STATE EMPLOYEES' RETIREMENT SYSTEM
OF ILLINOIS

ACTUARIAL VALUATION COMPLETED AS OF JUNE 30, 1990

OCTOBER, 1990

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INTRODUCTION

The law governing the State Employees' Retirement System requires the Actuary, as the technical advisor to the Board of Trustees to:

> ...make an annual valuation of the liabilities and reserves of this System, an annual determination of the amount of contributions required from the State under this Article, and certify the results thereof to this board. (Chapter 108 1/2, Par. 14-138).

The Wyatt Company, as Actuary, has completed a valuation as of June 30, 1990, based upon membership and financial data compiled by the administrative staff of the System, and the results of the valuation are presented in this report.

Senate Bill 95 and House Bill 332 were passed by the Illinois legislature in June 1989 and approved by the governor in August 1989. These bills contained provisions affecting benefits and annual appropriation requirements. As these bills were approved after the end of the 1989 fiscal year, the effect on the accrued actuarial liability is first disclosed in this 1990 valuation. However, because the bills were approved before completion of the 1989 actuarial valuation, and because the contribution requirements for the 1991 fiscal year were based on that valuation, the annual funding requirements developed therein reflected the provisions of these bills.

The bills included the following significant benefit changes:

- The 3% automatic annual increase for retirees is now compounded and applies to the total annuity, including any Ad Hoc increases that have been or may be granted. The first increase affected was the one payable January 1, 1990. §14-114(a); §14-115(c)

- Effective January 1, 1990, or the January 1 on or after the first anniversary of the benefit, whichever is later, a 3% annual increase is applied to widow and survivor annuities. The increase is compounded; that is, each 3% increase is applied to the total benefit being paid. §14-119(g); §14-121(m)

- For State Police with 20 years of eligible creditable service as State Police, the definition of final average compensation for such service is the greater of the monthly rate of pay on the last day of service or the average monthly pay received during the last 48 months of employment. §14-103.12(c)

- Security Employees of the Department of Mental Health and Developmental Disabilities (Chester, Illinois facility only), and members of the Prisoner Review Board are eligible for the same retirement formulas as Security Employees of the Department of Corrections. §14-108(g)-(i)

- Court Reporters with at least 10 years of service as a Court Reporter are entitled to the following retirement benefit for such service: 2.2% of final average compensation times service as a non-covered employee plus 1.5% of final average compensation times service as a covered employee. §14-108(k)

- Investigators for the Department of State Police, and Dangerous Drug Inspectors, are eligible for the alternative formulas for service in such positions. §14-110

- The provisions requiring discontinuance of disability benefits upon attainment of age 70 have been removed. §14-123; §14-123.1; §14-124

In addition to the annual valuation, we have completed the experience review for the five year period ending June 30, 1990. The results of that study are presented in a separate report. The most significant changes recommended as a result of that study are:

- salary increase rates that vary by age to replace a single salary increase assumption (The average salary increase over a 30-35 year career is essentially unchanged.)

- retirement rates that vary by age to replace a single retirement age assumption

- lower termination rates that reflect experience over the last ten years

- for disabled employees, decreased mortality rates below age 55 and increased mortality rates at higher ages

The revised assumptions resulting from this study were used to process this valuation. The net effect of the change in assumptions is an increase of 4.3% in the accrued actuarial liability, and an increase in the employer normal cost from 2.267 percent of pay to 2.932 percent of pay. The revised assumptions are described in detail beginning on page 20.

The cost method used to process the valuation was the Projected Unit Credit Cost Method, and is unchanged from last year.

CHANGES SINCE LAST VALUATION

Senate Bill 95 and House Bill 332, passed in June 1989 and approved in August of that year, affect disclosed liabilities for the first time this year. Revised actuarial assumptions based on the experience review for the five year period ending June 30, 1990 were used to process this year's valuation. This year for the first time the System has provided the Actuary with additional individual data for non-retired members detailing current average compensation as of the valuation date. This information was estimated in previous valuations based on the salary increase assumption. Changes in the valuation results are also due to changes in membership data and fund assets.

Summarized below are certain important results for both years.

		June 30, 1989	June 30, 1990
1.	Number of Active Members	76,651	79,211
2.	Annualized Rate of Pay (Average)	$2,023,661,652 ($26,401)	$2,181,235,949 ($27,537)
3.	Number of Members Receiving Payments	33,523	33,981
4.	Annual Benefit Payments (Average)	$ 178,306,617 ($5,319)	$191,431,524 ($5,633)
5.	Assets: (a) Book Value (b) Market Value	$2,580,198,846 2,856,941,986	$2,795,567,110 $3,086,666,667
6.	Accrued Actuarial Liability (AAL) (Funded Percentage)	$3,752,134,283 (68.8%)	$4,538,074,194 (61.6%)
7.	Unfunded Accrued Actuarial Liability	$1,171,935,437	$1,742,507,084

The increase in the unfunded accrued actuarial liability of $570,571,647 was due to the following:

