GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

MICHIGAN PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM

ANNUAL ACTUARIAL VALUATION REPORT
SEPTEMBER 30, 2009

GRS

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March 30, 2010

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, 2009

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. This report may be provided to parties other than the Office of Retirement Services only in its entirety and only with the permission of the Office of Retirement Services.

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. All of the undersigned are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. It is our opinion that the actuarial assumptions used for the valuation produce results which are reasonable.

Sincerely,

Alan E. Sonnanstine

Alan Sonnanstine, ASA, MAAA

Curtis Powell

Curtis Powell, EA, MAAA

AES/CP:lr

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EXECUTIVE SUMMARY/BOARD SUMMARY

1. Required Employer Contributions to Support Retirement Benefits

The computed employer contribution for the fiscal year beginning October 1, 2009 is shown below. Computed contributions are shown as a percentage of active member payroll and as an annual dollar amount.

Total Computed Employer Contribution	
As a percentage of active member payroll	11.56%
As an annual dollar amount	$1,182,164,061

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:

Valuation Date	9/30/2008	9/30/2009
Contribution %	9.60%	11.56%
Contribution $	$989,150,149	$1,182,164,061

3. Reasons for Change

There are three 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, 2009. There were no material assumption changes. Experience for the year ended September 30, 2009 was overall unfavorable and is described in more detail in Section B of this report.

SECTION A

INTRODUCTION

CONTRIBUTION REQUIREMENTS

Development of Employer Contributions for the Indicated Valuation Date

	Contributions for	September 30 2008	September 30 2009
(1)	Total Normal Cost of Benefits (as a % of member pay)	9.61%	9.55%
(2)	Member Contribution % (weighted average)	5.40%	5.42%
(3)	Employer Normal Cost % = (1) - (2)	4.21%	4.13%
(4)	Projected Active Member Payroll for Coming Year	$ 10,303,647,377	$ 10,226,332,708
(5)	Employer Normal Cost $ = (3) x (4)	433,783,555	422,347,541
(6)	Total Accrued Liability	54,607,640,423	56,684,963,977
(7)	Funding Value of Assets	45,677,053,757	44,702,878,189
(8)	Unfunded Actuarial Accrued Liabilities (UAAL) = (6) - (7)	$ 8,930,586,666	$ 11,982,085,788
(9)	Amortization Period (years)	28	27
(10)	Amortization Factor (level percent of payroll payments)	16.08400786	15.77897730
(11)	Amortization Payment % = (8) / (10) / (4)	5.39%	7.43%
(12)	Amortization Payment $ = (11) x (4)	$ 555,366,594	$ 759,816,520
(13)	Total Computed Employer Contribution % = (3) + (11)	9.60%	11.56%
(14)	Total Computed Employer Contribution $ = (5) + (12)	**$ 989,150,149**	**$ 1,182,164,061**

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 4.13% 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) is 4.13%. Applying the employer normal cost contribution rate of 4.13% to the projected payroll for the coming fiscal year, produces annual employer normal cost contributions of $422,347,541. The amortization payment for funding the UAAL, $759,816,520, when added to the normal cost contribution produces a total employer contribution of $1,182,164,061.

DISCUSSION OF CHANGES

Revisions in Benefits

There have been no revisions in plan benefits reported to GRS.

Revisions in Actuarial Assumptions or Methods

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

Actuarial Experience

Actuarial Experience was less favorable than that anticipated by the actuarial assumptions. The total actuarial loss was $2.7 billion. The loss was primarily due to recognized investment losses and longer than projected retiree lifetimes, partially offset by lower than projected pay increases and fewer than projected retirements.

Comment on the Investment Markets

Investment markets have been very volatile the past two years. The actuarial value of assets (funding value), used to determine both the funded status and the required employer contribution, is based on a 5-year smoothed value of assets. This reduces the volatility of the valuation results.

As of September 30, 2009, the actuarial value of assets was 130% of market value. This means that meeting the actuarial assumption in the next few years will require average future market returns that exceed the 8% investment return assumption.

If the September 30, 2009 valuation results were based on market value instead of smoothed funding value, the funded percent of the plan would be 60.9% (instead of 78.9%), and the employer contribution requirement would be 17.88% of payroll (instead of 11.56%). If the investment markets do not turn around, the funded percent and employer contribution requirement can be expected to head in that direction.

