



Cavanaugh Macdonald
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**Report on the Annual Valuation of the
Public Employees' Retirement System of
Mississippi**

Prepared as of June 30, 2013





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

October 10, 2013

Board of Trustees
Public Employees' Retirement System of Mississippi
429 Mississippi Street
Jackson, MS 39201-1005

Ladies and Gentlemen:

Presented in this report are the results of the annual actuarial valuation of the Public Employees' Retirement System of Mississippi. The purpose of the valuation was to measure the System's funding progress and to determine the unfunded accrued liability amortization period beginning July 1, 2013. The results may not be applicable for other purposes.

The date of the valuation was June 30, 2013.

The valuation was based upon data, furnished by the Executive Director and the PERS staff, concerning active, inactive and retired members along with pertinent financial information. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. The complete cooperation of the PERS staff in furnishing materials requested is hereby acknowledged with appreciation.

Your attention is directed particularly to the presentation of contribution rates on page 1 and the comments on page 8.

To the best of our knowledge, this report is complete and accurate. The valuation was performed by, and under the supervision of, independent actuaries who are members of the American Academy of Actuaries with experience in performing valuations for public retirement systems. The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The valuation was prepared in accordance with the principles of practice prescribed by the Actuarial Standards Board. We have reviewed the actuarial methods, including the asset valuation method, and continue to believe they are appropriate for the purpose of determining employer contribution levels.

Future actuarial results may differ significantly from the current results 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. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

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Board of Trustees
October 10, 2013
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The actuarial calculations were performed by qualified actuaries according to generally accepted actuarial procedures and methods. The calculations are based on the current provisions of the system, and on actuarial assumptions that are, in the aggregate, internally consistent and reasonably based on the actual experience of the system.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Thomas J. Cavanaugh'.

Thomas J. Cavanaugh, FSA, FCA, EA, MAAA
Chief Executive Officer

A handwritten signature in blue ink, appearing to read 'Edward J. Koebel'.

Edward J. Koebel, FCA, EA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink, appearing to read 'Jonathan T. Craven'.

Jonathan T. Craven, ASA, EA, FCA, MAAA
Senior Actuary

TJC/EJK:mjn

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**REPORT ON THE ANNUAL VALUATION OF THE
PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF MISSISSIPPI
PREPARED AS OF JUNE 30, 2013**

SECTION I – SUMMARY OF PRINCIPAL RESULTS

1. This report, prepared as of June 30, 2013, presents the results of the annual actuarial valuation of the System. For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized below. The current valuation and reported benefit amounts reflect any benefit increases granted to retirees as of July 1, 2013. Based on the new funding policy adopted by the Board in 2012, the employer contribution rate is to be set at 15.75% of annual compensation and the amortization period calculated on an open basis.

SUMMARY OF PRINCIPAL RESULTS

VALUATION DATE	June 30, 2013	June 30, 2012
Active members included in valuation		
Number	161,744	162,311
Annual compensation	\$ 5,823,577,978	\$ 5,857,789,376
Retirees		
Number	90,214	86,829
Annual allowances	\$ 1,874,720,385	\$ 1,752,606,759
Assets		
Market related actuarial value	\$ 20,490,555,000	\$ 19,992,797,000
Market value	\$ 21,686,911,000	\$ 19,781,387,000
Unfunded accrued liability	\$ 15,052,293,126	\$ 14,500,076,009
Funded Ratio	57.7%	58.0%
Fiscal Year End	June 30, 2015	June 30, 2014
Employer contribution rate*		
Normal Cost**	2.07%	2.21%
Accrued liability	<u>13.68</u>	<u>13.62</u>
Total	15.75%	15.83%
Anticipated accrued liability payment period	32.2 years	30.0 years
Unfunded accrued liability based on market value of assets	\$ 13,855,937,126	\$ 14,711,486,009
Funded Ratio	61.0%	57.3%
Payment Period	26.1 years	30.8 years

* A contribution rate of 16.29% of active members' compensation for the 2014/2015 fiscal year would be needed in order to keep the anticipated accrued liability payment within 30 years in accordance with GASB Statements 25 and 27.

** Beginning with the June 30, 2013 valuation, estimated budgeted administrative expenses are included in the normal cost rate.



2. The valuation balance sheet showing the results of the valuation is given in Section III.
3. Comments on the valuation results are given in Section IV, comments on the experience and actuarial gains and losses during the valuation year are given in Section V and the rates of contribution payable by employers are given in Section VI.
4. The following changes in actuarial assumptions or methods were made since the last valuation:
 - The withdrawal rates, pre-retirement mortality rates, disability rates and retirement rates have been revised to more closely reflect the actual experience of the System.
 - The post-retirement mortality tables have been changed.
 - The rates of salary increase were decreased by 0.50% for service prior to 28 years and by 0.25% for service on or after 28 years to more closely reflect the actual experience of the System.
 - The percentage of deferred vested participants assumed to choose to forfeit their accrued benefit and receive their employee contributions with interest has been changed from 0% to 30%.
 - The investment return assumption was changed from net of all expenses to net of investment expenses only. Therefore, a budgeted administrative expense of 0.23% of payroll is included in the normal cost of the annual required contribution rate.
5. There were no changes in the plan provisions since the last valuation.
6. Schedule A of this report presents the development of the actuarial value of assets. Schedule B details the actuarial assumptions and methods employed. Schedule C gives a summary of the benefit and contribution provisions of the plan.
7. The table on the following page provides a ten-year history of some pertinent figures.
8. Governmental Accounting Standards Board Statement No. 27 requires employers to expense pension costs at the actuarially required contribution level, which is based on a maximum 30 year accrued liability payment period.
9. All amounts shown prior to the 2004/2005 fiscal year were developed and/or reported by the prior actuarial firm.



Public Employees' Retirement System of Mississippi

Comparative Schedule*

Valuation Date June 30	Active Members				Retired Lives				Valuation Results (\$ millions)		
	Number	Payroll (\$ millions)	Average Salary	% increase from previous year	Number	Active/ Retired Ratio	Annual Benefits** (\$ millions)	Benefits as % of Payroll	Accrued Liability	Valuation Assets	UAAL
2004	156,353	4,617	29,531	3.2	62,407	2.5	778.6	16.9	22,847	17,103	5,744
2005	157,101	4,786	30,466	3.2	63,939	2.5	1,022.0	21.4	23,727	17,181	6,546
2006	158,091	4,972	31,450	3.2	66,757	2.4	1,117.2	22.5	24,928	18,321	6,607
2007	162,804	5,196	31,917	1.5	70,756	2.3	1,214.4	23.4	26,863	19,792	7,071
2008	165,733	5,545	33,456	4.8	73,540	2.3	1,305.9	23.6	28,535	20,815	7,720
2009	167,122	5,832	34,896	4.3	76,143	2.2	1,395.9	23.9	30,595	20,598	9,997
2010	164,896	5,764	34,953	0.2	79,168	2.1	1,498.7	26.0	31,400	20,143	11,257
2011	161,676	5,685	35,161	0.6	83,115	1.9	1,627.8	28.6	32,654	20,315	12,339
2012	162,311	5,858	36,090	2.6	86,829	1.9	1,752.6	29.9	34,493	19,993	14,500
2013	161,744	5,824	36,005	(0.2)	90,214	1.8	1,874.7	32.2	35,543	20,491	15,052

*All amounts prior to 2005 reported by prior actuarial firm.

**Excluding COLA for years prior to 2005



SECTION II – MEMBERSHIP DATA

Data regarding the membership of the System for use as a basis for the valuation were furnished by the System's office. The following tables summarize the membership of the system as of June 30, 2013 upon which the valuation was based. Detailed tabulations of the data are given in Schedule D.

Active Members

Employers	Number of Employers	Number	Payroll	Group Averages		
				Salary	Age	Service
State Agencies	112	32,921	\$1,113,271,357	\$33,816	44.1	10.4
State Universities	9	17,636	868,183,113	49,228	43.5	9.7
Public Schools	149	64,045	2,196,453,153	34,295	44.1	10.5
Community/Junior Colleges	15	6,272	290,146,471	46,261	46.9	11.7
Counties	82	13,904	442,782,098	31,846	46.9	9.4
Municipalities	241	17,108	555,811,830	32,488	44.0	10.0
Other Political Subdivisions	265	9,858	356,929,956	36,207	43.9	8.4
Total in PERS	873	161,744	\$5,823,577,978	\$36,005	44.4	10.2

The total number of active members includes 96,321 vested members (33,354 State employees and 62,967 employees of other entities), and 65,423 non-vested members (23,475 State and 41,948 others).

Retired Lives

Type of Benefit Payment	No.	Annual Benefits	Group Averages	
			Benefit	Age
Retirement	73,830	\$1,622,807,883	\$21,980	70.0
Disability	6,030	102,379,131	16,978	61.1
Survivor	10,354	149,533,371	14,442	65.8
Total in PERS	90,214	\$1,874,720,385	\$20,781	68.9

The total retired lives include 32,021 from State employment and 58,193 from other employment.



