State Universities Retirement System of Illinois

Actuarial Valuation as of June 30, 1994

October 1994

Wyatt

303 West Madison Street
Suite 2400
Chicago, IL 60606

The Wyatt Company
Consultants and Actuaries

Suite 2400
303 West Madison Street
Chicago, Illinois 60606-3308

Telephone 312 704 0600
Fax 312 704 8114
Fax 312 704 8206
TDD 312 853 6818

Wyatt

October 14, 1994

Board of Trustees
State Universities Retirement System of Illinois
P.O. Box 2710-Station A
1901 Fox Drive
Champaign, IL 61825-2710

Dear Members of the Board:

We are pleased to present the report of the actuarial valuation of the State Universities Retirement System of Illinois ("SURS") as of June 30, 1994.

This valuation provides information on the funding of SURS and includes a determination of State contribution levels for 1996 under State law. This contribution is based on the funding plan established under Senate Bill 533. The contribution that would have been required under Senate Bill 95 is shown for comparison purposes. This valuation is based on the provisions of SURS in effect as of June 30, 1994.

This actuarial valuation process uses data on the SURS membership and the asset value of the Trust Fund. Both of these were provided by SURS staff. While certain checks for reasonableness were performed, these data were used unaudited.

The actuarial assumptions, actuarial cost method and asset valuation method used in this valuation are identical to those used in the prior actuarial valuation of SURS.

To the best of our knowledge, this actuarial statement is complete and accurate, and has been prepared in accordance with generally accepted actuarial principles and practice.

Respectfully submitted,
THE WYATT COMPANY

By Denise I. Patterson
Denise I. Patterson
Fellow of the Society of Actuaries

By
Norman S. Losk
Fellow of the Society of Actuaries

State Universities Retirement System of Illinois

Actuarial Valuation
As Of June 30, 1994

Table of Contents

Section I

Executive Summary

At your request, we have completed an actuarial valuation of the State Universities Retirement System ("SURS") as of June 30, 1994.

The purposes of the actuarial valuation are:

(1) To develop State contribution levels to SURS for the fiscal year ending June 30, 1996 under Section 15-155, Chapter 108½, IRS, and

(2) To examine the funding status of SURS as of the valuation date.

This actuarial valuation is based on:

(1) Data on active, inactive, and retired SURS members provided by SURS staff;

(2) Information on the assets of SURS provided by SURS staff;

(3) Actuarial assumptions adopted by the Board at its December, 1991 meeting, effective July 1, 1991; and

(4) Actuarial methods required under Section 15-155, IRS (reflecting the changes adopted with Senate Bill 533).

The actuarial assumptions and methods utilized in this valuation are identical to those used in the prior valuation for determination of the 1994-95 State contribution.

The eligibility and benefit provisions of SURS recognized in this valuation are identical to those recognized in the prior valuation. To our knowledge, no changes were enacted during the year ended June 30, 1994.

Key results in this valuation, compared to comparable results from the prior valuation are as follows:

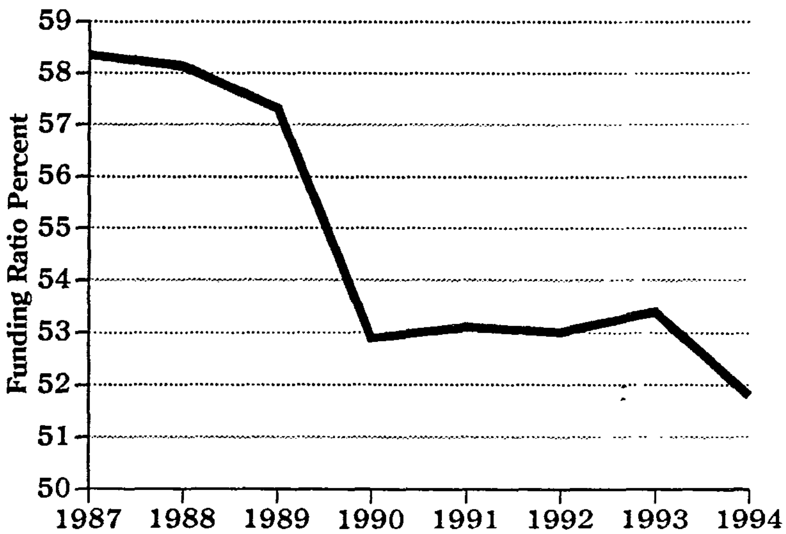
	Actuarial Valuation as of June 30, [$ in millions] 1993	1994
Members		
Active Members	78,605	80,350
Total Payroll	$2,106.2	$2,140.1
Inactive Members	13,890	17,756
Retirees & Survivors	21,253	22,642

	Actuarial Valuation as of June 30, [$ in millions]	
	1993	1994
State Contribution Levels		
[1995 & 1996, respectively]		
Normal Cost:		
• % of Pay	9.640%	9.238%
• Dollars	$224.9	$219.0
Contribution under Section 15-155:		
• % of Pay	11.021%	5.704%
• Dollars	$257.1	$141.9
Funding Status		
GASB #5 Liability	$7,838.2	$8,585.5
Assets (Book Value)	$4,188.5	$4,446.9
Unfunded Actuarial Accrued Liability	$3,649.7	$4,138.6
Funding Ratio	53.4%	51.8%

Continuing deficiencies in State contributions to SURS and actuarial losses from investment performance (based on book value of assets) during the 1993-94 fiscal year produced a decrease in the Funding Ratio (from 53.4% to 51.8%). This funding level is low given the age and maturity of SURS.

