

**State Employees' Retirement
System of Illinois**

**Actuarial Valuation
As Of June 30, 1991**

Wyatt

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October 24, 1991

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, 1991. In this report we present the results of the valuation and the appropriation requirements for fiscal years 1993-1998. For purposes of disclosure, this report also includes the actuarial present value of accumulated plan benefits, as required by FASB Statement No. 35, and the actuarial present value of credited projected benefits, as required by GASB Statement No. 5.

The valuation was completed based upon membership and financial data provided by the administrative staff of the System. The actuarial assumptions used were based on an experience review for the five-year period ending June 30, 1990. The cost method used to process the valuation was the Projected Unit Credit Cost Method. Both the actuarial assumptions and the cost method are unchanged from last year.

CHANGES SINCE LAST VALUATION

Senate Bill 1951, approved in January 1991, modified the date of application of the first automatic annual increase for widow and survivor annuities, added 3% automatic annual increases for disability benefits and occupational death annuities, and provided a six month window during which refunds could be repaid at an interest charge of 2.5% per annum. In addition to these legislative changes, changes in membership and fund assets affected the results of the valuation.

Summarized below are certain important results for both years.

	June 30, 1991	June 30, 1990
1. Number of Active Members	81,023	79,211
2. Annualized Rate of Pay (Average)	\$ 2,342,743,054 (\$28,915)	\$ 2,181,235,949 (\$27,537)
3. Number of Members Receiving Payments	34,685	33,994
4. Annualized Benefit Payments (Average)	\$ 207,138,840 (\$5,972)	\$ 191,431,524 (\$5,631)
5. Assets: (a) Book Value	\$ 2,981,414,553	\$ 2,795,567,110
(b) Market Value	\$ 3,307,041,904	\$ 3,086,666,667
6. Accrued Actuarial Liability (AAL) (Funded Percentage)	\$ 4,949,880,212 (60.2%)	\$ 4,538,074,194 (61.6%)
7. Unfunded Accrued Actuarial Liability	\$ 1,968,465,659	\$ 1,742,507,084

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

The increase in the unfunded accrued actuarial liability (UAAL) of \$225,958,575 was due to the following:

1.	UAAL at 6/30/90	\$ 1,742,507,084
2.	Contribution being less than the amount necessary to fund the normal cost and interest on the unfunded.	
	(a) Contributions Due	
	(i) Interest on (1) to 6/30/91	\$ 139,400,567
	(ii) From Participants (includes Repayment of Refunds)	120,263,354
	(iii) Employer Normal Cost	72,166,831
	(iv) Interest on (ii) and (iii) to 6/30/91	<u>7,549,129</u>
	(v) Total Contributions Due	\$ 339,379,881
	(b) Contributions Paid	
	(i) From Participants (includes Repayment of Refunds)	\$ 120,263,354
	(ii) Employing State Agencies and Appropriations	115,979,568
	(iii) Interest on (i) and (ii) to 6/30/91	<u>9,267,924</u>
	(iv) Total Contributions Paid	\$ 245,510,846
	(c) Expected Increase (a) minus (b)	\$ 93,869,035
3.	Expected UAAL at 6/30/91	\$ 1,836,376,119

3. Expected UAAL at 6/30/91 (from previous page)	\$ 1,836,376,119
4. Actuarial (Gains) Losses	-
(a) Loss from investment return less than 8%	\$ 43,333,979
(b) Loss from salary increases greater than expected	15,879,462
(c) Loss from retirement at other than the expected age	19,232,881
(d) Loss from fewer terminations than expected	12,967,263
(e) Losses from other sources	<u>12,725,852</u>
(f) Total Actuarial Loss	\$ 104,139,437
5. Non-Recurring Items	
(a) Legislation (SB 1951)	\$ 17,743,150
(b) Benefit recipients not previously reported	10,206,953
6. Total Increase in UAAL (2) + (4) + (5)	\$ 225,958,575
7. UAAL at June 30, 1991 (1) + (6)	\$ 1,968,465,659

APPROPRIATION REQUIREMENTS FOR FISCAL YEARS 1993 - 1998

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 108-1/2, Par. 14-131(f))

However, the State's projected contribution of \$101,600,000 to SERS for fiscal year 1992 is insufficient to meet the System's total required contribution for that year of \$119,423,000. As a result, the 7-year phase in period called for in the law has been reduced to a 5-year period starting with fiscal year 1992. 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
1993	3.072%	1.656%	4.728%	\$2.588	\$122,361,000
1994	3.072	2.262	5.334	2.718	144,978,000
1995	3.072	2.869	5.941	2.854	169,556,000
1996	3.072	3.475	6.547	2.996	196,148,000
1997	3.072	3.475	6.547	3.146	205,969,000
1998	3.072	3.475	6.547	3.303	216,247,000

Contribution levels are shown on a gross basis. The net State appropriation requirements can be determined by adjusting the gross amount for such items as State Pension Fund appropriations and other 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, 1991 actuarial valuation. In order to determine projected contribution rates and amounts the following additional assumptions were used:

- (1) Covered payroll of \$2,465,000,000 for fiscal year 1992.
- (2) 5% per annum rate of increase in covered payroll.
- (3) Total employer contributions of \$101,600,000 for fiscal year 1992.