MEASURES OF FINANCIAL SOUNDNESS

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
9/30/2009	$44,702,878,189	$56,684,963,977	78.9 %
9/30/2008 [1]	45,677,053,757	54,607,640,423	83.6
9/30/2008	45,677,053,757	53,555,048,563	85.3

[1] *Change in plan provisions.*

MEASURES OF FINANCIAL SOUNDNESS

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
9/30/2009	4.13 %	7.43 %	11.56 %
9/30/2008 [1]	4.21	5.39	9.60
9/30/2008	5.40	4.75	10.15

[1] Change in plan provisions.

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)
9/30/2009	$ (2,719,194,269)
9/30/2008	(1,834,299,174)

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.

SECTION B

FUNDING RESULTS

PRESENT VALUE OF FUTURE BENEFITS AND ACCRUED LIABILITY

Determination of Unfunded Accrued Liability
as of September 30, 2009

A. Accrued Liability	
1. For retirees and beneficiaries	$34,159,148,709
2. For vested and other terminated members	756,815,633
3. For present active members	
a. Value of expected future benefit payments	28,681,751,413
b. Value of future normal costs	6,912,751,778
c. Active member accrued liability: (a) - (b)	21,768,999,635
4. Total accrued liability	56,684,963,977
B. Present Valuation Assets (Funding Value)	44,702,878,189
C. Unfunded Accrued Liability: (A.4) - (B)	11,982,085,788
D. Funding Ratio: (B) / (A.4)	78.9%

EXPERIENCE GAIN/(LOSS)

A. Derivation of Actuarial Gain/(Loss):		
	1. Unfunded Actuarial Accrued Liability(UAAL) - Previous Valuation	$ 8,930,586,666
	2. Total Normal Cost (employer plus member) for Year Ending 9/30/2009	990,180,513
	3. Total Contributions (employer plus member) for Year Ending 9/30/2009	1,357,624,821
	4. Interest at 8% on:	
	a. UAAL: .08 x (1)	714,446,933
	b. Normal Cost and Contributions: .04 x [(2) - (3)]	(14,697,772)
	c. Net Total: (a) + (b)	699,749,161
	5. Change in UAAL due to Benefit Changes	0
	6. Change in UAAL due to Assumption Changes	0
	7. Expected UAAL Current Year: (1) + (2) - (3) + (4c) + (5) + (6)	9,262,891,519
	8. Actual UAAL Current Year	11,982,085,788
	9. Experience Gain/(Loss): (7) - (8)	(2,719,194,269)
B. Approximate Portion of Gain/(Loss) due to Investments		(2,727,806,702)
C. Approximate Portion of Gain/(Loss) due to Liabilities: (A.9) - (B)		8,612,433

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

DETAILED EXPERIENCE GAIN/(LOSS)

Gains/(Losses) During the Year Ended September 30, 2009
Resulting from Differences Between Assumed and Actual Experience

TYPE OF ACTIVITY

	Gain/(Loss)
1. **Retirements** (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.	$ 150,706,630
2. **Withdrawal from Employment** (including death-in-service). If more liabilities are released by withdrawals and deaths than assumed, there is a gain. If smaller releases, a loss.	(21,393,067)
3. **Pay Increases.** If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	487,788,765
4. **Investment Income.** If there is greater investment income than assumed, there is a gain. If less income, a loss.	(2,727,806,702)
5. **Death After Retirement.** If retirants and inactive vested members live longer than assumed, there is a loss. If not as long, a gain.	(259,405,425)
6. **New Entrants/Rehires.**	(91,109,697)
7. **Other.** Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, etc.	(257,974,773)
8. **Composite Gain/(Loss) During Year.**	$ (2,719,194,269)

EXPERIENCE GAIN/(LOSS)

Five-Year History
(Amounts Shown in Millions)

Plan Year Ending September 30	Experience Gain/(Loss)	Gain/(Loss) Due to Investments	Actuarial Value of Investments	Investment Gain/(Loss) as % of Assets
2009	$ (2,719)	$ (2,728)	$ 44,703	(6.10)%
2008	(1,834)	(1,464)	45,677	(3.20)
2007	614	757	45,335	1.67
2006 [1]		3,102		
2006	539	(205)	39,893	(0.51)
2005	(1,868)	(2,086)	38,211	(5.46)

