

**THE STATE POLICE RETIREMENT SYSTEM
OF NEW JERSEY
ANNUAL REPORT
OF THE ACTUARY
PREPARED AS OF JULY 1, 2003**

April 12, 2004

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, 2003 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, 2003 and gives the basis for determining the required annual contribution for the plan year beginning July 1, 2003.

The valuation was prepared on the basis of the revised actuarial assumptions that were determined from the July 1, 1999 – June 30, 2002 Experience Study and an interest rate of 8.75% per year.

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

Respectfully submitted,

(Signed) GEORGE M. LOVAGLIO

George M. Lovaglio
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, 2003

SECTION I - SUMMARY OF KEY RESULTS

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, 2003, 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, 2003	July 1, 2002
Number of Members	2,693	2,793
Annual Compensation	\$ 217,448,864	\$ 215,161,126
Number of Pensioners and Beneficiaries	2,080	1,969
Total Annual Allowance	\$ 83,095,494	\$ 75,314,289
<u>Assets</u>		
Market Value of Assets	\$ 1,545,738,865	\$ 1,565,301,249
Valuation Assets	\$ 1,865,079,083	\$ 1,853,684,177
<u>Contribution Amounts</u>		
Normal Contribution	\$ 939,544*	\$ 0*
Accrued Liability Contribution	<u>0</u>	<u>0</u>
Total Contribution	\$ 939,544**	\$ 0

* Required contributions have been reduced by a portion of excess assets (See Section III G).

** The contribution requirement could be subject to reduction in accordance with the provisions of the Appropriation Act for fiscal year 2005.

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.

The valuation reflects the revised actuarial assumptions that were determined from the July 1, 1999 – June 30, 2002 Experience Study. The revised actuarial assumptions and methods used for valuing the Fund are summarized in Appendix B. There were no other changes in actuarial assumptions and methods since the previous valuation.

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.

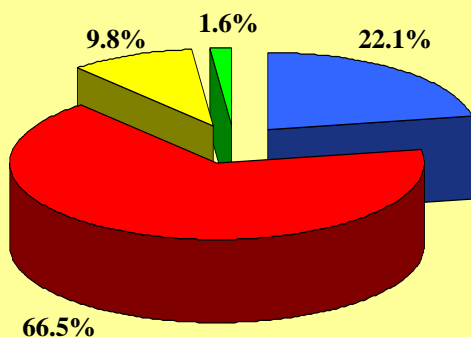
The valuation generates a balance sheet which summarizes in some detail the total present and prospective assets and liabilities of the Fund. A summary comparison of the balance sheets as of July 1, 2002 and July 1, 2003 is set forth in the following table. The allocation of assets among the various investment alternatives is shown in graphic form on page 5.

TABLE I
COMPARATIVE BALANCE SHEET

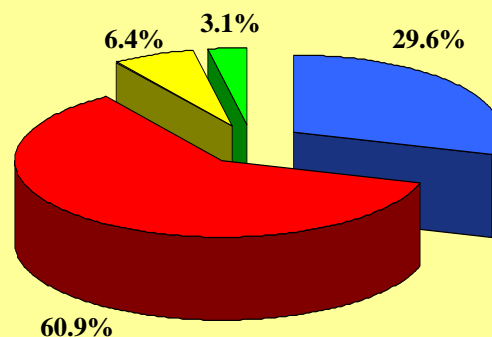
<u>ASSETS</u>	2003	2002
Actuarial Value of assets of Fund	\$ 1,865,079,083	\$ 1,853,684,177
Unfunded accrued liability/(surplus)	(49,353,827)	(114,256,438)
Total Assets	\$ 1,815,725,256	\$ 1,739,427,739
<u>LIABILITIES</u>		
Present value of benefits to present beneficiaries payable from the Retirement Reserve Fund	\$ 1,014,285,416	\$ 917,195,351
Present value of benefits to present active members	801,439,840	822,232,388
Total Liabilities	\$ 1,815,725,256	\$ 1,739,427,739

