

**THE STATE POLICE RETIREMENT SYSTEM
OF NEW JERSEY
ANNUAL REPORT
OF THE ACTUARY
PREPARED AS OF JULY 1, 2004**

April 19, 2005

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, 2004 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, 2004 and gives the basis for determining the required annual contribution for the plan year beginning July 1, 2004.

The Treasurer upon recommendation from the Directors of the Division of Pensions and Benefits and the Division of Investments, has approved a change in the economic assumptions used for the valuation. The rate of investment return has been revised from 8.75% per annum to 8.25% per annum, the assumed future salary increases has been revised from 5.95% per annum to 5.45% per annum, and the Cost-of-Living Adjustment assumption for future benefit increases has been revised from 4.0% per annum to 3.0% per annum.

The valuation also reflects the potential effect of the Appropriation Act for fiscal year 2005 (20% of the contribution recommended for the July 1, 2003 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) 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, 2004

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, 2004, 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, 2004	July 1, 2003
Number of Members	2,684	2,693
Annual Compensation	\$ 223,552,154	\$ 217,448,864
Number of Pensioners and Beneficiaries	2,204	2,080
Total Annual Allowance	\$ 92,315,891	\$ 83,095,494
<u>Assets</u>		
Market Value of Assets	\$ 1,687,272,805*	\$ 1,545,738,865
Valuation Assets	\$ 1,897,713,119*	\$ 1,865,079,083
<u>Contribution Amounts</u>		
Normal Contribution	\$ 40,452,614	\$ 939,544 [#]
Accrued Liability Contribution	<u>3,135,874</u>	<u>0</u>
Total Contribution	\$ 43,588,488**	\$ 939,544^{##}

* Assets include a fiscal year 2005 receivable contribution that assumes that 20% of the contribution recommended for the July 1, 2003 valuation will be paid (potential effect of the Appropriation Act for fiscal year 2005).

** The required contribution could be subject to reduction in accordance with the provisions of the Appropriation Act for fiscal year 2006.

Required contributions have been reduced by a portion of excess assets.

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. However, the valuation does reflect the potential effect of the Appropriation Act for fiscal year 2005 (20% of the contribution recommended for the July 1, 2003 valuation has been included as a receivable contribution for this valuation).

The actuarial assumptions and methods used for valuing the Fund are summarized in Appendix B. The valuation reflects a change in the assumed rate of investment return from 8.75% to 8.25%, a decrease in the rate of annual salary increases from 5.95% to 5.45%, and a decrease in the Cost-of-Living Adjustment from 4.0% to 3.0% per year. The Treasurer, upon recommendation from the Directors of the Division of Pensions and Benefits and the Division of Investments, has approved these changes in order to better reflect the expected investment return for the System's current investment portfolio. 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.

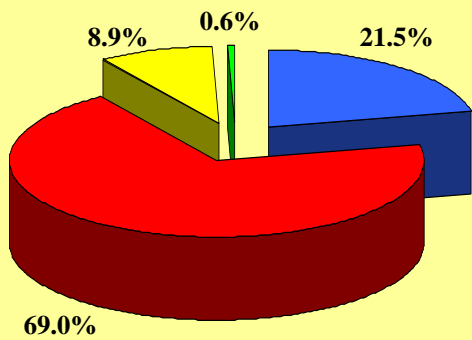
The valuation generates a balance sheet which summarizes in some detail the total present and prospective assets and liabilities of the Fund. A summary comparison of the balance sheets as of July 1, 2003 and July 1, 2004 is set forth in the following table. The allocation of assets among the various investment alternatives is shown in graphic form on page 5.

TABLE I
COMPARATIVE BALANCE SHEET

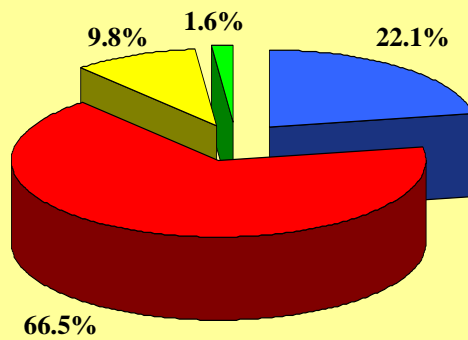
<u>ASSETS</u>	2004	2003
Actuarial Value of assets of Fund	\$ 1,897,713,119	\$ 1,865,079,083
Unfunded accrued liability/(surplus)	51,596,522	(49,353,827)
Total Assets	\$ 1,949,309,641	\$ 1,815,725,256
<u>LIABILITIES</u>		
Present value of benefits to present beneficiaries payable from the Retirement Reserve Fund	\$ 1,117,321,901	\$ 1,014,285,416
Present value of benefits to present active members	831,987,740	801,439,840
Total Liabilities	\$ 1,949,309,641	\$ 1,815,725,256