[1] *Assets reset to market value on September 30, 2006.*

Plan Year Ending September 30	Gain/(Loss) Due to Liabilties	Actuarial Accrued Liability	Liability Gain/(Loss) as % of Accrued Liability
2009	$ 9	$ 56,685	0.02%
2008	(371)	54,608	(0.68)
2007	(143)	51,107	(0.28)
2006	744	49,136	1.51
2005	218	48,206	0.45

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 Reported Payroll	Unfunded/(Overfunded) As % of Active Payroll
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 [3]	29,792	30,051	100.9	(259)	8,027	(3.2)
1998	32,137	31,870	99.2	267	8,265	3.2
1998 [2]	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 [2]	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
2006 [1]	49,136	42,995	87.5	6,141	9,806	62.6
2007	51,107	45,335	88.7	5,771	9,851	58.6
2008	53,555	45,677	85.3	7,878	9,958	79.1
2008 [4]	54,608	45,677	83.6	8,931	9,958	89.7
2009	56,685	44,703	78.9	11,982	9,884	121.2

[1] *Revised asset valuation method.*
[2] *Revised actuarial assumptions.*
[3] *Revised actuarial assumptions and asset valuation method.*
[4] *Change in plan provisions.*

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	Employer Contribution for Fiscal Year Actual
1997	1996 [3]	10.97 %	$ 8,028.6	$ 880.7	$ 904.9
1998	1997	10.22	8,226.1	840.7	-
1998	1997 [1]	6.70	8,226.1	551.1	674.7
1999	1998	6.96	8,447.7	588.0	-
1999	1998 [1]	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	-
2005	2004 [1]	9.83	10,137.4	996.5	715.0
2006	2005	11.38	10,242.5	1,165.6	996.0
2007	2006	10.90	10,307.6	1,123.5	-
2007	2006 [2]	9.06	10,307.6	933.9	-
2007	2006 [5]	8.15	10,307.6	840.1	835.4
2008	2007	8.87	10,318.9	915.3	999.4
2009	2008	10.15	10,412.0	1,056.8	-
2009	2008 [6]	9.60	10,412.0	999.6	1,000.4
2010 [4]	2009	11.56			

[1] *Revised actuarial assumptions and/or methods.*
[2] *Revised asset valuation method.*
[3] *Amortization period changed from rolling 50 years to declining 40 years effective 10-1-96.*
[4] *For the year ending September 30, 2010, the actual payroll and actual contribution are not yet known.*
[5] *Interest-only funding adopted for one year only.*
[6] *Change in plan provisions.*

HISTORICAL FUNDING LEVELS FOR PRIORITIZED ACTUARIAL ACCRUED LIABILITY

Valuation Date September 30	Actuarial Accrued Liability ($ in Millions) (1) Active Members Contributions	(2) Retirants and Beneficiaries	(3) Active and Inactive Members (Employer Financed Portion)	Valuation Assets ($ in Millions)	Portion of Actuarial Accrued Liability Covered by Assets (1)	(2)	(3)	(4)[4]
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[3]	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[2]	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[2]	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
2006[1]	4,082	29,505	15,549	42,995	100	100	60.5	87.5
2007	4,376	31,254	15,477	45,335	100	100	62.7	88.7
2008	5,168	32,723	15,664	45,677	100	100	49.7	85.3
2008[5]	5,168	32,723	16,717	45,677	100	100	46.6	83.6
2009	5,449	34,159	17,077	44,703	100	100	29.8	78.9

[1] *Revised asset valuation method.*
[2] *Revised actuarial assumptions.*
[3] *Revised actuarial assumptions and asset valuation method.*
[4] *Percent funded on a total valuation asset and total actuarial accrued liability basis.*
[5] *Change in plan provisions.*