The chart below illustrates the lack of funding progress in recent years.

State Universities Retirement System
Funding Ratios 1987 - 1994



The remainder of this report details the development of these results.

Section II

Development of the Valuation

A. Introduction

The law governing the State Universities Retirement System requires the actuary, as the technical advisor to the Board of Trustees, to make:

> "An annual determination of the liabilities and reserves of this System and an annual determination of the amount and distribution of required employer contributions."
> [Chapter 108½, Par. 15-173]

The Wyatt Company, as Actuary, has completed a valuation as of June 30, 1994, based upon membership and financial data compiled by the administrative staff of SURS. The results of the valuation are presented in this report.

The results of this valuation are based on the same actuarial methods and assumptions as used in the prior valuation. The assumptions, which are based on an experience review for the four-year period ending June 30, 1991, are described in detail in Appendix B. To our knowledge, no changes were made to the benefit provisions of the system during the 1993-94 fiscal year. Appendix C summarizes the plan provisions. The expected 1995 fiscal year expenses in the normal cost include administrative expenses but exclude investment expenses. The interest rate of 8% per annum, compounded annually, is assumed to be net of investment expenses.

Important information on the data used in this valuation and the results of this valuation are summarized below:

	June 30, 1993	June 30, 1994
1. Number of Active Members	78,605	80,350
2. Annualized Reported Earnings		
Full-time Payroll	$1,965,594,000	$2,074,690,000
(Average)	(32,360)	(31,398)
Total Payroll	$2,106,167,000	$2,140,139,000
(Average)	(26,794)	(26,635)
3. Number of Members Receiving Payments	21,253	22,642
4. Annual Benefit Payments	$269,573,590	$306,908,953
5. Assets:		
(a) Book Value	4,188,535,089	4,446,941,755
(b) Market Value	5,156,170,161	5,175,287,535
6. State Normal Cost	203,036,439	197,708,420
(% Total Payroll)	(9.640%)	(9.238%)
(% Full-time Payroll)	(10.330%)	(9.530%)
7. Accrued Actuarial Liability ("AAL")	7,838,186,000	8,585,512,000
(Funding Ratio)	(53.4%)	(51.8%)
8. Unfunded Accrued Actuarial Liability ("UAAL")	3,649,650,911	4,138,570,245

B. *Analysis of Increase in Unfunded Accrued Actuarial Liability*

Changes in membership data and fund assets during the year affect the results of the valuation. The unfunded accrued actuarial liability (UAAL) increased by $488,919,334 in the year ending June 30, 1994. A detailed description of this increase follows:

1. UAAL at 6/30/93 for purposes of disclosure	$3,649,650,911
2. Effect of contribution being less than the amount necessary to fund normal cost and interest on the UAAL:	
(a) Contributions Due:	
(i) Interest on (1) to 6/30/94	$ 291,972,073
(ii) Employee Contributions (including Early Retirement Option ("ERO") payments)	183,070,148
(iii) Employer Normal Cost	204,981,028
(iv) Employer ERO Payments	11,780,269
(v) Service Credit Purchases	11,614,072
(vi) Interest on (ii) through (v)	16,141,207
(vii) Total	$719,558,797
(b) Contribution Paid:	
(i) Participants (including ERO Payments)	$ 183,070,148
(ii) State Appropriations	102,015,800
(iii) Employer ERO Payments	11,780,269
(iv) Reciprocity	246,584
(v) Federal, Trust Funds and Other	19,740,157
(vi) Interest on Contributions to 6/30/93	12,430,295
(vii) Total	$329,283,253
(c) Increase in the UAAL due to Contribution Shortfall [(a) minus (b)]	$390,275,544
3. Actuarial (Gains) Losses	
(a) Loss from investment return less than 8%	$57,409,831
(b) (Gain) from salary increases less than 7%	(14,718,077)
(c) (Gain) due to age and service retirement	(10,016,970)
(d) Loss due to terminations	41,107,919
(e) Loss from other sources	24,861,087
(f) Net Actuarial (Gain)/Loss	$98,643,790
4. Total Increase in UAAL [2 + 3]	$488,919,334
5. UAAL at 6/30/94	$4,138,570,245

C. Appropriation Requirements For Fiscal Year 1996

The 1994 Legislature enacted Senate Bill 533 which contained the following provisions relating to the funding of SURS:

(i) Contributions, beginning in fiscal year 1996, are based on the process outlined below:

(a) The objective after 50 years is to achieve a funding ratio of 90%.

(b) Contribution incidence is to grade in equal steps (as a percentage of pay) from the fiscal year 1995 level to the ultimate level in fiscal year 2010.

(c) After fiscal year 2010, the State contribution rate is to remain (theoretically) a constant percentage of pay through fiscal year 2045.

(d) After fiscal year 2045, the State contribution rate is the amount sufficient to maintain a funding ratio of 90%.

(ii) State contributions shall be budgeted by continuing appropriations.

The contributions under Section 15-155 as amended by Senate Bill 533 are shown in (1) below as well as Appendix D. For comparison purposes, we have developed the estimated State contributions on the basis of the law in effect prior to Senate Bill 533 (i.e., Senate Bill 95). These are shown in (2) below.

