

**ARKANSAS STATE HIGHWAY EMPLOYEES RETIREMENT SYSTEM**  
**ACTUARIAL VALUATION REPORT**  
JUNE 30, 2015

October 30, 2015

Board of Trustees  
Arkansas State Highway Employees  
Retirement System  
P.O. Box 2261  
Little Rock, AR 72203

Dear Members of the Board:

**Subject: Actuarial Valuation as of June 30, 2015**

We certify that the information contained in this report is accurate and fairly presents the actuarial position of the Arkansas State Highway Employees Retirement System (ASHERS) as of June 30, 2015.

All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion the results presented also comply with Arkansas statutes, and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries and both are experienced in performing valuations for large public retirement systems. Joseph Newton is an Enrolled Actuary and a Member of the American Academy of Actuaries.

### *Actuarial Valuation*

The primary purposes of the valuation report are to determine the adequacy of the current employer contribution rate, to describe the current financial condition of ASHERS, and to analyze changes in ASHERS' condition.

This report no longer provides information related to Governmental Accounting Standards Board (GASB) Statement No. 25. All of the information required by GASB is now provided in a stand-alone report entitled "GASB 67 Reporting and Disclosure Information", dated October 30, 2015 for the plan year ending June 30, 2015.

Valuations are prepared annually, as of June 30 of each year, the last day of ASHERS' plan and fiscal year.

### *Financing Objectives*

The member and employer contribution rates are established by statute. Currently, members contribute 6% of annual compensation, and the State contributes 12.90%. The rates are intended to be sufficient to pay ASHERS' normal cost and to amortize ASHERS' unfunded actuarial

accrued liability (UAAL) in level payments (as a percentage of payroll) over a period not in excess of 30 years from the valuation date. The amortization period for the current contribution rates is more than 30 years and, therefore, the financing objectives are currently not being met. A State contribution rate of 14.72% of payroll (in conjunction with a member rate of 6.00%) for fiscal year 2016 would produce a 30-year funding period.

### ***Progress Toward Realization of Financing Objectives***

As of June 30, 2015, the System's UAAL is \$198.7 million, and the current funding period is 48.4 years. The current contribution rate will not be able to amortize the unfunded liabilities of the system in a period that less than 30 years, and therefore does not meet the stated funding policy.

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) decreased from last year. The funded ratio at June 30, 2014 was 90.9%, while it is 87.8% as of June 30, 2015. This decrease is primarily due to the increase in liabilities associated with the change in actuarial assumptions.

### ***Benefit Provisions***

The actuarial valuation reflects the benefit and contribution provisions set forth in the Arkansas statutes. There was no legislation passed since prior valuation.

Section T of Table 17 summarizes the most recent plan changes which were effective in 2013. There are no ancillary benefits (such as cost-of-living increases to retirees) funded by a source independent of ASHERS.

### ***Assumptions and Methods***

In determining costs and liabilities, actuaries use assumptions about the future, such as rates of salary increase, probabilities of retirement, termination, death and disability, and an investment return assumption. The Board of Trustees adopts the assumptions used in the valuation, taking into account the actuary's recommendations. By accepting this report, the Board is adopting new assumptions effective as of June 30, 2015 based on the six-year experience study for the period ending June 30, 2014. These assumption changes are briefly summarized below:

- Changes to post-retirement mortality
- Changes to disabled mortality
- Changes to active mortality
- Changes to retirement rates for male members
- Changes to termination rates for all members
- Decrease wage inflation from 4.50% to 3.50%

- Changes as to how many members enter DROP and when
- Change in the payroll growth rate

In addition to the actuarial assumptions, the Board is adopting a change in the actuarial asset valuation method. While the overall methodology of the method is the same, the period over which excess or shortfalls in investment income is recognized is being shorted from 5 years to 4 years.

Actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the plan's actuary. We believe these assumptions are internally consistent and where applicable are reasonably based on the actual experience of ASHERS, and comply with Actuarial Standards of Practice.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. The actuarial calculations are intended to provide information for rational decision making.

Please see Table 18 for a summary of the current actuarial assumptions.

### ***Deferred Retirement Option Program (DROP)***

We have reviewed the DROP program to determine its overall impact on the liabilities of the System. Based on the current actuarial assumptions, the overall DROP program does not increase the cost of the benefits for new hires. For active employees, while overall the DROP program provides some additional costs to the System, Tier II of the DROP program does not add any additional costs.

### ***Data***

Member data for retired, active, and inactive participants was supplied as of June 30, 2015, by the staff of ASHERS. We have not subjected this data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data. Asset information was also supplied by the ASHERS staff.

Please see the following page for additional disclosures required by our Actuarial Standards of Practice.

We are available to answer any questions you may have and to provide additional details as may be appropriate.

Sincerely,  
Gabriel, Roeder, Smith & Company



Lewis Ward  
Consultant



Joseph P. Newton, FSA, MAAA, EA  
Senior Consultant

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## **Actuarial Standards of Practice Disclosure Statements**

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

This report should not be relied on for any purpose other than the purpose described above. Determinations of the financial results associated with the benefits described in this report in a manner other than the intended purpose may produce significantly different results.

The valuation was based upon information furnished by the System's staff, concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not otherwise audit the data. We are not responsible for the accuracy or completeness of the information provided by the System's staff.

The developed findings included in this report consider data or other information through June 30, 2015.

This is one of multiple documents comprising the actuarial report. The other document comprising the actuarial report is a PowerPoint presentation presented to the Board of Trustees following the publication of this report.

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## Executive Summary

The key results of the valuation of the Arkansas State Highway Employees Retirement System as of June 30, 2015, may be summarized as follows:

	<u>June 30, 2015</u>	<u>June 30, 2014</u>
	(1)	(2)
1. Assets		
Market Value	\$ 1,443.5 million	\$ 1,492.2 million
Actuarial Value	\$ 1,430.5 million	\$ 1,349.5 million
2. Members		
a. Actives not in DROP	3,338	3,191
b. Actives in DROP	333	333
c. Inactive, vested	217	217
d. Retirees and beneficiaries	3,244	3,162
3. Annualized salaries (excluding DROP participants)	\$140.5 million	\$137.3 million
4. Normal Cost rate	12.44%	12.54%
5. UAAL	\$198.7 million	\$135.5 million
6. Actuarial assets as % of actuarial accrued liability	87.8%	90.9%
7. Funding period	48.4 years	23.2 years
8. Employer contribution rate necessary to produce 30-year funding period	14.72%	12.08%
9. Estimated yield on actuarial assets for prior year	11.82%	11.46%
10. Estimated yield on market value for prior year	1.74%	18.12%
11. Member contributions for prior year	\$9.1 million	\$8.9 million
12. Member contribution rate for prior year	6.00%	6.00%
13. State contributions for prior year	\$19.1 million	\$18.6 million
14. State contribution rate for prior year	12.90%	12.90%
15. Benefit, refund, and administrative expense payments for prior year	\$102.3 million	\$95.5 million
16. Net Investment income for prior year	\$25.4 million	\$234.2 million

**Executive Summary  
(Continued)**

	June 30, 2015 (1)	June 30, 2014 (2)
16. Actuarial gains (losses)		
Assets	\$32.1 million	\$42.9 million
Liability experience	(20.8) million	(14.4) million
Legislative changes	0.0 million	0.0 million
Method change	18.1 million	(33.0) million
Assumption change	(91.9) million	0.0 million
Total	(\$62.6) million	(\$4.5) million

	UAAL (\$ Million) (1)	Funding Period (in years) (2)	Change in Funding Period (in years) (3)
17. Changes in funding period			
a. 2014 valuation	\$135.5	23.2	0.0
b. 2015 valuation with all expected experience	\$136.1	20.7	(2.5)
c. 2015 valuation with actual assets	\$104.1	13.7	(7.0)
d. 2015 valuation with actual assets and actual liabilities	\$124.9	18.0	4.3
e. 2015 valuation with actual assets and actual liabilities, after assumption changes and before method changes	\$216.8	83.4	65.4
f. 2015 valuation with actual assets and actual liabilities, after assumption changes and assumption changes	\$198.7	48.4	(35.0)

## **Introduction**

The results of the June 30, 2015, actuarial valuation of the Arkansas State Highway Employees Retirement System (ASHERS) performed by Gabriel, Roeder, Smith are summarized in this report. The purpose of any actuarial valuation is to provide an estimate of how well the employer is meeting its emerging pension liabilities.

In preparing this valuation, Gabriel, Roeder, Smith has relied on employee data and asset information provided by the staff of ASHERS. While not verifying the data at their source, Gabriel, Roeder, Smith has performed such tests for consistency and reasonableness as has been deemed necessary to be satisfied with the appropriateness of using the data supplied.

The valuation results are based on benefit provisions of the System as of June 30, 2015, as summarized in Table 17 of Section J. The determination of actuarial accrued liabilities and funded status is based on the actuarial assumptions recommended effective for the June 30, 2015, and as summarized in Table 17.

The results of the actuarial valuation are summarized in Section C. The period required to amortize the unfunded actuarial accrued liability is also discussed in Section C. Section D discusses the change in assets during the last year. Section E discusses actuarial gains and losses. The impact of changes is discussed in Section F. Cash flow history is shown in Section G, and historical comparisons and statistical summaries are provided by Section H. Section I provides the summary remarks regarding the actuarial valuation. Completing the report is Section J with the various supporting tables.