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

		Termination Indicator		Experience Indicator
Valuation September 30	Valuation Assets	Actuarial Present Value of Vested Benefits	Funded Ratio	Actuarial Gain/(Loss)
1994	$ 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 [3]	30,051	23,601	127.3	1,563
1998	31,870	25,838	123.3	(583)
1998 [2]	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 [2]	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
2006 [1]	42,995	45,549	94.4	3,641
2007	45,335	47,502	95.4	614
2008	45,677	50,286	90.8	(1,834)
2009	44,703	51,936	86.1	(2,719)

[1] *Revised asset valuation method.*
[2] *Revised actuarial assumptions.*
[3] *Revised actuarial assumptions and asset valuation method.*

SECTION C

FUND ASSETS

PLAN NET ASSETS (ASSETS AT MARKET OR FAIR VALUE)

	September 30	
	2008	2009
Equity in Common Cash	$ 565,197,559	$ 113,238,544
Total Receivables	436,081,506	401,604,821
Short Term Investment Pools	328,695,712	792,418,383
Fixed Income Pools	6,928,097,881	6,686,446,346
Domestic Equity Pools	16,948,852,673	12,970,936,759
Real Estate Pool	4,366,607,612	3,035,118,231
Alternative Investments Pool	7,526,501,188	6,791,057,200
International Equities Pools	3,574,931,658	4,479,240,469
Absolute Return Pools	0	632,784,513
Securities Lending Collateral less Obligations	(1,589,948,859)	(1,382,979,347)
Total Assets	39,085,016,930	34,519,865,919
Other Liabilities	(19,275,474)	(21,486,356)
Net Assets Held in Trust for Pension Benefits	$39,065,741,456	$34,498,379,563

Note: Asset amounts exclude assets held for health benefits.

RECONCILIATION OF PLAN NET ASSETS

	September 30, 2008	September 30, 2009
Market Value, Beginning of Year	$48,362,932,895	$39,065,741,456
Additions		
Member Contributions	399,256,616	357,249,466
Employer Contributions	999,374,879	1,000,375,355
Net Investment Income	(7,520,927,313)	(2,712,429,401)
Audit Adjustment	0	122,297,344 *
Total Additions	(6,122,295,818)	(1,232,507,236)
Deductions		
Benefit Payments	3,117,434,847	3,278,118,116
Contribution Refunds/Transfers	32,720,146	33,943,530
Administrative Expenses	24,740,628	22,793,011
Total Deductions	3,174,895,621	3,334,854,657
Market Value, End of Year	$39,065,741,456	$34,498,379,563

* *Reflects adjustment made to the September 30, 2008 assets after the 2008 actuarial report was published.*

DEVELOPMENT OF VALUATION ASSETS

	2009	2010	2011	2012	2013
1. Beginning of Year Assets					
a. Market Value	$ 39,065,741,456				
b. Valuation Assets	45,677,053,757				
2. End of Year Assets at Market Value	34,498,379,563				
3. Net Additions to Market Value					
a. Member Contributions	357,249,466				
b. Employer Contributions	1,000,375,355				
c. Investment Income	(2,712,429,401)				
d. Benefit Payments	(3,278,118,116)				
e. Contribution Refunds/Transfers	(33,943,530)				
f. Administrative Expenses	(22,793,011)				
g. Transfer (to) from stabilization subaccount	0				
h. Audit Adjustment	122,297,344				
i. Total Additions to Market Value	(4,567,361,893)				
4. Summary of Net Additions to Market Value					
a. Net Contributions and Transfers = 3a + 3b + 3e +3g	1,323,681,291				
b. Net Investment Income = 3c + 3f	(2,735,222,412)				
c. Benefit Payments = 3d	(3,278,118,116)				
d. Audit Adjustment = 3h	122,297,344				
e. Total Additions to Market Value	(4,567,361,893)				
5. Average Valuation Assets = 1b + .5 x (4a + 4c) + 4d	44,822,132,688				
6. Imputed Income at Valuation Rate = 8.00% x 5	3,585,770,615				
7. Gain (Loss) from investments = 4b - 6	(6,320,993,027)				
8. Portion of Gains (Losses) recognized from prior years					
a. From this year = .2 * 7	(1,264,198,605)				
b. From one year ago	(2,220,488,012)	$(1,264,198,605)			
c. From two years ago	756,879,915	(2,220,488,012)	$(1,264,198,605)		
d. From three years ago	0	756,879,915	(2,220,488,012)	$(1,264,198,605)	
e. From four years ago	0	0	756,879,917	(2,220,488,012)	$(1,264,198,607)
f. Total	(2,727,806,702)	(2,727,806,702)	(2,727,806,700)	(3,484,686,617)	(1,264,198,607)
9. Change in Valuation Assets = 4a + 4c + 4d + 6 + 8f	(974,175,568)				
10. End of Year Assets					
a. Market Value = 2	34,498,379,563				
b. Valuation Assets = 1b + 9	44,702,878,189				
11. Actuarial Rate of Return	1.91%				
12. Market Rate of Return	(7.16)%				