(1) Under Section 15-155

The law governing the System provides that:

> "For State fiscal years 2011 through 2045, the minimum contribution to the System to be made by the State...shall be an amound determined by the System to be sufficient to bring the total assets...up to 90% of the total actuarial liabilities...by the end of the State fiscal year 2045. ...The required State contribution shall be calculated each year as a level percentage of payroll over the years remaining to and including fiscal year 2045. ...For State fiscal years 1996 through 2010, the State contribution to the System, as a percentage of...employee payroll, shall be increased in equal annual increments. ...Beginning in State fiscal year 2046, the minimum State contribution for each fiscal year shall be the amount needed to maintain the total assets...at 90% of the total actuarial liabilities..." [Chapter 108½, Par. 15-155(a-1), IRS]

The required State contribution rates and amounts for 1996 and estimates for 1997 through 2001 are as follows:

Fiscal Year	Employer Normal Cost	Amortization of Unfunded Liability	Total Required Rate	Assumed Payroll (Billions)	Total Required Contribution	Funding Ratio
1996	9.238%	(3.534%)	5.704%	$2.488	$141,911,000	50.1%
1997	9.238%	(2.661%)	6.577%	2.616	172,070.000	49.6%
1998	9.238%	(1.789%)	7.449%	2.751	204,896,000	49.3%
1999	9.238%	(0.916%)	8.322%	2.890	240,522,000	49.3%
2000	9.238%	0.044%	9.194%	3.038	279,311,000	49.4%
2001	9.238%	0.829%	10.067%	3.192	321,323,000	49.7%

Contribution levels are shown on a gross State contribution basis. The net State General Fund appropriation requirement can be determined by adjusting for such items as State Pension Fund appropriations and contributions from federal and trust funds.

These contribution levels are based on the Projected Unit Credit Actuarial Cost Method, the data provided, and assumptions used for the June 30, 1994 actuarial valuation. To determine projected contribution rates and amounts, the following additional assumptions and estimates were used:

(1) The population statistics, valuation results and expected cash flows for future years were developed using a deterministic projection model.

(2) Constant active population with new entrants having the same demographic characteristics as recent new hires.

(3) Total State contributions of $114,236,700 for fiscal year 1995.

(4) Population changes are in accordance with the decrements used as the basis for the June 30, 1994 actuarial valuation.

(5) The amortization rates for fiscal years 1996-2010 would not be uniform, but the rate for each year would exceed the rate for the previous year by a uniform percentage of payroll.

(6) The amortization rates for fiscal years 2010-2045 would be a uniform percentage of payroll.

(2) Under Section 15-155 Prior to Amendment by Senate Bill 533

For comparison purposes, the required State contribution rates and amounts for fiscal years 1996 through 2001 are shown below on the basis of the funding provisions of Senate Bill 95. The State's projected contribution of $114,236,700 to SURS for fiscal year 1995 is insufficient to meet the System's total required contribution for that year of $257,136,000. As a result, the State contribution pattern below has been developed on the basis of a 2-year period, starting with fiscal year 1995, rather than the 7-year period set out in statute. The target date for completely amortizing the unfunded accrued actuarial liability remains unchanged at June 30, 2035.

Fiscal Year	Normal Cost	Amortization of Unfunded Liability	Total Required Rate	Assumed Payroll (Billions)	Total Required Contribution
1996	9.238%	7.921%	17.159%	$2.371	$406,791,000
1997	9.238%	7.921%	17.159%	2.495	428,148,000
1998	9.238%	7.921%	17.159%	2.626	450,625,000
1999	9.238%	7.921%	17.159%	2.764	474,283,000
2000	9.238%	7.921%	17.159%	2.909	499,183,000
2001	9.238%	7.921%	17.159%	3.062	525,390,000

These contribution levels are based on the Projected Unit Credit Actuarial Cost Method, the data provided and the assumptions used for the June 30, 1994 actuarial valuation. To determine the projected contribution rates and amounts, the following additional assumptions and estimates were used:

(1) Covered payroll of $2,252,000,000 for fiscal year 1995.

(2) 5.25% per annum rate of increase in covered payroll.

(3) Total State contributions of $114,236,700 for fiscal year 1995.

The contribution rates were determined in the following manner:

- The Projected Unit Credit Actuarial Cost Method was used. The normal cost rate calculated for fiscal year 1995 was based on the results of the June 30, 1994 valuation.
- The difference between the total 1995 appropriation and the required normal cost was considered the 1995 amortization payment, and this payment was converted to a percentage of the expected 1995 payroll.
- An amortization schedule was then determined on the assumption that:

  (1) The UAAL existing at June 30, 1995 would be completely amortized by June 30, 2035.

  (2) The amortization rates for fiscal years 1996 - 2035 would be a uniform percentage of payroll.

The normal cost rate calculated for fiscal year 1995 (based on the results of the June 30, 1994 valuation) was assumed to remain unchanged.

D. *GASB Statement 5 Disclosure: Pension Benefit Obligation*

GASB Statement No. 5 sets forth certain standards of disclosure in the annual financial statements of a defined benefit pension plan.

This statement requires the disclosure of the actuarial present value of credited projected benefits and the effect of any changes in actuarial assumptions or benefit provisions. The actuarial present value of credited projected benefits is a standardized measure of the accrued pension benefit obligation (PBO). It is the discounted amount of benefits estimated to be payable in the future as a result of employee service through the balance sheet date, computed by attributing an equal benefit amount (including the effects of projected salary increases and step-rate benefits) to each year of credited and expected future employee service.