Deferred Vested/Inactive Lives

Type of Member	No.	Deferred Benefits	Outstanding Refunds
Deferred Vested - Benefit Provided	16,019	\$ 79,727,391	N/A
Deferred Vested – Missing Benefit	2,802	N/A	\$ 120,354,594
Inactive	111,874	N/A	126,126,440
Total in PERS	130,695	\$ 79,727,391	\$ 246,481,034

The total deferred vested and inactive lives include 42,186 from State employment and 88,509 from other employment.

SECTION III – VALUATION BALANCE SHEET

The following valuation balance sheet shows the assets and liabilities of the retirement system as of the current valuation date of June 30, 2013 and, for comparison purposes, as of the immediately preceding valuation date of June 30, 2012. The items shown in the balance sheet are present values actuarially determined as of the relevant valuation date. The development of the actuarial value of assets is presented in Schedule A.



**VALUATION BALANCE SHEET
SHOWING THE ASSETS AND LIABILITIES OF THE
PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF MISSISSIPPI**

	JUNE 30, 2013	June 30, 2012
ASSETS		
Current actuarial value of assets:		
Annuity Savings Account	\$ 5,053,887,699	\$ 4,463,252,302
Annuity Reserve	4,166,242,970	3,836,308,400
Employers' Accumulation Account	<u>11,270,424,331</u>	<u>11,693,236,298</u>
Total current assets	\$ 20,490,555,000	\$ 19,992,797,000
 Future member contributions to Annuity Savings Account	 \$ 3,974,114,020	 \$ 4,142,443,569
 Prospective contributions to Employer's Accumulation Account		
Normal contributions	\$ 812,485,533	\$ 1,017,200,032
Unfunded accrued liability contributions	<u>15,052,293,126</u>	<u>14,500,076,009</u>
 Total prospective contributions	 \$ 15,864,778,659	 \$ 15,517,276,041
Total assets	<u>\$ 40,329,447,679</u>	<u>\$ 39,652,516,610</u>
LIABILITIES		
Present value of benefits payable on account of present retired members and beneficiaries	\$ 20,789,550,808	\$ 19,547,366,899
 Present value of benefits payable on account of active members	 18,487,380,031	 19,169,155,900
 Present value of benefits payable on account of inactive members for service rendered before the valuation date	 <u>1,052,516,840</u>	 <u>935,993,811</u>
 Total liabilities	 \$ 40,329,447,679	 \$ 39,652,516,610



**BREAKDOWN OF TOTAL AND ACCRUED LIABILITIES
AS OF JUNE 30, 2013**

	Total Liability	Accrued Liability
Active Members		
Retirement	\$ 15,575,844,724	\$ 12,733,116,036
Death	143,187,952	87,237,420
Disability	461,894,273	253,350,836
Termination	2,306,453,082	627,076,186
Total	\$ 18,487,380,031	\$ 13,700,780,478
Retirees		
Retirement	\$ 18,392,891,451	\$ 18,392,891,451
Survivor	1,362,499,616	1,362,499,616
Disability	1,034,159,741	1,034,159,741
Total	\$ 20,789,550,808	\$ 20,789,550,808
Deferred Vested Members	800,263,960	800,263,960
Inactive Members	252,252,880	252,252,880
Total Actuarial Values	\$ 40,329,447,679	\$ 35,542,848,126
Actuarial Value of Assets		20,490,555,000
Unfunded Actuarial Accrued Liability		\$ 15,052,293,126



SECTION IV – COMMENTS ON VALUATION

The valuation balance sheet gives the following information with respect to the funds of the System as of June 30, 2013.

Total Assets

The Annuity Savings Account is the fund to which are credited contributions made by members together with interest thereon. When a member retires, the amount of his or her accumulated contributions is transferred from the Annuity Savings Account to the Annuity Reserve. The Employer's Accumulation Account is the fund to which are credited employer contributions and investment income, and from which are paid all employer-provided benefits under the plan. The assets credited to the Annuity Savings Account as of the valuation date, which represent the accumulated contributions of members to that date, amounted to \$5,053,887,699. The assets credited to the Annuity Reserve were \$4,166,242,970 and the assets credited to the Employer's Accumulation Account totaled \$11,270,424,331. Current actuarial assets as of the valuation date equaled the sum of these three funds, \$20,490,555,000. Future member contributions to the Annuity Savings Account were valued to be \$3,974,114,020. Prospective contributions to the Employer's Accumulation Account were calculated to be \$15,864,778,659 of which \$812,485,533 is attributable to service rendered after the valuation date (normal contributions) and \$15,052,293,126 is attributable to service rendered before the valuation date (unfunded accrued liability contributions).

Therefore, the balance sheet shows the present value of current and future assets of the System to be \$40,329,447,679 as of June 30, 2013.

Total Liabilities

The present value of benefits payable on account of presently retired members and beneficiaries totaled \$20,789,550,808 as of the valuation date. The present value of future benefit payments on behalf of active members amounted to \$18,487,380,031. In addition, the present value of benefits for inactive members, due to service rendered before the valuation date, was calculated to be \$1,052,516,840.

Therefore, the balance sheet shows the present value for all prospective benefit payments under the System to be \$40,329,447,679 as of June 30, 2013.

Section 25-11-123(a)(1) of State law requires that active members contribute 9.00% of annual compensation to the System.

Section 25-11-123(c) requires that the State contribute a certain percentage of the annual compensation of members to cover the normal contributions and a certain percentage to cover the accrued liability contributions of the System. These individual contribution percentages are established in accordance with an actuarial valuation. Based on the new funding policy adopted by the Board in October, 2012, the employer rate is set at 15.75% of annual compensation and the amortization period calculated on an open basis. Therefore, the amortization period for the June 30, 2013 valuation is 32.2 years, compared to 30.0 years for the last valuation.

The primary reasons for the increase in the amortization period are the continued recognition of the investment loss from the 2009 fiscal year and the investment loss for the 2012 fiscal year. In addition, since the overall payroll growth rate was less than expected, it has caused upward pressure on the contribution rate attributed to the unfunded accrued liability. This was offset by assumption changes that caused a gain in the unfunded accrued liability.



SECTION V – DERIVATION OF EXPERIENCE GAINS AND LOSSES

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. Detail on the derivation of the experience gain/(loss) for the year ended June 30, 2013 is shown below.

	<u>\$ millions</u>
(1) UAAL* as of June 30, 2012	\$ 14,500.1
(2) Total Normal cost from last valuation	656.7
(3) Total Employee and Employer Contributions	1,429.6
(4) Interest accrual: $(1) \times .080 + [(2) - (3)] \times .0392$	<u>1,129.7</u>
(5) Expected UAAL before changes: $(1) + (2) - (3) + (4)$	14,856.9
(6) Change due to plan amendments	0.0
(7) Change due to new actuarial assumptions or methods	<u>(226.1)</u>
(8) Expected UAAL after changes: $(5) + (6) + (7)$	\$ 14,630.8
(9) Actual UAAL as of June 30, 2013	\$ 15,052.3
(10) Gain/(loss): $(8) - (9)$	\$ (421.5)
(11) Gain/(loss) as percent of actuarial accrued liabilities at start of year (\$34,492.9)	(1.2)%

*Unfunded actuarial accrued liability.

Valuation Date June 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2008	(2.1)%
2009	(6.4)
2010	(3.1)
2011	(3.4)
2012	(5.7)
2013	(1.2)



SECTION VI – REQUIRED CONTRIBUTION RATES

The valuation balance sheet gives the basis for determining the percentage rates for contributions to be made by employers to the Retirement System. The following table shows the rates of contribution payable by employers as determined from the present valuation for the 2014/2015 fiscal year and a comparison to the previous valuation results.

Contribution for	2014/2015 Fiscal Year	2013/2014 Fiscal Year
Normal Cost:		
Service retirement benefits	9.51%	9.75%
Disability benefits	0.43	0.44
Survivor benefits	<u>0.12</u>	<u>0.12</u>
Total	10.06%	10.31%
Member Contributions:	9.00%	9.00%
Less future refunds	<u>(0.78)</u>	<u>(0.90)</u>
Available for benefits	8.22%	8.10%
Employer Normal Cost	1.84%	2.21%
Administrative Expense Load	0.23%	N/A
Unfunded Actuarial Accrued Liabilities (32.2 year level % of payroll amortization*)	13.68%	13.62%
Total Computed Employer Contribution Rate	15.75%	15.83%

*Amortization period a year ago was 30.0 years.



The components of the change in the computed unfunded accrued liability amortization period from 30.0 years to 32.2 years are as follows:

Previously Reported Period	30.0 years
Change due to:	
Normal amortization	(1.0)
Actuarial experience	2.7
Assumption changes	(1.8)
Plan amendments	0.0
Method Change	0.0
Funding Policy Change	2.2
UAL contribution experience	0.1
Computed Period	32.2 years



SECTION VII – CASH FLOW PROJECTION

Regular actuarial valuations measure the Retirement System's present financial position and contributions adequacy by calculating and financing the liabilities created by the present benefit program. This process involves discounting to present values the future benefit payments on behalf of present active and retired members and their survivors. However, valuations do not produce information regarding future changes in the makeup of the covered group or the amounts of benefits to be paid or investment income to be received – actuarial projections do.

