COMMONWEALTH OF PENNSYLVANIA

STATE EMPLOYEES' RETIREMENT SYSTEM

2001 ACTUARIAL REPORT

HAY GROUP

APRIL 24, 2002

Hay Group. Inc.

Suite 500
4301 North Fairfax Drive
Arlington, VA 22203
USA

April 24, 2002

Mr. John Brosius
Executive Director
State Employees' Retirement System
30 North Third Street
Harrisburg, PA 17108-1147

Dear Mr. Brosius:

The purpose of this letter is to certify the actuarial adequacy of the contributions being made by the State of Pennsylvania and other participating agencies to the Pennsylvania State Employees' Retirement System (SERS), and to discuss the approach currently being taken toward meeting the financing objectives of the plan.

The results provided herein are based upon the December 31, 2001 actuarial valuation. The December 31, 2001 actuarial valuation is the first actuarial valuation that recognizes the substantial changes in benefits, contributions and funding of the retirement system provided for by Act 2001-9 (Act 9), which was enacted in May 2001.

The funding objective of the plan is set forth in the SERS code. The annual employer contribution is equal to the sum of the following:

(1) The employer share of the normal cost.

(2) The amortization of the unfunded liabilities as of December 31, 2001 over a ten-year period beginning July 1, 2002 and ending on June 30, 2012.

(3) The amortization of changes in liability after 2001 over ten-year periods beginning with the July first following the effective date of the change. Changes include actuarial gains and losses and plan amendments.

The amortization payments are level amounts over each ten-year period. The employer cost is determined as a percent of payroll, and the employer contributes that percent of the payroll of all covered members during each fiscal year. The employer cost is the total of (1) the employer normal cost percent and (2) the amortization payment on the outstanding liabilities. The employer contribution rate is based on the results of the actuarial valuation that is performed annually. The most recent valuation was performed as of December 31, 2001.

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All costs and liabilities have been determined in conformance with generally accepted actuarial principles and procedures in accordance with the principles of practice prescribed by the American Academy of Actuaries. The calculations were performed on the basis of actuarial assumptions and methods, which are internally consistent, and reasonable (taking into account past experience under the SERS and reasonable expectations) and which in combination represent the best estimate of anticipated experience under the plan.

The actuarial valuation is based on financial and participant data, which is prepared by SERS staff. The data are reviewed for internal and year-to-year consistency as well as general reasonableness prior to their use in the actuarial valuation.

The actuarial valuation uses assumptions regarding future rates of investment return and rates of retirement, withdrawal, death, and disability among SERS members and their beneficiaries. The current set of assumptions used in the December 31, 2001 actuarial valuation was adopted by the Board and was based on actual experience of SERS during the years 1996 thorough 2000.

The actuarial value of assets is developed by recognizing the difference between the expected actuarial value of assets and the market value of assets over a five-year period.

Government Accounting Standards Board (GASB) Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans* establishes the range of funding methods for the Unfunded Actuarial Accrued Liability. The SERS payments are within the range established under GASB #25.

Based upon the valuation results, it is our opinion that the Pennsylvania State Employees' Retirement System continues in sound condition in accordance with generally accepted actuarial principles and procedures.

Respectfully submitted,
Hay Group

By ______________________________
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By ______________________________
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State Employees' Retirement System
Valuation Highlights

	December 31, 2001 Valuation	December 31, 2000 Valuation
Summary of Contributions as a Percent of Members' Compensation		
Normal Cost	8.64%	8.72%
Amortization of Liabilities	-12.03%	-10.36%
Total Contribution	-3.39%	-1.64%
Contribution Rates by Employee Group:		
Class AA Members:		
Age 60 Retirement	0.00%	N/A
Age 50 Retirement (Including Enforcement Officers)	0.79%	N/A
Park Rangers & Capitol Police	1.74%	N/A
Class A Members:		
Age 60 Retirement	0.00%	0.00%
Age 50 Retirement (Including Enforcement Officers)	0.63%	0.55%
Park Rangers & Capitol Police	1.59%	1.54%
State Police (Class A & Class C)	8.11%	8.38%
Class D3 Members	2.37%	2.06%
Class D4 Members	0.00%	N/A
Class E Members	1.09%	1.10%

Demographic Characteristics of the Population

	December 31, 2001 Valuation	December 31, 2000 Valuation
Active Participants:		
Number	109,716	109,469
Average age	46.0	45.8
Average service	13.7	13.6
Average annualized compensation	$ 42,172	$ 41,110
Total annualized compensation	$ 4,626,943,000	$ 4,500,271,000
Funding payroll	$ 4,872,375,000	$ 4,769,180,000
Annuitants and Beneficiaries:		
Number	89,217	88,392
Average age	68.8	68.7
Total annual pension	$ 1,035,957,692	$ 987,422,521
Inactive Participants:		
Number	4,877	3,777

Assets

	December 31, 2001 Valuation	December 31, 2000 Valuation
Market Value Assets	$ 24,706,063,446	$ 27,880,467,761
Actuarial Value of Assets	$ 27,505,493,986	$ 26,094,306,293

General Discussion

The liabilities and costs in this report were based on actuarial assumptions adopted by the State Employees' Retirement Board in 2001 and funding procedures specified in the State Employees' Retirement System (SERS) code. The most important actuarial assumptions are the investment return and salary growth. The investment return assumption is 8.5 percent per year. Salary growth is the total of assumed increases in salary rates and career salary growth. It is assumed that the salary rates will increase at 3.3 percent a year and that career salary growth will average an additional 3.5 percent a year. The total average salary increase for an individual will be 6.8 percent a year. The investment return and the salary rate increase assumptions are based on an underlying inflation rate of 3.0 percent a year.

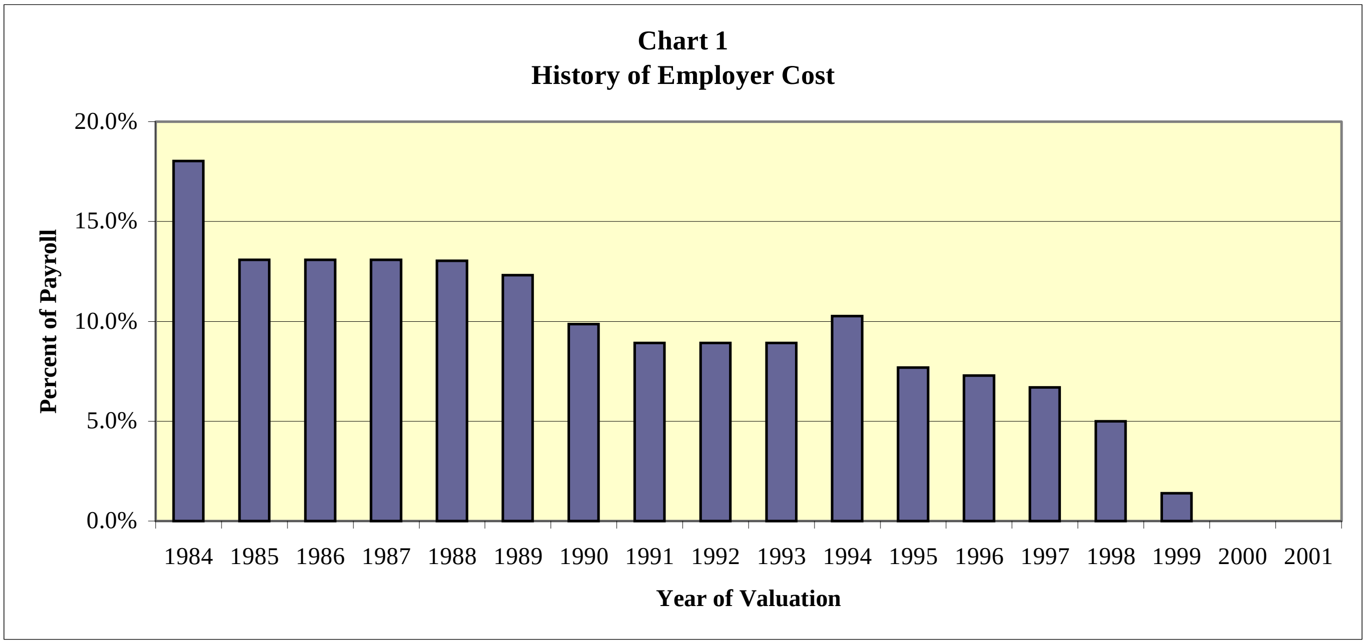
This valuation includes the impact of Act 2001-9 (Act 9) which made major changes in the SERS benefits and funding. The primary benefits change was to increase the annual accrual rate for most employees from 2 to 2.5 percent of salary. The primary funding changes were to increase most employee contributions from 5 to 6.25 percent of salary and to amortize the unfunded liability through ten equal annual payments. The prior law had amortized the unfunded liability through 20 annual payments scheduled to increase 5 percent a year.

The employer contribution is determined as the total of the normal cost plus the amortization of the unfunded liability. This unfunded liability is negative so the net amortization of the unfunded liability reduces the normal cost. As in the December 31, 2000 valuation, the net amortization credit is greater than the normal cost. This has resulted in a zero basic employer contribution for most employees. An employer contribution is required for some classes of members who can retire earlier or who have higher benefits than the general employees in Class AA (60).

A cost-of-living increase will become effective July 1, 2002 pursuant to Act 2002-38. Since funding for Act 38 will begin July 1, 2003, that cost-of-living increase has not been included in this valuation.

History of the Employer Contribution Rate

Chart 1 shows the history of the employer contribution rate from 1984 through 2001. With some fluctuations, the general trend has been downward with the rate declining from 18.03 percent in 1984 to zero in 2000 and 2001. The primary reason for the trend has been the excess of the investment return over the assumed valuation investment return over the last twenty years. For instance, as shown in Table 1, the average investment return in the last five years has been 9.7 percent compared to the 8.5 percent investment return. The higher than expected investment return has resulted in reductions in cost in most years. Another significant impact has been the reduction in cost reflected in the changes in assumptions adopted every five years.



The total employer cost is the actual contribution rate during the succeeding fiscal year. For instance, the rate of 0.00 percent will be the employer contribution for fiscal year beginning July 1, 2002.

History of Inflation, Investment Return and Salary Growth

Table 1 below shows the rate of inflation, the nominal and real investment return based on the market value of assets, and the nominal and real salary growth for the past twenty years. The nominal rates are the actual investment rate and salary growth. The real rates are the nominal rates adjusted by removing inflation. The inflation rates shown are based on the Consumer Price Index (CPI-U) data.

