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PERS
of MISSISSIPPI

Report on the Annual Valuation of the Mississippi Highway Safety Patrol Retirement System

Prepared as of June 30, 2013

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CONSULTING, LLC
The experience and dedication you deserve

October 16, 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 Mississippi Highway Safety Patrol Retirement System. 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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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,

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Chief Executive Officer

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REPORT ON THE ANNUAL VALUATION OF THE
MISSISSIPPI HIGHWAY SAFETY PATROL RETIREMENT SYSTEM
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 reflects 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 37.00% 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	520	547
Annual compensation	$ 25,815,787	$ 25,670,030
Retirees		
Number	713	713
Annual allowances	$ 25,835,619	$ 25,167,940
Assets		
Market related actuarial value	$ 271,097,000	$ 268,424,000
Market value	$ 287,456,000	$ 265,232,000
Unfunded accrued liability	$ 160,477,971	$ 152,991,015
Funded Ratio	62.8%	63.7%
Fiscal Year End	**June 30, 2015**	**June 30, 2014**
Employer contribution rate*		
Normal Cost**	16.15%	16.33%
Accrued liability	20.85%	23.16%
Total	37.00%	39.49%
Anticipated accrued liability payment period	33.0 years	30.0 years
Unfunded accrued liability based on market value of assets	$ 144,118,971	$ 156,183,015
Funded Ratio	66.6%	62.9%
Payment Period	24.5 years	31.6 years

* A contribution rate of 38.11% 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, the derivation of the experience 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 post-retirement mortality tables have been changed.
   - The rates of salary increase were decreased by 0.25% to more closely reflect the actual experience of the System.
   - 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 to the benefit provisions since the last valuation.

6. Due to Senate Bill No. 2659 enacted in 2004 and House Bill No. 1015 enacted April 25, 2013, additional contributions are being made to the System and are expected to continue in the future. The following table shows the expected future contributions for each bill:

Legislation	Effective Date	Estimated Additional Contributions
Senate Bill No. 2659	July 1, 2004	$3,400,000
House Bill No. 1015	July 1, 2013	$1,200,000

The employers are also required to contribute 37.00% of payroll. The funding period of the UAL of 33.0 years shown on the previous page reflects the additional contributions from Senate Bill No. 2659 and House Bill No. 1015. Without these additional contributions, the funding period would have been infinite. If the funding period was kept at 30 years, without the additional contributions the employer contribution rate would have been 50.36%.

7. Schedule A of this report presents the development of the actuarial value of assets. Schedule B of this report outlines the full set of actuarial assumptions and methods employed. Schedule C gives a summary of the benefit and contribution provisions of the System.

8. The table on page 3 provides a ten-year history of some pertinent figures.

9. 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.

10. All amounts shown prior to the 2004/2005 fiscal year were developed and/or reported by the prior actuarial firm.

Mississippi Highway Safety Patrol Retirement System

Comparative Schedule*

Valuation Date June 30	Active Members				Retired Lives				Valuation Results ($ thousands)		
	Number	Payroll ($ thousands)	Average Salary	% increase from previous year	Number	Active/ Retired Ratio	Annual Benefits** ($ thousands)	Benefits as % of Payroll	Accrued Liability	Valuation Assets	UAAL
2004	559	$22,683	$40,579	4.7%	605	0.9	$12,111.9	53.4%	$316,570	$256,481	$60,089
2005	540	22,343	41,376	2.0	621	0.9	17,189.8	76.9	335,117	253,477	81,640
2006	564	24,499	43,438	5.0	625	0.9	17,821.8	72.7	350,638	265,637	85,001
2007	591	27,037	45,748	5.3	638	0.9	18,722.6	69.2	371,233	284,626	86,607
2008	626	29,597	47,280	3.3	651	1.0	19,798.7	66.9	381,578	298,630	82,948
2009	570	26,390	46,298	(2.1)	692	0.8	21,994.1	83.3	394,630	292,322	102,308
2010	542	26,353	48,623	5.0	696	0.8	22,899.7	86.9	411,277	281,088	130,189
2011	515	24,872	48,295	(0.7)	704	0.7	23,975.7	96.4	414,432	278,265	136,167
2012	547	25,670	46,929	(2.8)	713	0.8	25,167.9	98.0	421,415	268,424	152,991
2013	520	25,816	49,646	5.8	713	0.7	25,835.6	100.1	431,575	271,097	160,478

* 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

				Group Averages		
Employers	Number of Employers	Number	Payroll	Salary	Age	Service
State Agencies	1	520	$25,815,787	$49,646	41.5	13.4

Of the 520 active members, 466 are vested and 54 are non-vested.

Retired Lives

			Group Averages	
Type of Benefit Payment	No.	Annual Benefits	Benefit	Age
Retirement	510	$21,680,995	$42,512	65.5
Disability	19	449,032	23,633	64.6
Survivor	184	3,705,592	20,139	73.0
Total in HSPRS	713	$25,835,619	$36,235	67.4

Deferred Vested/Inactive Lives

Type of Member	No.	Deferred Benefits	Outstanding Refunds
Deferred Vested – Benefit Included	30	$473,566	N/A
Inactive	24	N/A	$78,445
Total in HSPRS	54	$473,566	$78,445

