# THE STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY ANNUAL REPORT OF THE ACTUARY PREPARED AS OF JULY 1, 2006

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January 10, 2007

Board of Trustees The State Police Retirement System of New Jersey Trenton, New Jersey 08625

### Members of the Board:

The law governing the operation of the State Police Retirement System of New Jersey provides for annual actuarial valuations of the System. The results of the July 1, 2006 valuation are submitted in this report, which also includes a comparison with the preceding year's valuation.

The valuation shows the financial condition of the Plan as of July 1, 2006 and gives the basis for determining the required annual contribution for the plan year beginning July 1, 2006.

The valuation was prepared on the basis of the revised demographic assumptions that were determined from the July 1, 2002 – June 30, 2005 Experience Study and the economic assumptions which were approved by the Treasurer (these include an investment return rate of 8.25% per annum, assumed future salary increases of 5.45% per annum and a Cost-of-Living Adjustment assumption of 60% of the assumed CPI increase of 3.0% per annum).

The valuation also reflects the potential effect of the Appropriation Act for fiscal year 2007 (57.5% of the contribution recommended for the July 1, 2005 valuation has been included as a receivable contribution for this valuation).

The Table of Contents, which follows, highlights the Sections of the Report.

Respectfully submitted,

(Signed) JANET H. CRANNA

Janet H. Cranna Principal, Consulting Actuary

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### REPORT ON THE ANNUAL VALUATION OF THE STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY PREPARED AS OF JULY 1, 2006

### <u>SECTION I - SUMMARY OF KEY RESULTS</u>

The State Police Retirement System of New Jersey became effective July 1, 1965 under terms of Chapter 89 of the Laws of 1965. This report, prepared as of July 1, 2006, presents the results of the annual actuarial valuation of the Fund.

For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized on the following pages.

Valuation Date		July 1, 2006		July 1, 2005
Number of Members Annual Compensation	\$	2,993 263,220,592	\$	2,844 241,813,372
Aintual Compensation	φ	203,220,392	φ	241,013,372
Number of Pensioners and Beneficiaries		2,338		2,297
Total Annual Allowance	\$	105,874,773	\$	100,045,679
Assets				
Market Value of Assets	\$	1,872,079,777*	\$	1,756,862,382
Valuation Assets	\$	2,000,274,259*	\$	1,935,384,732
Contribution Associate				
Contribution Amounts				
Normal Contribution	\$	51,531,887	\$	42,907,789
Accrued Liability Contribution		19,411,046		8,501,547
Total Contribution	\$	70,942,933**	\$	51,409,336#

<sup>\*</sup> Assets include a fiscal year 2007 receivable contribution of \$29,875,748 which is 57.5% of the contribution recommended for the July 1, 2005 valuation (potential effect of the Appropriation Act for fiscal year 2007).

<sup>\*\*</sup> The required contribution could be subject to reduction in accordance with the provisions of the Appropriation Act for fiscal year 2008.

<sup>\*</sup> The contribution requirement could be subject to reduction in accordance with the provisions of the Appropriation Act for fiscal year 2007.

The major benefit and contribution provisions of the statute as reflected in the valuation are summarized in Appendix A. There were no changes from the provisions used in the previous valuation. However, the valuation reflects the potential impact of the Appropriation Act for fiscal year 2007 which allows the State Treasurer to reduce the State normal and accrued liability contributions for fiscal year 2007 of \$50,667,267 by 42.5%. (This amount excludes the estimated premium paid to the Non-Contributory Insurance Premium Fund of \$742,069 for the lump sum death benefit during active service.) Accordingly, a fiscal year 2007 State appropriation receivable of only \$29,875,748 (comprised of the reduced contribution of \$29,133,679 plus the estimated non-contributory group insurance premium of \$742,069) was recognized for purposes of this valuation.

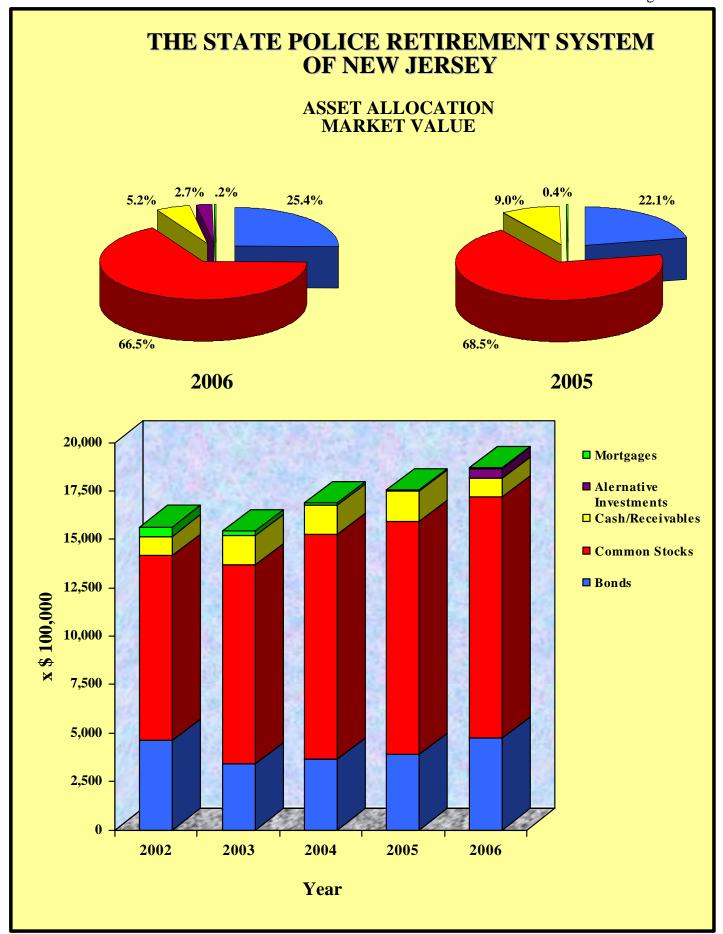
The valuation reflects the revised actuarial assumptions that were determined from the July 1, 2002 – June 30, 2005 Experience Study. The revised actuarial assumptions and methods used for valuing the Fund are summarized in Appendix B.

The combination of the plan provisions, actuarial assumptions and member and beneficiary data is used to generate the overall required level of employer contributions. These contributions are composed of two separate portions, an "accrued liability contribution" and a "normal contribution". The required contribution is developed in Section III G.

The valuation generates a balance sheet which summarizes in some detail the total present and prospective assets and liabilities of the Fund. A summary comparison of the balance sheets as of July 1, 2005 and July 1, 2006 is set forth in the following table. The allocation of assets among the various investment alternatives is shown in graphic form on page 5.

