

**THE STATE POLICE RETIREMENT SYSTEM
OF NEW JERSEY
ANNUAL REPORT
OF THE ACTUARY
PREPARED AS OF JULY 1, 2002**

March 12, 2003

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, 2002 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, 2002 and gives the basis for determining the required annual contribution for the plan year beginning July 1, 2002.

The valuation was prepared on the basis of the same assumptions as were employed for the previous valuation which include an interest rate of 8.75% per year. In addition, the valuation reflects the provisions of Chapter 350, P.L. 2001 which increased the compensation base used for determining accidental death benefits payable to surviving spouses and children.

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

Respectfully submitted,

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REPORT ON THE ANNUAL
VALUATION OF
THE STATE POLICE RETIREMENT SYSTEM
OF NEW JERSEY
PREPARED AS OF JULY 1, 2002

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, 2002, 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, 2002	July 1, 2001
Number of Members	2,793	2,675
Annual Compensation	\$ 215,161,126	\$ 199,727,203
Number of Pensioners and Beneficiaries	1,969	1,906
Total Annual Allowance	\$ 75,314,289	\$ 69,952,007
<u>Assets</u>		
Total Present Market Value of Assets	\$ 1,565,301,249	\$ 1,761,657,628
Total Valuation Assets	\$ 1,853,684,177	\$ 1,829,414,353
<u>Contribution Amounts</u>		
Normal Contribution	\$ 0*	\$ 0*
Accrued Liability Contribution	<u>0</u>	<u>0</u>
Total Contribution	\$ 0	\$ 0

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

The major benefit and contribution provisions of the statute as reflected in the valuation are summarized in Appendix A. In particular, the valuation reflects the provisions of Chapter 350, P.L. 2001 which increased the compensation base used for the determination of the accidental death benefit for spouses and children. There were no other changes from the provisions used in the previous valuation.

The actuarial assumptions and methods used for valuing the Fund are summarized in Appendix B. There were no 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.

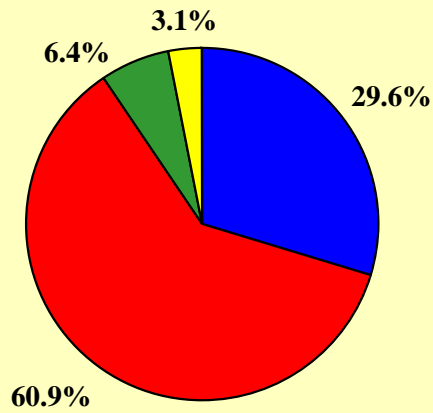
The valuation generates a balance sheet which summarizes in some detail the total present and prospective assets and liabilities of the Fund. A summary comparison of the balance sheets as of July 1, 2001 and July 1, 2002 is set forth in the following table. The allocation of assets among the various investment alternatives is shown in graphic form on page 5.

TABLE I
COMPARATIVE BALANCE SHEET

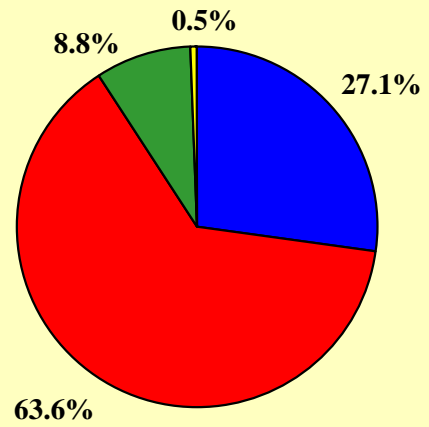
<u>ASSETS</u>	2002	2001
Actuarial Value of assets of Fund	\$ 1,853,684,177	\$ 1,829,414,353
Unfunded accrued liability/(surplus)	(114,256,438)	(202,782,697)
Total Assets	\$ 1,739,427,739	\$ 1,626,631,656
<u>LIABILITIES</u>		
Present value of benefits to present beneficiaries payable from the Retirement Reserve Fund	\$ 917,195,351	\$ 856,126,296
Present value of benefits to present active members	822,232,388	770,505,360
Total Liabilities	\$ 1,739,427,739	\$ 1,626,631,656