The PBO was computed for both this year's and last year's valuation, using the same assumptions as were used to process the respective valuations. Summarized below are key results for both years.

GASB Statement 5 Disclosure

Actuarial Present Value (APV) of Credited Projected Benefits

	June 30, 1993	June 30, 1994
Accumulated Contributions		
Current employees	$1,923,519,000	$2,035,886,000
Inactive members	175,111,000	220,154,000
APV of Credited Projected Benefits Payable to:		
Retirees and beneficiaries	2,653,146,000	3,046,334,000
Terminated employees not yet receiving benefits – employer-financed portion	78,023,000	84,298,000
Vested current employees – employer-financed portion	2,809,800,000	3,019,852,000
Non-vested current employees – employer-financed portion	198,587,000	178,988,000
Total APV of Credited Projected Benefits	$7,838,186,000	$8,585,512,000
Net Assets Available for Benefits (Market value at June 30, 1994 is $5,175,287,535)	$4,188,535,089	$4,446,941,755
Unfunded APV of Credited Projected Benefits	$3,649,650,911	4,138,570,245

Compared to the assets valued on the same basis as for funding purposes, the credited projected benefits are 51.8% funded compared with 53.4% last year.

APPENDIX A

Results of Actuarial Valuation

Table 1

[Page 1 of 3]

Summary of Results of Actuarial Valuation as of June 30, 1994

Member Data

1. Number of Members:		
(a) Members Receiving Annuities:		
• Retirement	17,401	
• Survivor (includes prospective Widows and Widowers)	4,161	
• Disability	1,080	
• Subtotal		22,642
(b) Other Inactive Members		17,756
(c) Active: • Full-time	66,078	
• Part-time	14,272	
• Subtotal		80,350
(d) Total		120,748
2. Annual Reported Earnings:		
(a) Full-time		$2,074,690,000
(b) Part-time		65,449,000
(c) Total		$2,140,139,000
3. Annual Annuity Payments currently being made:		
(a) Retirement		$270,522,320
(b) Survivor		23,453,976
(c) Disability		12,932,657
(d) Total		$306,908,953

Table 1

[Page 2 of 3]

Summary of Results of Actuarial Valuation as of June 30, 1994

Valuation Results

	Normal Cost	Actuarial Liability
4. Actuarial Liability for Members Receiving Annuities:		
(a) Retirement		$2,717,016,000
(b) Survivor		233,477,000
(c) Disability		95,841,000
(d) Subtotal		$3,046,334,000
5. Actuarial Liability for Inactive Members		$304,452,000
6. Active Members:		
(a) Pension Benefits	$276,134,000	$4,242,692,000
(b) Death Benefits (Excludes refunds)	20,859,000	314,876,000
(c) Disability	23,200,000	263,498,000
(d) Withdrawals and Refunds	48,090,000	413,660,000
(e) Administrative Expenses	6,869,289	—
(f) Subtotal	$375,152,289	$5,234,726,000
7. Total	$375,152,289	$8,585,512,000
8. Assets		$4,446,941,755
9. Unfunded Actuarial Liability		$4,138,570,245
10. Expected Employee Contributions	$177,443,869	
11. Annual Normal Cost to be Provided by the State	$197,708,420	
% of Full-time Payroll	9.530%	
% of Total Payroll	9.238%	

Table 1

[Page 3 of 3]

Summary of Results of Actuarial Valuation as of June 30, 1994

Annual Funding Requirement for Fiscal Year 1996

	Percent of Payroll	Amount
12. "Interest Only Funding":		
(a) Normal Cost	9.238%	$219,033,000
(b) Interest on Unfunded	14.872%	352,625,000
(c) Total	24.110%	$571,658,000
13. "40-Year Amortization" from 7/1/94:		
(a) Normal Cost	9.238%	$219,033,000
(b) Contribution toward Unfunded	15.650%	371,072,000
(c) Total	24.888%	$590,105,000

Notes: (1) All figures have been adjusted by the appropriate interest factor for monthly contributions.

(2) Funding requirements are based on an assumed payroll of $2.371 billion.

Table 2

Actuarial Present Value of Accumulated Plan Benefits at June 30, 1994

	Vested	Non-Vested	Total
Members Currently Receiving Payments	$3,046,334,000	—	$3,046,334,000
Inactive Members	304,452,000	—	304,452,000
Active Members:			
(a) Pension Benefits	3,216,391,000	$147,109,000	3,363,500,000
(b) Death Benefits (without refunds)	255,289,000	31,752,000	287,041,000
(c) Disability	205,551,000	26,986,000	232,537,000
(d) Withdrawal and Refunds	302,428,000	62,909,000	365,337,000
(e) Sub-total	$3,979,659,000	$268,756,000	$4,248,415,000
Total:	$7,330,445,000	$268,756,000	$7,599,201,000

Non-Retired Member Contributions with Interest:	
Active	$2,035,886,000
Inactive	220,154,000
Total:	$2,256,040,000

Notes: (1) Accumulated benefits were calculated in accordance with plan provisions in effect on June 30, 1994, based on the member's history of pay and service as of such date.

(2) Projected years of service were considered only in determining members' expected eligibility for particular benefits.

