

**MICHIGAN PUBLIC SCHOOL EMPLOYEES'  
RETIREMENT SYSTEM**

**ANNUAL ACTUARIAL VALUATION REPORT  
SEPTEMBER 30, 2006**

March 16, 2007

The Retirement Board  
Michigan Public School Employees' Retirement System  
General Office Building, Third Floor  
P.O. Box 30171  
Lansing, Michigan 48909

**Re: Michigan Public School Employees' Retirement System - Actuarial Valuation as of  
September 30, 2006**

Dear Board Members:


The results of the annual actuarial valuation of the Michigan Public School Employees' Retirement System pension benefits are presented in this report. The purpose of the valuation was to measure the System's funding progress and to determine the employer contribution for the next fiscal year.

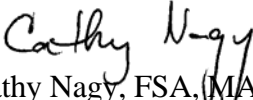
The valuation was based upon information, furnished by the Office of Retirement Services, concerning Retirement System benefits, financial transactions, and active members, terminated members, retirees and beneficiaries. Data was checked for internal and year-to-year consistency but was not otherwise audited. Year 2005 and prior years' valuation results back to 1993 were not prepared by GRS and are reproduced for comparison with the current year's results.

The valuation summarized in this report involves actuarial calculations that require making assumptions about future events. We believe that the assumptions and methods used in this report are reasonable and appropriate. However, other assumptions and methods could also be reasonable and could result in materially different results. Some of the numbers in this report are rounded. The use of rounded numbers for plan liabilities should not imply a lack of precision. In addition, because it is not possible or practical to consider every possible contingency, we may use summary information, estimates or simplifications of calculations to facilitate the modeling of future events. We may also exclude factors or data that we deem to be immaterial.

To the best of our knowledge this report is complete and accurate and the valuation was conducted in accordance with standards of practice prescribed by the Actuarial Standards Board and in compliance with the applicable state statutes. It is our opinion that the actuarial assumptions used for the valuation produce results which are reasonable.

Sincerely,

  
Alan Sonnanstine, ASA, MAAA

  
Cathy Nagy, FSA, MAAA

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**EXECUTIVE SUMMARY/BOARD SUMMARY**

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**1. Required Employer Contributions to Support Retirement Benefits**

The computed employer contribution for the fiscal year beginning October 1, 2006 is shown below. Computed contributions are shown as a percentage of active member payroll and as an annual dollar amount.

<b>Total Computed Employer Contribution</b>	
As a percentage of active member payroll	10.90%
As an annual dollar amount	\$1,106,314,895

**2. Contribution Comparison**

The chart below compares the results of this valuation of the Retirement System with the results of the prior year's valuation:

<b>Valuation Date</b>	<b>9/30/2005</b>	<b>9/30/2006</b>
Contribution %	11.38%	10.90%
Contribution \$	\$1,161,843,239	\$1,106,314,895

**3. Reasons for Change**

There are 3 general reasons why contribution rates change from one valuation to the next. The first is a change in the benefits or eligibility conditions of the plan. The second is a change in the valuation assumptions used to predict future occurrences. The third is the difference during the year between the plan's actual experience and what the assumptions predicted.

There were no benefit changes reported to the actuary for the year ended September 30, 2006. In addition, there were no assumption changes. Experience for the year ended September 30, 2006 was overall favorable and is described in more detail in Section B of this report.

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**SECTION A**  
INTRODUCTION

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**CONTRIBUTION REQUIREMENTS**

**Development of Employer Contributions for the Indicated Valuation Date**

<u>Contributions for</u>	<u>September 30,</u>	
	<u>2005</u>	<u>2006</u>
(1) Total Normal Cost of Benefits (as a % of member pay)	9.63%	9.41%
(2) Member Contribution % (weighted average)	<u>3.94%</u>	<u>3.98%</u>
(3) Employer Normal Cost % = (1) - (2)	5.69%	5.43%
(4) Projected Active Member Payroll for Coming Year	\$ 10,205,972,353	\$ 10,149,677,942
(5) Employer Normal Cost \$ = (3) x (4)	581,205,803	551,127,512
(6) Total Accrued Liability	48,206,292,866	49,136,170,650
(7) Funding Value of Assets	<u>38,211,008,964</u>	<u>39,892,950,554</u>
(8) Unfunded Actuarial Accrued Liabilities (UAAL) = (6) - (7)	\$ 9,995,283,902	\$ 9,243,220,096
(9) Amortization Period	31	30
(10) Amortization Factor (level percent of payroll payments)	17.21432907	16.65646971
(11) Amortization Payment % = (8) / (10) / (4)	5.69%	5.47%
(12) Amortization Payment \$ = (11) x (4)	\$ 580,637,436	\$ 555,187,383
(13) Total Computed Employer Contribution % = (3) + (11)	11.38%	10.90%
(14) Total Computed Employer Contribution \$ = (5) + (12)	<b>\$1,161,843,239</b>	<b>\$1,106,314,895</b>

**Computed Employer Contributions**

Based on the assumptions outlined in Section E, the long term contribution rate for the Michigan Public School Employees' Retirement System is expected to be 5.43% of payroll (the employer normal cost rate). However, for the current year there is also a contribution needed to fund the unfunded actuarial accrued liability (UAAL). The sum of these two contributions is the recommended employer contribution rate.

**Determining Employer Dollar Contributions**

For any period of time, the percent-of-payroll contribution rate needs to be converted to dollars, then promptly contributed to the Retirement System. The employer normal cost rate (expressed as a % of active member payroll reported for this valuation) was 5.43%. Applying the employer normal cost contribution rate of 5.43% to the projected payroll for the coming fiscal year, produces annual employer normal cost contributions of \$551,127,512. The amortization payment for funding the UAAL, \$555,187,383, when added to the normal cost contribution produces a total employer contribution of \$1,106,314,895.

## **DISCUSSION OF CHANGES**

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### **Revisions in Benefits**

There have been no revisions in plan benefits.

### **Revisions in Actuarial Assumptions or Methods**

There have been no material revisions in actuarial assumptions or methods.

### **Actuarial Experience**

Actuarial Experience was more favorable than that anticipated by the actuarial assumptions. The total actuarial gain was \$539 million. The gain was primarily due to pay increases being less than assumed during the last plan year, offset somewhat by an investment loss (based on the smoothed actuarial value of assets).

## MEASURES OF FINANCIAL SOUNDNESS

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The purpose of this section of the report is to provide certain measures which indicate the financial soundness of the program. These measures relate to long term solvency and level funding.