THE STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY

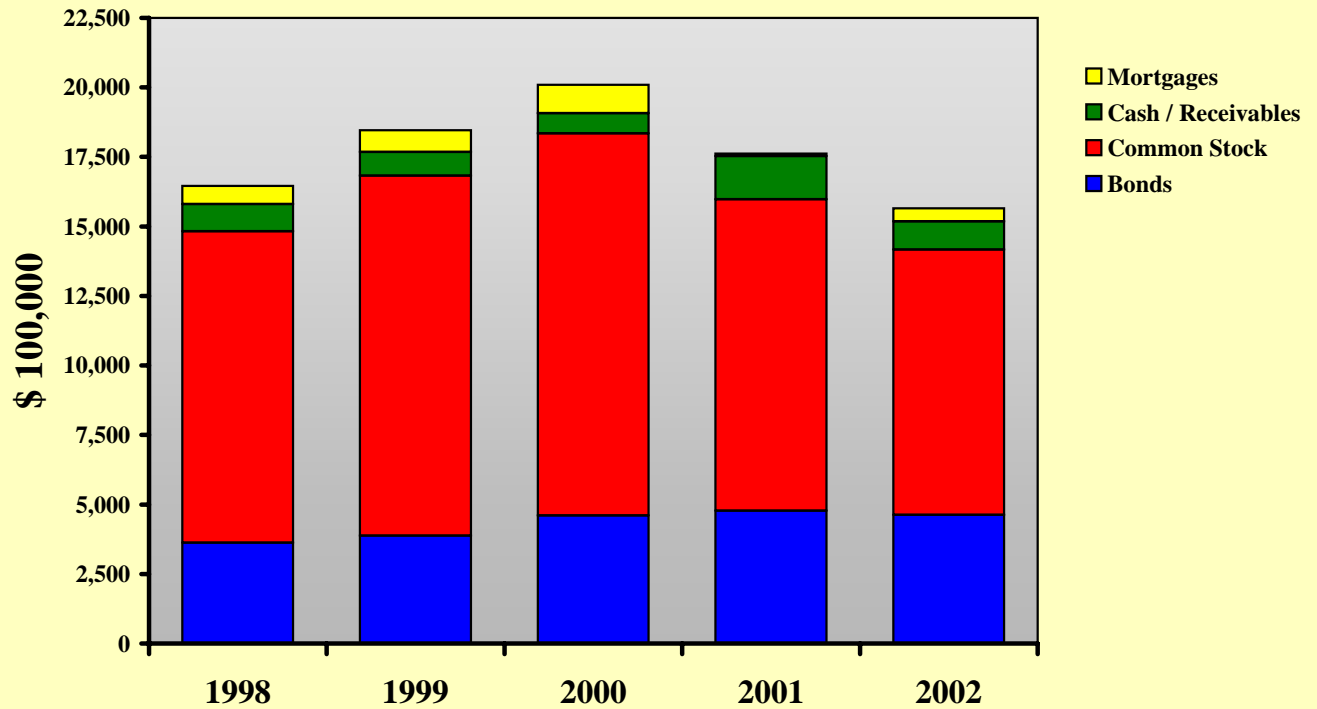
ASSET ALLOCATION MARKET VALUE



2002



2001



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, 2001 and July 1, 2002 by various categories.

ACTIVE MEMBERSHIP

Group	2002		2001	
	Number	Annual Compensation	Number	Annual Compensation
Men	2,696	\$ 207,875,656	2,583	\$ 193,076,929
Women	97	\$ 7,285,470	92	\$ 6,650,274