Section A contains an executive summary of the key valuation results. It is intended to provide one convenient place for those valuation items most often referenced during the year.

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## Funded Status

Table 3 in Section J details the normal cost of the Retirement System by its various components. This normal cost is developed based on the valuation method known as the Entry Age Normal (EAN) actuarial valuation method. This method gives an equitable allocation of contribution requirements among various generations of taxpayers, complying with the objective of Act 793 of 1977.

Table 3 details the normal cost by its various components. The total normal cost for the Retirement System is 12.44% of pay. Retirement benefits account for 8.87% of the 12.44% total normal cost. Benefits payable upon death, disability, and other terminations account for the remaining 3.57% of the total normal costs. The normal cost reflects the change in the actuarial assumptions. This assumptions change resulted in a decrease in the normal cost from 12.54% to 12.44%.

Table 1 calculates the unfunded actuarial accrued liability (UAAL). As shown in Item 10, the UAAL has increased from \$135.5 million to \$198.7 million. The largest reason for this increase was the change in the actuarial assumptions. Since the UAAL is positive, the System is deemed to be underfunded. The funding period required to amortize the UAAL is 48.4 years.

The funded ratio, the ratio of actuarial value of assets of the System to the actuarial accrued liability of the System, decreased from 90.9%, as of June 30, 2014, to 87.8%, as of June 30, 2015. The ratio of the market value of assets to the actuarial accrued liability decreased year over year from 100.5% to 88.6%.

As part of the experience study, the Board has decided to shorten the period over which deferred investment excess/(shortfalls) are recognized from 5 years to 4 years. Therefore, bases will be recognized 25% per year over a four-year period. The shortfall earnings for fiscal year 2015 was \$91.1 million while the excess earnings for fiscal years 2013 and 2014 were \$63.6 million and \$130.8 million. Therefore, \$(68.3) million (or 75% of the total 2015 shortfall earnings), \$65.4 million (or 50% of the total 2014 excess earnings) and \$15.9 million (or 25% of the total 2013 excess earnings) are still being deferred for recognition in future valuations.

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### **Change in Assets During the Year**

This section of the report provides an analysis of the change in the accounting assets during the year and estimates the yield on mean assets of the total System. Table 6 provides the change in the plan net assets.

Part II of Table 6 details the revenue of the year, distinguished between contributions in Item A and investment income in Item B. The total revenue for the year is shown in Item C.

In Part III of Table 6 the System's expenditures for the year are categorized into refunds (Item III.A), benefit payments (Item III. B), and administrative expenses (Item III.D), with the total for the year shown in Item III.E.

The net increase/(decrease) in market value of the System during the year is shown in Item IV as \$(48.8) million.

Item VI and Item VII of Table 6 use the increases and decreases of the prior sections of the table to produce an estimated yield based on market value and on actuarial value.

The estimated yield is derived by applying the traditional yield formula of  $2I/(A + B - I)$ . As indicated by Item VII.D. in Table 6, the estimated yield on actuarial assets is 11.82%. The estimated yield on mean market assets is 1.74%.

As shown on Table 4-A, the expected investment income for fiscal year 2015 was \$116.4 million. The actual investment income (net of all expenses) during fiscal year 2015 was \$25.3 million. Therefore, the shortfall in investment income for the fiscal year was \$91.1 million. 25% of this shortfall will be recognized in this valuation and the remainder will be recognized over the next three valuations.

### **Actuarial Gains and Losses**

Section C noted that the unfunded actuarial accrued liability (UAAL) has increased from \$135.5 million in 2014 to \$198.7 million in 2015. The purpose of this section is to determine the source of the actuarial losses during the year that have caused the UAAL to increase.

Table 8 develops the expected value of actuarial assets for this valuation, based on the investment return assumption that was in effect for the 2014/2015 plan year, namely, 8.0%. It compares the expected value with the actual value of actuarial assets as of the end of the year to determine the asset gain (loss) for the year.

As shown in Item 6 of Table 8, the expected value of actuarial assets as of June 30, 2015, is \$1,380.4 million. As shown in Item 7, the actual value of actuarial assets (prior to the asset method change) as of the valuation date is \$1,430.5 million. Thus the asset gain for the year is the difference between the actual value and the expected value, or \$32.1 million (as shown in Item 8).

In addition, the change in the asset method increased the actuarial value of assets by \$18.1 million.

Table 9 determines that the overall actuarial loss for the 2014/2015 plan year is \$62.6 million. The asset gain for the year is \$32.1 million, and the asset method change reduced the UAAL by \$18.1 million. This means that the total liability loss for the year is \$112.7 million. This is comprised of a \$91.9 million loss due to assumptions changes and a \$20.8 million liability experience loss, which is 1.28% of the actuarial accrued liability.

### **Impact of Changes**

Using the actuarial gains and losses developed in Table 9, it is possible in Table 10 to trace the source of the changes in the funding period between June 30, 2014 and June 30, 2015.

The funding period as of June 30, 2014, was 23.2 years. Item 2 of Table 10 indicates that if experience had been exactly as anticipated (i.e., no actuarial gains or losses on either the asset or the liability side, but using actual payroll) the UAAL would have been \$136.1 million and the funding period would have decreased to 20.7 years.

The asset gain of \$32.1 million decreased the above expected UAAL to \$104.1 million, and decreased the funding period to 13.7 years. The liability experience loss of \$20.8 million increased the UAAL to \$124.9 million, which increased the funding period to 18.0 years. The changes to the actuarial assumptions increased the UAAL to \$216.8 million (a \$91.9 million increase), which increased the funding period to 83.4 years. Finally, the change in asset method decreased the UAAL to \$198.7 million, which decreased the funding period to 48.4 years.

### **History of Cash Flow**

Table 11 provides a history of external cash flow. External cash flow is defined as total contributions during the year, less benefit payments, refunds, window benefits, and expenses.

Note that the calculation of external cash flow specifically excludes investment income since investment income is generated by the System. If external cash flow is positive, all expenditure obligations can be met by external funds, and all income generated by the System's investments is available for re-investment.

On the other hand, when external cash flow becomes negative, some portion of investment income must be used to make benefit payments instead of being re-invested. The more negative this measure, the more emphasis asset allocation must place on the production of current income as opposed to long-term asset growth.

External cash flow became negative for the first time from July 1, 1994 to June 30, 1995 and has slowly grown more negative since that time. This is the expected consequence of a mature pension plan. The reason we pre-fund the pension plans is so that the assets (and income on those assets) can be used to meet benefit payments obligations. Currently, the contributions and investment income have been sufficient to cover external fund needs. As the DROP program matures, its cash flow impact will be an item to watch in this table.

### **Historical Comparisons and Statistical Summaries**

Tables 13 through 17 summarize statistical information for active and retired members of Arkansas State Highway Employees Retirement System as of June 30, 2014. The number of participants in DROP remained unchanged at 333 as of the valuation date (See Table 12). There was an increase in the amount of benefit payments during the fiscal year. This increase in benefit payments contributed to an increase in the negative external cash flow of the System.

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## Summary and Closing Comments

Like most retirement systems with June 30 measurement dates, the System earned less than its assumed rate of return on investments for the 2015 fiscal year, when measured on a market value basis. Arkansas State Highway Employees Retirement System (ASHERS) 2015 fiscal year return of 1.74% was 6.26% below its investment return assumption.

After considering all aspects of the Retirement System, it is our opinion that as of the valuation date the rate of contribution required under the Law will be sufficient to fund the benefit payments which are specified in the Law. However, as demonstrated by this valuation, the funding period is very volatile due to the ratio of payroll to the assets and liabilities of the system. Because the funding period is more than 30 years, the State law banning benefit enhancements is currently applicable.

The major changes in this valuation were due to the adoption of new actuarial assumptions, in particular a new mortality assumption with a generational approach to mortality improvement.

The 1998 valuation was the first ASHERS valuation to include members participating in DROP. As of June 30, 2015, there are 333 active employees who are DROP participants with an average balance per participant of \$119,535.

As noted in Section D, general market conditions produced an investment loss on a market value basis when compared with the 8% assumption during the 2015 plan year. As shown on Table 8, the System still experienced a gain on the actuarial value of assets due to the partial recognition of the investment gain from fiscal years 2013 and 2014 (the actuarial value of assets was marked to market as of 06/30/2012). However, with the shortfall in 2015, (as shown on Table 4-B) the actuarial asset valuation method is now deferring only \$12.9 million in net investment gains compared with \$142.8 million in the prior valuation.

The System remained in an unfunded position this year. The current funding deficit is \$198.7 million. While the funded ratio of the System at 87.8% is still strong, the funding period is significantly longer than we would like it to be. Furthermore, as the funding period gets larger, smaller changes in the UAAL cause larger changes in the funding period. So even a small increase in the UAAL could cause a significant increase in the funding period.

**Summary and Closing Comments  
(Continued)**

Given the large increase in the funding period and the reduction in the amount of deferred investment gains to be recognized in the future, we believe it would be appropriate for the Board of Trustees to consider changes to the benefit structures and/or contribution structures of the System. We have worked with many state-wide systems in making modifications to their structures. It is always desirable to consider not just the impact on the retirement systems but also the impact on the workforce and the employer's workforce needs when making changes to a retirement system. We stand ready to assist you in any deliberations.

