2008		
<b>C.</b>	Requirements			% of			% of
	1		Amount	Covered		Amount	Covered
				Comp.			Comp.
1.	Annual Compensation						
	a. Members included in Valuation						
	(Covered Compensation)	\$	246,816,498		\$	235,371,501	
	b. Deferred Option Plan Members		6,188,940			6,669,269	
	c. Total Compensation		253,005,438			242,040,770	
2.	Total Normal Cost Mid-year	\$	81,832,133	33.2%	\$	77,986,754	33.1%
3.	Unfunded Actuarial Accrued						
	Liability	\$	1,407,106,382		\$	1,124,029,967	
4.	Amortization of Unfunded						
	Actuarial Accrued Liability over						
	30 years from July 1, 2003 Mid-						
	year (1)	\$	123,567,150	50.1%	\$	97,256,305	41.3%
5.	Budgeted Expenses	\$	1,503,162	0.6%	\$	1,410,606	0.6%
6.	Total Required Contribution						
	(2+4+5)	\$	206,902,445	83.8%	\$	176,653,665	75.1%
7.	Estimated Member Contribution	\$	19,745,320	8.0%	\$	18,829,720	8.0%
8.	Estimated Employer Contribution						
	a. Active Members – Paid	\$	32,086,145	13.0%	\$	30,598,295	13.0%
	b. Deferred Option Plan			(2)			(2)
	Members – Paid		402,281	6.5% <sup>(2)</sup>	\$	433,502	6.5% <sup>(2)</sup>
	c. Active Members - Volunteer		479,640			466,860	
	d. Deferred Option Plan						
	Members – Volunteer		1,230	(2)		1,440	(2)
	e. Total	\$	32,969,296	13.0%(3)	\$	31,500,097	13.0% <sup>(3)</sup>
9.	Required State Contribution to						
	amortize Unfunded Actuarial						
	Accrued Liability over 30 years						
	from July 1, 2003 at Mid-year.						
	(6 - 7 - 8e)	\$	154,187,829	62.5%	\$	126,323,848	53.7%
10.	Previous year's actual State		<b>50</b> 000 450	21.00/	_	FO 450 44 5	22.50
	Contribution (4)	\$	53,989,458	21.9%	\$	53,172,116	22.6%
11.	Approximate period over which						
	previous year's State Contribution						
	will amortize Unfunded Actuarial		cc:			cc:	
	Accrued Liability (UAAL) from		ot sufficient to			ot sufficient to	
	July 1, 2003	an	nortize UAAL		an	nortize UAAL	

<sup>(1)</sup> Funding Policy adopted by Board.

<sup>&</sup>lt;sup>(2)</sup> Percentage of Deferred Option Plan Compensation.

<sup>(3)</sup> Percent of Total Compensation.

<sup>&</sup>lt;sup>(4)</sup> For the fiscal year beginning July 1, 2006 and each fiscal year thereafter, the System is scheduled to receive 34% of collected state-wide insurance premium taxes.

## CALCULATION OF CONTRIBUTION REQUIREMENT (CONTINUED)

D. Allocation of Contribution Requirements		July 1, 2009				
		Paid	Volunteer	Total		
1.	Total Normal Cost Mid-year	\$ 78,751,728	\$ 3,080,405	\$ 81,832,133		
2.	Unfunded Actuarial Accrued Liability (1)	1,313,404,963	93,701,419	1,407,106,382		
3.	Amortization of Unfunded Actuarial Accrued Liability over 30 years from July 1, 2003 Mid-year (2)	115,338,620	8,228,530	123,567,150		
4.	Budgeted Expenses <sup>(3)</sup>	1,403,064	100,098	1,503,162		
5.	Total Required Contribution (1 + 3 + 4)	195,493,412	11,409,033	206,902,445		
6.	Estimated Member Contribution	19,745,320	0	19,745,320		
7.	Estimated Employer Contribution					
	a. Active Members	32,086,145	479,640	32,565,785		
	b. Deferred Option Plan Members	402,281	1,230	403,511		
	c. Total	32,488,426	480,870	32,969,296		
8.	Required State Contribution to amortize Unfunded Actuarial Accrued Liability over 30 years from July 1, 2003 at Mid- year					
	(5-6-7c)	143,259,666	10,928,163	154,187,829		

<sup>(1)</sup> See Section 1.3 for allocation.

<sup>(2)</sup> Funding Policy Adopted by Board.

<sup>(3)</sup> Allocation based on total Actuarial Accrued Liability.

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### LIABILITY DETAIL

Total	
Present Value of Benefits	\$ 3,717,002,134
Present Value of Future Normal Cost	\$ 641,914,207
Accrued Liability	\$ 3,075,087,927
Normal Cost Mid-year	\$ 81,832,133

Active				
a. Retirement	\$	1,091,026,004		
b. Withdrawal		7,807,815		
c. Disability		9,770,009		
d. Death		16,673,627		
e. Total	\$	1,125,277,455		
Inactive	-			
1. Members Eligible for Automatic COLA				
a. Disabled Members	\$	73,439,869		
b. Beneficiaries		107,770,276		
c. Retired Members		137,556,163		
d. Total	\$	318,766,308		
2. Members Not Eligible for Automatic COLA				
a. Terminated Vested Members		28,338,332		
b. Disabled Members		462,610,059		
c. Beneficiaries		115,945,417		
d. Retired Members		656,127,189		
e. Deferred Option Plan Members - Annuity		48,959,844		
f. Deferred Option Plan Members - Account Balances		293,390,473		
g. Total	\$	1,605,371,314		
3. Total Inactive $(1d + 2g)$	\$	1,924,137,622		
4. COLA Reserve	\$	25,672,850		
Accrued Liability (Active + Inactive + COLA Reserve) \$ 3,075,087,927				

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#### UNFUNDED ACTUARIAL ACCRUED LIABILITY

The actuarial accrued liability is the present value of projected Plan Benefits allocated to past service by the actuarial funding method being used.

	Total Plan		
	July 1, 2009	July 1, 2008	
1. Actuarial Present Value of Benefits			
a. Active Members	\$ 1,767,191,662	\$ 1,672,898,307	
b. Members with Deferred Benefits	28,338,332	26,299,257	
c. Members Receiving Benefits who are eligible for Automatic COLA	318,766,308	328,564,399	
d. Members Receiving Benefits who are not eligible for Automatic COLA	1,234,682,665	1,207,325,121	
e. Deferred Option Plan Members (1)	342,350,317	328,036,521	
f. COLA Reserve	25,672,850	0	
g. Total	3,717,002,134	3,563,123,605	
2. Actuarial Present Value of Future Normal Costs	\$ 641,914,207	\$ 621,916,273	
3. Total Actuarial Accrued Liability (1g - 2)	\$ 3,075,087,927	\$ 2,941,207,332	
4. Actuarial Value of Assets	\$ 1,667,981,545	\$ 1,817,177,365	
5. Unfunded Actuarial Accrued Liability (3 - 4, not less than \$0)	\$ 1,407,106,382	\$ 1,124,029,967	

#### Allocation of Current Year Between Paid and Volunteer:

		Total Plan	
	Paid	Volunteer	Total
1. Actuarial Present Value of Benefits			
a. Active Members	\$ 1,693,446,897	\$ 73,744,765	\$ 1,767,191,662
b. Members with Deferred Benefits	4,278,639	24,059,693	28,338,332
c. Members Receiving Benefits who are eligible for Automatic COLA	318,766,308	0	318,766,308
d. Members Receiving Benefits who are not eligible for Automatic COLA	1,114,673,536	120,009,129	1,234,682,665
e. Deferred Option Plan Members (1)	341,073,710	1,276,607	342,350,317
f. COLA Reserve	23,247,135	2,425,715	25,672,850
g. Total	3,495,486,225	221,515,909	3,717,002,134
Actuarial Present Value of Future Normal     Costs	625,173,222	16,740,985	641,914,207
3. Total Actuarial Accrued Liability (1g - 2)	2,870,313,003	204,774,924	3,075,087,927
4. Actuarial Value of Assets (2)	1,556,908,040	111,073,505	1,667,981,545
5. Unfunded Actuarial Accrued Liability (3 - 4, not less than \$0)	1,313,404,963	93,701,419	1,407,106,382

Effective July 1, 1997, Deferred Option Account balances are included as liability and assets. The total Account Balance on July 1, 2009, is \$293,390,473 and the balance on July 1, 2008, is \$273,872,784.

