

**MICHIGAN STATE EMPLOYEES RETIREMENT SYSTEM**  
**ANNUAL ACTUARIAL VALUATION REPORT**  
**SEPTEMBER 30, 2006**

March 16, 2007

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

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

Dear Board Members:

The results of the annual actuarial valuation of the Michigan State 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 results summarized in this report involve 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



Louise Gates, ASA, 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 displayed as annual dollar amounts. The Retirement System is closed to new members and as a result, contributions expressed as percentages of active member payroll are not useful. We understand that the current policy is to contribute on the basis of the dollar amount shown below.

<b>Contribution \$</b>
\$382,729,234

**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	9/30/2005	9/30/2006
Contribution \$	\$366,650,515	\$382,729,234

**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 are benefit changes reflected in this valuation pursuant to Public Act 109 of 2004. Act 109 increased the duty disability and duty death benefit provisions. There were no material changes in actuarial assumptions. 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**

<b>Contributions for</b>	<b>September 30,</b>	
	<b>2005</b>	<b>2006</b>
(1) Total Normal Cost of Benefits (as a % of member pay)	8.21%	8.22%
(2) Member Contribution %	<u>0.00%</u>	<u>0.00%</u>
(3) Employer Normal Cost % = (1) - (2)	8.21%	8.22%
(4) Projected Active Member Payroll for Coming Year	\$ 1,880,178,520	\$ 1,861,837,336
(5) Employer Normal Cost \$ = (3) x (4)	154,392,065	153,043,029
(6) Total Accrued Liability	12,400,360,771	12,798,519,534
(7) Funding Value of Assets	<u>9,896,760,033</u>	<u>10,110,658,252</u>
(8) Unfunded Actuarial Accrued Liabilities (UAAL) = (6) - (7)	\$ 2,503,600,738	\$ 2,687,861,282
(9) Amortization Period	31	30
(10) Amortization Factor (level dollar payments)	11.79505804	11.70231918
(11) Amortization Payment/(Credit) = (8) / (10)	\$ 212,258,450	\$ 229,686,205
(12) Total Computed Employer Contribution = (5) + (11)	<b>\$ 366,650,515</b>	<b>\$ 382,729,234</b>

**Computed Employer Contributions**

Based on the assumptions outlined in Section E, the long term contribution rate for the Michigan State Employees Retirement System is expected to be 8.22% of payroll (the employer normal cost rate) until the last active member retires. 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.

**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) was 8.22%. Applying the employer normal cost contribution rate of 8.22% to the projected payroll for the coming fiscal year, produces annual employer normal cost contributions of \$153,043,029. The amortization payment for funding the UAAL, \$229,686,205 when added to the normal cost contributions produces a total employer contribution of \$382,729,234.

## **DISCUSSION OF CHANGES**

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### **Revisions in Benefits**

Public Act 109 of 2004 increased the duty disability and duty death pension benefits. The effect of these changes was an increase of \$2.4 million in the computed annual employer contribution.

### **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 \$27 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). Improvements in data reporting contributed to the increase in computed liabilities and contributions requirements.

## 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	\$10,110,658,252	\$12,798,519,534	79.0%
9/30/2005	9,896,760,033	12,400,360,771	79.8



**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. In a closed plan, the normal cost dollar amount will eventually decline as active members retire and terminate employment.

Valuation Date	Normal Cost	Amortization Payment	Total Contribution
9/30/2006	\$153,043,029	\$229,686,205	\$382,729,234
9/30/2005	154,392,065	212,258,450	366,650,515

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	\$ 26,951,265
9/30/2005	(600,525,314)

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**

	<u>All Divisions</u>
A. Accrued Liability	
1. For retirees and beneficiaries	\$ 7,607,335,109
2. For vested terminated members	511,807,989
3. For present active members	
a. Value of expected future benefit payments	5,554,528,402
b. Value of future normal costs	<u>875,151,966</u>
c. Active member accrued liability: (a) - (b)	<u>4,679,376,436</u>
4. Total accrued liability	12,798,519,534
B. Present Assets (Funding Value)	<u>10,110,658,252</u>
C. Unfunded Accrued Liability: (A.4) - (B)	<u>2,687,861,282</u>
D. Funding Ratio: (B) / (A.4)	<u>79.0%</u>

**EXPERIENCE GAIN/(LOSS)**

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A. Derivation of Actuarial Gain/(Loss)

1. Unfunded Actuarial Accrued Liability (UAAL) - Previous Valuation	\$2,503,600,738
2. Total Normal Cost (employer plus member) for Year Ending 9/30/2006	154,392,065
3. Total Contributions (employer plus member) for Year Ending 9/30/2006	280,139,327
4. Interest at 8% on:	
a. UAAL and NC: $.08 \times [(1) + (2)]$	212,639,424
b. Contributions: $.04 \times (3)$	11,205,573
c. Net Total: (a) - (b)	201,433,851
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	135,525,220
7. Expected UAAL Current Year:	
(1) + (2) - (3) + (4c) + (5) + (6) + (6a)	2,714,812,547
8. Actual UAAL Current Year	2,687,861,282
9. Experience Gain/(Loss): A.7 - A.8	26,951,265
 B. Approximate Portion of Gain/(Loss) due to Investments	 (73,433,506)
 C. Approximate Portion of Gain/(Loss) due to Liabilities: (A.9) - (B)	 100,384,771