Table 1

Comparison of Annual Rates of Growth

		Investment Return		Salary Growth	
Year	**Inflation**	**Nominal**	**Real**	**Nominal**	**Real**
1982	3.8	27.8	23.1	8.0	4.0
1983	3.8	13.0	8.9	0.0	(3.7)
1984	3.9	9.4	5.2	5.1	1.1
1985	3.8	23.1	18.6	3.6	(0.2)
1986	1.1	15.2	13.9	3.5	2.4
1987	4.4	3.3	(1.1)	3.4	(1.0)
1988	4.4	12.8	8.0	5.0	0.6
1989	4.6	17.8	12.6	6.0	1.3
1990	6.1	1.0	(4.8)	5.0	(1.0)
1991	3.1	22.6	19.0	1.0	(2.0)
1992	2.9	7.4	4.4	2.1	(0.8)
1993	2.7	13.2	10.2	5.1	2.3
1994	2.7	(1.1)	(3.7)	3.9	1.2
1995	2.5	25.5	22.4	3.8	1.2
1996	3.3	15.9	12.2	2.0	(1.3)
1997	1.7	18.0	16.0	3.0	1.3
1998	1.6	16.3	14.5	3.0	1.4
1999	2.7	19.9	16.8	3.0	0.3
2000	3.4	2.2	(1.1)	3.0	(0.4)
2001	1.6	(7.9)	(9.3)	3.3	1.7
Average 1997-2001	**2.2%**	**9.7%**	**7.4%**	**3.1%**	**0.8%**

Comments on Schedules

Employer Contribution Rate

Schedules A and B summarize the development of the employer contribution rate before allocation by group.

The normal cost is the level percentage of compensation needed to fund the liability for any prospective benefits earned by new active members over the period of their actual service. The normal cost calculation uses data for all active members in Class AA (60) who had not yet completed one year of credited service. The employer share of the normal cost decreased from 8.72 percent in 2000 to 8.64 percent in 2001. For the reasons shown in Schedule E, reductions in the employer normal cost more than offset the increase in normal cost attributable to Act 9.

The unfunded liability that existed on December 31, 2001 is being funded over 10 years from July 1, 2002. Changes in the unfunded liability will be amortized over 10 years from the July 1 following the effective date of the change. Changes can result from changes in actuarial assumptions, new legislation, or gains or losses because actual experience differs from the actuarial assumptions. Assets exceeded liabilities as of December 31, 2001 with a surplus (negative unfunded liability) of $3.85 billion. The surplus was $6.39 billion as of December 31, 2000. The reduction in the surplus of $2.54 billion was primarily attributable to the increased benefits provided by Act 9.

Schedule B shows the allocation of the unfunded liability into the liability attributable to past supplemental annuities (cost-of-living allowances) and the surplus attributable to all other benefits. Both amounts are being amortized over ten years in level dollar payments.

The negative unfunded liability as of December 31, 2001 is a temporary surplus that will gradually be recognized as an offset to future employer normal costs. The total credit for amortization of the surplus increased from 10.36 percent of payroll in 2000 to 12.03 percent of payroll in 2001. The surplus had declined as a result of Act 9 but the change in the amortization period resulted in a net increase in the amortization credit.

The employer contribution rate is equal to the total of the normal cost and the amortization of the unfunded liabilities but not less than zero. The employer contribution rate calculated as a result was zero in both 2000 and 2001.

Employer Contribution Rates by Group

Schedule C summarizes the development of the employer contribution rate for each group of members with different benefits. The Class AA(60) rate is the basic contribution rate because the majority of new members enter that class. The basic employer contribution rate for Class AA benefits is 0.00 percent of salary.

The employer contribution rates for other classes is a function of the Class AA(60) rate. Three adjustments are made for the Class rates. The first is to add the cost of earlier full retirement conditions if applicable. The second is to multiply by the ratio of (1) the annual accrual rate applicable to the Class to (2) the annual accrual rate of 2.5 percent for Class AA(60). Third, the Park Rangers, Capitol Police, State Police Officers, and the Class E members are also charged the amount necessary to fund the past service cost of benefit improvements that were effective in prior years. These charges are explained in Schedule O. The complete schedule of contributions by group is shown in Table 2.

Table 2
Employer Contribution Rate by Group
Fiscal Year 2002/2003

Class AA	
Age 60 benefit	0.00%
Age 50 benefit	0.79
Park Rangers	1.74
Capitol Police	1.74
Enforcement Officers	0.79
Class A	
Age 60 benefit	0.00
Age 50 benefit	0.63
Park Rangers	1.59
Capitol Police	1.59
State Police	8.11
Enforcement Officers	0.63
Class C	
State Police	8.11
Enforcement Officers	0.63
Class D	
D-3 Legislators	2.37
D-4 Legislators	0.00
Class E	1.09

The contribution rate for Class D-4 Legislators is 0.0 percent of payroll. In conjunction with the passage of Act 9, the D-4 employer contributed a lump sum amount which was more than sufficient to fund the additional cost of the higher accrual rate and the retirement at age 50. Therefore, the past service liability for Class D-4 Legislators is $0, and the past liability adjustment has been set to produce a contribution rate of zero. The excess contribution made by the D-4 employer will continue to be used to offset future D-4 employer contribution requirements.

Schedule D shows the development of the contribution rates for additional annuities for certain State Police and Enforcement Officers. These members receive an additional annuity that is equal to the accumulated member contributions and interest at retirement determined as if the members were at least age 60 at retirement. These benefits have been fully funded by past contributions so no future contribution is required.

Change in Employer Contribution Rate

Schedule E contains an analysis of the change in the employer contribution rate and unfunded liability from the 2000 to 2001 valuation. The new benefit and employee contribution provisions of Act 9 increased the employer cost of the retirement system by 5.81 percent of payroll. This increase was almost entirely offset by the 5.54 percent reduction in contribution resulting from the change to ten year amortization of unfunded liabilities.

The significant losses as a result of investment return less than the expected 8.5 percent in 2000 and 2001 were more than offset by recognition of investment return gains from 1997 through 1999. The result was a small, 0.27 percent, reduction in employer cost.

In connection with Act 9, Hay conducted a review of the assumptions in the valuation concerning purchase of service and the effect of election of optional benefits. Adoption of these revised assumptions resulted in a reduction in cost. This was partially offset by correction of an error in the 2000 valuation that increased costs by 0.23 percent of salary.The error was due do use of male mortality on females retired after 1995. The total effect of the changes in actuarial methods and assumptions was to reduce the employer cost by 0.62 percent of salary.

There were three other smaller reductions in the employer contributions that, in combination, reduced the employer cost by 0.40 percent of salary. One was the change in the demographics of new entrants between 2000 and 2001. The second was the effect of pay increases being slightly lower than expected. The third was the receipt of contributions in excess of the required zero percent. The amount needed to fully fund SERS in 2001 was negative. Since the actual contribution for employers was either zero or positive, there was a gain to the fund. Other differences between actual experience and actuarial assumptions reduced the cost by 0.73 percent of payroll.

The analysis of changes in the unfunded liability generally parallels the effect of changes in the unfunded liability component of the employer contribution rate. The largest change in unfunded liability was the increase of $2.7 billion attributable to Act 9 benefit improvements.

The change in demographics of new entrants and actuarial methods and assumptions increased the unfunded liability. The gain from investment return and pay increases lower than expected reduced the unfunded liability. Other differences resulted in a net decrease in the unfunded liability.

Actuarial Balance Sheet and Account Balance Transfers

Schedule F contains the actuarial balance sheet that compares the total assets and liabilities of $31.5 billion. The assets include current assets and the present value of future contributions. The liabilities include the present value of all benefits to current active and retired members.

Each year the account balances in the benefit payment accounts are compared to the actuarial liability developed in the valuation. The accounts are the Annuity Reserve Account, the State Police Benefit Account, and the Enforcement Officers' Benefit Account. If needed, transfers are made to bring the accounts into balance with the liabilities. The accounts go out of balance during the year as a result of differences between actual experience and the reserves set for retirees. In 2001, a transfer of $99.0 million was made from the State Accumulation Account to the Annuity Reserve Account to keep the latter account in balance. This transaction is shown in Schedule G.

Accounting Disclosure Statements

Schedule H is a statement of disclosure to report the information required by the Governmental Accounting Standards Board (GASB) Statement No. 25. Page 1 of Schedule H shows the funding progress from December 31, 1992 through December 31, 2001. The actuarial value of the assets is greater than the actuarial accrued liability as it has been since the December 31, 1992 actuarial valuation. As a result, the unfunded actuarial accrued liability (UAAL) is negative.

Page 2 of Schedule H shows that the actual contribution to the system has been consistent with the Annual Required Contribution (ARC). The ARC is the actual contribution unless the contribution rates differed from the actuarial calculation. In those cases, the ARC is the amount that would have been paid based on the contribution rate calculated in the valuation.

Valuations are performed on December 31 of each year and the results are presented to the Board as a basis for determining the employer contribution rate for the year beginning July 1 after the valuation date. The Board has adopted the rate from the valuation unless information available after the valuation supported an adjustment to the valuation rate.

The Board adopted the valuation rate as the contribution rate in 1995 through 2000. The Board adopted slightly different rates in 1993 and 1994 based on information available after the valuation was performed. The actuary agreed with the actions taken by the Board in 1993 and 1994. The effect of the adjustments to the contribution rate extended over two calendar years so the 1993 through 1995 actual fiscal year contributions are different from the ARCs in those years.

During the year 2001, actual contributions exceeded the ARC. For the period July 1, 2001 through December 31, 2001, the ARC was set at zero. However, the System required payment from special classes for past liabilities due to retro-active benefit enhancements. Collection of those amounts resulted in the actual contributions exceeding the ARC.

Schedule I shows the results of the solvency test. A short-term solvency test is one means of checking a pension system's progress under its funding program. In this solvency test, the SERS assets are compared with the actuarial accrued liabilities. The liabilities are classified into the following categories:

- Liability for active member contributions in the Fund,
- Liability for future benefits to present retired lives, and
- Liability for service already rendered by the active members.

The schedule shows that the total actuarial accrued liability is fully covered by the assets as it has been since December 31, 1992.

Plan Assets

Schedule J summarizes the development of the actuarial value of assets as of December 31, 2001. The assets are based on the financial statements prepared by SERS. The asset valuation method smoothes out year-to-year fluctuations in the market value. The approach gradually recognizes, over a 5-year period, the differences between total investment return and the actuarial assumed rate of return (8.5 percent in 2001). This smoothing method recognizes 20 percent of the 2001 asset loss of $4.4 billion this year, with the remainder to be recognized over the next four years.

Projection

Schedule K shows the number of members, contributions, and benefits from 1990 through 2001 with a projection through 2012. The first half of Schedule K shows new retirements, deaths from former employees, new survivors, and deaths from survivors during the year. The second half of Schedule K shows the projection of employer and employee contributions and a projection of the benefits and expenses.

Participant Data

Section I of Schedule L provides a distribution of the active and inactive participants as of December 31, 2001 by benefit class, sex, age, and length of service. It also shows the average annualized salary in 2001 by age group and sex. Section II of the schedule shows the retired participants and beneficiaries by age, sex, and benefit amounts.

Although we have made tests to check for reasonableness and consistency, we have not independently audited the data, which were submitted by SERS.

Plan Provisions

Schedule M contains a summary of the principal provisions of the plan. There have been significant changes in plan benefits since December 31, 2000.