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
MISSISSIPPI HIGHWAY SAFETY PATROL RETIREMENT SYSTEM

	JUNE 30, 2013	JUNE 30, 2012
ASSETS		
Current actuarial value of assets:		
Annuity Savings Account	$ 23,706,361	$ 20,760,063
Annuity Reserve	27,502,961	30,856,877
Employers' Accumulation Account	219,887,678	216,807,060
Total current assets	$ 271,097,000	$ 268,424,000
Future member contributions to Annuity Savings Account	$ 16,914,745	$ 17,276,458
Prospective contributions to Employer's Accumulation Account		
Normal contributions	$ 37,142,446	$ 38,913,732
Unfunded accrued liability contributions	160,477,971	152,991,015
Total prospective contributions	$ 197,614,417	$ 191,904,747
Total Assets	$ 485,632,162	$ 477,605,205
LIABILITIES		
Present value of benefits payable on account of present retired members and beneficiaries	$ 306,272,996	$ 300,752,924
Present value of benefits payable on account of active members	175,553,965	175,353,949
Present value of benefits payable on account of inactive members for service rendered before the valuation date	$ 3,805,201	$ 1,498,332
Total liabilities	$ 485,632,162	$ 477,605,205

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

	Total Liability	Accrued Liability
Active Members		
Retirement	$ 168,299,996	$ 118,912,766
Death	1,910,714	737,998
Disability	2,964,715	989,806
Termination	2,378,540	856,204
Total	$ 175,553,965	$ 121,496,774
Retirees		
Retirement	$ 268,158,212	$ 268,158,212
Survivor	33,354,519	33,354,519
Disability	4,760,265	4,760,265
Total	$ 306,272,996	$ 306,272,996
Deferred Vested Members	3,648,310	3,648,310
Inactive Members	156,891	156,891
Total Actuarial Values	$ 485,632,162	$ 431,574,971
Actuarial Value of Assets		271,097,000
Unfunded Actuarial Accrued Liability		$ 160,477,971

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 $23,706,361. The assets credited to the Annuity Reserve were $27,502,961 and the assets credited to the Employer's Accumulation Account totaled $219,887,678. Current actuarial assets as of the valuation date equaled the sum of these three funds, $271,097,000. Future member contributions to the Annuity Savings Account were valued to be $16,914,745. Prospective contributions to the Employer's Accumulation Account were calculated to be $197,614,417, of which $37,142,446 is attributable to service rendered after the valuation date (normal contributions) and $160,477,971 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 $485,632,162 as of June 30, 2013.

Total Liabilities

The present value of benefits payable on account of presently retired members and beneficiaries totaled $306,272,996 as of the valuation date. The present value of future benefit payments on behalf of active members amounted to $175,553,965. In addition, the present value of benefits for inactive members, due to service rendered before the valuation date, was calculated to be $3,805,201.

Therefore, the balance sheet shows the present value for all prospective benefit payments under the System to be $485,632,162 as of June 30, 2013.

Section 25-13-7 of State law requires that active members contribute the current rate of 7.25% 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 37.00% of annual compensation and the amortization period calculated on an open basis. Therefore, the amortization period for the June 30, 2013 valuation is 33.0 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.

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.

			$ Thousands
(1)	UAAL* as of June 30, 2012	$	152,991.0
(2)	Total normal cost from last valuation		6,053.0
(3)	Total employee and employer contributions		15,317.0
(4)	Interest accrual: (1) x .080 + [[(2) – (3)] x .0392]		11,876.2
(5)	Expected UAAL before changes: (1) + (2) – (3) + (4)	$	155,603.2
(6)	Change due to plan amendments		0.0
(7)	Change due to actuarial assumptions or methods		1,121.6
(8)	Expected UAAL after changes: (5) + (6) + (7)	$	156,724.8
(9)	Actual UAAL as of June 30, 2013	$	160,478.0
(10)	Gain/(loss): (8) – (9)	$	(3,753.2)
(11)	Gain/(loss) as percent of actuarial accrued liabilities at start of year ($421,415.0)		(0.9)%

*Unfunded actuarial accrued liability.

Valuation Date June 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2008	0.7%
2009	(4.3)
2010	(7.1)
2011	(0.8)
2012	(3.5)
2013	(0.9)

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	21.21%	21.73%
Disability benefits	1.00	1.00
Survivor benefits	0.58	0.59
Total	22.79%	23.32%
Member Contributions:	7.25%	7.25%
Less future refunds	(0.38)	(0.26)
Available for benefits	6.87%	6.99%
Employer Normal Cost	15.92%	16.33%
Administrative Expense Load	0.23%	N/A
Unfunded Actuarial Accrued Liabilities (33.0 year level % of payroll amortization*)	20.85%	23.16%
Total Computed Employer Contribution Rate	37.00%	39.49%

*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 33.0 years are as follows:

Previously Reported Period	30.0 years
Change due to:	
Normal amortization	(1.0)
Actuarial experience	1.3
Assumption changes	(1.4)
Plan amendments	0.0
Method Change	0.0
Funding Policy Change	14.0
House Bill No. 1015	(11.0)
UAL contribution experience	1.1
Computed Period	33.0 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 8.00% 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 37.00% of payroll.