THE STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY

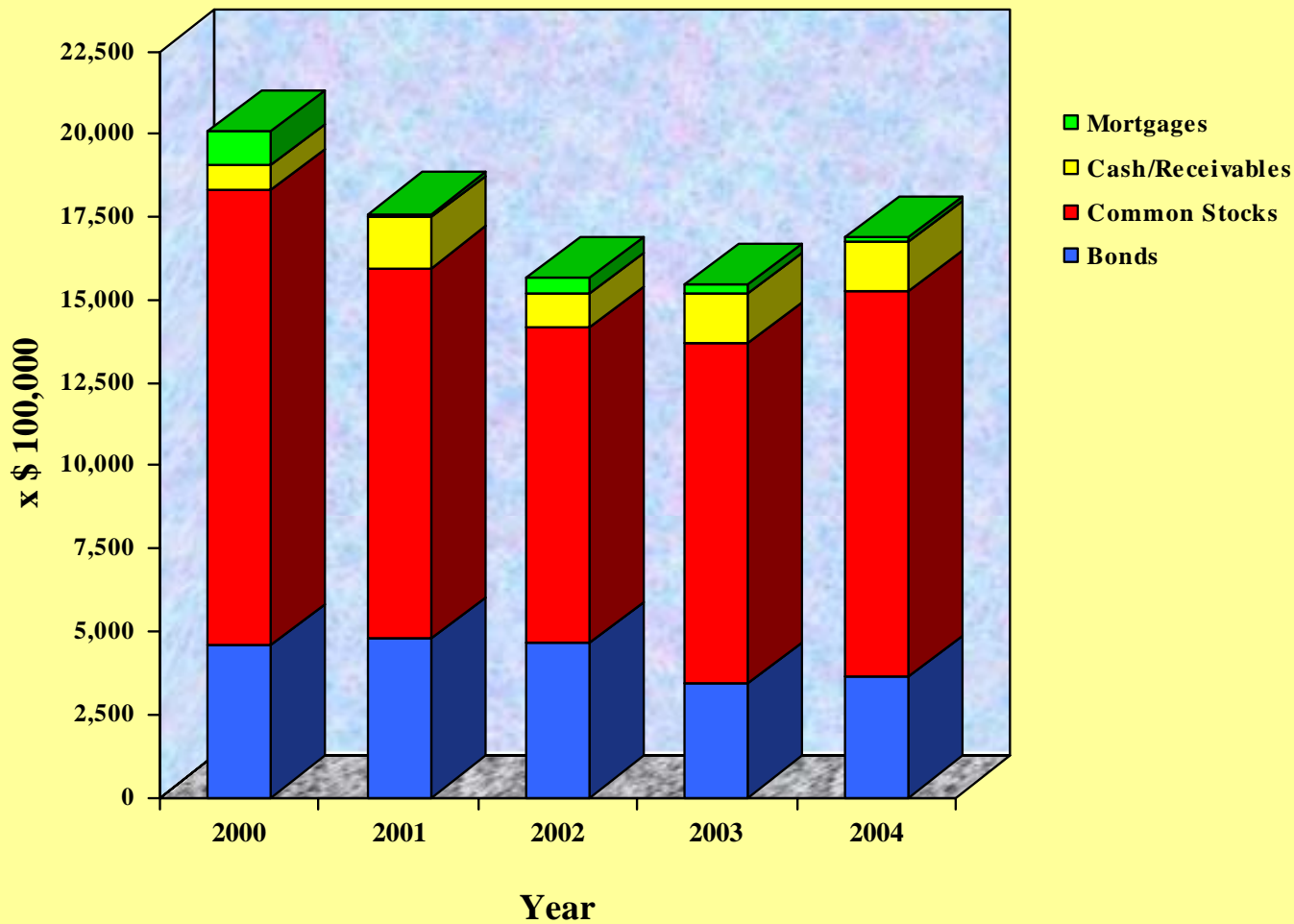
ASSET ALLOCATION MARKET VALUE



2004



2003



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, 2003 and July 1, 2004 by various categories.

ACTIVE MEMBERSHIP

Group	2004		2003	
	Number	Annual Compensation	Number	Annual Compensation
Men	2,582	\$ 215,248,769	2,598	\$ 209,830,143
Women	102	\$ 8,303,385	95	\$ 7,618,721