The retirement plan was substantially changed by Act 9 passed in May 2001. The primary changes were to increase benefits and employee contributions by 25 percent. Other changes were to lower the minimum vesting requirement from 10 to 5 years, add a supplemental death benefit, and add a floor increase equal to the actuarial value of the preceding year's benefit for eligible members who work beyond their 70^{th} birthday. Benefits were capped at the lower of 100 percent of salary or the limits imposed by Internal Revenue Code Section 415.

Act 9 also changed the amortization period for gains and losses from 20 year increasing amortization to 10 year level amortization.

Actuarial Assumptions

Schedule N summarizes the actuarial assumptions used for the valuation. The two types of assumptions are the economic assumptions, such as the investment return and salary growth assumptions, and demographic assumptions, such as the assumed rate of mortality and retirement. The assumptions are generally the same as in the 2000 valuation.

There were two changes in the actuarial assumptions between 2000 and 2001. The first was to reflect the reduction in the vesting requirement from 10 to 5 years. We assumed that members leaving with 5 to 10 years of service would have the same rates of retirement with immediate benefit as members leaving at the same age with 10 to 14 years of service. We reduced the rates of separation with a withdrawal of contributions for those with 5 to 10 years of service by the rate of retirement for those who received an immediate benefit. The result was to keep the total separation assumption at the old rate, as long as the prior withdrawal rate was greater than or equal to the early retirement rate.

The second change resulted from a review of the amount of non-SERS service purchased by members. It was found that the amount of service purchased had dropped since the last review so those rates were reduced accordingly.

Actuarial Methods

Schedule O explains the asset valuation and funding method used in the valuation, and the determination of the annual contribution. The asset valuation method amortizes investment gains and losses over five years. The funding method provides for reasonable levels of contribution that will fund the cost of future benefits with a credit for amortization of the excess of assets over liabilities. Schedule O also explains how the individual class rates are determined. The final section of Schedule O discusses the plan provisions that are not valued.

Definitions

Schedule P defines certain technical terms used in the valuation.

State Employees' Retirement System
Unfunded Liability and Normal Cost as of December 31, 2001

I.	Present Value of Benefits:		
	1) Active and Inactive Participants		
	a) Superannuation and Withdrawal	$	20,520,107,091
	b) Disability		1,030,479,511
	c) Death		1,209,308,584
	d) Refunds		30,100,209
	e) Special Police and Enforcement Officer Benefits		11,360,588
	2) Annuitants and Beneficiaries		8,684,733,976
	3) Total	$	31,486,089,959
II.	Present Value of Member and Employer Contributions:		
	1) Employer Portion of Normal Cost	$	4,369,294,709
	2) Member Contributions		3,458,038,603
	3) Total	$	7,827,333,312
III.	Actuarial Accrued Liability: (I) - (II)	$	23,658,756,647
IV.	Actuarial Value of Assets	$	27,505,493,986
V.	Unfunded Liability (III) - (IV)	$	(3,846,737,339)
VI.	Employer Normal Cost Rate		
	1) Normal Cost Rate for new active members to fund:		
	a) Superannuation and Withdrawal		12.71%
	b) Disability		1.02%
	c) Death		0.74%
	d) Refunds		0.42%
	e) Total		14.89%
	2) Member Deductions		6.25%
	3) Employer Normal Cost (1) - (2)		8.64%

State Employees' Retirement System

<u>Employer Contribution Rate in Fiscal Year 2002 - 2003</u>

	Funding Period 10 Years from July 1	Initial Amount of Liability	Outstanding Balance as of 12/31/01	Annual Payment Amount	Payment as a Percent of Payroll *
I. Amortization of:					
1) Liability for Supplemental Annuities	2002	$1,143,657,729	$ 1,143,657,729	$ 174,303,527	3.58%
2) Liability for Other Benefits	2002	(4,990,395,068)			-15.61%
Total Liability			$ (3,846,737,339)	$ (586,276,704)	-12.03%
II. Employer Normal Cost					**8.64%**
III. Basic Employer Contribution Rate = (I) + (II), but not less than zero		(4,990,395,068)	(760,580,231)		**0.00%**

* The payment is expressed as a percentage of the total projected payroll for active members in fiscal year 2002-2003 of $4,872,375,000. Percentages may not add due to rounding.

<u>SCHEDULE B</u>

State Employees' Retirement System
Employer Contribution Rate by Group

Employer Group (1)	Basic Contribution Rate (2)	Age 50 Retirement Adjustment (3)	Multiplier Adjustment* (4)	Past Liability Adjustment (5)	Adjusted Contribution Rate** (6)	Projected 2002-2003 Payroll (7)	Employer Contribution Amount (8)
Class AA - Age 60 Retirement	0.00%		1.0000		0.00%	$ 3,791,421,000	-
Class A - Age 60 Retirement	0.00%		0.8000		0.00%	53,434,000	-
Class AA - Age 50 Retirement (Including Enforcement Officers)	0.00%	0.79%	1.0000		0.79%	635,123,000	$ 5,017,472
Class A - Age 50 Retirement (Including Enforcement Officers)	0.00%	0.79%	0.8000		0.63%	16,304,000	102,715
Class AA - Park Rangers & Capitol Police	0.00%	0.77%	1.0000	0.97%	1.74%	9,596,000	166,970
Class A - Park Rangers & Capitol Police	0.00%	0.77%	0.8000	0.97%	1.59%	45,000	716
State Police (Class A & Class C)	0.00%	0.79%	1.1395	7.21%	8.11%	263,555,000	21,374,311
Class D3	0.00%	0.79%	3.0000		2.37%	627,000	14,860
Class D4	0.00%	0.79%	1.2000	-0.95%	0.00%	14,539,000	-
Class E	0.00%		1.2677	1.09%	1.09%	87,731,000	956,268
					Total	$ 4,872,375,000	$ 27,633,311

* The multiplier adjustment at column 4 is the adjustment for the employer group contribution rate. Because the majority of SERS members are covered under Class AA(60), the 2.5 percent accrual rate for that Class is used to determine the basic contribution rate. Column (4) is the ratio of the class contribution rate to 2.5 percent

** The adjusted contribution rate is [(2) + (3)] times (4) + (5)

State Employees' Retirement System
<u>State Police and Enforcement Officers Additional Annuity Rate</u>
(Fiscal Year 2002 - 2003)

		State Police	Enforcement Officers
1)	Balance in Benefit Account as of December 31, 2001	$1,124,075,287	$27,272,834
2)	Present Value of Benefits for Annuitants and Beneficiaries	1,084,488,007	25,187,706
3)	Assets available for additional annuities for Active Members: (1) - (2)	39,587,280	2,085,128
4)	Present Value of additional annuities for Active Members	9,868,818	1,491,770
5)	Present Value of Future Contribution to fund additional annuities: (4) - (3); not less than zero	-	-
6)	Present Value of Future Compensation for eligible Active Members	*	*
7)	Contribution Rate as a percentage of payroll payable January 1: (5) / (6)	0.00%	0.00%

* Not calculated because additional annuity is fully funded.

State Employees' Retirement System

Analysis of the Change in Employer Contribution Rate

		Normal Cost	Unfunded Liability	Total
I.	December 31, 2000 Valuation	8.72%	-10.36%	-1.64%
II.	Changes in the December 31, 2001 Valuation:			
	1) Gain from investment earnings		-0.27%	-0.27%
	2) Change in demographics of new entrants	-0.66%	0.50%	-0.16%
	3) Pay increase different than assumptions		-0.16%	-0.16%
	4) Change in actuarial methods and assumptions	-1.14%	0.52%	-0.62%
	5) Gain from contributions		-0.08%	-0.08%
	6) New benefit provisions of Act 2001 - 9	1.72%	4.09%	5.81%
	7) Other differences between actual experience and actuarial assumptions		-0.73%	-0.73%
	8) Total change before modification of funding method	-0.08%	3.87%	3.79%
	9) New funding provisions of Act 2001 - 9*		-5.54%	-5.54%
III.	December 31, 2001 Valuation: (I) + (II.8) + (II.9)	8.64%	-12.03%	-3.39%

Analysis of the Change in the Unfunded Liability

I.	December 31, 2000 Unfunded Liability	$ (6,392,028,230)
II.	Expected Amortization Payment	(494,269,695)
III.	Expected Liability as of December 31, 2001 [((I) x 1.085) - (II)]	$ (6,441,080,935)
IV.	Change in Liability Due to:	
	1) Gain from investment earnings	$ (182,272,328)
	2) Change in demographics of new entrants	333,765,568
	3) Pay increase different than assumptions	(108,201,268)
	4) Change in actuarial methods and assumptions	348,789,360
	5) Gain from contributions	(52,059,776)
	6) Act 2001 - 9 Benefits	2,735,791,064
	7) Other differences between actual experience and actuarial assumptions	(481,469,024)
	8) Total change	$ 2,594,343,596
V.	December 31, 2001 Unfunded Liability: (III) + (IV. 8)	$ (3,846,737,339)

* Note: the new funding provisions of Act 2001-9 do not affect the dollar amount of the unfunded liability

State Employees' Retirement System

Actuarial Balance Sheet as of December 31, 2001

ASSETS

Present Assets:

Members Savings Account	$ 3,344,107,442
Annuity Reserve Account	7,575,058,263
State Police Benefit Account	1,124,075,287
Enforcement Officers Benefit Account	27,272,834
State Accumulation Account *	13,779,207,349
Supplemental Annuity Account	(1,143,657,729)
Total Present Assets (Market Value)	$ 24,706,063,446
Adjustment to Smooth Market Fluctuations	2,799,430,540
Total Present Assets (Actuarial Value)	$ 27,505,493,986

Present Value of Future Contributions

Members' Contributions (Employee)	$ 3,458,038,603
Normal Cost Contributions (Employer)	4,369,294,709
Accrued Liability Amortization (Employer)	(4,990,395,068)
Supplemental Annuity Amortizatio (Employer)	1,143,657,729
Special State Police Contributions (Employer)	0
Special Enforcement Officer Contributions (Employer)	0
Total Future Contributions	$ 3,980,595,973
TOTAL ASSETS	$ 31,486,089,959

* Includes $2,265,210 in directed commissions.

LIABILITIES

Present Value of Benefits Payable to Annuitants and Beneficiaries from:

Annuity Reserve Account	$ 7,575,058,263
State Police Benefit Account	1,084,488,007
Enforcement Officers Benefit Account	25,187,706
Total for Annuitants and Beneficiaries	$ 8,684,733,976

Present Value of Benefits to Active and Inactive Members from:

Members Savings Account and State Accumulation Account

Superannuation and withdrawal	$ 20,520,107,091
Disability	1,030,479,511
Death	1,209,308,584
Refunds	30,100,209
Subtotal	$ 22,789,995,395
State Police Benefit Account	9,868,818
Enforcement Officers Benefit Account	1,491,770
Total Present Value of Benefits to Active and Inactive Members	$ 22,801,355,983
TOTAL LIABILITIES	$ 31,486,089,959

State Employees' Retirement System
Required Transfers Within SERS Accounts

I. Annuity Reserve Account

Balance as reported by SERS	$ 7,476,037,833
Transfer from State Accumulation Account	99,020,430
December 31, 2001 balance after transfers	$ 7,575,058,263

II. State Accumulation Account *

Balance as reported by SERS	$13,878,227,779
Transfer to Annuity Reserve Account	(99,020,430)
December 31, 2001 balance after transfers	$13,779,207,349

* Balance includes $2,265,210 in directed commissions.