THE STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY

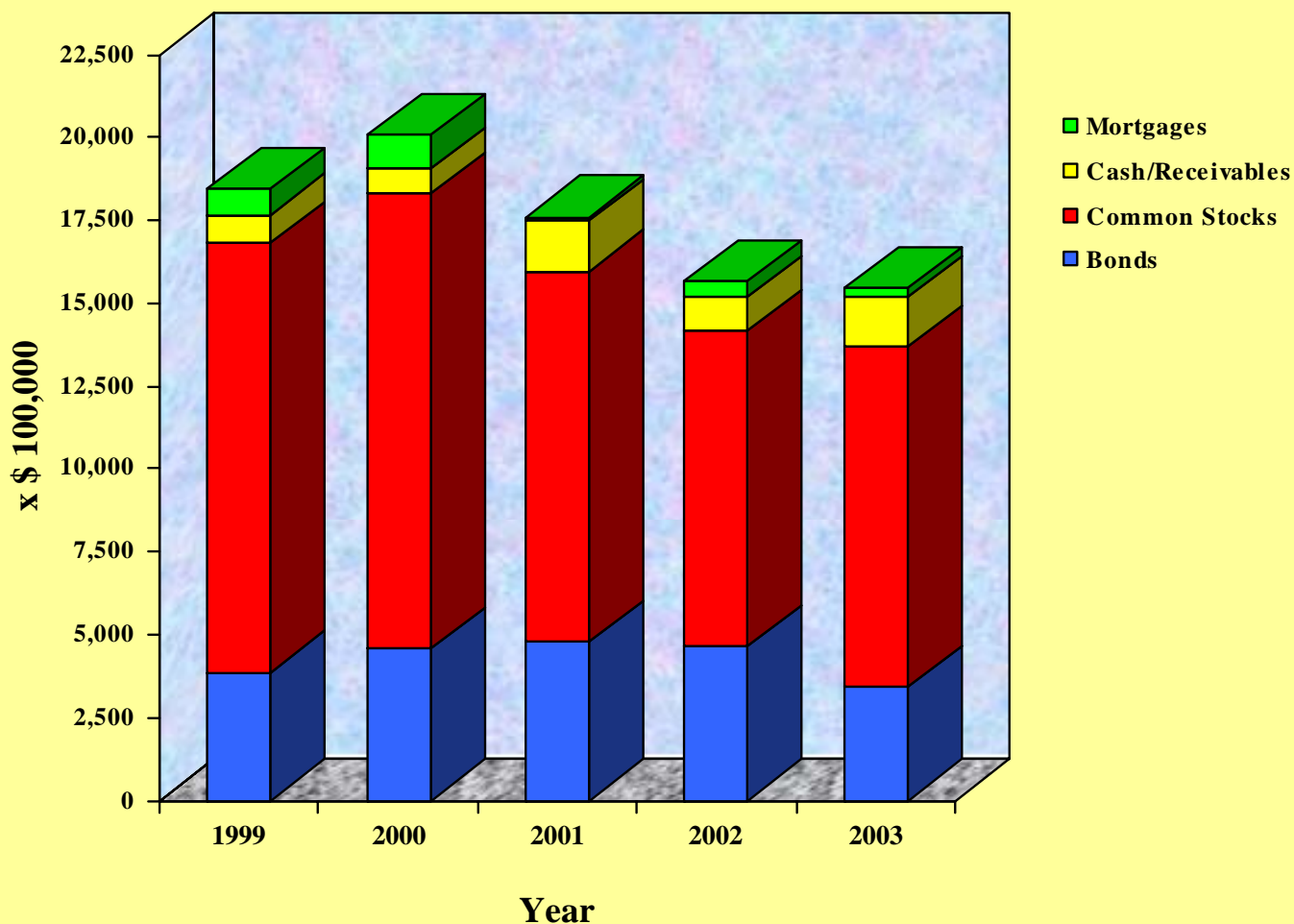
ASSET ALLOCATION MARKET VALUE



2003



2002



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, 2002 and July 1, 2003 by various categories.

ACTIVE MEMBERSHIP

Group	2003		2002	
	Number	Annual Compensation	Number	Annual Compensation
Men	2,598	\$ 209,830,143	2,696	\$ 207,875,656
Women	95	\$ 7,618,721	97	\$ 7,285,470

RETIRED MEMBERS AND BENEFICIARIES