The various percentages listed in this section as of a single valuation date are not overly significant standing alone. What is more significant is the trend of the rates over a period of years. It is also important to keep in mind that each time benefits or assumptions are revised, actuarial liabilities are created or diminished. Any newly created liabilities are financed systematically over a period of future years. All actuarially computed values in this analysis are based on the actuarial assumptions utilized in the respective years' actuarial valuations.

### Long Term Solvency

Over the longer term, the solvency of an ongoing plan can be measured by comparing the actuarial value of assets to an amount known as the actuarial accrued liability (AAL) under the Entry Age actuarial cost method. This item has often been called the "past service liability". The AAL is affected immediately by any revisions in benefits or assumptions. The accumulation of assets to equal the AAL can be considered a long range funding goal. Largely because of periodic benefit increases, very few retirement programs have attained this goal.

Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	% of AAL Covered by Assets
9/30/2006	\$39,892,950,554	\$49,136,170,650	81.2%
9/30/2005	38,211,008,964	48,206,292,866	79.3%



**MEASURES OF FINANCIAL SOUNDNESS**

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**Level Contributions**

The actuarial assumptions and cost methods have been chosen with the intent of producing required employer contributions which remain fairly level as a percentage of active member payroll.

Valuation Date	Normal Cost	Amortization Payment	Total Contribution
9/30/2006	5.43%	5.47%	10.90%
9/30/2005	5.69%	5.69%	11.38%

A major factor affecting the stability of the contribution requirements just shown is how well the actual plan experience compares to the actuarial assumptions. The value of the difference between what actually occurred and what was assumed to occur is called the actuarial gain or loss. Gains tend to lower the subsequent cost of the program while losses tend to cause subsequent costs to rise.

Year Ending	Actuarial Gain (Loss)
9/30/2006	\$ 539,349,743
9/30/2005	(1,867,569,204)

Analysis of all the benchmarks listed above over a period of years will provide an indication of whether the program is becoming financially stronger or weaker.

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**SECTION B**  
FUNDING RESULTS

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**PRESENT VALUE OF FUTURE BENEFITS AND ACCRUED LIABILITY**

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**Determination of Unfunded Accrued Liability  
as of September 30, 2006**

A. Accrued Liability	
1. For retirees and beneficiaries	\$29,505,035,580
2. For vested terminated members	781,327,613
3. For present active members	
a. Value of expected future benefit payments	26,947,022,605
b. Value of future normal costs	<u>8,097,215,148</u>
c. Active member accrued liability: (a) - (b)	<u>18,849,807,457</u>
4. Total accrued liability	49,136,170,650
B. Present Assets (Funding Value)	<u>39,892,950,554</u>
C. Unfunded Accrued Liability: (A.4) - (B)	<u>9,243,220,096</u>
D. Funding Ratio: (B) / (A.4)	<u>81.2%</u>

**EXPERIENCE GAIN/(LOSS)**

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A. Derivation of Actuarial Gain/(Loss)

1. Unfunded Actuarial Accrued Liability(UAAL) - Previous Valuation	\$9,995,283,902
2. Total Normal Cost (employer plus member) for Year Ending 9/30/2006	983,075,457
3. Total Contributions (employer plus member) for Year Ending 9/30/2006	1,514,596,719
4. Interest at 8% on:	
a. UAAL and NC: $.08 \times [(1) + (2)]$	878,268,749
b. Contributions: $.04 \times (3)$	60,583,869
c. Net Total: (a) - (b)	817,684,880
5. Change in UAAL due to Benefit Changes	0
6. Change in UAAL due to Assumption Changes	0
a. Change in UAAL due to Actuarial Model Change and Data Changes	(498,877,681)
7. Expected UAAL Current Year:	
(1) + (2) - (3) + (4c) + (5) + (6) + (6a)	9,782,569,839
8. Actual UAAL Current Year	9,243,220,096
9. Experience Gain/(Loss): A.7 - A.8	539,349,743

B. Approximate Portion of Gain/(Loss) due to Investments (204,586,913)

C. Approximate Portion of Gain/(Loss) due to Liabilities: (A.9) - (B) \$ 743,936,656

The schedule above shows the net, aggregate experience for the System. The next page shows this experience in detail.

**DETAILED EXPERIENCE GAIN/(LOSS)**

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**Gains/(Losses) During the Year Ended September 30, 2006  
Resulting from Differences Between Assumed and Actual Experience**

**TYPE OF ACTIVITY**

	<u><b>Gain/(Loss)</b></u>
1. <b>Retirements</b> (including disability retirement). If members retire at older ages or with lower final average pay than assumed, there is a gain. If younger ages or higher average pays, a loss.	\$ 46,169,587
2. <b>Withdrawal from Employment</b> (including death-in-service). If more liabilities are released by withdrawals and deaths than assumed, there is a gain. If smaller releases, a loss.	(5,918,000)
3. <b>Pay Increases</b> . If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	691,550,640
4. <b>Investment Income</b> . If there is greater investment income than assumed, there is a gain. If less income, a loss.	(204,586,913)
5. <b>Death After Retirement</b> . If retirants and inactive vested members live longer than assumed, there is a loss. If not as long, a gain.	(49,164,540)
6. <b>New Entrants/Rehires</b> .	(98,700,211)
7. <b>Other</b> . Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, etc.	<u>159,999,180</u>
8. <b>Composite Gain (or Loss) During Year</b> .	\$539,349,743

**EXPERIENCE GAIN/(LOSS)**

**Five Year History  
(Amounts Shown in Millions)**

<b>Plan Year Ending September 30</b>	<b>Experience Gain/(Loss)</b>	<b>Gain/(Loss) Due to Investments</b>	<b>Actuarial Value of Investments</b>	<b>Investment Gain/(Loss) as % of Assets</b>
2006	\$ 539	\$ (205)	\$39,893	(0.51)%
2005	(1,868)	(2,086)	38,211	(5.46)
2004	(2,001)	(1,960)	38,784	(5.05)
2003	(2,337)	(1,684)	38,726	(4.35)
2002	(2,096)	(1,985)	38,382	(5.17)

<b>Plan Year Ending September 30</b>	<b>Gain/(Loss) Due to Liabilities</b>	<b>Actuarial Accrued Liability</b>	<b>Liability Gain/(Loss) as % of Accrued Liability</b>
2006	\$744	\$49,136	1.51%
2005	218	48,206	0.45
2004	(41)	46,317	(0.09)
2003	(653)	44,769	(1.46)
2002	(111)	41,957	(0.26)

**HISTORICAL FUNDING LEVELS FOR ACTUARIAL ACCRUED LIABILITIES**

(Amounts Shown in Millions)