State Employees' Retirement System
Accounting Disclosure Statements

I. Schedule of Funding Progress as of December 31, 2001
(Dollars in Thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded Actuarial Accrued Liability (UAAL) (b-a)	Funded Ratio (a) / (b)	Covered Payroll (c)	Unfunded Actuarial Accrued Liability as a Percentage of Covered Payroll ((b-a)/c)
12/31/92	11,769,388	11,488,414	(280,974)	102.4%	3,533,428	-8.0%
12/31/93	13,060,613	12,213,736	(846,877)	106.9%	3,731,515	-22.7%
12/31/94	13,991,485	13,742,056	(249,429)	101.8%	3,990,440	-6.3%
12/31/95 *	15,510,309	15,067,205	(443,104)	102.9%	4,021,605	-11.0%
12/31/96	16,841,069	15,936,616	(904,453)	105.7%	4,163,683	-21.7%
12/31/97	18,565,136	17,288,413	(1,276,723)	107.4%	4,219,034	-30.3%
12/31/98	20,670,711	18,357,899	(2,312,812)	112.6%	4,446,147	-52.0%
12/31/99	23,624,267	19,091,840	(4,532,427)	123.7%	4,519,112	-100.3%
12/31/00 *	26,094,306	19,702,278	(6,392,028)	132.4%	4,769,180	-134.0%
12/31/01	27,505,494	23,658,757	(3,846,737)	116.3%	4,872,375	-78.9%

* Revised economic and demographic assumptions due to experience review.

II. Schedule of Employer Contributions as of December 31, 2001

(Dollars in Thousands)

Calendar Year	Annual Required Contribution	Actual Contribution	Percentage Contributed
1992	319,093	319,093	100.0%
1993	310,089	304,122	98.1%
1994	342,158	342,927	100.2%
1995	376,692	384,506	102.1%
1996	373,903	373,903	100.0%
1997	324,093	324,093	100.0%
1998	310,501	310,501	100.0%
1999	269,869	269,869	100.0%
2000	168,002	168,002	100.0%
2001	52,104	76,709	147.2%

Notes to Governmental Accounting Standards Board Statement No. 25

The actual contribution amounts in the above table include the employer share of regular contributions, the employer share of purchased service and contributions for employee service under the Public School Employees' Retirement System.

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows.

Accounting Disclosure Statements (continued)

Valuation Date	December 31, 2001
Actuarial cost method	Variation of Entry-age Actuarial Cost Method
Amortization method	10-year schedule with level payments
Remaining amortization period	10 years
Asset valuation method	5-year smooth market
Actuarial Assumptions	
Investment rate of return	8.5 percent
Projected salary increases	Average increase of 6.8 percent (range: 5.16 to 8.98 percent)
Inflation	3.0 percent
Cost-of-living adjustments	None

The Annual Required Contribution (ARC) is equal to the sum of the following:

> The employer share of the normal cost.
>
> The amortization of the unfunded liabilities as of December 31, 2001 over a ten-year period ending on June 30, 2012.
>
> The amortization of changes in liability after 2001 over ten-year periods typically beginning with the July first following the effective date of the change in liability. Changes include actuarial gains and losses and plan amendments.

Valuations are performed on December 31 of each year and the results are presented to the Board as a basis for determining the employer contribution rate for the year beginning July 1 after the valuation date. The Board has adopted the rate from the valuation unless information available after the valuation supports an adjustment to the valuation rate.

The Board adopted the valuation rate as the contribution rate since 1995. The Board adopted slightly different rates in 1993 and 1994 based on information available after the valuation was performed. In 1993, the valuation rate of 9.27 percent was lowered to 8.92 percent because it was determined that the payroll reported for the valuation was unusually high and that future payrolls were expected to be relatively lower. In 1994, the valuation rate of 8.53 percent was increased to 8.92 percent to allow for the extension of the early retirement window and acceleration of the longevity pay scales.

Accounting Disclosure Statements (continued)

During 2001, actual contributions exceeded the ARC. For the period July 1, 2001 through December 31, 2001, the ARC was set at zero. However, contributions were made by employers of some special class employees for the cost of additional benefits including payment of past liabilities for retro-active benefit enhancements. Collection of those amounts resulted in the actual contributions exceeding the ARC.

The actuary agreed with the actions taken by the Board that resulted in some difference between the ARC and the actual contribution. The table above shows the ARC based on the actuarial valuation. The effect of the adjustments in 1993 and 1994 extended over three calendar years so the 1993 through 1995 actual contributions are different from the ARCs in those years. The actual contributions were higher than the ARC in 2001.

All of the amortization payments are based on a 10-year schedule of contributions which remain level during the amortization period. The employer cost is determined as a percent of payroll, and the employer contributes that percent of the payroll of all covered members during each fiscal year.

GASB #25 establishes the range of funding methods for the Unfunded Actuarial Accrued Liability. The payments for SERS are within the range of funding specifications under GASB #25.

State Employees' Retirement System
Solvency Test

Valuation Date	Actuarial Accrued Liabilities For (1) Active Member Contributions	(2) Retirees & Beneficiaries	(3) Active Members (Employer Financed Portion)	Total Actuarial Accrued Liability (AAL)	Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Reported Assets (1)	(2)	(3)	Funded Ratio
	(Amounts in Thousands)								
December 31, 1992	$ 1,994,567	$ 4,621,318	$ 4,872,529	$ 11,488,414	$ 11,769,388	100.0%	100.0%	100.0%	102.4%
December 31, 1993	2,170,593	4,806,907	5,236,236	12,213,736	13,060,613	100.0	100.0	100.0	106.9
December 31, 1994	2,352,731	5,039,221	6,350,104	13,742,056	13,991,485	100.0	100.0	100.0	101.8
December 31, 1995	2,499,485	5,649,454	6,918,265	15,067,205	15,510,309	100.0	100.0	100.0	102.9
December 31, 1996	2,646,630	6,027,333	7,262,653	15,936,616	16,841,069	100.0	100.0	100.0	105.7
December 31, 1997	2,748,177	6,951,411	7,588,825	17,288,413	18,565,136	100.0	100.0	100.0	107.4
December 31, 1998	2,904,232	7,200,000	8,253,666	18,357,899	20,670,711	100.0	100.0	100.0	112.6
December 31, 1999	2,989,489	7,779,993	8,322,358	19,091,840	23,624,267	100.0	100.0	100.0	123.7
December 31, 2000	3,182,776	8,148,876	8,370,626	19,702,278	26,094,306	100.0	100.0	100.0	132.4
December 31, 2001	3,344,107	8,684,734	11,629,915	23,658,757	27,505,494	100.0	100.0	100.0	116.3

State Employees' Retirement System
Actuarial Value of Assets

I.	Development of 12/31/01 Expected Actuarial Value:		
	1)	Actuarial Value as of 12/31/00	$ 26,094,306,293
	2)	Contributions in 2001	317,237,630
	3)	Benefits and Expenses in 2001	(1,266,015,251)
	4)	Investment return at 8.5% to 12/31/01 on (1)	2,218,016,035
	5)	Investment return at 8.5% to 12/31/01 on (2) and (3) .5 x ((2) + (3))	(40,323,049)
	6)	Expected Actuarial Value as of 12/31/01: (1) + (2) + (3) + (4) + (5)	$ 27,323,221,658
II.	Previous Differences Not Yet Amortized:		
	1)	Unrecognized amount of 12/31/97 Difference: .2 x $1,909,855,668	$ 381,971,134
	2)	Unrecognized amount of 12/31/98 Difference: .4 x $1,805,107,670	722,043,068
	3)	Unrecognized amount of 12/31/99 Difference: .6 x $2,988,135,569	1,792,881,341
	4)	Unrecognized amount of 12/31/00 Difference: .8 x ($1,388,417,592)	(1,110,734,074)
	5)	Total	$ 1,786,161,469
III.	Gain or Loss from 2001		
	1)	Market Value of Assets on 12/31/01	$ 24,706,063,446
	2)	Expected Market Value II(5) + I(6)	29,109,383,127
	3)	Gain (loss) from 2001 Investments (1) - (2)	$ (4,403,319,681)
IV.	Development of Actuarial Value of Assets as of 12/31/01:		
	1)	20% of $1,909,855,668 (12/31/97 Difference):	$ 381,971,134
	2)	20% of $1,805,107,670 (12/31/98 Difference):	361,021,534
	3)	20% of $2,988,135,569 (12/31/99 Difference):	597,627,114
	4)	20% of ($1,388,417,592) (12/31/00 Difference):	(277,683,518)
	5)	20% of ($4,403,319,681) (12/31/01 Difference):	(880,663,936)
	6)	Total Difference: (1) + (2) + (3) + (4) + (5)	$ 182,272,328
	7)	Actuarial Value at 12/31/01: I(6) + IV(6)	$ 27,505,493,986

State Employees' Retirement System
Projection of Population, Benefits, and Contributions

Projection of Annuitants and Employees
Actual Data Through 2001

Calendar Year	New Retirements During the Year	Deaths During the Year	Former Employees (EOY)	New Survivors During the Year	Deaths During the Year	Survivors (EOY)	Total Retired and Survivor Lives	Active Employees
1990			68,156			6,066	74,222	111,248
1991			69,908			6,332	76,240	105,731
1992			73,897			6,595	80,492	109,609
1993			73,894			6,796	80,690	111,962
1994			73,780			7,055	80,835	114,120
1995			74,110			7,094	81,204	112,637
1996			75,609			7,477	83,086	110,922
1997			77,667			7,790	85,457	108,684
1998			78,017			7,817	85,834	108,893
1999			80,095			7,948	88,043	108,035
2000			80,289			8,103	88,392	109,469
2001			80,911			8,306	89,217	109,716
2002	4,569	2,733	82,747	594	409	8,491	91,238	109,716
2003	4,418	2,783	84,382	604	406	8,689	93,071	109,716
2004	4,322	2,861	85,843	619	429	8,879	94,722	109,716
2005	4,488	2,932	87,399	633	450	9,062	96,461	109,716
2006	4,603	3,001	89,001	646	474	9,234	98,235	109,716
2007	4,835	3,066	90,770	658	497	9,395	100,165	109,716
2008	5,041	3,121	92,690	667	520	9,542	102,232	109,716
2009	5,159	3,182	94,667	678	543	9,677	104,344	109,716
2010	5,151	3,241	96,577	688	567	9,798	106,375	109,716
2011	5,113	3,298	98,392	698	592	9,904	108,296	109,716
2012	5,499	3,356	100,535	724	614	10,014	110,549	109,716

State Employees' Retirement System

Projection of Population, Benefits, and Contributions

Projection of Expected Contributions and Benefits
Actual Data Through 2001
(Dollars in Millions)

Calendar Year	Contributions: Employee	Contributions: Employer	Benefits / Expenses
1990	$ 175	$ 418	$ 607
1991	183	381	664
1992	187	319	851
1993	190	304	781
1994	193	343	812
1995	202	385	894
1996	210	374	943
1997	213	324	1,037
1998	222	311	1,080
1999	224	270	1,248
2000	232	168	1,198
2001	240	77	1,266
2002	305	27	1,424
2003	315	28	1,589
2004	325	161	1,739
2005	336	455	1,880
2006	347	756	2,030
2007	359	977	2,276
2008	371	1,195	2,551
2009	383	1,359	2,759
2010	395	1,395	2,974
2011	408	1,422	3,201
2012	422	1,733	3,599

The projection is based upon the following assumptions: a projected investment loss of 4.5 percent for 2002 and return of 8.5 percent thereafter; general pay increases of 3.3 percent; and supplemental annuity increases in 2002/2003, 2007 and 2012.