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>Gain/(Loss)</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.	\$ 8,717,240
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.	(2,236,860)
3. <b>Pay Increases</b> . If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	80,535,169
4. <b>Investment Income</b> . If there is greater investment income than assumed, there is a gain. If less income, a loss.	(73,433,506)
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.	2,570,366
6. <b>New Entrants/Rehires</b> .	(20,886,697)
7. <b>Other</b> . Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, etc.	<u>31,685,553</u>
8. <b>Composite Gain (or Loss) During Year</b> .	\$26,951,265

**EXPERIENCE GAIN/(LOSS)**

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

<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	\$ 26,951	\$ (73,434)	\$10,110,658	(0.73)%
2005	(600,525)	(583,958)	9,896,760	(5.90)
2004	(560,154)	(538,728)	10,149,275	(5.31)
2003	(460,905)	(442,911)	10,440,611	(4.24)
2002	(553,528)	(523,564)	10,616,278	(4.93)

<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	\$100,385	\$12,798,520	0.78%
2005	(16,567)	12,400,361	(0.13)
2004	(21,426)	12,003,995	(0.18)
2003	(17,994)	11,761,147	(0.15)
2002	(29,964)	10,752,684	(0.28)

**HISTORICAL FUNDING LEVELS FOR ACTUARIAL ACCRUED LIABILITIES**

(Amounts Shown in Thousands)

Valuation Date September 30	Actuarial Accrued Liability	Actuarial Value of Assets	Funded Ratio	Unfunded/(Overfunded) Accrued Liability	Active Member Payroll	Unfunded/(Overfunded) As % of Active Payroll
1990	\$ 4,463,561	\$ 4,105,717	92.0%	\$ 357,844	\$2,305,726	15.5%
1991 <sup>2</sup>	4,939,084	4,346,586	88.0	592,498	2,314,608	25.6
1992	5,480,459	4,533,757	82.7	946,702	2,266,394	41.8
1993 <sup>1</sup>	6,172,846	5,043,880	81.7	1,128,966	2,261,476	49.9
1994 <sup>3</sup>	6,559,708	5,475,533	83.5	1,084,175	2,350,649	46.1
1995	6,861,422	6,090,002	88.8	771,420	2,430,733	31.7
1996	7,147,279	6,678,011	93.4	469,268	2,515,420	18.7
1997	8,213,429	7,515,869	91.5	697,560	2,273,203	30.7
1997 <sup>4</sup>	8,100,552	8,834,424	109.1	(733,872)	2,273,203	(32.3)
1998	8,373,977	9,108,985	108.8	(735,008)	2,107,996	(34.9)
1998 <sup>3</sup>	8,496,974	9,108,985	107.2	(612,011)	2,107,996	(29.0)
1999	9,028,621	9,648,383	106.9	(619,762)	2,213,851	(28.0)
2000	9,473,873	10,336,872	109.1	(863,000)	2,253,818	(38.3)
2001	9,878,161	10,632,677	107.6	(754,516)	2,230,562	(33.8)
2002	10,752,684	10,616,278	98.7	136,406	2,133,477	6.4
2003	11,761,147	10,440,611	88.8	1,320,536	1,859,555	71.0
2004	12,166,603	10,149,275	83.4	2,017,328	1,889,410	106.8
2004 <sup>3</sup>	12,003,995	10,149,275	84.6	1,854,719	1,889,410	98.2
2005	12,400,361	9,896,760	79.8	2,503,601	1,880,179	133.2
2006	12,798,520	10,110,658	79.0	2,687,861	1,847,653	145.5

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

<sup>2</sup> Revised benefit provisions.

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

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

**RECOMMENDED AND ACTUAL STATE CONTRIBUTIONS  
HISTORICAL COMPARISON**

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
1994	1993	10.03 %	\$2,327,924,221	\$233,490,799	-
1994	1993 <sup>1</sup>	9.89	2,327,924,221	230,231,705	\$263,791,739
1995	1994	10.02	2,434,824,614	243,969,426	-
1995	1994 <sup>2</sup>	10.71	2,434,824,614	260,769,716	306,488,437
1996	1995	10.38	2,528,503,514	262,458,665	285,766,953
1997	1996	9.93	2,458,227,626	244,102,003	288,366,799
1998	1997	10.51	2,282,056,831	239,844,173	-
1998	1997 <sup>3</sup>	5.56	2,282,056,831	126,882,360	145,734,677
1999	1998	5.41	2,125,707,551	115,000,779	-
1999	1998 <sup>2</sup>	5.29	2,125,707,551	112,449,929	121,119,857
2000	1999	5.46	2,153,964,222	117,606,447	121,817,366
2001	2000	4.57	2,204,452,791	100,743,493	112,299,808
2002	2001	5.00	2,165,589,882	108,279,494	0 <sup>5</sup>
2003	2002	8.63	1,859,884,999	160,508,075	61,927,219 <sup>5</sup>
2004	2003	14.12	1,759,588,178	248,453,851	128,326,810 <sup>5</sup>
2005	2004	17.30	1,844,786,278	319,148,026	-
2005	2004 <sup>2</sup>	16.31	1,844,786,278	300,884,642	254,160,400
2006	2005	19.50	1,789,601,622	348,972,316	270,705,017
2007 <sup>6</sup>	2006	N/A <sup>7</sup>		380,308,846	
2007 <sup>6</sup>	2006 <sup>4</sup>	N/A <sup>7</sup>		382,729,234	

<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> Revised benefit provisions.