RETIRED MEMBERS AND BENEFICIARIES

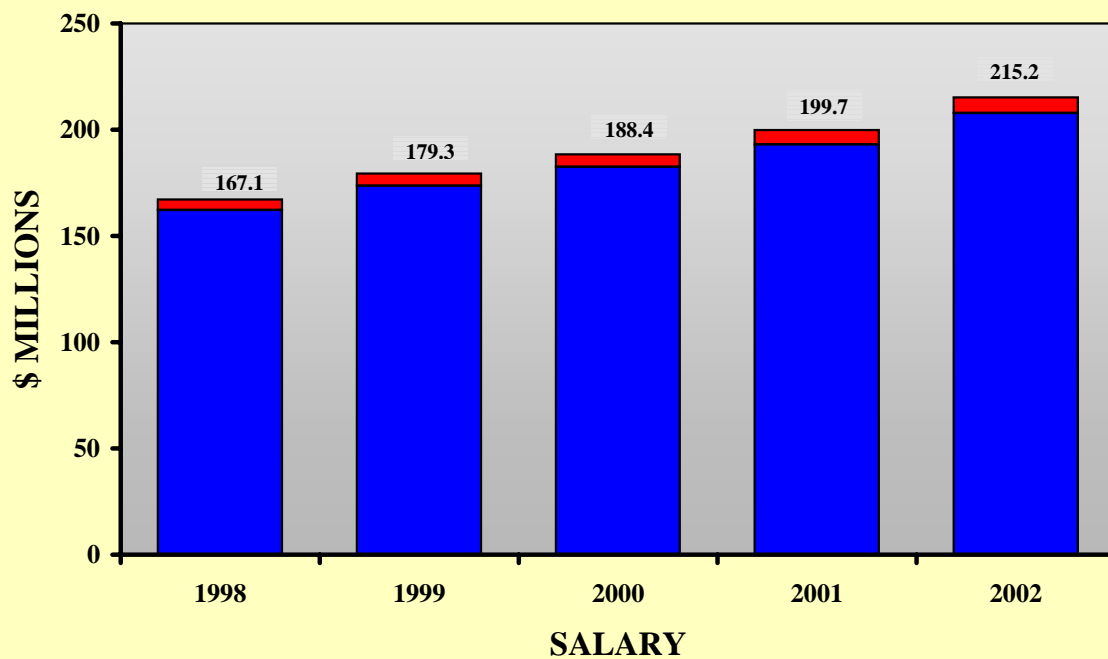
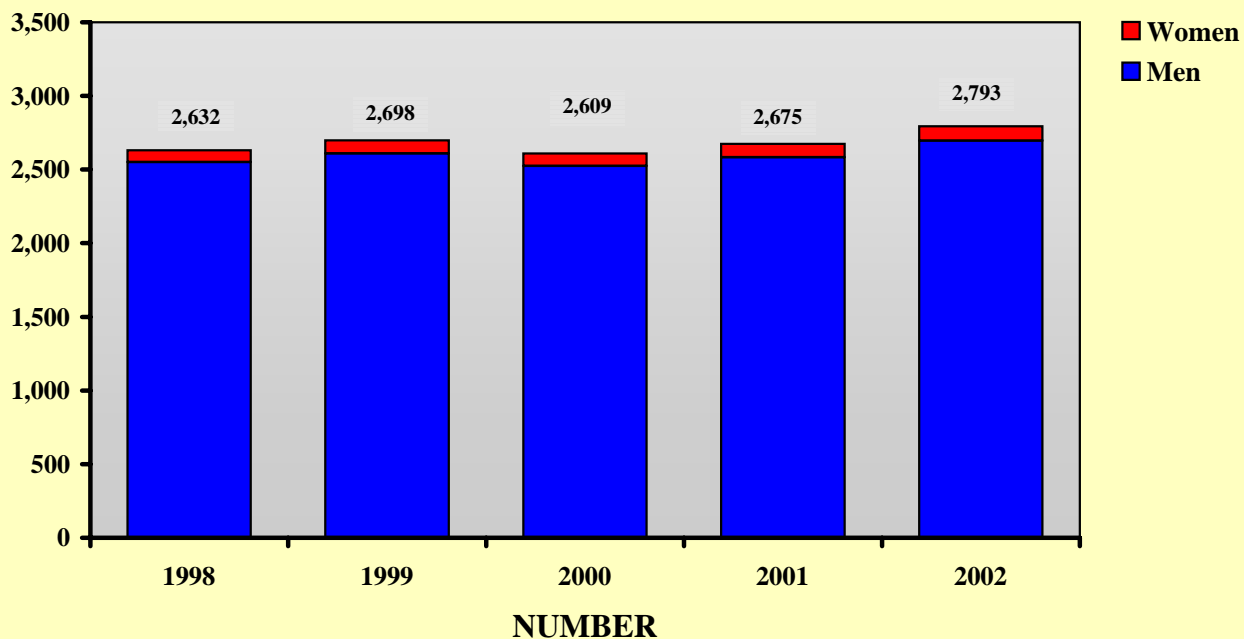
Group	2002		2001	
	Number	Annual Allowances	Number	Annual Allowances
Service Retirements	1,486	\$ 62,798,563	1,451	\$ 59,219,991
Ordinary Disability Retirements	83	\$ 1,900,616	80	\$ 1,700,414
Accidental Disability Retirements	76	\$ 2,680,069	69	\$ 2,192,649
Beneficiaries of Deceased Pensioners	241	\$ 5,740,750	223	\$ 5,042,785
Beneficiaries of Deceased Active Employees	83	\$ 2,194,292	83	\$ 1,796,168

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.

