



**Cavanaugh Macdonald**  
CONSULTING, LLC

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

**Prepared as of June 30, 2011  
(revised)**





# Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

December 12, 2011

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

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, 2011. The results may not be applicable for other purposes.

The date of the valuation was June 30, 2011. This report is a revision of the one presented at the October Board meeting. The Schedule of Employer Contributions on page 19 was amended to properly reflect the change in employee contribution rate that took effect in 2010, and two typographical errors were corrected.

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 9.

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  
December 12, 2011  
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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

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, 2011**

**SECTION I – SUMMARY OF PRINCIPAL RESULTS**

- This report, prepared as of June 30, 2011, 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, 2011. We recommend that the contribution rate be set at 14.26% of active members' compensation for the 2012/2013 fiscal year in order to keep the anticipated accrued liability payment period within 30 years in accordance with GASB Statements 25 and 27.

**SUMMARY OF PRINCIPAL RESULTS**

VALUATION DATE	June 30, 2011	June 30, 2010
Active members included in valuation		
Number	161,676	164,896
Annual compensation	\$ 5,684,624,214	\$ 5,763,556,195
Retirees		
Number	83,115	79,168
Annual allowances	\$ 1,627,813,430	\$ 1,498,662,976
Assets		
Market related actuarial value	\$ 20,315,165,000	\$ 20,143,426,000
Market value	\$ 20,377,236,000	\$ 16,788,214,000
Unfunded accrued liability	\$ 12,339,300,368	\$ 11,256,562,237
Funded Ratio	62.2%	64.2%
Recommended employer contribution rate		
Normal	2.31%	2.18%
Accrued liability	<u>11.95</u>	<u>10.75</u>
Total	14.26%	12.93%
Anticipated accrued liability payment period	30.0 years	30.0 years
Unfunded accrued liability based on market value of assets	\$ 12,277,229,368	\$ 14,611,774,237
Funded Ratio	62.4%	53.5%
Payment Period	29.7 years	53.4 years



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 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 and disability rates have been revised to more closely reflect the actual experience of the System.
  - The post-retirement mortality table used for disability retirements has been changed.
  - The rates of salary increase for service periods under 5 years were revised to more closely reflect the actual experience of the System.
5. The following changes in benefit structure were made since the last valuation:
  - Section 25-11-115 was amended to add Option 4, the 75 percent joint and survivor annuity, effective January 1, 2011.
  - Section 25-11-115 (3) and (4) were amended to add Option 4, the 75 percent joint and survivor annuity, to the “pop-up” and “pop-down” provisions, respectively, effective July 1, 2011.
  - Section 25-11-115 was amended to provide that, for members who retire effective on or after July 1, 2012, the actuarial equivalent factor used to compute the reduced retirement allowance at retirement or upon any subsequent recalculation of benefit shall be the factor for the age of the retiree and his or her beneficiary at the time of retirement or at the time an election for recalculation of benefits is made.
  - Section 25-11-111 was amended to establish 30 years as the number of years of creditable service required for retirement regardless of age for persons who become members of the System on or after July 1, 2011.
  - Section 25-11-115 was amended to establish 33 years as the number of years of creditable service required to select a partial lump sum option for persons who become members of the System on or after July 1, 2011.
  - Section 25-11-111 was amended to establish the retirement formula for persons who become members of the System on or after July 1, 2011, as two percent (2.0%) of average compensation for each of the first thirty (30) years of creditable service and two and one-half



percent (2.5%) of average compensation for each year beyond thirty (30) years, with no minimum monthly benefit.

- Section 25-11-111 was amended to provide for an actuarial reduction in the benefit for each year of creditable service below thirty (30) years or the number of years in age that the member is below age 65, whichever is less, for persons who become members of the System on or after July 1, 2011.
- Section 25-11-112 was amended to establish the COLA for persons who become members of the System on or after July 1, 2011, as three percent (3.0%) of the annual retirement allowance for each full fiscal year in retirement up to the fiscal year in which the retired member reaches age 60, plus three percent (3.0%) compounded for each full fiscal year thereafter.
- Section 25-11-114 was amended to replace the three percent (3.0%) reduction in spouse survivor retirement benefits with an actuarially determined percentage or factor to allow for modification as the percentage or factor might need to change from time to time as determined by the actuary.

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
2002	152,148	\$4,221	\$27,740	1.9%	56,705	2.7	\$656.5	15.6%	\$20,180	\$16,823	\$3,357
2003	154,872	4,432	28,615	3.2	59,447	2.6	715.1	16.1	21,486	16,980	4,506
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

\*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, 2011 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	114	32,574	\$1,092,822,914	\$33,549	44.4	10.8
State Universities	9	18,018	855,000,721	47,453	43.3	9.5
Public Schools	150	63,538	2,115,139,207	33,289	44.3	10.7
Community/Junior Colleges	15	6,198	279,184,913	45,044	46.9	11.7
Counties	82	13,641	422,679,741	30,986	46.9	9.4
Municipalities	284	18,828	609,440,866	32,369	43.8	9.8
Other Political Subdivisions	218	8,879	310,355,852	34,954	43.7	7.7
<b>Total in PERS</b>	<b>872</b>	<b>161,676</b>	<b>\$5,684,624,214</b>	<b>\$35,161</b>	<b>44.5</b>	<b>10.2</b>

The total number of active members includes 111,395 vested members (38,733 State employees and 72,662 employees of other entities), and 50,281 non-vested members (18,057 State and 32,224 others).