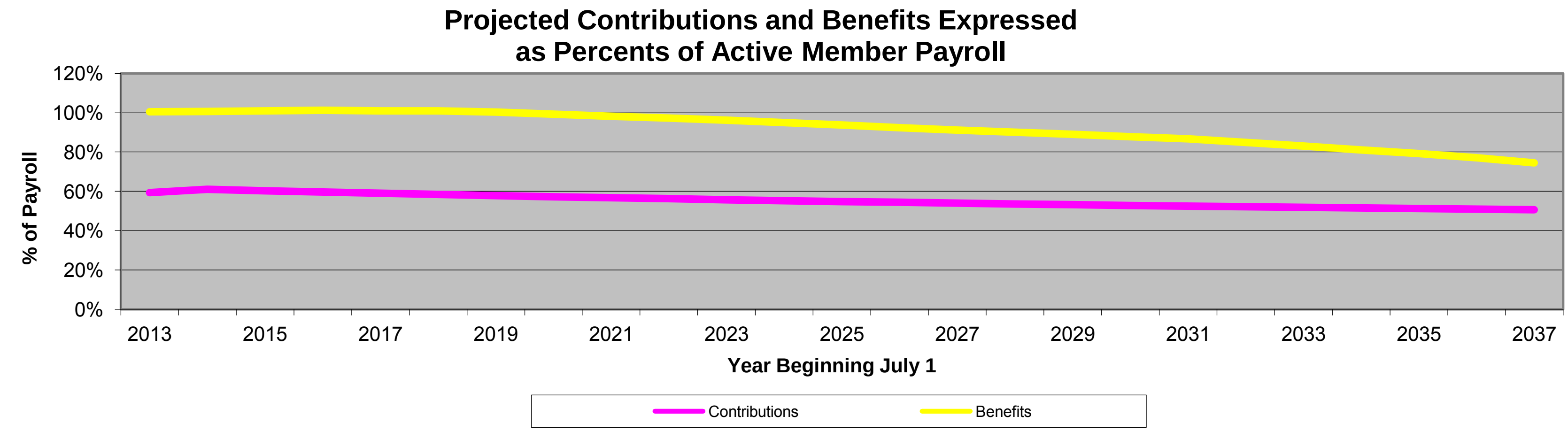
Mississippi Highway Safety Patrol Retirement System