1.	Unfunded at 6/30/89 for purposes of disclosure		$1,171,935,437
2.	Increase due to Senate Bill 95 and House Bill 332		
	(a)	Compounding of AAI for Retirees	$ 125,240,720
	(b)	AAI for Survivor and Widows	87,031,687
	(c)	Definition of Final Average Pay for State Police	23,054,123
	(d)	Correctional Formula for Prisoner Review Board and Mental Health Security Employees	6,045,512
	(e)	New Formulas for Court Reporters	8,904,393
	(f)	State Police Investigators and Dangerous Drug Inspectors are now considered State Police Positions	603,284
	(g)	Disability Benefits May Continue Past Age 70	643,334
	(h)	Total	$ 251,523,053
3.	Contribution being less than the amount necessary to fund normal cost and interest on the unfunded.		
	(a)	Contributions Due	
		(i) Interest on 1 and 2(h) to 6/30/90	$ 113,876,679
		(ii) Participants (includes Repayment of Refunds)	110,109,685
		(iii) Employer Normal Cost	56,553,248
		(iv) Interest on (ii) and (iii) to 6/30/90	6,538,268
		(v) Total Due	$ 287,077,880
	(b)	Contributions Paid	
		(i) Participants (includes Repayment of Refunds)	$ 110,109,685
		(ii) Employing State Agencies and Appropriations	107,938,094
		(iii) Interest on (i) and (ii) to 6/30/90	8,554,120
			$ 226,601,899
	(c)	Increase in the Unfunded (a) minus (b)	$ 60,475,981
4.	Actuarial (Gains) Losses		
	(a)	(Gain) from investment return greater than 8%	$ (6,636,389)
	(b)	Loss from salary increases greater than 6.5%	5,058,229
	(c)	Loss from retirement at other than the expected age	32,243,743
	(d)	Loss from fewer terminations than expected	24,540,651
	(e)	Losses from other sources	13,873,361
	(f)	Total Actuarial Loss	$ 69,079,595
5.	Non-Recurring Items		
	(a)	Increase due to change in actuarial assumptions	$ 185,673,427
	(b)	Change in data provided by SERS: Increase due to current average compensation	3,819,591
6.	Total		$570,571,647
7.	Unfunded Accrued Actuarial Liability at June 30, 1990		$1,742,507,084

STATE EMPLOYEES' RETIREMENT SYSTEM
APPROPRIATION REQUIREMENTS FOR
FISCAL YEARS 1992 - 1997

The law governing the System provides that:

Starting with ... fiscal year ... 1990, the State's contribution shall be increased incrementally over a 7-year period so that by ... fiscal year ... 1996, the minimum contribution ... shall be ... sufficient to meet the normal cost and amortize the unfunded liability over 40 years as a level percentage of payroll, determined under the projected unit credit actuarial cost method. (Chapter 108½, Par. 14-131(f))

However, the State's projected contribution of $106,000,000 to SERS for fiscal year 1991 was insufficient to meet the System's total required contribution for that year of $111,746,000. As a result, the 7-year phase in period called for in the law was reduced to a 6-year period starting with fiscal year 1991. The target date for completely amortizing the unfunded accrued actuarial liability remains unchanged at June 30, 2035.

The required contribution rates and amounts calculated on this basis are as follows:

Fiscal Year	Normal Cost	Amortization of Unfunded Liability	Total Required Rate	Assumed Payroll (Billions)	Total Required Contribution
1992	2.932%	1.807%	4.739%	2.520	$119,423,000
1993	2.932%	2.130%	5.062%	2.646	133,941,000
1994	2.932%	2.452%	5.384%	2.778	149,568,000
1995	2.932%	2.775%	5.707%	2.917	166,473,000
1996	2.932%	3.097%	6.029%	3.063	184,668,000
1997	2.932%	3.097%	6.029%	3.216	193,893,000

Contribution levels are shown on a gross basis. The net State appropriation requirements can be determined by adjusting for such things as State Pension Fund appropriations and contributions from non-appropriated agencies.

The results are based on the projected unit credit actuarial cost method, and on the data provided, and assumptions used, for the June 30, 1990 actuarial valuation. In order to determine projected contribution rates and amounts the following additional assumptions and estimates were used:

(1) Covered payroll of $2,400,000,000 for fiscal year 1991.
(2) 5% per annum rate of increase in covered payroll.
(3) Total employer contributions of $106,000,000 for fiscal year 1991.

The unfunded accrued actuarial liability (UAAL) to be amortized was:

UAAL as of June 30, 1990	$1,742,507,084

METHOD OF CALCULATION

I. 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 1991 was based on the results of the June 30, 1990 valuation. The difference between the total 1991 appropriation and the required normal cost was considered the 1991 amortization payment, and this payment was converted to a percentage of the expected 1991 payroll. An amortization schedule was then determined on the assumptions that:

(1) The unfunded accrued actuarial liability existing at June 30, 1990 would be completely amortized by June 30, 2035.

(2) The amortization rates for fiscal years 1992 - 1996 would not be uniform, but the rate for any one of these years would exceed the rate for the previous year by a uniform percentage of payroll.

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

The normal cost rate calculated for fiscal year 1992 (based on the results of the June 30, 1990 valuation) was assumed to remain unchanged.

20 YEAR PROJECTION

Based on the results of our valuation and the assumptions used therefor, we have projected what the valuation results will be for the next 20 years under the Projected Unit Credit Cost method. Actual State contributions were assumed to be $106,000,000 for Fiscal Year 1991, and were projected under two different scenarios for future years.

A. State contributions were assumed to be those required by Chapter 108-1/2, Par. 14-131(f) of the Illinois Pension Code. The Fiscal Year 1992-1997 contribution requirements are given on page 6. The results of this projection are shown in Table 2A.

B. State Contributions were assumed to equal 45% of projected benefit payments (excluding refunds). The results of this projection are shown in Table 2B.

Certain key results are summarized below. ($ amounts are in millions.)

	Fiscal Year Ending				
	6/30/91	6/30/96	6/30/01	6/30/06	6/30/11
Number of Active Members	79,211	79,211	79,211	79,211	79,211
Payroll	$2,400	$3,063	$3,909	$4,989	$6,368
State Normal Cost	$70	$90	$115	$146	$187
(% Payroll)	(2.932%)	(2.932%)	(2.932%)	2.932%)	(2.932%)
Actuarial Liability	$4,853	$6,712	$9,176	$12,458	$16,807
Projection A.					
State Contributions According to Par. 14-131(f)					
Assets (Book Value)	$3,008	$4,411	$6,462	$9,320	$13,283
(Funded %)	(61.99%)	(65.72%)	(70.42%)	(74.82%)	(79.03%)
Projection B.					
State Contributions Equal 45% of Benefit Payments					
Assets (Book Value)	$3,008	$4,233	$5,894	$8,159	$11,238
(Funded %)	(61.99%)	(63.06%)	(64.23%)	(65.49%)	(66.86%)

GASB: VALUE OF ACCRUED PENSION BENEFIT OBLIGATION

Statement Number 5 of the Governmental Accounting Standards Board sets forth certain standards of financial accounting and reporting for 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. 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.