**Retired Lives**

Type of Benefit Payment	No.	Annual Benefits	Group Averages	
			Benefit	Age
Retirement	67,486	\$1,402,917,892	\$20,788	69.9
Disability	5,676	91,458,679	16,113	60.6
Survivor	9,953	133,436,859	13,407	65.0
<b>Total in PERS</b>	<b>83,115</b>	<b>\$1,627,813,430</b>	<b>\$19,585</b>	<b>68.7</b>

The total retired lives include 29,558 from State employment and 53,557 from other employment.



### Deferred Vested/Inactive Lives

Type of Member	No.	Deferred Benefits	Outstanding Refunds
Deferred Vested - Benefit Provided	15,830	\$ 72,470,372	N/A
Deferred Vested – Missing Benefit	2,957	N/A	\$ 118,435,079
Inactive	110,573	N/A	96,513,826
<b>Total in PERS</b>	<b>129,360</b>	<b>\$ 72,470,372</b>	<b>\$214,948,905</b>

The total deferred vested and inactive lives include 41,665 from State employment and 87,695 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, 2011 and, for comparison purposes, as of the immediately preceding valuation date of June 30, 2010. 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, 2011	JUNE 30, 2010
<b>ASSETS</b>		
Current actuarial value of assets:		
Annuity Savings Account	\$ 4,356,556,375	\$ 4,266,621,074
Annuity Reserve	3,497,973,699	3,161,092,621
Employers' Accumulation Account	<u>12,460,634,926</u>	<u>12,715,712,305</u>
Total current assets	\$ 20,315,165,000	\$ 20,143,426,000
Future member contributions to Annuity Savings Account	\$ 4,014,397,836	\$ 3,992,853,784
Prospective contributions to Employer's Accumulation Account		
Normal contributions	\$ 1,030,362,111	\$ 967,157,916
Unfunded accrued liability contributions	<u>12,339,300,368</u>	<u>11,256,562,237</u>
Total prospective contributions	\$ 13,369,662,479	\$ 12,223,720,153
Total assets	<u>\$ 37,699,225,315</u>	<u>\$ 36,359,999,937</u>
 <b>LIABILITIES</b>		
Present value of benefits payable on account of present retired members and beneficiaries	\$ 18,001,718,176	\$ 16,763,455,284
Present value of benefits payable on account of active members	18,772,388,399	18,593,667,581
Present value of benefits payable on account of inactive members for service rendered before the valuation date	<u>925,118,740</u>	<u>1,002,877,072</u>
Total liabilities	<u>\$ 37,699,225,315</u>	<u>\$ 36,359,999,937</u>



**BREAKDOWN OF TOTAL AND ACCRUED LIABILITIES  
AS OF JUNE 30, 2011**

	Total Liability	Accrued Liability
Active Members		
Retirement	\$ 15,749,647,795	\$ 12,622,943,070
Death	153,934,153	94,856,716
Disability	499,956,555	279,476,571
Termination	2,368,849,896	730,352,095
Total	\$ 18,772,388,399	\$ 13,727,628,452
Retirees		
Retirement	\$ 15,836,216,494	\$ 15,836,216,494
Survivor	1,245,588,406	1,245,588,406
Disability	919,913,276	919,913,276
Total	\$ 18,001,718,176	\$ 18,001,718,176
Deferred Vested Members	732,091,088	732,091,088
Inactive Members	193,027,652	193,027,652
Total Actuarial Values	\$ 37,699,225,315	\$ 32,654,465,368
Actuarial Value of Assets		20,315,165,000
Unfunded Actuarial Accrued Liability		\$ 12,339,300,368



#### **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, 2011.

##### 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 \$4,356,556,375. The assets credited to the Annuity Reserve were \$3,497,973,699 and the assets credited to the Employer's Accumulation Account totaled \$12,460,634,926. Current actuarial assets as of the valuation date equaled the sum of these three funds, \$20,315,165,000. Future member contributions to the Annuity Savings Account were valued to be \$4,014,397,836. Prospective contributions to the Employer's Accumulation Account were calculated to be \$13,369,662,479 of which \$1,030,362,111 is attributable to service rendered after the valuation date (normal contributions) and \$12,339,300,368 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 \$37,699,225,315 as of June 30, 2011.

##### Total Liabilities

The present value of benefits payable on account of presently retired members and beneficiaries totaled \$18,001,718,176 as of the valuation date. The present value of future benefit payments on behalf of active members amounted to \$18,772,388,399. In addition, the present value of benefits for inactive members, due to service rendered before the valuation date, was calculated to be \$925,118,740.

Therefore, the balance sheet shows the present value for all prospective benefit payments under the System to be \$37,699,225,315 as of June 30, 2011.

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. We recommend the sum of these normal and accrued liability contributions be increased from 12.93% to 14.26% of the annual compensation of all members. The amortization period of the unfunded accrued liability of the System is therefore calculated on an open-ended basis.

The primary reasons for the increase in the employer contribution rate are the continued recognition of the investment losses from the 2008 and 2009 fiscal years and the decrease in active membership which resulted in a decrease in total payroll. Although the individual pay increases were less than expected, which produced downward pressure on the system liabilities, the lack of total payroll growth caused the contribution rate to rise. The change in the actuarial assumptions resulted in a slight increase in the normal cost but a decrease in the unfunded accrued liability rate.