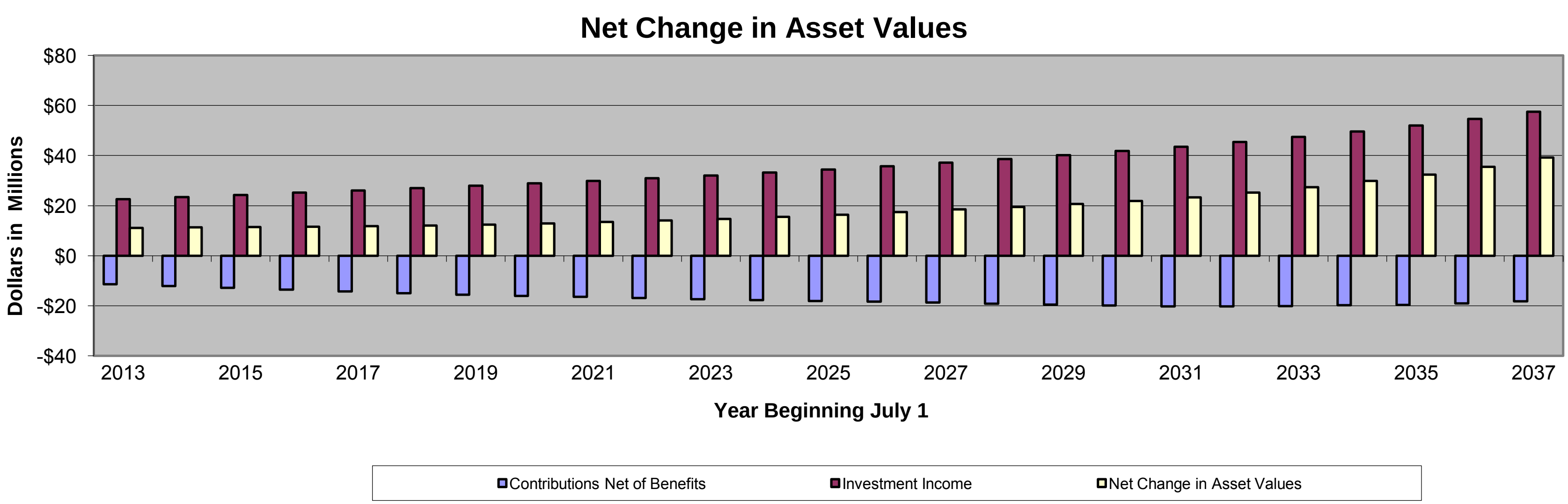
Twenty-five Year Cash Flow Projection

Year	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
2013	$26,332,103	$287,456,000	$16,251,956	$26,452,032	$22,588,477	$12,388,401	$299,844,401
2014	27,451,217	299,844,401	16,747,164	27,604,221	23,553,270	12,696,213	312,540,614
2015	28,617,894	312,540,614	17,263,418	28,875,415	24,538,769	12,926,772	325,467,386
2016	29,834,154	325,467,386	17,801,613	30,182,638	25,542,150	13,161,125	338,628,511
2017	31,102,106	338,628,511	18,362,682	31,396,967	26,568,909	13,534,624	352,163,135
2018	32,423,946	352,163,135	18,947,596	32,702,617	27,622,850	13,867,829	366,030,964
2019	33,801,964	366,030,964	19,557,369	33,927,869	28,707,657	14,337,157	380,368,121
2020	35,238,547	380,368,121	20,193,057	34,988,735	29,837,623	15,041,945	395,410,066
2021	36,736,185	395,410,066	20,855,762	36,081,539	31,023,774	15,797,997	411,208,063
2022	38,297,473	411,208,063	21,546,632	37,234,348	32,269,136	16,581,420	427,789,484
2023	39,925,116	427,789,484	22,266,864	38,429,975	33,576,634	17,413,523	445,203,007
2024	41,621,933	445,203,007	23,017,705	39,550,117	34,954,944	18,422,532	463,625,539
2025	43,390,865	463,625,539	23,800,458	40,655,222	36,415,853	19,561,089	483,186,628
2026	45,234,977	483,186,628	24,616,477	41,754,555	37,969,407	20,831,329	504,017,957
2027	47,157,464	504,017,957	25,467,178	42,952,635	39,622,018	22,136,561	526,154,518
2028	49,161,656	526,154,518	26,354,033	44,297,000	41,374,643	23,431,676	549,586,194
2029	51,251,026	549,586,194	27,278,579	45,601,077	43,233,996	24,911,498	574,497,691
2030	53,429,195	574,497,691	28,242,419	46,935,468	45,212,093	26,519,044	601,016,736
2031	55,699,936	601,016,736	29,247,222	48,267,440	47,320,530	28,300,312	629,317,048
2032	58,067,183	629,317,048	30,294,728	49,329,620	49,583,968	30,549,076	659,866,124
2033	60,535,038	659,866,124	31,386,754	50,280,352	52,033,546	33,139,948	693,006,072
2034	63,107,777	693,006,072	32,525,191	51,123,689	54,696,546	36,098,048	729,104,120
2035	65,789,858	729,104,120	33,712,012	52,092,997	57,593,090	39,212,105	768,316,225
2036	68,585,927	768,316,225	34,949,273	52,830,678	60,750,042	42,868,637	811,184,862
2037	71,500,829	811,184,862	36,239,117	53,290,060	64,212,751	47,161,808	858,346,670

Mississippi Highway Safety Patrol Retirement System

Twenty-five Year Cash Flow Projection Based on Valuation Assumptions





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	713
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	54
Active Participants	520
Total	1,287

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)
06/30/2004	$256,481	$316,570	81.0%	$60,089	$22,683	264.9%
06/30/2005#	253,477	335,117	75.6	81,640	22,343	365.4
06/30/2006	265,637	350,638	75.8	85,001	24,499	347.0
06/30/2007#	284,626	371,233	76.7	86,607	27,037	320.3
06/30/2008*	298,630	381,578	78.3	82,948	29,597	280.3
06/30/2009#	292,322	394,630	74.1	102,308	26,390	387.7
06/30/2010	281,088	411,277	68.3	130,189	26,353	494.0
06/30/2011#	278,265	414,432	67.1	136,167	24,872	547.5
06/30/2012	268,424	421,415	63.7	152,991	25,670	596.0
06/30/2013#	271,097	431,575	62.8	160,478	25,816	621.6

* After change in benefit provisions.
\# After change in actuarial assumptions.

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 has also contributed to the decline. However, estimated projection results, using a fixed employer contribution rate of 37.00% of payroll, show 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 $160,477,971 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*	16.15%	16.33%
Accrued liability	21.96	23.16
Total	38.11%	39.49%
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 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#	5.00% – 10.52%
Cost-of-living adjustments	3.00%
*Includes price inflation at	3.50%
# Includes wage inflation at	4.25%

Schedule of Employer Contributions

Fiscal Year Ending June 30	Valuation date June 30	Annual Required Contribution	Percentage Contributed
2005	2003	$9,087,647[1]	100.0%
2006	2004	8,691,766[2]	100.0
2007	2005	10,023,287[3]	100.0
2008	2006	10,492,230[4]	100.0
2009	2007	11,668,004[5]	100.0
2010	2008	11,096,142[6]	100.0
2011	2009	11,385,080[7]	100.0
2012	2010	12,257,461[8]	100.0
2013	2011	13,097,911[9]	100.0
2014	2012	13,594,654[10]	

1 An estimated additional contribution of $2,700,000 (11.9% of payroll) was made to the System due to SB 2659

2 An estimated additional contribution of $2,400,000 (10.7% of payroll) was made to the System due to SB 2659

3 An estimated additional contribution of $2,600,000 (10.6% of payroll) was made to the System due to SB 2659

4 An estimated additional contribution of $2,300,000 (8.5% of payroll) was made to the System due to SB 2659

5 An estimated additional contribution of $2,700,000 (9.1% of payroll) was made to the System due to SB 2659

6 An estimated additional contribution of $3,100,000 (11.7% of payroll) was made to the System due to SB 2659

7 An estimated additional contribution of $3,400,000 (12.9% of payroll) was made to the System due to SB 2659

8 An estimated additional contribution of $3,500,000 (14.1% of payroll) was made to the System due to SB 2659

9 An estimated additional contribution of $3,600,000 (14.0% of payroll) was made to the System due to SB 2659

10 An estimated additional contribution of $3,600,000 (14.0% of payroll) was made to the System due to SB 2659

Solvency Tests
($ in Thousands)

Valuation Date	Actuarial Accrued Liabilities for: (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)
6/30/2003	$17,604	$192,62	$91,868	$259,746	100%	100.0%	53.9%
6/30/2004	18,352	201,573	96,645	256,481	100	100.0	37.8
6/30/2005	18,972	214,844	101,301	253,477	100	100.0	19.4
6/30/2006	19,906	222,281	108,451	265,637	100	100.0	21.6
6/30/2007	20,870	231,771	118,592	284,626	100	100.0	27.0
6/30/2008	21,371	242,265	117,942	298,630	100	100.0	29.7
6/30/2009	20,136	273,774	100,720	292,322	100	99.4	0.0
6/30/2010	20,658	284,106	106,513	281,088	100	91.7	0.0
6/30/2011	20,621	292,234	101,577	278,265	100	88.2	0.0
6/30/2012	20,760	300,753	99,902	268,424	100	82.3	0.0
6/30/2013	23,706	306,273	101,596	271,097	100	80.8	0.0