This measure of the pension benefit obligation was computed for both this year's and last year's valuation, using the same assumptions as were used to process the valuation. Summarized below are key results for both years.

Actuarial Present Value (APV) of Credited Projected Benefits	June 30, 1989	June 30, 1990
Accumulated Contributions of current employees	$1,045,212,119	1,153,104,503
Accumulated Contributions of inactive members	46,726,965	50,871,245
Payable to Retirees and Beneficiaries	1,653,880,384	1,932,126,127
Payable to Terminated Employees not yet receiving benefits - employer-financed portion	14,003,475	16,549,419
Payable to Vested Current Employees - employer-financed portion	945,556,322	1,308,230,363
Payable to Nonvested Current Employees - employer-financed portion	46,755,018	77,192,537
Total APV of Credited Projected Benefits	$3,752,134,283	$4,538,074,194
Net Assets available for benefits (Market value at June 30, 1990 is $3,086,666,667)	$2,580,198,846	$2,795,567,110
Unfunded APV of Credited Projected Benefits	$1,171,935,437	$1,742,507,084

Compared to the assets valued on the same basis as for funding purposes, the credited projected benefits are 61.6% funded compared with 68.8% last year. Plan amendments, changes in assumptions, and changes in reporting procedures since the last valuation had the following effects on the actuarial present value of credited projected benefits:

1.	Increase due to Senate Bill 95 and House Bill 332	
	(a) Compounding of AAI for Retirees	$125,240,720
	(b) AAI for Survivors and Widows	87,031,687
	(c) Definition of Final Average Pay for State Police	23,054,123
	(d) Correctional Formulas for Prisoner Review Board and Mental Health Security Employees	6,045,512
	(e) New Formulas for Court Reporters	8,904,393
	(f) State Police Investigators and Dangerous Drug Inspectors Considered State Police Positions	603,284
	(g) Continuation of Disability Benefits Past Age 70	643,334
	(h) Total	$251,523,053
2.	Increase due to change in actuarial assumptions	$185,673,427
3.	Increase due to current average compensation provided by SERS	$ 3,819,591

APB8: LEVEL DOLLAR FUNDING
FOR FISCAL YEAR ENDED JUNE 30, 1992

The Board of Trustees has adopted a policy of amortizing the Unfunded Accrued Actuarial Liability (UAAL), on a level percent of payroll basis, by June 30, 2035. Accounting Principals Board Opinion No. 8 sets forth requirements for amortizing the UAAL of a defined benefit plan. The minimum requirements specified by APB8 are a 40-year amortization period and level dollar annual payments. The Board's policy results in lower annual contributions in the early years of the amortization period and higher annual contributions in the later years than the APB8 method. The APB8 method is designed to complete the amortization by June 30, 2028. The Fiscal Year 1992 contribution required by the Board is given on page 5. The Fiscal Year 1992 contribution under APB8 would be determined as follows:

	% of Payroll(1)	Annual Contribution(1)
Normal Cost	2.932%	$ 73,886,000
Amortization of the Unfunded Actuarial Liability with level annual payments By June 30, 2028	5.623%	$141,692,000
Total Contribution	8.555%	$215,578,000

(1) Based upon an assumed payroll of $2,520,000,000 for Fiscal Year July 1, 1991 - June 30, 1992.

EXPENSES FOR FISCAL YEAR ENDED JUNE 30, 1990

Based on the results of our valuation as of June 30, 1988, and actual covered payroll for the year July 1, 1989 to June 30, 1990 of $2,270,302,995, the minimum pension expense for fiscal year 1990 would be $185,197,130 or 8.157% of actual covered payroll.

The remainder of this report is comprised of the following:

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 S. Lynn Hill

S. Lynn Hill
Consultant

By

Lloyd L. Nordstrom
Fellow of The Society of Actuaries

Chicago, Illinois
October, 1990

sers/servl-90/clg

STATE EMPLOYEES' RETIREMENT SYSTEM OF ILLINOIS

RESULTS OF ACTUARIAL VALUATION AS OF June 30, 1990

MEMBER DATA	
1. Number of Members	
(a) Active	79,211
(b) Inactive:	
(i) Eligible for deferred vested pension benefits	3,114
(ii) Eligible for Return of contributions only	17,710
(c) Current Benefit Recipients:	
(i) Retirement Annuities	23,864
(ii) Survivor Annuities	8,627
(iii) Disability Annuities	1,490
(d) Deferred Benefit Recipients:	
(i) Retirement Annuities	36
(ii) Survivor Annuities	185
(e) Total	134,237
2. Annualized Rate of Pay	$2,181,235,949
3. Annual Benefit Payments Currently Being Made:	
(a) Retirement	$158,392,677
(b) Survivor	21,857,777
(c) Disability	11,181,070
(d) Total	$191,431,524
VALUATION RESULTS	
4. Actuarial Liability for Annuitants:	
(a) For Benefit Recipients:	
(i) Retirement Annuities	$1,641,954,167
(ii) Survivor Annuities	214,764,228
(iii) Disability Annuities	65,636,773
(b) Deferred:	
(i) Retirement Annuities	1,135,115
(ii) Survivor Annuities	8,635,844
(c) Total	$1,932,126,127
5. Actuarial Liability for Inactive Members:	
(a) Eligible for deferred vested pension benefits	$61,844,342
(b) Eligible for return of contributions only	5,576,322
(c) Total	$67,420,664