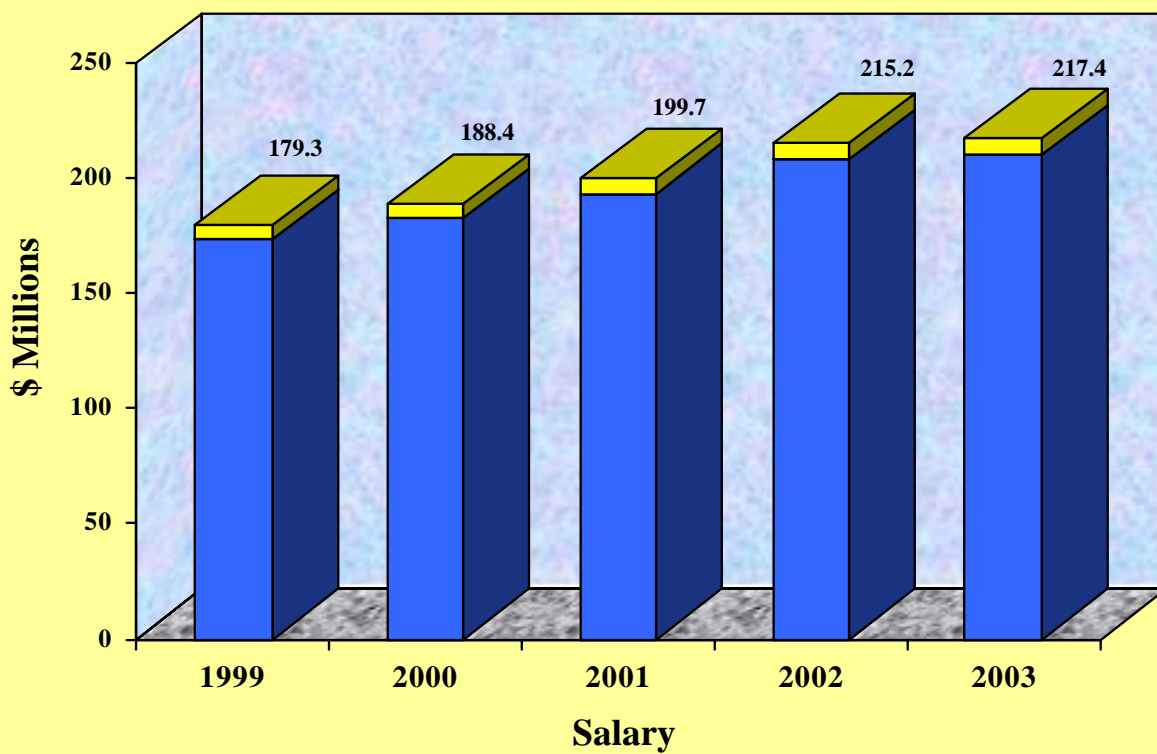
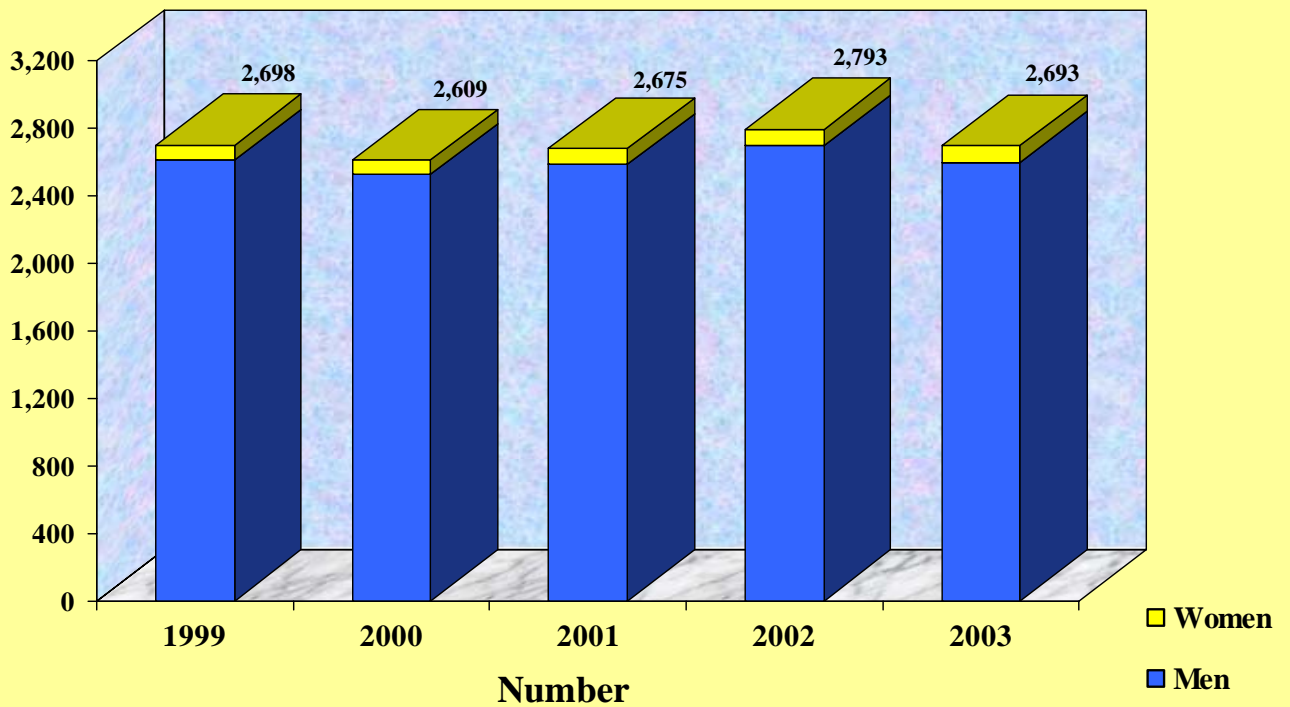
Group	2003		2002	
	Number	Annual Allowances	Number	Annual Allowances
Service Retirements	1,578	\$ 69,416,901	1,486	\$ 62,798,563
Ordinary Disability Retirements	94	\$ 2,316,842	83	\$ 1,900,616
Accidental Disability Retirements	83	\$ 3,117,705	76	\$ 2,680,069
Beneficiaries of Deceased Pensioners	243	\$ 5,921,134	241	\$ 5,740,750
Beneficiaries of Deceased Active Employees	82	\$ 2,322,912	83	\$ 2,194,292