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Summary of Cost Items

	Valuation as of June 30, 2015 <u>(1)</u>	Valuation as of June 30, 2014 <u>(2)</u>
1. Participants		
a. Active members not in DROP	3,338	3,191
b. Active members in DROP	333	333
c. Inactive members with deferred benefits	217	217
d. Retired members and beneficiaries	<u>3,244</u>	<u>3,162</u>
e. Total	7,132	6,903
2. Annualized salaries (excludes DROP participants)	\$ 140,544,393	\$ 137,261,720
3. Averages for active members (excludes DROP participants)		
a. Age	43.6	44.3
b. Service	9.9	10.7
c. Pay	\$ 42,104	\$ 43,015
4. State normal cost	12.44%	12.54%
5. Present value of future benefits		
a. Retired members	\$ 1,038,576,896	\$ 902,048,214
b. Active members	711,917,248	714,830,662
c. Vested terminated members	9,843,578	8,424,628
d. Non-vested terminated members	<u>690,297</u>	<u>583,752</u>
e. Total	\$ 1,761,028,019	\$ 1,625,887,256
6. Present value of future normal costs	\$ 126,481,471	\$ 135,231,572
7. Present value of Tier II DROP contributions	\$ 5,270,461	\$ 5,719,626
8. Actuarial accrued liability (Item 5.e. - Item 6 - Item 7)	\$ 1,629,276,087	\$ 1,484,936,058
9. Actuarial assets	\$ 1,430,527,926	\$ 1,349,452,452
10. Unfunded actuarial accrued liability (Item 8 - Item 9)	\$ 198,748,161	\$ 135,483,606
11. Employer contribution rate	12.90%	12.90%
12. Funding period	48.4 years	23.2 years
13. Estimated yield on assets		
a. Based on Market Value	1.74%	18.12%
b. Based on Actuarial Value	11.82%	11.46%
14. Relative size of unfunded actuarial accrued liability		
a. As % of actuarial assets	13.9%	10.0%
b. As % of covered payroll	141.4%	98.7%
c. As % of total present value of future benefits	11.3%	8.3%

**Actuarial Present Value of Future Benefits**

	June 30, 2015	June 30, 2014
	(1)	(2)
1. Active members		
a. Retirement benefits	\$ 639,461,394	\$ 642,552,719
b. Deferred termination benefits	20,674,407	18,834,812
c. Refunds	1,186,586	899,421
d. Death benefits	7,560,060	15,561,133
e. Disability benefits	43,034,801	36,982,577
f. Total	<u>\$ 711,917,248</u>	<u>\$ 714,830,662</u>
2. Retired members		
a. Service retirements	\$ 906,812,132	\$ 779,218,033
b. Disability retirements	72,366,196	61,665,357
c. Beneficiaries	59,398,568	61,164,824
d. Window health insurance subsidy	-	-
e. Total	<u>\$ 1,038,576,896</u>	<u>\$ 902,048,214</u>
3. Inactive members		
a. Vested terminations	\$ 9,843,578	\$8,424,628
b. Non-vested terminations	690,297	583,752
c. Total	<u>\$ 10,533,875</u>	<u>\$9,008,380</u>
4. Total actuarial present value of future benefits	<u>\$ 1,761,028,019</u>	<u>\$ 1,625,887,256</u>

**Analysis of Normal Cost by Component**

Benefit Component (1)	Cost as % of Pay	
	2015 (2)	2014 (3)
1. Retirement benefit	8.87%	9.15%
2. Disability benefit	1.75%	1.52%
3. Death benefit	0.18%	0.36%
4. Vesting benefit	1.08%	1.00%
5. Refund of contributions	<u>0.56%</u>	<u>0.51%</u>
6. Gross normal cost (State normal cost)	12.44%	12.54%

Note: change in the normal cost as a percent of payroll due to switch from new entrant profile to individual normal cost method.

**Calculation of Excess Investment Income  
For Actuarial Value of Assets**

Item (1)	Plan Year Ending June 30				
	2015 (2)	2014 (3)	2013 (4)	2012 (5)	2011 (6)
1. Net investment income for year	25,383,457	234,208,606	159,592,223	(11,817,056)	298,267,461
2. Expenses and fees for year	91,542	43,282	163,298	64,122	61,396
3. Actual net investment income based on market value of assets (Item 1 - Item 2)	25,291,915	234,165,324	159,428,925	(11,881,178)	298,206,065
4. Market value of assets (beginning of year)	1,492,232,721	1,326,022,360	1,230,012,388	1,298,501,306	1,052,235,399
5. Contributions during year					
a. Employee	9,138,451	8,884,829	8,621,381	8,580,297	8,485,669
b. State	19,059,012	18,614,507	18,053,378	17,936,005	17,661,269
c. Other	-	-	37,910	4,773	427,245
d. Total	28,197,463	27,499,336	26,712,669	26,521,075	26,574,183
6. Benefits paid during year	100,328,585	93,712,721	89,037,007	82,216,303	77,553,673
7. Refunds paid during year	1,917,221	1,741,876	1,084,539	912,512	960,668
8. Window insurance paid during year	-	-	-	-	-
9. Expected net investment income at 8.0%					
a. Market value of assets (beginning of year)	119,378,618	106,081,789	98,400,991	103,880,104	84,178,832
b. Contributions	1,127,899	1,099,973	1,068,507	1,060,843	1,062,967
c. Benefits	(4,013,143)	(3,748,509)	(3,561,480)	(3,288,652)	(3,102,147)
d. Refunds	(76,689)	(69,675)	(43,382)	(36,500)	(38,427)
e. Window insurance	-	-	-	-	-
f. Total	116,416,685	103,363,578	95,864,636	101,615,795	82,101,225
10. Excess investment income for year (Item 3 - Item 9f)	(91,124,770)	130,801,746	63,564,289	(113,496,973)	216,104,840

**Development of Actuarial Value of Assets**

Item (1)	2015 (2)	2014 (3)
1. Excess/(Shortfall) of invested income for current and previous years		
a. Current year	\$ (91,124,770)	\$ 130,801,746
b. Current year - 1	130,801,746	63,564,289
c. Current year - 2*	63,564,289	N/A
d. Current year - 3*	N/A	N/A
e. Current year - 4*	N/A	N/A
f. Total	\$ 103,241,265	\$ 194,366,035
2. Deferral of excess/(shortfall) of invested income for current and previous years		
a. Current year (75%**)	\$ (68,343,578)	\$ 104,641,397
b. Current year - 1 (50%**)	65,400,873	38,138,573
c. Current year - 2 (25%**)*	15,891,072	N/A
d. Current year - 3 (0%**)*	N/A	N/A
e. Current year - 4 (0%)*	N/A	N/A
f. Total deferred	\$ 12,948,367	\$ 142,779,970
3. Market value of plan assets (end of year)	\$ 1,443,476,293	\$ 1,492,232,422
4. Preliminary AVA (end of year) (Item 3 - Item 2f)	\$ 1,430,527,926	\$ 1,349,452,452
5. AVA corridor		
a. 80% of MVA, EOY	\$ 1,154,781,034	\$ 1,193,785,938
b. 120% of MVA, EOY	\$ 1,732,171,552	\$ 1,790,678,906
6. Actuarial value of plan net assets	\$ 1,430,527,926	\$ 1,349,452,452
7. Actuaril value of assets prior to method change (Table 8 Item 7)	\$ 1,412,469,345	N/A
8. Increase/(Decrease) in actuarial value of assets due to method change	\$ 18,058,581	N/A

\* Actuaial value of assets was marked to market June 30, 2012  
Prior years' bases set to zeros

\*\* Beginning with 2015 valuation, Cost method has been changed from  
5-year period smoothing to 4-year period smoothing.

**Development of Years to Fund Unfunded Actuarial Liability**

	June 30, 2015 (1)	June 30, 2014 (2)
<b>A. Basic Data</b>		
1. Annualized salaries (excludes DROP participants)	\$ 140,544,393	\$ 137,261,720
2. Projected payroll for upcoming fiscal year	\$ 152,213,166	\$ 146,859,028
3. State normal cost	12.44%	12.54%
4. Contribution rate for funding unfunded accrued liability		
a. Total contribution rate	18.90%	18.90%
b. Less normal cost rate	(12.44%)	(12.54%)
c. Total contribution rate available	6.46%	6.36%
5. Actuarial accrued liability for active members		
a. Present value of future benefits for active members	\$ 711,917,248	\$ 714,830,662
b. Less present value future normal cost	(126,481,471)	(135,231,572)
c. Less present value of Tier II DROP contributions	(5,270,461)	(5,719,626)
d. Actuarial accrued liability	\$ 580,165,316	\$ 573,879,464
<b>B. Development of Funding Period</b>		
6. Total actuarial accrued liability		
a. Present value of benefits currently being paid	\$ 1,038,576,896	\$ 902,048,214
b. Actuarial accrued liability for active members (Item 5d)	580,165,316	573,879,464
c. Present value of deferred vested benefits	9,843,578	8,424,628
d. Present value of non-vested benefits	690,297	583,752
e. Other liabilities	0	0
f. Total	\$ 1,629,276,087	\$ 1,484,936,058
7. Current assets	\$ 1,430,527,926	\$ 1,349,452,452
8. Unfunded actuarial accrued liability (Item 6f - Item 7)	\$ 198,748,161	\$ 135,483,606
9. Amount of contribution available to fund unfunded actuarial accrued liability (Item 4c x Item 2)	\$ 10,632,475	\$ 9,343,768
10. Years to fund unfunded actuarial accrued liability based on 3.00% payroll growth	48.4 years	23.2 years