**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, 2011 is shown below.

		<u>\$ millions</u>
(1)	UAAL* as of June 30, 2010	\$ 11,256.6
(2)	Total Normal cost from last valuation	644.4
(3)	Total Employee and Employer Contributions	1,257.2
(4)	Interest accrual: $(1) \times .080 + [(2) - (3)] \times .0392$	876.5
(5)	Expected UAAL before changes: $(1) + (2) - (3) + (4)$	11,520.3
(6)	Change due to plan amendments	0.0
(7)	Change due to new actuarial assumptions or methods	(255.6)
(8)	Expected UAAL after changes: $(5) + (6) + (7)$	11,264.7
(9)	Actual UAAL as of June 30, 2011	12,339.3
(10)	Gain/(loss): $(8) - (9)$	\$ (1,074.6)
(11)	Gain/(loss) as percent of actuarial accrued liabilities at start of year (\$31,400.0)	(3.4)%

\*Unfunded actuarial accrued liability.

Valuation Date June 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2006	(1.7) %
2007	0.8
2008	(2.1)
2009	(6.4)
2010	(3.1)
2011	(3.4)



**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 2012/2013 fiscal year and a comparison to the previous valuation results.

Contribution for	2012/2013 Fiscal Year	2011/2012 Fiscal Year
Normal Cost:		
Service retirement benefits	9.96%	9.84%
Disability benefits	0.46	0.42
Survivor benefits	<u>0.12</u>	<u>0.11</u>
Total	10.54%	10.37%
Member Contributions:	9.00%	9.00%
Less future refunds	<u>(0.77)</u>	<u>(.81)</u>
Available for benefits	8.23%	8.19%
Employer Normal Cost	2.31%	2.18%
Unfunded Actuarial Accrued Liabilities (30.0 year level % of payroll amortization*)	11.95%	10.75%
Total Computed Employer Contribution Rate	14.26%	12.93%

\*Amortization period a year ago was 30.0 years.

The components of the change in the employer contribution rate from 12.93% to 14.26% are as follows:

Previously Reported Employer Rate	12.93%
Change due to:	
Actuarial experience	1.44
Assumption changes	(0.11)
Plan amendments	0.00
Method Change	<u>0.00</u>
Computed Employer Rate	14.26%



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

Previously Reported Period	30.0 years
Change due to:	
Normal amortization	(1.0)
Actuarial experience	1.2
Assumption changes	(0.6)
Plan amendments	0.0
Method Change	0.0
UAL contribution experience	0.4
Computed Period	30.0 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% investment return and salary increases of 4.25% each year in the future. In addition, the employer and employee contribution rates are assumed to remain at the 2011 valuation results for all years beginning in 2012.

# Public Employees' Retirement System of Mississippi



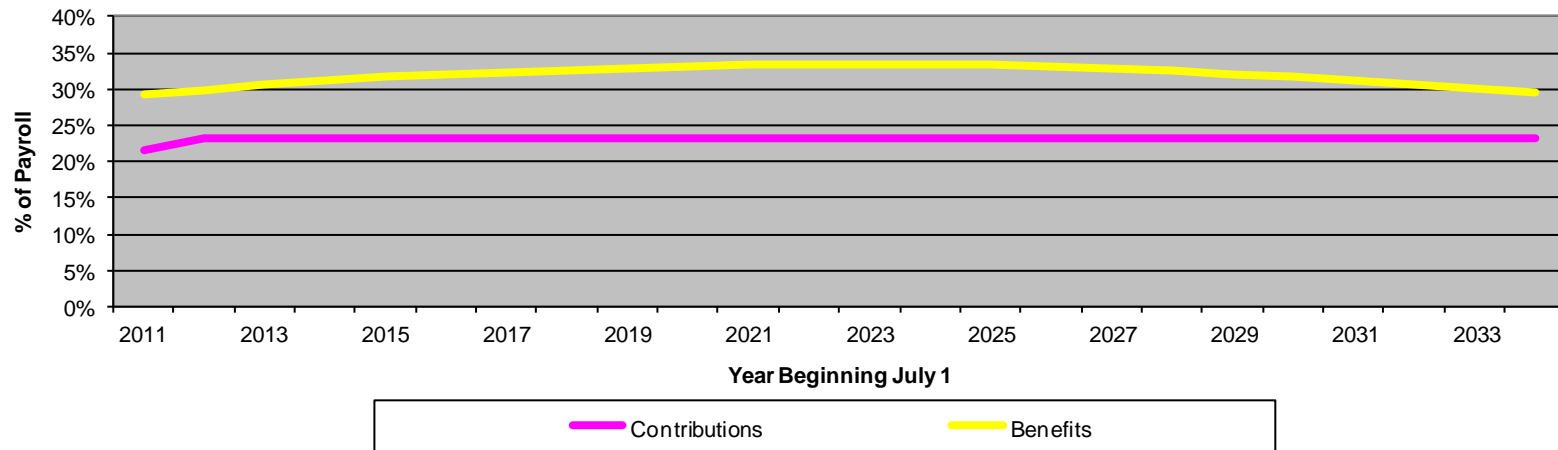
## Twenty-five Year Cash Flow Projection