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.

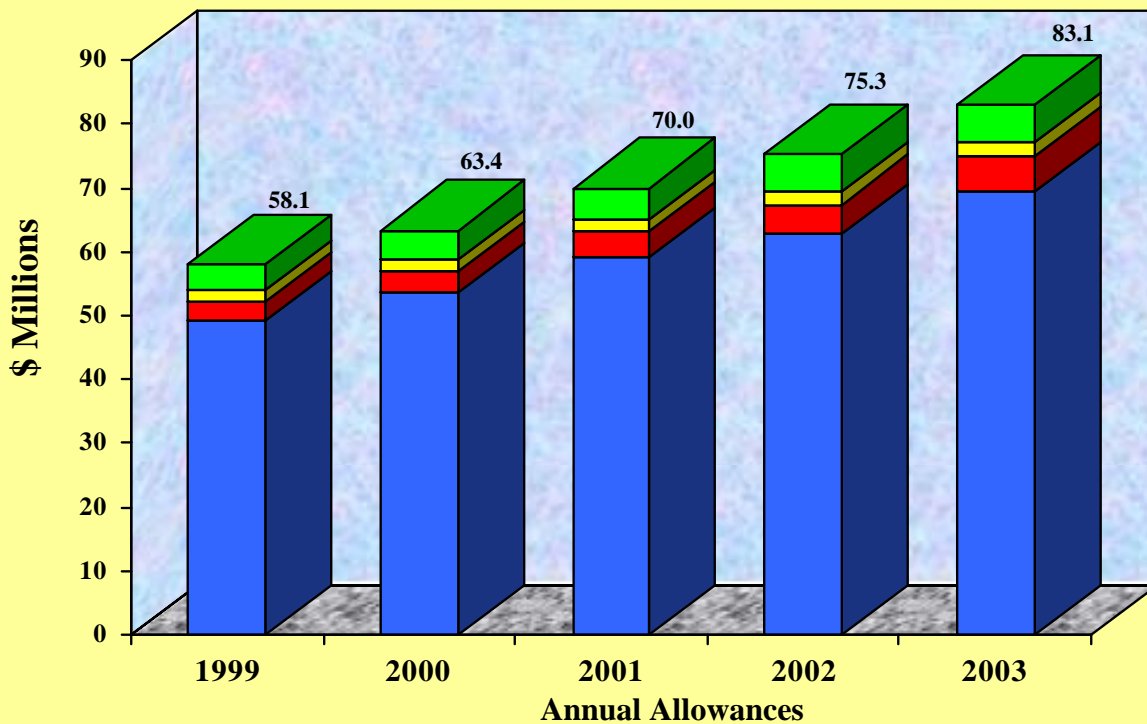
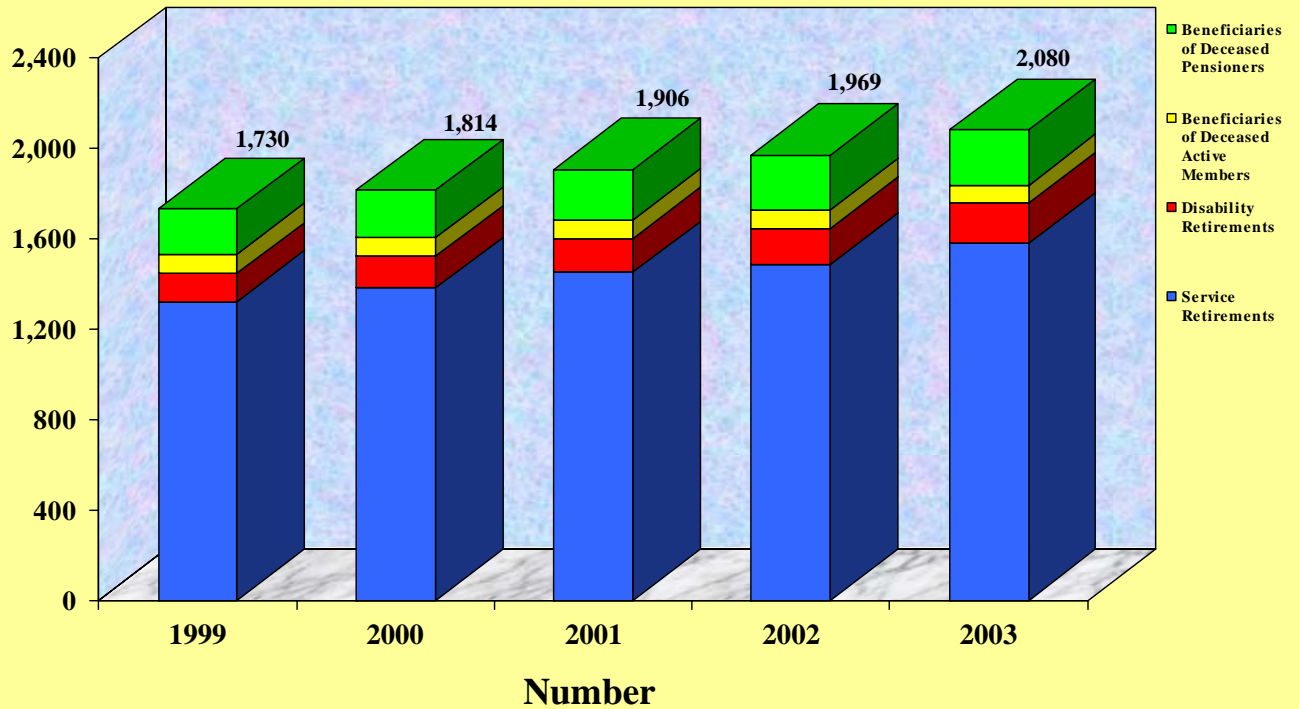
THE STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY

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, 2003

1.	Assets		
	a.	Cash	\$ (19,248)
	b.	Investment Holdings	1,512,709,890
	c.	Accrued Interest on Investments	4,070,005
	d.	Employers' Contributions Receivable	0
	e.	Members' Contributions Receivable	924,340
	f.	Loans Receivable	31,484,280
	g.	Interest Receivable on Loans	205,152
	h.	Dividends Receivable	<u>3,310,514</u>
	i.	Total	\$ 1,552,684,933
2.	Liabilities		
	a.	Pension Payroll Payable	\$ 6,804,058
	b.	Accounts Payable and Accrued Expense	<u>142,010</u>
	c.	Total	\$ 6,946,068
3.	Market Value of Assets as of June 30, 2003: 1(i) - 2(c)		\$ 1,545,738,865

B. Reconciliation of Market Value of Assets from June 30, 2002 to June 30, 2003

1.	Market Value of Assets as of June 30, 2002		\$ 1,565,301,249
2.	Increases		
	a.	Members' Contributions	\$ 14,111,908
	b.	State Appropriations	0
	c.	Transfer from Other Systems	279,985
	d.	Other	70
	e.	Investment Income	<u>48,430,338</u>
	f.	Total	\$ 62,822,301
3.	Decreases		
	a.	Withdrawal of Members	\$ 27,368
	b.	NCGI Premium Expense	1,664,797
	c.	Administrative Expenses	283,306
	d.	Benefit Payments	67,100,468
	e.	COLA Benefit Payments	13,307,054
	f.	Transfer Withdrawal Employer Benefit	1,692
	g.	Adjustment – Members' Account Expense – Loans	<u>0</u>
	h.	Total	\$ 82,384,685
4.	Market Value of Assets as of June 30, 2003 = 1. + 2.(f) - 3.(h)		\$ 1,545,738,865

C. Development of Actuarial Value of Assets as of July 1, 2003

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, 2002	\$	1,853,684,177
2.	Net Cash Flow (excluding investment income)		(67,992,722)
3.	Expected Investment Income at 8.75%		
	a. Interest on assets as of July 1, 2002	\$	162,197,365
	b. Interest on Net Cash Flow		(2,974,682)
	c. Total	\$	159,222,683
4.	Expected Actuarial Value of Assets as of July 1, 2003:		
	1. + 2. + 3(c)	\$	1,944,914,138
5.	20% of Difference from Market Value of Assets		(79,835,055)
6.	Receivable Employer Contributions		0
7.	Actuarial Value of Assets as of July 1, 2003 = 4. + 5. + 6.	\$	1,865,079,083

