

ARKADELPHIA FIREFIGHTERS PENSION FUND

ACTUARIAL VALUATION

AS OF DECEMBER 31, 2014

Osborn, Carreiro & Associates, Inc.  
Actuaries Consultants Analysts  
Little Rock, Arkansas

Osborn, Carreiro & Associates, Inc.  
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August 5, 2015

Board of Trustees  
Arkadelphia Firefighters Pension Fund

Gentlemen:

This report presents the results of our actuarial valuation of the assets and liabilities of the Arkadelphia Firefighters Pension Fund as of December 31, 2014.

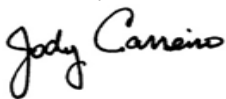
This valuation is required by Arkansas Code Annotated 24-11-205. The purpose of this report is to (1) evaluate the actuarial status of the Fund, (2) determine the level contribution requirement needed, (3) review the development of the Fund over the past several years, and (4) present certain actuarial items for disclosure under Governmental Accounting Standards. This report is not intended for any other purpose.

The implementation of Government Accounting Standards Board Statement No. 67 (GASB 67) is included in this report for the first time. GASB 68 will be added for the next valuation. There are four Appendices added to this report to disclose the necessary items for GASB 67.

The member and financial information used in this report was supplied by the Arkansas Fire & Police Pension Review Board. We did not audit this information, although we did review it for reasonableness and consistency.

I certify that this report has been prepared in accordance with generally accepted actuarial principles and practices. In my opinion, the actuarial methods used are appropriate and the actuarial assumptions produce results which, in the aggregate, are reasonable.

Sincerely,



Jody Carreiro, A.S.A., M.A.A.A.  
Actuary

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EXHIBIT 1

CONTRIBUTIONS

The following contribution level reflects the payment of the current year Normal Cost for benefits attributable to said year (see Exhibit 2) plus an amount sufficient to pay off the Unfunded Actuarial Liability over a 5-year period. These costs DO NOT include the contributions due to the Local Police and Firefighters Retirement System ("LOPFI") for persons hired after 1982.

	<u>Full Paid</u>	<u>Volunteer or Part-Paid</u>	<u>Total</u>
2015 Necessary Annual Contribution to pay:			
1 Normal Cost, plus	\$ 10,164	\$ 221	\$ 10,385
2 Pay off the Unfunded Actuarial Accrued Liability	<u>150,488</u>	<u>34,091</u>	<u>184,579</u>
3 Total necessary	\$ 160,652	\$ 34,312	\$ 194,964
Less			
4 Expected Employee Contribution (6.00% of salary. \$12 per active volunteer)	<u>- 2,243</u>	<u>- 12</u>	<u>- 2,255</u>
Necessary Employer Contribution (This is the amount needed in addition to investment income)	<u>\$ 158,409</u>	<u>\$ 34,300</u>	<u>\$ 192,709</u>
Covered Payroll	\$ 37,390	N/A	\$ 37,390
Necessary Employer Rate	<u>423.67%</u>	<u>\$ 34,300</u>	<u>515.41%</u>

The contributions are assumed to be made continuously throughout the year.

**The actual 2014 contribution was \$73,029 from the employer.**

EXHIBIT 2

COSTS AND LIABILITIES

	<u>December 31, 2014</u>	
	<u>Dollar</u>	<u>Percent</u>
	<u>Amount</u>	<u>of pay</u>
A <u>Normal Cost</u> (Cost to fund current active members)		
1 Regular Retirement Benefits	\$ 9,098	24.33%
2 Voluntary Termination Benefits	928	2.48%
3 Survivors' Benefits	148	0.40%
4 Disability Benefits	211	0.56%
	<hr/>	<hr/>
TOTAL	\$ 10,385	27.77%
B <u>Actuarial Accrued Liability</u>		
1 <u>Active Lives</u>		
Regular Retirement Benefits	\$ 290,755	
Voluntary Termination Benefits	0	
Survivors' Benefits	0	
Disability Benefits	0	
	<hr/>	
TOTAL ACTIVE LIVES	\$ 290,755	
2 <u>Inactive Lives</u>		
Retirees	\$ 914,910	
Disability Retirees	0	
Widows & Children	54,037	
	<hr/>	
TOTAL INACTIVE LIVES	\$ 968,947	
3 <u>Total Liability</u>	\$ 1,259,702	
C <u>Assets</u>	\$ 441,079	
D <u>Unfunded Actuarial Accrued Liability</u>	\$ 818,623	

## EXHIBIT 3

SUMMARY OF FINANCIAL INFORMATION

(Items C, F-H, and J determined by Osborn, Carreiro and Associates, Inc.)