State Employees' Retirement System

I. Age, Service and Salary Profile of Active Participants as of December 31, 2001

Active Employees*

Males - Full Years of Service to December 31, 2001

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total	Average Salary
Less than 20	17	0	0	0	0	0	0	17	$ 20,780
20-24	598	5	0	0	0	0	0	603	24,302
25-29	1,391	287	7	0	0	0	0	1,685	30,138
30-34	1,484	1,259	410	15	0	0	0	3,168	34,443
35-39	1,311	1,175	1,284	562	42	0	0	4,374	38,397
40-44	1,297	1,150	1,364	1,399	1,051	52	0	6,313	40,987
45-49	1,325	1,212	1,381	1,342	1,845	1,241	147	8,493	43,658
50-54	1,124	1,040	1,131	1,133	1,525	2,562	1,603	10,118	47,940
55-59	776	747	804	776	809	1,244	2,235	7,391	50,635
60-64	343	420	445	346	301	322	880	3,057	51,435
65+	194	214	223	131	103	92	316	1,273	50,936
Total	9,860	7,509	7,049	5,704	5,676	5,513	5,181	46,492	$ 44,175

Average Age 47.57

Average Service 14.91

Females - Full Years of Service to December 31, 2001

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total	Average Salary
Less than 20	51	0	0	0	0	0	0	51	$ 20,828
20-24	904	28	0	0	0	0	0	932	23,804
25-29	1,530	442	36	0	0	0	0	2,008	27,924
30-34	1,502	1,110	708	65	0	0	0	3,385	31,179
35-39	1,340	977	1,130	780	139	0	0	4,366	33,885
40-44	1,500	1,119	1,202	1,109	1,345	127	0	6,402	36,210
45-49	1,376	1,095	1,378	1,101	1,556	1,932	298	8,736	39,193
50-54	1,008	943	1,227	1,051	1,225	1,700	1,457	8,611	40,607
55-59	552	625	858	862	933	909	919	5,658	40,545
60-64	219	313	422	329	342	306	307	2,238	39,988
65+	100	104	198	127	101	73	131	834	37,169
Total	10,082	6,756	7,159	5,424	5,641	5,047	3,112	43,221	$ 37,171

Average Age 46.07

Average Service 13.94

* The following three pages contain information on members in special categories. These include selected hazardous duty members, legislators, judges and district justices. The above information is for all other active members. Page five of Schedule L is the total of all active categories. Page six is the total of all active and inactive employees.

State Employees' Retirement System
I. Age, Service and Salary Profile of Active Participants as of December 31, 2001

Selected Hazardous Duty*

Males - Full Years of Service to December 31, 2001

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total	Average Salary
Less than 20	0	0	0	0	0	0	0	0	$ -
20-24	120	0	0	0	0	0	0	120	26,771
25-29	1,011	182	0	0	0	0	0	1,193	33,869
30-34	1,080	1,791	463	4	0	0	0	3,338	44,168
35-39	632	1,095	1,304	230	3	0	0	3,264	47,477
40-44	388	496	665	679	186	5	0	2,419	49,243
45-49	293	387	425	422	436	113	1	2,077	49,990
50-54	260	403	403	350	269	310	117	2,112	49,813
55-59	121	219	244	235	97	109	179	1,204	49,699
60-64	23	86	85	73	31	23	33	354	48,439
65+	15	16	19	13	9	8	11	91	47,723
Total	3,943	4,675	3,608	2,006	1,031	568	341	16,172	$ 46,716

Average Age 41.34
Average Service 10.19

Females - Full Years of Service to December 31, 2001

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total	Average Salary
Less than 20	2	0	0	0	0	0	0	2	$ 21,534
20-24	50	0	0	0	0	0	0	50	26,178
25-29	183	26	0	0	0	0	0	209	31,977
30-34	204	151	21	0	0	0	0	376	37,210
35-39	163	123	89	14	0	0	0	389	39,125
40-44	117	108	92	101	33	2	0	453	44,077
45-49	96	132	94	79	86	30	2	519	45,498
50-54	41	77	83	47	49	36	9	342	49,199
55-59	19	36	49	29	19	12	8	172	47,437
60-64	5	20	24	15	12	4	5	85	54,109
65+	1	2	8	4	4	1	2	22	51,882
Total	881	675	460	289	203	85	26	2,619	$ 42,593

Average Age 42.33
Average Service 9.16

* Enforcement officers, correction officers, psychiatric security aides, and officers of the Pennsylvania State Police and the Delaware River Port Authority

State Employees' Retirement System

I. Age, Service and Salary Profile of Active Participants as of December 31, 2001

Legislators

Males - Full Years of Service to December 31, 2001

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total	Average Salary
Less than 20	0	0	0	0	0	0	0	0	$ -
20-24	0	0	0	0	0	0	0	0	-
25-29	0	0	0	0	0	0	0	0	-
30-34	3	1	0	0	0	0	0	4	63,629
35-39	7	9	0	0	0	0	0	16	63,629
40-44	7	7	7	2	3	0	0	26	64,149
45-49	5	15	5	7	5	1	0	38	65,810
50-54	2	8	8	6	11	7	0	42	66,361
55-59	3	0	5	13	7	4	2	34	67,634
60-64	2	6	2	4	3	1	5	23	64,746
65+	0	4	1	4	1	7	12	29	66,264
Total	29	50	28	36	30	20	19	212	$ 65,749

Average Age 52.91
Average Service 15.47

Females - Full Years of Service to December 31, 2001

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total	Average Salary
Less than 20	0	0	0	0	0	0	0	0	$ -
20-24	0	0	0	0	0	0	0	0	-
25-29	0	0	0	0	0	0	0	0	-
30-34	2	0	0	0	0	0	0	2	63,629
35-39	0	0	0	0	0	0	0	0	-
40-44	1	4	1	0	0	0	0	6	63,629
45-49	1	0	0	2	0	0	0	3	63,629
50-54	1	2	2	1	0	0	0	6	63,629
55-59	2	7	1	0	0	0	0	10	63,629
60-64	0	1	1	2	0	0	0	4	65,861
65+	0	0	4	0	0	0	1	5	65,414
Total	7	14	9	5	0	0	1	36	$ 64,125

Average Age 53.89
Average Service 9.83

State Employees' Retirement System
I. Age, Service and Salary Profile of Active Participants as of December 31, 2001

Judges And District Justices

Males - Full Years of Service to December 31, 2001

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total	Average Salary
Less than 20	0	0	0	0	0	0	0	0	$ -
20-24	0	0	0	0	0	0	0	0	-
25-29	1	0	0	0	0	0	0	1	59,085
30-34	6	1	0	0	0	0	0	7	59,085
35-39	9	6	3	0	0	0	0	18	62,431
40-44	22	16	8	4	0	0	0	50	68,802
45-49	33	28	31	15	9	3	0	119	81,284
50-54	48	36	43	26	26	10	2	191	85,212
55-59	16	32	51	26	27	13	4	169	91,581
60-64	12	20	27	17	17	13	8	114	93,412
65+	4	6	17	8	17	9	7	68	100,698
Total	151	145	180	96	96	48	21	737	$ 86,782

Average Age 54.14
Average Service 12.46

Females - Full Years of Service to December 31, 2001

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total	Average Salary
Less than 20	0	0	0	0	0	0	0	0	$ -
20-24	0	0	0	0	0	0	0	0	-
25-29	1	0	0	0	0	0	0	1	59,085
30-34	6	0	0	0	0	0	0	6	59,085
35-39	6	5	1	0	0	0	0	12	63,937
40-44	14	10	4	2	1	0	0	31	80,799
45-49	13	17	16	3	2	0	0	51	92,321
50-54	9	12	18	10	5	1	0	55	92,376
55-59	5	5	14	10	4	0	0	38	89,932
60-64	1	4	5	4	4	3	0	21	75,010
65+	1	3	3	2	2	1	0	12	73,880
Total	56	56	61	31	18	5	0	227	$ 85,259

Average Age 50.73
Average Service 10.13

State Employees' Retirement System
I. Age, Service and Salary Profile of Active Participants as of December 31, 2001

All Active Employees

Males - Full Years of Service to December 31, 2001

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total	Average Salary
Less than 20	17	0	0	0	0	0	0	17	$ 20,780
20-24	718	5	0	0	0	0	0	723	24,712
25-29	2,403	469	7	0	0	0	0	2,879	31,694
30-34	2,573	3,052	873	19	0	0	0	6,517	39,468
35-39	1,959	2,285	2,591	792	45	0	0	7,672	42,369
40-44	1,714	1,669	2,044	2,084	1,240	57	0	8,808	43,480
45-49	1,656	1,642	1,842	1,786	2,295	1,358	148	10,727	45,380
50-54	1,434	1,487	1,585	1,515	1,831	2,889	1,722	12,463	48,891
55-59	916	998	1,104	1,050	940	1,370	2,420	8,798	51,359
60-64	380	532	559	440	352	359	926	3,548	52,571
65+	213	240	260	156	130	116	346	1,461	53,356
Total	13,983	12,379	10,865	7,842	6,833	6,149	5,562	63,613	$ 45,386

Average Age 46.08
Average Service 13.68

Females - Full Years of Service to December 31, 2001

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total	Average Salary
Less than 20	53	0	0	0	0	0	0	53	$ 20,855
20-24	954	28	0	0	0	0	0	982	23,925
25-29	1,714	468	36	0	0	0	0	2,218	28,320
30-34	1,714	1,261	729	65	0	0	0	3,769	31,842
35-39	1,509	1,105	1,220	794	139	0	0	4,767	34,388
40-44	1,632	1,241	1,299	1,212	1,379	129	0	6,892	36,952
45-49	1,486	1,244	1,488	1,185	1,644	1,962	300	9,309	39,844
50-54	1,059	1,034	1,330	1,109	1,279	1,737	1,466	9,014	41,264
55-59	578	673	922	901	956	921	927	5,878	41,106
60-64	225	338	452	350	358	313	312	2,348	40,857
65+	102	109	213	133	107	75	134	873	38,206
Total	11,026	7,501	7,689	5,749	5,862	5,137	3,139	46,103	$ 37,737

Average Age 45.88
Average Service 13.65

State Employees' Retirement System
I. Age, Service and Salary Profile of Active Participants as of December 31, 2001