Valuation Date September 30	Actuarial Accrued Liability	Actuarial Value of Assets	Funded Ratio	Unfunded/(Overfunded) Accrued Liability	Active Member Payroll <sup>2</sup>	Unfunded/(Overfunded) As % of Active Payroll
1991	\$18,032	\$14,653	81.3 %	\$3,379	\$ 6,248	54.1%
1992	19,563	15,333	78.4	4,230	6,593	64.2
1993 <sup>1</sup>	21,699	16,999	78.3	4,700	7,070	66.5
1994	23,500	18,503	78.7	4,997	7,344	68.0
1994 <sup>3</sup>	25,014	18,503	74.0	6,511	7,344	88.7
1995	27,402	20,455	74.6	6,947	7,565	91.8
1996	28,571	22,529	78.9	6,042	7,807	77.4
1997	30,179	25,485	84.4	4,694	8,027	58.5
1997 <sup>4</sup>	29,792	30,051	100.9	(259)	8,027	(3.2)
1998	32,137	31,870	99.2	267	8,265	3.2
1998 <sup>3</sup>	32,863	31,870	97.0	993	8,265	12.0
1999	34,348	34,095	99.3	253	8,644	2.9
2000	37,139	36,893	99.3	246	8,985	2.7
2001	39,774	38,399	96.5	1,375	9,264	14.8
2002	41,957	38,382	91.5	3,575	9,707	36.8
2003	44,769	38,726	86.5	6,043	10,044	60.2
2004	47,055	38,784	82.4	8,271	10,465	79.0
2004 <sup>3</sup>	46,317	38,784	83.7	7,533	10,407	72.4
2005	48,206	38,211	79.3	9,995	10,206	97.9
2006	49,136	39,893	81.2	9,243	9,806	94.3

<sup>1</sup> Revised asset valuation method.

<sup>2</sup> Valuation payroll includes payroll projection factor through 1994.

<sup>3</sup> Revised actuarial assumptions.

<sup>4</sup> Revised actuarial assumptions and asset valuation method.

**RECOMMENDED AND ACTUAL EMPLOYER CONTRIBUTIONS  
HISTORICAL COMPARISON**

(Amounts Shown in Millions)

Fiscal Year Ending September 30	Valuation Date September 30	Contribution Rates As Percents of Valuation Payroll	Actual Payroll	Employer Contribution for Fiscal Year	
				Computed	Actual
1992	1991	8.69 %	\$ 6,592.8	\$ 572.9	\$ 546.9
1993	1992	9.06	7,014.7	635.5	612.2
1994	1993	8.75	7,319.5	640.5	-
1994	1993 <sup>2</sup>	8.62	7,319.5	630.9	809.8
1995	1994	10.91	7,433.5	811.0	769.9
1996	1995	11.21	7,732.5	866.8	829.6
1997	1996 <sup>3</sup>	10.97	8,028.6	880.7	904.9
1998	1997	10.22	8,226.1	840.7	-
1998	1997 <sup>1</sup>	6.70	8,226.1	551.1	674.7
1999	1998	6.96	8,447.7	588.0	-
1999	1998 <sup>1</sup>	7.18	8,447.7	606.5	574.4
2000	1999	6.63	9,169.3	607.9	655.3
2001	2000	6.48	9,374.8	607.5	756.0
2002	2001	7.22	9,719.6	701.8	604.0
2003	2002	8.37	10,021.1	838.8	697.9
2004	2003	9.74	10,029.2	976.8	697.6
2005	2004	10.72	10,137.4	1,086.7	715.0
2005	2004 <sup>1</sup>	9.83	10,137.4	996.5	715.0
2006	2005	11.38	10,242.5	1,165.6	996.0
2007 <sup>4</sup>	2006	10.90			

<sup>1</sup> Revised actuarial assumptions and/or methods.

<sup>2</sup> Revised asset valuation method.

<sup>3</sup> Amortization period changed from rolling 50 years to declining 40 years effective 10-1-96.

<sup>4</sup> For the year ending September 30, 2007 the actual payroll and actual contribution are not yet known.



**HISTORICAL FUNDING LEVELS FOR PRIORITIZED ACTUARIAL ACCRUED LIABILITY**

Valuation Date September 30	Actuarial Accrued Liability (\$ in Millions)			Valuation Assets (\$ in Millions)	Portion of Actuarial Accrued Liability Covered by Assets			
	(1) Active Members Contributions	(2) Retirants and Beneficiaries	(3) Active and Inactive Members (Employer Financed Portion)		(1)	(2)	(3)	(4) <sup>4</sup>
	1991	\$1,365	\$ 7,505		\$ 9,162	\$14,653	100%	100%
1992	1,510	8,212	9,841	15,333	100	100	57.0	78.4
1993 <sup>1</sup>	1,700	9,177	10,822	16,999	100	100	56.6	78.3
1994	1,892	10,051	11,557	18,502	100	100	56.8	78.7
1994 <sup>2</sup>	1,892	10,312	12,810	18,502	100	100	49.2	74.0
1995	2,057	11,569	13,776	20,455	100	100	49.6	74.6
1996	2,261	12,590	13,720	22,529	100	100	56.0	78.9
1997	2,500	14,303	13,376	25,485	100	100	64.9	84.4
1997 <sup>3</sup>	2,500	14,303	12,989	30,051	100	100	102.0	100.9
1998	2,505	15,689	13,943	31,870	100	100	98.1	99.2
1998 <sup>2</sup>	2,505	15,888	14,470	31,870	100	100	93.1	97.0
1999	2,706	17,291	14,351	34,095	100	100	98.2	99.3
2000	2,932	19,200	15,007	36,893	100	100	98.4	99.3
2001	3,244	20,943	15,587	38,399	100	100	91.2	96.5
2002	3,490	22,480	15,987	38,382	100	100	77.6	91.5
2003	3,720	24,080	16,969	38,726	100	100	64.4	86.5
2004	3,800	26,178	17,077	38,784	100	100	51.6	82.4
2004 <sup>2</sup>	3,800	26,178	16,339	38,784	100	100	53.9	83.7
2005	3,898	28,047	16,261	38,211	100	100	38.5	79.3
2006	4,082	29,505	15,549	39,893	100	100	40.6	81.2

<sup>1</sup> Revised asset valuation method.

<sup>2</sup> Revised actuarial assumptions.

<sup>3</sup> Revised actuarial assumptions and asset valuation method.

<sup>4</sup> Percent funded on a total valuation asset and total actuarial accrued liability basis.