Whereas valuations provide a snapshot of the retirement system as of a given date, projections provide a moving picture. Projected active and retired groups are developed from year to year by the application of assumptions regarding pre-retirement withdrawal from service, retirements, deaths, disabilities, and the addition of new members. Projected information regarding the retired life group leads to assumed future benefit payout. Combining future benefit payments with assumed contributions and expected investment earnings produces the net cash flow of the System each year, and thus end of year asset levels.

Projections are used for many purposes. Among them are (i) developing cash flow patterns for investment policy and asset mix consideration, (ii) exploring the effect of alternative assumptions about future experience, (iii) analyzing the impact on system funding progress of changes in the workforce, and (iv) examining the potential effect of changes in benefits on system financial activity.

Projection results are useful in demonstrating changing relationships among key elements affecting system financial activity. For example: how benefits payable and system assets will grow in future decades. Projections are not predictions of specific future events and do not provide numeric precision in absolute terms. For instance, cash flow projected to occur 10 years in the future will not be exact (except by coincidence), but understanding the changed relationship between future benefit payout and future investment income can be very useful.

The following projections assume an 8.00% investment return and salary increases of 4.25% each year in the future. Due to the new funding policy all future contribution rates are assumed to remain at 15.75% of payroll.



Public Employees' Retirement System of Mississippi

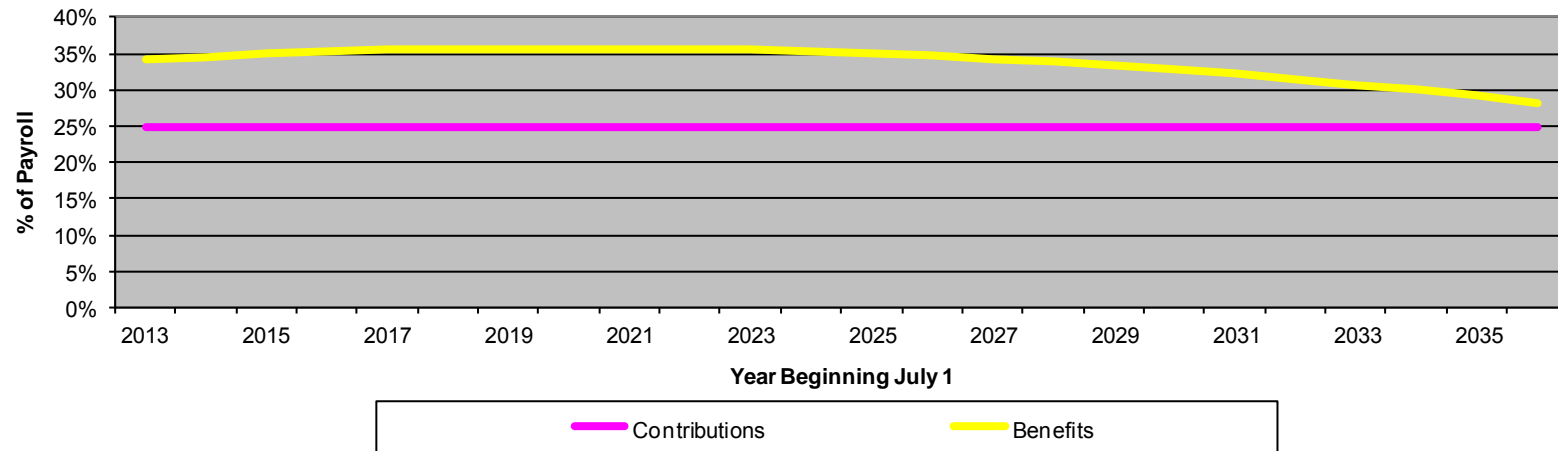
Twenty-five Year Cash Flow Projection

Year Beginning <u>July 1</u>	Valuation <u>Payroll</u>	Market Value of Assets Balance <u>July 1</u>	<u>Contributions</u>	Projected Benefit <u>Payments</u>	Expected Investment <u>Return</u>	<u>Cash Flow</u>	Market Value of Assets Balance <u>June 30</u>	Year Ending <u>June 30</u>
2013	5,940,049,538	21,686,911,000	1,470,162,261	2,027,668,987	1,712,652,611	1,155,145,885	22,842,056,885	2014
2014	6,192,501,643	22,842,056,885	1,532,644,157	2,140,908,552	1,803,033,975	1,194,769,580	24,036,826,465	2015
2015	6,455,682,963	24,036,826,465	1,597,781,533	2,256,148,069	1,896,611,456	1,238,244,920	25,275,071,385	2016
2016	6,730,049,489	25,275,071,385	1,665,687,249	2,373,017,902	1,993,712,485	1,286,381,832	26,561,453,216	2017
2017	7,016,076,592	26,561,453,216	1,736,478,957	2,492,717,873	2,094,666,701	1,338,427,785	27,899,881,001	2018
2018	7,314,259,847	27,899,881,001	1,810,279,312	2,606,595,957	2,200,137,814	1,403,821,169	29,303,702,170	2019
2019	7,625,115,890	29,303,702,170	1,887,216,183	2,720,002,314	2,310,984,728	1,478,198,597	30,781,900,768	2020
2020	7,949,183,315	30,781,900,768	1,967,422,870	2,834,312,115	2,427,876,492	1,560,987,247	32,342,888,014	2021
2021	8,287,023,606	32,342,888,014	2,051,038,342	2,957,457,831	2,551,174,262	1,644,754,773	33,987,642,787	2022
2022	8,639,222,109	33,987,642,787	2,138,207,472	3,079,475,527	2,681,360,701	1,740,092,646	35,727,735,433	2023
2023	9,006,389,049	35,727,735,433	2,229,081,290	3,199,586,578	2,819,398,623	1,848,893,335	37,576,628,768	2024
2024	9,389,160,584	37,576,628,768	2,323,817,245	3,317,904,762	2,966,366,801	1,972,279,284	39,548,908,051	2025
2025	9,788,199,909	39,548,908,051	2,422,579,477	3,432,990,930	3,123,496,186	2,113,084,733	41,661,992,784	2026
2026	10,204,198,405	41,661,992,784	2,525,539,105	3,544,467,435	3,292,202,290	2,273,273,960	43,935,266,744	2027
2027	10,637,876,837	43,935,266,744	2,632,874,517	3,652,392,512	3,474,040,620	2,454,522,625	46,389,789,369	2028
2028	11,089,986,603	46,389,789,369	2,744,771,684	3,755,794,086	3,670,742,253	2,659,719,851	49,049,509,220	2029
2029	11,561,311,034	49,049,509,220	2,861,424,481	3,855,804,090	3,884,185,553	2,889,805,944	51,939,315,164	2030
2030	12,052,666,753	51,939,315,164	2,983,035,021	3,950,584,962	4,116,443,216	3,148,893,275	55,088,208,439	2031
2031	12,564,905,090	55,088,208,439	3,109,814,010	4,038,743,459	4,369,899,497	3,440,970,048	58,529,178,487	2032
2032	13,098,913,556	58,529,178,487	3,241,981,105	4,120,415,497	4,647,196,903	3,768,762,511	62,297,940,998	2033
2033	13,655,617,382	62,297,940,998	3,379,765,302	4,195,923,033	4,951,188,971	4,135,031,240	66,432,972,238	2034
2034	14,235,981,121	66,432,972,238	3,523,405,327	4,263,674,495	5,285,027,012	4,544,757,844	70,977,730,082	2035
2035	14,841,010,319	70,977,730,082	3,673,150,054	4,321,280,330	5,652,293,196	5,004,162,920	75,981,893,002	2036
2036	15,471,753,258	75,981,893,002	3,829,258,931	4,368,386,114	6,056,986,353	5,517,859,170	81,499,752,172	2037
2037	16,129,302,771	81,499,752,172	3,992,002,436	4,401,899,486	6,503,584,292	6,093,687,242	87,593,439,414	2038