Schedule of Active Member Valuation Data

		Active Members			
Valuation Date	Number of Employers	Number	Annual Payroll	Annual Average Pay	% Increase in Average Pay
2004	1	559	$22,683,404	$40,579	4.7%
2005	1	540	22,342,918	41,376	2.0
2006	1	564	24,499,296	43,438	5.0
2007	1	591	27,037,063	45,748	5.3
2008	1	626	29,597,374	47,280	3.3
2009	1	570	26,389,909	46,298	(2.1)
2010	1	542	26,353,400	48,623	5.0
2011	1	515	24,872,085	48,295	(0.7)
2012	1	547	25,670,030	46,929	(2.8)
2013	1	520	25,815,787	49,646	5.8

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

	Fiscal Year Ended June 30									
Item	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Beginning of Year	599	605	621	625	638	651	692	696	704	713
Added	27	33	32	29	42	62	22	32	31	23
Removed	(21)	(17)	(28)	(16)	(29)	(21)	(18)	(24)	(22)	(23)
End of Year	605	621	625	638	651	692	696	704	713	713

Schedule of Benefit Payments Added To and Removed From Rolls
Last Seven Fiscal Years

Year Ending	2007	2008	2009	2010	2011	2012	2013
Beginning of Year	$17,821,809	$18,722,555	$19,798,655	$21,994,109	$22,899,689	$23,975,708	$25,167,940
Added	826,877	1,341,416	2,263,514	806,092	1,089,231	1,157,796	642,344
Removed	(390,154)	(739,677)	(556,046)	(450,658)	(609,133)	(574,614)	(596,871)
Benefit increase due to annual COLA	464,023	474,361	487,986	550,146	595,921	609,050	622,206
Benefit increase due to plan amendments	0	0	0	0	0	0	0
End of Year	$18,722,555	$19,798,655	$21,994,109	$22,899,689	$23,975,708	$25,167,940	$25,835,619

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		$661.61	$710.09		$1,172.98	$1,696.31	$2,859.71		$3,269.65
Average Final Salary		$21,843.63	$36,998.42		$31,851.99	$28,672.69	$54,157.79		$54,646.02
Number of Active Retirants		1	2		3	2	11		4
July 1, 2011 to June 30, 2012									
Average Monthly Benefit		$1,648.69		$2,340.93	$982.05	$1,568.62	$2,267.88	$4,335.37	$3,798.92
Average Final Salary		$39,568.45		$58,021.27	$39,971.01	$28,716.82	$46,824.02	$71,048.35	$62,979.14
Number of Active Retirants		1		1	1	1	10	5	12
July 1, 2010 to June 30, 2011									
Average Monthly Benefit			$716.18	$1,020.55	$2,433.84	$1,896.54	$2,408.76	$3,791.81	$3,296.52
Average Final Salary			$28,057.78	$26,202.46	$60,342.83	$43,144.33	$50,019.57	$52,042.20	$51,855.68
Number of Active Retirants			1	2	3	2	11	4	9
July 1, 2009 to June 30, 2010									
Average Monthly Benefit				$1,405.04		$3,155.49	$3,024.51	$3,461.46	$2,973.70
Average Final Salary				$37,962.84		$59,219.21	$47,430.92	$30,160.22	$41,004.34
Number of Active Retirants				4		2	5	2	9
July 1, 2008 to June 30, 2009									
Average Monthly Benefit		$466.11		$438.86	$1,580.07	$3,177.63	$3,143.57	$4, 604.35	$3,055.97
Average Final Salary		$33,559.84		$16,844.95	$38,404.11	$61,298.36	$59,583.98	$75,125.92	$52,752.04
Number of Active Retirants		3		1	7	13	21	7	10

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		$346.95	$1,157.63	$407.81	$1,778.14	$3,442.30	$2,411.10	$4,364.71	$3,034.57
Average Final Salary		$13,030.50	$46,554.36	$12,949.33	$48,156.36	$64,164.63	$45,198.00	$73,561.75	$54,588.25
Number of Active Retirants		1	1	3	9	2	9	5	12
July 1, 2006 to June 30, 2007									
Average Monthly Benefit			$213.25		$2,107.95	$2,246.68	$2,536.45	$1,044.36	$2,257.21
Average Final Salary			$4,971.00		$42,893.86	$48,745.57	$47,312.51	$29,283.33	$40,152.62
Number of Active Retirants			1		7	3	13	1	4
July 1, 2005 to June 30, 2006									
Average Monthly Benefit	$129.75		$193.87	$831.37	$2,364.17	$1,547.62	$2,080.44	$1,802.57	$2,447.36
Average Final Salary	$5,260.50		$5,119.56	$21,650.66	$53,948.96	$35,031.14	$42,378.93	$39,574.31	$45,797.02
Number of Active Retirants	1		1	2	6	4	10	2	6
July 1, 2004 to June 30, 2005									
Average Monthly Benefit	$1,150.68			$138.07	$1,558.09	$2,117.73	$1,585.17	$1,410.24	$2,819.25
Average Final Salary	$27,616.23			$6,627.65	$37,085.48	$43,821.52	$36,481.94	$29,669.04	$48,744.72
Number of Active Retirants	1			1	6	5	10	3	7
July 1, 2003 to June 30, 2004									
Average Monthly Benefit	$741.50		$2,739.00	$617.17	$1,299.97	$2,015.18	$2,092.61	$4,405.08	$3,775.60
Average Final Salary	$21,819.03		$65,736.29	$17,233.42	$30,458.56	$44,300.15	$46,563.44	$83,468.52	$58,207.95
Number of Active Retirants	1		1	1	5	5	6	1	7