DEVELOPMENT OF VALUATION ASSETS (CONTINUED)

	2004	2005	2006	2007	2008
1. Beginning of Year Assets					
a. Market Value	$ 33,162,274,148	$ 36,288,506,853	$ 39,216,068,515	$ 42,995,406,246	$ 48,362,932,895
b. Valuation Assets	38,726,183,662	38,783,811,565	38,211,008,964	42,995,406,246	45,335,413,233
2. End of Year Assets at Market Value	36,288,506,853	39,216,068,515	42,995,406,246	48,362,932,895	39,065,741,456
3. Net Additions to Market Value					
a. Member Contributions	456,352,606	278,290,298	518,599,720	356,761,212	399,256,616
b. Employer Contributions	697,647,338	714,980,264	995,996,999	835,366,382	999,374,879
c. Investment Income	4,184,883,142	4,476,382,374	4,927,177,496	7,177,114,740	(7,520,927,313)
d. Benefit Payments	(2,358,216,073)	(2,554,278,925)	(2,761,292,217)	(2,944,920,179)	(3,117,434,847)
e. Contribution Refunds/Transfers	(18,397,014)	(22,061,718)	(24,024,234)	(32,241,730)	(32,720,146)
f. Administrative Expenses	(19,374,673)	(19,997,954)	(22,501,098)	(24,489,202)	(24,740,628)
g. Transfer (to) from stabilization subaccount	183,337,379	54,247,323	0	0	0
h. Audit Adjustment	0	0	145,381,065	(64,574)	0
i. Total Additions to Market Value	3,126,232,705	2,927,561,662	3,779,337,731	5,367,526,649	(9,297,191,439)
4. Summary of Net Additions to Market Value					
a. Net Contributions and Transfers = 3a + 3b + 3e +3g	1,318,940,309	1,025,456,167	1,490,572,485	1,159,885,864	1,365,911,349
b. Net Investment Income = 3c + 3f	4,165,508,469	4,456,384,420	4,904,676,398	7,152,625,538	(7,545,667,941)
c. Benefit Payments = 3d	(2,358,216,073)	(2,554,278,925)	(2,761,292,217)	(2,944,920,179)	(3,117,434,847)
d. Audit Adjustment = 3h	0	0	145,381,065	(64,574)	0
e. Total Additions to Market Value	3,126,232,705	2,927,561,662	3,779,337,731	5,367,526,649	(9,297,191,439)
5. Average Valuation Assets = 1b + .5 x (4a + 4c + 4d)	38,206,545,780	38,019,400,186	37,648,339,630	42,102,824,514	44,459,651,484
6. Imputed Income at Valuation Rate = 8.00% x 5	3,056,523,662	3,041,552,015	3,011,867,170	3,368,225,961	3,556,772,119
7. Gain (Loss) from investments = 4b - 6	1,108,984,807	1,414,832,405	1,892,809,228	3,784,399,577	(11,102,440,060)
8. Portion of Gains (Losses) recognized from prior years					
a. From this year = .2 * 7	221,796,961	282,966,481	3,481,017,538 [1]	756,879,915	(2,220,488,012)
b. From one year ago	295,714,940	221,796,961	282,966,481	0	756,879,915
c. From two years ago	(1,383,627,141)	295,714,940	221,796,961	0	0
d. From three years ago	(1,502,383,099)	(1,383,627,141)	295,714,940	0	0
e. From four years ago	408,878,343	(1,502,383,099)	(1,383,627,141)	0	0
f. Total	(1,959,619,995)	(2,085,531,858)	2,897,868,779	756,879,915	(1,463,608,097)
9. Change in Valuation Assets = 4a + 4c + 4d + 6 + 8f	57,627,903	(572,802,601)	4,784,397,282	2,340,006,987	341,640,524
10. End of Year Assets					
a. Market Value = 2	36,288,506,853	39,216,068,515	42,995,406,246	48,362,932,895	39,065,741,456
b. Valuation Assets = 1b + 9	38,783,811,565	38,211,008,964	42,995,406,246	45,335,413,233	45,677,053,757
11. Actuarial Rate of Return	2.87%	2.51%	15.70%	9.80%	4.71%
12. Market Rate of Return	12.76%	12.54%	12.69%	16.99%	(15.89)%