# TABLE I COMPARATIVE BALANCE SHEET

	2006	2005
<u>ASSETS</u>		
Actuarial Value of assets of Fund	\$ 2,000,274,259	\$ 1,935,384,732
Unfunded accrued liability/(surplus)	319,382,273	139,881,348
Total Assets	\$ 2,319,656,532	\$ 2,075,266,080
<u>LIABILITIES</u>		
Present value of benefits to present beneficiaries payable from the Retirement Reserve Fund	\$ 1,297,507,146	\$ 1,209,833,316
Present value of benefits to present active members	1,022,149,386	865,432,764
Total Liabilities	\$ 2,319,656,532	\$ 2,075,266,080



### **SECTION II - EMPLOYEE DATA**

The data employed for the valuations were furnished to the actuary by the Division of Pensions and Benefits. The following summarizes and compares the Fund membership as of July 1, 2005 and July 1, 2006 by various categories.

### **ACTIVE MEMBERSHIP**

		2006 2005						
		Annual		Annual				Annual
Group	Number	Compensation		Number	(	Compensation		
Men	2,886	\$	254,084,834	2,737	\$	232,778,942		
Women	107	\$	9,135,758	107	\$	9,034,430		

### RETIRED MEMBERS AND BENEFICIARIES

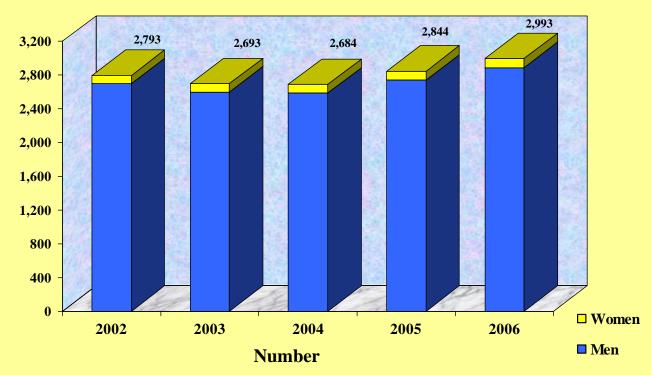
	2006		20	2005		
			Annual			Annual
Group	Number	A	Allowances	Number	P	Allowances
Service Retirements	1,783	\$	88,744,633	1,759	\$	84,078,930
Ordinary Disability Retirements  Accidental Disability	109	\$	2,897,219	111	\$	2,859,217
Retirements	100	\$	4,300,944	96	\$	4,001,705
Beneficiaries of Deceased Pensioners	271	\$	7,544,120	254	\$	6,749,337
Beneficiaries of Deceased Active Employees	75	\$	2,387,857	77	\$	2,356,490

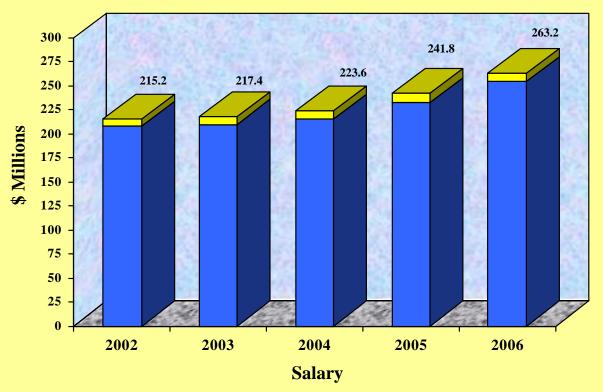
Appendix C provides a detailed distribution between groups.

Graphic presentations of the statistical data on membership for the five preceding years are shown on the following pages.

# THE STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY

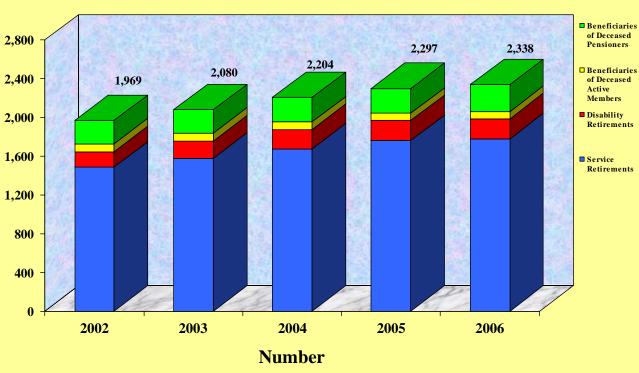
### **SUMMARY OF ACTIVE PARTICIPATION**

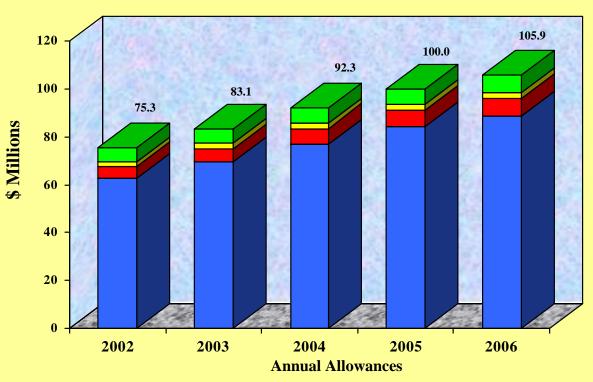




# THE STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY

### **SUMMARY OF RETIRED PARTICIPATION**





### SECTION III - ASSETS, LIABILITIES AND CONTRIBUTIONS

### A. Market Value of Assets as of June 30, 2006

1.	Assets	
	a. Cash	\$ (145,946)
	b. Securities Lending Collateral	356,602,490
	c. Investment Holdings	1,803,205,297
	d. Interest Receivable on Investments	6,198,947
	e. Employer Contribution Receivable – NCGI	120,410
	f. Members' Contributions Receivable	1,013,368
	g. Accounts Receivable	0
	h. Dividends Receivable	6,013,924
	i. Loans Receivable	28,483,709
	j. Interest Receivable – Member Loans	 80,309
	k. Total	\$ 2,201,572,508
2.	Liabilities	
	a. Pension Payroll Payable	\$ 885,416
	b. Pension Adjustment Payroll Payable	444,040
	c. Withholdings Payable	1,403,400
	d. Securities Lending Collateral and Rebates Payable	356,602,490
	e. Accounts Payable – Other	9,514
	f. Administrative Expense Payable	 23,619
	g. Total	\$ 359,368,479
3.	Preliminary Market Value of Assets	
	as of June 30, 2006: 1(k) - 2(g)	\$ 1,842,204,029
4.	State Appropriations Receivable	 29,875,748*
5.	Market Value of Assets as of June 30, 2006: 3. + 4.	\$ 1,872,079,777

<sup>\*</sup> The amount shown as the fiscal year 2007 receivable contribution is 57.5% of the contribution recommended for the July 1, 2005 valuation (potential effect of the Appropriation Act for fiscal year 2007).