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	$278,265	$268,424				
B.	Market Value End of Year	265,232	287,456				
C.	Market Value Beginning of Year	277,563	265,232				
D.	Cash Flow						
	D1. Contributions	10,744	11,903				
	D2. Other Revenue	3,246	3,414				
	D3. Benefit Payments	(26,950)	(27,164)				
	D4. Administrative Expenses	(176)	(199)				
	D5. Investment Expenses	(584)	(657)				
	D6. Net	(13,720)	(12,703)				
E.	Investment Income						
	E1. Market Total: B.-C.-D6.	1,389	34,927				
	E2. Assumed Rate	8.00%	8.00%				
	E3. Amount for Immediate Recognition	22,447	21,394				
	E4. Amount for Phased-In Recognition	(21,058)	13,533				
F.	Phased-In Recognition of Investment Income						
	F1. Current Year: 0.20*E4.	(4,212)	2,707				
	F2. First Prior Year	7,758	(4,212)	2,707			
	F3. Second Prior Year	2,650	7,758	(4,212)	2,707		
	F4. Third Prior Year	(14,921)	2,650	7,758	(4,212)	2,707	
	F5. Fourth Prior Year	(9,843)	(14,921)	2,650	7,758	(4,212)	2,707
	F6. Total Recognized Investment Gain	(18,568)	(6,018)	8,903	6,253	(1,505)	2,707
G.	Actuarial Value End of Year:						
	A.+D6.+E3.+F6.	$268,424	$271,097				
H.	Difference Between Market & Actuarial Values	$(3,192)	$16,359	$7,456	$1,203	$2,708	$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	$265,232	$237,048	$268,424
2. Contributions and Misc. Revenue	15,317	15,317	15,317
3. Investment Increment	34,927	19,584	15,376
4. Benefit Payments	(27,164)	(27,164)	(27,164)
5. Expenses	(856)	(856)	(856)
6. Assets at June 30, 2013 (1) + (2) + (3) + (4) + (5)	$287,456	$243,929	$271,097
7. Investment Increment/Mean Assets*	13.5%	8.5%	5.9%

*Based on the approximation formula: I / [.5 x (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 expenses only).

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

			Disability			
Age	Withdrawal and Vesting*	Death	Non-Duty	Duty	Service	Service Retirement*
25	4.0%	.03%	.09%	.01%	5	5%
30	3.5	.04	.12	.02	10	5%
35	2.5	.05	.16	.04	15	5%
40	1.0	.07	.20	.07	20	10%
45	1.0	.11	.30	.06	25	15%
50	0.5	.16	.50	.05	30	25%
55	0.0	.21	.91	.02	35	25%

* The annual rate of service retirement is 100% at age 60.

It is assumed that a member will be granted 1¾ years of service credit for unused leave at termination of employment. In addition, it is assumed that, on average, ¼ year of service credit for peace-time military service will be granted to each member.

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

		Annual Rates of	
Age	Merit & Seniority	Base (Economy)	Increase Next Year
20	5.59%	4.25%	9.84%
25	2.32	4.25	6.57
30	1.50	4.25	5.75
35	1.50	4.25	5.75
40	1.50	4.25	5.75
45	1.00	4.25	5.25
50	0.50	4.25	4.75
55	0.50	4.25	4.75

PAYROLL GROWTH: 4.25% per annum, compounded annually.

PRICE INFLATION: 3.50% per annum, compounded annually.

TIMING OF DECREMENT AND PAY INCREASES: Middle of Year.

DEATH AFTER RETIREMENT: The mortality table, for post-retirement mortality, used in evaluating allowances to be paid was the RP-2000 Combined Mortality Table Projected to 2025 by Scale AA (set forward 2 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 selected table.

MARRIAGE ASSUMPTION: 100% married with the husband three years older than his wife.

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 HSPRS 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 HSPRS. 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 June 30, 2013, as interpreted in preparing the actuarial valuation.

DEFINITIONS

Average Compensation	Average annual covered earnings of an employee during the four highest consecutive 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 July 1, 1958, active duty military service, 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*
7/1/1958	6/30/1968	13.33%		5.00%	
7/1/1968	6/30/1971	15.33		5.00	
7/1/1971	6/30/1973	18.59		5.00	
7/1/1973	6/30/1975	20.77		5.00	
7/1/1975	6/30/1978	24.65		5.00	
7/1/1978	6/30/1980	26.16		6.00	
7/1/1980	6/30/1989	26.16		6.50	
7/1/1989	6/30/1990	27.97		6.50	
7/1/1990	6/30/2003	26.16		6.50	
7/1/2003	6/30/2006	28.16		6.50	
7/1/2006	6/30/2008	30.30		6.50	
7/1/2008	12/31/2011	30.30		7.25	
1/1/2012	6/30/2012	35.21		7.25	
7/1/2012	6/30/2014	37.00		7.25	

*Maximum covered earnings equal wages paid, not to exceed wages paid to the Commissioner of the Department of Public Safety (currently $146,850).

Effective July 1, 2004, additional contributions will be made to the System as a result of the enactment of Senate Bill No. 2659. The additional contributions are estimated to be $3,400,000 annually based on current experience.

Effective July 1, 2013, additional contributions will be made to the System as a result of the enactment of House Bill No. 1015. The additional contributions are estimated to be $1,200,000 annually based on current experience.