RETIRED MEMBERS AND BENEFICIARIES

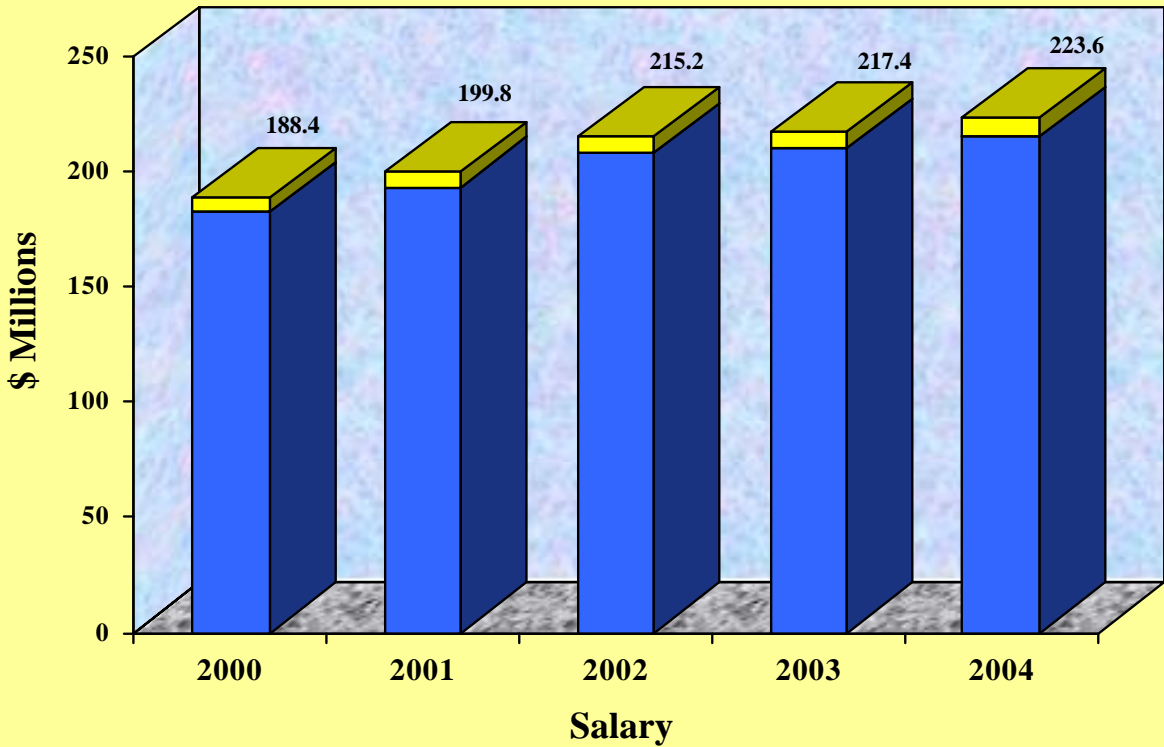
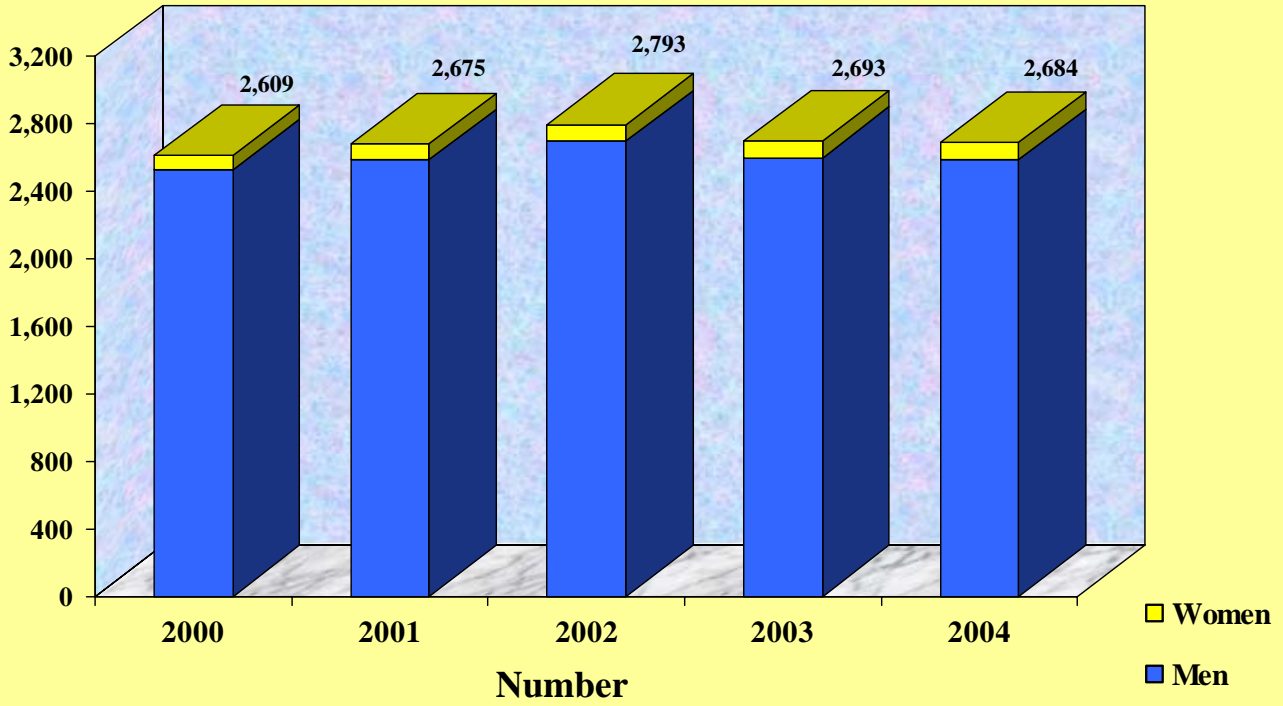
Group	2004		2003	
	Number	Annual Allowances	Number	Annual Allowances
Service Retirements	1,673	\$ 77,122,623	1,578	\$ 69,416,901
Ordinary Disability Retirements	111	\$ 2,817,136	94	\$ 2,316,842
Accidental Disability Retirements	89	\$ 3,668,850	83	\$ 3,117,705
Beneficiaries of Deceased Pensioners	251	\$ 6,355,229	243	\$ 5,921,134
Beneficiaries of Deceased Active Employees	80	\$ 2,352,053	82	\$ 2,322,912

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.