(3) Future automatic cost-of-living increases were recognized.

Table 3

Actuarial Present Value of Credited Projected Benefits at June 30, 1994

	Vested	Non-Vested	Total
Members Currently Receiving Payments	$3,046,334,000	—	$3,046,334,000
Inactive Members	304,452,000	—	304,452,000
Active Members:			
(a) Pension Benefits	4,076,060,000	$166,632,000	4,242,692,000
(b) Death Benefits (without refunds)	279,898,000	34,978,000	314,876,000
(c) Disability	231,567,000	31,931,000	263,498,000
(d) Withdrawal and Refunds	349,610,000	64,050,000	413,660,000
(e) Sub-total	$4,937,135,000	$297,591,000	$5,234,726,000
(f) Employee Contributions	$1,917,283,000	$118,603,000	$2,035,886,000
(g) Employer Financed	$3,019,852,000	$178,988,000	$3,198,840,000
Total	$8,287,921,000	$297,591,000	$8,585,512,000

Notes: (1) Credited projected benefits were calculated in accordance with plan provisions in effect on June 30, 1994, based on the member's service as of that date and on the members' historical and projected pay.

(2) Projected years of service were considered only in determining members' expected eligibility for particular benefits.

(3) Future automatic cost-of-living increases were recognized.

Table 4

Analysis of Financial Experience

Activity		Gain (Loss)
1. Actuarial Gains (Losses):		
(a) Age & Service Retirements	$10,016,970	
(b) Incidence of Disability	(6,407,591)	
(c) In-service Mortality	(11,895,475)	
(d) Retiree Mortality	(5,871,202)	
(e) Disabled Mortality	(190,340)	
(f) Termination of Employment	(41,107,919)	
(g) Salary Increases	14,718,077	
(h) Investment Income	(57,409,831)	
(i) Other	(496,479)	
(j) Total Actuarial Gain (Loss)		$(98,643,790)
2. Contribution Income (Shortfall)		(390,275,544)
3. Total Gain (Loss)		$(488,919,334)

APPENDIX B

Description of Actuarial Basis

Actuarial Cost Method Adopted June 30, 1989

A Projected Unit Credit Normal Cost Method is used in this valuation. Under this method, the projected pension at retirement age is first calculated for each member. The actuarial present value of that benefit is determined at the member's current age. The normal cost for the member for the current year is equal to that actuarial present value, divided by the member's projected service at retirement. The normal cost for the plan for the year is the sum of the normal costs for all members.

The accrued actuarial liability (AAL) at any point in time is the value of the projected pensions based on service to the valuation date.

For ancillary benefits for active members, in particular disability benefits, death and survivor benefits, termination benefits, and the post-retirement increases, the same procedure as outlined above is followed.

Actuarial gains and losses are amortized as a level percentage of payroll over a 50-year period ending June 30, 2045, after an initial phase in period ending June 30, 2010.

Estimated annual administrative expenses are added to the normal cost. For valuation purposes, assets are valued at book.

While no change has been made in the actuarial method, Senate Bill 533 produced a change in the process for determining the State contribution to SURS, beginning in fiscal year 1996.

Actuarial Assumptions (Adopted June 30, 1991)

Mortality: 1986 Projected Experience Table, a table based on experience underlying the 1971 Group Annuity Mortality Table, without margins, with a projections for mortality improvements to 1986, with a 3-year setback for males and a 2-year setback for females.

Interest: 8% per annum, compounded annually, net of investment expenses.

Termination: Illustrative rates of withdrawal from the plan are as follows:

Age	Males	Females
20	0.050	0.050
25	0.047	0.047
30	0.042	0.042
35	0.034	0.037
40	0.024	0.031
45	0.017	0.025
50	0.013	0.024
55	0.018	0.024
60	0.026	0.033
65	0.041	0.051
70	0.054	0.065

For the first 10 years of service, the termination rate is increased by multiplying the initial rate by the following:

Service Year	Males	Females
0	5.75	5.90
1	5.75	5.60
2	4.70	4.75
3	3.90	3.95
4	3.20	3.30
5	2.50	2.60
6	2.15	2.30
7	1.80	2.00
8	1.50	1.65
9	1.25	1.30

Part-time employees with less than 3 years of service are assumed to terminate within the plan year.

Salary Increases: 7% per annum compounded annually with the 7% increased by the following multiples for the first six years of service:

Service Year	Multiplier
0	1.0400
1	1.0300
2	1.0175
3	1.0175
4	1.0175
5	1.0100

Disability: Incidence of disability amongst employees:

Age	Males	Females
20	0.0000	0.0000
25	0.0003	0.0003
30	0.0006	0.0008
35	0.0007	0.0011
40	0.0009	0.0014
45	0.0013	0.0021
50	0.0021	0.0031
55	0.0043	0.0050
60	0.0088	0.0081
65	0.0104	0.0113
70	0.0050	0.0100

Retirement: Employees are assumed to retire after becoming eligible according to the following schedule:

Age	Males	Females
50-55	.075	.065
56	.040	.045
57-58	.040	.040
59	.050	.065
60	.100	.105
61	.095	.065
62	.115	.145
63	.110	.115
64	.130	.175
65	.240	.225
66	.200	.155
67	.200	.165
68	.165	.200
69	.200	.200
70	1.000	1.000

Assets: Assets available for benefits are used at book value.