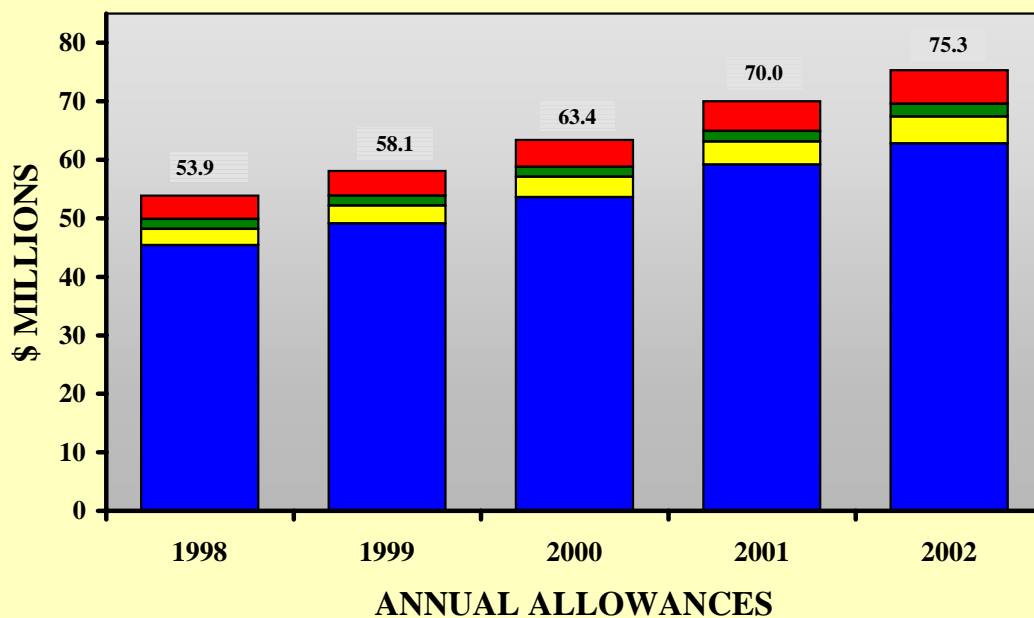
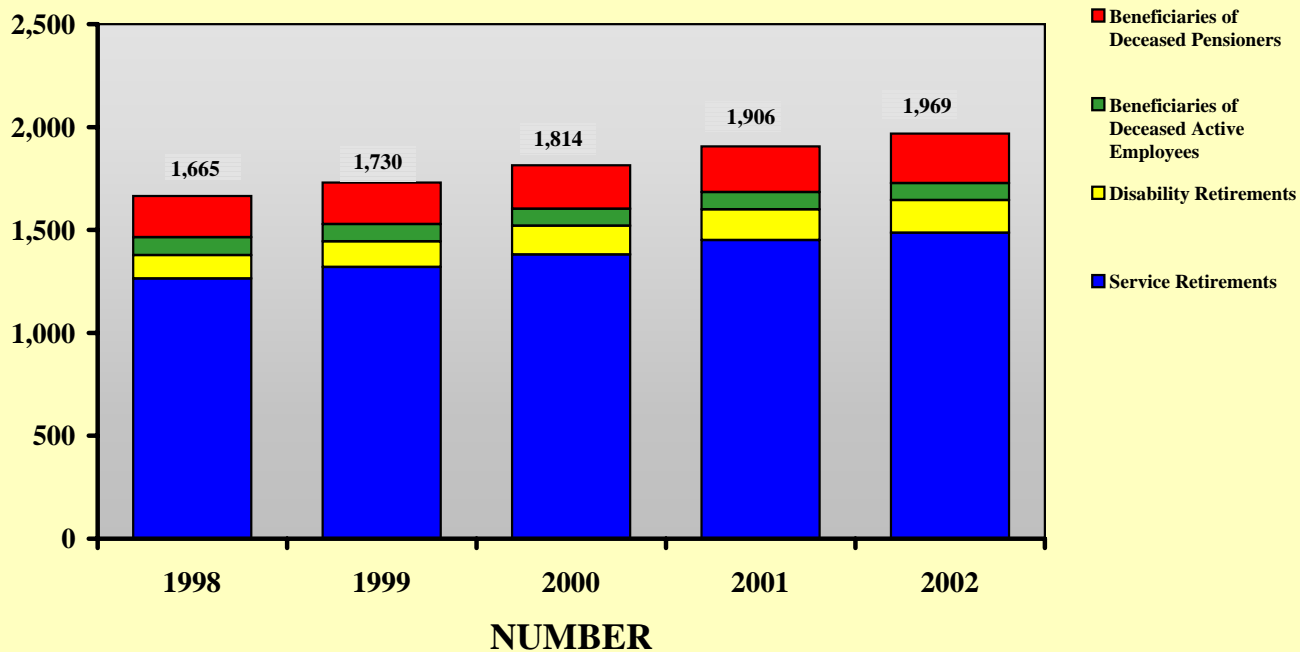
THE STATE POLICE RETIREMENT SYSTEM OF NEW JERSEY

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, 2002

1.	Assets		
	a.	Cash	\$ 20,780
	b.	Investment Holdings	1,529,600,374
	c.	Accrued Interest on Investments	6,738,863
	d.	Employers' Contributions Receivable	0
	e.	Members' Contributions Receivable	934,009
	f.	Loans Receivable	32,160,087
	g.	Dividends Receivable	2,672,280
	h.	Accounts Receivable - Other	<u>30,203</u>
	i.	Total	\$ 1,572,156,596
2.	Liabilities		
	a.	Pension Payroll Payable	\$ 6,360,467
	b.	Accounts Payable and Accrued Expense	<u>494,880</u>
	c.	Total	\$ 6,855,347
3.	Market Value of Assets as of June 30, 2002: 1(i) - 2(c)		\$ 1,565,301,249

B. Reconciliation of Market Value of Assets from June 30, 2001 to June 30, 2002

1.	Market Value of Assets as of June 30, 2001		\$ 1,761,657,628
2.	Increases		
	a.	Members' Contributions	\$ 13,613,597
	b.	State Appropriations	0
	c.	Transfer from Other Systems	534,467
	d.	Other	89
	e.	Investment Income	<u>(135,318,583)</u>
	f.	Total	\$ (121,170,430)
3.	Decreases		
	a.	Withdrawal of Members	\$ 106,839
	b.	NCGI Premium Expense	1,420,692
	c.	Administrative Expenses	253,999
	d.	Benefit Payments	60,822,507
	e.	COLA Benefit Payments	12,565,413
	f.	Transfer Withdrawal Employer Benefit	12,349
	g.	Adjustment – Members' Account Expense – Loans	<u>4,150</u>
	h.	Total	\$ 75,185,949
4.	Market Value of Assets as of June 30, 2002 = 1. + 2.(f) - 3.(h)		\$ 1,565,301,249

C. Development of Actuarial Value of Assets as of July 1, 2002

Chapter 115 P.L. 1997 revalued the actuarial value of plan assets to market for the July 1, 1996 valuation. Beginning with the July 1, 1997 valuation, the five-year average market value with write up was used. 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, 2001	\$	1,829,414,353
2.	Net Cash Flow (excluding investment income)		(61,037,796)
3.	Expected Investment Income at 8.75%		
	a. Interest on assets as of July 1, 2001	\$	160,073,756
	b. Interest on Net Cash Flow		(2,670,404)
	c. Total\$		<u>157,403,352</u>
4.	Expected Actuarial Value of Assets as of July 1, 2002:		
	1. + 2. + 3(c)	\$	1,925,779,909
5.	20% of Difference from Market Value of Assets		(72,095,732)
6.	Receivable Employer Contributions		<u>0</u>
7.	Actuarial Value of Assets as of July 1, 2002 = 4. + 5. + 6.	\$	<u>1,853,684,177</u>