D. Present Value of Projected Benefits as of July 1, 2003

1.	Retirees and Beneficiaries		
	a. Service Retirements	\$	850,229,476
	b. Disability Retirements		75,283,119
	c. Beneficiaries		76,165,486
	d. Death Benefits		12,607,335
	e. Total	\$	1,014,285,416
2.	Terminated Vested Members	\$	0
3.	Contributing Active Participants		
	a. Service Retirement	\$	733,591,390
	b. Ordinary Disability		19,104,220
	c. Accidental Disability		16,646,821
	d. Ordinary Death		9,304,797
	e. Accidental Death		8,622,666
	f. Vested Termination		1,242,450
	g. Withdrawal Benefits		126,573
	h. Lump Sum Death Benefits*		7,398,213
	i. Total	\$	796,037,130
4.	Non-Contributing Active Participants	\$	5,402,710
5.	Total Present Value of Benefits = 1.(e) + 2. + 3.(i) + 4.	\$	1,815,725,256

*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 (68% for the current valuation). The development of excess valuation assets is summarized as follows:

1.	Valuation Assets	\$	1,865,079,083
2.	Actuarial Accrued Liability		1,815,725,256
3.	Excess Valuation Assets = 1. - 2.	\$	<u>49,353,827</u>

F. Development of Normal Cost as of July 1, 2003

1.	Service Retirement	\$	41,987,157
2.	Ordinary Disability		1,655,929
3.	Accidental Disability		1,316,777
4.	Ordinary Death		771,355
5.	Accidental Death		859,004
6.	Vested Termination		120,011
7.	Withdrawal Benefits		35,751
8.	Lump Sum Death Benefits*		451,450
9.	Term Cost for Lump Sum Death Benefit During Active Service		<u>985,779</u>
10.	Total	\$	<u>48,183,213</u>

*Excludes lump sum death benefits payable during active service.

G. Development of State Contributions

1.	Present Value of Benefits	\$	1,815,725,256
2.	Actuarial Value of Assets		<u>1,865,079,083</u>
3.	Unfunded Actuarial Accrued Liability/(Surplus) = 1. - 2.	\$	(49,353,827)
4.	Amortization Period		30
5.	Amortization of Unfunded Actuarial Accrued Liability payable July 1, 2004	\$	0
6. (a)	Gross Normal Cost	\$	48,183,213
	(b) Expected Member Contributions		<u>13,758,662</u>
	(c) State Normal Cost = (a) - (b)	\$	34,424,551
	(d) State Normal Cost payable July 1, 2004 = (c) * 1.0875	\$	37,436,699
	(e) Excess Valuation Assets*		<u>36,497,155</u>
	(f) State Net Normal Cost payable July 1, 2004 = (d) - (e)	\$	939,544
7.	Total Required Contribution as of July 1, 2004 = 5. + 6.(f)	\$	939,544**

*Excess Valuation Assets are allocated as follows:

1.	Excess Valuation Assets (from Section E)	\$	49,353,827
2.	Excess Valuation Assets as of July 1, 2004 = 1. * 1.0875	\$	53,672,287
3.	Reduction Due to Normal Contribution for the Valuation Period ending June 30, 2003 payable July 1, 2004 = .68 * 2. not greater than 6(d) above		<u>36,497,155</u>
4.	Net Excess Valuation Assets After Reductions as of July 1, 2004 = 2. - 3.	\$	17,175,132

**Amount could be subject to reduction in accordance with the provisions of the Appropriation Act for fiscal year 2005.

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, 2003.

The loss is primarily due to an actual return on Fund assets less than that expected. For valuation purposes, an 8.75% per annum rate of return was assumed. The actual return on the Fund's actuarial value of assets was approximately 4.36% for the period from July 1, 2002 through June 30, 2003. There was also a net gain 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, 2003

1.	Unfunded Accrued Liability/(Surplus) as of July 1, 2002	\$ (114,256,438)
2.	Gross Normal Cost as of July 1, 2002	50,716,839
3.	Interest on (1) and (2)	(5,559,715)
4.	Actual Members' Contributions Received	14,111,908
5.	Employers' Contributions (including receivable and transfers from other Funds)	279,985
6.	Interest on Contributions	<u>629,645</u>
7.	Expected Unfunded Accrued Liability/(Surplus) as of July 1, 2003 = (1) + (2) + (3) - (4) - (5) - (6)	\$ (84,120,852)
8.	Decrease in Unfunded Liability due assumption changes	(27,131,699)
9.	Actual Unfunded Accrued Liability as of July 1, 2002	<u>(49,353,827)</u>
10.	Actuarial (Gain)/Loss = (9) - (7) - (8)	\$ 61,898,724

B. Components of Actuarial Experience

1.	Investment (Gain)/Loss	\$	79,835,055
2.	Other (Gain)/Loss, including mortality, changes in employee data		<u>(17,936,331)</u>
3.	Total Actuarial (Gain)/Loss	\$	61,898,724

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, 2005:**

1.	Actuarial Value of Plan Assets as of June 30, 2003	
	(a) Valuation Assets as of June 30, 2003	\$ 1,865,079,083
	(b) Adjustment for Receivable Contributions included in (a)	0
	(c) Valuation Assets as of June 30, 2003 for GASB Disclosure = (a) - (b)	\$ 1,865,079,083

2.	Actuarial Accrued Liability as of June 30, 2003	\$	1,815,725,256
3.	Unfunded Actuarial Accrued Liability/(Surplus) as of June 30, 2003 = 2. - 1.	\$	(49,353,827)
4.	Amortization of Unfunded Actuarial Accrued Liability/(Surplus) over 30 years	\$	(2,341,248)
5.	(a) Gross Normal Cost as of June 30, 2003	\$	48,183,213
	(b) Expected Members' Contributions		<u>13,758,662</u>
	(c) Net Normal Cost as of June 30, 2003 = (a) - (b)	\$	34,424,551
6.	Annual Required Contribution as of June 30, 2005		
	(a) Annual Required Contribution as of June 30, 2003 = 4. + 5.(c)	\$	32,083,303
	(b) Interest Adjustment to June 30, 2005		<u>5,860,216</u>
	(c) Annual Required Contribution as of June 30, 2005 = (a) + (b)	\$	37,943,519