<sup>(2)</sup> Allocated based on total actuarial accrued liability (item 3).

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### **ACTUARIAL GAIN/(LOSS)**

The actuarial gain/(loss) is comprised of both the liability gain/(loss) and the actuarial asset gain/(loss). Each of these represents the difference between the expected and actual values as of July 1, 2009.

	Regular	De	eferred Option	Total
Expected Actuarial Accrued Liability				
a. Actuarial Accrued Liability at July 1, 2008	\$ 2,667,334,548	\$	273,872,784	\$ 2,941,207,332
b. Normal Cost at July 1, 2008	66,553,103		0	66,553,103
c. Reserve for DROP Interest Rate Guarantee and DROP Contribution at Mid-Year	6,317,932		2,665,095	8,983,027
d. Benefit Payments for Plan Year Ending June 30, 2009	135,546,831		11,099,025	146,645,856
e. Interest on $a + b + c - d$ to End of Year	200,283,099		20,229,904	220,513,003
f. Cost of Amendment	\$ 0	\$	0	\$ 0
g. COLA Reserve	\$ 25,672,850	\$	0	\$ 25,672,850
h. Expected Actuarial Accrued Liability at July 1, 2009 $(a + b + c - d + e + f + g)$	\$ 2,830,614,701	\$	285,668,758	\$ 3,116,283,459
2. Actuarial Accrued Liability at July 1, 2009	\$ 2,781,697,454	\$	293,390,473	\$ 3,075,087,927
3. Actuarial Liability Gain/(Loss) $(1h-2)$	\$ 48,917,247	\$	(7,721,715)	\$ 41,195,532
Expected Actuarial Value of Assets     a. Actuarial Value of Assets at     July 1, 2008	\$ 1,543,304,581	\$	273,872,784	\$ 1,817,177,365
b. Contributions Made for Plan Year Ending June 30, 2009	101,663,951		2,665,095	104,329,046
c. Benefit Payments and Expenses for Plan Year Ending June 30, 2009	137,055,369		11,099,025	148,154,394
d. Interest on a + b - c to End of Year	114,444,658		20,229,904	134,674,562
e. Expected Actuarial Value of Assets at July 1, 2009 (a + b - c + d)	\$ 1,622,357,821	\$	285,668,758	\$ 1,908,026,579
5. Actuarial Value of Assets as of July 1, 2008				
a. Actuarial Value of Assets as of July 1, 2009 prior to DROP transfer	\$ 1,418,369,750	\$	249,611,795	\$ 1,667,981,545
b. DROP transfer	(43,778,678)		43,778,678	0
c. Actuarial Value of Assets as of July 1, 2009 after DROP transfer	\$ 1,374,591,072	\$	293,390,473	\$ 1,667,981,525
6. a. Actuarial Asset Gain/(Loss) Before DROP Transfer (5a-4e)	\$ (203,988,071)	\$	(36,056,963)	\$ (240,045,034)
b. Actuarial Asset Gain/(Loss) After DROP Transfer (5c-4e)	\$ (247,766,749)	\$	7,721,715	\$ (240,045,034)
7. Summary				
a. Actuarial Asset Gain/(Loss) (6a)	\$ (203,988,071)	\$	(36,056,963)	\$ (240,045,034)
b. DROP Guarantee Gain/(Loss) (5b)	(43,788,678)		43,778,678	0
c. Actuarial Liability Gain/(Loss) (3)	48,917,247		(7,721,715)	41,195,532
d. Total Actuarial Gain/(Loss) $(a + b + c)$	\$ (198,849,502)	\$	0	\$ (198,849,502)

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#### **CONTRIBUTIONS**

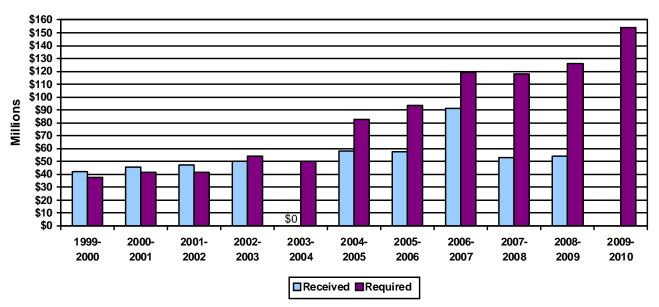
Contributions to the Retirement System are made by the Members, municipalities, fire districts, and the State of Oklahoma.

Paid firefighters contribute 8% of gross salary. Municipalities and fire districts contribute 13.0% of gross salary. For the fiscal year ending June 30, 2009, the fund received a contribution of \$53,989,458 from the State. For the fiscal year beginning July 1, 2006 and each fiscal year thereafter, the System is scheduled to receive 34% of collected statewide insurance premium taxes.

Volunteer firefighters do not contribute to the fund. Municipalities and fire districts that are not exempt contribute \$60 per year per active volunteer.

The Deferred Option Plan Members do not make employee contributions to the plan. However, municipalities continue contributing for them, with 50% of the contribution going into the Retirement System fund and 50% going into the Deferred Option account. Contributions for members who retroactively elect to enter the Deferred Option Plan as of a back drop date are also deposited into the Deferred Option account.

#### State Contributions Received versus Contributions Required by 30-Year Funding Policy<sup>(1)</sup>



<sup>(1) 30-</sup>year amortization period was reset for plan year ending June 30, 2004 (SB 286) to start at July 1, 2003 Prior to that time, the amortization period was 30 years from July 1, 1988.

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TEN-YEAR PROJECTED CASH FLOW (1) (RETIREMENT BENEFIT PAYMENTS)

Plan Year Ending	Actives	Retirees (2)	Total
6/30/2010	\$ 5,889,505	\$ 124,405,414	\$ 130,294,919
6/30/2011	15,841,719	126,062,822	141,904,541
6/30/2012	25,687,437	127,637,861	153,325,298
6/30/2013	35,462,761	129,133,815	164,596,576
6/30/2014	45,173,289	130,498,636	175,671,925
6/30/2015	55,042,128	131,709,913	186,752,041
6/30/2016	65,227,550	132,707,944	197,935,494
6/30/2017	75,712,559	133,523,644	209,236,203
6/30/2018	86,167,748	134,107,641	220,275,389
6/30/2019	96,587,285	134,454,427	231,041,712

<sup>(1)</sup> Includes payment to DROP as retirement benefits.

<sup>(2)</sup> Includes Deferred Option Plan Members, Disabled Members, Beneficiaries and Terminated Vested Members.

**Section 2.1** SFAS No. 35 Information

Section 2.2 GASB No. 25 Information

#### SFAS No. 35 Information

#### A. Actuarial Present Value of Accumulated Plan Benefits

The actuarial present value of vested and nonvested accumulated Plan Benefits was computed on an ongoing plan basis in order to provide required information under Financial Accounting Standards Board Statement No. 35. In this calculation, a determination is made of all benefits earned by current Members as of the calculation date; the actuarial present value is then computed using demographic assumptions and an assumed interest rate. Assumptions regarding future salary and accrual of future benefit service are not necessary for this purpose.

Accumulated Plan Benefits	July 1, 2009	July 1, 2008
Vested Benefits		
a. Active Members	\$ 641,268,669	\$ 581,688,439
b. Deferred Option Plan Members	332,480,768	317,018,600
c. Members with Deferred Benefits	22,907,274	21,268,281
d. Members Receiving Benefits	1,333,442,590	1,318,654,044
e. Total Vested Benefits	2,330,099,301	2,238,629,364
Nonvested Benefits	94,535,954	90,988,638
<b>Total Accumulated Plan Benefits</b>	\$ 2,424,635,255	\$ 2,329,618,002
Assumed Rate of Interest	7.5%	7.5%
Market Value of Assets Available for Benefits	\$ 1,389,984,621	\$ 1,745,219,502
Funded Ratio	57.33%	74.91%

	July 1, 2009	July 1, 2008
Vested Members		
a. Active Members	4,798	4,674
b. Deferred Option Plan Members	127	143
c. Members with Deferred Benefits	1,142	1,208
d. Members Receiving Benefits	9,209	8,993
e. Total Vested Members	15,276	15,018
Nonvested Members	7,275	7,110
<b>Total Members</b>	22,551	22,128

### SFAS No. 35 Information (Continued)

#### B. Statement of Changes in Accumulated Plan Benefits

A statement of changes in the actuarial present value of accumulated Plan Benefits follows. This statement shows the effect of certain events on the actuarial present value shown on the previous page.