	Normal Cost	Actuarial Liability
6. Active Members:		
(a) Pension Benefits	$88,883,720	$1,437,043,968
(b) Cost-of-Living Adjustments	$23,485,502	$375,888,309
(c) Death Benefits:		
(i) Occupational	1,399,355	13,245,324
(ii) Survivor & Widow	11,120,256	179,267,021
(iii) Non-Occupational	366,601	3,833,463
(iv) Refund	4,197,206	58,079,572
(v) Total	$17,083,418	$254,425,380
(d) Disability:		
(i) Occupational	4,537,886	45,480,228
(ii) Non-Occupational	4,913,867	77,697,017
(iii) Total	$9,451,753	$123,177,245
(e) Withdrawal	$32,758,016	$347,992,501
(f) Expenses	$3,942,000	---
(g) Total	$175,604,409	$2,538,527,403
7. Total Actuarial Liability		$4,538,074,194
8. Assets (Book)		$2,795,567,110
9. Unfunded Actuarial Liability		$1,742,507,084
10. Employee Contributions	$109,403,610	
11. Annual Normal Cost to be Provided by the State	$66,200,799	
(% Payroll)	(2.932%)	

ANNUAL FUNDING REQUIREMENT FOR FISCAL YEAR 1992

12. Projected Unit Credit	
(a) Contributions as a percent of payroll	
(i) Annual Normal Cost	2.932%
(ii) Amortization of UAAL per Par. 14-131(f) of the Illinois Pension Code	1.807%
(iii) Total Required Contribution	4.739%
(b) Total contribution based on a payroll of $2.520 billion for fiscal year 1992	$119,423,000

TABLE 2A

STATE EMPLOYEES' RETIREMENT SYSTEM OF ILLINOIS
TWENTY YEAR PROJECTION OF COSTS AND LIABILITIES
STATE CONTRIBUTION BASED ON SENATE BILL 95
(All Dollar Amounts in Millions)

	Fiscal Year Ending 6/30								
	1991	1992	1993	1994	1995	1996	2001	2006	2011
BASIC DATA									
1. Number of Active Members	79,211	79,211	79,211	79,211	79,211	79,211	79,211	79,211	79,211
2. Expected Total Payroll	$ 2,400	$ 2,520	$ 2,646	$ 2,778	$ 2,917	$ 3,063	$ 3,909	$ 4,989	$ 6,368
VALUATION RESULTS - PROJECTED UNIT CREDIT									
3. Actuarial Liability	$ 4,853	$ 5,186	$ 5,537	$ 5,907	$ 6,298	$ 6,712	$ 9,176	$12,458	$16,807
(Retired Lives Reserves)	(2,038)	(2,150)	(2,268)	(2,392)	(2,523)	(2,662)	(3,590)	(4,790)	(6,420)
4. Assets (Book)	$ 3,008	$ 3,241	$ 3,495	$ 3,772	$ 4,077	$ 4,411	$ 6,462	$ 9,320	$13,283
5. Unfunded Actuarial Liability	$ 1,845	$ 1,945	$ 2,042	$ 2,135	$ 2,221	$ 2,300	$ 2,714	$ 3,137	$ 3,525
(Funded Percentage)	(61.99)	(62.49)	(63.12)	(63.86)	(64.73)	(65.72)	(70.42)	(74.82)	(79.03)
6. Annual Normal Cost									
(a) Total	$ 187	$ 196	$ 205	$ 215	$ 225	$ 236	$ 297	$ 375	$ 473
(b) Employee Contributions	116	122	127	133	139	146	182	228	287
(c) Balance	70	74	78	81	86	90	115	146	187
(% Total Payroll)	(2.93)	(2.93)	(2.93)	(2.93)	(2.93)	(2.93)	(2.93)	(2.93)	(2.93)
7. State Contribution	$ 106	$ 119	$ 134	$ 150	$ 166	$ 185	$ 236	$ 301	$ 384
(% Total Payroll)	(4.42)	(4.74)	(5.06)	(5.38)	(5.71)	(6.03)	(6.03)	(6.03)	(6.03)
8. Benefit Payments	$ 216	$ 232	$ 249	$ 267	$ 285	$ 304	$ 409	$ 547	$ 729

Notes:

Total payroll as advised by the Board for FY 1990, increasing by 5.00% per annum thereafter.
Normal Cost rate includes Administrative Expenses.
State Contribution based on the requirements of Senate Bill 95.
Benefit payments shown do not include refunds.

TABLE 2B

STATE EMPLOYEES' RETIREMENT SYSTEM OF ILLINOIS
TWENTY YEAR PROJECTION OF COSTS AND LIABILITIES
STATE CONTRIBUTION EQUAL TO 45% OF BENEFIT PAYMENTS
(All Dollar Amounts in Millions)

	Fiscal Year Ending 6/30								
	1991	1992	1993	1994	1995	1996	2001	2006	2011
BASIC DATA									
1. Number of Active Members	79,211	79,211	79,211	79,211	79,211	79,211	79,211	79,211	79,211
2. Expected Total Payroll	$ 2,400	$ 2,520	$ 2,646	$ 2,778	$ 2,917	$ 3,063	$ 3,909	$ 4,989	$ 6,368
VALUATION RESULTS - PROJECTED UNIT CREDIT									
3. Actuarial Liability	$ 4,853	$ 5,186	$ 5,537	$ 5,907	$ 6,298	$ 6,712	$ 9,176	$12,458	$16,807
(Retired Lives Reserves)	(2,038)	(2,150)	(2,268)	(2,392)	(2,523)	(2,662)	(3,590)	(4,790)	(6,420)
4. Assets (Book)	$ 3,008	$ 3,225	$ 3,455	$ 3,699	$ 3,958	$ 4,233	$ 5,894	$ 8,159	$11,238
5. Unfunded Actuarial Liability	$ 1,845	$ 1,961	$ 2,082	$ 2,208	$ 2,340	$ 2,479	$ 3,282	$ 4,299	$ 5,569
(Funded Percentage)	(61.99)	(62.19)	(62.40)	(62.62)	(62.84)	(63.06)	(64.23)	(65.49)	(66.86)
6. Annual Normal Cost									
(a) Total	$ 187	$ 196	$ 205	$ 215	$ 225	$ 236	$ 297	$ 375	$ 473
(b) Employee Contributions	116	122	127	133	139	146	182	228	287
(c) Balance	70	74	78	81	86	90	115	146	187
(% Total Payroll)	(2.93)	(2.93)	(2.93)	(2.93)	(2.93)	(2.93)	(2.93)	(2.93)	(2.93)
7. State Contribution	$ 106	$ 104	$ 112	$ 120	$ 128	$ 137	$ 184	$ 246	$ 328
(% Total Payroll)	(4.42)	(4.14)	(4.24)	(4.32)	(4.39)	(4.46)	(4.70)	(4.93)	(5.15)
8. Benefit Payments	$ 216	$ 232	$ 249	$ 267	$ 285	$ 304	$ 409	$ 547	$ 729