<sup>5</sup> Net after transfer was made to the Advance Health Funding Subaccount from employer contributions.

<sup>6</sup> For the year ending September 30, 2007 the actual payroll and actual contribution are not yet known.

<sup>7</sup> For the 2006 and later valuations a contribution percentage is not computed.



### 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) Retirees and Beneficiaries	(3) Active and Inactive Members (Employer Financed Portion)		(1)	(2)	(3)	(4) <sup>3</sup>
	1990	\$ 83	\$1,715		\$2,666	\$ 4,106	100%	100%
1991 <sup>4</sup>	82	1,870	2,987	4,347	100	100	80.2	88.0
1992	83	2,413	2,984	4,533	100	100	68.3	82.7
1993 <sup>1</sup>	72	2,561	3,540	5,043	100	100	68.1	81.7
1994 <sup>2</sup>	73	2,778	3,709	5,476	100	100	70.8	83.5
1995	72	2,751	4,038	6,090	100	100	80.9	88.8
1996	55	2,844	4,248	6,678	100	100	89.0	93.4
1997	3	4,300	3,910	7,516	100	100	82.2	91.5
1997 <sup>5</sup>	3	4,300	3,798	8,834	100	100	119.3	109.0
1998	27	4,360	3,987	9,109	100	100	118.4	108.8
1998 <sup>2</sup>	27	4,484	3,986	9,109	100	100	115.4	107.2
1999	35	4,538	4,456	9,648	100	100	113.9	106.9
2000	29	4,659	4,786	10,337	100	100	118.0	109.1
2001	34	4,677	5,167	10,633	100	100	114.6	107.6
2002	123	5,512	5,118	10,616	100	100	97.3	98.7
2003	57	7,386	4,318	10,441	100	100	69.4	88.8
2004	78	7,503	4,586	10,149	100	100	56.0	83.4
2004 <sup>2</sup>	78	7,503	4,423	10,149	100	100	58.1	84.5
2005	97	7,607	4,696	9,896	100	100	46.7	79.8
2006	107	7,607	5,085	10,111	100	100	47.1	79.0

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

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

<sup>3</sup> Percent funded on a total valuation asset and total actuarial accrued liability basis

<sup>4</sup> Revised benefit provisions.

<sup>5</sup> Revised actuarial assumptions and asset valuation method.

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

Valuation September 30	Valuation Assets <sup>3</sup>	Termination Indicator		Experience Indicator
		Actuarial Present Value of Vested Benefits <sup>3</sup>	Funded Ratio	Actuarial Gain (Loss)
1992	\$ 4,583,777	\$ 4,287,004	106.9 %	\$(300,607)
1993	5,004,990	4,394,179	113.9	(286,259)
1993 <sup>1</sup>	5,089,835	4,394,179	115.8	(286,259)
1994	5,514,735	4,731,537	116.6	23,872
1994 <sup>2</sup>	5,514,735	5,066,906	108.8	23,872
1995	6,132,233	5,255,984	116.7	333,511
1996	6,678,011	5,337,969	125.1	308,146
1997	7,515,869	6,528,114	115.1	279,245
1997 <sup>4</sup>	8,834,424	6,528,114	135.3	279,245
1998	9,108,985	6,607,380	137.9	(8,425)
1998 <sup>2</sup>	9,108,985	6,696,390	136.0	(8,425)
1999	9,648,383	7,351,103	131.3	6,923
2000	10,336,872	7,535,245	137.2	252,243
2001	10,632,677	7,917,271	134.3	(106,544)
2002	10,616,278	8,861,608	119.8	(553,528)
2003	10,440,611	10,146,046	102.9	(460,905)
2004	10,149,275	10,513,034	96.5	(560,154)
2004 <sup>2</sup>	10,149,275	10,503,835	96.6	(560,154)
2005	9,896,760	10,886,913	90.9	(600,525)
2006	10,110,658	12,122,695	83.4	26,951

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

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

<sup>3</sup> Includes dental and vision benefit liabilities and assets prior to 1996.