	Year Ended 12/31/2014	Year Ended 12/31/2013	Year Ended 12/31/2012	Year Ended 12/31/2011	Year Ended 12/31/2010	Year Ended 12/31/2009	Year Ended 12/31/2008	Year Ended 12/31/2007	Year Ended 12/31/2006	Year Ended 12/31/2005
<b>A. INCOME</b>										
1 <u>Employee Contributions</u>	\$ 2,255	\$ 2,755	\$ 2,042	\$ 2,175	\$ 2,078	\$ 2,797	\$ 1,891	\$ 2,018	\$ 1,793	\$ 1,872
2 <u>Employer Contributions</u>										
Employer/Court Fines/Other	48,445	2,763	2,042	2,175	2,078	2,797	1,891	2,018	1,793	1,872
Local Millage	0	0	0	0	0	0	0	0	0	0
3 <u>State Insurance Premium Tax</u>										
Premium Tax Allocation	24,584	25,954	24,808	39,057	33,158	32,328	38,034	33,371	34,773	53,025
Additional Allocation	0	0	0	0	0	0	0	0	0	0
Guarantee Fund	0	0	0	0	0	0	0	0	0	0
4 <u>Other Income</u>										
LOPFI Subsidy	0	0	0	0	0	0	0	0	0	0
Police Supplement (Act 1452 of 199	0	0	0	0	0	0	0	0	0	0
Future Supplement (Act 1373 of 200	12,350	9,435	8,120	6,608	5,002	6,144	7,681	9,503	6,428	5,490
Other Income/Donations	0	12,104	14,625	0	12,596	14,796	12,443	12,567	12,639	16,483
Adjustment to prior year value	0	0	0	0	0	0	0	0	0	0
5 <u>Net Investment Income</u>	13,005	16,342	15,126	18,017	(10,659)	4,935	9,289	44,768	8,439	82,274
<b>TOTAL INCOME</b>	<b>\$ 100,639</b>	<b>\$ 69,353</b>	<b>\$ 66,763</b>	<b>\$ 68,032</b>	<b>\$ 44,253</b>	<b>\$ 63,797</b>	<b>\$ 71,229</b>	<b>\$ 104,245</b>	<b>\$ 65,865</b>	<b>\$ 161,016</b>
<b>B. EXPENSES</b>										
1 <u>Administrative</u>	\$ 0	\$ 2,000	\$ 1,825	\$ 1,825	\$ 1,775	\$ 2,100	\$ 2,400	\$ 1,947	\$ 1,717	\$ 1,721
2 <u>Benefits Paid</u>										
Monthly Benefits	102,415	104,215	103,615	108,215	110,315	114,490	115,743	114,575	125,880	126,465
Police Supplements	0	0	0	0	0	0	0	0	0	0
Future Supplements	12,350	9,250	7,395	5,428	4,592	5,760	7,681	9,503	6,428	5,490
DROP Payouts	0	0	0	0	0	0	0	0	0	0
Paid Current Year for Previous Year	0	0	0	0	0	0	0	0	0	0
3 <u>Refunds</u>	0	0	0	0	0	0	0	0	0	0
4 <u>Other Expenses</u>	0	0	0	0	0	0	0	0	0	0
<b>TOTAL EXPENSES</b>	<b>\$ 114,765</b>	<b>\$ 115,465</b>	<b>\$ 112,835</b>	<b>\$ 115,468</b>	<b>\$ 116,682</b>	<b>\$ 122,350</b>	<b>\$ 125,824</b>	<b>\$ 126,025</b>	<b>\$ 134,025</b>	<b>\$ 133,676</b>
<b>C. Non-Investment Cash Flow</b>	<b>\$ (27,131)</b>	<b>\$ (62,454)</b>	<b>\$ (61,198)</b>	<b>\$ (65,453)</b>	<b>\$ (61,770)</b>	<b>\$ (63,488)</b>	<b>\$ (63,884)</b>	<b>\$ (66,548)</b>	<b>\$ (76,599)</b>	<b>\$ (54,934)</b>

## EXHIBIT 3 (Continued)

<b>D. ASSETS (at book value)</b>	<u>12/31/2014</u>	<u>12/31/2013</u>	<u>12/31/2012</u>	<u>12/31/2011</u>	<u>12/31/2010</u>	<u>12/31/2009</u>	<u>12/31/2008</u>	<u>12/31/2007</u>	<u>12/31/2006</u>	<u>12/31/2005</u>
1 Cash & Checking Accounts	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 2,540	\$ 382	\$ 0	\$ 0	\$ 0
2 Bank Deposits	0	0	0	0	0	0	0	126,954	74,490	65,404
3 Savings and Loan Deposits	0	0	0	0	0	0	0	0	0	0
4 Other Cash Equivalents	33,093	1,542	14,134	46,627	29,104	0	188,767	247,929	213,836	804,938
5 US Govt. Securities	0	0	0	0	0	0	0	0	0	0
6 Non-US Govt Securities	0	0	0	0	0	0	0	0	0	0
7 Mortgages	0	0	0	0	0	0	0	0	0	0
8 Corporate Bonds	37,988	248,619	135,116	50,675	75,751	176,003	176,003	0	0	0
9 Common Stocks	367,616	205,044	352,067	433,635	489,970	488,711	360,655	404,459	511,892	0
10 Other	2,382	0	0	16,452	0	0	0	1,060	1,964	0
11 Payables	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>TOTAL ASSETS</b>	<b>\$ 441,079</b>	<b>\$ 455,205</b>	<b>\$ 501,317</b>	<b>\$ 547,389</b>	<b>\$ 594,825</b>	<b>\$ 667,254</b>	<b>\$ 725,807</b>	<b>\$ 780,402</b>	<b>\$ 802,182</b>	<b>\$ 870,342</b>
<b>E. TOTAL MARKET VALUE</b>	<b>\$ 554,425</b>	<b>\$ 553,220</b>	<b>\$ 545,658</b>	<b>\$ 565,712</b>	<b>\$ 644,442</b>	<b>\$ 664,052</b>	<b>\$ 643,179</b>	<b>\$ 831,829</b>	<b>\$ 852,131</b>	<b>\$ 870,342</b>
<b>F. RATIO OF ASSETS TO ANNUAL EXPENSES</b>										
Book Value Basis	3.8	3.9	4.4	4.7	5.1	5.5	5.8	6.2	6.0	6.5
Market Value Basis	4.8	4.8	4.8	4.9	5.5	5.4	5.1	6.6	6.4	6.5
<b>G. RATIO OF ASSETS TO NON-INVESTMENT CASH OUTFLOW</b>										
Book Value Basis	16.3	7.3	8.2	8.4	9.6	10.5	11.4	11.7	10.5	15.8
Market Value Basis	20.4	8.9	8.9	8.6	10.4	10.5	10.1	12.5	11.1	15.8
<b>H. SUMMARY OF NET INVESTMENT RETURNS</b>										
Book Value Rate of Return	2.94%	3.48%	2.93%	3.21%	-1.67%	0.71%	1.24%	5.82%	1.01%	10.09%
10 Year Average Return	<b>2.93%</b>									
Market Value Rate of Return	5.25%	13.61%	7.69%	-2.17%	6.66%	13.80%	-15.60%	5.65%	7.02%	5.83%
10 Year Average Return	<b>4.44%</b>									