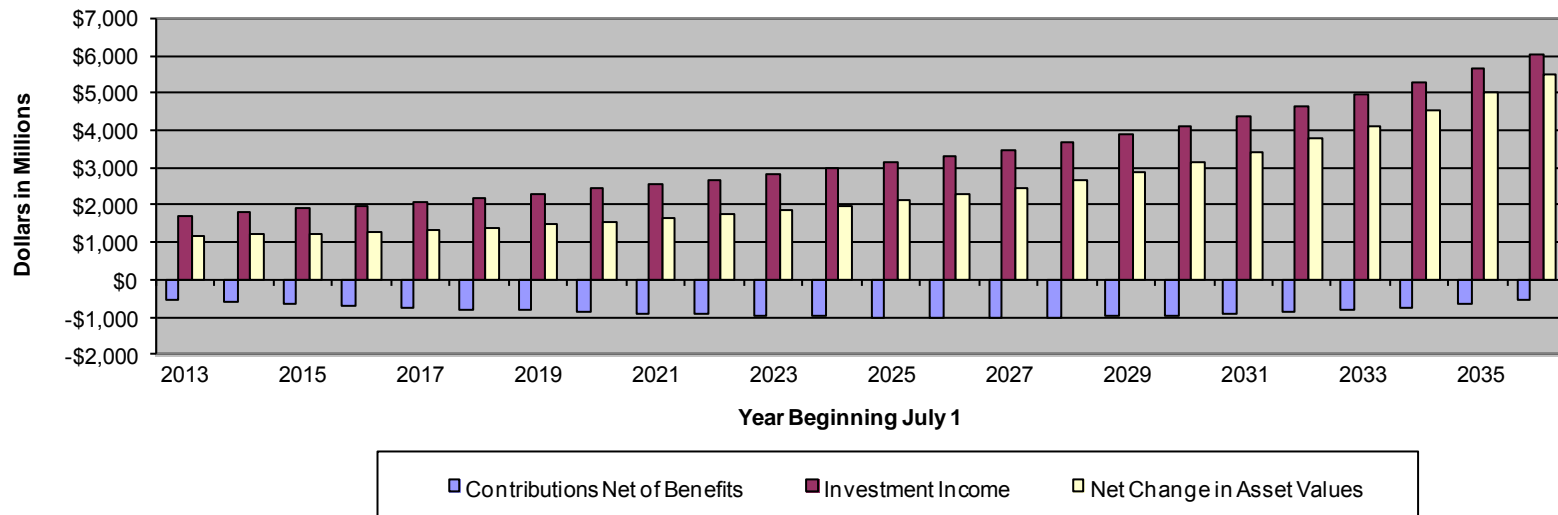


Public Employees' Retirement System of Mississippi 25 Year Cash Flow Projection Based on Valuation Assumptions

Projected Contributions and Benefits Expressed as Percents of Active Member Payroll



Net Change in Asset Values





SECTION VIII – SUPPLEMENTAL DISCLOSURE INFORMATION

1. Statement Nos. 25 and 27 of the Governmental Accounting Standards Board (GASB) set forth certain items of information to be disclosed in the financial statements of the System and the employer. One such item is a distribution of the number of employees by type of membership, as follows:

**NUMBER OF ACTIVE AND RETIRED PARTICIPANTS
AS OF JUNE 30, 2013**

GROUP	NUMBER
Retired participants and beneficiaries currently receiving benefits	90,214
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	130,695
Active Participants	<u>161,744</u>
Total	382,653



2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS
(\$ Thousands)

Plan Year Ended	(1) Actuarial Value of Assets	(2) Actuarial Accrued Liability (AAL) Entry Age	(3) Percent Funded (1)/(2)	(4) Unfunded AAL (2) – (1)	(5) Annual Covered Payroll	(6) Unfunded AAL as a Percentage of Covered Payroll (4)/(5)
06/30/04*	17,103,285	22,847,260	74.9	5,743,975	4,617,273	124.4
06/30/05#	17,180,705	23,727,098	72.4	6,546,393	4,786,280	136.8
06/30/06	18,321,063	24,928,464	73.5	6,607,401	4,971,974	132.9
06/30/07#	19,791,564	26,862,636	73.7	7,071,072	5,196,295	136.1
06/30/08*	20,814,720	28,534,694	72.9	7,719,974	5,544,705	139.2
06/30/09*#	20,597,581	30,594,546	67.3	9,996,965	5,831,864	171.4
06/30/10*	20,143,426	31,399,988	64.2	11,256,562	5,763,556	195.3
06/30/11#	20,315,165	32,654,465	62.2	12,339,300	5,684,624	217.1
06/30/12	19,992,797	34,492,873	58.0	14,500,076	5,857,789	247.5
06/30/13#	20,490,555	35,542,848	57.7	15,052,293	5,823,578	258.5

* After change in benefit provisions.

After change in actuarial assumptions.

Note: All amounts prior to June 30, 2005 reported by prior actuarial firm.

As can be seen from the table above, the funded ratio has declined over the 10-year period. This is due in large part to the less than expected investment returns over this 10-year span. The open 30-year amortization period and contributions below the actuarially required amounts during the latter half of the time period have also contributed to the decline. However, estimated projection results using a fixed employer contribution rate of 15.75% of payroll shows improving funded ratios.



3. The annual required contribution (ARC) of the employer as a percentage of payroll determined in accordance with the parameters of GASB 25/27, is shown below. The maximum allowable amortization period under GASB 25 and 27 is 30 years. As a result, the annual required contribution for accounting purposes is different than that for funding purposes. The accrued liability rate is based on amortization of the unfunded actuarial accrued liability of \$15,052,293,126 over a 30.0 year period from the valuation date.

Annual Required Contribution (ARC)		
Valuation Date June 30	2013	2012
For Fiscal Year	2014/2015	2013/2014
Employer contribution rate		
Normal Cost*	2.07%	2.21%
Accrued liability	<u>14.22</u>	<u>13.62</u>
Total	16.29%	15.83%
Anticipated accrued liability payment period	30.0 years	30.0 years

* Beginning with the June 30, 2013 valuation, estimated budgeted administrative expenses are included in the normal cost rate.

4. Additional information as of June 30, 2013 as follows.

Valuation date	6/30/2013
Actuarial cost method	Entry age
Amortization method	Level percent open
Remaining amortization period	30.0 years
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return*	8.00%
Projected salary increases [#]	4.25% – 19.5%
*Includes price inflation at	3.50%
[#] Includes wage inflation at	4.25%
Cost of living adjustments	3.00%



Schedule of Employer Contributions

Fiscal Year Ending June 30	Valuation date June 30	Annual Required Contribution	Percentage Contributed
2005	2003	482,966,753	100
2006	2004	514,525,143	100
2007	2005	621,496,708	90
2008	2006	636,546,125	97
2009	2007	657,047,535	100
2010	2008	699,823,624	100
2011	2009	687,015,898	100
2012	2010	735,021,911	100
2013	2011	835,320,765	100
2014	2012	921,872,394	



Solvency Tests
(\$ in Thousands)

Valuation Date	Actuarial Accrued Liabilities for				Portions of Accrued Liabilities Covered by Assets		
	(1) Accumulated Employee Contributions Including Allocated Investment Earnings	(2) Retirees and Beneficiaries Currently Receiving Benefits	(3) Active and Inactive Members Employer Financed Portion	Net Assets Available for Benefits	(1)	(2)	(3)
6/30/04	\$3,571,428	\$10,657,920	\$8,617,912	\$17,103,285	100.0%	100.0%	33.3%
6/30/05	3,819,498	11,260,642	8,646,958	17,180,705	100.0	100.0	24.3
6/30/06	3,955,066	12,228,330	8,745,068	18,321,063	100.0	100.0	24.4
6/30/07	3,788,781	13,342,531	9,731,324	19,791,564	100.0	100.0	27.3
6/30/08	3,991,804	14,306,528	10,236,362	20,814,720	100.0	100.0	24.6
6/30/09	4,235,466	15,665,712	10,693,368	20,597,581	100.0	100.0	6.5
6/30/10	4,266,621	16,763,455	10,369,912	20,143,426	100.0	94.7	0.0
6/30/11	4,356,556	18,001,718	10,296,191	20,315,165	100.0	88.7	0.0
6/30/12	4,463,252	19,547,367	10,482,254	19,992,797	100.0	79.4	0.0
6/30/13	5,053,888	20,789,551	9,699,409	20,490,555	100.0	74.3	0.0



Schedule of Active Member Valuation Data

Valuation Date	Number of Employers	Number	Active Members		
			Annual Payroll	Annual Average Pay	% Increase in Average Pay
2004	880	156,353	\$4,617,272,973	\$29,531	3.2%
2005	861	157,101	4,786,280,398	30,466	3.2
2006	861	158,091	4,971,973,661	31,450	3.2
2007	861	162,804	5,196,294,899	31,917	1.5
2008	863	165,733	5,544,704,937	33,456	4.8
2009	866	167,122	5,831,863,534	34,896	4.3
2010	868	164,896	5,763,556,195	34,953	0.2
2011	872	161,676	5,684,624,214	35,161	0.6
2012	870	162,311	5,857,789,376	36,090	2.6
2013	873	161,744	5,823,577,978	36,005	(0.2)

Schedule of Retirants Added to and Removed From Rolls Last Ten Fiscal Years

Item	Fiscal Year Ended June 30									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Beginning of Year	59,447	62,407	63,939	66,757	70,756	73,540	76,143	79,168	83,115	86,829
Added	5,174	4,610	5,360	6,218	5,335	4,965	5,747	6,566	6,569	6,276
Removed	(2,214)	(3,078)	(2,542)	(2,219)	(2,551)	(2,362)	(2,722)	(2,619)	(2,855)	(2,891)
End of Year	62,407	63,939	66,757	70,756	73,540	76,143	79,168	83,115	86,829	90,214