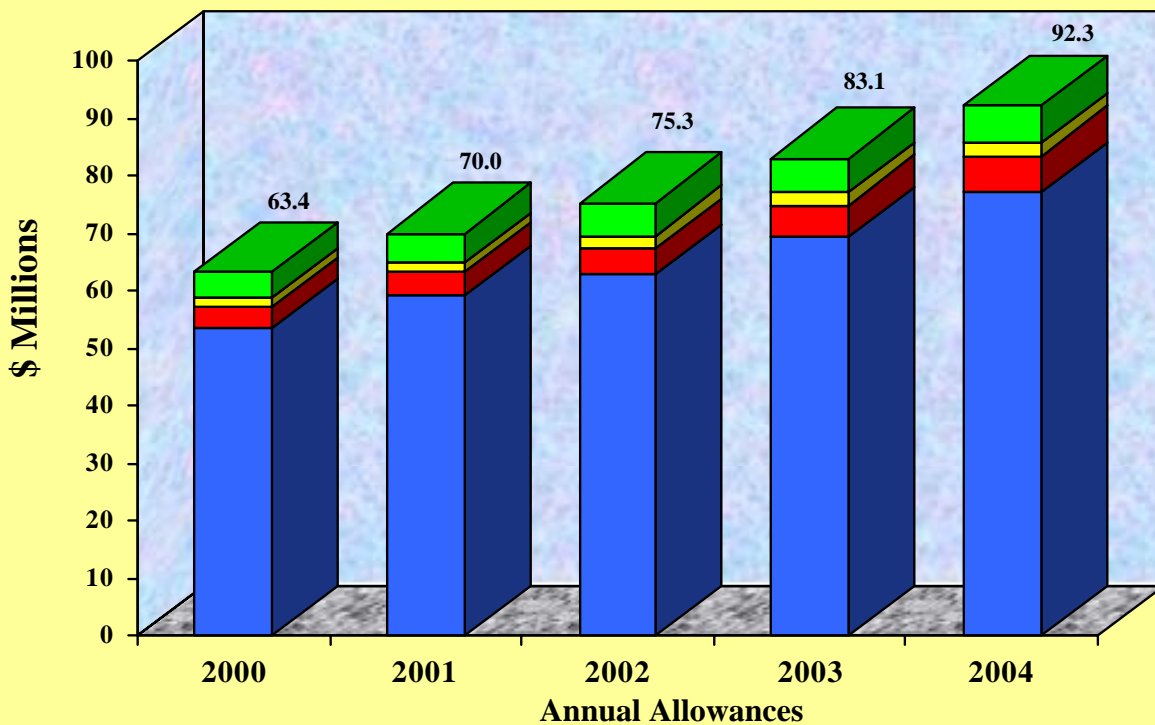
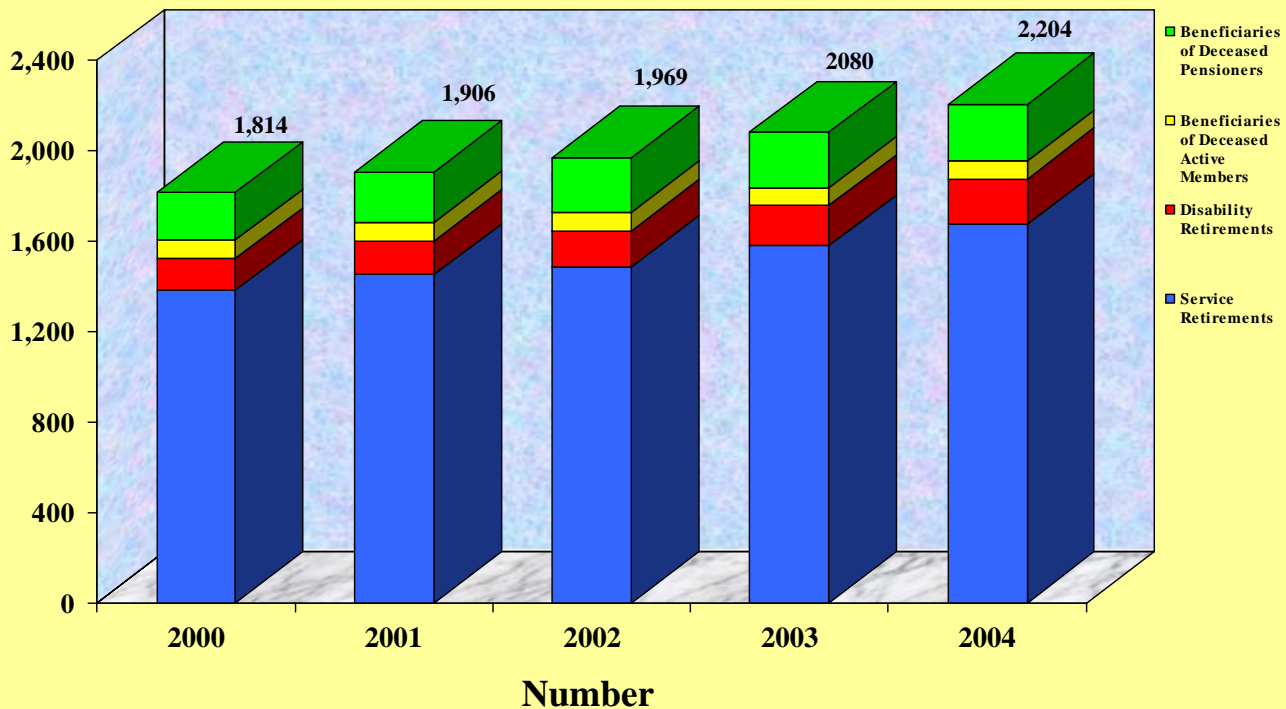
THE STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY

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, 2004

1.	Assets		
	a.	Cash	\$ (86,498)
	b.	Investment Holdings	1,656,406,308
	c.	Accrued Interest on Investments	3,595,041
	d.	Members' Contributions Receivable	902,488
	e.	Loans Receivable	30,064,243
	f.	Interest Receivable on Loans	115,656
	g.	Accounts Receivable	1,426
	h.	Dividends Receivable	<u>3,684,571</u>
	i.	Total	\$ 1,694,683,235
2.	Liabilities		
	a.	Pension Payroll Payable	\$ 7,544,671
	b.	Accounts Payable and Accrued Expense	<u>53,668</u>
	c.	Total	\$ 7,598,339
3.	Preliminary Market Value of Assets as of June 30, 2004: 1(i) - 2(c)		\$ 1,687,084,896
4.	State Appropriations Receivable		<u>\$ 187,909*</u>
5.	Market Value of Assets as of June 30, 2004: 3. + 4.		\$ 1,687,272,805

* The amount shown as the fiscal year 2005 receivable contribution assumes that 20% of the contribution recommended for the July 1, 2003 valuation will be paid (potential effect of the Appropriation Act for fiscal year 2005).