**FINANCIAL OBJECTIVE ACHIEVEMENT INDICATORS – HISTORICAL COMPARISON  
(DOLLAR AMOUNTS IN MILLIONS)**

Valuation September 30	Valuation Assets	Termination Indicator		Experience Indicator
		Actuarial Present Value of Vested Benefits	Funded Ratio	Actuarial Gain (Loss)
1993	\$16,767	\$15,892	105.5 %	N/A
1993 <sup>1</sup>	16,999	15,892	107.0	N/A
1994	18,503	17,493	105.8	N/A
1994 <sup>2</sup>	18,503	18,488	100.1	N/A
1995	20,455	20,192	101.3	\$(168)
1996	22,529	21,365	105.4	1,186
1997	25,485	23,413	108.8	1,563
1997 <sup>3</sup>	30,051	23,601	127.3	1,563
1998	31,870	25,838	123.3	(583)
1998 <sup>2</sup>	31,870	26,205	121.6	(583)
1999	34,095	27,755	122.8	904
2000	36,893	30,264	121.9	2
2001	38,399	32,755	117.2	(1,259)
2002	38,382	34,686	110.7	(2,096)
2003	38,726	37,424	103.5	(2,337)
2004	38,784	39,659	97.8	(2,001)
2004 <sup>2</sup>	38,784	39,737	97.6	(2,001)
2005	38,211	41,595	91.9	(1,868)
2006	39,893	45,549	87.6	539

<sup>1</sup> Revised asset valuation method.

<sup>2</sup> Revised actuarial assumptions.

<sup>3</sup> Revised actuarial assumptions and asset valuation method.

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**SECTION C**  
FUND ASSETS

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**PLAN NET ASSETS (ASSETS AT MARKET OR FAIR VALUE)**

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	<b>September 30,</b>	
	<b>2005</b>	<b>2006</b>
Equity in Common Cash	\$ 82,512,540	\$ 81,654,557
Total Receivables	265,384,174	569,167,001
Short-Term Investment Pool	1,391,102,975	1,176,085,700
Fixed Income Pool	6,507,075,783	7,050,167,117
Domestic Equity Pool	19,418,437,105	20,826,454,404
Real Estate Investment Pool	2,958,413,840	3,245,483,600
Alternative Investment Pool	4,596,675,402	5,491,257,612
International Investment Pool	4,614,426,207	5,274,474,448
Total Assets	39,834,028,026	43,714,744,439
Other Assets (Liabilities)	(94,084,679)	(89,124,169)
Less Assets Held in Trust for Health Benefits	(523,874,832)	(630,214,024)
Net Assets Held in Trust for Pension Benefits	\$39,216,068,515	\$42,995,406,246

Note: The above 2005 assets do not match the published CAFR due to adjustments made after the 2005 valuation report was published.

The asset values shown above are consistent with the amounts shown in the 2005 valuation report and do not reflect later adjustments.

**RECONCILIATION OF PLAN ASSETS**

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	<b>September 30, 2005</b>	<b>September 30, 2006</b>
Market Value, BOY	\$36,288,506,853	\$39,216,068,515
Additions		
Member Contributions	278,290,298	518,599,720
Employer Contributions	714,980,264	995,996,999
Net Investment Income	4,476,382,374	4,927,177,496
Transfer From Stabilization Account	54,247,323	0
Adjustments	0	145,381,065 *
Total Additions	5,523,900,259	6,587,155,280
Deductions		
Benefit Payments	(2,554,278,925)	(2,761,292,217)
Contribution Refunds/Transfers	(22,061,718)	(24,024,234)
Administrative Expenses	(19,997,954)	(22,501,098)
Total Deductions	(2,596,338,597)	(2,807,817,549)
Market Value, EOY	\$39,216,068,515	\$42,995,406,246

\* Reflects adjustment made to the September 30, 2005 assets (as reported in the published CAFR) after the 2005 actuarial report was published. Also see line 3h on the following page.

# MPSERS Annual Actuarial Valuation

## DEVELOPMENT OF VALUATION ASSETS

	2002	2003	2004	2005	2006
1. Beginning of Year Assets					
a. Market Value	\$ 34,605,769,223	\$ 29,655,593,676	\$ 33,162,274,148	\$ 36,288,506,853	\$ 39,216,068,515
b. Valuation Assets	38,399,142,454	38,382,189,323	38,726,183,662	38,783,811,565	38,211,008,964
2. End of Year Assets at Market Value	29,655,593,676	33,162,274,148	36,288,506,853	39,216,068,515	42,995,406,246
3. Net Additions to Market Value					
a. Member Contributions	413,163,871	379,084,549	456,352,606	278,290,298	518,599,720
b. Employer Contributions	603,949,327	697,906,265	697,647,338	714,980,264	995,996,999
c. Investment Income	(3,865,135,521)	4,532,071,835	4,184,883,142	4,476,382,374	4,927,177,496
d. Benefit Payments	(2,041,439,863)	(2,180,574,193)	(2,358,216,073)	(2,554,278,925)	(2,761,292,217)
e. Contribution Refunds/Transfers	(20,813,845)	(13,642,300)	(18,397,014)	(22,061,718)	(24,024,234)
f. Administrative Expenses	(23,529,221)	(23,016,963)	(19,374,673)	(19,997,954)	(22,501,098)
g. Transfer (to) from stabilization subaccount	(16,370,295)	114,851,279	183,337,379	54,247,323	0
h. Audit Adjustment	0	0	0	0	145,381,065
i. Total Additions to Market Value	(4,950,175,547)	3,506,680,472	3,126,232,705	2,927,561,662	3,779,337,731
4. Summary of Net Additions to Market Value					
a. Net Contributions and Transfers = 3a + 3b + 3e + 3g	979,929,058	1,178,199,793	1,318,940,309	1,025,456,167	1,490,572,485
b. Net Investment Income = 3c + 3f	(3,888,664,742)	4,509,054,872	4,165,508,469	4,456,384,420	4,904,676,398
c. Benefit Payments = 3d	(2,041,439,863)	(2,180,574,193)	(2,358,216,073)	(2,554,278,925)	(2,761,292,217)
d. Audit Adjustment = 3h	0	0	0	0	145,381,065
e. Total Additions to Market Value	(4,950,175,547)	3,506,680,472	3,126,232,705	2,927,561,662	3,779,337,731
5. Average Valuation Assets =					
1b + .5 x (4a + 4c + 4d)	37,868,387,052	37,881,002,123	38,206,545,780	38,019,400,186	37,648,339,630
6. Imputed Income at Valuation Rate = 8.00% x 5	3,029,470,964	3,030,480,170	3,056,523,662	3,041,552,015	3,011,867,170
7. Gain (Loss) from investments = 4b - 6	(6,918,135,706)	1,478,574,702	1,108,984,807	1,414,832,405	1,892,809,228
8. Portion of Gains (Losses) recognized from prior years					
a. From this year = .2 * 7	(1,383,627,141)	295,714,940	221,796,961	282,966,481	378,561,846
b. From one year ago	(1,502,383,099)	(1,383,627,141)	295,714,940	221,796,961	282,966,481
c. From two years ago	408,878,343	(1,502,383,099)	(1,383,627,141)	295,714,940	221,796,961
d. From three years ago	497,305,526	408,878,343	(1,502,383,099)	(1,383,627,141)	295,714,940
e. From four years ago	(5,086,919)	497,305,526	408,878,343	(1,502,383,099)	(1,383,627,141)
f. Total	(1,984,913,290)	(1,684,111,431)	(1,959,619,995)	(2,085,531,858)	(204,586,913)
9. Change in Valuation Assets = 4a + 4c + 4d + 6 + 8f	(16,953,131)	343,994,339	57,627,903	(572,802,601)	1,681,941,590
10. End of Year Assets					
a. Market Value = 2	29,655,593,676	33,162,274,148	36,288,506,853	39,216,068,515	42,995,406,246
b. Valuation Assets = 1b + 9	38,382,189,323	38,726,183,662	38,783,811,565	38,211,008,964	39,892,950,554
11. Actuarial Rate of Return	2.76%	3.55%	2.87%	2.51%	7.46%
12. Market Rate of Return	(11.41)%	15.47%	12.76%	12.54%	12.69%