Note: The assumed liability discount rate is 5%. If the plan does not realize an investment return of 5% or more over the long term, the ultimate cost of the plan will be greater than the liabilities shown in this report.

That is, the plan would need more money to meet its obligations.

EXHIBIT 3 (Continued)

	<u>12/31/2014</u>	<u>12/31/2013</u>	<u>12/31/2012</u>	<u>12/31/2011</u>	<u>12/31/2010</u>
I. <u>TOTAL MARKET VALUE</u>					
Market Value, end of year (Used for GASB calculations, page 9)	554,425	553,220	545,658	565,712	644,442
J. <u>ACTUARIAL VALUE OF ASSETS</u>					
Actuarial Value of Assets, end of year (same as D: Total Assets Book Value)	441,079	455,205	501,317	547,389	594,825

Note: The Pension Review Board's Board Rule #11 defines the Actuarial Value of Assets to be the Book Value of Assets for plans whose Book Value of Assets is less than \$5,000,000.



EXHIBIT 3 (Continued)

ACCOUNTING INFORMATION

This page is included to provide the information required by the Governmental Accounting Standards Board Statement No. 25 and 27. The values below are based on the assumptions contained in Exhibit 8.

The Annual Pension Cost disclosed in this exhibit will almost always differ from the actual cash contribution to the fund. We must emphasize that these disclosures are shown in the city's financial statements; Sound actuarial projections should be used to determine the actual cash contribution requirements.

RECONCILIATION OF NET PENSION OBLIGATION (NPO)

	2012	2013	2014
1. Actuarially Required Contribution	194,075	180,235	185,855
2. Interest on NPO	23,795	27,981	30,647
3. Adjustment to (1)	107,304	126,180	138,202
4. Annual Pension Cost (1)+(2)-(3)	110,565	82,036	78,299
5. Actual Contribution Made	26,850	28,717	73,029
6. Increase in NPO (4)-(5)	83,715	53,319	5,270
7. NPO Beginning of Year	475,902	559,617	612,937
8. NPO End of Year	559,617	612,937	618,207

REQUIRED SUPPLEMENTARY INFORMATION

(a)	(b)	(c)	(d)	(e)	(f)	(g)
Actuarial Valuation Date	Market Value of Plan Assets	Entry Age Actuarial Accrued Liability	Unfunded Accrued Liability (UAL) (c)-(b)	Funded Ratio (b)/(c)	Annual Covered Payroll	UAL as a % of Covered Payroll (d)/(f)
12/31/2003	857,688	1,348,683	490,995	63.6%	72,533	676.9%
12/31/2005	870,342	1,369,537	499,195	63.6%	32,624	1530.1%
12/31/2007	a 831,829	1,313,229	481,400	63.3%	33,633	1431.3%
12/31/2008	643,179	1,279,041	635,862	50.3%	31,323	2030.0%
12/31/2009	b 664,052	1,491,593	827,541	44.5%	35,023	2362.9%
12/31/2010	644,442	1,416,367	771,925	45.5%	35,743	2159.7%
12/31/2011	565,712	1,390,913	825,201	40.7%	36,251	2276.4%
12/31/2012	545,658	1,310,307	764,649	41.6%	36,768	2079.7%
12/31/2013	c 553,220	1,338,386	785,166	41.3%	36,768	2135.5%
12/31/2014	554,425	1,259,702	705,277	44.0%	36,768	1918.2%

a Includes change in assumptions to 7% discount rate and 83GAM mortality.

b Includes change in assumptions to 5% discount rate and 83GAM mortality.

c Includes change in assumptions to 5% discount rate and 83GAM mortality.