B. Reconciliation of Market Value of Assets from June 30, 2003 to June 30, 2004

1.	Market Value of Assets as of June 30, 2003		\$ 1,545,738,865
2.	Increases		
	a.	Members' Contributions	\$ 14,533,858
	b.	State Appropriations	0
	c.	Transfer from Other Systems	194,004
	d.	Other	67
	e.	Investment Income	<u>216,208,991</u>
	f.	Total	\$ 230,936,920
3.	Decreases		
	a.	Withdrawal of Members	\$ 53,968
	b.	NCGI Premium Expense	721,085
	c.	Administrative Expenses	264,858
	d.	Benefit Payments	74,612,608
	e.	COLA Benefit Payments	13,938,370
	f.	Transfer Withdrawal Employer Benefit	0
	g.	Adjustment – Members' Account Expense – Loans	<u>0</u>
	h.	Total	\$ 89,590,889
4.	Preliminary Market Value of Assets as of June 30, 2004 = 1. + 2.(f) - 3.(h)		\$ 1,687,084,896
5.	State Appropriations Receivable		<u>\$ 187,909*</u>
6.	Market Value of Assets as of June 30, 2004 = 4. + 5.		\$ 1,687,272,805

* The amount shown as the fiscal year 2005 receivable contribution assumes that 20% of the contribution recommended for the July 1, 2003 valuation will be paid (potential effect of the Appropriation Act for fiscal year 2005).

C. Development of Actuarial Value of Assets as of July 1, 2004

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, 2003	\$	1,865,079,083
2.	Net Cash Flow (excluding investment income)		(74,862,960)
3.	Expected Investment Income at 8.75%		
	a. Interest on assets as of July 1, 2003	\$	163,194,420
	b. Interest on Net Cash Flow		<u>(3,275,255)</u>
	c. Total	\$	159,919,165
4.	Expected Actuarial Value of Assets as of July 1, 2004:		
	1. + 2. + 3(c)	\$	1,950,135,288
5.	20% of Difference from Preliminary Market Value of Assets		(52,610,078)
6.	Receivable Employer Contributions		<u>187,909*</u>
7.	Actuarial Value of Assets as of July 1, 2004 = 4. + 5. + 6.	\$	1,897,713,119

* The amount shown as the fiscal year 2005 receivable contribution assumes that 20% of the contribution recommended for the July 1, 2003 valuation will be paid (potential effect of the Appropriation Act for fiscal year 2005).

D. Present Value of Projected Benefits as of July 1, 2004

1.	Retirees and Beneficiaries		
	a. Service Retirements	\$	933,432,690
	b. Disability Retirements		89,472,742
	c. Beneficiaries		79,326,422
	d. Death Benefits		<u>15,090,047</u>
	e. Total	\$	1,117,321,901
2.	Terminated Vested Members	\$	0
3.	Contributing Active Participants		
	a. Service Retirement	\$	760,938,466
	b. Ordinary Disability		19,720,626
	c. Accidental Disability		17,250,367
	d. Ordinary Death		9,626,048
	e. Accidental Death		8,789,383
	f. Vested Termination		1,282,264
	g. Withdrawal Benefits		140,574
	h. Lump Sum Death Benefits*		<u>8,333,441</u>
	i. Total	\$	826,081,169
4.	Non-Contributing Active Participants	\$	5,906,571
5.	Total Present Value of Benefits = 1.(e) + 2. + 3.(i) + 4.	\$	1,949,309,641

*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	\$	1,897,713,119
2.	Actuarial Accrued Liability		<u>1,949,309,641</u>
3.	Excess Valuation Assets = 1. - 2., not less than \$0	\$	0

F. Development of Normal Cost as of July 1, 2004

1.	Service Retirement	\$	44,878,856
2.	Ordinary Disability		1,741,059
3.	Accidental Disability		1,383,437
4.	Ordinary Death		808,510
5.	Accidental Death		891,242
6.	Vested Termination		126,617
7.	Withdrawal Benefits		38,297
8.	Lump Sum Death Benefits*		526,521
9.	Term Cost for Lump Sum Death Benefit During Active Service		<u>1,204,107</u>
10.	Total	\$	51,598,646

*Excludes lump sum death benefits payable during active service.

G. Development of State Contributions

1.	Present Value of Benefits	\$	1,949,309,641
2.	Actuarial Value of Assets		<u>1,897,713,119</u>
3.	Unfunded Actuarial Accrued Liability/(Surplus) = 1. - 2.	\$	51,596,522
4.	Amortization Period		30
5.	Amortization of Unfunded Actuarial Accrued Liability payable July 1, 2005	\$	3,135,874
6. (a)	Gross Normal Cost	\$	51,598,646
	(b) Expected Member Contributions		<u>14,229,026</u>
	(c) State Normal Cost = (a) - (b)	\$	37,369,620
	(d) State Normal Cost payable July 1, 2005 = (c) * 1.0825	\$	40,452,614
	(e) Excess Valuation Assets		<u>0</u>
	(f) State Net Normal Cost payable July 1, 2005 = (d) - (e)	\$	40,452,614
7.	Total Required Contribution as of July 1, 2005 = 5. + 6.(f)	\$	43,588,488*

*Contribution could be subject to reduction in accordance with the provisions of the Appropriation Act for fiscal year 2006.

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, 2004.