(B) Development of the Net Pension Obligation (NPO) as of June 30, 2005:

1.	Annual Required Contribution as of June 30, 2005	\$	37,943,519
2.	Interest on Net Pension Obligation		13,641,097
3.	Adjustment to Annual Required Contribution		<u>(8,042,611)</u>
4.	Annual Pension Cost = 1. + 2. + 3.	\$	43,542,005
5.	Expected Employer Contributions for Fiscal Year 2005	\$	939,544
6.	Net Pension Obligation at June 30, 2004	\$	155,898,255
7.	Increase in Net Pension Obligation = 4. - 5.	\$	42,602,461
8.	Net Pension Obligation at June 30, 2005 = 6. + 7.	\$	198,500,716

(C) Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	Unfunded Actuarial Accrued Liability as a Percentage of Covered Payroll $\frac{(b-a)}{c}$
6/30/98	\$ 1,458,600,992	\$ 1,369,277,968	\$ (89,323,024)	106.5%	\$ 167,145,161	(53.4)%
6/30/99	\$ 1,600,165,104	\$ 1,469,144,146	\$ (131,020,958)	108.9%	\$ 178,203,420	(73.5)%
6/30/00	\$ 1,752,423,441	\$ 1,512,909,805	\$ (239,513,636)	115.8%	\$ 188,466,237	(127.1)%
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)%

(D) Schedule of Employer Contributions

Fiscal Year	Annual Required Contribution	Employer Contribution	Percentage Contributed
2000	\$ 33,598,843	\$ 0	0.0%
2001	\$ 35,341,259	\$ 0	0.0%
2002	\$ 24,990,652	\$ 0	0.0%
2003	\$ 29,449,164	\$ 0	0.0%
2004	\$ 37,600,821	\$ 0	0.0%
2005	\$ 37,943,519	\$ 939,544*	2.5%

*The required contribution could be subject to reduction in accordance with the provisions of the Appropriation Act for fiscal year 2005.

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

Valuation Date	June 30, 2003
Actuarial Cost Method	Projected Unit Credit
Amortization Method	Level Dollar, closed
Remaining Amortization Period	30 years
Asset Valuation Method	Five Year Average of Market Value
Actuarial Assumptions:	
Investment Rate of Return	8.75%
Projected Salary Increase	5.95%
Cost of Living Adjustments	60% of the maximum of the CPI increase and 4.0%

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.

<u>FASB 87 ABO Funded Ratios</u>		
Actuarial present value of accumulated benefits:		
	<u>June 30, 2003</u>	<u>June 30, 2002</u>
Vested benefits		
Participants currently receiving payments	\$ 1,014,285,416	\$ 917,195,351
Other participants	501,781,906	424,950,307
	\$ 1,516,067,322	\$ 1,342,145,658
Non-vested benefits	286,619,450	397,529,673
Total	\$ 1,802,686,772	\$ 1,739,675,331
Assets at market value	\$ 1,545,738,865	\$ 1,565,301,249
Ratio of Assets to Total Present Value	85.7%	90.0%

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 8.75% for both 2002 and 2003.

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, plus 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 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. 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 or remarriage. If there is no surviving spouse, or upon death or remarriage, 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 $\frac{2}{3}$ of final compensation. Upon death after disability retirement, lump sum benefit of $3\frac{1}{2}$ times final compensation if death occurs before 55 and $\frac{1}{2}$ 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: 8.75% per annum, compounded annually.

COLA: 4.0% per annum, compounded annually. The COLA is 60% of the cumulative increase.

SALARY INCREASES: Salaries are assumed to increase by 5.95% per year.

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

<u>Age</u>	<u>Lives per Thousand</u>	
	<u>Less Than 5 Years of Service</u>	<u>Five to Nineteen Years of Service</u>
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>Age</u>	<u>Annual Rates of *</u>			
	<u>Ordinary Death</u>	<u>Accidental Death</u>	<u>Ordinary Disability</u>	<u>Accidental Disability</u>
25	0.0	0.4	0.6	0.3
30	0.7	0.5	0.9	0.4
35	0.5	0.5	1.2	0.5
40	0.8	0.5	1.8	0.7
45	1.0	0.6	3.1	1.3
50	2.5	0.9	5.4	2.2

*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 or number of children assumptions are individually explicit but they 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:

<u>Age</u>	<u>Lives Per Thousand</u> <u>Retired Members</u>		<u>Lives Per Thousand</u> <u>Beneficiaries of</u> <u>Deceased Members</u>		<u>Disabled Males</u> <u>and Females</u>
	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>	
55	6.1	2.5	6.1	2.5	9.6
60	9.2	4.2	9.2	4.2	13.6
65	15.6	7.1	15.6	7.1	19.8
70	27.5	12.4	27.5	12.4	29.5
75	44.6	24.0	44.6	28.8	44.5
80	74.1	42.9	74.1	51.5	67.3
85	114.8	69.9	114.8	83.9	101.1
90	166.3	111.8	166.3	134.1	149.4

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
with 25 years:	
(a) through age 42	25.0
(b) ages 43-54	20.0
greater than 25:	
(a) through age 47	5.0
(b) ages 48-52	15.0
(c) ages 53-54	22.0

APPENDIX C

TABULATIONS USED AS A BASIS FOR THE 2003 VALUATION

The following tables give a reconciliation of data from July 1, 2002 to June 30, 2003. Tables are also given showing active member number and salaries by age and length of service as of July 1, 2003 and showing the number and retirement allowances of beneficiaries classified by age as of July 1, 2003.