Expenses: As estimated and advised by SURS staff, based on current expenses with an allowance for expected increases.

Marital Status: Employees are assumed to be married in accordance with the following table:

Age	Males	Females
20	25%	40%
30	70%	75%
40	80%	80%
50	85%	80%
60	85%	70%

Spouse's Age: The female spouse is assumed to be 3 years younger than the male spouse.

Remarriage: The surviving spouses of deceased employees are assumed to remarry in accordance with the following table:

Age	Rate of Remarriage
20	0.145
25	0.095
30	0.060
35	0.041
40	0.029
45	0.019
50	0.012
55	0.007

Children: It is assumed that married members have 2.0 children with a one age difference.

The age of the youngest child of a deceased employee at his date of death is assumed to be as follows:

Age at Death of Employee	Age of Youngest Child
20	0
25	1
30	3
35	5
40	7
45	9
50	12
55	15
60	18

Effective Rate of Interest: The rate of interest credited on member contributions is assumed to be 8% per annum.

Missing Data: If earnings were not available, the annual salary is assumed to be the prior year's earnings increased by 5.25%. If the prior year's earnings are not available, the annual salary is assumed to be $30,000. If a birthdate was not available, the participant is assumed to be age 40 if active, age 50 if a widow(er), age 70 if a retiree and age 12 if a child.

Procedure for Determining Prior Year Earnings: In November of each year, the System provides the Actuary with a tape containing actual salaries for the 12-month period ended August 31. That tape is matched against the valuation tape that contains actual salaries for the 10-month period ended June 30 resulting in a special file with salaries for July and August. When the following year's valuation tape is received, it is matched against this special file resulting in a file with salaries for the period July 1 - June 30.

APPENDIX C

Summary of Plan Provisions

Summary of Plan Provisions

The following is a summary of the major provisions of the State Universities Retirement System as in effect on the date of the valuation (6/30/94).

Membership: The System covers faculty and non-academic permanent employees of State Universities and Colleges, Community Colleges, State Scientific Surveys and other related agencies. In addition, employees in a position where services are expected to be rendered on a continuous basis for the lesser of 4 months or one academic term will also be covered by the System.

Employees employed on a temporary basis at less than full-time and attending classes with an employer are ineligible to participate.

Member Contributions: 8% of gross earnings. 6½% of the 8% contributions are designated for retirement annuities, ½% for automatic annual increases and 1% for survivor benefits. Police officers and firefighters contribute 9½% of earnings. The additional 1½% is a normal retirement contribution.

Interest Credited on Member Contributions: The interest rate credited is fixed by the Board and has been 8% in recent years. (For FY89 it was 7½%.) For purposes of lump sum payments to former members, the interest rate is 4½%.

Normal Retirement: Members are eligible for normal retirement after 35 years of covered service, after 8 years of covered service and age 60, or after 5 years of covered service and age 62. Policemen and firemen are eligible for normal retirement at age 55 with 20 years of service, or at age 50 with 25 years of service.

The annuity payable is based on the largest of three formulas:

(1) The following percentages of "average earnings":

	General	Police & Firefighters
(a) For each of the first 10 years of service	1.67%	2.25%
(b) For each of the next 10 years of service	1.90%	2.50%
(c) For each of the next 10 years of service	2.10%	2.75%
(d) For each year of service over 30	2.30%	2.75%

Average earnings are the average of the highest earnings for any 4 consecutive years. Optionally, for all employees, except academic employees paid on other than a 12-month basis, average earnings may be based on the 48 consecutive calendar months ending with the last day of employment. A lump sum payment for up to 56 days of accrued vacation may be included in this computation.

(2) The actuarial equivalent of 2.4 times the accumulated member contributions for retirement annuities (6½% of earnings for ordinary members, 8% of earnings for police officers and firefighters). The actuarial equivalent assumes a constant annuity payable for life.

(3) For each year of service up to a maximum of 30 years, if employed one-half time or more, the following monthly amount based on average earnings:

Average Annual Earnings	
Under $3,500	$8
$3,500 - $4,500	9
$4,500 - $5,500	10
$5,500 - $6,500	11
$6,500 - $7,500	12
$7,500 - $8,500	13
$8,500 - $9,500	14
$9,500 and above	15

For members first participating hired after September 14, 1977, the maximum annuity under (1) or (2) is 75% of average earnings. The maximum is 80% of average earnings for members who participated on or before September 14, 1977.

Early Retirement: Members are eligible for early retirement after 8 years of service and age 55, but the annuity calculated under formula (1) or (3) above is reduced by ½% for each month the retirement precedes age 60.

Early Retirement Without Discount: A member may retire between the ages of 55 and 60 with at least 8, but not more than 35 years service credit, without the ½% reduction provided:

(1) The member does so between June 1, 1981 and September 1, 1992.

(2) The member retires within 6 months of the last day of employment.

(3) The member and the employer make one-time lump sum payments to the Retirement System based upon the member's highest full-time annual salary rate during the 4-year average salary period. The member pays 7% of such salary rate for each year or fraction of a year prior to age 60 or for each year or fraction of a year that his service credit is less than 35 years, whichever is less. The employer payment is 20% of the salary rate for each year or fraction of a year prior to age 60.

The numbers of members using this provision may be limited, at the option of the employer, to no less than 15% of those eligible during any year. The right to participate is allocated among those applying on the basis of seniority in the service of the employer.