Notes:

Total payroll as advised by the Board for FY 1990, increasing by 5.00% per annum thereafter.
Normal Cost rate includes Administrative Expenses.
State Contribution of $106 million for FY 1991; 45% of benefit payouts thereafter.
Benefit payments shown do not include refunds.

Table 3

STATE EMPLOYEES' RETIREMENT SYSTEM OF ILLINOIS

ACTUARIAL PRESENT VALUE OF CREDITED PROJECTED BENEFITS AT JUNE 30, 1990

	Vested	Non-Vested	Total
1. Annuitants			
(a) Participants Currently Receiving Payments	$1,922,355,168	---	$1,922,355,168
(b) Deferred	$9,770,959	---	$9,770,959
2. Inactive Members			
(a) Employee Contributions	$50,871,245	---	$50,871,245
(b) Employer Financed	$16,549,419	---	$16,549,419
3. Active Members:			
(a) Pension Benefits	$1,349,412,395	$87,631,573	$1,437,043,968
(b) Cost-of-Living Adjustments	$352,668,583	$23,219,726	$375,888,309
(c) Death Benefits:			
(i) Occupational	10,180,278	3,065,046	13,245,324
(ii) Survivor & Widow	165,063,981	14,203,040	179,267,021
(iii) Non-Occupational	3,080,510	752,953	3,833,463
(iv) Refund	52,215,870	5,863,702	58,079,572
(v) Total	$230,540,639	$23,884,741	$254,425,380
(d) Disability:			
(i) Occupational	36,483,958	8,996,270	45,480,228
(ii) Non-Occupational	72,178,447	5,518,570	77,697,017
(iii) Total	$108,662,405	$14,514,840	$123,177,245
(e) Withdrawal	$284,255,282	$63,737,219	$347,992,501
(f) Total	$2,325,539,304	$212,988,099	$2,538,527,403
(g) Employee Contributions	$1,017,308,941	$135,795,562	$1,153,104,503
(h) Employer Financed	$1,308,230,363	$77,192,537	$1,385,422,900
4. TOTAL	$4,325,086,095	$212,988,099	$4,538,074,194

NOTES:

(1) Credited projected benefits were calculated in accordance with plan provisions in effect on June 30, 1990 based on the members' service as of such 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.

(4) The actuarial assumptions utilized were the same as those adopted for funding purposes.

Table 4

STATE EMPLOYEES' RETIREMENT SYSTEM OF ILLINOIS

ACTUARIAL PRESENT VALUE OF ACCUMULATED PLAN BENEFITS AT JUNE 30, 1990

	Vested	Non-Vested	Total
1. Annuitants			
(a) Participants Currently Receiving Payments	$1,922,355,168	---	$1,922,355,168
(b) Deferred	$9,770,959	---	$9,770,959
2. Inactive Members			
(a) Employee Contributions	$50,871,245	---	$50,871,245
(b) Employer Financed	$16,549,419	---	$16,549,419
3. Active Members:			
(a) Pension Benefits	$850,280,071	$29,451,535	$879,731,606
(b) Cost-of-Living Adjustments	$219,257,979	$7,482,815	$226,740,794
(c) Death Benefits:			
(i) Occupational	9,580,149	5,076,699	14,656,848
(ii) Survivor & Widow	130,066,897	25,075,505	155,142,402
(iii) Non-Occupational	4,100,877	1,511,970	5,612,847
(iv) Refund	50,537,364	5,770,438	56,307,802
(v) Total	$194,285,287	$37,434,612	$231,719,899
(d) Disability:			
(i) Occupational	33,974,978	15,321,058	49,296,036
(ii) Non-Occupational	58,949,768	2,409,433	61,359,201
(iii) Total	$92,924,746	$17,730,491	$110,655,237
(e) Withdrawal	$206,992,124	$43,646,166	$250,638,290
(f) Total	$1,563,740,207	$135,745,619	$1,699,485,826
(g) Employee Contributions	$1,017,308,941	$135,795,562	$1,153,104,503
(h) Employer Financed	$546,431,266	($49,943)	$546,381,323
4. TOTAL	$3,563,286,998	$135,745,619	$3,699,032,617

NOTES:

(1) Accumulated benefits were calculated in accordance with plan provisions in effect on June 30, 1990, based on members' 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.

(4) The actuarial assumptions utilized were the same as those adopted for funding purposes.

Table 5

STATE EMPLOYEES' RETIREMENT SYSTEM OF ILLINOIS

ANALYSIS OF FINANCIAL EXPERIENCE

Gains and losses in Actuarial Liability for Fiscal Year ending June 30, 1990.