### B. Reconciliation of Market Value of Assets: June 30, 2005 to June 30, 2006

<ul> <li>Increases</li> <li>a. Pension Contributions Members' Contributions Transfer from Other Systems \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$</li></ul>	16,711,022 206,295 11,508,005
Members' Contributions \$	206,295
Transfer from other bystems	
<ul> <li>Employers' Contributions         State Appropriations         Non-Contributory Group Insurance         Transfer from Other Systems     </li> </ul>	1,432,995 74,093
c. Income Per Statement	172 767 121
d. Total \$	173,767,121 203,699,531
3. Decreases	
a. Benefits Provided by Members Withdrawals – Members' Contributions	
Regular \$	8,927
Transfer	81,196
Adjustment – Member Account Loans – State b. Benefits Provided by Employers and Members Retirement Allowances	15
c. Benefits Provided by Employers	87,425,434
Benefit Expense – Pension Adjustment	16,079,731
Administrative Expense	433,185
Miscellaneous Expense	(44,599)
NCGI Premium Expense	1,432,995
d. Total \$	105,416,884
4. Preliminary Market Value of Assets as of June 30, 2006: 1. + 2.(d) – 3.(d) \$	1,842,204,029
5. State Appropriations Receivable	29,875,748*
6. Market Value of Assets as of June 30, 2006: 4. + 5. \$	1,872,079,777

<sup>\*</sup> The amount shown as the fiscal year 2007 receivable contribution is 57.5% of the contribution recommended for the July 1, 2005 valuation (potential effect of the Appropriation Act for fiscal year 2007).

### C. <u>Development of Actuarial Value of Assets as of July 1, 2006</u>

The actuarial value of plan assets is determined using a five-year average market value with write up. The following summary shows the development of the actuarial value of plan assets for the current valuation:

1.	Actuarial Value of Assets as of July 1, 2005	\$ 1,922,443,732
2.	Net Cash Flow (excluding investment income)	(75,484,474)
3.	Expected Investment Income at 8.25%	
	a. Interest on assets as of July 1, 2005	\$ 158,601,608
	b. Interest on Net Cash Flow	 (3,113,735)
	c. Total	\$ 155,487,873
4.	Expected Actuarial Value of Assets as of July 1, 2006:	
	1. + 2. + 3.(c)	\$ 2,002,447,131
5.	20% of Difference from Preliminary Market Value of Assets	(32,048,620)
6.	Receivable Employer Contributions	 29,875,748*
7.	Actuarial Value of Assets as of July 1, $2006 = 4. + 5. + 6$ .	\$ 2,000,274,259

<sup>\*</sup> The amount shown as the fiscal year 2007 receivable contribution is 57.5% of the contribution recommended for the July 1, 2005 valuation (potential effect of the Appropriation Act for fiscal year 2007).

### D. Present Value of Projected Benefits as of July 1, 2006

1.	Retirees and Beneficiaries	
	a. Service Retirements	\$ 1,092,730,979
	b. Disability Retirements	98,578,475
	c. Beneficiaries	90,392,742
	d. Death Benefits	 15,804,950
	e. Total	\$ 1,297,507,146
2.	Terminated Vested Members	\$ 0
3.	Contributing Active Participants	
	a. Service Retirement	\$ 939,095,196
	b. Ordinary Disability	23,946,238
	c. Accidental Disability	22,689,991
	d. Ordinary Death	9,930,102
	e. Accidental Death	9,348,882
	f. Vested Termination	1,236,954
	g. Withdrawal Benefits	192,557
	h. Lump Sum Death Benefits*	 8,698,313
	i. Total	\$ 1,015,138,233
4.	Non-Contributing Active Participants	\$ 7,011,153
5.	Total Present Value of Benefits = $1.(e) + 2. + 3.(i) + 4.$	\$ 2,319,656,532

<sup>\*</sup>Excludes lump sum death benefits payable during active service.

### **E.** Development of Excess Valuation Assets

Chapter 115, P.L. 1997 prescribes a procedure for determining the value of excess valuation assets. This law provides for a reduction in the normal contributions for the valuation periods ending June 30, 1996 and June 30, 1997 to the extent possible by the excess valuation assets and permitted the State Treasurer to reduce the normal contribution payable by the State for valuations after June 30, 1997 up to a specified portion of excess valuation assets (50% for the current valuation). The development of excess valuation assets is summarized as follows:

1.	Valuation Assets	\$ 2,000,274,259
2.	Actuarial Accrued Liability	 2,319,656,532
3.	Excess Valuation Assets = 1 2., not less than \$0	\$ 0

### F. Development of Normal Cost as of July 1, 2006

1.	Service Retirement	\$ 55,520,729
2.	Ordinary Disability	2,415,938
3.	Accidental Disability	2,276,971
4.	Ordinary Death	957,791
5.	Accidental Death	1,159,005
6.	Vested Termination	145,402
7.	Withdrawal Benefits	66,620
8.	Lump Sum Death Benefits*	 578,395
9.	Total (Excluding Non-Contributory Group Insurance Premium)	
	= 1. + 2. + 3. + 4. + 5. + 6. + 7. + 8.	\$ 63,120,851
10.	Non-Contributory Group Insurance Premium	 1,054,053
11.	Total Including Non-Contributory Group Insurance Premium	\$ 64,174,904
	= 9. + 10.	

<sup>\*</sup>Excludes Non-Contributory Group Insurance Premium (term cost for lump sum death benefits payable during active service.)

### G. <u>Development of State Contributions</u>

1.	Present Value of Benefits	\$ 2,319,656,532
2.	Actuarial Value of Assets	 2,000,274,259
3.	Unfunded Actuarial Accrued Liability/(Surplus) = 1 2.	\$ 319,382,273
4.	Amortization Period	30
5.	Amortization of Unfunded Actuarial Accrued Liability payable July 1, 2007	\$ 19,411,046
6. (a)	Gross Normal Cost (excluding Non-Contributory Group Insurance Premium)	\$ 63,120,851
(b)	Expected Member Contributions	 16,570,389
(c)	State Normal Cost = (a) - (b)	\$ 46,550,462
(d)	State Normal Cost payable July 1, 2007 = (c) * 1.0825	\$ 50,390,875
(e)	Excess Valuation Assets	0
(f)	Non-Contributory Group Insurance Premium Payable July 1, 2007	 1,141,012
(g)	State Net Normal Cost payable July 1, 2007 = $(d) - (e) + (f)$	\$ 51,531,887
7.	Total Required Contribution as of July 1, $2007 = 5. + 6.(g)$	\$ 70,942,933*

<sup>\*</sup>Contribution could be subject to reduction in accordance with the provisions of the Appropriation Act for fiscal year 2008.