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 5.87% for the period from July 1, 2003 through June 30, 2004. 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, 2004

1.	Unfunded Accrued Liability/(Surplus) as of July 1, 2003	\$ (49,353,827)
2.	Gross Normal Cost as of July 1, 2003	48,183,213
3.	Interest on (1) and (2)	(102,429)
4.	Actual Members' Contributions Received	14,533,858
5.	Employers' Contributions (including receivable and transfers from other Funds)	381,980
6.	Interest on Contributions	<u>644,347</u>
7.	Expected Unfunded Accrued Liability/(Surplus) as of July 1, 2004 = (1) + (2) + (3) - (4) - (5) - (6)	\$ (16,833,228)
8.	Net Change in Unfunded Accrued Liability due to Revised Economic Assumptions	(9,524,528)
9.	Actual Unfunded Accrued Liability as of July 1, 2004	<u>51,596,522</u>
10.	Actuarial (Gain)/Loss = (9) - (7) - (8)	\$ 77,954,278

B. Components of Actuarial Experience

1.	Investment (Gain)/Loss	\$	52,610,078
2.	Other (Gain)/Loss, including mortality, cost of living adjustments less than expected, changes in employee data and clarification of System pay limitations level		<u>25,344,200</u>
3.	Total Actuarial (Gain)/Loss	\$	77,954,278

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, 2006:**

1.	Actuarial Value of Plan Assets as of June 30, 2004	
	(a) Valuation Assets as of June 30, 2004	\$ 1,897,713,119
	(b) Adjustment for Receivable Contributions included in (a)	<u>187,909</u>
	(c) Valuation Assets as of June 30, 2004 for GASB Disclosure = (a) - (b)	\$ 1,897,525,210

2.	Actuarial Accrued Liability as of June 30, 2004	\$	1,949,309,641
3.	Unfunded Actuarial Accrued Liability/(Surplus) as of June 30, 2004 = 2. - 1.	\$	51,784,431
4.	Amortization of Unfunded Actuarial Accrued Liability/(Surplus) over 30 years	\$	2,907,431
5.	(a) Gross Normal Cost as of June 30, 2004	\$	51,598,646
	(b) Expected Members' Contributions		<u>14,229,026</u>
	(c) Net Normal Cost as of June 30, 2004 = (a) - (b)	\$	37,369,620
6.	Annual Required Contribution as of June 30, 2006		
	(a) Annual Required Contribution as of June 30, 2004 = 4. + 5.(c)	\$	40,277,051
	(b) Interest Adjustment to June 30, 2006		<u>6,919,849</u>
	(c) Annual Required Contribution as of June 30, 2006 = (a) + (b)	\$	47,196,900

(B) Development of the Net Pension Obligation (NPO) as of June 30, 2006:

1.	Annual Required Contribution as of June 30, 2006	\$	47,196,900
2.	Interest on Net Pension Obligation		16,438,319
3.	Adjustment to Annual Required Contribution		<u>(12,109,929)</u>
4.	Annual Pension Cost = 1. + 2. + 3.	\$	51,525,290
5.	Expected Employer Contributions for Fiscal Year 2006	\$	43,588,488
6.	Net Pension Obligation at June 30, 2005	\$	199,252,351*
7.	Increase in Net Pension Obligation = 4. - 5.	\$	7,936,802
8.	Net Pension Obligation at June 30, 2006 = 6. + 7.	\$	207,189,153

* The June 30, 2005 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 2005 receivable contribution.

(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 (b-a)/c
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)%
6/30/04	\$ 1,897,525,210	\$ 1,949,309,641	\$ 51,784,431	97.3%	\$ 223,552,154	23.2%

(D) Schedule of Employer Contributions

Fiscal Year	Annual Required Contribution	Employer Contribution	Percentage Contributed
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	\$ 187,909*	0.5%
2006	\$ 47,196,900	\$ 43,588,488**	92.4%

*The fiscal year 2005 required contribution of \$939,544 has been reduced to \$187,909 in anticipation of the provisions of the Appropriation Act for fiscal year 2005.

** The required contribution could be subject to reduction in accordance with the provisions of the Appropriation Act for fiscal year 2006.

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

Valuation Date	June 30, 2004
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	8.25%
Projected Salary Increase	5.45%
Cost of Living Adjustments	60% of the maximum of the CPI increase and 3.0%

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, 2004</u>	<u>June 30, 2003</u>
Vested benefits		
Participants currently receiving payments	\$ 1,117,321,901	\$ 1,014,285,416
Other participants	510,376,813	501,781,906
	\$ 1,627,698,714	\$ 1,516,067,322
Non-vested benefits	324,463,910	286,619,450
Total	\$ 1,952,162,624	\$ 1,802,686,772
Assets at market value	\$ 1,687,272,805	\$ 1,545,738,865
Ratio of Assets to Total Present Value	86.4%	85.7%

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 2004 and 8.75% for 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. 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:
	<ul style="list-style-type: none"> (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:
	<ul style="list-style-type: none"> (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.
	<ul style="list-style-type: none"> (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: 8.25% per annum, compounded annually.

COLA: 3.0% per annum, compounded annually. The COLA is 60% of the cumulative increase.

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>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 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:

<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 2004 VALUATION

The following tables give a reconciliation of data from July 1, 2003 to June 30, 2004. Tables are also given showing active member number and salaries by age and length of service as of July 1, 2004 and showing the number and retirement allowances of beneficiaries classified by age as of July 1, 2004.