**HISTORY OF APPROXIMATE INVESTMENT RETURN RATES**

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<b>Plan Year Ending September 30</b>	<b>Approximate Rate of Return *</b>	
	<b>Market</b>	<b>Actuarial</b>
2000	13.29%	10.67%
2001	(11.60)	6.35
2002	(11.41)	2.76
2003	15.47	3.55
2004	12.76	2.87
2005	12.54	2.51
2006	12.69	7.46
<b>Average Returns:</b>		
Last five years:	7.90%	3.81%
Last seven years:	5.61%	5.13%

\* *Approximate return based on ratio of total investment return to average asset value, using an assumed mid-year timing of asset flows (see previous page).*

**HISTORICAL GROWTH OF ASSETS AT MARKET VALUE**

Fiscal Year Ended September 30	Revenues by Source			Expenses by Type			Market Value of Assets
	Member Contributions	Employer Contributions	Investment Income (Market Basis)	Retirement Benefits	Return of Contributions	Administrative Expenses	
1987	\$100,364,158	\$515,458,166	N/A	\$791,194,027	\$1,515,904	\$7,191,225	N/A
1988	141,662,530	597,092,668	N/A	616,882,022	1,560,025	8,184,566	N/A
1989	157,309,641	566,307,528	N/A	741,995,367	1,425,086	8,251,139	N/A
1990	174,658,758	654,221,516	N/A	821,705,321	2,418,522	9,162,434	N/A
1991	175,136,454	673,399,035	N/A	897,827,918	3,317,244	17,398,261	N/A
1992	208,791,106	751,909,882	N/A	1,002,123,397	3,453,421	25,990,432	\$16,498,623,006
1993	242,018,294	760,446,814	\$1,980,352,703	1,094,442,442	3,940,883	36,407,714	18,346,649,778
1994	264,638,521	877,409,856	444,815,417	1,208,331,304	5,457,370	45,812,746	18,673,912,152
1995	271,859,995	1,017,486,956	3,116,656,100	1,359,988,407	8,369,566	48,211,560	21,663,345,670
1996	279,052,573	1,110,808,092	3,299,263,857	1,533,696,715	186,198,045	52,518,344	24,580,057,088
1997	278,789,985	1,222,326,910	5,766,520,214	1,650,304,796	17,904,603	41,833,668	30,137,651,130
1998	266,105,558	984,274,725	2,413,274,166	1,811,893,540	21,252,147	47,154,514	31,921,005,378
1999	549,259,484	920,601,920	5,104,774,748	1,955,626,410	15,585,460	51,061,591	36,473,368,069
2000	355,229,988	1,084,255,551	4,765,922,069	2,161,697,019	17,486,704	53,957,715	40,445,634,239
2001	415,565,528	1,260,006,294	(4,564,964,529)	2,347,069,816	19,908,136	58,691,608	35,130,571,972
2002	456,381,392	1,208,577,347	(3,823,824,261)	2,554,611,684	20,880,961	68,383,190	30,327,830,615
2003	426,478,552	1,355,314,526	4,557,655,910	2,739,257,114	13,706,711	70,924,708	33,843,391,070
2004	509,118,487	1,316,478,440	4,166,118,397	2,973,632,976	18,494,863	70,493,524	36,772,485,031
2005	340,797,914	1,415,347,006	4,569,347,953	3,260,262,708	22,253,862	75,517,986	39,739,943,348
2006	590,413,273	1,828,307,622 <sup>1</sup>	4,969,087,485	3,396,104,065	24,066,605	81,960,788	43,625,620,270

<sup>1</sup> Includes audit adjustment (see page C-2).

Note: Above figures include supplemental payments and health benefits, and administrative fees for self-insured health benefits. Assets include pension, health and the stabilization sub account.



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**SECTION D**  
CENSUS DATA

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**SUMMARY OF PARTICIPANT DATA BY CATEGORY**

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	<u>2005</u>	<u>2006</u>
Retirees and beneficiaries currently receiving benefits:		
Regular benefits	133,564	138,306
Survivor benefits	12,932	13,484
Disability benefits	<u>5,210</u>	<u>5,373</u>
Total	151,706	157,163
Current Employees:		
Vested	117,915	119,192
Non-vested	<u>198,236</u>	<u>189,041</u>
Total	316,151	308,233
Inactive employees entitled to benefits and not yet receiving them:	<u>16,806</u>	<u>15,679</u>
Total Participants	<u><u>484,663</u></u>	<u><u>481,075</u></u>

**RETIREES AND BENEFICIARIES – HISTORICAL COMPARISON**

Year Ended September 30	Rolls End of Year		Annual % Increase		Average Annual Benefit
	Number	Annual Benefit <sup>1</sup>	Number	Benefits	
1987	73,316	\$ 500,353	6.3%	13.8%	\$ 6,825
1988	76,111	547,015	3.8	9.3	7,187
1989	79,917	611,424	5.0	11.8	7,651
1990	83,286	686,850	4.2	12.3	8,247
1991	86,253	749,717	3.6	9.2	8,692
1992	90,201	831,290	4.6	10.9	9,216
1993	93,574	911,686	3.7	9.7	9,743
1994	97,989	1,018,819	4.7	11.8	10,397
1995	103,151	1,141,972	5.3	12.1	11,071
1996	107,465	1,251,811	4.2	9.6	11,649
1997	111,842	1,371,479	4.1	9.6	12,263
1998	116,620	1,505,362	4.3	9.8	12,908
1999	120,913	1,639,825	3.7	8.9	13,562
2000	126,115	1,798,028	4.3	9.6	14,257
2001	130,790	1,943,444	3.7	8.1	14,859
2002	135,277	2,094,382	3.4	7.8	15,482
2003	139,814	2,251,766	3.4	7.5	16,105
2004	145,378	2,431,636	4.0	8.0	16,726
2005	151,706	2,644,700	4.4	8.8	17,433
2006	157,163	2,828,460	3.6	6.9	17,997

<sup>1</sup> In thousands of dollars.