D. Present Value of Projected Benefits as of July 1, 2002

1.	Retirees and Beneficiaries		
	a. Service Retirements	\$	769,700,994
	b. Disability Retirements		62,872,512
	c. Beneficiaries		73,448,127
	d. Death Benefits		<u>11,173,718</u>
	e. Total	\$	917,195,351
2.	Terminated Vested Members	\$	0
3.	Contributing Active Participants		
	a. Service Retirement	\$	751,949,895
	b. Ordinary Disability		18,202,573
	c. Accidental Disability		15,177,732
	d. Ordinary Death		13,408,281
	e. Accidental Death		8,009,445
	f. Vested Termination		3,681,949
	g. Withdrawal Benefits		233,175
	h. Lump Sum Death Benefits*		<u>7,226,861</u>
	i. Total	\$	817,889,911
4.	Non-Contributing Active Participants	\$	4,342,477
5.	Total Present Value of Benefits = 1.(e) + 2. + 3.(i) + 4.	\$	1,739,427,739

*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. The development of excess valuation assets is developed below:

1.	Valuation Assets	\$	1,853,684,177
2.	Actuarial Accrued Liability		1,739,427,739
3.	Excess Valuation Assets = 1. - 2.	\$	<u>114,256,438</u>

F. Development of Normal Cost as of July 1, 2002

1.	Service Retirement	\$	43,876,754
2.	Ordinary Disability		1,648,648
3.	Accidental Disability		1,295,006
4.	Ordinary Death		1,235,993
5.	Accidental Death		898,154
6.	Vested Termination		410,946
7.	Withdrawal Benefits		72,831
8.	Lump Sum Death Benefits*		442,637
9.	Term Cost for Lump Sum Death Benefit During Active Service		<u>835,870</u>
10.	Total	\$	<u>50,716,839</u>

*Excludes lump sum death benefits payable during active service.

G. Development of State Contributions

1.	Present Value of Benefits	\$	1,739,427,739
2.	Actuarial Value of Assets		<u>1,853,684,177</u>
3.	Unfunded Actuarial Accrued Liability/(Surplus) = 1. - 2.	\$	(114,256,438)
4.	Amortization Period		30
5.	Amortization of Unfunded Actuarial Accrued Liability payable July 1, 2003	\$	0
6. (a)	Gross Normal Cost	\$	50,716,839
	(b) Expected Member Contributions		<u>13,503,207</u>
	(c) State Normal Cost = (a) - (b)	\$	37,213,632
	(d) State Normal Cost payable July 1, 2003 = (c) * 1.0875	\$	40,469,825
	(e) Excess Valuation Assets*		<u>40,469,825</u>
	(f) State Net Normal Cost payable July 1, 2003 = (d) - (e)	\$	0
7.	Total Required Contribution as of July 1, 2003 = 5. + 6.(f)	\$	0

*Excess Valuation Assets are allocated as follows:

1.	Excess Valuation Assets (from Section E)	\$	114,256,438
2.	Excess Valuation Assets as of July 1, 2003 = 1. * 1.0875	\$	124,253,876
3.	Reduction Due to Normal Contribution for the Valuation Period ending June 30, 2002 payable July 1, 2003		<u>40,469,825</u>
4.	Net Excess Valuation Assets After Reductions as of July 1, 2003 = 2. - 3.	\$	83,784,051

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, 2002.

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 4.74% for the period from July 1, 2001 through June 30, 2002. 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, 2002

1.	Unfunded Accrued Liability/(Surplus) as of July 1, 2001	\$ (202,782,697)
2.	Gross Normal Cost as of July 1, 2001	46,945,136
3.	Interest on (1) and (2)	(13,635,787)
4.	Actual Members' Contributions Received	13,613,597
5.	Employers' Contributions (including receivable and transfers from other Funds)	534,467
6.	Interest on Contributions	<u>618,978</u>
7.	Expected Unfunded Accrued Liability/(Surplus) as of July 1, 2002 = (1) + (2) + (3) - (4) - (5) - (6)	\$ (184,240,390)
8.	Increase in Unfunded Liability due to Chapter 350, P.L. 2001	4,853,305
9.	Actual Unfunded Accrued Liability as of July 1, 2002	<u>(114,256,438)</u>
10.	Actuarial (Gain)/Loss = (9) - (7) - (8)	\$ 65,130,647

B. Components of Actuarial Experience

1.	Investment (Gain)/Loss	\$	72,095,732
2.	Other (Gain)/Loss, including mortality, changes in employee data		<u>(6,965,085)</u>
3.	Total Actuarial (Gain)/Loss	\$	65,130,647

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, 2004:**

1.	Actuarial Value of Plan Assets as of June 30, 2002	
	(a) Valuation Assets as of June 30, 2002	\$ 1,853,684,177
	(b) Adjustment for Receivable Contributions included in (a)	0
	(c) Valuation Assets as of June 30, 2002 for GASB Disclosure = (a) - (b)	\$ 1,853,684,177