Year Beginning July 1	Valuation Payroll	Market Value of Assets Balance July 1	Contributions	Projected Benefit Payments	Expected Investment Return	Cash Flow	Market Value of Assets Balance June 30	Year Ending June 30
2011	5,798,316,698	20,377,236,000	1,244,608,679	1,698,823,196	1,612,010,299	1,157,795,782	21,535,031,782	2012
2012	6,044,745,158	21,535,031,782	1,406,007,724	1,807,700,071	1,706,734,849	1,305,042,502	22,840,074,284	2013
2013	6,301,646,827	22,840,074,284	1,465,763,052	1,927,737,392	1,808,726,969	1,346,752,629	24,186,826,913	2014
2014	6,569,466,817	24,186,826,913	1,528,057,982	2,053,237,006	1,913,938,992	1,388,759,968	25,575,586,881	2015
2015	6,848,669,157	25,575,586,881	1,593,000,446	2,173,869,634	2,022,812,183	1,441,942,995	27,017,529,876	2016
2016	7,139,737,596	27,017,529,876	1,660,702,965	2,287,771,812	2,136,319,636	1,509,250,789	28,526,780,665	2017
2017	7,443,176,444	28,526,780,665	1,731,282,841	2,406,626,458	2,255,128,709	1,579,785,092	30,106,565,757	2018
2018	7,759,511,443	30,106,565,757	1,804,862,362	2,528,850,655	2,379,565,729	1,655,577,436	31,762,143,193	2019
2019	8,089,290,679	31,762,143,193	1,881,569,012	2,660,923,570	2,509,797,273	1,730,442,715	33,492,585,908	2020
2020	8,433,085,533	33,492,585,908	1,961,535,695	2,794,555,552	2,646,086,078	1,813,066,221	35,305,652,129	2021
2021	8,791,491,668	35,305,652,129	2,044,900,962	2,929,381,385	2,789,072,953	1,904,592,530	37,210,244,660	2022
2022	9,165,130,064	37,210,244,660	2,131,809,253	3,063,675,603	2,939,544,919	2,007,678,569	39,217,923,228	2023
2023	9,554,648,092	39,217,923,228	2,222,411,146	3,195,645,304	3,098,504,492	2,125,270,334	41,343,193,562	2024
2024	9,960,720,636	41,343,193,562	2,316,863,620	3,326,701,911	3,267,061,953	2,257,223,662	43,600,417,225	2025
2025	10,384,051,263	43,600,417,225	2,415,330,324	3,454,946,939	3,446,448,713	2,406,832,098	46,007,249,323	2026
2026	10,825,373,442	46,007,249,323	2,517,981,863	3,580,269,464	3,638,088,442	2,575,800,841	48,583,050,164	2027
2027	11,285,451,813	48,583,050,164	2,624,996,092	3,702,757,911	3,843,533,540	2,765,771,721	51,348,821,885	2028
2028	11,765,083,515	51,348,821,885	2,736,558,426	3,821,703,742	4,064,499,938	2,979,354,622	54,328,176,508	2029
2029	12,265,099,564	54,328,176,508	2,852,862,159	3,938,960,562	4,302,810,184	3,216,711,781	57,544,888,289	2030
2030	12,786,366,295	57,544,888,289	2,974,108,800	4,051,225,833	4,560,506,382	3,483,389,349	61,028,277,638	2031
2031	13,329,786,863	61,028,277,638	3,100,508,424	4,158,901,951	4,839,926,470	3,781,532,943	64,809,810,581	2032
2032	13,896,302,805	64,809,810,581	3,232,280,032	4,260,707,445	5,143,647,750	4,115,220,337	68,925,030,918	2033
2033	14,486,895,674	68,925,030,918	3,369,651,934	4,355,322,543	5,474,575,649	4,488,905,040	73,413,935,958	2034
2034	15,102,588,740	73,413,935,958	3,512,862,141	4,442,048,490	5,835,947,423	4,906,761,074	78,320,697,031	2035
2035	15,744,448,761	78,320,697,031	3,662,158,782	4,518,230,188	6,231,412,906	5,375,341,500	83,696,038,532	2036