Active And Inactive Employees

Males - Full Years of Service to December 31, 2001

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total
Less than 20	17	0	0	0	0	0	0	17
20-24	720	5	0	0	0	0	0	725
25-29	2,407	478	7	0	0	0	0	2,892
30-34	2,590	3,079	886	19	0	0	0	6,574
35-39	1,981	2,325	2,640	797	45	0	0	7,788
40-44	1,747	1,707	2,126	2,115	1,250	57	0	9,002
45-49	1,700	1,691	1,924	1,830	2,329	1,373	151	10,998
50-54	1,560	1,538	1,675	1,589	1,883	2,942	1,781	12,968
55-59	1,041	1,030	1,176	1,100	972	1,415	2,555	9,289
60-64	443	556	604	496	390	394	1,046	3,929
65+	242	255	271	179	145	136	375	1,603
Total	14,448	12,664	11,309	8,125	7,014	6,317	5,908	65,785

Average Age 46.31
Average Service 13.73

Females - Full Years of Service to December 31, 2001

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total
Less than 20	53	0	0	0	0	0	0	53
20-24	954	28	0	0	0	0	0	982
25-29	1,722	476	36	0	0	0	0	2,234
30-34	1,750	1,303	754	65	0	0	0	3,872
35-39	1,534	1,142	1,300	808	140	0	0	4,924
40-44	1,691	1,291	1,418	1,258	1,395	129	0	7,182
45-49	1,614	1,336	1,644	1,268	1,671	1,979	306	9,818
50-54	1,287	1,146	1,460	1,184	1,329	1,774	1,498	9,678
55-59	762	753	1,019	957	981	959	963	6,394
60-64	307	377	502	394	403	351	358	2,692
65+	135	126	227	143	119	89	140	979
Total	11,809	7,978	8,360	6,077	6,038	5,281	3,265	48,808

Average Age 46.17
Average Service 13.50

State Employees' Retirement System
II. Age and Benefit Profile of Annuitants and Beneficiaries as of December 31, 2001

Superannuation Annuitants

	Male		Female		Total	
Age	Number	Annual Pension	Number	Annual Pension	Number	Annual Pension
50-54	280	$ 8,013,763	55	$ 979,852	335	$ 8,993,615
55-59	1,053	33,356,914	227	5,376,036	1,280	38,732,950
60-64	2,918	74,850,167	1,805	30,079,221	4,723	104,929,388
65-69	4,648	88,606,496	3,117	39,626,512	7,765	128,233,008
70-74	5,343	87,826,234	3,854	40,477,880	9,197	128,304,114
75-79	5,188	71,260,575	4,260	37,583,391	9,448	108,843,966
80-84	3,544	37,466,446	3,650	25,810,398	7,194	63,276,844
85-89	1,965	18,383,123	2,267	15,166,558	4,232	33,549,681
90 & over	797	7,126,566	1,137	7,668,051	1,934	14,794,617
Total	25,736	$ 426,890,284	20,372	$ 202,767,899	46,108	$ 629,658,183

Average Age	74.4
Average Annual Pension	$13,656

State Employees' Retirement System

II. Age and Benefit Profile of Annuitants and Beneficiaries as of December 31, 2001

Early Retirement Annuitants

Age	Male		Female		Total	
	Number	Annual Pension	Number	Annual Pension	Number	Annual Pension
30-34	30	$ 31,138	54	$ 56,044	84	$ 87,182
35-39	168	275,548	267	363,411	435	638,959
40-44	418	1,162,487	708	1,418,762	1,126	2,581,249
45-49	903	3,886,134	1,709	4,968,391	2,612	8,854,525
50-54	2,311	25,403,065	2,505	14,989,754	4,816	40,392,819
55-59	3,936	68,185,355	2,296	22,311,013	6,232	90,496,368
60-64	2,770	44,877,346	1,914	20,816,941	4,684	65,694,287
65-69	2,001	25,752,231	1,612	13,707,483	3,613	39,459,714
70-74	1,528	18,971,992	1,260	9,933,420	2,788	28,905,412
75-79	666	6,694,684	849	5,603,537	1,515	12,298,221
80-84	267	2,519,115	361	2,320,640	628	4,839,755
85-89	98	870,159	124	960,025	222	1,830,184
90 & over	29	203,654	55	411,113	84	614,767
Total	15,125	$ 198,832,908	13,714	$ 97,860,534	28,839	$ 296,693,442

Average Age	59.7
Average Annual Pension	$10,288

State Employees' Retirement System
II. Age and Benefit Profile of Annuitants and Beneficiaries as of December 31, 2001

Disabled Annuitants

	Male		Female		Total	
Age	Number	Annual Pension	Number	Annual Pension	Number	Annual Pension
30-34	17	$ 182,325	16	$ 118,473	33	$ 300,798
35-39	58	553,400	49	405,884	107	959,284
40-44	113	1,118,122	180	1,699,694	293	2,817,816
45-49	261	2,778,656	376	3,908,522	637	6,687,178
						-
50-54	505	5,915,098	521	5,766,180	1,026	11,681,278
55-59	556	6,384,809	513	5,442,307	1,069	11,827,116
60-64	448	4,491,921	445	4,021,409	893	8,513,330
65-69	357	3,066,328	373	2,874,524	730	5,940,852
						-
70-74	272	2,280,679	263	1,762,489	535	4,043,168
75-79	155	1,159,105	187	1,100,741	342	2,259,846
80-84	95	628,218	124	635,968	219	1,264,186
85-89	25	149,030	40	209,557	65	358,587
90 & over	2	9,694	13	45,409	15	55,103
Total	2,864	$ 28,717,385	3,100	$ 27,991,157	5,964	$ 56,708,542

Average Age	59.6
Average Annual Pension	$9,508

State Employees' Retirement System
II. Age and Benefit Profile of Annuitants and Beneficiaries as of December 31, 2001

Beneficiaries and Survivor Annuitants

	Male		Female		Total	
Age	Number	Annual Pension	Number	Annual Pension	Number	Annual Pension
Under 25	12	$ 42,655	9	$ 110,507	21	$ 153,162
25-29	5	66,027	7	123,534	12	189,561
30-34	4	37,484	13	167,397	17	204,881
35-39	11	67,276	20	196,703	31	263,979
40-44	20	67,631	29	242,584	49	310,215
45-49	35	178,703	104	653,230	139	831,933
50-54	46	259,360	197	1,598,829	243	1,858,189
55-59	60	392,350	304	3,023,396	364	3,415,746
60-64	62	312,290	438	4,073,706	500	4,385,996
65-69	70	433,557	598	5,281,507	668	5,715,064
70-74	124	925,375	1,024	7,789,411	1,148	8,714,786
75-79	91	513,303	1,456	8,858,496	1,547	9,371,799
80-84	85	558,971	1,535	8,165,742	1,620	8,724,713
85-89	52	214,265	1,189	5,318,819	1,241	5,533,084
90 & over	10	78,966	696	3,145,457	706	3,224,423
Total	687	$ 4,148,213	7,619	$ 48,749,318	8,306	$ 52,897,531

Average Age	75.7
Average Annual Pension	$6,369

State Employees' Retirement System
Benefit and Contribution Provisions as of December 31, 2001
(as embodied in Act 31, approved March 1, 1974, and amended through Act 9 in May 2001)

The State Employees' Retirement System makes provision for retirement, disability, and death benefits for all State employees, except those specifically excluded under Section 5301 of the State Code, and certain other eligible groups. The major provisions are summarized as follows:

Eligible Employees

Class AA - All eligible employees, except State Police Officers, members of the judiciary and legislators, hired after June 30, 2001; and employees hired before July 1, 2001 who elected Class AA by December 31, 2001.

Class A - State Police Officers hired on or after March 1, 1974, members of the judiciary who have not elected Class E-1 or E-2, legislators elected before July 1, 2001 who have not elected Class AA or Class D-4 and Class A employees hired before July 1, 2001 who remained in Class A.

Class C - Liquor Law enforcement officers and other officers and certain employees of the State Police who have been members and employees continuously since prior to March 1, 1974.

Class D-3 - Legislators who have been members and employees continuously since prior to March 1, 1974.

Class D-4 - Legislators coming into service after June 30, 2001 who elect to be SERS members, and legislators who elected Class D-4 before July 1, 2001.

Class E-1 - Judges who elect Class E-1.

Class E-2 - District Justices who elect Class E-2.

Age and Service Requirements for Superannuation (full formula benefits)

Class AA & Class A	Age 60, with three years of service, except for legislators, enforcement officers, correction officers, psychiatric security aides, and officers of the Delaware River Port Authority; for whom the requirement is age 50 with three years of service. Members of Class AA or Class A with 35 or more years of credited service are entitled to full formula benefits regardless of age. State Police Officers can retire on full benefits after age 50 or with 20 years of service. Capitol Police and Park Rangers can retire on full benefits at age 50 with 20 years of Capitol Police or Park Ranger service.
Class C	Age 50, with three years of service.
Class D-3 & Class D-4	Age 50, with three years of service.
Class E-1	Age 60, with three years of service; or 35 or more years of credited service, regardless of age.
Class E-2	Age 60, with three years of service; or 35 or more years of credited service, regardless of age.

Formula for Superannuation Annuity

The standard single-life annuity applicable to members of Class A and Class C is equal to 2 percent of the high 3-year final average salary ("F.A.S.") of the member multiplied by the years and fractions of credited service.

The applicable single-life annuity for Class C State Police and Class A State Police is 50 percent of highest annual salary if the member has over 20 but less than 25 years of service. With more than 25 years of service the benefit is 75 percent of highest annual salary.

The annuity for other classes of members is obtained by multiplying the standard single-life annuity by a class multiplier as follows:

Class	Multiplier	
AA	1.25	
D-3	3.75	
D-4	1.50	
E-1	2.0	for each of the first 10 years of judicial service dropping to 1.5 for each subsequent year of judicial service.
E-2	1.5	for each year of judicial service.

There are two conditions under which long-service members or members retiring at advanced ages may receive larger benefits than those described above. First, members who have 41 or more years of combined Class A and AA service are entitled to a supplemental benefit. Second, there is a late retirement increase (or actuarial increase) provision whereby benefits for eligible members who work beyond their 70th birthday are guaranteed to be at least actuarially equivalent to the preceding year's benefits.

In addition to the standard single-life annuity as determined above, a member of Class C receives a "member's annuity" actuarially equivalent to the regular accumulated member contributions and interest at retirement but not less than such annuity determined as if the member was age 60 at retirement.

In addition to the above benefits, a member who has elected Social Security Integration Coverage is entitled to a single-life annuity of 2 percent of the members' "Average Non-Covered Salary" for each year of Social Security Integration (SSI) coverage. All Class E members can elect SSI coverage. Other members must have elected SSI coverage before March, 1974. "Average Non-Covered Salary" is the average annual salary received while covered by the Retirement System since January 1, 1956 in excess of the maximum covered wages under Social Security.

The annuity paid to a member shall not exceed the member's highest salary during any period of twelve consecutive months of creditable service; however, late retirement increase benefits, if any, are not subject to this limitation.