**Change in Plan Net Assets**

	Year Ending as of	
	June 30, 2015 (1)	June 30, 2014 (2)
I. Plan Net Assets, beginning of year		
A. Value reported in prior valuation	\$ 1,492,232,422	\$ 1,326,032,436
B. Prior period adjustments	299	(10,076)
C. Revised value	<u>\$ 1,492,232,721</u>	<u>\$ 1,326,022,360</u>
II. Additions		
A. Contributions		
1. Employee Contributions	\$ 9,138,451	\$ 8,884,829
2. State Contributions	19,059,012	18,614,507
3. Reinstatements and Other		
a. Principal	-	-
b. Interest	-	-
c. Other	-	-
d. Total	<u>-</u>	<u>-</u>
4. Total Contributions	<u>\$ 28,197,463</u>	<u>\$ 27,499,336</u>
B. Investment Income		
1. Interest	\$ 7,821,372	\$ 6,881,099
2. Dividends	15,109,023	15,470,487
3. Net Gains	10,245,461	218,463,774
4. Subtotal	<u>33,175,856</u>	<u>240,815,360</u>
5. less Investment Expenses	<u>(7,792,398)</u>	<u>(6,606,753)</u>
6. Net Investment Income	<u>\$ 25,383,457</u>	<u>\$ 234,208,606</u>
C. Total Additions	<u>\$ 53,580,920</u>	<u>\$ 261,707,942</u>
III. Deductions		
A. Refunds	\$ 1,917,221	\$ 1,741,876
B. Benefit Payments	100,328,585	93,712,721
C. Other	-	1
D. Administrative Expenses	91,542	43,282
E. Total Deductions	<u>\$ 102,337,348</u>	<u>\$ 95,497,880</u>
IV. Net Change	\$ (48,756,428)	\$ 166,210,062
V. Plan Net Assets, end of year	\$ 1,443,476,293	\$ 1,492,232,422
VI. Market value yield		
A. Beginning of year net market assets	\$ 1,492,232,721	\$ 1,326,022,360
B. Investment income net of all expenses	\$ 25,291,915	\$ 234,165,324
C. End of year market assets	\$ 1,443,476,293	\$ 1,492,232,422
D. Estimated market value yield	1.74%	18.12%
VII. Actuarial value yield		
A. Beginning of year actuarial assets	\$ 1,349,452,452	\$ 1,275,181,005
B. Investment income net of all expenses	\$ 155,123,817	\$ 142,226,709
C. End of year actuarial assets	\$ 1,430,527,926	\$ 1,349,452,452
D. Estimated actuarial value yield	11.82%	11.46%

**Plan Net Assets**  
**(Assets at Fair Value)**

ASSET BALANCES	June 30, 2015 (1)	June 30, 2014 (2)
1. Current assets		
a. Cash in State Treasury	\$ 306,337	\$ 176,865
b. Cash in bank	18,228	1
c. Accounts receivable		
i. Member contributions	432,166	360,115
ii. State contributions	863,727	718,778
iii. Miscellaneous	3,702,771	2,373
iv. DROP plan	-	-
d. Interest and dividends receivable	1,576,207	3,687,868
e. Short-term investments	<u>122,881,838</u>	<u>109,357,866</u>
f. Total current assets	<u>\$ 129,781,274</u>	<u>\$ 114,303,866</u>
2. Long-term investments		
a. U.S. Government agency obligations	\$ 33,910,333	\$ 13,943,560
b. Corporate bonds	163,274,921	206,914,906
c. Common stock	<u>1,117,650,310</u>	<u>1,157,104,620</u>
d. Total long-term investments	<u>\$ 1,314,835,564</u>	<u>\$ 1,377,963,086</u>
3. Total assets	<u>\$ 1,444,616,838</u>	<u>\$ 1,492,266,952</u>
4. Liabilities	(1,140,545)	(34,530)
5. Total market value of net assets available for benefits (item 3 + item 4)	<u>\$ 1,443,476,293</u>	<u>\$ 1,492,232,422</u>
6. Allocation of invested assets, including cash		
a. Invested cash	8.6%	7.4%
b. U.S. Government agency obligations	2.4%	0.9%
c. Corporate bonds	11.4%	13.9%
d. Common stock	<u>77.6%</u>	<u>77.8%</u>
e. Total investments	<u>100.0%</u>	<u>100.0%</u>

**Actual Versus Expected Actuarial Assets**

Item (1)	Valuation as of	
	June 30, 2015 (2)	June 30, 2014 (3)
1. Actuarial assets, beginning of year	\$ 1,349,452,452	\$ 1,275,181,005
2. Total contributions during year	28,197,463	27,499,336
3. Benefits paid during year	(100,328,585)	(93,712,721)
4. Refunds paid during year	(1,917,221)	(1,741,876)
5. Assumed net investment income at 8.0%		
a. Beginning of year assets	107,956,196	102,014,480
b. Contributions	1,127,899	1,099,973
c. Benefits	(4,013,143)	(3,748,509)
d. Refunds	(76,689)	(69,675)
e. Total	\$ 104,994,263	\$ 99,296,269
6. Expected actuarial assets, end of year (Sum of Items 1 through 5)	\$ 1,380,398,372	\$ 1,306,522,013
7. Actuarial assets, end of year prior to asset method change	\$ 1,412,469,345	\$ 1,349,452,452
8. Asset gain/(loss) for year (Item 7 - Item 6)	\$ 32,070,973	\$ 42,930,439
9. Asset gain/(loss) as percentage of end of year assets (Item 8 / Item 7)	2.27%	3.18%
10. Final actuarial value of assets after method change	\$ 1,430,527,926	N/A

**Actuarial Gain or Loss for the Year**

Item (1)	Valuation as of	
	June 30, 2015 (2)	June 30, 2014 (3)
A. Calculation of total actuarial gain or loss		
1. Unfunded actuarial accrued liability (UAAL), previous year	\$ 135,483,606	\$ 129,305,105
2. Normal cost for the year	18,412,588	19,202,119
3. Contributions for the year	(28,197,463)	(27,499,336)
4. Interest at 8.0%		
a. On UAAL	\$ 10,838,688	\$ 10,344,408
b. On normal cost	736,504	768,085
c. On contributions	(1,127,899)	(1,099,973)
d. Total	\$ 10,447,293	\$ 10,012,520
5. Expected UAAL (sum of Items 1 - 4)	\$ 136,146,024	\$ 131,020,408
6. Actual UAAL	\$ 198,748,161	\$ 135,483,606
7. Gain (loss) for the year (Item 5 - Item 6)	\$ (62,602,137)	\$ (4,463,198)
B. Source of gains and losses		
8. a. Asset gain (loss) for the year (Table 8)	\$ 32,070,973	\$ 42,930,439
b. Gain (loss) from change in assumptions	(91,940,822)	0
c. Gain (loss) from change in methods	18,058,581	(33,039,434)
d. Gain (loss) from Legislative changes	0	0
9. Asset gain (loss) as percentage of actuarial assets	2.24%	3.18%
10. Total actuarial accrued liability gain (loss) for the year (Item 7 - Item 8a - Item 8b - Item 8c)	\$ (20,790,869)	\$ (14,354,203)
11. Analysis of actuarial accrued liability gain (loss)		
a. Assumption changes	(91,940,822)	0
b. Method changes	0	(33,039,434)
c. Legislative changes	0	0
d. Experience liability gain (loss) for the year	(20,790,869)	(14,354,203)
e. Total actuarial accrued liability gain (loss)	\$ (112,731,691)	\$ (47,393,637)
12. Experience liability gain (loss) as percentage of total actuarial liability (Item 11d as % of total actuarial accrued liability \$1,484,936,058 as of June 30, 2014, and \$1,629,276,087 as of June 30, 2015)	(1.28%)	(0.97%)

**Analysis of Change in Funding Period**

Basis (1)	Unfunded Actuarial Accrued Liability (\$ millions) (2)	Normal Cost (3)	Funding Period (in years) (4)	Attributable Change in Funding Period (5)
1. Valuation as of June 30, 2014	\$135.484	12.54%	23.2	0.0
2. Valuation as of June 30, 2015, using expected assets and expected liabilities	\$136.146	12.54%	20.7	(2.5)
3. Valuation as of June 30, 2015, using actual assets and expected liabilities (asset gain/loss)	\$104.075	12.54%	13.7	(7.0)
4. Valuation as of June 30, 2015, using actual assets and actual liabilities, before assumption and method changes	\$124.866	12.54%	18.0	4.3
5. Valuation as of June 30, 2015, using actual assets and actual liabilities, after assumption changes but before method changes	\$216.807	12.44%	83.4	65.4
6. Valuation as of June 30, 2015, using actual assets and actual liabilities, after assumption and after method changes	\$198.748	12.44%	48.4	(35.0)

Note: Expected assets are based on actual contribution made for 2014/2015 plan year.