**Schedule of Annual Benefit Payments Added to and Removed From Rolls
Last Seven Fiscal Years**

Year Ending	2007	2008	2009	2010	2011	2012	2013
Beginning of Year	\$1,117,210,600	\$1,214,384,863	\$1,305,908,320	\$1,395,939,879	\$1,498,662,976	\$1,627,813,430	\$1,752,606,759
Added	97,985,045	93,694,780	87,403,913	103,950,841	127,035,815	125,378,708	120,592,399
Removed	(31,700,099)	(35,621,113)	(33,633,667)	(40,358,965)	(39,518,227)	(45,787,704)	(47,237,330)
Benefit increase due to annual COLA	30,889,317	33,449,790	36,261,313	39,131,221	41,632,866	45,202,325	48,758,557
Benefit increase due to plan amendments	0	0	0	0	0	0	0
End of Year	\$1,214,384,863	\$1,305,908,320	\$1,395,939,879	\$1,498,662,976	\$1,627,813,430	\$1,752,606,759	\$1,874,720,385



Schedule of Average Benefit Payments

	Years of Credited Service								
	0-4	5-9	10-14	15-19	20-24	25	26-29	30	31+
July 1, 2012 to June 30, 2013									
Average Monthly Benefit	\$430.24	\$443.74	\$694.71	\$963.61	\$1,421.74	\$1,924.91	\$2,016.94	\$2,187.80	\$2,931.36
Average Final Salary	\$28,954	\$30,707	\$34,404	\$36,876	\$41,550	\$47,768	\$48,862	\$49,470	\$56,341
Number of Active Retirants	115	800	901	740	758	496	1,121	224	1,121
July 1, 2011 to June 30, 2012									
Average Monthly Benefit	\$503.45	\$425.55	\$655.76	\$984.40	\$1,325.25	\$1,823.47	\$1,956.67	\$2,283.30	\$2,938.26
Average Final Salary	\$27,325	\$29,424	\$32,872	\$37,561	\$40,246	\$46,050	\$47,965	\$51,720	\$56,263
Number of Active Retirants	146	861	867	779	736	501	1,138	260	1,281
July 1, 2010 to June 30, 2011									
Average Monthly Benefit	\$490.21	\$444.82	\$637.24	\$974.84	\$1,347.49	\$1,791.74	\$1,996.32	\$2,176.08	\$2,910.64
Average Final Salary	\$26,297	\$29,798	\$31,063	\$36,095	\$39,613	\$45,296	\$48,620	\$49,084	\$55,608
Number of Active Retirants	247	837	808	741	743	456	1,050	245	1,439
July 1, 2009 to June 30, 2010									
Average Monthly Benefit	\$320.17	\$386.23	\$620.46	\$905.46	\$1,239.55	\$1,717.84	\$1,897.84	\$2,174.78	\$2,833.34
Average Final Salary	\$23,675	\$27,192	\$30,890	\$33,781	\$37,426	\$43,924	\$46,537	\$49,426	\$54,049
Number of Active Retirants	220	765	773	641	627	428	867	237	1,189
July 1, 2008 to June 30, 2009									
Average Monthly Benefit	\$395.82	\$373.84	\$581.94	\$874.55	\$1,314.05	\$1,672.61	\$1,865.25	\$2,115.68	\$2,821.82
Average Final Salary	\$26,414	\$26,280	\$29,481	\$32,707	\$37,865	\$42,352	\$45,058	\$47,003	\$53,867
Number of Active Retirants	192	703	669	572	535	378	732	223	961



Schedule of Average Benefit Payments

	Years of Credited Service								
	0-4	5-9	10-14	15-19	20-24	25	26-29	30	31+
July 1, 2007 to June 30, 2008									
Average Monthly Benefit	\$400.20	\$382.62	\$586.58	\$900.09	\$1,221.01	\$1,738.22	\$1,844.70	\$2,070.82	\$2,726.23
Average Final Salary	\$25,527	\$25,618	\$28,649	\$33,139	\$36,537	\$44,534	\$45,142	\$48,053	\$53,245
Number of Active Retirants	201	690	703	614	586	386	855	226	1,074
July 1, 2006 to June 30, 2007									
Average Monthly Benefit	\$411.52	\$369.97	\$536.43	\$817.54	\$1,113.79	\$1,671.02	\$1,761.30	\$2,127.34	\$2,615.87
Average Final Salary	\$22,554	\$24,146	\$27,269	\$30,518	\$34,644	\$42,366	\$43,541	\$47,398	\$51,466
Number of Active Retirants	340	986	827	747	684	381	917	251	1,085
July 1, 2005 to June 30, 2006									
Average Monthly Benefit	\$489.98	\$331.00	\$492.09	\$765.75	\$1,137.28	\$1,574.92	\$1,729.20	\$1,942.37	\$2,380.21
Average Final Salary	\$21,672	\$22,459	\$25,293	\$29,138	\$33,142	\$38,998	\$41,558	\$43,360	\$46,793
Number of Active Retirants	121	671	692	632	627	358	973	217	1,069
July 1, 2004 to June 30, 2005									
Average Monthly Benefit	\$478.93	\$354.32	\$556.04	\$872.26	\$1,239.41	\$1,569.12	\$1,683.54	\$1,878.27	\$2,382.38
Average Final Salary	\$22,862	\$22,656	\$24,775	\$29,619	\$34,563	\$38,437	\$40,090	\$41,687	\$46,505
Number of Active Retirants	108	543	666	516	421	296	853	223	984
July 1, 2003 to June 30, 2004									
Average Monthly Benefit	\$380.68	\$354.90	\$584.96	\$821.55	\$1,068.15	\$1,605.52	\$1,709.53	\$1,871.84	\$2,437.30
Average Final Salary	\$21,732	\$23,875	\$26,052	\$29,035	\$30,841	\$38,021	\$40,186	\$41,374	\$47,014
Number of Active Retirants	202	651	738	535	368	496	862	274	1,048



SCHEDULE A

Development of Actuarial Value of Assets (\$ thousands)

Valuation Date June 30:	2012	2013	2014	2015	2016	2017
A. Actuarial Value Beginning of Year	\$20,315,165	\$19,992,797				
B. Market Value End of Year	19,781,387	21,686,911				
C. Market Value Beginning of Year	20,377,236	19,781,387				
D. Cash Flow						
D1. Contributions	1,314,501	1,429,639				
D2. Other Revenue	0	0				
D3. Benefit Payments	(1,956,205)	(2,074,025)				
D4. Administrative Expenses	(13,744)	(14,106)				
D5. Investment Expenses	<u>(43,332)</u>	<u>(49,140)</u>				
D6. Net	(698,780)	(707,632)				
E. Investment Income						
E1. Market Total: B.-C.-D6.	102,931	2,613,156				
E2. Assumed Rate	8.00%	8.00%				
E3. Amount for Immediate Recognition	1,661,587	1,605,311				
E4. Amount for Phased-In Recognition	(1,558,656)	1,007,845				
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.20*E4.	(311,731)	201,569				
F2. First Prior Year	566,840	(311,731)	201,569			
F3. Second Prior Year	191,592	566,840	(311,731)	201,569		
F4. Third Prior Year	(1,048,191)	191,592	566,840	(311,731)	201,569	
F5. Fourth Prior Year	<u>(683,685)</u>	<u>(1,048,191)</u>	<u>191,592</u>	<u>566,840</u>	<u>(311,731)</u>	<u>201,569</u>
F6. Total Recognized Investment Gain	(1,285,175)	(399,921)	648,270	456,678	(110,162)	201,569
G. Actuarial Value End of Year:						
A.+D6.+E3.+F6.	\$19,992,797	\$20,490,555				
H. Difference Between Market & Actuarial Values	\$211,410	\$(1,196,356)	\$(548,086)	\$(91,408)	\$(201,570)	\$(1)

The Actuarial Valuation of Assets recognizes assumed investment income (line E3) fully each year. Differences between actual and assumed investment income (line E4) are phased in over a closed 5 year period. During periods when investment performance exceeds the assumed rate, Actuarial Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Actuarial Value of Assets will tend to be greater than market value. If assumed rates are exactly realized for 4 consecutive years, actuarial value will become equal to market value.



Asset Summary June 30, 2013 (\$ in Thousands)			
	Market Value	Book Value	Actuarial Value
1. Assets at June 30, 2012	\$19,781,387	\$17,676,641	\$19,992,797
2. Contributions and Misc. Revenue	1,429,639	1,429,639	1,429,639
3. Investment Increment	2,613,156	1,440,333	1,205,390
4. Benefit Payments	(2,074,025)	(2,074,025)	(2,074,025)
5. Expenses	(63,246)	(63,246)	(63,246)
6. Assets at June 30, 2013 (1) + (2) + (3) + (4) + (5)	\$21,686,911	\$18,409,342	\$20,490,555
7. Investment Increment/Mean Assets*	13.45%	8.31%	6.14%

*Based on the approximation formula: $I/[.5 \times (A + B - I)]$, where

I = Investment increment
A = Beginning of year asset value
B = End of year asset value



SCHEDULE B

STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

INTEREST RATE: 8.00% per annum, compounded annually (net of investment expense only).

SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed rates of separation from active service are as follows:

Annual Rates of						
Age	Withdrawal and Vesting*		Death**		Disability**	
	Male	Female	Male	Female	Male	Female
20	22.0%	25.0%	.01%	.01%	.01%	.01%
25	15.0	15.5	.01	.01	.02	.01
30	10.0	10.5	.02	.01	.02	.02
35	7.5	8.0	.03	.02	.04	.02
40	6.0	6.0	.04	.02	.12	.09
45	5.5	5.0	.07	.04	.22	.15
50	5.5	5.0	.14	.05	.32	.23
55	5.5	5.0	.19	.05	.52	.40
60	5.5	5.0	.22	.08	.38	.32
65	5.5	5.0	.40	.10		
70	5.5	5.0	.40	.10		
74	5.5	5.0	.40	.10		

Annual Rates of Service Retirements				
Age	Male		Female	
	Under 25 Years of Service***	25 Years of Service and Over***	Under 25 Years of Service***	25 Years of Service and Over***
45		18.0%		14.0%
50		13.0		11.0
55		17.0		18.0
60	10.0%	20.0	12.5%	22.0
62	19.0	33.0	18.0	36.0
65	22.0	30.0	27.0	42.0
70	19.0	25.0	21.0	22.0
75	100.0	100.0	100.0	100.0

* For all ages, rates of 32% for 1st year of employment and 22% for 2nd year.

** 94% are presumed to be non-duty related, and 6% are assumed to be duty related.

*** For Tier 4 members, 30 years of service.



SALARY INCREASES: Representative values of the assumed annual rates of salary increases are as follows:

Service	Merit & Seniority	Annual Rates of Base (Economy)	Increase Next Year
0	15.25%	4.25%	19.50%
1	5.25	4.25	9.50
2	2.75	4.25	7.00
3	1.75	4.25	6.00
4	1.25	4.25	5.50
5	0.75	4.25	5.00
10	0.25	4.25	4.50
15	0.25	4.25	4.50
20	0.25	4.25	4.50
25	0.25	4.25	4.50
30	0.00	4.25	4.25
35	0.00	4.25	4.25

PAYROLL GROWTH: 4.25% per annum, compounded annually.

PRICE INFLATION: 3.50% per annum, compounded annually.

TIMING OF DECREMENTS AND PAY INCREASES: Middle of Year.

DEATH AFTER RETIREMENT: The mortality table, for post-retirement mortality, used in evaluating allowances to be paid is the RP-2000 Combined Mortality Table Projected with Scale AA to 2025 set forward two years for males. The RP-2000 Disabled Mortality Table (set back 3 years for males and set forward 2 years for females) was used for the period after disability retirement. This assumption is used to measure the probabilities of each benefit payment being made after retirement. Mortality improvement is anticipated under this assumption as recent mortality experience shows actual deaths 7% greater than expected under the selected table.

MARRIAGE ASSUMPTION: 85% married with the husband three years older than his wife.

UNUSED SICK LEAVE: 0.50 years at retirement.

MILITARY SERVICE: 0.25 years at retirement.

DEFERRED VESTEDS: 30% of vested participants will forfeit their accrued benefit and receive their employee contributions with interest.



VALUATION METHOD: The valuation is prepared on the projected benefit basis, which is used to determine the present value of each member's expected benefit payable at retirement, disability or death. The calculations are based on the member's age, years of service, sex, compensation, expected future salary increases, and an assumed future interest earnings rate (currently 8.00%). The calculations consider the probability of a member's death or termination of employment prior to becoming eligible for a benefit and the probability of the member terminating with a service, disability, or survivor's benefit. The present value of the expected benefits payable to active members is added to the present value of the expected future payments to current benefit recipients to obtain the present value of all expected benefits payable to the present group of members and survivors.

The employer contributions required to support the benefits of PERS are determined following a level funding approach, and consist of a normal contribution and an accrued liability contribution.

The normal contribution is determined using the "entry age normal" method. Under this method, a calculation is made for pension benefits to determine the uniform and constant percentage rate of employer contribution which, if applied to the compensation of the average new member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.

The unfunded accrued liability is determined by subtracting the current assets and the present value of prospective employer normal contributions and member contributions from the present value of expected benefits to be paid from the PERS. The accrued liability contribution amortizes the balance of the unfunded accrued liability over a period of years from the valuation date.

ASSET VALUATION METHOD: Actuarial value, as developed in Schedule A. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected market value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between market value and expected market value.



SCHEDULE C

SUMMARY OF MAIN BENEFIT AND CONTRIBUTION PROVISIONS

The following summary presents the main benefit and contribution provisions of the System in effect July 1, 2013, as interpreted in preparing the actuarial valuation.

DEFINITIONS

Average Compensation	Average annual covered earnings of an employee during the four highest years of service.
Covered Earnings	Gross salary not in excess of the maximum amount on which contributions were required.
Fiscal Year	Year commencing on July 1 and ending June 30.
Credited Service	Service while a contributing member plus additional service as described below.
Unused Sick and Vacation Leave	Service credit is provided at no charge to members for unused sick and vacation time that has accrued at the time of retirement.
Additional Service	Additional service credit may be granted for service prior to February 1, 1953, active duty military service, out-of-state service, professional leave and non-covered and retroactive service



The maximum covered earnings for employers and employees over the years are as follows:

**EMPLOYER AND EMPLOYEE RATES OF CONTRIBUTION
AND MAXIMUM COVERED EARNINGS**

Fiscal Date From	Fiscal Date To	Employer Rate	Maximum Covered Earnings	Employee Rate	Maximum Covered Earnings
2/1/53	6/30/58	2.50%	\$6,000	4.00%	\$4,800*
7/1/58	6/30/60	2.50	9,000	4.00	7,800*
7/1/60	6/30/66	2.50	15,000	4.00	13,800*
7/1/66	6/30/68	3.00	15,000	4.50	13,800*
7/1/68	3/31/71	4.50	15,000	4.50	15,000
4/1/71	6/30/73	4.50	35,000	4.50	35,000
7/1/73	6/30/76	5.85	35,000	5.00	35,000
7/1/76	6/30/77	7.00	35,000	5.00	35,000
7/1/77	6/30/78	7.50	35,000	5.50	35,000
7/1/78	6/30/80	8.00	35,000	5.50	35,000
7/1/80	6/30/81	8.00	53,000	5.50	53,000
7/1/81	12/31/83	8.75	53,000	6.00	53,000
1/1/84	6/30/88	8.75	63,000	6.00	63,000
7/1/88	6/30/89	8.75	75,600	6.00	75,600
7/1/89	12/31/89	8.75	75,600	6.50	75,600
1/1/90	6/30/91	9.75	75,600	6.50	75,600
7/1/91	6/30/92	9.75	75,600	7.25	75,600
7/1/92	6/30/02	9.75	125,000	7.25	125,000
7/1/02	6/30/05	9.75	150,000	7.25	150,000
7/1/05	6/30/06	10.75	150,000	7.25	150,000
7/1/06	6/30/07	11.30	150,000	7.25	150,000
7/1/07	6/30/08	11.85	150,000	7.25	150,000
7/1/08	6/30/09	11.85	230,000	7.25	230,000
7/1/09	6/30/10	12.00	245,000	7.25	245,000
7/1/10	6/30/11	12.00	245,000	9.00	245,000
7/1/11	12/31/11	12.00	245,000	9.00	245,000
1/1/12	6/30/12	12.93	245,000	9.00	245,000
7/1/12	6/30/13	14.26	250,000	9.00	250,000
7/1/13	6/30/14	15.75	255,000	9.00	255,000

*From February 1, 1953 through June 30, 1968 the first \$100 in monthly earnings or \$1,200 in annual earnings were not covered earnings for the employee.



BENEFITS

Superannuation Retirement

Condition for Retirement

- (a) A retirement allowance is paid upon the request of any member who retires and has attained age 60 and completed at least eight years* of membership service. A retirement allowance may also be paid upon the completion of 25 years of creditable service for members hired prior to July 1, 2011 or upon the completion of 30 years of creditable service for members hired on or after July 1, 2011.
- (b) Any member who withdraws from service prior to his or her attainment of age 60 and who has completed at least eight years* of membership service is entitled to receive, in lieu of a refund of his or her accumulated contributions, a retirement allowance commencing at age 60.

Amount of Allowance

The annual retirement allowance payable to a member who retires under condition (a) above is equal to:

1. A member's annuity which is the actuarial equivalent of the member's accumulated contributions at the time of his or her retirement, plus
2. For a member hired prior to July 1, 2011, an employer's annuity which, together with the member's annuity, is equal to 2% of his or her average compensation for each of the first 25 years of creditable service plus 2-1/2% for each year of creditable service over 25 years.
3. For a member hired on or after July 1, 2011, an employer's annuity which, together with the member's annuity, is equal to 2% of his or her average compensation for each of the first 30 years of creditable service plus 2-1/2% for each year of creditable service over 30 years. There will be an actuarial reduction for each year of creditable service below 30 or for each year of age below age 65, whichever is less.

For members hired prior to July 1, 2011, the minimum allowance is \$120 for each year of creditable service.

Disability Retirement

Condition for Retirement

A retirement allowance is paid to a member who is totally and permanently disabled, as determined by the Board of Trustees, and has accumulated eight or more years* of membership service.