### SECTION IV - COMMENTS CONCERNING THE VALUATION

The variation in liabilities and contributions reflects the System's actual experience during the year. The System experienced a net actuarial loss during the year that ended June 30, 2006.

The loss is primarily due to an actual return on Fund assets less than that expected. For valuation purposes, an 8.25% per annum rate of return was assumed. The actual return on the Fund's actuarial value of assets was approximately 6.55% for the period from July 1, 2005 through June 30, 2006. There was also a net loss due to experience among the active and the retired participants.

The following shows the development of the actuarial experience and identifies the major experience components:

A.	Calculation of Actuarial Experience for the Year Ended June 30, 2006	
1.	Unfunded Accrued Liability/(Surplus) as of July 1, 2005	\$ 139,881,348
2.	Gross Normal Cost as of July 1, 2005	55,075,394
3.	Interest on (1) and (2)	16,083,931
4.	Actual Members' Contributions Received	16,711,022
5.	Employers' Contributions (including receivable)	29,875,748
6.	Interest on Contributions	 689,330
7.	Expected Unfunded Accrued Liability/(Surplus) as of July 1, 2006 = $(1) + (2) + (3) - (4) - (5) - (6)$	\$ 163,764,573
8.	Increase in Unfunded Accrued Liability due to Assumption Changes	94,423,795
9.	Actual Unfunded Accrued Liability as of July 1, 2006	 319,382,273
10.	Actuarial (Gain)/Loss = $(9) - (7) - (8)$	\$ 61,193,905
В.	Components of Actuarial Experience	
1.	Investment (Gain)/Loss	\$ 32,048,620
2.	Other (Gain)/Loss, including mortality, cost of living adjustments greater than expected, changes in employee data and salary increases greater than expected	 29,145,285

\$

61,193,905

3.

Total Actuarial (Gain)/Loss

### SECTION V - ACCOUNTING INFORMATION

Statement No. 5 of the Governmental Accounting Standards Board, issued November 1986, established standards of disclosure of pension information by public retirement systems. Statement No. 25 of the Governmental Accounting Standards Board, issued November 1994, established financial reporting standards for defined benefit pension plans and for the notes to the financial statements of defined contribution plans of state and local governmental liabilities and superseded Statement No. 5 effective for periods beginning after June 15, 1996. Statement No. 27, Accounting for Pensions by State and Local Governmental Employers superseded Statement 5 for employers participating in pension plans and is effective for periods beginning after June 15, 1997.

The information required by Statement No. 25 is presented in the following tables. These include the development of the Annual Required Contribution (ARC), the development of the Net Pension Obligation (NPO), the Schedule of Funding Progress and the Schedule of Employer Contributions.

### (A) Development of the Annual Required Contribution (ARC) as of June 30, 2008:

- 1. Actuarial Value of Plan Assets as of June 30, 2006
  - (a) Valuation Assets as of June 30, 2006

\$ 2,000,274,259

(b) Adjustment for Receivable Contributions included in (a)

29,875,748

(c) Valuation Assets as of June 30, 2006 for GASB Disclosure = (a) - (b)

\$ 1,970,398,511

	2.	Actuarial Accrued Liability as of June 30, 2006	\$ 2,319,656,532
	3.	Unfunded Actuarial Accrued Liability/(Surplus) as of June $30$ , $2006 = 2$ 1.	\$ 349,258,021
	4.	Amortization of Unfunded Actuarial Accrued Liability/(Surplus) over 30 years	\$ 19,609,053
	5.	(a) Gross Normal Cost as of June 30, 2006	\$ 64,174,904
		(b) Expected Members' Contributions	 16,570,389
		(c) Net Normal Cost as of June 30, 2006 = (a) - (b)	\$ 47,604,515
	6.	Annual Required Contribution as of June 30, 2008	
		(a) Annual Required Contribution as of June 30, 2006 = 4. + 5.(c)	\$ 67,213,568
		(b) Interest Adjustment to June 30, 2008	 11,547,711
		(c) Annual Required Contribution as of June 30, 2008 = (a) + (b)	\$ 78,761,279
<b>(B)</b>	<u>Devel</u>	opment of the Net Pension Obligation (NPO) as of June 30, 2008:	
	1.	Annual Required Contribution as of June 30, 2008	\$ 78,761,279
	2.	Interest on Net Pension Obligation	22,244,431
	3.	Adjustment to Annual Required Contribution	 (16,387,227)
	4.	Annual Pension Cost = $1. + 2. + 3.$	\$ 84,618,483
	5.	Expected Employer Contributions for Fiscal Year 2008	\$ 70,942,933
	6.	Net Pension Obligation at June 30, 2007	\$ 269,629,462*
	7.	Increase in Net Pension Obligation = 4 5.	\$ 13,675,550
	8.	Net Pension Obligation at June 30, 2008 = 6. + 7.	\$ 283,305,012

<sup>\*</sup> The June 30, 2007 Net Pension Obligation amount has been revised from the amount shown in the prior year's report to reflect the adjustment to the fiscal year 2007 receivable contribution.

### (C) Schedule of Funding Progress

Actuarial Valuation	Actuarial Value of	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	Unfunded Actuarial Accrued Liability as a Percentage of Covered Payroll (b-a)
Date	(a)	(b)	( <b>b-a</b> )	(a/b)	(c)	С
6/30/01	\$ 1,829,414,353	\$ 1,626,631,656	\$ (202,782,697)	112.5%	\$ 199,727,203	(101.5)%
6/30/02	\$ 1,853,684,177	\$ 1,739,427,739	\$ (114,256,438)	106.6%	\$ 215,161,126	(53.1)%
6/30/03	\$ 1,865,079,083	\$ 1,815,725,256	\$ (49,353,827)	102.7%	\$ 217,448,864	(22.7)%
6/30/04	\$ 1,897,525,210	\$ 1,949,309,641	\$ 51,784,431	97.3%	\$ 223,552,154	23.2%
6/30/05	\$ 1,922,443,732	\$ 2,075,266,080	\$ 152,822,348	92.6%	\$ 241,813,372	63.2%
6/30/06	\$ 1,970,398,511	\$ 2,319,656,532	\$ 349,258,021	84.9%	\$ 263,220,592	132.7%

### (D) Schedule of Employer Contributions

Fiscal Year	Annual Required	Employer	Percentage
	Contribution	Contribution	Contributed
2003	\$ 29,449,164	\$ 0	0.0%
2004	\$ 37,600,821	\$ 0	0.0%
2005	\$ 37,943,519	\$ 187,909	0.5%
2003 2006 2007 2008	\$ 47,196,900 \$ 56,502,006 \$ 78,761,279	\$ 12,941,000 \$ 29,875,748* \$ 70,942,933**	27.4% 52.9% 90.1%

<sup>\*</sup> The fiscal year 2007 required contribution of \$51,409,336 has been reduced to \$29,875,748 in anticipation of the provisions of the Appropriation Act for fiscal year 2007.