Activity	Gain (Loss)
1. Actuarial Gains and Losses	
(a) Age & Service Retirements	$ (32,243,743)
(b) Incidence of Disability	(1,634,929)
(c) In-Service Mortality	(3,983,963)
(d) Retiree Mortality	1,361,738
(e) Disabled Mortality	55,701
(f) Termination of Employment	(24,540,651)
(g) Salary Increases	(5,058,229)
(h) Investment Income	6,636,389
(i) Other	(9,671,908)
(j) Total Actuarial Gain (Loss)	$ (69,079,595)
2. Contribution Income	$ (60,475,981)
3. Non Recurring Items	
(a) Legislation	
(i) Compounding of AAI for Retirees	$(125,240,720)
(ii) AAI for Survivors and Widows	(87,031,687)
(iii) Definition of Final Average Pay for State Police	(23,054,123)
(iv) Correctional Formulas for Prisoner Review Board and Mental Health Security Employees	(6,045,512)
(v) New Formulas for Court Reporters	(8,904,393)
(vi) State Police Investigators and Dangerous Drug Inspectors Considered State Police Positions	(603,284)
(vii) Continuation of Disability Benefits Past Age 70	(643,334)
(b) Change in Actuarial Assumptions	(185,673,427)
(c) Current Average Compensation Provided by SERS	(3,819,591)
(d) Total Non Recurring Gain (Loss)	$(441,016,071)
4. Total Financial Gain (Loss)	$(570,571,647)

ACTUARIAL COST METHOD
Adopted June 30, 1989

A projected unit credit normal cost method is used. Under this method, the projected pension at retirement age is first calculated and the value thereof at the individual member's current or attained age is determined. The normal cost for the member for the current year is equal to the value so determined divided by the member's projected service at retirement. The normal cost for the plan for the year is the sum of the individual normal costs.

The actuarial liability at any point in time is the value of the projected pensions at that time less the value of future normal costs.

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 40 year period ending June 30, 2035, after an initial phase in period ending June 30, 1996.

Estimated annual administrative expenses are added to the normal cost.

For valuation purposes assets are valued at book.

ACTUARIAL ASSUMPTIONS
Adopted June 30, 1990

Mortality: 1986 Projected Experience Table, a table based on experience underlying the 1971 Group Annuity Mortality Table, without margins, with a projection for mortality improvements to 1986. 5% of deaths amongst active employees are assumed to be in the performance of their duty.

Interest: 8% per annum, compounded annually.

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

Age	Males	Females
20	.188	.377
25	.126	.144
30	.085	.096
35	.062	.072
40	.047	.056
45	.038	.041
50	.032	.030
55	.030	.030
60	.030	.030
65	.030	.030

It is assumed that terminated employees will not be rehired.

Salary Increases: Illustrative rates of increase per individual employee per annum, compounded annually:

Age	Males & Females
20	9.2%
25	8.7
30	8.2
35	7.7
40	7.2
45	6.7
50	6.2
55	5.7
60	5.2
65	5.0

In addition, for purposes of determining annual appropriations as a percent of total covered payroll, it is assumed that the total payroll will increase 5.0% per annum, compounded annually.

These increases include a component for inflation of 4.5% per annum.

In determining total covered payroll the size of the active group is assumed to remain constant.

Disability: Incidence of disability amongst employees eligible for disability benefits:

Age	Males	Females
20	.0020	.0026
25	.0021	.0031
30	.0022	.0037
35	.0025	.0045
40	.0031	.0057
45	.0043	.0074
50	.0068	.0098
55	.0109	.0128
60	.0162	.0164
65	.0226	.0226

15% of disabilities amongst active employees are assumed to be in the performance of their duty.

Employees receiving a disability allowance are assumed to recover or die in accordance with the following tables:

Age	Rate of Recovery Male/Female	Rate of Mortality Male	Rate of Mortality Female
20	0.689	0.040	0.035
25	0.572	0.040	0.035
30	0.466	0.040	0.035
35	0.370	0.040	0.035
40	0.286	0.040	0.036
50	0.150	0.044	0.038
60	0.058	0.059	0.045
70	--	0.094	0.059
80	--	0.174	0.091

Retirement: Listed below are rates of retirement that vary by age.

Age	General Employees	Alternative Formula Employees*
50-54	--	20%
55-59	10%	20
60	25	20
61	15	20
62	20	20
63-64	15	20
65	40	40
66-69	25	30
70	100	100

* An additional 10% are assumed to retire in the year in which the employe completes 30 years of service. The rates apply only to employees who have fulfilled the service requirement necessary for retirement at any given age.

Assets:	Assets available for benefits are used at book value.
Expenses:	As estimated and advised by SERS staff, based on current expenses with an allowance for expected increases.
Marital Status:	85% of employees are assumed to be married.
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	0.144
25	0.094
30	0.059
35	0.040
40	0.028
45	0.018
50	0.010
55	0.004

Children:	It is assumed that married members have 2.2 children one year apart in age.

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	2
25	3
30	4
35	5
40	6
45	8
50	10
55	12
60	14

Social Security Benefits:	Social Security Disability and Survivor benefits payable in future years are assumed to bear the same relationship to future compensation levels at time of entitlement as current Social Security benefits bear to current compensation levels.
Overtime and Shift Differentials:	Reported earnings include base pay alone. It is assumed that overtime and shift differentials will increase total payroll by 3.5% over reported earnings.
Missing Data:	If earnings were not available, the annual rate of pay was assumed to be $24,700. If a birthdate was not available, the member was assumed to be age 40.

SUMMARY OF RETIREMENT SYSTEM PLAN
(As of July 1, 1990)

1. PURPOSE

The State Employees' Retirement System of Illinois, a State Agency, provides an orderly means whereby aged or disabled employees may be retired from active service without prejudice or hardship and enables the employees to accumulate reserves for old age, disability, death and termination of employment.

2. ADMINISTRATION

Responsibility for the operation of the System and the direction of its policies is vested in a Board of Trustees of seven members. The administration of the detailed affairs of the System is the responsibility of the Executive Secretary who is appointed by the Board of Trustees. Administrative policies and procedures are designed to insure an accurate accounting of funds of the System and prompt payment of claims for benefits within the applicable statute.