History of Cash Flow

Year Ending June 30, (1)	Contributions for the Year <sup>1</sup> (2)	Expenditures During the Year				Total (6)	External Cash Flow for the Year <sup>3</sup> (7)	Market Value of Assets (8)	External Cash Flow as Percent of Market Value (9)
		Benefit Payments (3)	Refund of Contributions (4)	Expenses <sup>2</sup> (5)					
1997	21,897,263	(23,593,197)	(902,144)	(1,274,552)	(25,770,613)	(3,873,350)	629,060,314	(0.6%)	
1998	20,633,572	(26,568,398)	(1,136,396)	(1,443,527)	(29,148,321)	(8,514,749)	758,971,958	(1.1%)	
1999	21,460,290	(27,868,587)	(1,218,372)	(1,776,862)	(30,863,821)	(9,403,531)	870,332,321	(1.1%)	
2000	20,635,998	(32,437,078)	(860,532)	(2,231,766)	(35,529,375)	(14,893,377)	1,020,171,033	(1.5%)	
2001	21,319,262	(35,505,451)	(1,134,443)	(3,179,023)	(39,818,918)	(18,499,656)	998,671,310	(1.9%)	
2002	23,395,271	(40,606,836)	(658,917)	(3,545,184)	(44,810,937)	(21,415,666)	875,304,832	(2.4%)	
2003	23,656,596	(48,128,153)	(907,236)	(4,056,463)	(53,091,851)	(29,435,255)	891,122,027	(3.3%)	
2004	23,623,171	(51,764,755)	(604,562)	(3,736,002)	(56,105,319)	(32,482,148)	981,026,764	(3.3%)	
2005	23,814,179	(53,952,761)	(974,389)	(4,157,579)	(59,084,730)	(35,270,551)	1,041,898,315	(3.4%)	
2006	23,956,626	(57,570,547)	(790,218)	(4,295,209)	(62,655,974)	(38,699,348)	1,098,788,670	(3.5%)	
2007	23,742,542	(62,317,277)	(1,243,841)	(4,458,889)	(68,020,007)	(44,277,465)	1,186,151,377	(3.7%)	
2008	24,286,799	(65,483,982)	(1,154,502)	(4,584,201)	(71,222,685)	(46,935,886)	1,242,354,294	(3.8%)	
2009	24,730,528	(69,635,808)	(861,725)	(4,726,929)	(75,224,462)	(50,493,934)	994,466,871	(5.1%)	
2010	26,691,696	(73,650,896)	(803,288)	(4,176,401)	(78,630,585)	(51,938,889)	1,052,235,399	(4.9%)	
2011	26,574,184	(77,553,673)	(960,668)	(5,253,653)	(83,767,994)	(57,193,810)	1,298,501,306	(4.4%)	
2012	26,521,075	(82,216,303)	(912,512)	(5,861,735)	(88,990,550)	(62,469,475)	1,230,012,388	(5.1%)	
2013	26,712,669	(89,037,007)	(1,084,539)	(6,542,055)	(96,663,601)	(69,950,932)	1,326,032,436	(5.3%)	
2014	27,499,336	(93,712,721)	(1,741,876)	(6,650,036)	(102,104,633)	(74,605,297)	1,492,232,422	(5.0%)	
2015	28,197,463	(100,328,585)	(1,917,221)	(7,883,940)	(110,129,746)	(81,932,283)	1,443,476,293	(5.7%)	

<sup>1</sup> Column (2) includes employee and employer contributions, as well as any account reinstatement receipts during the year

<sup>2</sup> Column (5) includes both administrative and investment expenses

<sup>3</sup> Column (7) = Column (2) + Column (6)

**Statistical Information**

	June 30, 2015 (1)	June 30, 2014 (2)
<b>A. <u>Number</u></b>		
1. Active members not in DROP		
a. Male members	2,682	2,548
b. Female members	656	643
c. Total active members	3,338	3,191
2. Inactive vested members	217	217
<b>B. <u>Annualized Salaries For Active Members Not in DROP</u></b>		
1. Male members	\$ 113,321,862	\$ 110,217,568
2. Female members	27,222,532	27,044,152
3. Total active members	\$ 140,544,394	\$ 137,261,720
4. Average annual salary	\$ 42,104	\$ 43,015
<b>C. <u>Accumulated Member Contributions</u></b>	\$ 129,353,920	\$ 128,789,673
<b>D. <u>Active Members in DROP</u></b>		
1. Number	333	333
2. DROP Balance	\$ 39,805,243	\$ 45,772,073
3. Average DROP Balance	\$ 119,535	\$ 137,454
<b>E. <u>Persons Receiving Benefits</u></b>		
1. Number		
a. Life annuities	2,340	2,268
b. Disability annuities	391	390
c. Survivor annuities	513	504
d. Total persons receiving benefits	3,244	3,162
2. Annual annuities*		
a. Life annuities	\$ 74,834,667	\$ 70,889,090
b. Disability annuities	6,422,307	6,313,530
c. Survivor annuities	7,343,000	6,970,035
d. Total persons receiving benefits	\$ 88,599,974	\$ 84,172,655

\* Annual annuities before adding July 1st COLA

Age and Service Distribution

Attained Age	Years of Credited Service												Number of Employees	Total Annual Salary	Average Annual Salary	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over				
Under 20	8	1	0	0	0	0	0	0	0	0	0	0	0	9	\$ 172,777	\$ 19,197
20-24	71	64	31	9	4	9	0	0	0	0	0	0	0	188	5,153,861	27,414
25-29	69	53	45	26	38	54	4	0	0	0	0	0	0	289	10,393,366	35,963
30-34	52	39	36	27	18	84	72	6	0	0	0	0	0	334	13,743,185	41,147
35-39	51	26	22	11	22	95	120	50	0	0	0	0	0	397	17,209,453	43,349
40-44	34	29	24	19	21	87	80	75	37	5	0	0	0	411	18,720,239	45,548
45-49	39	20	26	24	16	87	92	59	68	57	0	0	0	488	22,426,505	45,956
50-54	33	21	27	22	30	78	89	89	75	119	1	0	0	584	27,053,830	46,325
55-59	26	23	19	23	17	75	78	50	51	57	0	1	0	420	17,323,267	41,246
60-64	8	14	6	9	13	49	60	21	5	7	1	0	0	193	7,479,248	38,753
65 & Up	3	1	0	1	5	9	4	1	0	0	0	1	0	25	868,663	34,747
Total	394	291	236	171	184	627	599	351	236	245	2	2	0	3,338	\$ 140,544,394	\$ 42,104

Note: Excludes DROP participants.

**Distribution of Service and  
 Current Rate of Compensation**

Completed Years of Service	Number of Employed Participants	Total Annual Plan Compensation	Total Average Plan Compensation
(1)	(2)	(3)	(4)
0	394	\$ 11,082,376	\$ 28,128
1	291	8,531,235	29,317
2	236	7,997,937	33,890
3	171	6,260,713	36,612
4	184	6,839,745	37,173
5-9	627	25,063,386	39,974
10-14	599	27,949,512	46,660
15-19	351	17,552,993	50,009
20-24	236	13,365,192	56,632
25-29	245	15,669,303	63,956
30-34	2	100,296	50,148
35 & up	2	131,705	65,853
Total	3,338	\$ 140,544,393	\$ 42,104

Note: Excludes DROP participants.

**Distribution of Retired Members by  
 Years Since Retirement as of June 30, 2015**

**SERVICE  
 RETIRED**

Years Since Retirement	Member		
	Number	Total Benefit	Average Benefit
(1)	(2)	(3)	(4)
0	77	\$ 2,078,486	\$ 26,993
1	143	3,926,466	27,458
2	159	4,288,693	26,973
3	140	4,286,270	30,616
4	128	3,993,950	31,203
5-9	530	16,415,361	30,972
10-14	504	17,213,983	34,155
15-19	333	11,207,422	33,656
20-24	165	5,462,482	33,106
25-29	129	5,026,735	38,967
30-34	26	817,201	31,431
35 & up	6	117,619	19,603
<b>Total</b>	<b>2,340</b>	<b>\$ 74,834,667</b>	<b>\$ 31,981</b>

\* Annual annuities before adding COLA

**Distribution of Retired Members by  
 Years Since Retirement as of June 30, 2015**

**DISABLED  
 RETIRED**

Years Since Retirement	Member		
	Number	Total Benefit	Average Benefit
(1)	(2)	(3)	(4)
0	4	\$ 37,925	\$ 9,481
1	28	363,195	12,971
2	23	335,287	14,578
3	19	228,570	12,030
4	20	284,923	14,246
5-9	92	1,315,260	14,296
10-14	79	1,253,800	15,871
15-19	69	1,420,494	20,587
20-24	36	814,831	22,634
25-29	9	173,448	19,272
30-34	5	110,616	22,123
35 & up	7	83,958	11,994
<b>Total</b>	<b>391</b>	<b>\$ 6,422,307</b>	<b>\$ 16,425</b>