TABLE 1

RECONCILIATION OF DATA FROM JULY 1, 2003 TO JUNE 30, 2004

	Actives		Deferred Vested	Retirees				Beneficiaries	Dependents	Domestic Relations Beneficiaries		Total
	Contrib.	Noncontrib.		Service	Special	Deferred	Disabled			Retirees	Disabilities	
Members as of July 1, 2003	2,660	33	0	486	1,028	1	160	319	6	63	17	4,773
Changed to Contributing												
Changed to Noncontributing	(3)	3										
Terminated Vested												
Terminated Non-Vested	(2)	(2)										(4)
Service Retirement	(6)			6								
Special Retirement	(104)				104							
New Disabled	(25)						25					
New Death				(12)	(9)		(3)	(17)				(41)
Payments Began										8	3	11
Payments Ceased								(1)		(2)	(2)	(5)
New Actives	130											130
Rehires												
New Beneficiaries								24				24
Data Corrections												
Members as of June 30, 2004	2,650	34	0	480	1,123	1	182	325	6	69	18	4,888

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

AGE	SERVICE	1	5	10	15	20	25	30	35	TOTAL
20	Number Salary									
25	Number Salary	145 8,588,447	41 2,596,184							186 11,184,631
30	Number Salary	127 7,561,958	219 14,914,911	35 2,827,774						381 25,304,643
35	Number Salary	44 2,612,179	147 10,392,073	237 19,618,195	104 8,944,633	2 180,090				534 41,747,170
40	Number Salary	1 31,033	17 1,229,178	106 8,980,133	442 38,602,416	246 22,672,319	1 98,476			813 71,613,555
45	Number Salary			9 716,657	88 7,689,491	263 24,598,021	146 14,782,486			506 47,786,655
50	Number Salary			2 87,802	15 1,222,577	62 5,680,617	152 15,448,998	33 3,475,506		264 25,915,500
TOTAL	Number Salary	317 18,793,617	424 29,132,346	389 32,230,561	649 56,459,117	573 53,131,047	299 30,329,960	33 3,475,506		2,684 223,552,154

TABLE 3

**THE NUMBER AND ANNUAL COMPENSATION OF
ACTIVE MEMBERS DISTRIBUTED BY AGE
AS OF JULY 1, 2004**

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
24	9	\$ 520,096		
25	29	1,726,652	2	\$ 118,129
26	53	3,199,323	2	120,425
27	59	3,541,045	3	177,193
28	49	3,004,397	2	120,425
29	69	4,305,645	2	129,613
30	62	3,970,284	5	309,104
31	70	4,625,500	5	309,102
32	86	6,008,583	3	201,048
33	99	7,136,867	8	570,574
34	104	7,836,640	8	579,813
35	94	7,148,076	2	138,799
36	91	7,131,964	2	136,503
37	104	8,510,389	4	306,206
38	138	11,725,259	4	325,180
39	158	13,805,379	6	512,632
40	186	16,295,450	4	342,328
41	171	15,122,176	7	618,598
42	142	12,788,025	5	450,460
43	128	11,599,063	5	468,965
44	78	7,061,547	4	400,949
45	113	10,633,804	5	513,283
46	88	8,437,671	1	105,810
47	96	9,206,240	5	536,435
48	81	7,887,405	2	212,063
49	54	5,262,704	3	274,547
50	53	5,198,996	3	325,207
51	36	3,629,784		
52	31	3,058,010		
53	32	3,008,444		
54	13	1,314,919		
55	5	480,266		
57	1	68,174		
TOTAL	2,582	\$ 215,248,769	102	\$ 8,303,385

Of the 2,684 active members included in the June 30, 2004 valuation data, 1,662 are vested and 1,022 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, 2004**

YEARS OF SERVICE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
0	1	\$ 53,297		
1	106	5,985,330	11	\$ 624,443
2	45	2,685,467	2	122,723
3	274	17,079,381	13	809,178
4	15	931,901	2	120,425
5	19	1,171,003		
6	128	9,184,976	6	420,995
7	108	7,960,314	6	434,772
8	15	1,064,203		
9	156	12,667,115	10	824,291
10	106	9,054,165	6	484,523
11	88	7,565,250		
12	10	706,005		
13	7	529,830		
14	9	710,366	1	72,846
15	74	6,364,297	2	175,314
16	209	17,909,507	4	356,475
17	272	23,970,080	4	350,706
18	248	22,331,464	7	623,243
19	116	10,632,659	3	271,259
20	57	5,287,892	2	169,545
21	77	7,228,587		
22	124	11,979,314	3	308,320
23	78	7,636,008	4	422,141
24	6	575,322	14	1,500,570
25	122	12,395,560		
26	54	5,544,480	1	105,810
27	25	2,569,496	1	105,810
29	17	1,805,288		
30	9	892,621		
31	6	664,010		
33	1	113,588		
TOTAL	2,582	\$ 215,248,769	102	\$ 8,303,385

Of the 2,684 active members included in the June 30, 2004 valuation data, 1,662 are vested and 1,022 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, 2004**

SERVICE RETIREMENTS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
44			1	\$ 6,480
45			1	11,511
46	6	\$ 323,238	3	69,686
47	5	304,626	1	45,003
48	11	715,138	1	9,854
49	11	695,867	1	19,398
50	36	2,274,457	2	36,977
51	17	1,049,273	3	55,088
52	31	2,040,644	1	16,932
53	41	2,478,734	4	30,990
54	38	2,446,928	3	42,218
55	67	4,144,138	5	130,798
56	71	3,932,504	1	18,000
57	92	5,334,272	9	178,312
58	99	5,311,690	9	158,835
59	76	3,949,038	7	97,766
60	73	3,640,659	1	16,049
61	95	4,710,994	5	52,292
62	89	4,214,985		
63	92	4,217,641	3	48,263
64	62	2,846,451		
65	47	2,167,306	2	44,221
66	53	2,262,401	3	57,880
67	32	1,404,046		
68	31	1,207,874	1	2,600
69	26	1,093,906		
70	20	843,805	2	27,028
71	18	679,134	1	4,872
72	33	1,298,102		
73	38	1,463,869		
74	36	1,235,188		
75	30	1,020,651		
76	44	1,627,241		
77	33	980,220		
78	27	722,547	1	13,045
79	26	740,111		
80	24	651,844		
81	15	407,589		
82	11	272,466		
83	14	392,350		
84	5	145,270		
85	7	188,349		
86	4	98,452		