<sup>4</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>
Cash	\$ 21,180,310	\$ 10,646,887
Total Receivables	119,206,655	117,440,276
Short-Term Investment Pool	349,107,209	233,080,725
Fixed Income Pool	1,612,115,000	1,763,011,727
Domestic Equity Pool	4,978,168,807	5,250,576,635
Real Estate Investment Pool	856,145,584	946,375,282
Alternative Investment Pool	1,119,252,745	1,303,531,489
International Investment Pool	1,122,616,035	1,328,694,117
Total Assets	10,177,792,345	10,953,357,138
Other Assets (Liabilities)	(3,027,099)	(3,376,982)
Less Assets Held In Trust for Health Benefits	(43,925,707)	(60,054,929)
Net Assets Held in Trust for Pension Benefits	\$10,130,839,539	\$10,889,925,227

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	\$ 9,428,463,524	\$ 10,130,839,539
Additions		
Member Contributions	30,583,004	9,434,310
Employer Contributions	254,160,400	270,705,017
Net Investment Income	1,168,692,345	1,248,722,460
Adjustments	0	1,986,124*
Total Additions	\$ 1,453,435,749	\$ 1,530,847,911
Deductions		
Benefit Payments	(746,470,156)	(767,000,706)
Contribution Refunds/Transfers	(291,593)	(133,474)
Administrative Expenses	(4,297,985)	(4,628,043)
Total Deductions	(751,059,734)	(771,762,223)
Market Value, EOY	\$10,130,839,539	\$10,889,925,227

\* Reflects adjustment made to 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.

**DEVELOPMENT OF VALUATION ASSETS**

	2002	2003	2004	2005	2006
1. Beginning of Year Assets					
a. Market Value	\$ 9,616,516,845	\$ 8,274,112,215	\$ 8,924,266,601	\$ 9,428,463,524	\$ 10,130,839,539
b. Valuation Assets	10,632,677,141	10,616,278,373	10,440,610,630	10,149,275,470	9,896,760,033
2. End of Year Assets at Market Value	8,274,112,215	8,924,266,601	9,428,463,524	10,130,839,539	10,889,925,227
3. Net Additions to Market Value					
a. Member Contributions	173,232,835	80,185,475	37,682,883	30,583,004	9,434,310
b. Employer Contributions	87,486,128	79,291,845	103,873,294	254,160,400	270,705,017
c. Investment Income	(1,005,732,436)	1,215,018,189	1,073,759,972	1,168,692,345	1,248,722,460
d. Benefit Payments	(503,453,879)	(701,664,432)	(731,009,109)	(746,470,156)	(767,000,706)
e. Contribution Refunds/Transfers	(18,331)	(120,026)	(157,200)	(291,593)	(133,474)
f. Administrative Expenses	(6,432,819)	(5,192,039)	(4,316,433)	(4,297,985)	(4,628,043)
g. Transfer (to) from Stabilization Subaccount	(87,486,128)	(17,364,626)	24,363,516	0	0
h. Adjustment from Prior Year	0	0	0	0	1,986,124
i. Total Additions to Market Value	(1,342,404,630)	650,154,386	504,196,923	702,376,015	759,085,688
4. Summary of Net Additions to Market Value					
a. Net Contributions = 3a + 3b + 3e + 3g	173,214,504	141,992,668	165,762,493	284,451,811	280,005,853
b. Net Investment Income = 3c + 3f	(1,012,165,255)	1,209,826,150	1,069,443,539	1,164,394,360	1,244,094,417
c. Benefit Payments = 3d	(503,453,879)	(701,664,432)	(731,009,109)	(746,470,156)	(767,000,706)
d. Adjustment from Prior Year = 3h	0	0	0	0	1,986,124
e. Total Additions to Market Value	(1,342,404,630)	650,154,386	504,196,923	702,376,015	759,085,688
5. Average Valuation Assets = 1b + .5 x (4a + 4c + 4d)	10,467,557,453	10,336,442,491	10,157,987,322	9,918,266,297	9,654,255,669
6. Imputed Income at Valuation Rate = 8.00% x 5	837,404,596	826,915,399	812,638,986	793,461,304	772,340,454
7. Gain (Loss) from investments = 4b - 6	(1,849,569,851)	382,910,751	256,804,553	370,933,056	471,753,963
8. Portion of Gains (Losses) recognized from prior years					
a. From this year = .2 * 7	(369,913,970)	76,582,150	51,360,911	74,186,611	94,350,793
b. From one year ago	(416,174,097)	(369,913,970)	76,582,150	51,360,911	74,186,611
c. From two years ago	119,417,476	(416,174,097)	(369,913,970)	76,582,150	51,360,911
d. From three years ago	147,177,063	119,417,476	(416,174,097)	(369,913,970)	76,582,150
e. From four years ago	(4,070,461)	147,177,063	119,417,476	(416,174,097)	(369,913,971)
f. Total	(523,563,989)	(442,911,378)	(538,727,530)	(583,958,395)	(73,433,506)
9. Change in Valuation Assets = 4a + 4c + 4d + 6 + 8f	(16,398,768)	(175,667,743)	(291,335,160)	(252,515,436)	213,898,219
10. End of Year Assets					
a. Market Value = 2	8,274,112,215	8,924,266,601	9,428,463,524	10,130,839,539	10,889,925,227
b. Valuation Assets = 1b + 9	10,616,278,373	10,440,610,630	10,149,275,470	9,896,760,033	10,110,658,252
11. Actuarial Rate of Return	3.00 %	3.72%	2.70%	2.11%	7.24%
12. Market Rate of Return	(10.71)%	15.13%	12.38%	12.66%	12.58%