Disability:

Members with 2 years of covered service who are unable to perform their duties because of illness or any amount of covered service if because of an accident, are eligible for disability after 60 days of disability. Pregnancy and childbirth are considered a disability.

The amount of the disability benefit is as follows:

(1) 50% of basic compensation at disability or 50% of average earnings for the 24 months preceding disability, whichever is greater. Payments are made until (a) the total benefits paid equal 50% of the total earnings in covered service, or (b) September 1 following the employee's 70th birthday or the end of the month following the fifth year anniversary, if later. In case of disability caused by an on-the-job accident, where workers' compensation or occupational disease payments are granted, 50% of total earnings limitation does not apply and the benefit ceases only due to (b) above.

(2) After cessation of the benefit in (1), members who had 8 years of covered service will receive the normal retirement benefit commencing at or after age 55 (with no reduction for early retirement) if the member continues to be disabled.

The disability benefit will end upon death or recovery.

Disability Retirement Allowance:

If a member's disability benefits are discontinued due to 50% of total earnings limitation, the member is entitled to a disability retirement allowance of 35% of the basic compensation which was payable at the time the disability began. This benefit is payable only if at least 2 licensed and practicing physicians appointed by the Board certify that the member has a medically determined physical or mental impairment that would prevent him/her from engaging in any substantial gainful activity, and that either can be expected to result in death, or has lasted or can be expected to last for a continuous period of not less than 12 months.

The disability retirement allowance is payable for life unless the member is able to accept substantial gainful employment, or elects to receive a retirement annuity.

Death Benefits Before Retirement:

Upon the death of a participating employee with 1½ years of covered service or of a former member with 10 years of covered service, the following amounts are paid to the member's survivors:

(1) A death benefit equal to the retirement contributions (7% for general employees, 8½% for police and firefighters) and interest, plus

(2) A lump sum payment of $1,000, plus

(3) A monthly survivor's annuity equal to the greater of 50% of the member's accrued normal retirement benefit or the following amounts, if greater:

   (i) 30% of average earnings to a spouse, child or parent, up to $400 monthly.

   (ii) 60% of average earnings to a spouse and one child, up to $600 monthly.

   (iii) 80% of average earnings to a spouse and 2 or more children, up to $600 monthly.

Survivor's benefits are payable until children attain age 18, to a spouse after age 50, and a dependent parent after age 55. The spouse's benefit is payable at any age while children are under 18 and living with the spouse. If death occurs after termination of employment, the monthly survivors annuity may not exceed 80% of the earned retirement annuity. The children's benefit is payable at any age provided that (i) the member's death occurs before the child attains age 18, and (ii) upon attaining age 18, the child suffers a disability which would prevent him/her from engaging in any substantial gainful activities. If there are no dependent survivors, the member did not have the necessary service, or if the dependent survivors so elect in lieu of any other benefits, the following amounts will be paid:

(1) A refund of all contributions and interest, and

(2) If death occurred while a participating employee *

 (i) to a dependent beneficiary, an amount equal to the employee's final annual rate of earnings, but not less than $2,000 nor more than $5,000.

 (ii) to a non-dependent beneficiary, a lump sum payment of $2,500.

* The recipient of a disability benefit is a participating employee. The recipient of a disability retirement allowance is not.

Death of an Annuitant:

Upon the death of an annuitant receiving a retirement annuity or disability retirement annuity, a lump sum benefit of $1,000 is payable to the member's spouse, children or dependent parent. In addition, a survivor's annuity as outlined above is payable. If no survivor annuity is payable, a minimum death benefit of $1,000 or an amount equal to the excess of the member's contributions and interest at retirement over the benefits paid is payable.

Automatic Increases:

Retirement benefits are increased annually after retirement by 3% of the current retirement annuity. The increase is compounded and does apply to survivor's benefits. The first automatic annual increase in retirement annuity is paid on the January 1 following the annuitant's retirement date, and is based on the number of completed months that have elapsed since retirement began.

For the disability benefit, the first adjustment is effective on January 1 following the fourth anniversary of the granting of the disability. The first adjustment is 7%. At each subsequent January 1, an adjustment of 3% is made.

Termination of Service:

A lump sum refund of all member contributions and interest (at 4½%) will be made. If a member has 5 years of covered service and does not apply for a refund, a normal retirement benefit will be payable at age 62.