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED
BY AGE AS OF JULY 1, 2004**

**SERVICE RETIREMENTS
(continued)**

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
87	5	\$ 151,890		
88	1	22,586		
89	2	43,618		
90	1	25,187		
91	1	21,798		
92	3	59,979		
94	2	44,353		
98	1	25,114		
TOTAL	1,602	\$ 75,928,525	71	\$ 1,194,098

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2004**

BENEFICIARIES OF DECEASED PENSIONERS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
12			1	\$ 13,988
46			1	36,296
52			2	67,345
53			1	19,588
54			1	32,723
56			2	68,594
57	1	\$ 8,658	5	191,417
58			2	60,168
59			4	112,811
60			2	86,067
61			5	143,448
62	1	36,630	6	251,904
63			3	85,116
64			8	224,603
65			4	132,173
66			9	292,107
67			4	107,770
68			4	119,085
69			3	72,906
70			6	159,142
71			10	297,131
72			15	380,231
73			11	250,679
74			11	281,479
75			12	317,461
76			12	269,873
77			7	191,854
78			9	209,116
79			6	134,693
80			8	204,883
81			8	186,168
82			7	181,988
83			8	167,303
84			7	161,714
85			7	130,905
86			9	182,550
87			3	51,761
88			3	46,605
89			7	118,846
90			5	83,237
91			4	61,107
92			1	13,780
93			1	17,244

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2004**

**BENEFICIARIES OF DECEASED PENSIONERS
(continued)**

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
94			2	35,774
95			1	19,276
97			1	22,402
98			1	14,627
TOTAL	2	\$ 45,288	249	\$ 6,309,941

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2004**

BENEFICIARIES OF DECEASED ACTIVE EMPLOYEES

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
19			1	\$ 11,754
28			1	42,235
36			1	38,254
38			1	61,983
39			1	61,771
40			1	33,624
41			1	59,162
42			1	60,935
45			1	66,211
46			2	100,483
49			1	36,448
50			1	41,126
52			1	42,338
53			2	74,865
54			1	50,058
55			3	89,690
57			1	32,708
58			1	45,333
59			3	100,970
60			3	102,636
61			3	129,972
62			3	93,502
63			2	71,791
64			2	55,297
65			1	19,218
66			1	19,795
67			1	36,157
69			2	48,731
70			1	32,210
72			2	41,809
74			3	85,110
75			4	90,567
76			1	34,183
77			1	21,115
78			1	27,957
79			1	16,619
80			3	65,756
82			1	28,891
83			3	41,704
84			1	17,468
85			1	15,054
86			1	15,274
87			1	13,570
88			2	26,317

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2004**

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

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
89			2	\$ 38,027
90			1	11,518
92			1	17,577
93			1	17,994
96			1	15,654
97			1	11,382
TOTAL	0	\$ 0	77	\$ 2,312,802

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2004**

CHILDREN OF DECEASED ACTIVE EMPLOYEES

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
12			1	\$ 11,754
14			1	11,754
16	1	\$ 15,743		
TOTAL	1	\$ 15,743	2	\$ 23,507

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED
BY AGE AS OF JULY 1, 2004**

ORDINARY DISABILITY RETIREMENTS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
35	1	\$ 27,386		
36	3	77,814		
37	1	31,517		
38	6	183,828	1	\$ 10,392
39	4	100,839		
40	6	175,267	2	47,605
41	5	167,209	3	68,848
42	4	116,563	2	13,104
43	2	59,907	2	62,186
44	1	33,559	1	16,278
45	3	110,201	2	58,340
46	1	33,252		
47	2	70,813		
48	3	76,865	1	5,418
51	2	81,024		
52	3	126,270		
53	2	21,413	2	232
54	1	23,333	1	19,482
55	1	45,416		
56	1	21,697		
57	6	185,597	1	29,029
59	3	75,337		
60	2	45,605	2	21,168
61	2	44,036		
62	4	97,834	1	7,280
63	2	34,433		
64	5	106,477		
65	2	66,558		
66	4	82,720		
67	2	31,786		
76	2	34,115		
77	1	18,998		
78	1	15,525		
79	2	34,578		
TOTAL	90	\$ 2,457,774	21	\$ 359,362

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED
BY AGE AS OF JULY 1, 2004**

ACCIDENTAL DISABILITY RETIREMENTS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
35	1	\$ 45,036		
36	2	95,150		
37	4	196,911	1	\$ 51,360
38	2	110,128		
39	3	160,306	1	52,296
40	4	177,313	1	4,784
41	2	101,478	1	55,020
42	5	250,806		
43	6	242,758	3	31,104
44	4	207,062	1	36,626
45	1	54,320		
46	2	86,195	1	27,716
47	1	59,078	2	100,534
48	5	226,412		
49	1	57,571		
50	2	98,802		
52	3	133,387		
54	3	158,463	1	46,106
57	1	48,897		
58	2	39,100	1	11,160
59	1	66,575	1	18,273
60	3	94,361		
61	1	24,448		
62	5	140,635		
63	1	23,158		
64	2	68,011		
65	3	92,033		
66	1	40,123		
67	1	45,343		
73	1	25,215		
79	2	64,800		
TOTAL	75	\$ 3,233,872	14	\$ 434,978