EXHIBIT 4

COMPARISON WITH PRIOR YEARS

Valuation Date	Full Paid <u>Active Members</u>	Actuarial Computed		Assets	Total Plan			
		<u>Employer Contribution</u>			Unfunded Actuarial Liability	Normal Cost	Funded Percent	
	No.	Annual Payroll	Percent of Pay	Dollar Amount				
12/31/1984	5	59,411	42.0%	25,193	253,928	395,768	17.6%	39.1%
12/31/1986	6	87,829	33.6%	29,554	333,727	407,731	17.1%	45.0%
12/31/1987	* 6	90,374	37.4%	33,774	365,775	461,163	19.3%	44.2%
12/31/1989	* 5	80,193	52.8%	42,362	435,348	569,724	25.6%	43.3%
12/31/1991	5	89,878	48.4%	43,473	479,586	542,803	23.8%	46.9%
12/31/1993	5	101,288	47.8%	48,409	531,583	558,449	23.1%	48.8%
12/31/1995	4	76,096	57.3%	43,616	632,163	414,640	23.4%	60.4%
12/31/1997	4	102,861	59.9%	61,567	739,265	464,125	21.5%	61.4%
12/31/1999	2	55,923	103.9%	58,107	832,807	383,277	23.0%	68.5%
12/31/2001	2	62,609	116.0%	72,610	854,495	393,731	21.3%	68.5%
12/31/2003	* 2	71,733	274.7%	103,533	816,342	532,341	20.5%	60.5%
12/31/2005	* 1	31,824	274.7%	81,369	870,342	499,195	25.6%	63.6%
12/31/2007	* 1	33,033	274.7%	90,724	780,402	532,827	19.5%	59.4%
12/31/2008	1	30,923	310.2%	95,920	725,807	553,234	19.2%	56.7%
12/31/2009	* 1	34,623	440.4%	152,480	667,255	824,338	29.0%	44.7%
12/31/2010	* 1	35,343	431.6%	152,522	594,825	821,542	28.6%	42.0%
12/31/2011	* 1	35,851	437.9%	157,002	547,389	843,524	28.4%	39.4%
12/31/2012	1	36,568	423.6%	154,895	501,317	808,990	27.4%	38.3%
12/31/2013	* 1	45,784	377.5%	172,845	455,205	883,181	25.3%	34.0%
12/31/2014	1	37,390	423.7%	158,409	441,079	818,623	27.8%	<b>35.0%</b>

\* Benefits or assumptions changed

Valuation Date	Part-Paid/Volunteer <u>Active Members</u>	Actuarial Computed <u>Employer Contribution</u>
12/31/1999	5	10,182
12/31/2001	4	8,761
12/31/2003	* 4	22,257
12/31/2005	* 4	33,982
12/31/2007	* 3	32,665
12/31/2008	2	31,519
12/31/2009	* 2	41,310
12/31/2010	* 2	40,663
12/31/2011	* 2	41,205
12/31/2012	1	35,339
12/31/2013	* 1	35,109
12/31/2014	1	34,300

EXHIBIT 5

SHORT CONDITION TEST

The Arkansas General Assembly has stated that the funding objective for these plans is to pay for benefits with contributions that remain level as a percentage of employee payroll. Thus, the long-term condition test is met when the actual contributions are fairly level and are paid when due.

A short condition test can be used to measure a plan's progress. Under the short condition test, the fund's assets are compared with:

- 1) Active member contributions;
- 2) The liabilities for future benefits to the present retirees and inactive members;
- 3) The liabilities for service already rendered by active members.

If the plan has been following level cost funding, liability (1) and liability (2) above will almost always be fully covered by the rest of the present assets. In addition, liability (3) above will at least partially funded. The larger the funded portion of liability (3), the stronger the condition of the fund. For a closed fund i.e., one like yours, where no new members are admitted), the funded portion of liability (3) should be steadily increasing.

The following table illustrates the history of the short condition test for this plan:

Valuation Date	<u>Computed Actuarial Liabilities</u>			Valuation Assets	<u>Portion of Liabilities covered by Assets</u>		
	(1) Active Members Contributions	(2) Retirees and Inactives	(3) Actives- Employer Financed		(1)	(2)	(3)
12/31/1984	11,322	334,044	304,330	253,928	100%	73%	0%
12/31/1986	21,387	321,624	398,447	333,727	100%	97%	0%
12/31/1987	27,002	315,240	484,696	365,775	100%	100%	5%
12/31/1989	25,571	568,469	411,032	435,348	100%	72%	0%
12/31/1991	36,357	547,010	439,022	479,586	100%	81%	0%
12/31/1993	48,562	529,948	511,522	531,583	100%	91%	0%
12/31/1995	49,987	631,122	365,694	632,163	100%	92%	0%
12/31/1997	62,033	623,236	518,121	739,265	100%	100%	10%
12/31/1999	49,509	850,211	316,364	832,807	100%	92%	0%
12/31/2001	42,303	819,682	386,241	854,495	100%	99%	0%
12/31/2003	50,603	821,262	476,818	816,342	100%	93%	0%
12/31/2005	25,390	1,118,243	225,904	870,342	100%	76%	0%
12/31/2007	28,917	1,090,649	193,663	780,402	100%	69%	0%
12/31/2008	30,504	1,081,395	167,142	725,807	100%	64%	0%
12/31/2009	32,606	1,210,278	248,709	667,255	100%	52%	0%
12/31/2010	34,684	1,130,850	250,833	594,825	100%	50%	0%
12/31/2011	36,859	1,098,524	255,530	547,389	100%	46%	0%
12/31/2012	38,505	1,036,120	235,682	501,317	100%	45%	0%
12/31/2013	41,260	998,825	298,301	455,205	100%	41%	0%
12/31/2014	43,516	968,947	247,239	441,079	100%	41%	0%

EXHIBIT 6

Employee Profile

Employee data needed for the valuation was obtained from the records furnished by the Arkansas Fire and Police Pension Review Board. The following table shows a detailed breakdown of the present participants by the number of participants and total salary.