Actuarial Present Value of Accumulated Plan Benefits as of	
July 1, 2008	\$ 2,329,618,002
Increase/(Decrease) During Year Attributable to:	
a. Normal Cost <sup>(1)</sup>	\$ 77,035,306
b. Increase for Interest Due to Decrease in Discount Period	175,099,194
c. Benefits Paid	(146,645,856)
d. Plan Amendment	0
e. Funding Method Changes	0
f. Assumption Changes	0
g. (Gains)/Losses	(10,471,391)
Net Increase/(Decrease)	\$ 95,017,253
Actuarial Present Value of Accumulated Plan Benefits as of	
July 1, 2009	\$ 2,424,635,255

<sup>&</sup>lt;sup>(1)</sup> Includes 3.28% of July 1, 2008, DROP account balance (\$273,872,784) as a reserve for the expected cost of the interest rate guarantee on the DROP.

The benefits valued include all benefits--retirement, preretirement death and vested termination-payable from the Plan for member service prior to the valuation date. Benefits are assumed to accrue/(accumulate) in accordance with the plan provisions.

SECTION 2.2 Page 17

#### **GASB No. 25 Information**

#### **Supplementary Schedules**

The GASB has issued a statement; Financial Reporting for Defined Benefit and Note Disclosures for Defined Contribution Plans (GASB Statement No. 25). This standard became effective for periods beginning after June 15, 1996, and requires funding status to be measured based upon the actuarial funding method adopted by the Board, i.e., for the Oklahoma Firefighters Pension and Retirement System, the Entry Age Normal Cost Method. The target value of assets is equal to the Actuarial Accrued Liability (AAL). The actual value of assets is the Actuarial Value developed later in this report.

#### A. Schedule of Funding Progress

The GASB Statement No. 25 liabilities and assets resulting from the last six actuarial valuations are as follows:

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a)/c)
07/01/2004	\$1,473,396,552	\$ 2,233,519,875	\$ 760,123,323	66.0%	\$ 173,178,595	438.9%
07/01/2005	\$1,485,516,048	\$ 2,332,601,300	\$ 847,085,252	63.7%	\$ 188,968,929	448.3%
07/01/2006	\$1,546,486,429	\$ 2,666,305,915	\$ 1,119,819,486	58.0%	\$ 204,206,759	548.4%
07/01/2007	\$1,717,070,814	\$ 2,785,218,488	\$ 1,068,147,674	61.6%	\$ 216,710,606	492.9%
07/01/2008	\$1,817,177,365	\$ 2,941,207,332	\$ 1,124,029,967	61.8%	\$ 235,371,501	477.6%
07/01/2009	\$ 1,667,981,545	\$ 3,075,087,927	\$ 1,407,106,382	54.2%	\$ 246,816,498	570.1%

#### GASB No. 25 Information (Continued)

### **Supplementary Schedules (continued)**

### **B.** Schedule of Employer Contributions

The GASB Statement No. 25 required contribution and actual percentage for the last six fiscal years are as follows:

Year Ended June 30	Annual Required Contribution	Percentage Contributed
2004	\$ 73,681,227	31.0%
2005	106,735,523	77.0%
2006	118,296,060	69.6%
2007	146,828,788	80.0%
2008	147,273,273	56.4%
2009	157,823,945	52.7%

This section presents information regarding plan assets as reported by the system administrator or trustee. The plan assets represent the portion of total plan liabilities, which has been funded as of the valuation date.

- **Section 3.1** Summary of Assets
- **Section 3.2** Reconciliation of Assets
- **Section 3.3** Actuarial Value of Assets
- **Section 3.4** Average Annual Rates of Investment Return

## SUMMARY OF ASSETS (1)

Asset Category	Market Value as of June 30, 2009	Market Value as of June 30, 2008
	Amount	Amount
Cash and Short-term Investments	\$ 36,087,469	\$ 39,339,244
2. Receivables	\$ 13,543,552	\$ 18,780,898
3. Investments at fair value		
a. Government Bonds	\$ 202,023,755	\$ 235,446,636
b. Foreign Government Bonds	0	0
c. Corporate Bonds	137,011,818	139,838,277
d. Common Stock	533,465,538	704,133,147
e. Foreign Stock	132,189,383	214,375,084
f. Limited Partnerships	339,351,881	398,136,152
g. Securities Lending	140,561,540	236,656,984
h. Total	\$ 1,484,603,915	\$ 1,928,586,280
4. Assets used in plan operations	\$ 37,156	\$ 36,084
5. Total Assets	\$ 1,534,272,092	\$ 1,986,742,506
6. Liabilities	\$ (144,287,471)	\$ (241,523,004)
7. Net Assets for Pension Benefits	\$ 1,389,984,621	\$ 1,745,219,502

Deferred option plan assets are included in the valuation assets. The value of these assets on July 1, 2008, is \$273,872,784 and the value on July 1, 2009, is \$293,390,473.

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### RECONCILIATION OF ASSETS

Transactions		June 30, 2009		June 30, 2008
Additions		_		
1. Contributions				
a. Contributions from Employers	\$	31,387,215	\$	30,383,932
b. Contributions from Plan Members		18,952,373		17,926,342
c. Insurance Premium Tax		53,989,458		53,172,116
d. Legislative Appropriation		0		0
e. Total	\$	104,329,046	\$	101,482,390
2. Net Investment Income	\$	(311,409,533)	\$	(69,568,939)
3. Total Additions	\$	(207,080,487)	\$	31,913,451
Deductions	-		-	
4. Benefit Payments	\$	(146,645,856)	\$	(133,767,091)
5. Administrative Expenses		(1,508,538)		(1,076,268)
6. Adjustment		0		0
7. Total Deductions	\$	(148,154,394)	\$	(134,843,359)
8. Net Increase	\$	(355,234,881)	\$	(102,929,908)
9. Net Assets Held in Trust for Pension Benefits <sup>(1)</sup>				
a. Beginning of Year	\$	1,745,219,502	\$	1,848,149,410
b. End of Year	\$	1,389,984,621	\$	1,745,219,502
10. DROP Assets (included above)				
a. Beginning of Year	\$	273,872,784	\$	254,237,382
b. End of Year	\$	293,390,473	\$	273,872,784

 $<sup>^{(1)}</sup>$  Includes Deferred Option Plan Assets.

SECTION 3.3 Page 22

### ACTUARIAL VALUE OF ASSETS

	Schedule of Assets Gains/(Losses)									
Year	Original Amount	Recognized in Prior Years	Recognized This Year	Recognized in Future Years						
2004/2005	\$ 13,846,248	\$ 11,077,000	\$ 2,769,248	\$ 0						
2005/2006	33,142,282	19,885,368	6,628,456	6,628,458						
2006/2007	120,982,858	48,393,144	24,196,572	48,393,142						
2007/2008	(200,717,174)	(40,143,435)	(40,143,435)	(120,430,304)						
2008/2009	(453,781,818)	0	(90,756,364)	(363,025,454)						
Total	\$ (486,527,604)	\$ 39,212,077	\$ (97,305,523)	\$ (428,434,158)						