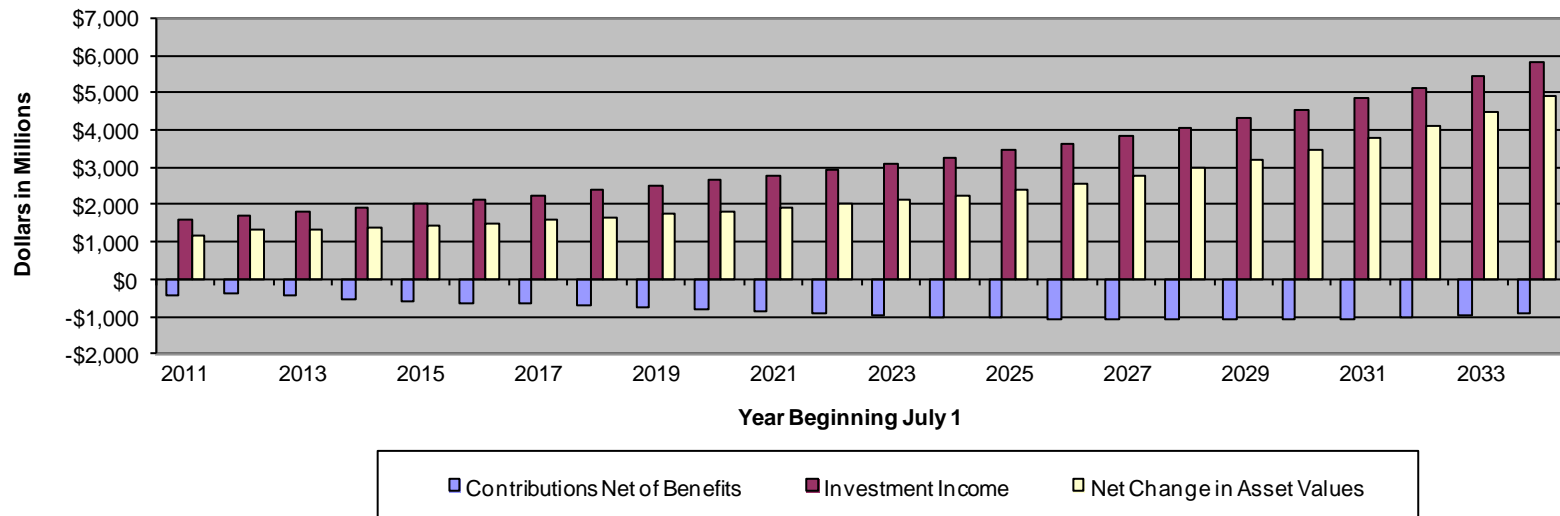


## Public Employees' Retirement System of Mississippi 25 Year Cash Flow Projection Based on Valuation Assumptions

### 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, 2011**

GROUP	NUMBER
Retired participants and beneficiaries currently receiving benefits	83,115
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	129,360
Active Participants	<u>161,676</u>
Total	374,151



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)
06/30/02*	\$16,823,185	\$20,180,347	83.4%	\$3,357,162	\$4,220,539	79.5%
06/30/03#	16,979,457	21,485,838	79.0	4,506,381	4,431,600	101.7
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

\* 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 contributed to the decline.



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 accrued liability rate is based on amortization of the unfunded actuarial accrued liability of \$12,339,300,368 over a 30.0 year period from the valuation date.

Annual Required Contribution (ARC)		
Valuation Date June 30	2011	2010
For Fiscal Year	2012/2013	2011/2012
UAL Payment Period (years)	30.0	30.0
Annual Required Contribution % of Payroll	14.26%	12.93%

4. Additional information as of June 30, 2011 as follows.

Valuation date	6/30/2011
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 <sup>#</sup>	4.5% – 20.0%
*Includes price inflation at	3.50%
<sup>#</sup> 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
2003	2001	\$411,502,537	100%
2004	2002	432,080,954	100
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	



**Solvency Tests  
(\$ in Thousands)**

Actuarial Accrued Liabilities for							
Valuation Date	(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	Portions of Accrued Liabilities Covered by Assets		
					(1)	(2)	(3)
6/30/02	\$3,221,756	\$8,913,895	\$8,044,696	\$16,823,185	100.0%	100.0%	58.3%
6/30/03	3,400,765	9,758,473	8,326,600	16,979,457	100.0	100.0	45.9
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





**Schedule of Active Member Valuation Data**

Valuation Date	Number of Employers	Active Members			
		Number	Annual Payroll	Annual Average Pay	% Increase in Average Pay
2002	866	152,148	\$4,220,538,845	\$27,740	1.9%
2003	871	154,872	4,431,599,526	28,615	3.2
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

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

Item	Fiscal Year Ended June 30									
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Beginning of Year	53,665	56,705	59,447	62,407	63,939	66,757	70,756	73,540	76,143	79,168
Added	5,138	4,857	5,174	4,610	5,360	6,218	5,335	4,965	5,747	6,566
Removed	(2,098)	(2,115)	(2,214)	(3,078)	(2,542)	(2,219)	(2,551)	(2,362)	(2,722)	(2,619)
End of Year	56,705	59,447	62,407	63,939	66,757	70,756	73,540	76,143	79,168	83,115



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

Year Ending	2005	2006	2007	2008	2009	2010	2011
Beginning of Year	\$778,636,196	\$1,022,022,560	\$1,117,210,600	\$1,214,384,863	\$1,305,908,320	\$1,395,939,879	\$1,498,662,976
Added	74,999,488	93,495,367	97,985,045	93,694,780	87,403,913	103,950,841	127,035,815
Removed	(25,851,732)	(26,749,850)	(31,700,099)	(35,621,113)	(33,633,667)	(40,358,965)	(39,518,227)
Benefit increase due to annual COLA	194,238,608	28,442,523	30,889,317	33,449,790	36,261,313	39,131,221	41,632,866
Benefit increase due to plan amendments	0	0	0	0	0	0	0
End of Year	\$1,022,022,560	\$1,117,210,600	\$1,214,384,863	\$1,305,908,320	\$1,395,939,879	\$1,498,662,976	\$1,627,813,430



Schedule of Average Benefit Payments

	Years of Credited Service								
	0-4	5-9	10-14	15-19	20-24	25	26-29	30	31+
<b>July 1, 2010 to June 30, 2011</b>									
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
<b>July 1, 2009 to June 30, 2010</b>									
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
<b>July 1, 2008 to June 30, 2009</b>									
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
<b>July 1, 2007 to June 30, 2008</b>									
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
<b>July 1, 2006 to June 30, 2007</b>									
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