TABLE 1

RECONCILIATION OF DATA FROM JULY 1, 2002 TO JUNE 30, 2003

	Actives		Deferred Vested	Retirees				Beneficiaries	Dependents	Domestic Relations Beneficiaries		Total
	Contrib.	Noncontrib.		Service	Special	Deferred	Disabled			Retirees	Disabilities	
Members as of July 1, 2002	2,765	28	0	494	935	1	142	317	7	56	17	4,762
Changed to Contributing	1	(1)										
Changed to Noncontributing	(8)	8										
Terminated Vested												
Terminated Non-Vested	(2)	(2)										(4)
Service Retirement	(6)			6								
Special Retirement	(100)				100							
New Disabled	(18)	(1)					19					
New Death	(3)			(14)	(7)		(1)	(14)				(39)
Payments Began										10		10
Payments Ceased									(1)	(3)		(4)
New Actives	31	1										32
Rehires												
New Beneficiaries								16				16
Data Corrections												
Members as of June 30, 2003	2,660	33	0	486	1,028	1	160	319	6	63	17	4,773

TABLE 2**DISTRIBUTION OF ACTIVE MEMBERS BY AGE AND SERVICE**

AGE	SERVICE	1	5	10	15	20	25	30	35	TOTAL
20	Number Salary	1 57,212								1 57,212
25	Number Salary	155 8,935,771	13 796,678							168 9,732,449
30	Number Salary	138 8,000,079	211 14,553,751	42 3,204,661						391 25,758,491
35	Number Salary	48 2,784,509	123 8,747,120	189 14,826,497	215 17,868,336	3 255,336				578 44,481,798
40	Number Salary	2 90,437	17 1,275,665	68 5,446,740	517 43,462,899	175 15,564,089				779 65,839,830
45	Number Salary			6 451,007	114 9,647,517	235 21,285,227	126 12,050,940			481 43,434,691
50	Number Salary			2 87,802	9 661,060	62 5,461,482	145 14,044,855	74 7,614,856	3 274,338	295 28,144,393
TOTAL	Number Salary	344 19,868,008	364 25,373,214	307 24,016,707	855 71,639,812	475 42,566,134	271 26,095,795	74 7,614,856	3 274,338	2,693 217,448,864

TABLE 3

**THE NUMBER AND ANNUAL COMPENSATION OF
ACTIVE MEMBERS DISTRIBUTED BY AGE
AS OF JULY 1, 2003**

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
23	2	\$ 114,423		
24	18	1,027,561	1	\$ 57,212
25	42	2,400,502	1	59,404
26	39	2,246,981	1	59,404
27	38	2,220,068	1	59,404
28	58	3,439,332	1	68,252
29	53	3,234,993	3	182,675
30	66	4,132,939	2	129,874
31	80	5,329,581	2	137,338
32	90	6,224,388	6	418,670
33	102	7,217,310	8	541,941
34	86	6,230,460	2	129,874
35	89	6,616,322	2	127,682
36	104	8,031,349	5	367,279
37	141	11,377,806	4	309,833
38	159	13,196,636	7	552,641
39	188	15,664,387	5	409,586
40	173	14,548,460	8	678,912
41	146	12,492,598	6	486,295
42	129	11,109,852	5	448,267
43	81	6,953,925	4	365,243
44	114	10,086,898	5	484,339
45	94	8,486,475	1	95,109
46	98	8,920,834	6	588,269
47	90	8,321,523	2	204,729
48	61	5,637,998	3	266,822
49	65	6,106,942	3	303,752
50	39	3,725,990		
51	45	4,388,909		
52	45	4,171,128		
53	22	2,161,137		
54	28	2,809,987	1	85,922
55	12	1,134,282		
56	1	68,174		
TOTAL	2,598	\$ 209,830,143	95	\$ 7,618,721

Of the 2,693 active members included in the June 30, 2003 valuation data, 1,786 are vested and 907 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, 2003**

YEARS OF SERVICE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
0	1	\$ 53,297		
1	47	2,588,570	2	\$ 114,423
2	277	16,119,394	12	701,882
3	14	816,305	1	59,404
4	12	706,397		
5	126	8,515,752	5	341,258
6	106	7,361,602	6	407,345
7	15	984,025		
8	158	12,183,702	11	857,280
9	104	8,070,894	6	457,036
10	89	7,313,920	1	52,279
11	6	437,751		
12	10	672,650		
13	10	741,526	1	68,252
14	73	6,083,025	2	166,987
15	214	17,422,643	7	581,429
16	281	23,603,155	4	328,520
17	250	21,473,415	7	597,350
18	117	10,190,432	3	262,096
19	57	4,991,760	2	159,105
20	80	7,024,610		
21	125	11,347,149	3	294,957
22	81	7,423,630	4	392,806
23	6	534,607	15	1,495,872
24	143	13,642,417		
25	73	7,120,094	1	99,415
26	43	4,276,444	1	95,109
27	2	163,856		
28	34	3,426,419		
29	12	1,136,762		
30	26	2,766,662		
31				
32	3	343,947		
33	3	293,339		
37			1	85,922
TOTAL	2,598	\$ 209,830,143	95	\$ 7,618,721

Of the 2,693 active members included in the June 30, 2003 valuation data, 1,786 are vested and 907 have not yet completed the vesting service requirement.

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED
BY AGE AS OF JULY 1, 2003**

SERVICE RETIREMENTS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
44			1	\$ 11,402
45	1	\$ 34,206	2	55,903
46	3	164,185		
47	3	166,851		
48	5	311,556	1	19,138
49	24	1,444,712	2	36,447
50	14	829,126	1	15,402
51	17	1,069,801		
52	28	1,574,201	3	26,370
53	30	1,848,582	3	42,070
54	44	2,512,090	4	68,476
55	58	3,129,202	1	18,000
56	93	5,318,992	10	183,688
57	99	5,239,069	9	157,030
58	76	3,913,584	7	96,561
59	73	3,589,746	1	16,049
60	95	4,644,895	5	51,438
61	90	4,179,696		
62	93	4,183,266	3	47,750
63	62	2,815,707		
64	47	2,135,609	2	43,611
65	53	2,229,129	3	57,143
66	32	1,383,281		
67	31	1,189,777	1	2,600
68	26	1,077,349	1	2,400
69	20	830,997	2	26,613
70	18	668,620	1	4,872
71	33	1,277,856		
72	41	1,546,556		
73	36	1,215,563		
74	32	1,061,711		
75	46	1,683,556		
76	34	986,646		
77	31	832,093	1	12,833
78	28	785,226		
79	24	640,367		
80	15	400,249		
81	11	267,706		
82	14	385,111		
83	5	142,584		
84	8	207,832		
85	5	116,791		
86	5	149,100		