BENEFITS

Superannuation Retirement

Condition for Retirement

(a) A retirement allowance is payable to any member who retires and has attained age 55 and completed at least five years of membership service, or has attained age 45 and completed at least 20 years of creditable service, or has completed 25 years of creditable service regardless of age.

Any member who has attained age 63 shall be retired forthwith. Effective July 1, 2011, the Commissioner of Public Safety is authorized to allow a member who has attained age 63 to continue in active service. Such continued service may be authorized annually until the member attains age 65.

(b) Any member who withdraws from service prior to his or her attainment of age 55 but after having completed five or more years of creditable service is entitled to receive, in lieu of a refund of his or her accumulated contributions, a retirement allowance commencing at age 55.

Amount of Allowance

The annual retirement allowance payable to a retired member 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. An employer's annuity which, together with the member's annuity, is equal to 2-1/2% of his or her average compensation for each year of membership service, plus

3. A prior service annuity equal to 2-1/2% of average compensation for each year of prior service.

The aggregate amounts of (2) and (3) above shall not exceed 100% of average compensation, regardless of service, for retirements on or after January 1, 2000; 85% for retirements prior to January 1, 2000.

The minimum allowance for both service and disability retirement based on the following table for each year of creditable service, reduced if necessary as indicated below.

Service	Monthly Benefit
Less than 10 years	$250
10-15 years	$300
15 or more years	$500

The annual retirement allowance payable to a member who retires under condition (a) above prior to age 55 is computed in accordance with the above formula except that the employer's annuity and prior service annuity are reduced 3% for each year of age below age 55, or 3% for each year of service below 25 years of creditable service, whichever is less.

Disability Retirement

Condition for Retirement

A retirement allowance is payable to any member who is not eligible for a service retirement benefit but who becomes totally and permanently disabled, either physically or mentally, regardless of creditable service, if the disability is due to causes in the performance of duty. If the disability is not in the performance of duty, the member must have completed at least 5 years of membership service to be eligible for retirement.

Amount of Allowance

The annual disability retirement allowance payable is equal to the greater of 50% of his or her average salary for the 2 years immediately preceding retirement, or a retirement allowance as calculated under the provisions for superannuation retirement.

Death Prior to Retirement

Upon the death of a highway patrolman who is eligible for service retirement, family benefits are payable equal to those which would have been payable had he been retired on his or her date of death.

Upon the death of a highway patrolman either in the line of duty or as a result of an accident occurring in the line of duty, the following benefits are payable:

a) a benefit to the spouse equal to one-half the member's average compensation.

b) a benefit to a dependent child payable to age 19 (23 if a full-time student) equal to one-fourth of the member's average compensation for one child or one-half for two or more children.

Death After Retirement

Upon the death of a highway patrolman who has retired for service or disability and who has not elected any other optional form of benefit, his widow or her widower is eligible for a benefit equal to 50% of his or her retirement allowance and each child (but not more than 2) who has not attained age 19 (23 if a full-time student) is eligible for a benefit equal to 25% of his or her retirement allowance. The benefit to the widow is payable for life and to children until they attain age 19 (23 if a full-time student) or for life if they are totally and permanently disabled.

Refund of Contributions

Upon a member's termination of employment for any reason before retirement, his or her accumulated contributions, together with regular interest thereon, are refunded. Upon the death of a member who is not eligible for any other death benefit, his or her accumulated contributions, together with regular interest thereon, are paid to his or her beneficiary.

Interest is currently credited to the member's account at 3.50% per annum.

Normal Form of Benefit

The normal form of benefit is an allowance payable during the life of the member. Upon death the benefits described above are payable.

Optional Benefits

A member upon retirement may elect to receive his 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 HSPRS 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 who qualifies for an unreduced retirement allowance may 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 either 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 this 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.

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 60*, plus (b) 3% compounded for each year thereafter beginning with the fiscal year in which the member turns age 60*.

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.

Those members who retired on or before July 1, 1999 received an ad hoc benefit increase in the amount of $3.50 per month per each full fiscal year of retirement through June 30, 1999 plus $1.00 per month for each year of credited service. The benefits were increased on July 1, 1999.

*this age will be reduced in five phases to age 55 if the actuary certifies that reducing the age will not result in the amortization period of the unfunded accrued liability exceeding 20 years.

CONTRIBUTIONS

Members contribute 7-1/4 percent of compensation and the employer contributes that additional amount necessary to fund the benefits outlined above on a full actuarial reserve funding basis.