## HISTORY OF APPROXIMATE INVESTMENT RETURN RATES

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Plan Year Ending September 30	Approximate Rate of Return *	
	Market	Actuarial
2000	13.48%	10.77%
2001	(11.46)	6.49
2002	(10.71)	3.00
2003	15.13	3.72
2004	12.38	2.70
2005	12.66	2.11
2006	12.58	7.24
<b>Average Returns:</b>		
Last five years:	7.94%	3.74%
Last seven years:	5.68%	5.11%

\* *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	Net Investment Income	Retirement Benefits	Return of Contributions and Transfers	Administrative Expenses	
1987	\$ 2,404,944	\$227,689,118	\$ 0	\$ 225,372,098	\$ 190,867	\$2,524,823	\$ 3,596,084,688
1988	4,595,524	198,535,629	(74,763,613)	180,131,209	196,462	2,583,564	3,541,540,993
1989	3,066,178	162,046,885	547,233,053	231,499,226	204,889	2,461,918	4,019,721,076
1990	2,733,598	188,863,034	(125,829,295)	246,339,702	125,828	2,993,159	3,836,029,724
1991	4,416,336	227,348,243	662,492,977	271,569,767	126,407	4,339,321	4,454,251,785
1992	4,810,700	285,424,632	397,363,808	333,082,769	123,793	5,223,109	4,803,421,254
1993	4,068,697	371,902,232	563,222,953	394,557,538	99,369	4,198,410	5,343,759,819
1994	2,257,176	389,728,590	128,583,844	409,975,307	92,153	5,101,168	5,449,160,801
1995	2,260,510	422,294,609	920,176,637	405,682,086	80,453	5,518,735	6,382,611,283
1996	2,619,067	431,094,371	959,236,243	439,056,604	30,082	6,721,163	7,329,753,115
1997	12,230,090	410,008,211	1,681,527,984	484,817,137	7,868,296	5,247,943	8,935,586,024
1998	11,549,990	257,934,304	686,386,228	593,453,929	134,441,035	4,248,894	9,159,312,688
1999	11,047,646	265,806,232	1,471,196,655	630,346,729	728,366	4,330,879	10,271,957,247
2000	9,663,634	289,224,539	1,363,375,124	667,431,376	222,171	3,954,992	11,262,612,005
2001	9,134,665	361,926,010	(1,263,116,077)	726,771,708	91,700	4,149,284	9,639,543,901
2002	179,559,102	345,216,945	(1,003,890,272)	782,452,212	18,331	6,432,819	8,371,526,314
2003	91,330,212	400,130,385	1,164,600,217	1,055,749,270	120,026	5,192,039	8,966,525,793
2004	47,406,113	461,427,993	1,077,140,707	1,085,658,774	157,200	4,316,433	9,462,368,199
2005	41,284,618	573,601,582	1,171,404,719	1,069,304,294	291,593	4,297,985	10,174,765,246
2006	20,962,351	629,365,384 <sup>1</sup>	1,259,247,083	1,129,598,391	133,474	4,628,043	10,949,980,156

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

Note: Assets in this schedule include both pension and health insurance assets.



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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	36,410	36,271
Survivor benefits	5,866	6,121
Disability benefits	<u>3,525</u>	<u>3,588</u>
Total	45,801	45,980
Current Employees:		
Vested	30,974	31,161
Non-vested	<u>2,796</u>	<u>1,414</u>
Total	33,770	32,575
Inactive employees entitled to benefits and not yet receiving them:	<u>7,200</u>	<u>7,217</u>
Total Participants	<u><u>86,771</u></u>	<u><u>85,772</u></u>

**RETIREES AND BENEFICIARIES – HISTORICAL COMPARISON**

Year Ended September 30	Number Added	Number Removed	Rolls End of Year		% Increase in Annual Benefits	Average Annual Benefit
			Number	Annual Benefit <sup>1</sup>		
1987			21,873	\$121,033	5.0 %	\$ 5,533
1988			23,008	149,237	23.3	6,486
1989			24,187	168,795	13.1	6,979
1990			24,863	180,696	7.1	7,268
1991			25,566	194,928	7.9	7,625
1992			28,856	243,612	25.0	8,442
1993			29,175	257,193	5.6	8,816
1994	1,888	1,101	29,962	273,387	6.3	9,124
1995	1,566	966	30,562	290,694	6.3	9,512
1996	1,595	1,064	31,093	307,933	5.9	9,904
1997	6,098	1,068	36,123	421,060	36.7	11,656
1998	1,279	1,217	36,185	432,456	2.7	11,951
1999	1,409	1,248	36,346	444,167	2.7	12,221
2000	1,540	1,181	36,705	463,969	4.5	12,640
2001	1,648	1,242	37,111	471,407	1.6	12,703
2002	3,806	1,251	39,666	546,968	16.0	13,789
2003	6,448	623	45,491	708,607	29.6	15,577
2004	1,561	1,433	45,619	729,087	2.9	15,982
2005	1,337	1,155	45,801	747,428	2.5	16,319
2006	1,801	1,622	45,980	769,096	2.9	16,727

<sup>1</sup> Amounts shown in thousands of dollars.

Note: Data related to additions and removals before 1994 is not available.