Age and Service Requirements for Disability Retirement

A member is eligible for disability retirement if the member is unable to perform his or her current job and has at least 5 years of service. An officer of the State Police or enforcement officer does not have a service requirement.

Formula for Disability Benefit

The disability benefit is equal to the benefit calculated as for full retirement, based on years of credited service at disability, if the result is greater than or equal to 33-1/3 percent of F.A.S. at time of disability. If the benefit so calculated is less than 33-1/3 percent of F.A.S., the disability benefit is equal to the smaller of:

(a) the benefit calculated as for full retirement based on service projected to retirement date, or

(b) 33-1/3 percent of F.A.S. at time of disability.

For service connected disabilities, the disability benefit payable will be increased, as needed, so that the sum of the plan benefit and Workers' Compensation benefit equals 70 percent of F.A.S.

Eligibility for Vested Benefit

A member is eligible for a vested benefit after 5 years of service.

Vested Benefit

The vested benefit is equal to the benefit calculated as for retirement, based on years of credited service at the time of leaving the plan. The former member can receive the full benefit beginning at retirement age, or an actuarially reduced early retirement benefit beginning at any date after separation but before retirement. The early retirement benefit is reduced from the earlier of age 60, or the age at which the member would have 35 years of credited service.

Eligibility for Death Benefit Prior to Retirement

A member is eligible if the member (1) is under retirement age with 5 years of credited service or (2) has attained retirement age with 3 years of credited service.

Amount of Death Benefit Prior to Retirement

An eligible beneficiary receives the full present value of the benefits to which the member would have been entitled had the member retired the day before he or she died, assuming the member had elected Option 1 if no other option had been elected. This death benefit includes the present value associated with benefits, if any, to which the member may not have been entitled because they exceeded the member's highest consecutive twelve months of salary.

Death Benefits After Retirement

A member who elects the single-life annuity is entitled to a refund of the unpaid balance of the member accumulated contributions and interest at the time of retirement. A member may elect one of several optional reduced pensions in lieu of the single-life annuity to provide additional death benefit protection. The optional forms of benefit are actuarially equivalent to the single life benefit using 4.0 percent interest per annum, and the actuarial equivalence factors described below.

The "Extra Piece"

The retirement code provides for an "extra piece" to be added to the annual benefit if the member's accumulated deductions, excluding any Class C deductions, exceed one-half of the actuarially equivalent value of the annual benefit. The extra piece is equal to the difference between the total accumulated deductions and one-half of the actuarially equivalent value of the annual benefit.

Benefit Limits Under Internal Revenue Code Section 415(b)

The amount of annual retirement benefit a member may receive shall not exceed the dollar limit specified under Section 415 (b) of the Internal Revenue Code. However, members will not receive a lower benefit than they would have been entitled to receive had Act 9 not been enacted.

Cost-of-Living Allowances (COLAs)

Supplemental annuities applying cost-of-living increases to the benefits of annuitants have been instituted from time to time. The last cost-of-living increase became effective as of July 1, 1998. The next cost-of-living increase will be effective July 1, 2002 pursuant to Act 2002-38. Since funding for Act 38 will begin July 1, 2003, that cost-of-living increase is not included in this valuation.

Rate of Member Contribution

(i) Regular member contributions, excluding Social Security Integration contributions

Class A - 5.00% of total salary

For other classes of members, the class of service multiplier is applied to the 5.00% rate to produce the following:

Class AA - 6.25%

Class C - 5.00%

Class D-3 - 18.75%

Class D-4 - 7.50%

Class E-1 - 10.00% during the first 10 years of judicial service and 7.50% thereafter.

Class E-2 - 7.50%

(ii) Additional contribution for Social Security Integration Credit

Any member who elects the Social Security Integration Credit pays 5.00 percent of any salary in excess of the amount of salary covered by Social Security during the year for which contributions are being made. A member electing to end additional contributions is ineligible to make future contributions or accrue future benefits.

(iii) Waiver of contributions

Members may elect to waive future contributions if their maximum single life annuity exceeds 110 percent of their highest calendar year compensation.

Interest Credited on Member Contributions

A rate of 4 percent, stipulated as the statutory rate of interest, has been credited on the member contributions since the inception of the system.

Refund of Accumulated Member Contributions

On the death of a member not qualifying for death benefits, the accumulated member contributions and interest are paid to the beneficiary; also, any member terminating service when not eligible for another form of benefit is paid a refund of the accumulated contributions and interest; any other terminating member may elect the refund of accumulated contributions and interest in lieu of a retirement allowance.

Employer Contributions

The employer pays the balance of the cost in excess of the members' contributions with payment schedules determined by law. See Section III of Schedule O.

Actuarial Equivalence

The actuarial table used to determined optional and early retirement benefits for members who entered service after August 1983 is the 1983 Group Annuity Mortality (1983GAM) Unisex table.

Members who entered service before August 1983 receive the better of benefits based on the 1983 GAM table or a variation of the 1971 Group Annuity Mortality (1971GAM) male table. The 1971 GAM table that applies in determining the benefits for members who entered service before August 1983 is:

For service before August, 1983:

Males (members or survivors) – 1971 GAM for males
Females (members or survivors) – 1971 GAM for males, set back 6 years

For service after August, 1983:

Members (male or female) – 1971 GAM for males, set back 6 years
Survivors (male or female) – 1971 GAM for males

Actuarial Assumptions

Schedule N shows the actuarial assumptions used for the valuation. The assumptions were based on a review of experience under SERS from 1996 through 2000. Schedule N contains an extract of the full set of rates used in the valuation. The full set of rates is in the Fifteenth Investigation of Actuarial Experience of the State Employees' Retirement System of the Commonwealth of Pennsylvania, which can be obtained from SERS. The rates are the probabilities that an event will occur in the year after the valuation. For instance, the male retirement rate of 22.0 percent at age 60 means that 220 of every 1,000 employees age 60 and eligible for full benefits are expected to retire before they reach age 61.

Interest Rate: 8.5 percent compounded annually

Mortality After Retirement:

Non-disabled Retirees, Beneficiaries and Survivors: The 1983 Group Annuity Mortality table for males and females.

Disability Retirees: The Federal Civil Service Retirement System disabled annuitant mortality table adjusted to equal the overall SERS disabled annuitant mortality with a margin for future improvement in mortality.

Assumptions for General Employees while Active Members

Rates of Separation for Eligibility for Full Unreduced Benefits:
(35 years of service under age 60; 3 years of service over age 60)

Rates of Separation for Eligibility for Full Unreduced Benefits			
	Age	**Male**	**Female**
AGE	51 – 61	22.0%	22.0%
	62	33.0	33.0
	63 – 64	22.0	22.0
	65	34.0	34.0
	66	27.0	27.0
	67 – 79	20.0	20.0
	80	100.0%	100.0%

Actuarial Assumptions (continued)

Rates of Separation for Eligibility for Reduced Benefits
(only apply to members not eligible for full unreduced benefits)

Rates of Separation for Eligibility for Reduced Benefits					
		5 - 14 Years of Service		15 or More Years of Service	
AGE		Male	Female	Male	Female
	20-24	4.0%	4.0%	NA	NA
	25-29	4.0	4.0	NA	NA
	30-34	3.0	4.0	3.0%	4.0%
	35-39	2.0	3.0	2.0	2.0
	40-44	2.0	1.0	2.0	2.0
	45-49	1.0	1.0	2.0	2.0
	50-54	1.0	1.0	2.0	2.0
	55-59	3.0	3.0	3.0	3.0

Rates of Separation Due to Withdrawal
(only apply to members not eligible for full retirement)

Rates of Separation Due to Withdrawal									
		Years of Service				Years of Service			
		Male				Female			
AGE		0	5	9	14+	0	5	9	14+
	20-24	9.6%	0.5%	0.0%	0.0%	9.5%	2.2%	0.5%	0.0%
	25-29	9.4	0.0	0.0	0.0	8.7	1.7	0.5	0.0
	30-34	9.0	1.0	0.0	0.0	8.7	1.7	0.0	0.0
	35-39	8.8	1.7	0.0	0.0	8.7	1.7	0.0	0.0
	40-44	8.8	0.6	0.0	0.0	8.5	3.7	0.8	0.0
	45-49	8.5	1.6	0.0	0.0	8.3	3.2	0.8	0.0
	50-54	8.3	1.3	0.0	0.0	8.3	3.2	0.0	0.0
	55-59	8.3	0.0	0.0	0.0	8.3	0.5	0.0	0.0

Actuarial Assumptions (continued)

Rates of Separation Due to Death and Disability
(Disability rates only apply to members not eligible for full retirement)

Rates of Separation Due to Death and Disability					
		Death		Disability	
		Male	Female	Male	Female
AGE	20-24	0.03%	0.02%	0.03%	0.06%
	25-29	0.03	0.02	0.03	0.06
	30-34	0.04	0.03	0.08	0.15
	35-39	0.06	0.04	0.15	0.25
	40-44	0.08	0.06	0.23	0.33
	45-49	0.15	0.09	0.41	0.52
	50-54	0.27	0.14	0.57	0.78
	55-59	0.42	0.22	0.75	0.99
	60-64	0.62	0.36	N/A	N/A

<u>For Special Benefit Classes if Different from General Employee Rates:</u>

Rates of Separation Due to Withdrawal:

Rates of Separation Due to Withdrawal				
		State Police/ Hazardous Duty	Legislators	Judicial Officers
Years Of Service	0	6.0%	0.0%	0.0%
	1	5.5	3.0	0.8
	2	4.0	3.0	0.8
	3-4	3.0	3.0	0.8
	5	2.0	3.0	0.8
	6	2.0	3.0	0.8
	7-9	1.0	3.0	0.8
	10+	1.0	3.0	1.1

Actuarial Assumptions (continued)

Rates of Separation Due to Early Retirement:

Rates of Separation Due to Early Retirement			
	State Police/ Hazardous Duty	**Legislators**	**Judicial Officers**
ANY AGE	1.0%	3.0%	1.0%

Rates of Separation Due to Retirement Other Than State Police with 20 or More Years of Service:

Rates of Separation Due to Retirement other than State Police with 20 or more years of Service				
AGE		**State Police/ Hazardous Duty**	**Legislators**	**Judicial Officers**
	50-54	5.0%	2.0%	N/A
	55-59	5.0	3.0	N/A
	60-64	5.0	4.0	2.0
	65-69	50.0	6.0	2.0
	70-74	24.0	8.0	100.0
	75-79	24.0	10.0	N/A
	80-84	100.0	100.0	N/A

Actuarial Assumptions (continued)

Rates of Separation Due to Retirement for State Police with 20 or More Years of Service:

Rates of Separation due to Retirement for State Police with 20 or More Years of Service			
Years of Service	**Rate**	**Years of Service**	**Rate**
20	4.0%	27-33	16.0%
21 – 24	1.0	34	30.0
25	30.0	35	41.0
26	17.0		

Years of Service Purchased by Eligible Members:

Purchase of Service			
Age	**Number of Years to Purchase**	**Age**	**Number of Years to Purchase**
20 – 24	0.992	40 – 44	0.962
25 – 29	0.991	45 – 49	0.944
30 – 34	0.979	50 – 54	0.873
35 – 39	0.968	55 – 59	0.756

Career Salary Increases

The salary scale shown below includes average increases in the employee salary due to promotions and longevity growth. The average career salary growth is 3.5 percent per year. In addition, it is assumed that the salary schedules will increase by 3.3 percent a year. The scale below does not include the assumed 3.3 percent general salary increase.