APPENDIX D

Estimated Contributions Under Section 15-155

Estimated Contributions Under Section 15-155

Fiscal Year	Total Payroll	Contribution % of Payroll	Contribution Dollar Amount	Assets as of End of Year	PUC-AAL GASB#5	15-155 Ratio
1994	2,140,139,000	6.251%	133,782,811	4,446,941,755	8,585,512,000	51.80%
1995	2,364,286,073	4.832%	114,236,700	4,712,662,899	9,273,473,000	50.82%
1996	2,487,819,539	5.704%	141,911,334	5,021,263,730	10,026,767,000	50.08%
1997	2,616,353,870	6.577%	172,070,476	5,375,692,563	10,844,142,000	49.57%
1998	2,750,568,033	7.449%	204,895,600	5,781,452,854	11,725,286,000	49.31%
1999	2,890,301,520	8.322%	240,522,016	6,242,842,887	12,674,134,000	49.26%
2000	3,037,917,372	9.194%	279,311,450	6,763,446,961	13,695,718,000	49.38%
2001	3,191,952,212	10.067%	321,322,907	7,344,678,775	14,793,206,000	49.65%
2002	3,351,690,271	10.939%	366,646,100	7,990,665,732	15,968,913,000	50.04%
2003	3,517,478,423	11.812%	415,471,281	8,705,332,427	17,229,892,000	50.52%
2004	3,689,772,218	12.684%	468,014,590	9,493,247,791	18,576,690,000	51.10%
2005	3,869,311,917	13.557%	524,546,662	10,361,204,122	20,016,296,000	51.76%
2006	4,056,566,530	14.429%	585,324,830	11,314,586,597	21,555,620,000	52.49%
2007	4,251,465,855	15.302%	650,540,284	12,359,640,112	23,201,192,000	53.27%
2008	4,454,629,520	16.174%	720,493,341	13,503,461,859	24,946,404,000	54.13%
2009	4,665,616,025	17.047%	795,325,054	14,754,009,908	26,777,584,000	55.10%
2010	4,887,554,789	17.919%	875,800,943	16,122,932,673	28,690,376,000	56.20%
2011	5,120,195,198	17.919%	917,487,778	17,574,301,580	30,676,598,000	57.29%
2012	5,363,453,656	17.919%	961,077,261	19,110,507,735	32,727,332,000	58.39%
2013	5,619,268,638	17.919%	1,006,916,747	20,738,841,677	34,750,588,000	59.68%
2014	5,887,738,746	17.919%	1,055,023,906	22,460,555,969	36,804,880,000	61.03%
2015	6,172,954,770	17.919%	1,106,131,765	24,283,903,409	38,881,172,000	62.46%
2016	6,474,947,748	17.919%	1,160,245,887	26,215,554,330	40,971,396,000	63.99%
2017	6,792,132,032	17.919%	1,217,082,139	28,260,852,027	43,064,796,000	65.62%
2018	7,128,384,359	17.919%	1,277,335,193	30,424,473,430	45,285,004,000	67.18%
2019	7,483,861,920	17.919%	1,341,033,217	32,715,072,361	47,499,024,000	68.88%
2020	7,876,764,671	17.919%	1,411,437,461	35,134,033,935	50,380,560,766	69.74%
2021	8,290,294,816	17.919%	1,485,537,928	37,685,165,351	53,393,465,989	70.58%
2022	8,725,535,294	17.919%	1,563,528,669	40,371,968,467	56,539,192,529	71.41%
2023	9,183,625,897	17.919%	1,645,613,925	43,197,562,888	59,818,542,864	72.21%
2024	9,665,766,257	17.919%	1,732,008,656	46,164,598,597	63,231,554,805	73.01%
2025	10,173,218,985	17.919%	1,822,939,110	49,275,156,958	66,777,373,134	73.79%
2026	10,707,312,981	17.919%	1,918,643,413	52,530,638,778	70,454,105,652	74.56%
2027	11,269,446,913	17.919%	2,019,372,192	55,931,638,003	74,258,661,984	75.32%
2028	11,861,092,875	17.919%	2,125,389,232	59,477,799,470	78,186,573,315	76.07%
2029	12,483,800,252	17.919%	2,236,972,167	63,167,658,963	82,231,791,027	76.82%
2030	13,139,199,764	17.919%	2,354,413,206	66,998,463,677	86,386,462,074	77.56%
2031	13,829,007,753	17.919%	2,478,019,899	70,965,970,972	90,640,678,636	78.29%
2032	14,555,030,659	17.919%	2,608,115,944	75,064,223,099	94,982,199,415	79.03%
2033	15,319,169,769	17.919%	2,745,042,031	79,285,295,358	99,396,139,650	79.77%
2034	16,123,426,182	17.919%	2,889,156,737	83,619,014,882	103,864,626,657	80.51%
2035	16,969,906,056	17.919%	3,040,837,466	88,052,646,978	108,366,417,381	81.25%
2036	17,860,826,124	17.919%	3,200,481,433	92,570,545,626	112,876,474,106	82.01%
2037	18,798,519,496	17.919%	3,368,506,708	97,153,764,459	117,365,494,125	82.78%
2038	19,785,441,769	17.919%	3,545,353,311	101,779,624,118	121,799,388,727	83.56%
2039	20,824,177,462	17.919%	3,731,484,359	106,421,231,536	126,138,706,455	84.37%
2040	21,917,446,778	17.919%	3,927,387,288	111,046,946,238	130,337,995,072	85.20%
2041	23,068,112,734	17.919%	4,133,575,121	115,619,788,286	134,345,096,182	86.06%
2042	24,279,188,652	17.919%	4,350,587,815	120,096,781,963	138,100,365,842	86.96%
2043	25,553,846,056	17.919%	4,578,993,675	124,428,228,753	141,535,813,890	87.91%
2044	26,895,422,973	17.919%	4,819,390,843	128,556,902,526	144,574,154,036	88.92%
2045	28,307,432,680	17.919%	5,072,408,862	132,417,159,166	147,127,755,986	90.00%
2046	29,793,572,895	12.300%	3,664,609,466	134,194,175,516	149,097,490,092	90.00%
2047	31,357,735,473	12.350%	3,872,680,331	135,327,965,114	150,371,454,084	90.00%
2048	33,004,016,585	12.500%	4,125,502,073	135,735,376,115	150,823,570,495	90.00%