* four years for those who entered the system before July 1, 2007



Amount of Allowance

For those who were active members prior to July 1, 1992, and did not elect the benefit structure outlined below, the annual disability retirement allowance payable is equal to a superannuation retirement allowance if the member has attained age 60, otherwise it is equal to a superannuation retirement allowance calculated as follows:

1. A member's annuity equal to the actuarial equivalent of his or her accumulated contributions at the time of retirement, plus
2. An employer's annuity equal to the amount that would have been payable had the member continued in service to age 60.

For those who become active members after June 30, 1992, and for those who were active members prior to July 1, 1992, who so elected, the following benefits are payable:

1. A temporary allowance equal to the greater of (a) 40% of average compensation plus 10% for each dependent child up to a maximum of 2, or (b) the member's accrued allowance. This temporary allowance is paid for a period of time based on the member's age at disability, as follows:

<u>Age at Disability</u>	<u>Duration</u>
60 and earlier	to age 65
61	to age 66
62	to age 66
63	to age 67
64	to age 67
65	to age 68
66	to age 68
67	to age 69
68	to age 70
69 and later	one year

For members hired prior to July 1, 2011, the minimum allowance is \$120 per year of creditable service.

2. A deferred allowance commencing when the temporary allowance ceases equal to the greater of (a) the allowance the member would have received based on service to the termination age of the temporary allowance, but not more than 40% of average compensation, or (b) the member's accrued allowance.

For members hired prior to July 1, 2011, the minimum allowance is \$120 per year of creditable service.

Effective July 1, 2004, a temporary benefit can be paid out of a member's accumulated contribution balance while the member is awaiting a determination for eligibility for disability benefits. Future disability payments, if any, would be offset by advanced payments made from the member's accumulated contributions.



Accidental Disability Retirement

Condition for Retirement

A retirement allowance is paid to a member who is totally and permanently disabled in the line of performance of duty.

Amount of Allowance

The annual accidental disability retirement allowance is equal to the allowance payable on disability retirement but not less than 50% of average compensation. There is no minimum benefit.

Accidental Death Benefit

Condition for Benefit

A retirement allowance is paid to a spouse and/or dependent children upon the death of an active member in the line of performance of duty.

Amount of Allowance

The annual retirement allowance is equal to 50% of average compensation payable to the spouse and 25% of average compensation payable to one dependent child or 50% to two or more children until age 19 (23 if a full time student). There is no minimum benefit.

Ordinary Death Benefit

Condition for Benefit

Upon the death of a member who has completed at least eight years* of membership service, a benefit is payable, in lieu of a refund of the member's accumulated contributions, to his or her spouse, if said spouse has been married to the member for not less than one year.

*four years for those who entered the system before July 1, 2007.

Amount of Allowance

The annual retirement allowance payable to the lawful spouse of a vested member who dies is equal to the greater of (i) the allowance that would have been payable had the member retired and elected Option 2, reduced by an actuarially determined factor based on the number of years the member lacked in qualifying for unreduced retirement benefits, or (ii) a lifetime benefit equal to 20% of the deceased member's average compensation, but not less than \$50 per month.

In addition, a benefit is payable to dependent children until age 19 (23 if a full time student). The benefit is equal to the greater of 10% of average compensation or \$50 per month for each dependent child up to 3.

Return of Contributions

Upon the withdrawal of a member without a retirement benefit, his or her contributions are returned to him or her, together with accumulated regular interest thereon.

Upon the death of a member before retirement, his or her contributions, together with the full accumulated regular interest thereon, are paid to his or her designated beneficiary, if any, otherwise, to his or her estate provided no other survivor benefits are payable.

Interest is currently credited to the member's account at 3.5% per annum.



Normal Form of Benefit

The normal form of benefit (modified cash refund) is an allowance payable during the life of the member with the provision that upon his or her death the excess of his or her total contributions at the time of retirement over the total retirement annuity paid to him or her will be paid to his or her designated beneficiary.

Optional Benefits

A member upon retirement may elect to receive his or her allowance in one of the following forms which are computed to be actuarially equivalent to the applicable retirement allowance.

Option 1. Reduced allowance with the provision that if the pensioner dies before he receives the value of the member's annuity as it was at the time of retirement, the balance shall be paid to his or her beneficiary.

Option 2. Upon his or her death, his or her reduced retirement allowance shall be continued throughout the life of, and paid to, his or her beneficiary.

Option 3. Upon his or her death, 50% of his or her reduced retirement allowance shall be continued throughout the life of, and paid to, a designated beneficiary and the other 50% of his or her reduced retirement allowance to some other designated beneficiary.

Option 4. Upon his or her death, 75% of his or her reduced retirement allowance shall be continued throughout the life of, and paid to, a designated beneficiary.

Option 4A. Upon his or her death, 50% of his or her reduced retirement allowance shall be continued throughout the life of, and paid to, a designated beneficiary.

Option 4B. A reduced retirement allowance shall be continued throughout the life of the pensioner, but with the further guarantee of payment to the pensioner or his or her beneficiary for a specified number of years certain.

Option 4C. A member may elect any option with the added provision that the member shall receive, so far as possible, the same total amount annually (considering both PERS and Social Security benefits) before and after the earliest age at which the member becomes eligible for a Social Security benefit. This option was only available to those who retired prior to July 1, 2004.

A member who elects Option 2, Option 4, or Option 4A at retirement may revert to the normal form of benefit if the designated beneficiary predeceases the retired member or if the retired member divorces the designated beneficiary. A member who elects the normal form of benefit or Option 1 at retirement may select Option 2, Option 4, or Option 4A to provide beneficiary protection to a new spouse if married after retirement.



A member hired prior to July 1, 2011 and who has at least 28 years of creditable service* or a member hired on or after July 1, 2011 who has at least 33 years of creditable service can select a partial lump-sum option at retirement. Under this option, the retiree has the option of taking a partial lump-sum distribution equal to 12, 24, or 36 times the base maximum monthly benefit. With each lump-sum amount, the base maximum monthly benefit will be actuarially reduced. A member selecting the partial lump-sum option may also select any of the regular options except Option 1, the prorated single-life annuity, and Option 4-C, the Social Security leveling provision. The benefit is then calculated using the new reduced maximum benefit as a starting point in applying the appropriate option factors for the reduction.

* or at least age 63 with four years of membership service for those who entered the system before July 1, 2007.

Post-Retirement Adjustments In Allowances

The allowances of retired members are adjusted annually by an amount equal to (a) 3% of the annual retirement allowance for each full fiscal year of retirement prior to the year in which the member reaches age 55*, plus (b) 3% compounded for each year thereafter beginning with the fiscal year in which the member turns age 55*.

*Age 60 for members hired on or after July 1, 2011

A prorated portion of the annual adjustment will be paid to the member, beneficiary, or estate of any member or beneficiary who is receiving the annual adjustment in a lump sum, but whose benefits are terminated between July 1 and December 1.



SCHEDULE D

DETAILED TABULATIONS OF THE DATA

Retirants & Beneficiaries as of June 30, 2013
Tabulated by Year of Retirement

Year of Retirement	No.	Total Annual Benefits, excluding COLA	COLA	Total Annual Benefits	Average Monthly Total Benefit
2013	3,182	\$62,208,672	\$50,531	\$62,259,203	\$1,631
2012	5,695	112,753,369	454,797	113,208,166	1,657
2011	5,596	108,147,922	3,082,578	111,230,500	1,656
2010	5,649	111,888,971	6,729,533	118,618,504	1,750
2009	4,530	80,406,625	7,222,441	87,629,066	1,612
2008	4,676	87,346,931	10,783,179	98,130,110	1,749
2007	4,257	76,476,755	11,819,888	88,296,643	1,728
2006	4,399	75,947,889	14,321,413	90,269,302	1,710
2005	4,168	69,230,283	15,434,136	84,664,419	1,693
2004	4,267	73,637,814	19,062,856	92,700,670	1,810
2003	3,792	62,402,230	18,405,523	80,807,753	1,776
2002	3,902	63,837,645	21,270,984	85,108,629	1,818
2001	3,837	60,117,203	22,483,520	82,600,723	1,794
2000	3,309	53,806,529	22,363,456	76,169,985	1,918
1999	2,641	39,272,021	17,990,413	57,262,434	1,807
1998	2,598	38,478,441	19,328,663	57,807,104	1,854
1997	2,535	34,295,964	18,827,267	53,123,231	1,746
1996	2,703	38,158,980	22,724,086	60,883,066	1,877
1995	2,127	27,207,425	17,475,499	44,682,924	1,751
1994	1,966	24,037,734	16,482,728	40,520,462	1,718
1993	1,875	21,791,022	16,093,848	37,884,870	1,684
1992	2,244	28,958,303	22,875,538	51,833,841	1,925
1991	1,761	20,709,816	17,453,756	38,163,572	1,806
1990	1,377	15,714,175	14,161,306	29,875,481	1,808
1989	1,076	10,203,450	9,710,146	19,913,596	1,542
1988	859	8,027,829	8,149,164	16,176,993	1,569
1987	737	6,446,224	6,897,146	13,343,370	1,509
1986	1,310	13,729,235	16,055,406	29,784,641	1,895
1985	573	5,197,104	6,200,413	11,397,517	1,658
1984	511	4,117,854	5,167,203	9,285,057	1,514
1983	358	2,522,910	3,322,676	5,845,586	1,361
1982	333	2,324,105	3,228,498	5,552,603	1,390
1981	327	2,067,409	3,004,609	5,072,018	1,293
1980	229	1,416,608	2,141,845	3,558,453	1,295
1979	143	850,642	1,365,107	2,215,749	1,291
1978 & Prior	672	3,096,963	5,747,181	8,844,144	1,097
Totals	90,214	\$1,446,833,052	\$427,887,333	\$1,874,720,385	\$1,732