(E) The information presented in the required supplementary schedules were determined as part of the actuarial valuation. Additional information follows:

Valuation Date June 30, 2006 Actuarial Cost Method Projected Unit Credit Amortization Method Level Percent, Open Remaining Amortization Period 30 years Asset Valuation Method Five-Year Average of Market Value **Actuarial Assumptions:** Investment Rate of Return 8.25% Projected Salary Increase 5.45% Cost of Living Adjustments 60% of the assumed

CPI increase of 3.0%

<sup>\*\*</sup> The required contribution could be subject to reduction in accordance with the provisions of the Appropriation Act for fiscal year 2008.

### **SECTION VI - LEVEL OF FUNDING**

Although the value of accrued benefits and the funding ratios shown in the previous section are required for the State's financial statements, it is instructive to also look at these values under an alternative approach. For this purpose, we are presenting liabilities determined on a Financial Accounting Standards Board Statement No. 87 Accumulated Benefit Obligation (ABO) basis. This is the same approach as GASB Statement No. 25 except that no assumption is made as to future salary increases.

FASB 87 ABO Funded Ratios				
Actuarial present value of accumulated				
benefits:				
		June 30, 2006		June 30, 2005
Vested benefits				
Participants currently				
receiving payments	\$	1,297,507,146	\$	1,209,833,316
Other participants		655,735,502		527,358,725
	\$	1,953,242,648	\$	1,737,192,041
Non-vested benefits		287,435,878		285,695,280
				, ,
Total	\$	2,240,678,526	\$	2,022,887,321
Assets at market value	\$	1,872,079,777	\$	1,756,862,382
Assets at market value	φ	1,072,079,777	φ	1,730,002,302
Ratio of Assets to Total Present Value		83.5%		86.8%

As in the case of the Governmental Accounting Standard Board Statement No. 25, the actuarial present value of vested and non-vested accrued benefits was based on an interest rate of 8.25% for both 2006 and 2005.

### APPENDIX A

### BRIEF SUMMARY OF THE BENEFIT AND CONTRIBUTION PROVISIONS AS INTERPRETED FOR VALUATION PURPOSES

### Eligibility for Membership

All members of the former State Police and Benevolent Fund: full-time commissioned officers, non-commissioned officers or troopers of the Division of State Police. Membership is a condition of employment.

### 1. Definitions

Plan Year The 12-month period beginning on July 1 and ending on June 30.

Service Service rendered while a member as described above.

Credited Service A year is credited for each year of service as an officer or trooper

in the State Police. Service with other State Retirement Systems is included in the calculation of the retirement benefit at the rate of

1% of final compensation for each year of service credit.

Compensation Based on contractual salary, including maintenance allowance,

received by the member in the last 12 months of credited service preceding retirement, termination or death. Compensation does not include individual salary adjustments granted primarily in anticipation of the retirement or for temporary or extracurricular duties beyond the ordinary work day. (Effective June 30, 1996, Chapter 113, P.L. 1997 provided that the amount of compensation used for employer and member contributions and benefits under the program cannot exceed the compensation limitation of Section

401(a)(17) of the Internal Revenue Code.)

Final Compensation Average compensation received by member in last 12 months of

credited service preceding retirement or death. Such term includes the value of the member's maintenance allowance for the same

period.

Aggregate Contributions The sum of all amounts deducted from the compensation of a

member or contributed by him or on his behalf. For contribution purposes, compensation does not include overtime, bonuses,

maintenance or any adjustments before retirement.

Adjusted Final Compensation The amount of final compensation or final compensation as

adjusted, as the case may be, increased by the same percentage increase which is applied in any adjustments of the compensation schedule of active members after the member's death and before the date on which the deceased member of the retirement system would have accrued 25 years of service under an assumption of continuous service, at which time that amount will become fixed. Adjustments to final compensation or adjusted final compensation

shall take effect at the same time as any adjustments in the compensation schedule of active members.

### 2. Benefits

Service Retirement

Mandatory retirement at age 55. Voluntary retirement prior to age 55 with 20 years of credited service. Benefit is an annual retirement allowance equal to the greater of (a), (b), or (c), as follows:

- (a) 50% of final compensation;
- (b) For members retiring with 25 or more years of service, 65% of final compensation, <u>plus</u> 1% for each year of service in excess of 25 years, to a maximum of 70% of final compensation.
- (c) For members as of August 29, 1985 who would not have 20 years of service by age 55, benefit as defined in (a) above. For members as of August 29, 1985 who would have 20 years of service but would not have 25 years of service at age 55, benefit as defined in (a) above plus 3% for each year of service in excess of 20 years.

**Vested Termination** 

Termination of service prior to age 55. Benefit for 10 to 20 years of Service - Refund of aggregate contributions, or a deferred life annuity beginning at age 55 equal to 2% of final compensation for each year of service up to 20 years.

**Death Benefits** 

Before Retirement

Death of an active member of the plan. Benefit is equal to:

- (a) Lump sum payment equal to 3-1/2 times final compensation, plus
- (b) Spousal life annuity of 50% of final compensation payable until spouse's death. If there is no surviving spouse, or upon death or remarriage, a total of 20%, 35% or 50% of final compensation payable to one, two or three dependent children. If there is no surviving spouse (or dependent children), 25% or 40% of final compensation to one or two dependent parents.

Minimum benefit: Aggregate contributions.

### After Retirement

Death of a retired member of the plan. The benefit is equal to:

- (a) Lump sum of 50% of final compensation, plus
- (b) Spousal life annuity of 50% of final compensation payable until spouse's death or remarriage. If there is no surviving spouse, or upon death or remarriage, a total of 20%, 35% or 50% of final compensation payable to one, two or three dependent children, respectively.