**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*							
		1	2	3	4	5	6	7	8
\$ 1 - 200	636	288	238	11	74	0	10	0	15
201 - 400	3,065	1,754	654	7	398	0	78	1	173
401 - 600	5,328	2,909	678	373	801	17	213	6	331
601 - 800	5,033	2,961	602	6	839	0	263	16	346
801 - 1,000	4,183	2,593	400	5	686	0	214	46	239
1,001 - 1,200	3,993	2,637	311	6	566	0	206	89	178
1,201 - 1,400	3,929	2,950	293	2	353	0	155	72	104
1,401 - 1,600	3,493	2,859	210	1	159	0	105	95	64
1,601 - 1,800	3,132	2,669	146	0	107	0	59	119	32
1,801 - 2,000	2,787	2,444	93	0	46	0	38	146	20
Over 2,000	10,401	9,255	179	2	28	0	77	831	29
Totals	45,980	33,319	3,804	413	4,057	17	1,418	1,421	1,531

Amount of Monthly Benefit	Number of Retirees	Selected Option**							
		Reg.	Opt. A	Opt. B	Opt. C	Opt. E	Opt. E1	Opt. E2	Opt. E3
\$ 1 - 200	636	149	191	208	4	57	14	13	0
201 - 400	3,065	1,152	800	667	37	271	62	75	1
401 - 600	5,328	2,330	1,380	820	65	457	110	161	5
601 - 800	5,033	2,096	1,367	843	71	443	69	142	2
801 - 1,000	4,183	1,801	1,158	764	60	258	67	73	2
1,001 - 1,200	3,993	1,809	1,156	699	68	155	44	60	2
1,201 - 1,400	3,929	1,787	1,186	688	69	107	41	47	4
1,401 - 1,600	3,493	1,409	1,095	705	102	102	37	39	4
1,601 - 1,800	3,132	1,210	957	607	141	96	59	50	12
1,801 - 2,000	2,787	986	800	534	129	169	65	83	21
Over 2,000	10,401	3,414	2,713	1,922	643	879	282	432	116
Totals	45,980	18,143	12,803	8,457	1,389	2,994	850	1,175	169

\* Type of Retirement

- 1 – Normal retirement for age & service
- 2 – Survivor payment – normal or early retirement
- 3 – Duty disability retirement (incl. survivors)
- 4 – Non-duty disability retirement (incl. survivors)
- 5 – Survivor payment – duty death in service
- 6 – Survivor payment – non-duty death in service
- 7 – Retirees with supplemental benefits for early retirement incentive factors
- 8 – Retirees with reduced benefits for early retirement reduction factors

\*\* Selected Option

- Reg. – Straight life allowance
- Opt. A – 100% survivor option
- Opt. B – 50% survivor option
- Opt. C – 75% survivor option
- Opt. E – Social Security equated
- Opt. E1 – Social Security equated w/100% survivor option
- Opt. E2 – Social Security equated w/50% survivor option
- Opt. E3 – Social Security equated w/75% survivor option

**ACTIVE MEMBERS BY CLASSIFICATION**

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Classification	September 30, 2005		September 30, 2006			
	Number	Annual Payroll	Number	Annual Payroll	Average Age	Average Service
Conservation Officers	143	\$ 9,876,295	132	\$ 8,635,988	43.8	17.1
Corrections Officers	9,477	535,876,965	8,984	517,233,691	47.3	17.8
All Other	24,150	1,334,425,260	23,459	1,321,783,551	51.3	22.3
Total	33,770	\$1,880,178,520	32,575	\$1,847,653,230	50.1	21.0

**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			
20 - 24	1							1	\$ 15,912	\$15,912
25 - 29	7	13	2					22	901,843	40,993
30 - 34	38	173	334	1				546	28,755,513	52,666
35 - 39	29	281	1,561	487	11			2,369	130,206,008	54,962
40 - 44	25	191	1,349	2,123	623	24		4,335	243,736,630	56,225
45 - 49	29	167	1,138	2,189	1,703	1,333	148	6,707	374,768,120	55,877
50 - 54	47	127	956	1,796	1,690	2,946	1,767	9,329	527,655,829	56,561
55 - 59	27	125	702	1,317	1,100	1,555	1,795	6,621	386,186,345	58,327
60 - 64	23	62	272	454	374	298	620	2,103	124,489,653	59,196
65 - 69	10	13	64	73	46	55	155	416	24,103,453	57,941
70 & up	13	13	15	13	11	6	55	126	6,833,924	54,237
Total	249	1,165	6,393	8,453	5,558	6,217	4,540	32,575	1,847,653,230	56,720