This table does not apply to members in Classes D and E. It is assumed that only the general salary increase (3.3 percent each year) would apply to members in these classes.

Actuarial Assumptions (continued)

Career Salary Scale for Members:

Career Salary Scale for Members			
Age	**Annual Increase**	**Age**	**Annual Increase**
20 – 29	5.5%	44	3.6%
30	5.3%	45	3.5%
31	5.2%	46	3.4%
32	5.0%	47	3.2%
33	4.9%	48	3.1%
34	4.8%	49	3.0%
35	4.6%	50	2.8%
36	4.5%	51	2.6%
37	4.4%	52	2.5%
38	4.2%	53	2.4%
39	4.1%	54	2.2%
40	4.0%	55	2.1%
41	3.9%	56	2.0%
42	3.8%	57-58	1.9%
43	3.7%	59-60	1.8%

Actuarial Methods

I. Asset Valuation

The actuarial value of assets is developed by recognizing the difference between the expected actuarial value of assets and the market value of assets over a five-year period. The expected actuarial value is last year's actuarial value brought forward to reflect actual contributions, benefit payments and expenses, and assumed investment income. Each year 20 percent of the difference between this expected value and the market value is recognized in determining the current actuarial value of assets with the remaining 80 percent to be recognized over the next four years.

II. Funding Method

The State Employees' Retirement System funding policy provides for employer contributions at actuarially determined rates that will amortize liabilities over a ten year period beginning with the first fiscal year after the measurement of the liability. The net liability as of December 31, 2001 is being funded over a ten year period ending June 30, 2012. This policy assures that the SERS is appropriately funded and also that the fund will accumulate sufficient assets to pay benefits when they are due. The policy is set by the State Employees' Retirement Board in conformance with specific legal requirements as to the method of funding.

A variation of the Entry-Age Actuarial Cost Method is used to determine the liabilities and costs related to all SERS benefits including retirement, withdrawal, death and disability benefits. The significant difference between the method used for SERS and the typical Entry-Age Actuarial Cost Method is that the normal cost is based on the benefits and contributions for new employees rather than for all current employees from their date of entry. The SERS variation should produce approximately the same results as the typical method over the long run.

III. Determination of the Annual Contribution

The annual employer contribution is equal to the sum of the following:

1) The employer share of the normal cost.

2) The amortization of the unfunded liabilities as of December 31, 2001 over a ten-year period ending on June 30, 2012.

3) The amortization of changes in liability after 2001 over ten-year periods beginning with the July 1st following the effective date of the change. Changes include actuarial gains and losses and plan amendments.

Actuarial Methods (Continued)

The amortization payments are based on a schedule of payments that remain fixed over a 10-year period. The employer cost is determined as a percent of payroll, and the employer contributes that percent of the payroll of all covered members during each fiscal year. The employer cost for fiscal year 2002/2003 is the total of (1) the employer normal cost percent and (2) the amortization payment for fiscal year 2002/2003 divided by the projected payroll for the fiscal year.

The assumptions used in determining the actuarial cost are stated in Schedule N, and the employer cost, as a percent of payroll, is determined in Schedules A and B. The assumptions used for the current valuation were based on a review of the evaluation of experience under SERS from 1996 through 2000.

The investment return assumption is 8.5 percent per year. Salary growth is the total of assumed increases in salary rates and career salary growth. It is assumed that the total payroll will increase at 3.3 percent a year. The employee career salary growth (promotion and longevity growth) will average 3.5 percent a year. Therefore, the average total salary growth for an individual will be 6.8 (3.3 plus 3.5) percent a year. The investment return and the salary rate increase assumptions are based on assumed underlying inflation of 3.0 percent a year.

All costs and liabilities have been determined in conformance with generally accepted actuarial principles and procedures in accordance with the principles of practice prescribed by the Actuarial Standards Board of the American Academy of Actuaries. The calculations were performed on the basis of actuarial assumptions and methods, which are internally consistent, and reasonable (taking into account past experience under the SERS and reasonable expectations) and which in combination represent the best estimate of anticipated experience under the plan.

IV. Allocation of the Annual Contribution Among Employer Groups

The annual contribution (total employer cost) is expressed as a percentage of the total projected payroll for active members. This amount is reflected on Schedule B, line III. and is referred to as the total employer cost. The total employer cost is the average contribution amount that needs to be received by the employer groups participating in the system. Therefore, some employer groups contribute a higher percent of pay, and some employer groups contribute a lower percent of pay.

Schedule C develops the contribution rate for each of the employer groups. The allocation method used to determine the employer rate takes into consideration the cost of additional benefits for special classes of members. For example, the contribution rate for Class E members takes into consideration the additional accrual rate those members receive at retirement. The Basic Contribution Rate (column 2 on Schedule C) is determined as the percentage needed to produce employer contribution amounts by class that, when added together, equal the total employer contribution.

Actuarial Methods (Continued)

The following is an explanation of the elements of Schedule C.

Column (1) is the employer group.

Column (2) is the Basic Contribution Rate. The Basic Contribution Rate is the amount needed to fund the benefits for Class AA(60) members. Because the majority of SERS members are covered under Class AA(60) the 2.5 percent accrual rate for that Class is used to determine the basic contribution rate.

Column (3) is the additional cost for members who are eligible to retire before reaching age 60, (or 35 years of service if earlier). The age 50 normal cost is determined for two groups of members: members who can retire at age 50 if they have 3 years of service, and members who can retire at age 50 once they obtain 20 service credits. Park Rangers and Capitol Police fall into the latter category. The additional cost for members who can retire at age 50 if they have 3 years of service is larger than the additional cost for members who can retire at age 50 if they have 20 years of service.

Column (4) is the multiplier adjustment to the basic benefit, which is applicable to members in classes that receive a larger, or smaller, percent accrual rate than the accrual rate for Class AA members. For actuarial valuations before December 31, 2001, the normal cost was determined for members who would receive the then standard 2 percent single-life annuity. For actuarial valuations beginning with the December 31, 2001 valuation, the normal cost is determined for members who would receive the standard 2.5 percent single-life annuity set by Act 9 (Class AA). For example, members in Class D-3 receive an annuity equal to 3.75 times the standard single-life annuity. The multiplier adjustment (Column (4)) for Class D-3 is 3.0, which is the ratio of 3.75 to the 1.25 multiplier for Class AA. The multiplier adjustment for members who receive a smaller accrual rate will be less than 1.00 (members in Class A).

Column (5) is the past-service liability component for certain employee groups. These employee groups were granted benefit improvements that were retroactive at the date of passage, and therefore cover all credited service for the class. The stipulation of each benefit improvement was that the employers of the individual employee group, not the Commonwealth, would fund the benefit improvement.

At implementation of the new benefit provision, a liability is established for the members who are eligible for the new benefit provisions, and a schedule is determined to pay off the increase in liability. For example, Park Rangers and Capitol Police Officers where formerly covered under the age 60 retirement provisions. Effective with the valuation at December 31, 1992, Park Rangers and Capitol Police Officers became eligible to retire at age 50 if they have 20 years of service. At that valuation, a liability was established that would fund the increase in benefits.

Actuarial Methods (Continued)

The liability for the increase in benefits for past service is paid off in equal installments by the employers of the member group. Each year, the annual contribution as a percent of payroll is determined as the annual payment divided by the funding payroll for the group. The outstanding balance is carried forward with interest each year.

The following table shows the payment schedule for the three groups of employees who have a past service liability.

Amortization Schedule for Past Liabilities		
Employer Group	**Payment**	**Last Payment (fiscal year beginning)**
State Police	$10,004,493	July 2029
Class E	$954,693	July 2002
Park Rangers / Capitol Police	$93,603	July 2027

In conjunction with the passage of Act 9, the D-4 employer contributed a lump sum amount which was more than sufficient to fund the additional cost of the higher accrual rate and the retirement at age 50. Therefore, the past service liability for Class D-4 Legislators is $0, and the past liability adjustment has been set to produce a contribution rate of zero. The excess contribution made by the D-4 employer (approximately $3.2 million) will continue to be used to offset future D-4 employer contribution requirements.

Column (6) is the adjusted contribution rate, and is equal to column (2) plus column (3), multiplied by column (4). Column (5) is added.

Column (7) is the projected payroll for the class of employees. The projected payroll is for the fiscal year to which the contribution rate is applicable.

Column (8) is the dollar amount of the employer group contribution. Except when the basic employer contribution rate is zero, the sum of the dollar amounts for each group is (approximately) equal to the total employer contribution (as a percent of payroll) multiplied by the total projected payroll for the active members.

Actuarial Methods (Continued)

V. Treatment of Class Contribution Rates When Basic Employer Contribution is Zero

Since the actuarial valuation at December 31, 1992, the unfunded liability has been negative. Therefore, the net amortization of the unfunded liability has reduced the normal cost. In the December 31, 2000 valuation, the net amortization credit was greater than the normal cost, which resulted in a zero percent basic employer contribution.

If the basic employer contribution is zero, the contribution for some members in Classes with added benefits will be positive because the employers of those members have to continue to pay for those additional benefits. The alternative of refunding prior contributions to result in an average zero contribution is not permitted by the Internal Revenue Service.

VI. Plan Provisions Not Valued

The cost effect of three plan provisions was not included in this valuation because the effect of the provisions is minimal. These are the limit on the amount of the retirement benefit imposed by the Internal Revenue Code Section 415(b), the limit on the amount of retirement benefit imposed by Section 5702(c) (100 percent limit), and the supplemental death benefit payable when the retirement benefit is limited by Section 5702(c).

Those three provisions are not valued because they only apply to very few SERS members. Since by definition the liability for the supplemental death benefit is lower that the reduction in liability for the 100 percent limit, the net effect of not including those provisions in the actuarial valuation is a minimal overstatement in the total employer cost.

State Employees' Retirement System

Definition of Technical Terms

Accrued Service. Service credited under the system, which was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability. The portion of the actuarial present value of benefits which is not provided for by the actuarial present value of future normal costs. Also referred to as Past Service Liability.

Actuarial Assumptions. Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, investment income and salary growth. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the actuarial present value of future benefits between future normal costs and the actuarial accrued liability.

Actuarial Present Value. The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting projected future payments at assumed rates of interest and probabilities of payment.

Amortization. Paying off an amount with periodic payments of interest and principal -- as opposed to paying off with a lump sum payment.

Normal Cost. The portion of the actuarial present value of future benefits that is allocated to the current year by the actuarial cost method.

Unfunded Actuarial Accrued Liability. The difference between actuarial accrued liability and valuation assets.