Actives

Age		Years of Service						30 and Over	Total
		0-5	5-10	10-15	15-20	20-25	25-30		
Under 25	Count	0	0	0	0	0	0	0	0
	Salary	0	0	0	0	0	0	0	0
25-29	Count	0	0	0	0	0	0	0	0
	Salary	0	0	0	0	0	0	0	0
30-34	Count	0	0	0	0	0	0	0	0
	Salary	0	0	0	0	0	0	0	0
35-39	Count	0	0	0	0	0	0	0	0
	Salary	0	0	0	0	0	0	0	0
40-44	Count	0	0	0	0	0	0	0	0
	Salary	0	0	0	0	0	0	0	0
45-49	Count	0	0	0	0	0	0	0	0
	Salary	0	0	0	0	0	0	0	0
50-54	Count	0	0	0	0	0	0	0	0
	Salary	0	0	0	0	0	0	0	0
55-59	Count	0	0	0	0	0	0	1	1
	Salary	0	0	0	0	0	0	37,390	37,390
60-64	Count	0	0	0	0	0	0	0	0
	Salary	0	0	0	0	0	0	0	0
65 & Over	Count	0	0	0	0	0	0	0	0
	Salary	0	0	0	0	0	0	0	0
Unknown Age	Count	0	0	0	0	0	0	0	0
	Salary	0	0	0	0	0	0	0	0
Total	Count	0	0	0	0	0	0	1	1
	Salary	0	0	0	0	0	0	37,390	37,390

EXHIBIT 6

Employee Profile

Employee data needed for the valuation was obtained from the records furnished by the Arkansas Fire and Police Pension Review Board. The following table shows a detailed breakdown of the present participants by the number of participants.

Volunteers/Part-Paid Actives

Age		<i>Years of Service</i>							30 and Over	Total
		0-5	5-10	10-15	15-20	20-25	25-30			
Under 25	Count	0	0	0	0	0	0	0	0	<b>0</b>
25-29	Count	0	0	0	0	0	0	0	0	<b>0</b>
30-34	Count	0	0	0	0	0	0	0	0	<b>0</b>
35-39	Count	0	0	0	0	0	0	0	0	<b>0</b>
40-44	Count	0	0	0	0	0	0	0	0	<b>0</b>
45-49	Count	0	0	0	0	0	0	0	0	<b>0</b>
50-54	Count	0	0	0	0	0	0	0	0	<b>0</b>
55-59	Count	0	0	0	0	0	0	0	0	<b>0</b>
60-64	Count	0	0	0	0	0	0	0	0	<b>0</b>
65 & Over	Count	0	0	0	0	0	0	0	1	<b>1</b>
Unknown Age	Count	0	0	0	0	0	0	0	0	<b>0</b>
Total	Count	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>

## EXHIBIT 6

### Inactive Profile

Employee data needed for the valuation was obtained from the records furnished by the Arkansas Fire and Police Pension Review Board. The following table shows a detailed breakdown of the present payees by the number of payees and total annual benefit.

### Retirees and Survivors

		<i>Years Since Retirement</i>							
<i>Age</i>		0-1	1-2	2-3	3-4	4-5	5-10	10 and Over	Total
Under 40	Count	0	0	0	0	0	0	0	0
	Benefit	0	0	0	0	0	0	0	0
40-44	Count	0	0	0	0	0	0	0	0
	Benefit	0	0	0	0	0	0	0	0
45-49	Count	0	0	0	0	0	0	0	0
	Benefit	0	0	0	0	0	0	0	0
50-54	Count	0	0	0	0	0	0	0	0
	Benefit	0	0	0	0	0	0	0	0
55-59	Count	0	0	1	0	0	0	1	2
	Benefit	0	0	1,800	0	0	0	12,049	13,849
60-64	Count	0	0	0	0	0	0	0	0
	Benefit	0	0	0	0	0	0	0	0
65-69	Count	0	0	0	0	0	1	2	3
	Benefit	0	0	0	0	0	2,455	3,000	5,455
70-74	Count	0	0	0	0	0	0	5	5
	Benefit	0	0	0	0	0	0	39,162	39,162
75-79	Count	0	0	0	0	0	1	4	5
	Benefit	0	0	0	0	0	1,800	24,701	26,501
80-84	Count	0	0	0	0	0	1	2	3
	Benefit	0	0	0	0	0	2,700	2,700	5,400
85 & Over	Count	0	0	0	0	0	0	4	4
	Benefit	0	0	0	0	0	0	13,048	13,048
Unknown Age	Count	0	0	0	0	0	0	0	0
	Benefit	0	0	0	0	0	0	0	0
Total	Count	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>18</b>	<b>22</b>
	Benefit	<b>0</b>	<b>0</b>	<b>1,800</b>	<b>0</b>	<b>0</b>	<b>6,955</b>	<b>94,660</b>	<b>103,415</b>

This includes	16 retirees	with annual benefit of	\$95,915 .
This includes	0 disableds	with annual benefit of	\$0 .
This includes	6 survivors	with annual benefit of	\$7,500 .