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED
BY AGE AS OF JULY 1, 2003**

**SERVICE RETIREMENTS
(continued)**

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
87	1	\$ 22,150		
88	2	42,779		
89	1	24,704		
90	1	21,378		
91	3	58,812		
93	2	43,488		
97	1	24,621		
TOTAL	1,514	\$ 68,421,106	64	\$ 995,795

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2003**

BENEFICIARIES OF DECEASED PENSIONERS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
11			1	\$ 13,797
19				
45			1	35,797
48			1	14,097
51			2	66,397
53			1	32,233
55			1	41,470
56	1	\$ 8,490	4	144,840
57			1	30,379
58			3	91,750
59			2	84,809
60			4	118,644
61	1	36,098	6	248,364
62			3	83,815
63			6	174,396
64			3	104,935
65			8	260,384
66			4	106,114
67			3	87,828
68			3	71,677
69			4	106,465
70			9	260,296
71			15	373,972
72			9	207,691
73			11	265,948
74			11	276,169
75			12	265,097
76			6	148,365
77			9	207,265
78			6	132,255
79			8	209,454
80			8	182,774
81			7	178,612
82			8	164,144
83			7	158,623
84			8	148,400
85			8	156,134
86			3	57,933
87			6	103,177
88	1	16,469	7	116,529
89			6	96,143
90			4	59,910
91			2	26,734
92			1	16,906

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2003**

**BENEFICIARIES OF DECEASED PENSIONERS
(continued)**

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
93			3	\$ 51,406
94			1	18,898
96			2	34,338.36
97			2	24,711.36
TOTAL	3	\$ 61,057	240	\$ 5,860,077

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2003**

BENEFICIARIES OF DECEASED ACTIVE EMPLOYEES

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
35			1	\$ 37,892
37			1	59,785
38			1	59,479
39			1	33,174
40			1	56,924
41			1	57,630
44			1	63,918
45			2	100,009
48			1	35,937
49			1	40,737
51			1	41,763
52			2	73,816
53			1	49,357
54			3	88,406
56			1	32,245
57			1	44,713
58			3	99,535
59			3	101,134
60			3	128,066
61			3	92,152
62			2	70,747
63			2	54,432
64			1	18,905
65			1	19,424
66			1	35,601
68			2	47,950
69			1	31,707
70			1	27,927
71			2	41,096
73			3	83,720
74			4	88,929
75			1	33,657
76			2	36,881
77			1	27,434
78			1	16,294
79			3	64,540
81			1	28,346
82			3	40,887
83			1	17,127
84			1	14,759
85			1	14,975
86			1	13,303
87			2	25,804

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2003**

**BENEFICIARIES OF DECEASED ACTIVE EMPLOYEES
(continued)**

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
88			2	\$ 37,300
89			1	11,292
91			1	17,232
92			1	17,637
95			1	15,350
96			1	11,161
102			1	11,518
TOTAL	0	\$ 0	78	\$ 2,272,608

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2003**

CHILDREN OF DECEASED ACTIVE EMPLOYEES

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
11			1	\$ 11,592
13	1	\$ 15,528		
15			1	11,592
18			1	11,592
TOTAL	1	\$ 15,528	3	\$ 34,776

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED
BY AGE AS OF JULY 1, 2003**

ORDINARY DISABILITY RETIREMENTS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
34	1	\$ 27,127		
35	2	43,949		
36	1	31,099		
37	4	129,184		
38	4	99,472		
39	5	142,893	1	\$ 10,868
40	3	101,679	2	35,188
41	1	27,816		
42	2	59,104	2	61,798
43			1	16,025
44	2	67,706	2	57,548
46	2	69,854		
47	3	75,716	1	5,418
50	2	80,138		
51	3	127,758		
52	2	20,985	2	148
53	1	22,989	1	19,214
54	1	44,780		
55	1	21,367		
56	6	182,950	1	28,630
58	3	74,155		
59	2	44,881	2	20,999
60	2	43,368		
61	4	96,242	1	7,280
62	2	33,876		
63	5	104,814		
64	2	65,562		
65	4	81,421		
66	2	31,215		
75	2	33,471		
76	1	18,638		
77	1	15,239		
78	2	33,916		
TOTAL	78	\$ 2,053,366	16	\$ 263,116

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED
BY AGE AS OF JULY 1, 2003**

ACCIDENTAL DISABILITY RETIREMENTS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
34	1	\$ 45,036		
35	2	94,082		
36	4	194,484		
37	1	55,020		
38	2	101,498		
39	3	119,299	1	\$ 4,784
40	2	100,319	1	55,020
41	4	198,681		
42	5	183,944	3	30,876
43	3	150,651	1	36,129
44	1	53,806		
45	2	84,983	1	27,295
46	1	59,078	2	99,170
47	4	168,114		
49	2	97,660		
51	3	131,525		
53	2	95,216	1	45,454
56	1	45,633	1	2,600
57	2	40,130	2	16,560
58	2	97,028	1	18,000
59	3	92,916		
60	1	24,013		
61	5	138,262		
62	1	22,752		
63	2	66,975		
64	3	90,505		
65	1	39,522		
66	1	44,664		
72	1	24,773		
77	1	35,929		
78	2	63,634		
90	1	21,686		
TOTAL	69	\$ 2,781,819	14	\$ 335,886