Schedule of Retired Members by Type of Benefit

Benefits Payable June 30, 2013

Amount of Monthly Benefit**	Number of Rets.	Ret. Type 1*	Ret. Type 2*	Ret. Type 3*
\$1-\$100	2,368	1,902	11	455
101-200	5,467	4,125	105	1,237
201-300	5,572	4,035	268	1,269
301-400	5,117	3,634	354	1,129
401-500	4,754	3,418	390	946
501-600	4,108	2,948	427	733
601-700	3,760	2,721	434	605
701-800	3,597	2,654	436	507
801-900	3,505	2,651	407	447
901-1,000	3,368	2,586	384	398
Over 1,000	48,598	43,156	2,814	2,628
Totals	90,214	73,830	6,030	10,354

*Type of Retirement

1 – Retirement for Age & Service

2 – Disability Retirement

3 – Survivor Payment

**Reflects reduced benefit



Schedule of Retired Members by Option

Benefits Payable June 30, 2013

Amount of Monthly Benefit**	Number of Rets.	Life	Option 1	Option 2	Option 3	Option 4	Option 4A	Option 4B	Option 4C*	Option 5	PLSO 1 Year*	PLSO 2 Years*	PLSO 3 Years*
\$1-\$100	2,368	1,715	78	319	13	0	33	204	5	6	55	43	408
101-200	5,467	3,958	209	674	26	10	88	463	23	39	105	87	495
201-300	5,572	4,126	205	614	18	18	103	443	39	45	110	84	412
301-400	5,117	3,699	217	579	26	8	117	443	58	28	105	96	362
401-500	4,754	3,398	184	598	17	22	155	354	71	26	109	84	309
501-600	4,108	2,877	136	547	19	15	121	367	94	26	117	82	304
601-700	3,760	2,672	152	470	19	11	139	275	143	22	104	76	233
701-800	3,597	2,484	159	460	15	13	180	240	172	46	97	84	248
801-900	3,505	2,324	162	494	13	19	193	269	194	31	110	68	299
901-1,000	3,368	2,247	128	479	17	24	174	248	224	51	109	55	292
Over 1,000	48,598	29,421	1,692	8,299	283	344	4,334	3,930	1,873	295	2,302	1,999	8,759
Totals	90,214	58,921	3,322	13,533	466	484	5,637	7,236	2,896	615	3,323	2,758	12,121

Option Selected

Life	-	Return of Contributions
Opt. 1	-	Return of Member's Annuity
Opt. 2	-	100% Survivorship
Opt. 3	-	50%/50% Dual Survivorship
Opt. 4	-	75% Survivorship
Opt. 4A	-	50% Survivorship
Opt. 4B	-	Years Certain & Life
Opt. 4C	-	Social Security Leveling *
Opt. 5	-	Pop-Up
PLSO	-	Partial Lump Sum Option*

*Included in other options

** Reflects reduced benefit



Public Employees' Retirement System of Mississippi

Retirant and Beneficiary Information June 30, 2013
Tabulated by Attained Ages

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Total	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20					641	\$2,587,794	641	\$2,587,794
20 – 24					184	1,051,246	184	1,051,246
25 – 29			2	\$22,940	69	750,222	71	773,162
30 – 34			21	271,233	128	1,128,298	149	1,399,531
35 – 39			77	1,055,329	150	1,253,608	227	2,308,937
40 – 44	19	388,513	201	3,643,976	260	2,687,136	480	6,719,625
45 – 49	515	12,544,454	428	8,354,907	314	3,151,676	1,257	24,051,037
50 – 54	2,426	63,769,457	786	14,907,030	537	5,830,154	3,749	84,506,641
55 – 59	5,865	170,326,923	1,193	22,219,571	753	10,584,882	7,811	203,131,376
60 – 64	14,243	336,824,269	1,318	21,988,772	991	15,021,145	16,552	373,834,186
65 – 69	17,242	373,130,277	1,004	16,166,249	1,179	18,768,561	19,425	408,065,087
70 – 74	13,121	271,758,022	501	7,471,893	1,217	19,851,194	14,839	299,081,109
75 – 79	8,943	179,320,851	320	4,173,158	1,274	22,033,130	10,537	205,527,139
80 – 84	6,164	120,928,705	115	1,364,011	1,303	22,118,652	7,582	144,411,368
85 – 89	3,564	63,943,737	43	519,495	874	14,578,308	4,481	79,041,540
90 – 94	1,318	23,193,544	20	200,514	391	6,952,932	1,729	30,346,990
95	110	1,955,320			36	413,330	146	2,368,650
96	101	1,668,961	1	20,053	15	194,527	117	1,883,541
97	66	1,052,945			11	154,002	77	1,206,947
98	38	715,733			10	123,245	48	838,978
99	32	473,076			10	198,995	42	672,071
100 & Over	63	813,096			7	100,334	70	913,430
Totals	73,830	\$1,622,807,883	6,030	\$102,379,131	10,354	\$149,533,371	90,214	\$1,874,720,385

Average Age: 68.9 years

Average Age at Retirement: 59.2 years



Public Employees' Retirement System of Mississippi

Total Active Members as of June 30, 2013
Tabulated by Attained Ages and Years of Service

Attained	Years of Service to Valuation Date							Totals	
	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30+	No.	Valuation Payroll
Under 20	308	7						315	\$4,104,421
20 – 24	6,695	121						6,816	152,997,862
25 – 29	12,258	3,606	53					15,917	474,104,656
30 – 34	8,259	8,305	2,549	49				19,162	653,135,450
35 – 39	6,480	5,589	5,586	1,725	34			19,414	712,315,262
40 – 44	5,924	5,250	4,451	4,433	1,810	56		21,924	831,433,462
45 – 49	4,885	4,415	3,721	3,279	3,474	1,334	43	21,151	794,524,637
50 – 54	4,249	4,088	3,826	3,265	2,987	2,498	838	21,751	822,142,851
55 – 59	3,260	3,561	3,157	2,853	2,818	1,966	1,512	19,127	743,095,584
60	508	540	521	436	457	330	298	3,090	122,827,559
61	419	517	470	402	371	295	253	2,727	107,721,084
62	324	457	371	305	303	221	198	2,179	88,041,672
63	260	380	290	257	211	159	188	1,745	69,759,010
64	210	288	229	209	177	133	126	1,372	55,318,553
65	164	251	181	161	145	98	112	1,112	46,154,432
66	154	191	184	129	96	73	94	921	37,672,195
67	97	111	100	69	59	36	63	535	19,889,109
68	74	108	99	60	53	34	52	480	19,401,451
69	72	78	79	56	32	25	50	392	15,913,166
70 & Over	274	322	342	229	141	123	183	1,614	53,025,562
Totals	54,874	38,185	26,209	17,917	13,168	7,381	4,010	161,744	\$5,823,577,978

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 44.4 years
Service: 10.2 years
Annual Pay: \$36,005



SCHEDULE E

**MISSISSIPPI PERS
ANALYSIS OF FINANCIAL EXPERIENCE**

**Gains & Losses in Accrued Liabilities
Resulting from Difference Between
Assumed Experience & Actual Experience
(\$ Millions)**

Type of Activity	\$ Gain (or Loss) For Year Ending 6/30/13	\$ Gain (or Loss) For Year Ending 6/30/12
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	\$ (90.8)	\$ (229.7)
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	(26.0)	(26.0)
Death-in Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(0.1)	0.3
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	34.7	13.0
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	349.6	102.3
New Members. Additional unfunded accrued liability will produce a loss.	(63.8)	(68.5)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	(416.8)	(1,280.2)
Death After Retirement. If retirants live longer than assumed, there is a loss. If not as long, a gain.	(32.7)	(17.7)
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	<u>(175.6)</u>	<u>(365.1)</u>
Gain (or Loss) During Year From Financial Experience	\$ (421.5)	\$ (1,871.6)
Non-Recurring Items. Adjustments for plan amendments, assumption changes, or method	<u>226.1</u>	<u>0.0</u>
Composite Gain (or Loss) During Year	\$ (195.4)	\$ (1,871.6)



SCHEDULE F

GLOSSARY

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability”.

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future plan benefits” between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method”.

Actuarial Equivalent. A series of payments is called an actuarial equivalent of another series of payments if the two series have the same actuarial present value.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Experience Gain (Loss). A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as “current service cost”. Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as “unfunded accrued liability”.

Valuation Assets. The value of current plan assets recognized for valuation purposes. Generally based on book value plus a portion of unrealized appreciation or depreciation.