Development of Actuarial Value of Assets	
1. Actuarial Value as of July 1, 2008 (Excluding DROP) (pre-corridor)	\$ 1,543,304,581
2. Contributions	
a. Employer (Excluding DROP)	\$ 28,722,120
b. Member	18,952,373
c. Insurance Tax	53,989,458
d. Legislative Appropriation	0
e. Total	\$ 101,663,951
3. Decreases During the Year	
a. Benefit Payments (Excluding benefit payments from DROP, including transfer	
payments to DROP)	\$ 135,546,831
b. Noninvestment Expenses	1,508,538
c. Total	\$ 137,055,369
4. Expected Return at 7.50% on:	
a. Item 1	\$ 115,747,844
b. Item 2	3,812,398
c. Item 3	5,139,576
d. Total $(a + b - c)$	\$ 114,420,666
5. Expected Actuarial Value of Assets (Excluding DROP)	
June 30, 2009 (1 +2 - 3 +4)	\$ 1,622,333,829
6. Unrecognized Asset Gain/(Loss) as of June 30, 2008	\$ (71,957,863)
7. DROP Assets	\$ 293,390,473
8. Expected Actuarial Value June 30, 2009 plus previous year's	
Unrecognized Asset Gain/(Loss) $(5 + 6 + 7)$	\$ 1,843,766,439
9. Market Value June 30, 2009	\$ 1,389,984,621
10. 2008/2009 Asset Gain/(Loss) (9 - 8)	\$ (453,781,818)
11. Asset Gain/(Loss) to be Recognized as of June 30, 2009	\$ (97,305,523)
12. Initial Actuarial Value July 1, 2009 (5 + 7 + 11)	\$ 1,818,418,779
13. Constraining Values:	
a. 80% of Market Value (9 x 0.8)	\$ 1,111,987,697
b. 120% of Market Value (9 x 1.2)	1,667,981,545
14. Actuarial Value July 1, 2009 (Including DROP)	
(12), but no less than (13a), nor greater than (13b)	\$ 1,667,981,545

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### AVERAGE ANNUAL RATES OF INVESTMENT RETURN

Year Ending June	Actuai	rial Value	Marke	t Value
30	Annual	Cumulative	Annual	Cumulative
1991	7.46%	7.46%	7.77%	7.77%
1992	8.35%	7.90%	13.74%	10.71%
1993	9.42%	8.41%	13.70%	11.70%
1994	8.34%	8.39%	1.75%	9.13%
1995	9.56%	8.62%	15.06%	10.29%
1996	11.30%	9.06%	15.22%	11.09%
1997	25.01%	11.21%	18.24%	12.09%
1998	11.34%	11.23%	18.77%	12.90%
1999	10.32%	11.13%	6.59%	12.18%
2000	10.98%	11.11%	11.08%	12.07%
2001	7.14%	10.74%	(7.88%)	10.09%
2002	1.94%	9.98%	(7.20%)	8.54%
2003	3.56%	9.47%	3.73%	8.16%
2004	2.75%	8.98%	13.32%	8.52%
2005	1.75%	8.48%	9.29%	8.57%
2006	5.39%	8.29%	10.23%	8.67%
2007	10.42%	8.41%	15.93%	9.09%
2008	7.85%	8.38%	(3.80%)	8.33%
2009	(5.87%)	7.58%	(18.07%)	6.75%

Annual Returns include Deferred Option Plan Assets.

This section presents and describes the basis of the valuation. The census of Members, actuarial basis and provisions of the Plan are the foundation of the valuation, since these are the present facts on which the projection of benefit payments will depend. The valuation is based on the premise that the Plan will continue in existence.

**Section 4.1** Plan Members

**Section 4.2** Actuarial Basis

**Section 4.3** Summary of Plan Provisions

### PLAN MEMBERS

#### **A.** Active Member Statistics

Statistics for Active			Average	
Members	Number	Age	Service	Earnings
As of July 1, 2008	-		-	-
Paid				
a. Continuing	3,704	39.8	13.1	\$ 60,799
b. New	299	28.1	0.7	34,023
c. Total	4,003	38.9	12.2	\$ 58,799
Volunteer				
a. Continuing	6,574	38.9	8.5	N/A
b. New	1,207	29.9	0.5	N/A
c. Total	7,781	37.5	7.3	N/A
Total	11,784	38.0	9.0	N/A
As of July 1, 2009				
Paid				
a. Continuing	3,892	39.9	13.1	\$ 61,737
b. New	187	28.0	0.7	34,955
c. Total	4,079	39.3	12.5	\$ 60,509
Volunteer				
a. Continuing	6,928	38.7	8.4	N/A
b. New	1,066	29.7	0.7	N/A
c. Total	7,994	37.5	7.4	N/A
Total	12,073	38.1	9.1	N/A

### PLAN MEMBERS (CONTINUED)

### **B.** Count of Paid Active Members

		Years of Service									
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total	
Under 20	3	0	0	0	0	0	0	0	0	3	
20-24	190	1	0	0	0	0	0	0	0	191	
25-29	408	110	14	0	0	0	0	0	0	532	
30-34	253	239	202	9	0	0	0	0	0	703	
35-39	140	142	298	152	6	0	0	0	0	738	
40-44	52	58	169	229	139	5	0	0	0	652	
45-49	18	21	107	170	282	149	2	0	0	749	
50-54	2	4	31	60	117	147	46	2	0	409	
55-59	1	0	2	7	21	26	23	6	0	86	
60-64	0	0	3	3	2	1	4	2	1	16	
65-69	0	0	0	0	0	0	0	0	0	0	
70-74	0	0	0	0	0	0	0	0	0	0	
75+	0	0	0	0	0	0	0	0	0	0	
Total	1,067	575	826	630	567	328	75	10	1	4,079	

C. Average Compensation of Paid Active Members

		Years of Service								
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
Under 20	19,359	0	0	0	0	0	0	0	0	19,359
20-24	37,447	54,357	0	0	0	0	0	0	0	37,536
25-29	42,573	49,513	46,067	0	0	0	0	0	0	44,100
30-34	43,722	53,889	61,642	69,015	0	0	0	0	0	52,651
35-39	42,419	54,585	63,572	74,373	71,021	0	0	0	0	60,115
40-44	47,580	57,108	61,293	72,934	77,511	77,631	0	0	0	67,498
45-49	60,430	48,766	62,612	71,348	75,574	80,395	93,761	0	0	72,655
50-54	53,664	57,709	54,149	63,264	74,506	73,194	80,583	85,406	0	71,313
55-59	72,000	0	12,127	65,077	66,995	69,058	82,381	74,791	0	70,904
60-64	0	0	45,986	55,715	64,877	72,644	83,862	73,933	65,685	66,031
65-69	0	0	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0	0	0
75+	0	0	0	0	0	0	0	0	0	0
Total	42,441	53,389	61,671	71,707	75,425	76,203	81,661	76,742	65,685	60,509

## PLAN MEMBERS (CONTINUED)

#### **D.** Count of Volunteer Active Members

		Years of Service									
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total	
Under 20	161	0	0	0	0	0	0	0	0	161	
20-24	817	83	0	0	0	0	0	0	0	900	
25-29	805	340	34	0	0	1	0	0	0	1,180	
30-34	697	333	173	21	0	0	1	0	0	1,225	
35-39	567	318	283	116	12	0	0	0	0	1,296	
40-44	401	291	255	167	53	4	0	0	0	1,171	
45-49	202	249	260	236	92	22	4	0	0	1,065	
50-54	18	94	198	201	77	19	5	1	0	613	
55-59	11	10	72	103	56	16	7	1	0	276	
60-64	1	0	11	25	22	7	3	4	0	73	
65-69	2	1	2	9	1	5	0	0	0	20	
70-74	0	1	0	8	0	0	1	0	0	10	
75+	0	0	0	4	0	0	0	0	0	4	
Total	3,682	1,720	1,288	890	313	74	21	6	0	7,994	

## PLAN MEMBERS (CONTINUED)

#### **E.** Inactive Member Statistics

Paid									
Inactive Members as of July 1, 2009	Number	A	Amount of Annual Benefit						
<b>Members Receiving Benefits</b>									
a. Retired	1,893	\$	52,200,468						
b. Beneficiaries	734		19,747,860						
c. Disabled	1,340		38,602,932						
d. Deferred Option	86		3,027,864						
Total	4,053	\$	113,579,124						
Members with Deferred Benefits									
a. Terminated Vested	44	\$	409,944						
Total	44	\$	409,944						