[1] *After adjusting to market value as of September 30, 2006.*

HISTORY OF APPROXIMATE INVESTMENT RETURN RATES

Plan Year Ending September 30	Approximate Rate of Return [1] Market	Actuarial
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
2006 [2]	12.69	15.70 [2]
2007	16.99	9.80
2008	(15.89)	4.71
2009	(7.16)	1.91
Average Returns:		
Last five years:	2.99 %	6.80 %
Last ten years:	2.96 %	6.00 %

[1] *Approximate return based on ratio of total investment return to average asset value, using an assumed beginning-of-year timing of audit adjustments (if any) and an assumed mid-year timing of other asset flows (see previous two pages).*

[2] *After adjusting to market value as of September 30, 2006.*

HISTORICAL GROWTH OF ASSETS AT MARKET VALUE

	Revenues by Source			Expenses by Type			
Fiscal Year Ended September 30	Member Contributions	Employer Contributions	Net Investment Income [1]	Retirement Benefits	Return of Contributions and Transfers	Administrative Expenses	Market Value of Assets
1990	$ 174,658,758	$472,089,593	$ 1,016,596,612 [2]	$ 665,936,618	$ 2,418,521	$ 9,162,436	$ 12,958,871,917
1991	174,835,458	502,685,310	935,681,704 [2]	726,785,861	4,630,054	15,591,629	13,825,066,845
1992	196,103,714	533,038,202	784,516,383 [2]	797,152,247	3,453,420	17,197,026	14,520,922,451
1993	223,584,885	612,237,315	1,134,556,020 [2]	879,273,565	3,940,883	15,757,850	15,592,328,373
1994	244,086,635	809,783,443	1,086,059,845 [2]	977,986,904	5,457,370	19,759,103	16,729,054,919
1995	248,662,424	771,888,667	1,361,440,148 [2]	1,100,208,507	7,926,131	19,663,705	17,983,247,815
1996	255,085,948	829,601,695	6,675,359,302 [2]	1,268,260,318	11,638,709	10,381,801	24,453,013,932
1997	253,358,290	904,817,513	5,738,458,322 [2]	1,317,828,100	17,859,063	12,102,095	30,001,858,799
1998	252,672,436	622,437,022	2,409,304,679	1,454,451,439	21,626,704	14,463,339	31,795,731,454
1999	518,861,556	574,436,929	5,075,649,100	1,587,992,361	11,198,300	16,525,359	36,348,963,019
2000	321,557,146	655,258,922	4,755,872,070	1,735,936,328	17,455,802	15,918,143	40,312,340,884
2001	371,548,016	629,924,827	(4,575,630,855)	1,890,812,400	19,835,729	17,312,250	34,810,222,493
2002	413,163,871	603,949,327	(3,733,441,844)	2,041,439,863	20,813,845	23,610,482	30,008,029,657
2003	379,084,549	697,906,265	4,532,071,835	2,180,574,193	13,642,300	23,016,963	33,399,858,850
2004	456,352,606	697,647,338	4,130,642,038	2,358,216,073	18,403,233	19,374,673	36,288,506,853
2005	368,240,837	774,277,778	4,530,606,037	2,558,017,710	22,166,261	19,997,954	39,361,449,580
2006	518,599,720	995,932,425	4,927,177,496	2,761,292,217	24,024,234	22,501,098	42,995,341,672
2007	356,761,212	835,366,382	7,177,114,740	2,944,920,179	32,241,730	24,489,202	48,362,932,895
2008	399,256,616	999,374,879	(7,398,629,969)	3,117,434,847	32,720,146	24,740,628	39,188,038,800
2009	357,249,466	1,000,375,355	(2,712,429,401)	3,278,118,116	33,943,530	22,793,011	34,498,379,563

[1] *Includes Miscellaneous Income.*
[2] *Includes Other Changes in Net Assets/Reserves/Fund Balances and, in 1996, a $3,405,165,438 cumulative adjustment due to GASB Statement Nos. 25 and 26.*

Note: Data for the year 2007 and prior years was provided by the State of Michigan Department of Management and Budget - Financial Services.