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	7	$263,463	$0	$263,463	$3,136
2012	17	735,320	0	735,320	3,605
2011	24	1,010,651	23,751	1,034,403	3,592
2010	18	695,173	38,534	733,707	3,397
2009	52	2,217,592	198,459	2,416,051	3,872
2008	20	790,917	92,621	883,537	3,681
2007	16	629,117	95,404	724,521	3,774
2006	21	720,355	123,573	843,928	3,349
2005	16	511,047	107,270	618,317	3,220
2004	27	934,644	230,920	1,165,564	3,597
2003	11	291,495	77,749	369,244	2,797
2002	25	725,345	231,236	956,581	3,189
2001	22	646,003	216,581	862,584	3,267
2000	16	491,030	181,228	672,258	3,501
1999	15	396,632	162,897	559,528	3,108
1998	20	570,039	254,365	824,404	3,435
1997	27	761,488	359,509	1,120,997	3,460
1996	33	902,382	472,373	1,374,755	3,472
1995	24	584,902	320,525	905,427	3,144
1994	11	277,041	166,994	444,035	3,364
1993	15	319,386	192,309	511,694	2,843
1992	14	301,053	195,753	496,806	2,957
1991	4	71,467	54,933	126,401	2,633
1990	12	193,701	149,733	343,434	2,385
1989	4	67,140	56,009	123,149	2,566
1988	6	98,282	85,894	184,176	2,558
1987	3	34,604	25,368	59,972	1,666
1986	121	2,172,336	1,998,893	4,171,229	2,873
1985	4	57,273	59,981	117,254	2,443
1984	14	205,572	218,996	424,568	2,527
1983	6	69,380	78,166	147,547	2,049
1982	14	147,385	187,871	335,256	1,996
1981	12	108,600	137,627	246,227	1,710
1980	12	112,339	161,078	273,417	1,899
1979	9	68,853	91,445	160,298	1,484
1978	5	30,198	43,049	73,247	1,221
1977 & Prior	36	188,605	343,715	532,320	1,232
TOTAL	713	$18,400,810	$7,434,809	$25,835,619	$3,020

Schedule of Retired Members by Type of Retirement

Benefits Payable June 30, 2013

Amount of Monthly Benefit	Number of Rets.	Ret Type 1*	Ret Type 2*	Ret Type 3*
$1 – $100	1			1
101 – 200	4			4
201 – 300	6			6
301 – 400	23	1		22
401 – 500	12		3	9
501 – 600	19	3		16
601 – 700	15	2		13
701 – 800	21	4	1	16
801 – 900	27	3	1	23
901 – 1,000	24	1	1	22
Over 1,000	561	496	13	52
Totals	713	510	19	184

<u>*Type of Retirement</u>
1 – Retirement for Age & Service
2 – Disability Retirement
3 – Survivor Payment

Schedule of Retired Members by Type of 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	1	1											
101 – 200	4	4											
201 – 300	6	6											
301 – 400	23	22		1									
401 – 500	12	9					3						
501 – 600	19	16					3						
601 – 700	15	13					2						
701 – 800	21	16					5						
801 – 900	27	23			1		3		1			1	
901 – 1,000	24	22					2						
Over 1,000	561	57	1	45	2		442	14	10		32	18	103
Totals	713	189	1	46	3	0	460	14	11	0	32	19	103

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** (Reflects reduced monthly benefit)

**Included in other options

Mississippi Highway Safety Patrol Retirement System

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					6	$41,278	6	$41,278
20 – 24					1	4,765	1	4,765
25 – 29					1	15,321	1	15,321
30 – 34					2	54,835	2	54,835
35 – 39								
40 – 44			1	$19,784	3	48,402	4	68,186
45 – 49	8	$265,061	2	60,224	3	56,565	13	381,850
50 – 54	45	1,833,629	3	76,965	1	55,447	49	1,966,041
55 – 59	109	4,693,737			5	132,405	114	4,826,142
60 – 64	104	4,486,334	4	106,639	10	179,251	118	4,772,224
65 – 69	93	3,977,983	1	28,695	25	634,098	119	4,640,776
70 – 74	74	3,051,480	3	70,009	32	711,981	109	3,833,470
75 – 79	36	1,551,001	2	39,349	27	549,453	65	2,139,803
80 – 84	27	1,194,207	3	47,367	34	609,736	64	1,851,310
85 – 89	10	494,198			16	328,330	26	822,528
90 – 94	4	133,365			16	246,353	20	379,718
95					1	20,212	1	20,212
96								
97								
98								
99								
100 & Over					1	17,160	1	17,160
Totals	510	$21,680,995	19	$449,032	184	$3,705,592	713	$25,835,619

Average Age: 67.4 years
Average Age at Retirement: 49.8 years

Mississippi Highway Safety Patrol Retirement System

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

Attained Age	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									
20 – 24	7							7	$275,893
25 – 29	23	18						41	1,689,354
30 – 34	17	62	3					82	3,522,448
35 – 39	3	53	36	4				96	4,401,779
40 – 44	2	33	37	46	5			123	6,003,101
45 – 49	2	7	10	34	12	7		72	3,834,834
50 – 54			5	15	5	31	5	61	3,509,190
55 – 59			2	1	2	17	13	35	2,364,629
60 – 64		1				1	1	3	214,559
65 – 69									
70 – 74									
75 – 79									
Totals	54	174	93	100	24	56	19	520	$25,815,787

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

Age: 41.5 years
Service: 13.4 years
Annual Pay: $49,646

SCHEDULE E

MISSISSIPPI HSPRS
ANALYSIS OF FINANCIAL EXPERIENCE

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

Type of Activity	$ Gain (or Loss) For Year Ending 6/30/2013	$ Gain (or Loss) For Year Ending 6/30/2012
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	$ 904.3	$ 738.2
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	147.0	(96.7)
Death-in Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	40.6	34.0
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	927.9	164.7
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	3,256.1	2,367.5
New Members. Additional unfunded accrued liability will produce a loss.	0.0	(1,140.8)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	(6,480.0)	(18,623.8)
Death After Retirement. If retirants live longer than assumed, there is a loss. If not as long, a gain.	(384.8)	103.6
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	(2,164.3)	2,136.2
Gain (or Loss) During Year From Financial Experience	$ (3,753.2)	$ (14,317.1)
Non-Recurring Items. Adjustments for plan amendments, assumption changes, or method changes.	(1,121.6)	0.0
Composite Gain (or Loss) During Year	$ (4,874.8)	$ (14,317.1)

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 on 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.