Volunteer								
Inactive Members as of July 1, 2009	Number	Amount of Annual Benefit						
<b>Members Receiving Benefits</b>	•	-						
a. Retired	3,769	\$	6,652,764					
b. Beneficiaries	1,143		1,961,952					
c. Disabled	330		468,756					
d. Deferred Option	41		78,816					
Total	5,283	\$	9,162,288					
Members with Deferred Benefits								
a. Terminated Vested	1,098	\$	1,922,712					
Total	1,098	\$	1,922,712					

## PLAN MEMBERS (CONTINUED)

### F. Members in Pay Status - Annual Benefits

	Paid										
Attained Age	Retir	ed Members	В	Beneficiaries			Disabled Aembers	Curi	ent Payment Total		
Age	No.	Benefit	No.		Benefit	No.	Benefit	No.	Benefit		
Under 50	110	\$ 2,627,268	46	\$	1,076,688	136	\$ 3,036,168	292	\$ 6,740,124		
50	32	738,000	4		106,008	26	675,768	62	1,519,776		
51	43	1,180,344	8		264,912	36	855,996	87	2,301,252		
52	53	1,381,068	3		72,216	37	1,083,396	93	2,536,680		
53	54	1,552,416	7		163,176	41	1,195,524	102	2,911,116		
54	50	1,346,844	12		337,140	50	1,463,736	112	3,147,720		
55	65	1,845,192	15		404,724	47	1,370,904	127	3,620,820		
56	62	1,818,396	8		166,356	52	1,632,612	122	3,617,364		
57	75	2,067,156	9		237,468	61	1,755,072	145	4,059,696		
58	89	2,583,876	8		162,048	49	1,435,980	146	4,181,904		
59	65	1,871,484	18		511,716	60	1,909,284	143	4,292,484		
60	52	1,364,760	11		283,788	76	2,243,472	139	3,892,020		
61	65	1,818,036	16		406,248	39	1,146,804	120	3,371,088		
62	78	2,194,608	20		491,820	65	1,920,504	163	4,606,932		
63	54	1,308,504	12		295,512	60	1,693,536	126	3,297,552		
64	55	1,476,708	24		566,724	45	1,175,664	124	3,219,096		
65	61	1,652,208	16		389,208	44	1,309,008	121	3,350,424		
66	80	2,078,928	24		533,508	59	1,679,460	163	4,291,896		
67	61	1,719,816	20		485,316	55	1,607,424	136	3,812,556		
68	68	1,828,200	21		557,328	36	1,117,884	125	3,503,412		
69	63	1,595,136	14		355,920	42	1,193,124	119	3,144,180		
70	59	1,623,120	17		450,360	36	1,056,636	112	3,130,116		
71	51	1,384,260	24		616,836	28	779,136	103	2,780,232		
72	40	1,048,548	17		490,416	23	686,868	80	2,225,832		
73	43	1,179,348	28		724,116	20	543,372	91	2,446,836		
74	44	1,337,796	21		676,512	17	501,348	82	2,515,656		
75	33	946,308	18		467,136	14	426,852	65	1,840,296		
76	31	885,312	19		563,460	10	341,316	60	1,790,088		
77	28	797,544	23		713,436	8	266,040	59	1,777,020		
78	32	901,800	19		560,448	10	401,892	61	1,864,140		
79	32	1,030,656	28		793,356	12	445,752	72	2,269,764		
80	25	801,972	29		882,672	14	504,564	68	2,189,208		
81	29	835,464	20		585,252	6	193,980	55	1,614,696		
82	22	683,004	19		469,464	4	121,728	45	1,274,196		
83	25	773,100	13		344,160	5	206,388	43	1,323,648		
84	13	357,084	12		384,476	4	143,112	29	843,672		
85	14	512,724	24		798,516	1	36,588	39	1,347,828		
86	10	271,152	12		407,364	5	204,936	27	883,452		
87	8	199,284	23		697,572			31	896,856		
88	5	203,376	9		233,040	5	172,296	19	608,712		
89	5	131,640	16		427,836			21	559,476		
90	4	118,464	3		57,468			7	175,932		
Over 90	5	129,564	24		577,140	2	68,808	31	775,512		
Total	1,893	\$ 52,200,468	734	\$	19,747,860	1,340	\$ 38,602,932	3,967	\$ 110,551,260		

## PLAN MEMBERS (CONTINUED)

### F. Members in Pay Status - Annual Benefits (continued)

Volunteer									
Attained	ttained Retired Members Age		Beneficiaries		Disabled Members		Current Payment Total		
Age	No.	Benefit	No.	Benefit	No.	Benefit	No.	Benefit	
Under 50	333	\$ 592,812	69	\$ 84,888	45	\$ 55,272	447	\$ 732,972	
50	97	151,944	10	13,680	7	9,792	114	175,416	
51	88	140,508	5	7,572	9	13,956	102	162,036	
52	126	204,540	13	17,724	6	8,100	145	230,364	
53	110	183,408	11	17,820	7	8,544	128	209,772	
54	123	205,284	5	7,728	8	10,692	136	223,704	
55	126	217,452	21	32,760	6	7,812	153	258,024	
56	120	207,312	6	9,720	14	18,720	140	235,752	
57	107	175,128	14	20,700	15	23,844	136	219,672	
58	133	224,184	12	23,160	10	10,428	155	257,772	
59	113	192,180	18	29,148	10	11,856	141	233,184	
60	129	219,108	16	27,960	4	7,020	149	254,088	
61	135	252,204	22	36,096	16	22,668	173	310,968	
62	151	272,928	23	39,540	12	18,984	186	331,452	
63	120	215,760	11	19,704	17	19,512	148	254,976	
64	130	234,396	24	37,980	21	32,844	175	305,220	
65	132	228,828	15	25,752	14	22,080	161	276,660	
66	119	216,660	27	44,112	10	14,556	156	275,328	
67	111	200,856	25	44,892	5	7,548	141	253,296	
68	110	202,056	17	29,880	6	7,200	133	239,136	
69	91	159,648	29	50,592	13	18,708	133	228,948	
70	103	181,668	31	55,008	10	16,476	144	253,152	
71	91	160,968	29	48,876	4	5,664	124	215,508	
72	80	146,856	41	74,268	7	12,060	128	233,184	
73	66	118,152	34	61,488	9	13,140	109	192,780	
74	80	146,112	24	42,132	6	8,184	110	196,428	
75	69	128,808	25	44,328	9	15,036	103	188,172	
76	55	103,452	36	67,524	8	12,228	99	183,204	
77	78	146,940	34	60,408	1	1,344	113	208,692	
78	58	110,508	27	50,328		2,011	85	160,836	
79	56	105,300	38	65,880	4	6,564	98	177,744	
80	52	95,148	40	72,000	2	3,696	94	170,844	
81	46	85,908	43	75,516	1	1,440	90	162,864	
82	49	89,136	41	71,110	-	1,	90	160,248	
83	36	66,888	38	68,694	1	1,800	75	137,652	
84	22	40,140	34	61,920	2	2,976	58	105,036	
85	25	46,656	33	60,588	2	3,240	60	110,484	
86	9	17,016	22	40,140	4	6,216	35	63,372	
87	21	39,624	32	54,900	3	5,136	56	99,660	
88	20	36,912	31	56,892	3	3,130	51	93,804	
89	11	20,340	25	45,276	1	1,620	37	67,236	
90	10	18,000	28	49,944	1	1,020	38	67,944	
Over 90	28	51,036	64	113,052	1	1,800	93	165,888	
Total	3,769	\$ 6,652,764	1,143	\$ 1,961,952	330	\$ 468,756	5,242	\$ 9,083,472	

## PLAN MEMBERS (CONTINUED)

### **G.** Terminated Vested and Deferred Option Plan Members - Annual Benefits

Paid								
Attained Age	Termin	ated Vested Members	<b>Deferred Option Plan Members</b>					
Attained Age	No.	Benefit	No.	Benefit				
Under 40	12	\$ 108,828						
40	1	2,220						
41	2	17,796						
42	2	20,532	1	\$ 38,796				
43	1	19,092	1	37,848				
44	2	28,248	1	40,824				
45	3	21,420	1	31,644				
46	3	25,464	5	192,900				
47	2	12,720	5	195,792				
48	4	38,604	8	285,468				
49	5	37,692	7	247,344				
50			6	191,820				
51	1	10,452	6	181,284				
52	1	8,448	4	135,480				
53			4	133,716				
54	3	20,496	4	136,092				
55			7	218,964				
56			9	331,128				
57			7	284,628				
58			5	161,136				
59	2	37,932	3	115,764				
60								
61								
62			2	67,236				
63				,				
64								
65								
66								
67								
68								
69								
70								
71 and over								
Total	44	\$ 409,944	86	\$ 3,027,864				