**RETIREES AND BENEFICIARIES  
AS OF SEPTEMBER 30, 2006  
BY TYPE OF RETIREMENT AND SELECTED OPTION**

Amount of Monthly Benefit	Number of Retirees	Type of Retirement*						Selected Option**				
		1	2	3	4	5	6	Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt 1E 2E,3E,4E
\$ 1 - 200	13,389	11,592	1,057	110	442	1	187	7,726	2,615	1,896	111	1,041
201 - 400	19,450	16,021	1,514	125	1,375	1	414	11,001	3,753	3,191	225	1,280
401 - 600	14,384	11,672	1,116	75	1,096	1	424	7,699	2,939	2,552	231	963
601 - 800	11,198	8,991	884	45	856	1	421	5,658	2,245	2,123	211	961
801 - 1,000	9,002	7,246	761	24	588	0	383	4,338	1,843	1,727	196	898
1,001 - 1,200	7,846	6,440	649	19	467	0	271	3,591	1,641	1,344	166	1,104
1,201 - 1,400	7,236	6,078	570	9	341	0	238	2,983	1,505	1,265	158	1,325
1,401 - 1,600	6,820	5,876	465	4	256	0	219	2,686	1,474	1,100	158	1,402
1,601 - 1,800	6,858	6,068	390	2	242	0	156	2,569	1,530	1,160	202	1,397
1,801 - 2,000	7,098	6,401	353	7	155	0	182	2,643	1,774	1,264	290	1,127
Over 2,000	53,882	51,921	1,196	5	268	1	491	23,069	10,345	11,074	2,939	6,455
Totals	157,163	138,306	8,955	425	6,086	5	3,386	73,963	31,664	28,696	4,887	17,953

\* Type of Retirement

- 1 – Normal retirement for age & service
- 2 – Survivor payment – normal retirement
- 3 – Duty disability retirement (including survivors)
- 4 – Non-duty disability retirement (including survivors)
- 5 – Survivor payment – duty death in service
- 6 – Survivor payment – non-duty death in service

\*\* Selected Option

- Opt. 1 – Straight life allowance
- Opt. 2 – 100% survivor option
- Opt. 3 – 50% survivor option
- Opt. 4 – 75% survivor option
- Opt. 1E, 2E, 3E, 4E – equated retirement plans

**ACTIVE MEMBERS BY CLASSIFICATION**

	September 30, 2005	September 30, 2006
<b>Basic Members</b>		
Number	53,308	49,855
Average Age	51.3 years	51.9 years
Average Service	20.3 years	20.9 years
Reported Payroll	\$2,595,353,288	\$2,336,416,102 <sup>1</sup>
Average Annual Pay	\$48,686	\$46,864
<b>MIP Members</b>		
Number	262,843	258,378
Average Age	42.2 years	42.6 years
Average Service	7.6 years	7.8 years
Reported Payroll	\$7,610,619,065	\$7,470,036,016 <sup>1</sup>
Average Annual Pay	\$28,955	\$28,911
<b>Total</b>		
Number	316,151	308,233
Average Age	43.7 years	44.1 years
Average Service	9.7 years	9.9 years
Reported Payroll	\$10,205,972,353	\$9,806,452,118 <sup>1</sup>
Average Annual Pay	\$32,282	\$31,815

<sup>1</sup> Beginning with the September 30, 2006 valuation, the payroll is no longer adjusted. Reported payroll is the sum of the actual pays reported for each active member for the year ending September 30, 2006.

**ACTIVE MEMBERS**

**Members in Active Service as of September 30, 2006  
by Age and Years of Service**

Age	Years of Service							Total Count	Total Pay	Average Pay
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & up			
Under 20	671				1			672	\$ 6,555,603	\$ 9,755
20 - 24	10,958	74						11,032	123,754,842	11,218
25 - 29	19,642	3,819	46		1			23,508	560,894,972	23,860
30 - 34	11,153	12,501	2,104	39		1		25,798	875,872,807	33,951
35 - 39	35,543	8,890	8,881	2,226	113			55,653	1,354,240,975	24,334
40 - 44	16,863	9,360	5,754	5,830	2,142	105	1	40,055	1,241,522,251	30,995
45 - 49	12,731	10,205	6,959	5,091	5,205	2,217	205	42,613	1,353,628,359	31,766
50 - 54	8,877	8,168	7,521	6,374	4,839	6,736	3,573	46,088	1,756,231,929	38,106
55 - 59	5,841	4,837	4,939	5,860	4,792	4,484	8,986	39,739	1,733,884,431	43,632
60 - 64	3,140	2,028	1,726	2,034	2,044	1,727	3,659	16,358	642,536,179	39,280
65 - 69	1,519	674	382	374	343	332	721	4,345	119,068,268	27,404
70 & Over	1,076	471	208	135	119	100	263	2,372	38,261,502	16,130
Total	128,014	60,556	38,312	27,828	19,479	15,602	17,145	308,233	\$ 9,806,452,118	\$ 31,815

**ACTIVE AND INACTIVE MEMBERS REPORTED FOR VALUATION  
HISTORICAL COMPARISON**

Valuation Date September 30	Number of Inactive Vested Members	Active Members					
		Number	Reported Payroll <sup>1</sup>	Average			
				Annual Pay	% Increase	Age	Service
1987	*	262,834	\$ 4,617,952	\$17,570	9.7 %	41.4	9.6
1988	*	285,992	4,989,959	17,448	(0.7)	41.1	9.2
1989	*	287,750	5,284,205	18,364	5.2	41.0	9.4
1990	*	288,865	5,633,895	19,504	6.2	41.3	9.5
1991	*	293,503	6,032,513	20,553	5.4	41.5	9.6
1992	*	297,230	6,427,775	21,626	5.2	41.7	9.5
1993	*	296,585	6,897,924	23,258	7.5	42.2	9.8
1994	*	291,006	7,164,807	24,621	5.9	42.5	10.0
1995	*	294,911	7,564,876	25,651	4.2	43.4	10.1
1996	*	295,096	7,807,029	26,456	3.1	43.6	9.9
1997	*	295,691	8,027,450	27,148	2.6	43.6	10.0
1998	*	302,016	8,265,463	27,368	0.8	43.5	9.7
1999	*	309,324	8,643,718	27,944	2.1	43.6	9.5
2000	*	312,699	8,984,737	28,733	2.8	43.6	9.7
2001	*	318,538	9,264,183	29,083	1.2	43.6	9.6
2002	14,403	326,350	9,707,281	29,745	2.3	43.6	9.5
2003	14,247	326,938	10,043,862	30,721	3.3	43.8	9.7
2004	15,756	322,494	10,407,072	32,271	5.0	43.8	9.7
2005	16,806	316,151	10,205,972	32,282	0.0	43.7	9.7
2006	15,679	308,233	9,806,452	31,815	(1.4)	44.1	9.9

\* Not available

<sup>1</sup> Reported payroll in thousands. Beginning with the September 30, 2006 valuation, the payroll is no longer adjusted. Reported payroll is the sum of the actual pays reported for each active member for the year ending September 30, 2006.