\* Annual annuities before adding COLA

**Distribution of Retired Members by  
 Years Since Retirement as of June 30, 2015**

**BENEFICIARIES**

Years Since Retirement	Member		
	Number	Total Benefit	Average Benefit
(1)	(2)	(3)	(4)
0	20	\$ 280,708	\$ 14,035
1	32	505,875	15,809
2	54	816,839	15,127
3	30	435,774	14,526
4	28	456,674	16,310
5-9	127	1,960,544	15,437
10-14	136	1,891,907	13,911
15-19	21	223,096	10,624
20-24	22	257,246	11,693
25-29	22	272,225	12,374
30-34	14	170,795	12,200
35 & up	7	71,318	10,188
<b>Total</b>	<b>513</b>	<b>\$ 7,343,000</b>	<b>\$ 14,314</b>

\* Annual annuities before adding COLA

**Distribution of Retired Members by  
 Age as of June 30, 2015**

**SERVICE  
 RETIRED**

Age	Member		
	Number	Total Benefit	Average Benefit
(1)	(2)	(3)	(4)
Up to 40	-	\$ -	\$ -
40-45	-	-	-
45-49	5	169,697	33,939
50-54	36	1,168,714	32,464
55-59	173	6,163,370	35,626
60-64	431	14,001,668	32,486
65-69	586	18,038,785	30,783
70-74	434	13,451,393	30,994
75-79	330	10,889,952	33,000
80-84	200	6,614,294	33,071
85-89	97	3,136,211	32,332
90-94	35	940,588	26,874
95 & up	13	259,995	20,000
Total	2,340	\$ 74,834,667	\$ 31,981

\* Annual annuities before adding COLA

**Distribution of Retired Members by  
 Age as of June 30, 2015**

**DISABLED  
 RETIREES**

Age	Member		
	Number	Total Benefit	Average Benefit
(1)	(2)	(3)	(4)
Up to 40	1	\$ 4,341	\$ 4,341
40-45	11	155,848	14,168
45-49	23	317,274	13,795
50-54	43	617,700	14,365
55-59	67	946,902	14,133
60-64	88	1,444,651	16,416
65-69	78	1,284,661	16,470
70-74	43	892,569	20,757
75-79	24	518,753	21,615
80-84	6	113,691	18,949
85-89	5	102,427	20,485
90-94	2	23,490	11,745
95 & up	-	-	-
<b>Total</b>	<b>391</b>	<b>\$ 6,422,307</b>	<b>\$ 16,425</b>

\* Annual annuities before adding COLA

**Distribution of Retired Members by  
 Age as of June 30, 2015**

**BENEFICIARIES**

Age	Number	Member	
		Total Benefit	Average Benefit
(1)	(2)	(3)	(4)
Up to 40	17	\$ 237,132	\$ 13,949
40-45	7	84,996	12,142
45-49	6	108,995	18,166
50-54	20	210,539	10,527
55-59	37	468,711	12,668
60-64	48	586,695	12,223
65-69	48	598,389	12,466
70-74	63	1,009,623	16,026
75-79	60	1,008,056	16,801
80-84	56	912,166	16,289
85-89	55	927,155	16,857
90-94	30	416,658	13,889
95 & up	66	773,885	11,726
<b>Total</b>	<b>513</b>	<b>\$ 7,343,000</b>	<b>\$ 14,314</b>

\* Annual annuities before adding COLA

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**Summary of Benefit Provisions of the Retirement System  
(As Most Recently Amended on June 30, 2013)<sup>1</sup>**

A. *NORMAL SERVICE RETIREMENT*

1. Eligibility:

Earliest of the following:

- (a) Completion of 28 years of creditable service,
- (b) Age 60 and 20 years of creditable service,
- (c) Age 62 and 15 years of creditable service,
- (d) Age 65 and 5 years of creditable service.

2. Benefit Formula:

Years of credited service times 2.2% of Final Average Compensation, plus post retirement health care supplements. The minimum annual normal retirement benefit is \$1,800. The health care supplements are depended on years of service at retirement, the benefits are provided as follows:

- (a) For members who retired before or on June 30, 2009: \$1,500 health care offset amount will be provided.
- (b) For members who retire after June 30, 2009:
  - 1. With less than 10 years of accrued service: No health care offset amount will be provided.
  - 2. With 10 or more years of accrued service but less than 15 years of accrued service at retirement: \$900 health care offset amount will be provided.
  - 3. With 15 or more years of accrued service but less than 20 years of accrued service at retirement: \$1,200 health care offset amount will be provided.
  - 4. With 20 or more years of accrued service at retirement: \$1,500 health care offset amount will be provided.

For members who retire after June 30, 2013 the health care offset is prorated for any service earned with a reciprocal retirement system.

3. Final Average Compensation:

Highest 3 year average.

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<sup>1</sup> System established July 1, 1949.

4. Normal Form:

Monthly benefit for life of Member plus, upon death, a refund of the excess (if any) of (i) the Member's accumulated contribution account at time of retirement over (ii) the total annuity payments received.

5. Optional Forms:

Option A - 10 years certain or life, or

Option B - joint and 50% contingent survivor, with a pop-up to the life only amount if the joint pensioner predeceases the member.

B. *DEFERRED RETIREMENT OPTION PLAN (DROP)*

Eligibility:

Earliest of the following:

- (a) Completion of 30 years of creditable service,
- (b) Age 60 and 20 years of creditable service,
- (c) Age 62 and 15 years of creditable service,
- (d) Age 65 and 5 years of creditable service.

Active members eligible for normal retirement are eligible to participate in the DROP program while continuing active employment. During DROP, the member will receive the regular retiree cost of living adjustments. A member can remain in DROP to the later of age 65 or the completion of five years of participation in DROP. DROP is divided into Tier I and Tier II. Tier I consists of the first five years of DROP participation, while Tier II is the remaining period. In Tier I, 90% of the retirement annuity will be deposited in the DROP account, whereas in Tier II, 79% of the retirement annuity will be deposited. The DROP account is credited with interest in Tier I and Tier II (as set by the Board, currently 6%). Furthermore, the member and employer contributions cease during DROP until the member enters Tier II; during Tier II participation, the member contributes 6.00% of their total payroll earnings and the employer contributes 6.90%. At actual retirement, the member will receive the DROP balance and commence receiving the regular annuity payments.

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C. *EARLY SERVICE RETIREMENT*

1. Eligibility:

Age 55 with 5 or more years of creditable service.

2. Benefit Formula:

Normal retirement benefit earned to the date of retirement, reduced .8% for each of the first 60 months and .3% for each of the next 60 months that the early retirement date precedes the normal retirement date. The minimum annual early retirement benefit is \$1,800.

D. *DISABILITY RETIREMENT*

1. Less than 1 Year of Creditable Service: Refund of member contributions without interest.

2. At least 1 Year of Creditable Service: Refund of member contributions with interest. Interest credits are currently 5% per annum.

3. At least 5 or more Years of Creditable Service: If he leaves his contribution account on deposit, a monthly annuity payable to the member for life based upon his years of creditable service and commencing upon disability.

E. *TERMINATION OF SERVICE*

1. Less than 1 Year of Creditable Service: Refund of member contributions without interest.

2. At least 1 Year of Creditable Service: Refund of member contributions with interest. Interest credits are currently 5% per annum.

3. At least 5 or more Years of Creditable Service: If he leaves his contribution account on deposit, a monthly annuity payable to the member for life based upon his years of creditable service and commencing upon eligibility for retirement.

F. *DEATH BEFORE RETIREMENT*

1. Less than 1 Year of Creditable Service: Refund of member contributions without interest.

2. At least 1 Year of Creditable Service: Refund of member contributions with interest.

3. At least 5 Years of Creditable Service: If the beneficiary leaves the Member's contribution account on deposit, an annuity payable under either Option A or B as elected by the beneficiary and commencing at the time the Member would have become eligible for retirement.
  - (a) Option A - a reduced annuity payable for 10 years in an amount equal to what the member would have received under retirement Option A.
  - (b) Option B - an annuity payable for the life of the beneficiary in an amount equal to 50% of what the member would have received under retirement Option B.
4. An additional death benefit equal to \$15,000.

#### G. DEATH AFTER RETIREMENT

If no option was elected, refund of the excess (if any) of (i) the Member's accumulated account (including interest) at retirement over (ii) the total annuity payments received. If an option is elected, death benefits are payable in accordance with such option.

An additional lump sum death benefit of \$7,500 is provided for retirees (not beneficiaries).

#### H. AUTOMATIC POST-RETIREMENT BENEFIT INCREASES

Benefits increase by 1-1/2% of the base benefit each year after June 30, 1976 through June 30, 1978, by 3% of the base benefit each year after June 30, 1978, through June 30, 1995, and by 3% of the previous year's benefit each year after June 30, 1995 for those who are retired for at least one year on the July 1 determination date. This benefit was limited by the Consumer Price Index until June 30, 1999. Effective July 1, 1999, the benefit increase is 3% with no ties to the Consumer Price Index.

#### I. EMPLOYER CONTRIBUTIONS

The State contributes 12.90% of the total payroll earnings of members, excluding DROP participants. The State does not contribute for members in the Tier I portion of DROP and contributes 6.9% of payroll for members in the Tier II portion of DROP.

#### J. MEMBER CONTRIBUTIONS

1. Each Member must contribute 6% of his annual Compensation while in the service of the Employer. During participation in the Tier I portion of DROP a member's contributions are suspended.
2. Within certain terms, conditions, and limitations, a Member voluntarily may make additional contributions in order to obtain creditable service for prior service.