### PLAN MEMBERS (CONTINUED)

### G. Terminated Vested and Deferred Option Plan Members - Annual Benefits (continued)

Volunteer							
Attained Age	Terminate	ed Vested Members	<b>Deferred Option Plan Members</b>				
Attained Age	No.	Benefit	No.	Benefit			
Under 40	118	\$ 145,368					
40	29	40,536					
41	31	41,640					
42	35	46,044	2	\$ 3,600			
43	37	51,744					
44	44	67,644					
45	44	60,708	3	5,856			
46	51	72,672	3	5,496			
47	49	65,184	2	3,600			
48	56	81,696	3	5,400			
49	58	81,780	2	3,876			
50	26	44,976	2	3,600			
51	37	66,672	2	4,500			
52	51	97,332	3	5,856			
53	35	66,192	1	1,800			
54	25	47,064	4	7,488			
55	35	69,540	3	5,496			
56	34	71,316	1	1,800			
57	20	42,024	2	3,696			
58	23	49,140	4	7,392			
59	30	64,860	2	4,500			
60	19	43,176					
61	15	33,000	1	2,160			
62	13	27,876	1	2,700			
63	11	25,512					
64	14	34,164					
65	15	34,836					
66	12	28,596					
67	12	28,776					
68	14	34,140					
69	13	31,020					
70 and over	92	227,484					
Total	1,098	\$ 1,922,712	41	\$ 78,816			

### PLAN MEMBERS

#### H. Member Data Reconciliation

	Paid Members							
	Active M	lembers	Inactive Members					
	Regular	Deferred Option Plan	Deferred Vested Members	Retired Members	Disabled Members	Bene- ficiaries	Total	
As of July 1, 2008	4,003	95	42	1,899	1,334	717	8,090	
Deferred Option Plan Retirees	(8)	8	-	-	-	-	-	
Service Retirements	(38)	(12)	(1)	51	-	=	-	
Disability Retirements	(21)	(5)	-	-	26	-	-	
Deaths Without Beneficiaries	-	-		(13)	(8)	(44)	(65)	
Deaths With Beneficiaries	(4)	-	-	(32)	(19)	55	-	
Nonvested Terminations	(29)	-	-	1	-	-	(29)	
Vested Terminations	(4)	-	4	ı	-	-	-	
Rehires	1	-	-	(1)	-	-	-	
Cashouts of Member Contributions	-	-	-	ı	-	-	-	
Expiration of Benefits	-	-	-	-	-	-	-	
Data Corrections	-	-	(1)	(11)	7	6	1	
Transfers to Volunteer	(7)	-	-	1	-	-	(7)	
Transfers from Volunteer	54	-	-	1	-	-	54	
Net Change	(56)	(9)	2	(6)	6	17	(46)	
New Entrants During the Year	132	-	-	1	1	-	132	
Net Change	76	(9)	2	(6)	6	17	86	
As of July 1, 2009	4,079	86	44	1,893	1,340	734	8,176	

## PLAN MEMBERS (CONTINUED)

### **H.** Member Data Reconciliation (continued)

	Volunteer Members							
	Active M	lembers						
	Regular	Deferred Option Plan	Deferred Vested Members	Retired Members	Disabled Members	Bene- ficiaries	Total	
As of July 1, 2008	7,781	48	1,166	3,587	335	1,121	14,038	
Deferred Option Plan Retirees	(6)	6	-	-	-	-	-	
Service Retirements	(137)	(13)	(120)	270	-	=	=	
Disability Retirements	(8)	-	(2)	-	10	-	-	
Deaths Without Beneficiaries	-	-	(1)	(36)	(7)	(57)	(101)	
Deaths With Beneficiaries	(11)	-	ı	(45)	(6)	62	-	
Nonvested Terminations	(559)	-	ı	-	-	-	(559)	
Vested Terminations	(78)	=	78	=	=	=	=	
Rehires	12	-	(11)	(1)	-	-	-	
Cashouts of Member Contributions	-	-	ı	-	-	-	-	
Expiration of Benefits	-	-	-	-	-	-	-	
Data Corrections	-	=	(12)	(6)	(2)	17	(3)	
Transfers to Paid	(54)	=	ı	II.	-	=	(54)	
Transfers from Paid	7	-	-	-	-	-	7	
Net Change	(834)	(7)	(68)	182	(5)	22	(710)	
New Entrants During the Year	1,047	-	-	-	-	-	1,047	
Net Change	213	(7)	(68)	182	(5)	22	337	
As of July 1, 2009	7,994	41	1,098	3,769	330	1,143	14,375	

#### **ACTUARIAL BASIS**

#### A. Entry Age Actuarial Cost Method

Liabilities and contributions shown in this report are computed using the Individual Entry Age method of funding.

Sometimes called "funding method," this is a particular technique used by actuaries for establishing the amount and incidence of the annual actuarial cost of Plan Benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily the annual contribution to the plan is comprised of (1) the normal cost and (2) an amortization payment on the unfunded actuarial accrued liability.

Under the Entry Age Actuarial Cost Method, the **Normal Cost** is computed as the level percentage of pay which, if paid from the earliest time each Member would have been eligible to join the plan if it then existed (thus, entry age) until his retirement or termination, would accumulate with interest at the rate assumed in the valuation to a fund sufficient to pay all benefits under the plan.

The **Actuarial Accrued Liability** under this method at any point in time is the theoretical amount of the fund that would have accumulated had annual contributions equal to the normal cost been made in prior years (it does not represent the liability for benefits accrued to the valuation date.) The **Unfunded Actuarial Accrued Liability** is the excess of the actuarial accrued liability over the actuarial value of plan assets actually on hand on the valuation date.

Under this method experience gains or losses, i.e. decreases or increases in accrued liabilities attributable to deviations in experience from the actuarial assumptions, adjust the unfunded actuarial accrued liability.

#### **Actuarial Present Value**

The current worth (on the valuation date) of an amount or series of amounts payable or receivable in the future. The actuarial present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

#### Present Value of Accrued Plan Benefit (SFAS No. 35)

The present value of accrued Plan Benefits represents the actuarial present value of benefits which are accrued based on service and salary information as of the valuation date.

### **ACTUARIAL BASIS (CONTINUED)**

#### **B.** Asset Valuation Method

The actuarial value of assets is based on a five-year moving average of expected and market values determined as follows:

- at the beginning of each plan year, a preliminary expected actuarial asset value is calculated as the sum of the previous year's actuarial value increased with a year's interest at the Plan valuation rate plus net cash flow adjusted for interest (at the same rate) to the end of the previous plan year;
- the expected actuarial asset value is set equal to the preliminary expected actuarial value plus the unrecognized investment gains and losses as of the beginning of the previous plan year;
- the difference between the expected actuarial asset value and the market value is the investment gain or loss for the previous plan year;
- the (final) actuarial asset value is the preliminary value plus 20% of the investment gains and losses for each of the five previous plan years, but in no case more than 120% of the market value or less than 80% of the market value.
- Deferred Option Plan assets were included in the actuarial value of assets. Deferred Option Plan assets are not subject to this smoothing methodology; they are included at market value.

#### C. Valuation Procedures

No actuarial accrued liability is held for nonvested, inactive Members who have a break in service, or for nonvested Members who have quit or been terminated, even if a break in service had not occurred as of the valuation date.

The wages used in the projection of benefits and liabilities were considered earnings for the year ending June 30, 2009, increased by the salary scale to develop expected earnings for the current valuation year. Earnings were annualized for Members with less than twelve months of reported earnings.

In computing accrued benefits, average earnings were determined using actual pay history provided for valuation purposes.

### **ACTUARIAL BASIS (CONTINUED)**

#### **C.** Valuation Procedures (continued)

The impact from the dollar limitation required by the Internal Revenue Code Section 415 for governmental plans was not considered in this valuation and was determined not to be significant on a projected basis.