**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	Incr. in Pay	Age	Service
1987	863	63,548	\$1,794,213	\$28,234	3.0 %	40.8	10.6
1988	811	63,511	1,861,675	29,313	3.8	41.1	10.9
1989	753	66,388	1,996,039	30,066	2.6	40.9	10.7
1990	2,458	69,558	2,227,755	32,027	6.5	41.2	10.9
1991	3,030	65,595	2,236,336	34,093	6.5	42.1	11.9
1992	4,367	64,248	2,189,752	34,083	0.0	42.2	11.9
1993	4,359	63,906	2,185,036	34,191	0.3	42.6	12.1
1994	4,540	64,923	2,271,158	34,982	2.3	43.1	12.6
1995	5,276	65,133	2,348,534	36,058	3.1	43.2	12.7
1996	6,667	63,807	2,515,420	39,422	9.3	43.8	13.0
1997	7,656	55,434	2,273,203	41,007	4.0	43.7	13.1
1998	8,021	49,717	2,107,996	42,400	3.4	44.8	14.8
1999	7,376	49,612	2,213,851	44,623	5.2	45.9	15.8
2000	7,556	47,778	2,253,818	47,173	5.7	46.7	16.7
2001	8,809	45,852	2,230,562	48,647	3.1	47.4	17.7
2002	7,917	43,064	2,133,477	49,542	1.8	48.0	18.6
2003	7,528	36,536	1,859,555	50,897	2.7	47.7	17.9
2004	7,397	34,749	1,889,410	54,373	6.8	48.4	19.0
2005	7,200	33,770	1,880,179	55,676	2.4	49.3	20.0
2006	7,217	32,575	1,847,653	56,720	1.9	50.1	21.0

<sup>1</sup> Amounts shown in thousands of dollars.

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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) dollar 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. These rates were first used for the September 30, 2004 valuation of the System.

Sample Ages	Salary Increase Assumptions For an Individual Member		
	Merit & Seniority	Base (Economy)	Increase Next Year
20	10.9%	3.5%	14.4%
25	7.2	3.5	10.7
30	3.1	3.5	6.6
35	1.4	3.5	4.9
40	0.9	3.5	4.4
45	0.6	3.5	4.1
50	0.4	3.5	3.9
55	0.4	3.5	3.9
60	0.0	3.5	3.5
65	0.0	3.5	3.5
Ref	270		

The charts shown in this section of the report may include a reference number (for example 270 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 set forward one year for both men and women. 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	0.29%	0.16%	29.77	33.94
55	0.49	0.26	25.26	29.24
60	0.90	0.51	21.00	24.70
65	1.62	0.97	17.10	20.46
70	2.60	1.50	13.63	16.54
75	4.09	2.53	10.53	12.90
80	6.86	4.40	7.89	9.71
Ref:	261 x 1.00	262 x 1.00		

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.

Sample Attained Ages	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	2.50%	1.72%	20.94	25.31
55	2.68	2.04	18.48	22.51
60	3.16	2.44	15.95	19.86
65	3.94	2.84	13.51	17.30
70	5.02	3.24	11.24	14.74
75	6.58	3.76	9.15	12.07
80	8.74	5.32	7.26	9.35
Ref:	476 x 1.00	477 x 1.00		

**VALUATION ASSUMPTIONS**

*The rates of regular retirement* used to measure the probability of eligible members retiring with an unreduced benefit during the next year are shown below. This assumption was first used for the September 30, 2004 valuation of the System.

Retirement Ages	Percent of Eligible Members Retiring		
	Conservation Officers	Corrections Officers	Others
45	16%		
46	16		
47	16		
48	16		
49	16		
50	16		
51	16	25%	
52	16	18	
53	16	12	
54	16	15	
55	16	15	18%
56	16	25	15
57	15	12	12
58	15	12	12
59	15	12	12
60	18	18	16
61	15	15	14
62	30	30	25
63	22	22	20
64	22	22	20
65	35	35	35
66	25	25	25
67	25	25	25
68	25	25	25
69	25	25	25
70	50	50	50
71	60	60	60
72	70	70	70
73	80	80	80
74	90	90	90
75	100	100	100
Ref	1343	1344	1345

Note: For Conservation Officers, 50% are assumed to retire in their first year of eligibility for unreduced benefits (completion of 25 years of service).

**VALUATION ASSUMPTIONS**

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

Retirement Age	Percent of Eligible Members Retiring
55	4.5%
56	3.0
57	4.0
58	4.0
59	4.0
Ref	1346

*The 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 actuarial valuation of the System.

Sample Ages	Years of Service	Percent Separating Within Next Year
All	0	12.00%
	1	8.50
	2	6.50
	3	5.00
	4	4.00
20	5 & Over	4.00%
25		3.50
30		3.00
35		2.50
40		2.25
45		2.00
50		1.75
55		1.75
60	1.75	
Ref	405	794

**VALUATION ASSUMPTIONS**

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*Rates of disability* among active members used in the valuation are shown below, and were first used for the September 30, 2004 valuation of the System.