### Accidental Death

Death of an active member of the plan resulting during performance of duties. Benefit is equal to:

- (a) Lump sum payment equal to 3-1/2 times final compensation, plus
- (b) Spousal life annuity of 70% of adjusted final compensation payable until spouse's death. If there is no surviving spouse, or upon death of the surviving spouse, a total of 20%, 35% or 50% of adjusted final compensation payable to one, two or three dependent children. If there is no surviving spouse or dependent children, 25% or 40% of final compensation to one or two dependent parents.

### Ordinary Disability Retirement

Mentally or physically incapacitated for the performance of his usual duty and of any other available duty in the Division of State Police and such incapacity is likely to be permanent.

- (a) The benefit for members with less than four years of service is a refund of the member's aggregate contributions.
- (b) For members with at least four years of service, the benefit is an immediate life annuity equal to 40% of final compensation plus 1-1/2% of final compensation for years of creditable service in excess of 26-2/3.
- (c) For members who are forced to retire with 20 but less than 25 years of service, the benefit is 50% of the member's final compensation plus 3% of final compensation for each year of service in excess of 20 years, to a maximum of 65% of final compensation.

For death following disability retirement, a lump sum equal to 3-1/2 times final compensation if death occurs prior to age 55 or 1/2 of final compensation after age 55.

### Accidental Disability Retirement

Totally and permanently disabled as a direct result of a traumatic event occurring during and as a result of his regular or assigned duties. Benefit is an immediate life annuity equal to 2/3 of final compensation. Upon death after disability retirement, lump sum benefit of 3-1/2 times final compensation if death occurs before 55 and 1/2 times final compensation if death occurs after 55.

**Loan Provision** 

Eligible if an active member of the State Police Retirement System with at least 3 years of contributory service. If eligible, a member may borrow an amount which is greater than \$50, but not more than 50% of aggregate contributions. The loan accrues interest at 4% per annum.

### APPENDIX B

### **OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS**

VALUATION INTEREST RATE: 8.25% per annum, compounded annually.

COLA: The COLA is 60% of the assumed CPI increase. CPI is assumed to increase at 3.0% per annum, compounded annually.

SALARY INCREASES: Salaries are assumed to increase by 5.45% per year.

TERMINATION: Withdrawal rates vary by length of service. Illustrative rates are shown below:

	<u>Lives per T</u>	<u> Thousand</u>
	Less Than	Five to Nineteen
<u>Age</u>	5 Years of Service	Years of Service
25	8.3	0.0
30	5.0	4.0
35	8.3	1.0
40	0.0	1.5
45	0.0	2.0
50	0.0	0.0

SEPARATIONS FROM SERVICE: Representative mortality, disability and retirement rates are as follows:

		<u>Annual F</u>	Rates of *	
	Ordinary	<b>Accidental</b>	Ordinary	Accidental
<u>Age</u>	<b>Death</b>	<b>Death</b>	<b>Disability</b>	<b>Disability</b>
25	0.0	0.4	0.6	0.3
30	0.7	0.5	0.9	0.4
35	0.5	0.5	2.4	1.5
40	0.8	0.5	2.5	1.6
45	1.0	0.6	3.1	1.7
50	2.5	0.9	5.4	2.2

<sup>\*</sup>Per one thousand lives.

MARRIAGE: Husbands are assumed to be 3 years older than wives. Among the active population, 83.3% of participants are assumed married. No children are assumed. Neither the percentage married nor number of children assumption is individually explicit but are considered as a single combined assumption.

VALUATION METHOD: Projected Unit Credit Method. This method essentially funds the System's benefits accrued to the valuation date. Experience gains and losses are recognized in future accrued liability contributions.

ASSET VALUATION METHOD: A five-year average of market values with write-up. (This method takes into account appreciation (depreciation) in investments in order to smooth asset values by averaging the excess of the actual over the expected income, on a market value basis, over a five-year period).

HEALTH INSURANCE BENEFITS: Retiree Health Insurance benefits are funded by the State on a pay-as-you-go basis and are not included in the actuarial valuation.

DEATHS AFTER RETIREMENT: For Healthy Inactive Mortality the 1983 Group Annuity Mortality Table for males and females is used. Illustrative rates of mortality for retired members are shown below:

	Retired 1	<u>Members</u>		usand ciaries of Members	Disabled Males
<u>Age</u>	Males*	<u>Females</u>	<b>Males</b>	<b>Females</b>	and Females
55	4.9	2.5	6.1	2.5	9.6
60	7.3	4.2	9.2	4.2	13.6
65	12.5	7.1	15.6	7.1	19.8
70	22.0	12.4	27.5	12.4	29.6
75	35.7	24.0	44.6	28.8	44.5
80	59.3	43.0	74.1	51.5	67.3
85	91.9	69.9	114.8	83.9	101.1
90	133.1	111.8	166.3	134.1	149.4

<sup>\*80.0%</sup> of 1983 GAM male rates are used.

RATES OF RETIREMENT: Rates of retirement vary by length of service and age (if more than 24 years of service) with 100% of those remaining at age 55 retiring at age 55. The rates are shown below:

<u>Service</u>	<u>Lives Per 100</u>
20	2.0
21	0.5
22	0.0
23	0.0
24	0.0
25	30.0
Greater than 25:	
(a) through age 42	5.0
(b) ages 43-47	25.0
(c) ages 48-53	30.0
(d) age 54	55.0

### APPENDIX C

### TABULATIONS USED AS A BASIS FOR THE 2006 VALUATION

The following tables give a reconciliation of data from July 1, 2005 to June 30, 2006. Tables are also given showing active member number and salaries by age and length of service as of July 1, 2006 and showing the number and retirement allowances of beneficiaries classified by age as of July 1, 2006.