2.	Actuarial Accrued Liability as of June 30, 2002	\$	1,739,427,739
3.	Unfunded Actuarial Accrued Liability/(Surplus) as of June 30, 2002= 2. - 1.	\$	(114,256,438)
4.	Amortization of Unfunded Actuarial Accrued Liability/(Surplus) over 30 years	\$	(5,420,099)
5.	(a) Gross Normal Cost as of June 30, 2002	\$	50,716,839
	(b) Expected Members' Contributions		<u>13,503,207</u>
	(c) Net Normal Cost as of June 30, 2002 = (a) - (b)	\$	37,213,632
6.	Annual Required Contribution as of June 30, 2004		
	(a) Annual Required Contribution as of June 30, 2002 = 4. + 5.(c)	\$	31,793,533
	(b) Interest Adjustment to June 30, 2004		<u>5,807,288</u>
	(c) Annual Required Contribution as of June 30, 2004 = (a) + (b)	\$	37,600,821

(B) Development of the Net Pension Obligation (NPO) as of June 30, 2004:

1.	Annual Required Contribution as of June 30, 2004	\$	37,600,821
2.	Interest on Net Pension Obligation		9,992,194
3.	Adjustment to Annual Required Contribution		<u>(5,891,266)</u>
4.	Annual Pension Cost = 1. + 2. + 3.	\$	41,701,749
5.	Expected Employer Contributions for Fiscal Year 2004	\$	0
6.	Net Pension Obligation at June 30, 2003	\$	114,196,506
7.	Increase in Net Pension Obligation = 4. - 5.	\$	41,701,749
8.	Net Pension Obligation at June 30, 2004 = 6. + 7.	\$	155,898,255

(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 <u>(b-a)</u> c
6/30/97	\$ 1,322,406,703	\$ 1,272,242,451	\$ (50,164,252)	103.9%	\$ 142,636,260	(35.2)%
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)%

(D) Schedule of Employer Contributions

Fiscal Year	Annual Required Contribution	Employer Contribution	Percentage Contributed
1999	\$ 33,116,255	\$ 0	0.0%
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%

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

Valuation Date	June 30, 2002
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, 2002</u>	<u>June 30, 2001</u>
Vested benefits		
Participants currently receiving payments	\$ 917,195,351	\$ 856,126,296
Other participants	424,950,307	371,481,371
	\$ 1,342,145,658	\$ 1,227,607,667
Non-vested benefits	397,529,673	375,171,557
Total	\$ 1,739,675,331	\$ 1,602,779,224
Assets at market value	\$ 1,565,301,249	\$ 1,761,657,628
Ratio of Assets to Total Present Value	90.0%	109.9%

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 2001 and 2002.

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:
	<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 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.
	<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: 8.75% 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	4.0
30	11.0	4.0
35	11.0	4.0
40	11.0	4.0
45	11.0	4.0
50	11.0	4.0

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	0.6	0.4	0.6	0.3
30	0.7	0.5	0.9	0.4
35	1.0	0.5	1.2	0.5
40	1.4	0.5	1.8	0.7
45	1.8	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 25 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	5
21	1
22	0
23	0
24	0
25	35
greater than 25:	
(a) through age 47	5
(b) ages 48-52	15
(c) ages 53-54	22

APPENDIX C

TABULATIONS USED AS A BASIS FOR THE 2002 VALUATION

The following tables give a reconciliation of data from July 1, 2001 to June 30, 2002. Tables are also given showing active member number and salaries by age and length of service as of July 1, 2002 and showing the number and retirement allowances of beneficiaries classified by age as of July 1, 2002.

TABLE 1

RECONCILIATION OF DATA FROM JULY 1, 2001 TO JUNE 30, 2002

	Actives		Deferred Vested	Retirees				Beneficiaries	Dependents	Domestic Relations Beneficiaries		Total
	Contrib.	Noncontrib.		Service	Special	Deferred	Disabled			Retirees	Disabilities	
Members as of July 1, 2001	2,649	26	0	507	897	1	130	298	8	46	19	4,581
Changed to Contributing	3	(3)										
Changed to Noncontributing	(6)	6										
Terminated Vested												
Terminated Non-Vested	(5)	(1)										(6)
Service Retirement	(6)			6								
Special Retirement	(49)				49							
New Disabled	(14)	(1)					15					
New Death	(3)			(19)	(11)		(3)	(9)				(45)
Payments Began										15		15
Payments Ceased									(1)	(5)	(2)	(8)
New Actives	196	1										197
Rehires												
New Beneficiaries								28				28
Data Corrections												
Members as of June 30, 2002	2,765	28	0	494	935	1	142	317	7	56	17	4,762