3. EMPLOYEE MEMBERSHIP

All persons entering State service on or after January 1, 1984 become members upon completion of 6 months of continuous service. Persons entering State service from January 1, 1972 to January 1, 1984 became members on their first day of employment. Excluded from membership are: any employee whose position is subject to membership under another State supported system; any person who becomes an employee after June 30, 1979 as a public service employment program participant under the federal CETA program, or any enrollee of the Young Adult Conservation Corps. Prior to January 1, 1984, emergency and temporary employees were excluded from membership. Persons appointed by the Governor with the advice and consent of the Senate may elect to become members of the System.

4. MEMBERSHIP SERVICE

Membership service includes all service rendered while a member of the System for which credit is allowable. Persons entering service on or after January 1, 1984, or after July 1, 1982 in the case of emergency or temporary employees, may also receive membership service credit for periods of employment prior to membership by making contributions for such periods.

5. MEMBER CONTRIBUTIONS

Members are required to contribute a percentage of salary as their share of meeting the cost of the various benefits. Contribution rates are as shown below:

A. Members covered by Social Security - 4% of Salary.

B. Members without Social Security - 8% of Salary.

C. Members covered by Social Security who are serving in a position in which service toward the Alternative Retirement Annuity may be earned, or who are Security Employees of the Department of Corrections - 5-1/2% of Salary.

D. Members without Social Security who are serving in a position in which service toward the Alternative Retirement Annuity may be earned, or who are Security Employees of the Department of Corrections - 9-1/2% of Salary.

Members coordinated with Social Security also pay the current Social Security tax rate.

6. RETIREMENT PENSION

A. Qualification of Member:

Upon termination of State service, a member is eligible for a pension at age 60 with at least eight years of pension credit; at any age with 35 or more years of credit; between ages 55 and 60 with 30 to 35 years of credit with the pension reduced by one-half of 1% for each month the member is under age 60.

Members serving in a position in which service toward the Alternative Retirement Annuity may be earned are eligible to receive the alternative retirement annuity at age 50 with at least 25 years pension credit or at age 55 with at least 20 years of pension credit in such a position. Security employees of the Department of Corrections were placed under the alternative formula effective August 16, 1985. The age and service requirements in accordance with the alternative formula are being phased in over a five-year period for these employees. A special formula is provided for members with at least 10 years of service as a Court Reporter.

B. Amount of Pension:

The pension is based on the member's final average compensation and the number of years of pension credit that has been established.

Final Average Compensation is the average of the highest 48 consecutive months in the last 10 years. State policemen with at least 20 years of service will have their pension calculated on the greater of the 48 month average or the base rate of pay on the last day of service.

The pension formula reflects a graded or progressive method according to length of service as follows:

For Each Year Of Credit	General Employees		Court Reporters	
	Covered*	Not Covered*	Covered*	Not Covered*
First 10	1.0%	1.67%	1.5%	2.2%
Second 10	1.1%	1.90%	1.5%	2.2%
Third 10	1.3%	2.10%	1.5%	2.2%
Over 30	1.5%	2.30%	1.5%	2.2%

For Each Year Of Credit	Department Of Corrections**		Alternative Formula	
	Covered*	Not Covered*	Covered*	Not Covered*
First 10	1.67%	1.90%	1.67%	2.25%
Second 10	1.90%	2.10%	1.90%	2.50%
Third 10	2.10%	2.25%	2.10%	2.75%
Over 30	2.30%	2.50%	2.30%	2.75%

* By Social Security.

** Who are not eligible for Alternative Formula.

The maximum pension payable is 75% of final average compensation.

C. Optional Forms of Payment:

Reversionary Annuity - A member may elect to receive a smaller pension during his lifetime in order to provide a spouse or a designated dependent with a lifetime income. That payment would be in addition to any other benefit payable by the System.

Level Income - A member who contributes to Social Security as a State employee may elect to have his pension payments increased before age 65 and reduced thereafter. To be eligible for this election the member must have established eligibility for a Social Security pension.

D. Annual Increases in Pension:

Post retirement increases of 3% of the current pension are granted to members effective each January 1 occurring on or after the first anniversary of the pension (i.e., increases are compounded).

7. **SURVIVORS ANNUITY**

A. Qualification of Survivor:

If death occurs while in State employment, the member must have established at least 18 months of pension credit. If death occurs after termination of State service and the member was not receiving a retirement pension, the member must have established at least eight years of pension credit.

An eligible spouse qualifies at age 50 or at any age if there is in the care of the spouse any unmarried children of the member under age 18; unmarried children under age 18 qualify if no spouse survives; dependent parents at age 50 qualify if neither an eligible spouse nor children survive the member.

B. Amount of Payment:

If the member's death occurs before retirement, the named beneficiary receives a lump sum refund of all of the member's pension contributions plus interest, excluding contributions for widows and survivors benefits. A single lump sum payment of $1,000 is also made immediately to the survivor beneficiary of the member.

An eligible spouse receives a monthly annuity equal to 30% of the member's final average compensation subject to a maximum of $400. If children of the member are under the care of the spouse, the annuity is increased for each child, subject to a maximum of $600 or 80% of final average salary. If only eligible children survive, the monthly annuity may not exceed the lesser of $600 or 80% of final average compensation. The maximum combined monthly payment to parents may not exceed $400. If the member's death occurs after retirement or after termination of State employment but before the member receives a pension, the monthly benefit is further limited to 80% of the pension received or earned by the member. Monthly benefits payable to survivors of a member who was covered by Social Security as a State employee are reduced by one-half of the Social Security benefits for which the survivors are eligible. If death of the member occurs on or after January 1, 1984 the minimum total survivors annuity benefit payable is equal to 50% of the member's earned pension without regard to the member's age at death.

C. Duration of Payment:

The monthly annuity payable to a spouse terminates upon death or remarriage prior to attainment of age 55; to children upon death, marriage or attainment of age 18, except for a child who at age 18 is physically or mentally disabled and unable to accept gainful employment.