TABLE 1

# RECONCILIATION OF DATA FROM JULY 1, 2005 TO JUNE 30, 2006

	A	Actives	Deferred		 Re	Retirees				Domestic Benef	Domestic Relations Beneficiaries	
	Contrib.	Noncontrib.	Vested	Service	Special	Deferred	Disabled	Beneficiaries	Dependents	Retirees	Disabilities	Total
Members as of July 1, 2005	2,817	27	0	467	1,211	1	187	326	S	80	20	5,141
Changed to Contributing	1	(1)										
Changed to Noncontributing	(14)	14										
Terminated Vested												
Terminated Non-Vested		(4)										(4)
Service Retirement	(7)			7								
Special Retirement	(48)				48							
New Disabled	(7)						7					
New Death				(24)	(6)		(3)	(13)				(49)
Payments Began									-	7	1	6
Payments Ceased										(9)	(2)	(8)
New Actives	213	-										214
Rehires	1											-
New Beneficiaries								27				27
Data Corrections					П		(1)					
Members as of June 30, 2006	2,956	37	0	450	1,251		190	340	9	81	19	5,331

TABLE 2
DISTRIBUTION OF ACTIVE MEMBERS BY AGE AND SERVICE

AGE	SERVICE	1	3	10	15	20	25	30	35	TOTAL
20	Number Salary	4 248,028								4 248,028
25	Number Salary	268 16,818,724	69 4,750,211							337 21,568,935
30	Number Salary	178 11,222,941	305 22,043,990	12 918,118						495 34,185,049
35	Number Salary	56 3,573,400	183 14,060,178	24,092,010	1,529,616	3 283,055				526 43,538,259
40	Number Salary		31 2,442,619	124 11,372,758	16,991,021	381 37,629,614	7 728,896			722 69,164,908
45	Number Salary			20 1,821,938	65 6,190,513	364 36,406,332	148 16,372,401			597 60,791,184
50	Number Salary			1 68,852	8 745,756	81 8,061,048	178 19,806,932	44 5,041,641		312 33,724,229
TOTAL	Number Salary	506 31,863,093	588 43,296,998	424 38,273,676	269 25,456,906	829 82,380,049	333 36,908,229	44 5,041,641		2,993 263,220,592

THE NUMBER AND ANNUAL COMPENSATION OF ACTIVE MEMBERS DISTRIBUTED BY AGE

**AS OF JULY 1, 2006** 

TABLE 3

### MEN WOMEN

			·		
AGE	NUMBER	AMOUNT	NUMBER	A	MOUNT
22	1	\$ 61,387			
23	14	869,337			
24	29	1,800,060	4	\$	248,028
25	60	3,760,094	2		125,254
26	94	5,961,369	2		125,254
27	89	5,778,765	3		199,064
28	95	6,353,016	2		140,157
29	116	7,692,623	5		331,756
30	84	5,684,153	4		265,411
31	98	6,832,994	6		404,027
32	80	5,786,599	5		359,917
33	82	6,127,566	5		360,022
34	91	7,320,962	4		297,462
35	115	9,300,282	8		640,598
36	110	9,372,559	8		675,467
37	94	8,133,718	2		160,985
38	89	7,923,178	2		158,505
39	102	9,377,317	4		356,918
40	137	13,006,638	4		372,970
41	157	15,242,269	6		589,913
42	183	17,800,855	4		376,493
43	169	16,696,196	6		602,937
44	140	14,074,580	4		415,618
45	126	12,689,764	4		391,032
46	77	7,813,152	3		336,587
47	107	11,292,316	4		466,904
48	74	7,845,255	2		245,706
49	82	8,805,268			
50	63	6,724,156	2		242,835
51	39	4,237,629	1		128,386
52	43	4,737,028	1		117,555
53	21	2,323,425			
54	25	2,660,323			
TOTAL	2,886	\$ 254,084,834	107	\$	9,135,758

Of the 2,993 active members included in the June 30, 2006 valuation data, 1,768 are vested and 1,225 have not yet completed the vesting service requirement.

TABLE 4

THE NUMBER AND ANNUAL COMPENSATION OF ACTIVE MEMBERS DISTRIBUTED BY SERVICE AS OF JULY 1, 2006

YEARS OF	MEN		WOMEN		
SERVICE	NUMBER	AMOUNT	NUMBER	A	MOUNT
0	2	\$ 115,571			
1	268	16,615,243	13	\$	805,470
2	171	10,904,092	4		255,468
3	108	7,138,714	10		663,459
4	49	3,355,601	3		199,065
5	284	20,411,064	13		939,677
6	26	1,795,312	3		206,503
7	20	1,391,780			
8	126	10,816,975	6		499,605
9	107	9,168,396	6		511,272
10	19	1,548,642			
11	153	14,265,865	10		942,602
12	106	9,881,671	5		481,728
13	88	8,288,560			
14	8	703,108			
15	8	659,155			
16	10	897,084	1		87,174
17	69	6,594,805	2		192,358
18	199	19,043,866	3		306,807
19	271	26,410,675	3		310,382
20	252	25,162,712	8		803,908
21	114	11,804,920	3		296,131
22	53	5,615,606	2		192,358
23	74	7,908,310			
24	120	13,212,835	2		245,941
25	66	7,321,662	4		470,010
26	4	428,850	6		725,842
27	63	7,205,312			
28	26	2,902,010			
29	14	1,585,919			
31	5	591,139			
32	3	339,379			
TOTAL	2,886	\$ 254,084,834	107	\$	9,135,758

Of the 2,993 active members included in the June 30, 2006 valuation data, 1,768 are vested and 1,225 have not yet completed the vesting service requirement.

TABLE 5

### THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED BY AGE AS OF JULY 1, 2006

### SERVICE RETIREMENTS

MEN WOMEN

AGE	NUMBER	AMOUNT	NUMBER	AMOUNT
42	2	\$ 84,688		
44	1	59,951	3	\$ 87,293
45	2	134,186	2	98,573
46	1	68,889	4	108,184
47	6	372,362	3	101,724
48	20	1,314,579	5	162,908
49	18	1,260,559	5	296,648
50	29	2,011,017		
51	25	1,614,718	5	161,919
52	45	2,945,158	7	280,463
53	31	2,013,582	4	80,987
54	49	3,301,489	2	31,504
55	59	3,835,811	4	50,440
56	50	3,276,390	3	43,226
57	71	4,512,250	5	133,918
58	69	3,925,320	1	18,000
59	91	5,451,498	9	184,135
60	98	5,425,328	8	151,109
61	75	4,068,944	7	118,563
62	70	3,601,958	1	16,049
63	94	4,824,837	2	18,571
64	87	4,297,361		
65	90	4,307,576	3	49,541
66	61	2,903,610		
67	46	2,213,800	3	71,039
68	52	2,319,384	3	59,714
69	32	1,430,398		
70	30	1,221,058	1	2,600
71	26	1,135,086	_	
72	19	848,993	2	28,060
73	18	705,279	1	4,872
74 7.7	32	1,310,865		
75	37	1,469,400		
76	35	1,237,744		
77 <b>7</b> 0	26	947,241		
78 70	42	1,612,349		
79	31	960,784	4	12.552
80	26	718,710	1	13,573
81	22	637,017		
82	23	651,894		
83	11	317,832		
84 85	8	205,026		
85	11	314,169		