Sample Ages	Percent Becoming Disabled Within Next Year	
	Non-Duty Disability	Duty Disability
25	0.03%	0.05%
30	0.05	0.05
35	0.10	0.05
40	0.20	0.05
45	0.34	0.05
50	0.47	0.05
55	0.62	0.05
60	0.82	0.05
65	1.16	0.05
Ref.	395	396

**MISCELLANEOUS AND TECHNICAL ASSUMPTIONS**

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<i><b>Benefit Service</b></i>	Exact Fractional service is used to determine the amount of benefit payable.
<i><b>Decrement Operation</b></i>	Disability and withdrawal decrements do not operate during retirement eligibility.
<i><b>Decrement Timing</b></i>	Decrements of all types are assumed to occur mid-year.
<i><b>Eligibility Testing</b></i>	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.
<i><b>Forfeitures</b></i>	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.
<i><b>Incidence of Contributions</b></i>	Contributions are assumed to be received continuously throughout the year.
<i><b>Liability Adjustments</b></i>	Retirement liabilities were increased by 1% to account for unused vacation time.
<i><b>Marriage Assumption</b></i>	75% of males and 60% of females were 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.
<i><b>Normal Form of Benefit</b></i>	A straight life benefit is the normal form of benefit.
<i><b>Pay Increase Timing</b></i>	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.
<i><b>Service Credit Accruals</b></i>	Members were assumed to accrue one year 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 Public Act No. 240 of 1943.

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

Eligibility - Age 55 with 30 years of service; or age 60 with 10 or more years service. Corrections Officers may retire at age 51 with 25 or more years service; or age 56 with 10 or more years service. Conservation Officers may retire after 25 years of service regardless of age.

Final Average Compensation - Regular retirement benefit is based on final average compensation (FAC), which is usually the average of highest 3 consecutive years (2 years for Conservation Officers).

Annual Amount - Total service times 1.5% of FAC. For members with 20 or more years of service, a \$3,000 minimum annual benefit is payable. Corrections Officers receive an additional temporary supplement to age 62 equal to the product of supplemental service times 0.5% of FAC. Conservation Officers retiring after 25 years receive a benefit equal to 60% of FAC.

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

Eligibility - Age 55 with 15 or more years service.

Annual Amount - Computed as regular retirement benefit but reduced by ½ % for each month under age 60.

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

Eligibility - 10 years service (5 years for unclassified persons in the executive or legislative branch). Benefit commences at age 60.

Annual Amount - Computed as regular retirement benefit based on service and FAC at termination.

## PLAN PROVISIONS

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### **Duty Disability Retirement:**

Eligibility - No age or service requirement.

Annual Amount - Disability age 60+: Computed as regular retirement benefit with minimum benefit based on 10 years service. Disability prior to age 60: To age 60, benefit is computed as a regular retirement benefit using service at the time of disability retirement with a minimum benefit of \$6,000 per year. Additional limitation such that benefit plus workers' compensation does not exceed final compensation. At age 60, benefit is recomputed as a regular retirement benefit with service granted for period in receipt of disability benefit before age 60. If the member dies before age 60, benefits are payable to a surviving spouse computed as a regular retirement benefit but based on service at time of disability retirement plus elapsed time between date of retirement and age 60.

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

Eligibility - 10 years of service.

Annual Amount - Computed as regular retirement benefit based on service and FAC at time of disability. Minimum annual benefit is \$600.

### **Duty Death Before Retirement:**

Eligibility - No age or service requirement.

Annual Amount - Surviving spouse receives annual benefit computed as a regular retirement benefit as if the deceased member retired the day before date of death and elected Option A. Benefit is based on member's service at time of death, or 10 years of service, whichever is greater. A minimum benefit of \$6,000 per year is payable. Children under age 21 each receive an equal share of 1/2 of the benefit payable (surviving spouse receives the other 1/2), to a maximum of 1/2 for all children. A given child's share of benefits terminates upon the child's marriage, death or attainment of age 21. In the event that there is no surviving spouse, the benefit is allocated equally among all children subject to the limitations described above. In the event that there is no surviving spouse or eligible children, benefits may be paid to an eligible, dependent parent. Benefits end upon the marriage or death of the surviving parent. Additional limitation such that benefit plus workers' compensation does not exceed final compensation.

## **PLAN PROVISIONS**

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

Eligibility - 10 years of service. In the case of a deceased vested former member, the survivor benefit commences when the deceased former member would have attained age 60.

Annual Amount - Computed as a regular retirement benefit but reduced in accordance with a 100% Joint and Survivor form of payment.

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

One-time upward adjustments have been made in 1972, 1974, 1976, 1977, and 1987. Beginning in 1983 some benefit recipients share in a distribution of a portion of investment income earned in excess of 8% annually (supplemental payment). Beginning in 1988 all benefit recipients are eligible for automatic 3% annual (non-compounded) benefit increases, with a maximum \$300 annual increase. Eligibility for the above benefits:

Retired before October 1, 1987 - Greater of supplemental payment or the combination of the 1987 one-time adjustment and the automatic increases.

Retired on or after October 1, 1987 - Automatic increases only.

### **Member Contributions:**

None

### **Defined Contribution Legislation (Public Act 487 of 1996)**

New state employees hired on or after March 31, 1997 become participants in Tier 2 (*i.e.*, a defined contribution plan) rather than Tier 1 (*i.e.*, the above described defined benefit plan).

Active members on March 30, 1997 could irrevocably elect to terminate membership in Tier 1 and become participants in Tier 2. Elections had to be in writing and submitted between January 2, 1998 and April 30, 1998. Such members became Tier 2 participants on June 1, 1998, and had the actuarial present value of their Tier 1 accrued benefit transferred into Tier 2 by November 30, 1998.

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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.

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**GLOSSARY**

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