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

AGE	SERVICE	1	5	10	15	20	25	30	35	TOTAL
20	Number Salary	9 478,024								9 478,024
25	Number Salary	176 9,450,439	18 1,106,870							194 10,557,309
30	Number Salary	125 6,737,434	305 20,338,539	10 668,552	1 67,756					441 27,812,281
35	Number Salary	32 1,732,291	181 12,653,219	81 6,069,709	345 27,459,474	2 162,891				641 48,077,584
40	Number Salary	1 30,615	26 1,875,392	31 2,344,310	514 41,377,634	157 13,457,911	1 67,756			730 59,153,618
45	Number Salary		1 74,933	3 179,177	103 8,389,096	251 21,838,456	111 10,199,629			469 40,681,291
50	Number Salary			1 35,105	9 634,441	45 3,801,426	144 13,417,458	43 4,310,504		242 22,198,934
55	Number Salary				1 67,756	7 563,684	28 2,503,521	29 32,883,640	2 183,484	67 36,202,085
TOTAL	Number Salary	343 18,428,803	531 36,048,953	126 9,296,853	973 77,996,157	462 39,824,368	284 26,188,364	72 37,194,144	2 183,484	2,793 215,161,126

TABLE 3

**THE NUMBER AND ANNUAL COMPENSATION OF
ACTIVE MEMBERS DISTRIBUTED BY AGE
AS OF JULY 1, 2002**

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
22	2	\$ 105,758		
23	16	848,176	1	\$ 52,879
24	35	1,863,445	1	54,993
25	36	1,929,008	1	54,993
26	35	1,901,549	1	54,993
27	54	2,984,831	1	63,501
28	52	2,953,427	3	169,259
29	63	3,675,301	2	120,609
30	80	4,907,726	2	122,749
31	89	5,701,005	7	459,569
32	101	6,673,208	7	450,278
33	86	5,815,397	2	120,609
34	88	6,127,331	2	118,495
35	104	7,540,886	5	338,856
36	146	11,099,297	4	286,371
37	159	12,522,905	7	514,902
38	192	15,175,538	5	388,891
39	175	13,965,610	9	712,480
40	147	11,951,812	6	467,191
41	129	10,547,021	6	492,717
42	82	6,699,660	4	342,355
43	115	9,663,562	5	445,501
44	95	8,077,846	1	91,455
45	101	8,711,082	6	554,470
46	94	8,220,978	2	196,873
47	66	5,796,072	3	250,979
48	83	7,485,823	3	276,895
49	46	4,176,929		
50	55	5,155,025		
51	53	4,669,280		
52	36	3,408,722		
53	35	3,330,891	1	82,607
54	26	2,293,077		
55	19	1,827,606		
57	1	69,870		
TOTAL	2,696	\$ 207,875,656	97	\$ 7,285,470

Of the 2,793 active members included in the June 30, 2002 valuation data, 1,825 are vested and 968 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, 2002**

YEARS OF SERVICE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
0	19	\$ 1,004,699	2	\$ 105,758
1	296	15,905,441	13	\$ 704,338
2	9	490,708		
3	7	380,722		
4	121	7,655,971	6	383,120
5	105	6,827,878	5	328,079
6	15	926,628		
7	158	10,987,388	11	775,069
8	106	7,896,953	5	372,446
9	89	6,791,140	1	61,126
10	7	456,387	1	51,861
11	4	283,317		
12	13	876,336	1	63,501
13	75	5,990,677	2	160,568
14	211	16,226,748	6	471,472
15	291	23,315,559	5	384,976
16	254	20,789,416	8	646,917
17	117	9,675,854	3	248,577
18	57	4,734,555	3	230,647
19	80	6,674,968		
20	128	10,943,322	3	271,493
21	83	7,198,975	4	359,449
22	7	589,652	15	1,404,002
23	144	12,983,722		
24	97	8,830,392	1	88,009
25	73	6,740,220	1	91,455
26	3	235,084		
27	49	4,727,666		
28	19	1,797,199		
29	39	3,942,155		
30	1	82,607		
31	8	798,791		
32	10	1,013,648		
33	1	100,877		
36			1	82,607
TOTAL	2,696	\$ 207,875,656	97	\$ 7,285,470

Of the 2,793 active members included in the June 30, 2002 valuation data, 1,825 are vested and 968 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, 2002

SERVICE RETIREMENTS				
AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
44			2	\$ 55,454
45	1	\$ 41,476		
47			1	18,745
48	6	315,296	1	24,925
49	8	459,592	1	15,279
50	8	437,451		
51	20	1,059,575	2	9,650
52	16	895,136	1	10,323
53	37	2,020,571	3	50,325
54	44	2,353,338	1	18,000
55	75	4,105,336	11	200,000
56	98	5,211,207	8	136,832
57	75	3,807,443	9	168,169
58	73	3,559,717	1	16,049
59	95	4,637,315	5	51,149
60	90	4,143,745	1	9,954
61	95	4,255,809	3	47,447
62	62	2,791,295		
63	48	2,140,138	1	9,626
64	53	2,232,285	2	33,930
65	32	1,371,031		
66	31	1,179,101	1	2,600
67	26	1,067,587	1	2,400
68	21	872,587	2	26,368
69	18	662,420	1	4,872
70	32	1,244,236	1	21,679
71	41	1,532,024		
72	38	1,233,613		
73	36	1,189,179		
74	49	1,770,005		
75	36	1,032,466		
76	32	853,983	1	12,708
77	28	777,255		
78	24	633,597		
79	15	395,920		
80	12	282,947		
81	14	380,841		
82	6	165,291		
83	8	205,529		
84	5	115,507		
85	6	171,789		
86	1	21,893		
87	2	42,285		
88	1	24,419		
89	1	21,129		
90	3	58,124		
92	2	42,977		
96	2	37,620		
TOTAL	1,426	\$ 61,852,080	60	\$ 946,483