The compensation limitation under IRC Section 401(a)(17) was not considered in this valuation. On a projected basis, the impact of this limitation is insignificant.

The census data provided by the Retirement System was screened for completeness and validity, and discrepancies were resolved. No significant assumptions for incomplete data were necessary.

The estimated employee, employer and state contributions have been determined based on total compensation.

When the data is edited, members reported as non-vested terminations are verified to have less than ten years of service at date of termination. Members with more than ten years of service are included in the valuation with estimated benefits. Members who terminated prior to the current year with over 10 years of service were added to the valuation with estimated benefits.

The Deferred Option Plan members are valued in a manner similar to retired Members. The main difference is the continuation of 50% of the employer contributions to the Firefighters Pension and Retirement System based on the compensation rate of the Deferred Option Plan members. Thirty-two percent (32%) of active and future Deferred Option Plan members are assumed to become disabled at benefit commencement.

The normal cost is adjusted to reflect the expected cost of the guaranteed minimum interest rate on the Deferred Option Plan account balances. The adjustment is 3.28% of the DROP account balances as of the valuation date. This load was determined through a simplified stochastic modeling process in a study conducted for the Plan during 2000. This amount will be carried forward as a reserve, if applicable. This reserve will effect the actuarial accrued liability for the first time on July 1, 2001.

The contribution requirements are based on total annual compensation rather than total covered compensation. This is a better reflection of the overall expectations for the Plan.

The calculations for the required state contribution are determined as of mid-year. This is a reasonable assumption since the employer contributions, employee contributions and State insurance premium tax allocations are made on a monthly basis throughout the year, and mid-year represents an average weighting of the contributions.

# **ACTUARIAL BASIS (CONTINUED)**

# D. Actuarial Assumptions

## **Paid Firefighters**

# **Economic Assumptions**

1. Investment Return 7.50%, net of investment expenses, per annum, compound

annually.

2. Earnings Progression Sample rates below:

Years of	Inflation	Merit	Increase
Service	%	%	%
0	3.00	7.00	10.00
1	3.00	6.00	9.00
2	3.00	5.40	8.40
3	3.00	5.20	8.20
4	3.00	5.00	8.00
5	3.00	4.80	7.80
10	3.00	3.55	6.55
15	3.00	1.65	4.65
20	3.00	1.20	4.20
25+	3.00	1.00	4.00

3. Reserve for Guaranteed Interest Rate for DROP Account Balances

3.28% of DROP account balances as of the valuation date is loaded to normal cost.

## **ACTUARIAL BASIS (CONTINUED)**

### **D.** Actuarial Assumptions (continued)

### **Paid Firefighters (continued)**

#### **Demographic Assumptions**

1. Retirement Rates

Sample rates below:

Attained Service	Annual Rates of Retirement Per 100 Eligible Members
20	20
21	18
22	15
23	14
24	14
25	17
26-34	25
35+	100

#### 2. Mortality Rates

(a) Active employees (pre-retirement)

1994 Group Annuity Mortality Table.

(b) Active employees (post-retirement) and nondisabled pensioners

Males - 1994 Group Annuity Mortality Table for males set

forward one year.

Females - 1994 Group Annuity Mortality Table for females set back two years.

(c) Disabled pensioners

Males - 1994 Group Annuity Mortality Table for males set forward five years.

Females - 1994 Group Annuity Mortality Table for females set forward two years.

# **ACTUARIAL BASIS (CONTINUED)**

# **D.** Actuarial Assumptions (continued)

**Paid Firefighters (continued)** 

# **Demographic Assumptions (continued)**

3. Disability Rates -

Graduated rates. See table below:

Age Range	Rate
20-24	.0005
25-29	.0010
30-34	.0030
35-39	.0040
40-44	.0045
45-49	.0105
50-54	.0280
55-59	.0490
60-64	.0900

33% of disabilities are assumed to be Non-Duty related and 67% are assumed to be Duty related.

## **ACTUARIAL BASIS (CONTINUED)**

### **D.** Actuarial Assumptions (continued)

## **Paid Firefighters (continued)**

## **Demographic Assumptions (continued)**

4. Disability from DROP 32% of DROP Members are assumed to become disabled

during active DROP membership.

5. Withdrawal Rates Graduated rates. See table below:

Attained Service	Rate
0	.0350
1	.0350
2	.0300
3	.0250
4	.0200
5-9	.0100
10-14	.0080
15+	.0040

6. Marital Status

(a) Percentage married Males: 85%; Females: 85%

(b) Age difference Males are assumed to be three years older than females.

### **ACTUARIAL BASIS (CONTINUED)**

### **D.** Actuarial Assumptions (continued)

#### **Paid Firefighters (continued)**

### **Other Assumptions**

 Assumed Age of Commencement for Deferred Benefits
 Later of Age 50 and 20 Years of Service.

2. Actuarial Value of Assets

An expected actuarial value is determined equal to the prior year's Actuarial Value of Assets plus cash flow (excluding realized and unrealized gains and losses) for the year ended on the valuation date and assuming 7.50% interest return. Twenty percent (20%) of any (gain)/loss as measured by the difference between the expected actuarial value and the market value at the valuation date is added to the expected actuarial value. The (gain)/loss is amortized over five years. The result is constrained to a value of 80% to 120% of the market value at the valuation date. Deferred Option Plan assets are included in the actuarial value of assets. Deferred Option Plan assets are included at market value and are not subject to smoothing.

3. Provision for Expenses

Administrative Expenses, as budgeted by the Oklahoma Firefighters Pension and Retirement System.

4. Cost-of-Living Allowance Assumption for Retirees with 20 years of service as of May 26, 1983 Half of the dollar amount of a 3% assumed increase in base pay.

5. Cost-of-Living Increase Assumption

Members are assumed to receive a 2% annual increase in benefits during each year of retirement, except for those in Item 4 above.

## **ACTUARIAL BASIS (CONTINUED)**

6. Deferred Option Plan The retirement rates reflect both regular retirement and

entry into the DROP. A 2.50% load is added to the liability

of anticipated member joining DROP retroactively.

## **Actuarial Assumptions (continued)**

## **Volunteer Firefighters**

### **Economic Assumptions**

1. Investment Return 7.50%, net of investment expenses, per annum, compound

annually.

2. Benefit level increases No increases.

## **Demographic Assumptions**

1. Retirement Rates Sample rates below:

Attained Service	Annual Rates of Retirement Per 100 Eligible Members
20	43
21	24
22	18
23	14
24	16
25	18
26-34	20
35+	100

## **ACTUARIAL BASIS (CONTINUED)**

### 2. Mortality Rates

(a) Active employees (pre-retirement)

1994 Group Annuity Mortality Table.

(b) Active employees (post-retirement) and nondisabled pensioners

Males - 1994 Group Annuity Mortality Table for males set

forward one year.

Females - 1994 Group Annuity Mortality Table for females

set back two years.

(c) Disabled pensioners Males - 1994 Group Annuity Mortality Table for males set

forward five years.

Females - 1994 Group Annuity Mortality Table for females

set forward two years.

# ACTUARIAL BASIS (CONTINUED)

# **D.** Actuarial Assumptions (continued)

**Volunteer Firefighters (continued)** 

# **Demographic Assumptions (continued)**

3. Disability Rates –

Graduated rates. See table below:

Age Range	Rate
20-24	.0005
25-29	.0005
30-34	.0010
35-39	.0010
40-44	.0020
45-49	.0020
50-54	.0080
55-59	.0140
60-64	.0165

67% of disabilities are assumed to be Non-Duty related and 33% are assumed to be Duty related.

# **ACTUARIAL BASIS (CONTINUED)**

# **D.** Actuarial Assumptions (continued)

**Volunteer Firefighters (continued)** 

## **Demographic Assumptions (continued)**

4. Withdrawal Rates Graduated rates. See table below:

Attained Service	Rate
0	.1800
1	.1600
2	.1400
3	.1300
4	.1100
5-9	.0075
10-14	.0500
15+	.0300

#### 5. Marital Status

(a) Percentage married Males: 85%; Females: 85%

(b) Age difference Males are assumed to be three years older than

females.