Schedule of Average Benefit Payments

	Years of Credited Service								
	0-4	5-9	10-15	16-20	21-24	25	26-29	30	31+
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
July 1, 2002 to June 30, 2003									
Average Monthly Benefit	\$429.80	\$355.18	\$526.23	\$787.32	\$1,052.00	\$1,502.35	\$1,657.46	\$1,739.17	\$2,328.86
Average Final Salary	\$21,698	\$21,817	\$25,046	\$26,377	\$28,859	\$36,308	\$38,977	\$38,459	\$44,883
Number of Active Retirants	157	535	732	507	327	459	868	236	1,036
July 1, 2001 to June 30, 2002									
Average Monthly Benefit	\$330.83	\$302.81	\$494.46	\$732.10	\$1,038.00	\$1,500.85	\$1,551.53	\$1,727.10	\$2,147.68
Average Final Salary	\$15,636	\$18,981	\$22,674	\$26,147	\$28,479	\$35,591	\$36,779	\$38,801	\$42,421
Number of Active Retirants	234	653	743	507	402	402	854	244	1,099



**SCHEDULE A**

**Development of Actuarial Value of Assets  
(\$ thousands)**

Valuation Date June 30:	2010	2011	2012	2013	2014	2015
A. Actuarial Value Beginning of Year	\$20,597,581	\$20,143,426				
B. Market Value End of Year	16,788,214	20,377,236				
C. Market Value Beginning of Year	15,134,487	16,788,214				
D. Cash Flow						
D1. Contributions	1,170,941	1,257,205				
D2. Other Revenue	0	0				
D3. Benefit Payments	(1,654,388)	(1,822,818)				
D4. Administrative Expenses	(11,739)	(12,637)				
D5. Investment Expenses	<u>(33,121)</u>	<u>(41,809)</u>				
D6. Net	(528,307)	(620,059)				
E. Investment Income						
E1. Market Total: B.-C.-D6.	2,182,034	4,209,081				
E2. Assumed Rate	8.00%	8.00%				
E3. Amount for Immediate Recognition	1,224,073	1,374,879				
E4. Amount for Phased-In Recognition	957,961	2,834,202				
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.20*E4.	191,592	566,840				
F2. First Prior Year	(1,048,191)	191,592	566,840			
F3. Second Prior Year	(683,685)	(1,048,191)	191,592	566,840		
F4. Third Prior Year	390,363	(683,685)	(1,048,191)	191,592	566,840	
F5. Fourth Prior Year	<u>0</u>	<u>390,363</u>	<u>(683,685)</u>	<u>(1,048,191)</u>	<u>191,592</u>	<u>566,840</u>
F6. Total Recognized Investment Gain	(1,149,921)	(583,081)	(973,444)	(289,759)	758,432	566,840
G. Actuarial Value End of Year:						
A.+D6.+E3.+F6.	\$20,143,426	\$20,315,165				
H. Difference Between Market & Actuarial Values	\$(3,355,212)	\$(62,071)	\$(1,035,515)	\$(1,325,274)	\$(566,842)	\$(2)

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, 2011 (\$ in Thousands)			
	Market Value	Book Value	Actuarial Value
1. Assets at June 30, 2010	\$16,788,214	\$16,199,815	\$20,143,426
2. Contributions and Misc. Revenue	1,257,205	1,257,205	1,257,205
3. Investment Increment	4,209,081	1,701,942	791,798
4. Benefit Payments	(1,822,818)	(1,822,818)	(1,822,818)
5. Expenses	(54,446)	(54,446)	(54,446)
6. Assets at June 30, 2011 (1) + (2) + (3) + (4) + (5)	\$20,377,236	\$17,281,698	\$20,315,165
7. Investment Increment/Mean Assets*	25.54%	10.71%	3.99%

\*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 all expenses).

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

Age	Annual Rates of					
	Withdrawal and Vesting*		Death**		Disability**	
	Male	Female	Male	Female	Male	Female
20	22.0%	22.0%	.01%	.00%	.01%	.01%
25	15.0	15.0	.01	.01	.02	.01
30	10.0	10.5	.02	.01	.02	.02
35	8.0	8.0	.03	.01	.05	.02
40	6.0	6.0	.04	.02	.12	.08
45	5.5	5.0	.07	.02	.23	.14
50	5.5	5.0	.14	.04	.29	.21
55	5.5	5.0	.19	.06	.52	.37
60	5.5	5.0	.22	.09	.40	.32
65	5.5	5.0	.40	.16		
70	5.5	5.0	.40	.27		
74	5.5	5.0	.40	.47		

Age	Annual Rates of Service Retirements			
	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		13.0%		11.0%
50		13.0		11.0
55		15.0		18.0
60	11.0%	15.0	13.0%	20.0
62	19.0	30.0	18.0	30.0
65	20.0	28.0	25.0	38.0
70	17.0	20.0	19.0	25.0
75	100.0	100.0	100.0	100.0

\* For all ages, rates of 34% for 1<sup>st</sup> year of employment and 22% for 2<sup>nd</sup> year.

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



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	15.75%	4.25%	20.00%
1	5.75	4.25	10.00
2	3.25	4.25	7.50
3	2.25	4.25	6.50
4	1.75	4.25	6.00
5	1.25	4.25	5.50
10	0.75	4.25	5.00
15	0.75	4.25	5.00
20	0.75	4.25	5.00
25	0.75	4.25	5.00
30	0.25	4.25	4.50
35	0.25	4.25	4.50

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 1994 Group Annuity Mortality Table. The RP-2000 Disabled Mortality Table (set back 2 years for males and set forward 3 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 11% 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.





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, 2011, as interpreted in preparing the actuarial valuation.