SECTION D

CENSUS DATA

SUMMARY OF PARTICIPANT DATA BY CATEGORY

	As of September 30	
	2008	**2009**
Retirees and beneficiaries currently receiving benefits:		
Regular benefits	147,323	151,465
Survivor benefits	14,401	14,871
Disability benefits	5,541	5,586
Total	167,265	171,922
Current Employees:		
Vested	121,232	123,855
Non-vested	157,410	144,353
Total	278,642	268,208
Inactive employees entitled to benefits and not yet receiving them:	14,312	14,454
Total Participants	460,219	454,584

RETIREES AND BENEFICIARIES – HISTORICAL COMPARISON

Year Ended September 30	Rolls End of Year Number	Rolls End of Year Annual Benefit[1]	Annual % Increase Number	Annual % Increase Benefits	Average Annual Benefit
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
2007	162,844	3,013,075	3.6	6.5	18,503
2008	167,265	3,171,261	2.7	5.3	18,960
2009	171,922	3,336,165	2.8	5.2	19,405

[1] *In thousands of dollars.*

RETIREES AND BENEFICIARIES AS OF SEPTEMBER 30, 2009 BY TYPE OF RETIREMENT AND SELECTED OPTION

Amount of Monthly Benefit	Number of Retirees	Type of Retirement* 1	2	3	4	5	6	Selected Option** Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt 1E 2E,3E,4E
$ 1 - 200	13,289	11,565	1,059	102	399	2	162	7,486	2,728	1,925	148	1,002
201 - 400	20,289	16,998	1,467	123	1,309	1	391	11,408	3,874	3,403	324	1,280
401 - 600	15,164	12,317	1,194	86	1,148	1	418	7,979	3,116	2,764	312	993
601 - 800	11,685	9,450	888	50	895	2	400	5,894	2,323	2,271	312	885
801 - 1,000	9,525	7,638	820	33	651	0	383	4,547	1,946	1,901	287	844
1,001 - 1,200	8,277	6,728	751	18	492	0	288	3,741	1,754	1,530	246	1,006
1,201 - 1,400	7,560	6,239	692	13	367	0	249	3,101	1,559	1,396	252	1,252
1,401 - 1,600	7,126	6,000	601	5	290	0	230	2,697	1,509	1,220	247	1,453
1,601 - 1,800	6,970	6,077	460	3	251	1	178	2,573	1,460	1,150	246	1,541
1,801 - 2,000	7,211	6,418	419	7	194	0	173	2,556	1,676	1,210	306	1,463
Over 2,000	64,826	62,035	1,765	7	380	1	638	27,857	12,732	13,397	4,264	6,576
Totals	171,922	151,465	10,116	447	6,376	8	3,510	79,839	34,677	32,167	6,944	18,295

*** 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, 2008	September 30, 2009
Basic Members		
Number	42,238	39,425
Average Age	53.1 years	53.7 years
Average Service	22.3 years	23.1 years
Reported Payroll	$2,145,543,091	$2,021,159,777
Average Annual Pay	$ 50,797	$ 51,266
MIP Members		
Number	236,404	228,783
Average Age	43.5 years	44.0 years
Average Service	8.7 years	9.4 years
Reported Payroll	$7,812,588,421	$7,862,513,884
Average Annual Pay	$ 33,048	$ 34,367
Total		
Number	278,642	268,208
Average Age	44.9 years	45.4 years
Average Service	10.8 years	11.4 years
Reported Payroll	$9,958,131,512	$9,883,673,661
Average Annual Pay	$ 35,738	$ 36,851