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*K. LEGISLATED PLAN CHANGES ENACTED BY THE 1991 LEGISLATURE OF THE STATE OF ARKANSAS*

1. ACT 198 Provide a one-time payment equal to 3.0% of the July 1, 1991 annualized annuity for members retired on or prior to January 1, 1990.
2. ACT 243 Permit members to accrue more than 35 years of creditable service. (Retroactively applied).
3. ACT 245 Effective July 1, 1991, increase annuities by the sum of \$50 per month for members receiving benefits prior to, on, or subsequent to July 1, 1991. The increase is also added to the base annuity.
4. ACT 246 Effective July 1, 1991, increase the benefit formula multiplier to 2.06% of average compensation times number of years of creditable service.
5. ACT 380 4.0% ad hoc increase payable on July 1, 1991 for those members retired on June 1, 1991, based on benefit payable on June 1, 1991. The increase is also added to the base annuity.
6. ACT 381 Benefits from reciprocal retirement systems are to be based on the highest final average salary at the time of retirement. (Retroactively applied).

*L. LEGISLATED PLAN CHANGES ENACTED BY THE 1993 LEGISLATURE OF THE STATE OF ARKANSAS*

1. ACT 929 2.9% ad hoc increase payable on July 1, 1993 for those members retired on June 1, 1993, based on benefits payable June 1, 1993. The increase is also added to the base annuity.
2. ACT 930 Effective July 1, 1993, the average compensation is based on a forty-eight (48) month averaging period. (Previously sixty (60) months.)

*M. LEGISLATED PLAN CHANGES ENACTED BY THE 1995 LEGISLATURE OF THE STATE OF ARKANSAS*

1. ACT 407 Cost of living increase up to 3% of the member's previous year's benefit for those members retired for at least twelve full months after the effective date of each increase. Increases are effective July 1 and will be limited to the lesser of 3% or the Consumer Price Index but may not result in a decrease in benefits otherwise payable.

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*N. LEGISLATED 1997 PLAN CHANGES ENACTED BY THE 1997 LEGISLATURE OF THE STATE OF ARKANSAS*

1. ACT 1067 Creates an active member death benefit of 10 years certain and life. Five years of service eligibility for benefit.
2. ACT 1089 Creates a \$15,000 death benefit for active and vested-terminated members.
3. ACT 1073 Creates a DROP program for active members eligible for normal retirement.
4. ACT 386 Increases the multiplier from 2.06% to 2.10%. Grants 2.0% ad hoc to retirees.
5. ACT 349 Changes 48 month FAE to 36 months. Grants 2.2% ad hoc to retirees.
6. ACT 347 Changes 10 year vesting requirement to 5 years.

*O. LEGISLATED 1999 PLAN CHANGES ENACTED BY THE 1999 LEGISLATURE OF THE STATE OF ARKANSAS*

1. ACT 311 Increases the \$50 per month supplement to \$125 per month to current and future retirees.
2. ACT 1325 Active members can retire with full benefit if they have 28 years of creditable service.
3. ACT 335 Cost of living increase will be 3% and is not limited by the Consumer Price Index.

*P. LEGISLATED 2001 PLAN CHANGES ENACTED BY THE 2001 LEGISLATURE OF THE STATE OF ARKANSAS*

1. ACT 482 Provides \$7,500 lump sum death benefit for retirees (not beneficiaries)
2. ACT 539 Increases the multiplier from 2.1% to 2.2%. Grant 4.8% ad hoc to retirees
3. Crediting 8% to the DROP account by taking a Board action.

*Q. LEGISLATED 2003 PLAN CHANGES ENACTED BY THE 2003 LEGISLATURE OF THE STATE OF ARKANSAS*

1. ACT 776 Allows members who enter DROP prior to age 60 to remain in DROP until age 65, beyond the five year limit previously set. During this time, known as Tier II DROP, 79% of the retirement annuity will be deposited in the DROP account. Furthermore, the member contributes

6.00% of their total payroll earnings and the employer contributes 6.90%.

2. ACT 205 Changes the factors used for determining optional forms of payment to actuarially equivalent factors. Current retirees had their benefits increased to reflect the new factors effective July 1, 2003.

*R. LEGISLATED 2009 PLAN CHANGES ENACTED BY THE 2009 LEGISLATURE OF THE STATE OF ARKANSAS*

1. HB 1177 Changes from 5 years vesting requirement to 10 years vesting requirement on health care coverage. Prorated the \$125 per month health care supplements as follows:
  - a. With less than 10 years of service at retirement: No health care supplements
  - b. With 10 or more years of service but less than 15 years of service at retirement: \$75/month (or 60% of \$125/month)
  - c. With 15 or more years of service but less than 20 years of service at retirement: \$100/month (or 80% of \$125/month)
  - d. With 20 or more years of service at retirement: \$125/month (or 100% of \$125/month)

*S. LEGISLATED 2011 PLAN CHANGES ENACTED BY THE 2011 LEGISLATURE OF THE STATE OF ARKANSAS*

1. HB 1213 Establishes the cost for purchasing service credit as the actuarial equivalent cost. The actuarial cost is the increase in the liability associated with adding the additional service credit. This applies to all types of service credit including: military service, service with another State agency, and reinstatement of forfeited service.

*T. LEGISLATED 2013 PLAN CHANGES ENACTED BY THE 2013 LEGISLATURE OF THE STATE OF ARKANSAS*

1. HB 1224 Prorates the Health Care Offset paid by the Arkansas State Highway Employees Retirement System (ASHERS), for members who also have service in a reciprocal retirement system.
2. HB 1225 Excludes lump sum termination payments (accrued leave, compensation, etc.) from inclusion in the Average Compensation and credited service used in the determination of retirement benefits paid by the Arkansas State Highway Employees Retirement System (ASHERS).

## Summary of Assumptions and Methods

The actuarial assumptions were reviewed as part of an experience investigation performed in 2015 based on data through June 30, 2014. All of the assumptions shown below were affirmed or revised as part of the investigation.

### ACTUARIAL ASSUMPTIONS

1. Investment Yield Rate ..... **(Effective June 30, 1997)** 8.0% per annum, compounded annually.
  
2. Mortality
  - a. Healthy Post-retirement .... **(Effective June 30, 2015)**  
..... Male: RP-2000 Combined Healthy for males with Blue Collar adjustments, scaled at 105% with no setback. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date)  
..... Female: RP-2000 Combined Healthy for females with Blue Collar adjustments, scaled at 100% with no setback. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date)
  
  - b. Disabled Post-retirement... **(Effective June 30, 2015)**  
..... Male: RP-2000 Combined Healthy for males with Blue Collar adjustments, scaled at 105% with three year set-forward. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date), minimum 3% rate of mortality at all ages  
..... Female: RP-2000 Combined Healthy for females with Blue Collar adjustments, scaled at 100% with three year set-forward. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date), minimum 3% rate of mortality at all ages
  
  - c. Healthy Pre-retirement ..... **(Effective June 30, 2015)**  
..... Male: RP-2000 Combined Healthy for males with Blue Collar adjustments, scaled at 70% with no setback. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date)

..... Female: RP-2000 Combined Healthy for females with Blue Collar adjustments, scaled at 70% with no setback. Generational mortality improvements in accordance with Scale AA from the table's base year of 2000 (both before and after the measurement date)

3. Retirement Rates (Effective June 30, 2015) The following probabilities of retirement were assumed for members eligible to retire.

Age	Early Retirement Rate		Normal Retirement Rate	
	Males and Females		Males	Females
48			5.0%	5.0%
49			5.0%	5.0%
50			6.5%	5.0%
51			8.0%	6.0%
52			9.5%	7.0%
53			11.0%	8.0%
54			12.5%	9.0%
55	1.0%		14.0%	10.0%
56	1.0%		15.5%	15.0%
57	2.0%		20.0%	15.0%
58	2.0%		25.0%	25.0%
59	3.0%		25.0%	25.0%
60	3.0%		15.0%	15.0%
61	8.0%		20.0%	20.0%
62	20.0%		45.0%	45.0%
63	20.0%		25.0%	25.0%
64	15.0%		25.0%	25.0%
65			40.0%	40.0%
66			40.0%	40.0%
67			40.0%	40.0%
68			40.0%	40.0%
69			40.0%	40.0%
70			100.0%	100.0%

4. Disability Rates ..... (Effective June 30, 2009) Rates based on the experience of other large public sector retirement systems through age 82; thereafter, Non-Disabled Mortality is assumed.