#### **DEFINITIONS**

<b>Average Compensation</b>	Average annual covered earnings of an employee during the four highest years of service.
<b>Covered Earnings</b>	Gross salary not in excess of the maximum amount on which contributions were required.
<b>Fiscal Year</b>	Year commencing on July 1 and ending June 30.
<b>Credited Service</b>	Service while a contributing member plus additional service as described below.
<b>Unused Sick and Vacation Leave</b>	Service credit is provided at no charge to members for unused sick and vacation time that has accrued at the time of retirement.
<b>Additional Service</b>	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

\*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, 2011  
Tabulated by Year of Retirement

Year of Retirement	No.	Total Annual Benefits, excluding COLA	COLA	Total Annual Benefits	Average Monthly Total Benefit
2011	2,908	\$56,893,761	\$23,314	\$56,917,075	\$1,631
2010	5,762	113,878,780	381,743	114,260,523	1,653
2009	4,639	82,195,594	2,337,713	84,533,307	1,519
2008	4,783	88,805,326	5,312,002	94,117,328	1,640
2007	4,371	77,790,494	6,955,324	84,745,818	1,616
2006	4,489	77,087,211	9,377,523	86,464,734	1,605
2005	4,253	70,094,954	10,818,134	80,913,088	1,585
2004	4,392	75,538,079	14,173,275	89,711,354	1,702
2003	3,955	64,299,244	14,249,766	78,549,010	1,655
2002	4,074	66,189,209	17,067,256	83,256,465	1,703
2001	3,982	62,133,903	18,393,079	80,526,982	1,685
2000	3,458	55,648,241	18,663,022	74,311,263	1,791
1999	2,741	40,664,556	15,200,472	55,865,028	1,698
1998	2,738	39,971,865	16,607,479	56,579,344	1,722
1997	2,680	35,658,891	16,427,723	52,086,614	1,620
1996	2,848	39,906,850	20,120,983	60,027,833	1,756
1995	2,251	28,677,007	15,749,407	44,426,414	1,645
1994	2,114	25,490,752	15,033,690	40,524,442	1,597
1993	2,053	23,533,939	15,060,892	38,594,831	1,567
1992	2,458	31,244,524	21,514,177	52,758,701	1,789
1991	1,909	22,227,610	16,434,231	38,661,841	1,688
1990	1,517	16,857,762	13,396,063	30,253,825	1,662
1989	1,218	11,597,188	9,779,428	21,376,616	1,463
1988	1,000	9,056,790	8,172,167	17,228,957	1,436
1987	836	7,218,777	6,896,955	14,115,732	1,407
1986	1,555	16,166,166	16,879,894	33,046,060	1,771
1985	701	6,287,358	6,704,342	12,991,700	1,544
1984	658	5,228,144	5,875,835	11,103,979	1,406
1983	470	3,296,928	3,923,006	7,219,934	1,280
1982	431	2,988,998	3,765,900	6,754,898	1,306
1981	432	2,763,977	3,648,502	6,412,479	1,237
1980	326	2,104,858	2,905,900	5,010,758	1,281
1979	200	1,217,279	1,753,637	2,970,916	1,238
1978	183	978,014	1,478,491	2,456,505	1,119
1977	158	805,128	1,285,558	2,090,686	1,103
1976 & Prior	572	2,417,729	4,530,661	6,948,390	1,012
<b>Totals</b>	<b>83,115</b>	<b>\$1,266,915,886</b>	<b>\$360,897,544</b>	<b>\$1,627,813,430</b>	<b>\$1,632</b>



Schedule of Retired Members by Type of Benefit

Benefits Payable June 30, 2011

Amount of Monthly Benefit**	Number of Rets.	Ret. Type 1*	Ret. Type 2*	Ret. Type 3*
\$1-\$100	2,428	1,944	12	472
101-200	5,615	4,210	115	1,290
201-300	5,521	3,965	272	1,284
301-400	4,997	3,515	362	1,120
401-500	4,534	3,194	403	937
501-600	3,879	2,732	437	710
601-700	3,481	2,509	406	566
701-800	3,393	2,497	415	481
801-900	3,228	2,444	375	409
901-1,000	3,102	2,388	345	369
Over 1,000	42,937	38,088	2,534	2,315
Totals	83,115	67,486	5,676	9,953

\*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, 2011

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	2,428	1,731	84	332	11	0	33	227	6	10	55	40	395
101-200	5,615	4,048	241	686	26	1	94	467	24	52	95	76	437
201-300	5,521	4,105	217	591	14	4	104	433	39	53	96	63	339
301-400	4,997	3,595	225	579	21	1	116	423	58	37	82	80	303
401-500	4,534	3,243	188	551	14	1	153	345	73	39	85	69	250
501-600	3,879	2,698	149	506	14	0	120	355	94	37	99	64	246
601-700	3,481	2,443	152	439	14	1	136	258	137	38	76	61	186
701-800	3,393	2,330	180	418	11	3	167	225	177	59	73	64	195
801-900	3,228	2,137	163	450	9	4	182	246	189	37	88	52	239
901-1,000	3,102	2,043	130	451	18	4	162	232	215	62	82	41	245
Over 1,000	42,937	25,913	1,629	7,369	207	61	3,955	3,442	1,999	361	1,793	1,561	7,251
Totals	83,115	54,286	3,358	12,372	359	80	5,222	6,653	3,011	785	2,624	2,171	10,086