EXHIBIT 7

PRINCIPLE PROVISIONS OF THE PLAN

<u>EMPLOYEE</u>	Member of Fire Department
<u>EMPLOYER</u>	Arkadelphia Fire Department
<u>MEMBERSHIP</u>	Condition of Employment. Firefighters hired after 1982 must join the statewide Local Police and Firefighters Retirement System
<u>CREDITABLE SERVICE</u>	Determined on basis of service since employment
<u>CONTRIBUTIONS</u>	
<u>Employee</u>	6% of salary (Volunteers contribute \$12/year). Refundable if member terminates before retirement eligibility.
<u>Employer</u>	<ol style="list-style-type: none"><li>1. Matching contribution equal to employee contribution</li><li>2. State Insurance Premium Tax turnback</li><li>3. Local Millage</li></ol>
<u>FINAL SALARY</u>	Salary attached to the rank of the member at time of retirement, based on regularly scheduled work-week.
<u>RETIREMENT BENEFITS</u>	
<u>Eligibility</u>	20 Years of Service regardless of age.
<u>Benefit</u>	<p>50% of Final Salary, but not less than \$4,200. (\$1,200/year for volunteer/part-paid). If service exceeds 20 years, the annual benefit is increased by \$240 for each year over 20, up to \$1,200/year extra. (\$120 for each year over 20 up to \$600/year for volunteer/part-paid).</p> <p>If service is more than 25 years, member receives an extra 1.25% (for each year over 25) of Final Salary, payable once the retiree reaches age 60. The benefit cannot exceed 100% of Final Salary.</p>
<u>DEATH BENEFITS</u>	
<u>Eligibility</u>	Death before 20 Years of Service not occurring while performing work in gainful employment outside the fire department, or death after 20 years.
<u>Benefit</u>	<ol style="list-style-type: none"><li>1. Widow receives \$4,200/year. (\$1,200 per yer for volunteer/part paid)</li><li>2. Each child under age 19 receives \$1,500/year. (\$300/year for volunteer/part-paid). If no surviving spouse, children receive spouse's benefit to age 19.</li></ol>

EXHIBIT 7 (Continued)

DISABILITY BENEFITS

Eligibility

Permanent physical or mental disability not acquired while performing work in gainful employment outside the fire department.

Benefit

Full Paid Non-duty disability

Retirement benefit but not less than \$4,200/year.

Full Paid Duty related disability

Retirement benefit but not less than 65% of Final Salary and not less than \$4,200/year.

Volunteer/Part-Paid:

Computed as voluntary retirement benefit



## EXHIBIT 8

### ACTUARIAL METHODS AND ASSUMPTIONS

The assumptions for this valuation have been selected in accordance with Actuarial Standards of Practice No. 27. The asset valuation method is prescribed in Arkansas Code Annotated 24-11-207. This prescribed asset valuation method directly impacts the investment return assumption. The assumed salary growth is restricted by A.C.A. 24-11-205 in relation to the investment return assumption.

#### ACTUARIAL COST METHOD

The "entry age normal" cost method has been used.

#### PRE-RETIREMENT MORTALITY

Deaths have been projected on the basis of the 1983 Group Annuity Table for Males, set back five years for females. Mortality rates at a few sample ages are:

<u>Age</u>	<u>Mortality rate per 1,000</u>
25	0.464
35	0.860
45	2.183
55	6.131

#### POST RETIREMENT MORTALITY

The 1983 Group Annuity Mortality Table was used. For females, the male table was used with a five-year setback. The life expectancy according to this table is as follows:

<u>Age</u>	<u>Males</u>	<u>Females</u>
55	24.87	29.23
65	16.74	20.68

#### MORTALITY BASIS AND PROJECTION

The mortality assumptions do not include a projection for mortality improvement. These rates were chosen after an experience study for 2007-2012. No projection was deemed necessary at this time since the recent experience study did not show significant improvement over an experience study for 2000-2006 deaths.

The 1971 Group Annuity Table for Males, set back five years for females was used before the 12/31/2007 Valuation.

#### VOLUNTARY TERMINATIONS

Annual termination rates at a few sample ages are:

<u>Age</u>	<u>Termination rate per 1,000</u>
20	40
25	35
30	29
35	15
40	6
45	5
50	5
55	5

EXHIBIT 8 (Continued)

When a person had less than 4 years of service, we assumed that his chances of voluntary termination were a multiple of thereafter rates, with the following multiples being used:

1st year	2.85
2nd year	2.00
3rd year	1.50
4th year	1.15

ASSUMED DISCOUNT RATE

5.0%

The reports for the valuations as of 12/31/2009 through 12/31/2012 were completed using an assumed discount rate of 5%.

A study of the returns of all fire and police plans was made of the 2006-2012 experience. The components and variations of appropriate portfolios were also reviewed. The Pension Review Board determined that for comparison with previous years and with other similar plans that a single discount assumption of 5% should be used.

DISABILITIES

We continued the disability rates used in prior reports. Disability rates at a few sample ages are:

<u>Age</u>	<u>Disability rate per 1,000</u>
20	0.8
25	0.8
30	0.8
35	0.8
40	2.0
45	2.6
50	4.9
55	8.9
60	14.1

One third of the disabilities were assumed to be service related.

For mortality after disability, we assumed rates based on the Eleventh Actuarial Valuation of the Railroad Retirement System, for occupational disabilities

ASSET VALUATION

See Exhibit 3, Part J

EXHIBIT 8 (Continued)

SALARY GROWTH

We have used the salary scale used in prior reports. Annual assumed growth at a few sample ages is:

<u>Age</u>	<u>ANNUAL SALARY INCREASE</u>		
	<u>Base</u>	<u>Merit</u>	<u>Total</u>
20	4.0%	4.0%	8.0%
25	4.0%	3.2%	7.2%
30	4.0%	2.8%	6.8%
35	4.0%	2.5%	6.5%
40	4.0%	2.2%	6.2%
45	4.0%	1.7%	5.7%
50	4.0%	1.2%	5.2%
55	4.0%	0.7%	4.7%
60	4.0%	0.2%	4.2%

EXPECTED RETIREMENT PATTERN

Since the plan allows full benefits at ages younger than the traditional "65", an assumption that will have an important impact is what percentage of people who are eligible for this early retirement will actually take advantage of it.

This will depend on intangible things such as the economy, health, financial ability to retire, Social Security eligibility, and work patterns. Based on recent experience, we are using the following assumed rates:

<u>Age</u>	<u>Retirement rate per 1,000</u>	
	<u>Full Paid</u>	<u>Vol/Part-Paid</u>
40-44	100	0
45-50	100	200
51	100	150
52-58	100	100
59	100	200
60+	1,000	1,000

Note: A full paid member was assumed to be eligible for retirement after attaining age 40 with 20 years of service. It is also assumed that twice the normal number will retire in the first year of eligibility.