ACTIVE MEMBERS

Members in Active Service as of September 30, 2009
by Age and Years of Service

Age	Years of Service							Total	Total	Average
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & up	Count	Pay	Pay
Under 20	916							916	$ 10,018,420	$ 10,937
20 - 24	9,823	59						9,882	110,269,700	11,159
25 - 29	15,994	2,967	45					19,006	480,662,783	25,290
30 - 34	10,241	11,754	2,039	558				24,592	919,537,470	37,392
35 - 39	10,921	6,870	7,531	4,740	172			30,234	1,244,122,454	41,150
40 - 44	12,677	6,401	5,304	7,522	2,997	156		35,057	1,352,455,221	38,579
45 - 49	12,100	7,765	6,231	5,080	5,727	2,131	233	39,267	1,377,603,621	35,083
50 - 54	8,954	6,953	7,157	6,313	5,126	4,790	3,102	42,395	1,593,202,551	37,580
55 - 59	6,024	4,402	5,127	6,052	5,473	3,787	8,096	38,961	1,697,407,853	43,567
60 - 64	3,476	2,148	2,140	2,550	2,898	2,093	4,953	20,258	881,952,184	43,536
65 - 69	1,626	764	486	412	503	375	1,009	5,175	167,563,526	32,379
70 & Over	1,030	494	218	121	135	124	343	2,465	48,877,878	19,829
Total	93,782	50,577	36,278	33,348	23,031	13,456	17,736	268,208	$ 9,883,673,661	$ 36,851

ACTIVE AND INACTIVE MEMBERS REPORTED FOR VALUATION
HISTORICAL COMPARISON

Valuation Date September 30	Number of Inactive Vested Members	Active Members					
				Average			
		Number	Reported Payroll[1]	Annual Pay	% Increase	Age	Years of Service
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
2007	14,999	295,984	9,851,471	33,284	4.6	44.5	10.3
2008	14,312	278,642	9,958,132	35,738	7.4	44.9	10.8
2009	14,454	268,208	9,883,674	36,851	3.1	45.4	11.4

* *Not available.*

[1] *Reported payroll in thousands. Beginning with the September 30, 2006 valuation, the payroll is no longer adjusted, and is the sum of the actual pays reported for each active member.*

SECTION E

METHODS AND ASSUMPTIONS

VALUATION METHODS

***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;

(iii) the normal cost is based on the benefit provisions applicable to new members.

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 and 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. The actuarial value of assets was reset to market value as of September 30, 2006, with five-year smoothing restarted at that time.

VALUATION ASSUMPTIONS

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.

	Pay Increase Assumptions For an Individual Member		
Sample Ages	**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 are 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

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.

Sample Ages	Years of Service	Percent Separating Within Next Year
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

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.

Sample Ages	Percent Becoming Disabled Within Next Year
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. Active members who were reported without any annual pay were assumed to have pay equal to the average pay of the corresponding active group.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Benefit Service	Exact fractional service is used to determine the amount of benefit payable.
Decrement Operation	Disability and withdrawal decrements do not operate during retirement eligibility.
Decrement Timing	Retirement decrements are assumed to occur on July 1. All other decrements are assumed to occur mid-year.
Eligibility Testing	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.
Forfeitures	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.
Incidence of Contributions	Contributions are assumed to be received continuously throughout the year.
Liability Adjustments	Inactive vested member liabilities were increased by 2% to reflect the value of the death benefit provision.
Marriage Assumption	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.
Normal Form of Benefit	A straight life benefit is the normal form of benefit.
Pay Increase Timing	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.
Service Credit Accruals	Members were assumed to accrue .92 years of service credit per year.

SECTION F

PLAN PROVISIONS

PLAN PROVISIONS

Our actuarial valuation of the System 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 60th 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

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 and before July 1, 2008 - 3.0% of first $5,000 of pay, plus 3.6% of next $10,000 of pay, plus 4.3% of pay in excess of $15,000.

MIP Participants hired on or after July 1, 2008 - 3.0% of first $5,000 of pay, plus 3.6% of next $10,000 of pay, plus 6.4% of pay in excess of $15,000.

Non-MIP Participants – None.

PLAN PROVISIONS

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.

SECTION G

GLOSSARY

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 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.
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.

GLOSSARY

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 is 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 market value plus a portion of unrealized appreciation or depreciation.