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, 2011  
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					651	\$2,429,431	651	\$2,429,431
20 – 24					192	1,054,282	192	1,054,282
25 – 29			2	\$35,599	78	740,494	80	776,093
30 – 34			25	324,675	108	901,451	133	1,226,126
35 – 39	2	\$13,293	95	1,284,364	154	1,406,260	251	2,703,917
40 – 44	17	372,488	188	3,264,070	251	2,466,840	456	6,103,398
45 – 49	477	10,927,715	442	8,122,479	331	3,127,398	1,250	22,177,592
50 – 54	2,466	62,972,093	775	14,612,421	554	6,023,233	3,795	83,607,747
55 – 59	5,806	163,328,727	1,157	20,202,378	708	9,292,568	7,671	192,823,673
60 – 64	14,118	320,034,542	1,310	20,641,061	978	14,101,715	16,406	354,777,318
65 – 69	14,352	291,842,862	810	12,297,564	1,062	15,714,306	16,224	319,854,732
70 – 74	11,366	218,580,170	460	5,975,696	1,193	18,721,490	13,019	243,277,356
75 – 79	8,158	150,922,806	255	2,879,913	1,239	19,537,967	9,652	173,340,686
80 – 84	5,947	106,243,157	103	1,272,288	1,205	18,759,829	7,255	126,275,274
85 – 89	3,138	52,434,445	39	389,724	825	13,137,554	4,002	65,961,723
90 – 94	1,266	19,874,594	14	147,252	343	4,950,055	1,623	24,971,901
95	106	1,586,903			24	284,998	130	1,871,901
96	79	1,221,972	1	9,195	17	165,353	97	1,396,520
97	63	987,959			18	329,054	81	1,317,013
98	41	492,108			9	133,961	50	626,069
99	30	383,449			6	70,034	36	453,483
100 & Over	54	698,609			7	88,586	61	787,195
<b>Totals</b>	<b>67,486</b>	<b>\$1,402,917,892</b>	<b>5,676</b>	<b>\$91,458,679</b>	<b>9,953</b>	<b>\$133,436,859</b>	<b>83,115</b>	<b>\$1,627,813,430</b>

Average Age: 68.7 years

Average Age at Retirement: 59.1 years



Public Employees' Retirement System of Mississippi

Total Active Members as of June 30, 2011  
 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	286	9						295	\$3,285,531
20 – 24	6,055	103	1					6,159	136,733,740
25 – 29	12,436	3,526	82	1				16,045	470,220,574
30 – 34	8,566	7,662	2,385	39				18,652	620,515,311
35 – 39	7,044	5,381	5,358	1,791	47			19,621	697,172,643
40 – 44	6,290	4,870	4,277	4,240	1,722	57		21,456	771,635,330
45 – 49	5,422	4,544	3,921	3,350	3,539	1,508	43	22,327	807,846,115
50 – 54	4,665	3,953	3,803	3,209	3,253	2,414	1,001	22,298	828,332,246
55 – 59	3,439	3,435	3,077	2,838	2,838	1,812	1,792	19,231	745,263,351
60	551	563	513	440	436	282	300	3,085	121,178,715
61	440	517	406	381	369	243	275	2,631	102,063,446
62	339	352	347	287	283	193	191	1,992	79,914,154
63	304	333	305	275	221	155	190	1,783	71,984,765
64	245	324	267	227	195	142	165	1,565	63,803,056
65	148	186	155	116	100	69	89	863	33,532,038
66	131	143	132	89	76	42	76	689	26,283,101
67	114	124	94	74	58	35	59	558	23,661,169
68	73	103	99	62	50	29	44	460	17,448,104
69	71	84	88	47	41	26	33	390	13,262,660
70 & Over	269	331	296	218	176	113	173	1,576	50,488,165
Totals	56,888	36,543	25,606	17,684	13,404	7,120	4,431	161,676	\$5,684,624,214

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

Age: 44.5 years  
 Service: 10.2 years  
 Annual Pay: \$35,161



**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 6/30/11	\$ Gain (or Loss) For Year Ending 6/30/10
<b>Age &amp; Service Retirements.</b> If members retire at older ages, there is a gain. If younger ages, a loss.	\$ (238.6)	\$ 125.7
<b>Disability Retirements.</b> If disability claims are less than assumed, there is a gain. If more claims, a loss.	(28.8)	(21.4)
<b>Death-in Service Benefits.</b> If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	0.5	0.1
<b>Withdrawal From Employment.</b> If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	9.2	(65.0)
<b>Pay Increases.</b> If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	459.2	541.6
<b>New Members.</b> Additional unfunded accrued liability will produce a loss.	(53.0)	(67.1)
<b>Investment Income.</b> If there is a greater investment income than assumed, there is a gain. If less income, a loss.	(851.5)	(1,552.5)
<b>Death After Retirement.</b> If retirants live longer than assumed, there is a loss. If not as long, a gain.	(49.2)	(36.4)
<b>Other.</b> Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	<u>(322.4)</u>	<u>111.3</u>
<b>Gain (or Loss) During Year From Financial Experience</b>	\$ (1,074.6)	\$ (963.7)
<b>Non-Recurring Items.</b> Adjustments for plan amendments, assumption changes, or method changes.	<u>255.6</u>	<u>(6.0)</u>
<b>Composite Gain (or Loss) During Year</b>	<u><u>\$ (819.0)</u></u>	<u><u>\$ (969.7)</u></u>



## **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.