Note: Volunteer/Part Paid members were assumed to all retire by the time they had 25 years of service.

## **APPENDIX 1**

### **Discussion of GASB 67**

#### **Accounting Standard**

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67, "Financial Reporting for Pension Plans," (GASB 67) replaces Statements No. 25 and No. 50. GASB 67 establishes standards of financial reporting and specifies the required approach for measuring the pension liability of employers for benefits provided through the pension plan.

This discussion provides a summary of the information that is required to be disclosed under GASB 67. A number of these disclosure items are provided in this report as noted. However, certain information, such as notes regarding accounting policies and investments, is not included in this report, and your internal staff will be responsible for preparing that information to fully comply with this accounting standard.

#### **Financial Statements**

GASB 67 requires defined benefit pension plans to present two financial statements: a statement of fiduciary plan net position and a statement of changes in fiduciary plan net position. Based on the information that was provided to our firm, we compiled the Financial Statements that are included in this report as Exhibit 3.

#### **Notes to Financial Statements**

Paragraph 30 of GASB 67 is an extensive list of notes to the plan's financial statements that are required to provide additional disclosure. Many of these notes concern the plan provisions and the actuarial assumptions used in making the calculations under this standard. Those items are included as Exhibits 7 and 8 in this report.

Please note that several items mentioned in Paragraph 30 are beyond the scope of the included information. Your internal staff will be responsible for preparing those notes.

This report includes some notes that are actuarial in nature and are written in the format we understand is desired by GASB 67. These notes are included as Appendix 2 of this report. These are only selected notes and not intended to be a complete compilation of notes to the financial statements.

#### **Required Supplementary Information**

GASB 67 requires a 10-fiscal year history of various information about the pension liability. These schedules may be built prospectively since the presentation is not the same as under previous standards. These compilations can be found in Appendix 4 of this report. The money-weighted rate of return schedule is based on all transactions occurring at mid-year. The standard calls for a monthly calculation of the weighted return, but we do not have the data sufficient to make that calculation.

#### **Single Discount Rate**

Projected benefit payments are required to be discounted to actuarial present values using a single discount rate that reflects (1) a long-term expected rate of return on pension plan investments and (2) a tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date. The description and result of this calculation is found in Appendix 4.

#### **Valuation Date, Effective Date and Transition**

GASB 67 is effective for fiscal years beginning after June 15, 2013. The fiscal year under consideration is 2014 and the corresponding financial statement covers the fiscal year from January 1, 2014 to December 31, 2014. We understand that the plan fiscal year and the employer's fiscal year are the same. Therefore, the calculations included in this report are not projected and reflect the above stated fiscal year.

## APPENDIX 2

### Notes to the Financial Statements

#### Cost of Living Adjustment (COLA)

The board of trustees has the ability to make ad hoc cost of living adjustments (COLA) and other benefit improvements through a process that requires actuarial soundness and approval by the Pension Review Board. Therefore, in the opinion of the actuary, any increases are not substantively automatic, and no COLA is included in the determination of the Total Pension Liability.

#### Long-Term Expected Return on Plan Assets

The Long-Term Expected Rate of Return on pension plan investments was determined using a building block method in which best-estimate ranges of expected future real rates of return. The rates were built on a target allocation for all local police and fire pension funds, the target for an individual fund will vary within the guidelines of Arkansas law and regulation. The target allocation and the long-term expected rates of return are shown in the table below:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-term Expected Rate of Return</u>
Domestic Fixed Income	80%	5.0%
International Fixed Income	0%	
Domestic Equity	10%	7.8%
Foreign Equity	0%	
Cash	10%	2.0%
Total	100%	5.0%

#### Single Discount Rate

A single discount rate of 5.00% was used to measure the Total Pension Liability. This single discount rate was based on the expected rate of return on pension plan investments of 5.00%. Since the Net Position as projected with future income is sufficient to meet all benefit payments, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability.

Regarding the sensitivity of the Net Pension Liability to changes in the single discount rate, the following presents the plan's net pension liability, calculated using a single discount rate of 5.00%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1-percentage point lower or 1-percentage point higher:

	<u>1% Decrease</u>	<u>Current Single Rate Assumed</u>	<u>1% Increase</u>
Total Pension Liability	4.00% 1,392,842	5.00% 1,259,702	6.00% 1,148,019
Net Pension Liability	838,417	705,277	593,594

## APPENDIX 3

### **Required Supplementary Information**

GASB 67 requires a 10-fiscal year history of various information about the pension liability. These schedules may be built prospectively since the presentation is not the same as all previous years under previous standards. The four schedules are:

- Schedule of changes in the net pension liability.
- Schedule of the components of net pension liability along with related ratios.
- Comparison of actual employer contributions to the actuarially determined contributions based on the plan's funding policy.
- Schedule of the annual money-weighted rate of return on pension plan investments.

Please note that the money-weighted rate of return schedule is based on all transactions occurring at mid-year. The standard calls for a monthly calculation of the weighted return, but we do not have the data sufficient to make that calculation.

The actuarially determined contribution rate was not calculated in the fashion described historically. Therefore, that schedule will be completed prospectively.

The schedules follow this page.