### **ACTUARIAL BASIS (CONTINUED)**

### **D.** Actuarial Assumptions (continued)

#### **Volunteer Firefighters (continued)**

### **Other Assumptions**

 Assumed Age of Commencement for Deferred Benefits
 Later of Age 50 and 20 Years of Service.

2. Actuarial Value of Assets

An expected actuarial value is determined equal to the prior year's Actuarial Value of Assets plus cash flow (excluding realized and unrealized gains and losses) for the year ended on the valuation date and assuming 7.50% interest return. Twenty percent (20%) of any (gain)/loss as measured by the difference between the expected actuarial value and the market value at the valuation date is added to the expected actuarial value plus unrecognized (gain)/loss. The (gain)/loss is amortized over five years. The result is constrained to a value of 80% to 120% of the market value at the valuation date. Deferred Option Plan assets are included in the actuarial value of assets. Deferred Option Plan assets are included at market value and are not subject to smoothing.

3. Provision for Expenses

Administrative Expenses, as budgeted by the Oklahoma Firefighters Pension and Retirement System.

4. Cost-of-Living Increase Assumption

Members are assumed to receive a 2% annual increase in benefits during each year of retirement.

5. Deferred Option Plan

The retirement rates reflect both regular retirement and entry into the DROP.

#### **SUMMARY OF PLAN PROVISIONS**

Effective Date and Plan Year: The plan became effective May 14, 1908 and is regularly

amended during legislative session. The plan year is July 1

to June 30.

Administration: The plan is administered the Oklahoma Firefighters

Pension and Retirement System Board consisting of 13 members. The Board acts as the fiduciary for investment

and administration of the Plan.

Members Included: All paid and volunteer firefighters of participating

municipalities and fire protection districts.

Member Contributions: Paid firefighters contribute 8% of gross salary. No

employee contributions are required of volunteer

firefighters.

**Employer Contributions:** Participating municipalities and fire protection districts

contribute 13% of gross salary for each paid firefighter and \$60.00 per year for each volunteer firefighter. Municipalities with revenues under \$25,000 make no

contribution for volunteers.

State Contributions: Insurance Premium Tax allocation. For the fiscal year

beginning July 1, 2006 and each fiscal year thereafter, the fund is scheduled to receive 34% of these collected taxes.

**Service Considered:** The period of membership in the Pension System or a

predecessor municipal system. Service for members of a fire protection district does not accrue before July 1, 1982.

Military service is credited for one term (unless the member is required by law to re-enlist) if the city continues to make contributions on the member's behalf as though he were in actual service, provided that he returns to actual service within the fire department within ninety (90) days of honorable discharge. War veterans shall receive up to

five years of credit for active military service.

### SUMMARY OF PLAN PROVISIONS (CONTINUED)

A member who has withdrawn his contributions and later returns to membership may repay the amount withdrawn plus interest as determined by the Board to reinstate participating service which was canceled by his withdrawal.

A member may receive credit for up to five years of credited service accumulated by the member while a member of the Oklahoma Police Pension and Retirement System, the Oklahoma Law Enforcement Retirement System, the Teachers' Retirement System of Oklahoma, or the Oklahoma Public Employees Retirement System, if the member is not receiving or eligible to receive retirement credit or benefits from said service in any other public retirement system. The cost of buy-back service is determined as the actuarial present value of the benefits attributable to this service, effective January 1, 1991.

**Considered Compensation:** 

The member's gross salary excluding overtime, payment for accumulated sick or annual leave upon termination, any uniform allowances or reimbursement of out-or-pocket expenses, but excluding any salary reductions pursuant to Section 457 or Section 414(b) of the Internal Revenue Code. Only salary on which the required contributions have been made may be considered.

**Final Average Compensation:** 

The monthly average of the highest thirty (30) consecutive months of the last sixty (60) months of participating service.

**Normal Retirement Date:** 

The first day following the day the member completes twenty (20) years of service, regardless of age.

**Normal Retirement Benefit:** 

<u>Paid firefighters</u> A monthly benefit equal to 50% of final average

compensation.

Volunteer firefighters \$150.60 per month, effective July 1, 2008.

### SUMMARY OF PLAN PROVISIONS (CONTINUED)

**Late Retirement Benefit:** Benefits continue to accrue for service up to thirty (30)

years at the following rates:

<u>Paid firefighters</u> 2.5% of final average compensation per year of service.

<u>Volunteer firefighters</u> \$7.53 per month per year of service, effective July 1, 2008.

**Early Retirement Benefit:** None.

**Disability or Death Benefit:** All firefighters are eligible for immediate disability or

death benefits. Disabilities due to heart disease, injury to the respiratory system, or cancer are considered in the line of duty. If there is no eligible surviving spouse, the death benefit is divided between the children under age 18 or age

22 if children are enrolled as full-time students.

Paid firefighters 2.5% of final average monthly compensation per year of

service, with a minimum service credit of 20 years and maximum of 30 years. For disabilities not in the line of duty, final average monthly compensation is based on 60

months instead of 30 months.

Volunteer firefighters \$7.53 per month per year of service, with a maximum of 30

years. For disabilities or deaths in the line of duty, there is

a minimum service credit of 20 years.

### SUMMARY OF PLAN PROVISIONS (CONTINUED)

**Vested Severance Benefit:** 

A member who terminates after ten years of credited service is eligible for a vested severance benefit determined by the normal retirement formula, based on service and salary history to date of termination.

The benefit is payable at age 50 or when the member would have completed twenty years of service, whichever is later, provided the member's contribution accumulation is not withdrawn.

Members terminating with less than ten years of credited service receive a refund of their contribution accumulation without interest.

**Lump Sum Death Benefit:** 

Upon the death of an active or retired member on or after July 1, 1999, a \$5,000 lump sum death benefit will be paid to the member's beneficiary, or estate if no beneficiary. The \$5,000 death benefit does not apply to members electing the vested benefit.

Form of Payments:

The normal form of benefit is a Joint and 100% Survivor Annuity if the firefighter was married 30 months prior to death.

**Post-Retirement Adjustments:** 

Firefighters with 20 years of service as of May 26, 1983, are entitled to post-retirement adjustments equal to one-half the increase or decrease for top step firefighters. Pensions will not be adjusted below the level at which the firefighter retired.

**Deferred Option Plan:** 

A Member who has 20 or more years of service and continues employment may elect to participate in the Deferred Option Plan (DROP). Participation in the DROP shall not exceed five years. The employees' contributions cease upon entering the Plan, but the employer contributions are divided equally between the Retirement System and DROP. The monthly retirement benefits that the employee is eligible to receive are paid into the DROP account.

### SUMMARY OF PLAN PROVISIONS (CONTINUED)

A member is also allowed to retroactively elect to join the DROP as of a back-drop-date which is no earlier than the member's normal retirement date or five years before his termination date. The monthly retirement benefits and employee contributions that would have been payable had the member elected to join the DROP are credited to the member's DROP account with interest.

The retirement benefits are not recalculated for service and salary past the election date to join the DROP. However, the benefits may be increased by any applicable cost-of-living increases.

When the Member actually terminates employment, the DROP account balance may be paid in a lump sum or to an annuity provider. Monthly retirement benefits are then paid directly to the retired Member.

The DROP account is guaranteed a minimum of the valuation interest rate for investment return, or 2% less than the fund rate of return, if greater.

October 14, 2009

#### **OVERNIGHT DELIVERY**

Mr. Robert E. Jones, Jr. Executive Director Oklahoma Firefighters Pension & Retirement System 4545 North Lincoln Blvd., Suite 265 Oklahoma City, OK 73105-3414

Re: Report on the Actuarial Valuation of the Oklahoma Firefighters Pension and Retirement System as of July 1, 2009

Dear Robert:

Enclosed are 45 bound copies and one unbound copy of the Report on the Actuarial Valuation of the Oklahoma Firefighters Pension and Retirement System as of July 1, 2009.

Very truly yours,

Richard A. Mackesey, FSA, EA, MAAA Principal, Consulting Actuary

 $\begin{array}{l} RAM:mw \\ \text{OFP}_{VAL}_{2009.DOC} \end{array}$ 

**Enclosures**