Age	Rates of Decrement Due to Disability
20	.00192
25	.00192
30	.00192
35	.00192
40	.00480
45	.00624
50	.01176
55	.02136
60	.03384
65	.03984

5. Withdrawal Rates  
 (for causes other than death, disability, or retirement) ..... (Effective June 30, 2015 Select and ultimate withdrawal rates are used based on age and service. Sample rates are shown below:

Probability of Decrement Due to Withdrawal						
Years of Service						
Male Members						
Age	0	1	2	3	4	5+
20	.3712	.2536	.1697	.1180	.1150	.1043
30	.2925	.1998	.1313	.0862	.0756	.0578
40	.2193	.1538	.1024	.0646	.0477	.0261
50	.1628	.1242	.0894	.0582	.0368	.0159
60	.1342	.1238	.1033	.0748	.0462	.0302
Female Members						
Age	0	1	2	3	4	5+
20	.4028	.3008	.2168	.1509	.1047	.0761
30	.2819	.2118	.1542	.1093	.0765	.0571
40	.1980	.1483	.1073	.0752	.0514	.0366
50	.1715	.1250	.0863	.0550	.0336	.0171
60	.1985	.1391	.0896	.0481	.0230	.0007

6. Salary Scales..... **(Effective June 30, 2015)** Future compensation is assumed to increase by an inflation (growth) increase rate of 2.5% plus a productivity component of 1.00%, and plus a step-rate/promotional component based on service. Rates are illustrated below:

Years of Service	Step-rate/ Promotional Component	Total Salary Scale
(1)	(2)	(3)
0	7.00%	10.50%
1	7.00%	10.50%
2	7.00%	10.50%
3	2.00%	5.50%
4	1.25%	4.75%
5-13	0.75%	4.25%
14-17	0.50%	4.00%
18-19	0.25%	3.75%
20+	0.00%	3.50%

7. Future Increase in Total Payroll<sup>1</sup> ..... **(Effective June 30, 2015)** 3.0% per annum.
8. Provision for Expense ..... **(Effective June 30, 1997)** The assumed investment return rate represents the anticipated net rate of return after payment of all administrative and investment expenses.
9. Election Rates..... **(Effective June 30, 2004)** After their initial vesting, members are assumed to elect the greater value of their deferred annuity or a refund of their account balances. 100% of non-vested members are assumed to take a refund.
10. Election of DROP Entry..... **(Effective June 30, 2015)** 100% of participants who are eligible to enter DROP are assumed to elect to participate in DROP, except as noted below. Members who elect into DROP are assumed to retire at the normal retirement patterns. Members who first become eligible to DROP prior to age 60 (at 30 years of service) are assumed to enter DROP after attaining 31 years of service. Members past their first eligibility are assumed to enter DROP immediately.

<sup>1</sup> Used for purposes of funding the Unfunded Actuarial Accrued Liability.

11. Interest Crediting Rate on Drop Accounts .....(Effective June 30, 2012) 6.0% interest credit on DROP accounts.
12. Drop Accounts Payout Period.....(Effective June 30, 2015) it is assumed that members who participate in DROP will receive their DROPaccounts in equal installments over a 10-year period.

**CHANGES IN ASSUMPTIONS SINCE PRIOR VALUATION**

Several changes to the actuarial assumptions were made since the prior valuation. These included:

- The rates of mortality for healthy members post-retirement were decreased. In addition, mortality improvement was added for all future years.
- The rates of mortality for disabled members post-retirement were decreased. In addition, mortality improvement was added for all future years.
- The rates of mortality for healthy members pre-retirement were decreased. In addition, mortality improvement was added for all future years.
- The rates of retirement for male members under age 60 were increased slightly. Male and female members now have separate retirement rates.
- The termination rates for male members were increased and the termination rates for female members were decreased.
- Wage inflation was decreased from 4.50% to 3.50%.
- The rate at which future payroll was assumed to grow decreased from 3.50% to 3.0%.
- The rate of DROP participation was increased from 65% to 100% for members who attained the assumed DROP entry date. Members under age 60 are assumed to enter DROP at 31 years of service.

**ASSET VALUATION METHOD (Adopted June 30, 2015)**

The actuarial value of assets is equal to the market value of assets less a four-year phase-in of the excess (shortfall) between expected investment return and actual income with the resulting value not being less than 80% or more than 120% of the market value of assets.

The actuarial value of assets was marked to the market for June 30, 2012 valuation. This was done to prevent an expected divergence away from the market value of assets.

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### ***ACTUARIAL COST METHOD***

The funding period required to amortize the unfunded actuarial accrued liability (UAAL) is determined using the Entry Age Actuarial Cost Method.

The Individual Entry Age Normal actuarial cost method assigns the plan's total unfunded liabilities (the actuarial present value of future benefits less the actuarial value of assets) to various periods. The unfunded actuarial accrued liability is assigned to years prior to the valuation, and the normal cost is assigned to the year following the valuation. The remaining costs are the normal costs for future years. Then each year's contribution is composed of (i) that year's normal cost, plus (ii) a payment used to reduce the unfunded actuarial accrued liability.

The normal contribution is determined using the Entry Age Normal method. Under this method, a calculation is made to determine the rate of contribution which, if applied to the compensation of each individual member during the entire period of anticipated covered service (prior to DROP entry), would be required to meet the cost of all benefits payable on his behalf. The salary-weighted average of these rates is the normal cost rate. This calculation reflects the plan provisions that apply to each individual member. The employer normal cost rate is equal to (i) the normal cost rate, minus (ii) the member contribution rate

The actuarial accrued liability is the difference between the total present value of future benefits and the actuarial present value of future normal costs. The unfunded actuarial accrued liability (UAAL) is the excess of the actuarial accrued liability over the actuarial value of assets.

Since the State statutes governing the System establish the current employee and State contribution rates, the actuarial valuation determines the number of years required to amortize (or fund) the UAAL on a level percentage of payroll basis, taking into account the payroll growth assumption and the normal cost expressed as a percent of pay. Because of this amortization procedure, any change in the unfunded actuarial accrued liability due to (i) actuarial gains and losses, (ii) changes in actuarial assumptions, or (iii) amendments, affects the funding period.

### ***FUNDING OF UNFUNDED ACTUARIAL ACCRUED LIABILITY***

The total normal cost for benefits provided by the System is 12.44% of payroll, which is 6.46% of payroll less than the total contributions required by Law (12.90% from State plus 6% from employees). 12.44% of the State's 12.90% contribution is required to meet the normal cost, and the remaining 0.46 along with the 6.00% from the employee contribution plus any contributions received on behalf of members in Tier II of DROP are assumed to be utilized to fund the unfunded actuarial accrued liability over a period of years in the future, assuming that total payroll is increased by 3.0% per year.

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### Definition of Actuarial Terms

In our report we have attempted to avoid the use of multitude of complex actuarial terminology, but we realize that different users of our reports may have differing opinions as to what constitutes an "actuarial term". Accordingly, we offer the following definitions of several terms contained in this report which might be considered actuarial in nature. Any qualified user of our report who believes that additional terms should be included is invited to communicate such terms either directly to us or through the Arkansas State Highway Employees Retirement System.

1. Actuarial Accrued Liability - for benefits payable in the future to the present members, it will equal the present value of benefits payable in the future to them less the present value of future normal costs.
2. Actuarial Value of Assets - the market value of assets of the System adjusted to recognize investment earnings above or below the investment return assumption uniformly over a five year period.
3. Actuarial Assumptions - assumptions as to future experience under the System. Current actuarial assumptions are detailed in Table 18 of the current annual valuation report. Assumptions include future fund earnings rates, rates of future salary increases, and rates of death (both before and after retirement), disability, retirement, and withdrawal.
4. Actuarially Determined - values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.
5. Actuarial Gain or Actuarial Loss - a measure of the difference between actual experience and assumed experience of the System. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, actuarial liabilities emerge which may be the same as forecasted or they may be larger or smaller than projected. Actuarial gains are due to favorable experience, i.e., the System's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the unfunded actuarial accrued liability while actuarial losses will lengthen the funding period.
6. Actuarial Liabilities - the actuarially determined present value of future benefits to be provided by the System. There are separate actuarially determined present values for retired members and non-retired members. The term "reserve" may be used interchangeably with "present value" or "liability". When applied to active members, it takes into account benefits which will be earned through future service and future salary increases.

7. Defined Benefits - in a retirement plan, benefits which are defined by a specific formula applied to a specific member compensation and/or specific years of service. The amount of the benefit is not a function of contributions or actual earnings on those contributions.
8. Future Benefits - benefits specified in the law which will become payable at some time in the future when the member satisfies the requirement to receive such benefits.
9. Future Contributions - contributions to be made by the member or the State in the future, as required by the law.
10. Funding Period - the number of years in the future that will be required to fund (i.e., pay off or eliminate) the unfunded actuarial accrued liability, based on the actuarial assumptions and assuming no future actuarial gains or losses.
11. Normal Cost - the average annual actuarial cost of the benefits provided by the System for the current employees.
12. Present Value - the actuarially determined lump sum value as of the valuation date of a series of payments to be made in the future, where the lump sum value is equal to the sum of the discounted value of each future payment. The discounted value of each payment is the product of (a) the amount of the payment, (b) the probability that the payment will be made (based on the current actuarial assumptions as to the future experience), and (c) the time value of money (based on the current assumed interest rate).
13. Unfunded Actuarial Accrued Liability - that portion of the actuarial accrued liability (including the present value of benefits presently being paid to retired members and the value of any miscellaneous liabilities) that exceeds the value of current assets.
14. Funded Ratio - the funded ratio is the ratio of the actuarial value of assets to the actuarial accrued liability. The funding ratio is a measure of funded status. While the annual ratio is important as a measure of the System's current funded status, it is probably more valuable to review ratios in time series as a measure of the direction of funding. Consistent substantial increases in this ratio over time can be an indicator of funding progress. However, benefit changes, changes in actuarial assumptions and other external forces may cause the ratio to decrease.