D. Annual Increases in Annuity:

Increases of 3% of the current annuity are granted to survivors effective each January 1 occurring on or after the first anniversary of the annuity (i.e., increases are compounded).

8. WIDOW'S ANNUITY OPTION

The widow of a male member who was a participant in the System prior to July 19, 1961, may have the option of taking a Widow's Annuity rather than the Survivor's Annuity.

A. Qualification of Widow:

An eligible widow receives a Widow's Annuity if she is age 50 or over or has in her care any of the member's unmarried children under age 18. If she is not age 50 and has no such children in her care, she becomes eligible at age 50.

B. Amount of Payment:

The Widow's Annuity consists of a lump sum payment of $500, plus a monthly annuity equal to 50% of the pension earned or received by the member at the date of death. If the widow has in her care eligible children of the member, the monthly annuity is increased because of each child, subject to a maximum payment equal to 66-2/3% of the earned pension. Monthly benefits payable to a widow of a member who was covered by Social Security as a State employee are reduced by one-half of the amount of benefits she is entitled to from Social Security.

C. Duration of Payment:

The monthly payment to the widow continues for her lifetime whether or not she remarries. If the amount of benefit was increased because of eligible children, it is adjusted downward as these children's benefits are terminated (death, marriage or attainment of age 18).

D. Annual Increases in Annuity:

Increases of 3% of the current annuity are granted to members effective each January 1 occurring on or after the first anniversary of the annuity (i.e., increases are compounded).

9. OCCUPATIONAL DEATH BENEFIT

A. Qualification of Survivors:

If a member's death results from an injury on the job or a job related cause, the spouse may be eligible for an Occupational Death benefit. If only unmarried children under age 18 survive, they would be eligible for the benefit. If neither a spouse nor eligible children survive, a dependent father or mother would be eligible.

B. Amount and Duration of Payment:

The nominated beneficiary receives a lump sum payment consisting of all contributions made by the member plus interest credited to his account.

A surviving spouse is entitled to a monthly benefit equal to 50% of the member's final average compensation. The benefit is payable until remarriage of the spouse unless the remarriage occurs after attainment of age 55. If children under age 18 also survive, the annuity is increased by 15% of such average because of each child subject to a maximum of 75%. If there is no spouse, or if the spouse remarries prior to attainment of age 55 or dies before all children have attained age 18, each child receives a monthly allowance of 15% of final average compensation.

The combined payment to children may not exceed 50% of the member's final average compensation. Payments to or on account of children terminate upon their death, marriage or attainment of age 18.

If there is no spouse or eligible children, a benefit of 25% of final average compensation is payable to each surviving dependent parent for life.

The monthly benefit is reduced by any payments awarded under the Workmen's Compensation or Occupational Diseases Acts.

10. OTHER DEATH BENEFITS

If the survivor beneficiaries of the member do not qualify for any of the previously described death benefits, one of the following benefits is payable to the nominated beneficiary on file with the System at date of death.

A. Before Retirement:

If the member's death occurred while in State service the benefit consists of: (1) a refund of all contributions plus interest credited to the member's account; and (2) a payment equal to one month's salary for each full year of pension credit not to exceed six month's salary. The minimum payment is equal to one month's salary.

If the member had terminated State service but not yet qualified for a pension, the benefit consists of a refund of all of the member's contributions to the System plus the interest credited to the member's account.

B. After Retirement:

The benefit consists of a lump sum payment equal to the excess of contributions plus interest credited to the member's account over the total amount of pension payments made to the member. The minimum payment is $500.00

11. NON-OCCUPATIONAL DISABILITY BENEFITS

A. Qualification and Amount of Payment:

Available to any member who has established at least one and one-half years of creditable service and who has been granted a disability leave of absence by his employing agency. The benefit is 50% of final average compensation plus a credit to the member's account of service and contributions. It begins on the 31st day of absence from service on account of disability.

If the member has Social Security coverage as a State employee, the benefit payable by the System is reduced by the amount of any disability payment to which he is entitled under Social Security.

B. Duration of Payment:

The member is eligible for the monthly benefit until the occurrence of any of the following events: (1) disability ceases; (2) resumption of gainful employment; (3) payments are made for a period of time equal to one-half of the service credit established as of the date disability began; or (4) attainment of age 65 if the benefit commences prior to age 60, or payment for 5 years if benefit commences after age 60.

If termination of the benefit is due to the member receiving benefits for a period of time equal to 1/2 of the service credit established at the date of disability, he shall be eligible for a retirement annuity if he has attained age 55 and has 15 years of service, or if he has attained age 50 and has 20 years of service.

12. OCCUPATIONAL DISABILITY BENEFIT

A. Qualification and Amount of Payment:

Provided for any member who becomes disabled as the direct result of injury or diseases arising out of and in the course of State employment.

The benefit is 75% of final average compensation plus a credit to the member's account of service and contributions. The cash benefit is reduced by any payment received under the Workmen's Compensation or Occupational Diseases Acts.

B. Duration of Payment:

Monthly benefits are payable until the occurrence of any of the following events: (1) disability ceases; (2) resumption of gainful employment; or (3) attainment of age 65 if the benefit commences prior to age 60, or payment for 5 years if benefit commences after age 60.

If termination of the benefit is due to the member having attained age 65 or having received benefits for five years after age 60, the member is entitled to a retirement pension based upon service credit established as of that date.

C. Temporary Disability Benefit

A member who is initially denied Workers' Compensation benefits and is appealing the denial may receive payment at the nonoccupational rate, 50% of pay, providing all eligibility requirements for the nonoccupational benefit are met, until the determination is made.

13. SEPARATION BENEFITS

Upon termination of State employment by resignation, discharge, dismissal, or layoff, a member may obtain a refund of the contributions made to the System. By accepting a refund, a member forfeits all accrued rights and benefits in the System for himself and his beneficiaries.