Appendix 3 - Continued

Schedules of Required Supplementary Information  
Schedule of Changes in the Employers' Net Pension Liability and Related Ratios

Fiscal Year ending December 31,	<u>2014</u>	<u>2013</u>
<b>Total Pension Liability</b>		
Service Cost	0	0
Interest	64,359	62,910
Benefit Changes	0	0
Difference between Actual & Expected Experience	(40,628)	69,384
Assumption changes	0	0
Benefit Payments	(102,415)	(104,215)
Net Change in Total Pension Liability	<u>(78,684)</u>	<u>28,079</u>
Total Pension Liability - Beginning	1,338,386	1,310,307
Total Pension Liability - Ending	<u>1,259,702</u>	<u>1,338,386</u>
<b>Plan Fiduciary Net Position</b>		
Contributions - Employee	2,255	2,755
Contributions - Employer	73,029	28,717
Contributions - Other	12,350	21,539
Net Investment Income	28,336	70,016
Benefit Payments	(102,415)	(104,215)
Supplements	(12,350)	(9,250)
Administrative Expense	0	(2,000)
Reconciliation	0	0
Net Change in Plan Net Position	<u>1,205</u>	<u>7,562</u>
Plan Fiduciary Net Position - Beginning	553,220	545,658
Plan Fiduciary Net Position - Ending	<u>554,425</u>	<u>553,220</u>
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	44.01%	41.33%
Covered Employee Payroll	36,768	36,768
Net Pension Liability as a Percentage of Covered Employee Payroll	1918.18%	2135.46%

Appendix 3 - Continued

Schedules of Required Supplementary Information

Schedule of Net Pension Liability

FY ending <u>December 31,</u>		(TPL) Total Pension <u>Liability</u>	Plan Net Position <u>Position</u>	(NPL) Net Pension <u>Liability</u>	Net Position as % of <u>TPL</u>	Covered <u>Payroll</u>	NPL as % of <u>Payroll</u>
12/31/2005							
12/31/2006							
12/31/2007	a	1,313,229	831,829	481,400	63.34%	33,633	1431.33%
12/31/2008	a	1,279,041	643,179	635,862	50.29%	31,323	2030.02%
12/31/2009	b	1,491,593	664,052	827,541	44.52%	35,023	2362.85%
12/31/2010	b	1,416,367	644,442	771,925	45.50%	35,743	2159.65%
12/31/2011	b	1,390,913	565,712	825,201	40.67%	36,251	2276.35%
12/31/2012	b	1,310,307	545,658	764,649	41.64%	36,768	2079.66%
12/31/2013	c	1,338,386	553,220	785,166	41.33%	36,768	2135.46%
12/31/2014	c	1,259,702	554,425	705,277	44.01%	36,768	1918.18%
	a	1983 GAM	7.00%				
	b	1983 GAM	5.00%				
	c	1983 GAM	5.00%				

Schedule of Contributions

FY ending <u>December 31,</u>	Actuarially Determined <u>Contribution</u>	Actual <u>Contribution</u>	Contribution Deficiency ( <u>Excess</u> )	Covered <u>Payroll</u>	Contribution as % of <u>Payroll</u>
12/31/2005					
12/31/2006					
12/31/2007					
12/31/2008					
12/31/2009					
12/31/2010					
12/31/2011					
12/31/2012	194,075	26,850	167,225	36,768	527.84%
12/31/2013	180,235	28,717	151,518	36,768	490.20%
12/31/2014	185,855	73,029	112,826	36,768	505.48%

Key Assumptions for Actuarially Determined Contribution (ADC):

Cost Method	Entry Age Normal
Amortization Method	Level dollar, open
Remaining Amortization	5 years
Asset Valuation	Market Value
Investment Rate of Return	5.00%
Mortality	1983 Group Annuity Mortality

Note: The full 10 year schedules will be completed as information is available.



Schedules of Required Supplementary Information

Schedule of Investment Returns

<u>FY ending December 31.</u>	<u>Annual Money-weighted Rate of Return</u>
2005	5.83%
2006	7.02%
2007	5.65%
2008	-15.60%
2009	13.80%
2010	6.66%
2011	-2.17%
2012	7.69%
2013	13.61%
2014	5.25%

The amounts shown are net of investment expenses.

The actuary calculated these rates with the information that was provided. Therefore, these rates are annual money-weighted. Monthly money-weighted returns are not available.

## APPENDIX 4

### Calculation of the Single Discount Rate

GASB 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future.

The Plan Net Position (assets) in future years can then be projected and compared to the obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a "risk-free" rate is required.

The single discount rate is the single rate equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods.

The following tables were generated and are available upon request which provide the background for the development of the single discount rate:

- Projection of Benefit Payments and Actuarially Determined Contributions
- Projection of Contributions. Since this plan is frozen with no new participants, there are no expected contributions projected for new participants.
- Projection of Plan Fiduciary Net Position
- Present Values of Projected Benefit Payments

The Local Police and Fire Pension Funds do not have formal funding policies. They typically contribute the amounts required by law as outlined in Exhibit 7. For purposes of this projection, any millage amount is assumed to increase by 1% annually; the premium tax and additional allocation revenues, if any, are changed in proportion to the Net Pension Liability; all other sources are assumed to remain level.

These projections are generated under the guidelines of GASB 67 and the related implementation guide. They should be used solely to determine the single discount rate as defined in the GASB statements. Any implication beyond that determination is beyond the scope of this report.

**For the purpose of this valuation, the expected rate of return on pension plan investments is 5.00%; the municipal bond rate is 4.29%; since the Net Position as projected with future income are sufficient to meet benefit payments, the resulting single discount rate is 5.00%.**