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**SECTION E**  
METHODS AND ASSUMPTIONS

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## VALUATION METHODS

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**Actuarial Cost Method** - Normal cost and the allocation of benefit values between service rendered before and after the valuation date was determined for most decrements using an Individual Entry-Age Actuarial Cost Method having the following characteristics:

- (i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement;
- (ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Normal Cost contributions for death and disability benefits were determined using the term cost method. This method produces normal cost contributions that are expected to be sufficient to fund the value of both pre-retirement death and disability benefits likely to be paid during the next year.

Actuarial gains (losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

**Financing of Unfunded Actuarial Accrued Liabilities** - Unfunded actuarial accrued liabilities (full funding credit if assets exceed liabilities) were amortized by level (principal & interest combined) percent-of-payroll contributions over a reasonable period of future years.

**Actuarial Value of System Assets** - The actuarial value of assets recognizes assumed investment income fully each year. Differences between actual and assumed investment income are phased in over a closed five 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 assumed rate, actuarial value of assets will tend to be greater than market value.

**VALUATION ASSUMPTIONS**

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*The rate of investment return* was 8.0% a year, compounded annually net of investment and administrative expenses.

The assumed real return is the rate of return in excess of wage inflation. Considering other assumptions used in the valuation, the 8.0% nominal rate translates to a net real return of 4.5% a year.

*The rates of pay increase* used for individual members are in accordance with the table below. This assumption is used to project a member’s current pay to the pay upon which System benefits will be based. The current assumption was first used for the September 30, 2004 valuation of the System.

Sample Ages	Pay Increase Assumptions For an Individual Member		
	Merit & Seniority	Base (Economy)	Increase Next Year
20	12.4 %	3.5 %	15.9 %
25	8.8	3.5	12.3
30	5.2	3.5	8.7
35	3.7	3.5	7.2
40	2.6	3.5	6.1
45	1.7	3.5	5.2
50	0.8	3.5	4.3
55	0.3	3.5	3.8
60	0.0	3.5	3.5
65	0.0	3.5	3.5
Ref	269		

The charts shown in this section may include a reference number (for example 269 is used above). These reference numbers are used by GRS to track and identify assumption tables.

**VALUATION ASSUMPTIONS**

*The healthy life mortality table* used in this valuation of the System was the 1994 Group Annuity Mortality table unadjusted. This assumption was first used for the September 30, 1998 valuation of the System. Sample rates of mortality and years of life expectancy are shown below:

Sample Attained Ages	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	0.26 %	0.14 %	30.73	34.93
55	0.44	0.23	26.19	30.21
60	0.80	0.44	21.87	25.63
65	1.45	0.86	17.88	21.32
70	2.37	1.37	14.33	17.35
75	3.72	2.27	11.16	13.64
80	6.20	3.94	8.41	10.35
Ref:	261 x 1.0	262 x 1.0		

This assumption is used to measure the probabilities of each benefit payment being made after retirement. For active members, the probabilities of dying before retirement were based upon the same mortality table as members dying after retirement.

*The disabled life mortality table* used in this valuation was developed by the prior actuary pursuant to an experience study. For disabled retirees, the sample rates of mortality and years of life expectancy are shown below, and were first used for the September 30, 1998 valuation of the System.

Sample Attained Ages	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	2.50 %	1.72 %	20.99	25.36
55	2.68	2.04	18.52	22.55
60	3.16	2.44	15.99	19.90
65	3.94	2.84	13.55	17.35
70	5.02	3.24	11.28	14.78
75	6.58	3.76	9.19	12.11
80	8.74	5.32	7.31	9.39
Ref:	476 x 1.0	477 x 1.0		

**VALUATION ASSUMPTIONS**

*The rates of retirement* used to measure the probability of eligible members retiring during the next year as shown below. These assumptions were first used for the September 30, 2004 valuation of the System.

Retirement Ages	Percent of Eligible Members Retiring			
	Normal Retirement		Early Retirement	
	Basic Members	MIP Members	Basic Members	MIP Members
46-49		40 %		
50		40		
51		30		
52		25		
53		20		
54		20		
55	35 %	20	11.5 %	11.5 %
56	18	20	5.5	7.0
57	20	20	6.0	7.5
58	20	22	6.0	8.5
59	20	24	7.5	9.5
60	22	26		
61	20	22		
62	35	36		
63	25	25		
64	23	23		
65	36	36		
66	25	25		
67	22	22		
68	22	22		
69	25	25		
70	25	25		
71	25	25		
72	25	25		
73	25	25		
74	25	25		
75 & Over	100	100		
Ref	1338	1339	1341	1340

A member is eligible for normal retirement after attaining age 55 with 30 or more years of credited service (no age requirement for MIP members), or after attaining age 60 with 10 or more years of credited service (5 years for MIP members).

A member is eligible for early retirement after attaining age 55 with 15 but less than 30 years of credited service.

**VALUATION ASSUMPTIONS**

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*Rates of separation from active membership* used in the valuation are shown below (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment, and was first used for the September 30, 2004 valuation of the System.

<b>Sample Ages</b>	<b>Years of Service</b>	<b>Percent Separating Within Next Year</b>
All	0	28.00 %
	1	15.00
	2	9.00
	3	7.00
	4	5.50
20	5 & over	5.00 %
25		5.00
30		3.50
35		2.65
40		2.10
45		1.60
50		1.40
55	1.40	
60	1.40	
Ref	437	742

**VALUATION ASSUMPTIONS**

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*Rates of disability* among active members used in the valuation are shown below, and were first used in the September 30, 1998 valuation of the System.

<b>Sample Ages</b>	<b>Percent Becoming Disabled Within Next Year</b>
20	0.00 %
25	0.01
30	0.01
35	0.02
40	0.06
45	0.13
50	0.23
55	0.33
60	0.45
Ref.	393

*Unknown Data:* Members with unknown gender were assumed to be female. Members with unknown dates of birth were assumed to have entry-age equal to 35 for MIP and 31 for Basic members.