TABLE 5

### THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED BY AGE AS OF JULY 1, 2006

# SERVICE RETIREMENTS (continued)

MEN WOMEN

AGE	NUMBER	I	AMOUNT	NUMBER	A	MOUNT
86	3		98,047			
87	6		174,085			
88	1		24,414			
89	2		61,378			
91	2		45,703			
92	1		26,389			
94	2		45,577			
100	1		26,340			
TOTAL	1,689	\$	86,371,021	94	\$	2,373,612

TABLE 6

# THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF BENEFICIARIES DISTRIBUTED BY AGE AS OF JULY 1, 2006

### BENEFICIARIES OF DECEASED PENSIONERS

MEN			WOMEN			
AGE	NUMBER AMOUNT		IOUNT	NUMBER	A	MOUNT
43				1	\$	45,620
44						
45						
46						00.40#
47	1	Ф	0.002	2		93,635
48 49	1	\$	9,093	1 1		37,536
53				1		38,085
53 54				2		69,704
55				1		49,916
56				2		82,324
58				4		145,141
59	1		9,075	8		306,910
60				4		142,759
61				3		96,900
62				3		119,050
63				5		149,129
64	1		37,955	7		290,560
65				4		124,060
66				8		247,881
67				4		137,066
68				10		324,895
69 70				5		142,505
70 71				5 3		150,533 95,256
71				6		165,536
73				10		309,098
74				17		449,658
75				12		295,941
76				13		340,298
77				11		302,527
78				14		341,610
79				12		338,675
80				11		276,621
81				7		163,634
82				7		183,522
83				8		194,608
84				6		166,317
85				10		224,662
86				7		169,403
87				7		137,164
88				10		222,144
89				2		39,597

TABLE 6

# THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF BENEFICIARIES DISTRIBUTED BY AGE AS OF JULY 1, 2006

# BENEFICIARIES OF DECEASED PENSIONERS (continued)

		MEN		W	OMEN	
AGE	NUMBER		AMOUNT	NUMBER		AMOUNT
90				3		59,132
91				5		89,830
92				2		35,346
93				1		20,335
96				2		37,521
97				1		20,217
TOTAL	3	\$	56,123	267	\$	7,472,861

WOMEN

### TABLE 7

### THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF BENEFICIARIES DISTRIBUTED BY AGE AS OF JULY 1, 2006

### BENEFICIARIES OF DECEASED ACTIVE EMPLOYEES

**MEN** 

80

81 82

84

85

86

87

88

90

91

AGE	NUMBER	AMOUNT	NUMBER	AN	MOUNT
30			1	\$	48,628
38			1		39,507
40			1		65,601
41			1		65,071
42			1		34,744
43			1		62,907
44			1		64,233
47			1		60,366
48			2		103,571
51			1		37,717
52			1		42,474
54			2		99,546
55			2		77,474
56			1		51,802
57			3		92,884
59			1		33,858
60			1		46,875
61			3		104,540
62			3		106,373
63			3		134,714
64			3		96,860
65			2		74,388
66			2		57,447
67			1		19,996
68			1		20,716
69			1		37,539
71			2		50,674
72			1		33,460
74			2		43,584
76			3		88,566
77			3		64,499
78			1		35,490
79			1		21,990

1

1

3

1

3

1

1

1

1

29,258

17,426

68,780

30,246

43,735

18,315

15,790

16,018

14,320

13,952

### TABLE 7

### THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF BENEFICIARIES DISTRIBUTED BY AGE AS OF JULY 1, 2006

# BENEFICIARIES OF DECEASED ACTIVE EMPLOYEES (continued)

MEN			WOMEN			
AGE	NUMBER	AMOUNT	NUMBER	I	AMOUNT	
92			1		12,082	
94			1		18,436	
95			1		18,880	
99			1		11,933	
TOTAL			72	\$	2.347.267	

### TABLE 8

### THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF BENEFICIARIES DISTRIBUTED BY AGE AS OF JULY 1, 2006

### CHILDREN OF DECEASED MEMBERS

	MEN			WOMEN		
AGE	NUMBER	AI	MOUNT	NUMBER	AN	MOUNT
14				2	\$	27,292
16 18	1	\$	16,279	1		12,155
TOTAL	1	\$	16,279	3	\$	39,447

**TABLE 9** 

# THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED BY AGE AS OF JULY 1, 2006

### ORDINARY DISABILITY RETIREMENTS

**MEN WOMEN AGE NUMBER AMOUNT NUMBER AMOUNT** 35 1 \$ 27,278 37 1 \$ 28,284 38 4 112,906 2 39 69,262 40 6 188,399 1 11,172 41 4 104,239 2 42 6 179,233 49,759 43 4 135,420 4 108,530 44 4 2 117,688 15,856 2 2 45 61,905 64,126 46 1 34,522 1 16,907 47 3 2 60,312 113,708 1 48 34,207 2 49 73,200 50 3 85,140 2 53 78,043 3 54 132,655 55 2 22,400 2 11,873 1 1 56 24,188 20,148 57 1 46,998 1 58 22,517 5 59 144,948 1 30,022 3 61 78,275 62 2 47,408 2 21,587 63 1 21,815 4 1 64 101,796 7,280 2 65 35,817 66 5 110,614 2 67 69,038 3 52,216 68 69 1 17,464 2 78 35,719 79 1 19,894 80 1 16,236 2 81 36,223 **TOTAL** 87 \$ 2,452,371 22 \$ 444,848

TABLE 10

# THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED BY AGE AS OF JULY 1, 2006

### ACCIDENTAL DISABILITY RETIREMENTS

MEN WOMEN

AGE	NUMBER	A	MOUNT	NUMBER	Al	MOUNT
33	2	\$	102,286			
34	1		48,890			
37	1		46,329			
38	2		98,277			
39	4		203,392	1	\$	52,834
40	2		104,188	1		9,100
41	4		223,796	1		52,959
42	5		243,149	1		4,784
43	4		220,437	1		56,599
44	6		321,894			
45	6		251,533	3		31,669
46	5		260,029	2		50,341
47	1		56,100			
48	2		89,212	1		28,763
49				2		103,925
50	5		233,904			
51	1		59,223			
52	3		164,316			
54	3		138,018			
56	3		163,532	1		47,727
59	1		50,546			
60	2		41,016	1		11,160
61	1		68,792	1		18,954
62	3		97,955			
63	1		25,529			
64	5		146,535			
65	1		24,167			
66	2		70,587			
67	3		95,832			
68	1		41,618			
69	1		47,032			
75	1		26,314			
81	2		67,699			
TOTAL	84	\$	3,832,128	16	\$	468,816