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2002**

BENEFICIARIES OF DECEASED PENSIONERS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
10			1	\$ 13,684
44			1	35,503
47			1	13,977
50			2	65,838
52			1	31,944
54			1	41,133
55	1	\$ 8,391	4	143,554
56			1	30,115
57			2	62,335
58			2	84,067
59			3	87,731
60	1	35,784	6	246,278
61			2	51,528
62			5	141,133
63			3	104,007
64			7	210,191
65			4	105,137
66			3	86,999
67			3	70,953
68			5	132,256
69			9	257,756
70			13	329,131
71			9	205,626
72			11	272,752
73			10	250,377
74			12	262,281
75			6	146,842
76			8	184,416
77			7	148,192
78			8	207,191
79			8	180,773
80			5	134,054
81			8	162,281
82			8	169,670
83			9	168,915
84			8	154,346
85			4	71,732
86			6	101,968
87	1	16,278	8	131,239
88			6	95,006
89			4	59,204
90			2	26,419
91			2	40,747
92			3	50,798
93			3	51,864
95			2	33,935
96			2	24,420
TOTAL	3	\$ 60,453	238	\$ 5,680,297

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2002**

BENEFICIARIES OF DECEASED ACTIVE EMPLOYEES

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
36			1	\$ 57,525
37			1	57,283
38			1	32,909
40			1	56,447
43			1	61,722
44			1	49,651
47			1	35,637
48			1	40,737
50			1	41,424
51			2	73,197
52			1	47,410
53			3	86,572
55			1	31,972
56			1	44,347
57			3	98,802
58			3	98,769
59			3	123,492
60			4	113,862
61			2	68,612
62			2	52,186
63			1	18,721
64			1	19,206
65			1	35,273
67			2	46,358
68			1	31,411
69			1	27,667
70			2	40,675
72			3	80,325
73			4	84,174
74			1	33,348
75			2	36,485
76			1	27,126
77			2	31,629
78			3	63,822
80			1	28,025
81			3	40,406
82			1	16,926
83			1	14,584
84			1	14,799
85			1	13,146
86			2	25,501
87			2	36,871
88			1	11,158
90			1	17,028
91			1	17,427
94			1	15,171
95			1	11,030
101			1	11,383
104			1	10,617
TOTAL	0	\$ 0	78	\$ 2,132,849

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF BENEFICIARIES DISTRIBUTED
BY AGE AS OF JULY 1, 2002**

CHILDREN OF DECEASED ACTIVE EMPLOYEES

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
10			1	\$ 11,497
12	1	\$ 13,476		
14			1	11,497
17	1	13,476	1	11,497
TOTAL	2	\$ 26,952	3	\$ 34,491

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED
BY AGE AS OF JULY 1, 2002**

ORDINARY DISABILITY RETIREMENTS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
33	1	\$ 27,127		
34	2	43,672		
35	1	30,960		
36	1	30,827		
37	4	98,666		
38	1	13,513	1	\$ 10,868
39	2	60,136	2	34,695
40	1	27,587		
41	2	58,733	1	27,591
42			1	15,876
43	2	67,296	2	57,190
45	2	69,433		
46	3	76,239	1	4,218
49	1	25,785		
50	2	72,354		
51	2	20,775	2	11,501
52	1	22,786	1	19,056
53	1	44,405		
54	1	21,173		
55	6	181,388	1	28,395
57	3	73,459		
58	2	44,454	2	20,899
59	2	42,975		
60	4	95,303	1	7,280
61	2	33,548		
62	5	103,834		
63	2	64,974		
64	4	80,656		
65	2	30,879		
74	2	33,090		
75	1	18,426		
76	1	15,070		
77	2	33,526		
TOTAL	68	\$ 1,663,047	15	\$ 237,569

**THE NUMBER AND ANNUAL RETIREMENT
ALLOWANCES OF RETIRED MEMBERS DISTRIBUTED
BY AGE AS OF JULY 1, 2002**

ACCIDENTAL DISABILITY RETIREMENTS

AGE	MEN		WOMEN	
	NUMBER	AMOUNT	NUMBER	AMOUNT
34	1	\$ 43,836		
35	4	193,825		
37	2	100,869		
38	3	118,269	1	\$ 4,784
39	1	46,132		
40	4	197,436		
41	5	182,244	3	30,742
42	2	79,270	1	35,836
44	2	84,267	1	27,046
45	1	47,842	1	50,523
46	4	166,903		
48	2	97,283		
50	3	130,427		
52	2	94,435	1	45,069
55	1	42,642	1	2,600
56	2	39,675	2	16,560
57	2	96,163	1	17,838
58	3	92,064		
59	1	23,757		
60	5	136,864		
61	1	22,512		
62	2	66,364		
63	3	89,604		
64	1	39,168		
65	1	44,264		
71	1	24,512		
76	1	35,545		
77	2	62,946		
81	1	28,517		
89			1	21,434
TOTAL	63	\$ 2,427,637	13	\$ 252,432