**MISCELLANEOUS AND TECHNICAL ASSUMPTIONS**

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<b><i>Benefit Service</i></b>	Exact Fractional service is used to determine the amount of benefit payable.
<b><i>Decrement Operation</i></b>	Disability and withdrawal decrements do not operate during retirement eligibility.
<b><i>Decrement Timing</i></b>	Retirement decrements are assumed to occur on July 1. All other decrements are assumed to occur mid-year.
<b><i>Eligibility Testing</i></b>	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
<b><i>Forfeitures</i></b>	For vested separations from service, it is assumed that 0% of members separating will withdraw their contributions and forfeit an employer financed benefit. It was further assumed that the liability at termination is the greater of the vested deferred benefit (if any) or the member's accumulated contributions.
<b><i>Incidence of Contributions</i></b>	Contributions are assumed to be received continuously throughout the year.
<b><i>Liability Adjustments</i></b>	None.
<b><i>Marriage Assumption</i></b>	75% of males and 65% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes.
<b><i>Normal Form of Benefit</i></b>	A straight life benefit is the normal form of benefit.
<b><i>Pay Increase Timing</i></b>	Pay increases were assumed to be at the beginning of the fiscal year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
<b><i>Service Credit Accruals</i></b>	Members were assumed to accrue .92 years of service credit per year.

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**SECTION F**  
PLAN PROVISIONS

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## PLAN PROVISIONS

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Our actuarial valuation of the System as of September 30, 2006 is based on the present provisions of the Public School Employees' Retirement Act (Act 300 of 1980, as amended).

### **Regular Retirement** (no reduction factor for age):

Eligibility - Age 55 with 30 years credited service; or age 60 with 10 years credited service. For Member Investment Plan (MIP) members, any age with 30 years credited service; or age 60 with 10 years credited service; or age 60 with 5 years of credited service provided member worked through 60<sup>th</sup> birthday and has credited service in each of the last 5 years.

Mandatory Retirement Age - None.

Annual Amount - Total credited service times 1.5% of final average compensation.

Final Annual Compensation - Average of highest 5 consecutive years. (3 years for MIP members).

### **Early Retirement** (age reduction factor used):

Eligibility - Age 55 with 15 or more years of credited service and earned credited service in each of the last 5 years.

Annual Amount - Regular retirement benefit, reduced by 1/2% for each month by which the commencement age is less than 60.

### **Deferred Retirement** (vested benefit):

Eligibility - 10 years of credited service. Benefit commences at the time age qualification is met.

Annual Amount - Regular retirement benefit based on service and final average compensation at time of termination.

### **Duty Disability Retirement**:

Eligibility - No age or service requirement; in receipt of workers' disability compensation.

Annual Amount - Computed as regular retirement benefit with minimum benefit based on 10 years credited service. Additional limitation such that disability benefits plus authorized outside earnings limited to 100% of final average compensation (increased by 2% each year retired).

## PLAN PROVISIONS

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### **Non-Duty Disability Retirement:**

Eligibility - 10 years of credited service.

Annual Amount - Computed as regular retirement benefit based on credited service and final average compensation at time of disability. Additional limitation such that disability benefits plus authorized outside earnings limited to 100% of final average compensation (increased by 2% each year retired).

### **Duty Death Before Retirement**

Eligibility – No age or service requirement. Beneficiary is in receipt of workers' compensation. Also applies to "duty disability" retirees during first three years of disability

Annual Amount – Spouse benefit computed as regular retirement benefit with minimum benefit based on 10 years of credited service, reduced for 100% Joint and Survivor election. If no surviving spouse, children under 18 share in benefit; if no spouse or children, a disabled and dependent parent is eligible.

### **Non-Duty Death Before Retirement**

Eligibility - 15 years of credited service, or age 60 and 10 years of credited service. 10 years of credited service, or age 60 and 5 years of credited service for MIP members.

Annual Amount - Computed as regular retirement benefit, reduced in accordance with a 100% Joint and Survivor election, with payments commencing first of month following death. For the beneficiary of a deferred member, benefit commences at time member would have attained the minimum age qualification.

### **Member Contributions:**

MIP Participants hired before January 1, 1990 - 3.9% of pay.

MIP Participants hired on or after January 1, 1990 - 3.0% of first \$5,000 of pay, plus 3.6% of next \$10,000 of pay, plus 4.3% pay in excess of \$15,000.

Non-MIP Participants – None

## PLAN PROVISIONS

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### Post-Retirement Cost-of-Living Adjustments:

One-time upward adjustments have been made in 1972, 1974, 1976, and 1977 for members retired on or after July 1, 1956 and prior to July 1, 1976 who were eligible for Social Security benefits. For members who retired prior to July 1, 1956 and not eligible for Social Security benefits based upon membership service, the minimum base pension was increased in 1965, 1971, 1972, 1974, and 1981 and in 1976 and 1977 one-time upward adjustment were made.

Beginning in 1983 some benefit recipients received an annual distribution of investment earnings in excess of 8% (supplemental payment). On January 1, 1986, all members who retired prior to January 1, 1986 were given a permanent 8% increase. On January 1, 1990 a one-time upward adjustment for members who retired prior to October 1, 1981 was made.

Currently members receive annual increases based on the following schedule:

Retired before January 1, 1987 - Greater of supplemental payment or automatic 3% increases.

Retired on or after January 1, 1987 under MIP - Automatic 3% increases only.

Retired on or after January 1, 1987 not under MIP - Supplemental payment only.

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**SECTION G**  
GLOSSARY

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## GLOSSARY

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<b><i>Actuarial Accrued Liability</i></b>	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.”
<b><i>Accrued Service</i></b>	The service credited under the plan which was rendered before the date of the actuarial valuation.
<b><i>Actuarial Assumptions</i></b>	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.
<b><i>Actuarial Cost Method</i></b>	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.”
<b><i>Actuarial Equivalent</i></b>	A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.
<b><i>Actuarial Present Value</i></b>	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.
<b><i>Amortization</i></b>	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.
<b><i>Experience Gain (Loss)</i></b>	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.

**GLOSSARY**

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<i>Normal Cost</i>	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.
<i>Reserve Account</i>	An account used to indicate that funds have been set aside for a specific purpose and is not generally available for other uses.
<i>Unfunded Actuarial Accrued Liability</i>	The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as “unfunded accrued liability.”
<i>Valuation Assets</i>	The value of current plan assets recognized for valuation purposes. Generally based on market value plus a portion of unrealized appreciation or depreciation.