The unfunded accrued actuarial liability (UAAL) to be amortized as of June 30, 1991 was \$1,968,465,659.

Method Of Calculation

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 1992 was based on the results of the June 30, 1991 valuation. The difference between the total 1992 appropriation and the required normal cost was considered to be the 1992 amortization payment, and this payment was converted to a percentage of the expected 1992 payroll. An amortization schedule was then determined on the assumption that:

- (1) The unfunded accrued actuarial liability existing at June 30, 1991 would be completely amortized by June 30, 2035.

- (2) The amortization rates for fiscal years 1993 - 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 1993 (based on the results of the June 30, 1991 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 \$101,600,000 for Fiscal Year 1992, 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 1993-1998 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 June 30				
	1992	1997	2002	2007	2012
Number of Active Members	81,023	81,023	81,023	81,023	81,023
Payroll	\$2,465	\$3,146	\$4,015	\$5,125	\$6,540
State Normal Cost (% Payroll)	\$76 (3.072%)	\$97 (3.072%)	\$123 (3.072%)	\$157 (3.072%)	\$201 (3.072%)
Actuarial Liability	\$5,288	\$7,279	\$9,912	\$13,419	\$18,076
Projection A					
Assets (Book Value)	\$3,189	\$4,666	\$6,840	\$9,885	\$14,134
(Funded %)	(60.3%)	(64.1%)	(69.0%)	(73.7%)	(78.2%)
Projection B					
Assets (Book Value)	\$3,189	\$4,453	\$6,158	\$8,475	\$11,621
(Funded %)	(60.3%)	(61.2%)	(62.1%)	(63.2%)	(64.3%)

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.

GASB 5 Disclosure	Actuarial Present Value (APV) of Credited Projected Benefits	
	June 30, 1991	June 30, 1990
Accumulated Contributions		
Current Employees	\$ 1,273,596,927	\$ 1,153,104,503
Inactive Members	56,285,352	50,871,245
Payable to		
Retirees and Beneficiaries	2,078,058,684	1,932,126,127
Terminated Employees not yet receiving benefits - employer-financed portion	14,714,928	16,549,419
Vested Current Employees - employer-financed portion	1,432,302,881	1,308,230,363
Nonvested Current Employees - employer-financed portion	<u>94,921,440</u>	<u>77,192,537</u>
Total APV of Credited Projected Benefits	\$ 4,949,880,212	\$ 4,538,074,194
Net Assets available for benefits (Book) (Market value at June 30, 1991 is \$3,307,041,904)	\$ 2,981,414,553	\$ 2,795,567,110
Unfunded APV of Credited Projected Benefits	\$ 1,968,465,659	\$ 1,742,507,084

Compared to the assets valued on the same basis as for funding purposes, the credited projected benefits are 60.2% funded compared with 61.6% last year. Plan amendments since the last valuation had the following effects on the actuarial present value of credited projected benefits:

1. Increase due to Senate Bill 1951

(a) Change in AAI for Survivors and Widows	\$	1,884,332
(b) AAI for Disabled Members		2,195,238
(c) AAI for Occupational Death Annuities		5,185,082
(d) Repayment of Refunds at 2.5% Interest (plus effect of Purchased Service)		<u>8,478,498</u>
(e) Total	\$	17,743,150

APB8: LEVEL DOLLAR FUNDING FOR FISCAL YEAR ENDED JUNE 30, 1993

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 method prescribed by APB8. The APB8 method is designed to complete the amortization by June 30, 2028. The Fiscal Year 1993 contribution required by the Board is given on page 5. The Fiscal Year 1993 contribution under APB8 would be determined as follows:

	% of Payroll ⁽¹⁾	Annual Contribution ⁽¹⁾
Normal Cost	3.072%	\$ 79,503,000
Amortization of the UAAL with level annual payments By June 30, 2028	6.216%	\$ 160,860,000
Total Contribution	9.288%	\$ 240,363,000

(1) Based upon an assumed payroll of \$2,588,000,000 for Fiscal Year July 1, 1992 - June 30, 1993.

EXPENSES FISCAL YEAR ENDED JUNE 30, 1991

Based on the results of our valuation as of June 30, 1989, and actual covered payroll for the year July 1, 1990 to June 30, 1991 of \$2,461,351,671, the minimum pension expense for fiscal year 1991 would be \$195,450,528 or 7.941% of actual covered payroll.

The remainder of this report is comprised of the following:

- Table 1 - Results of Actuarial Valuation
- Table 2 - Twenty Year Projection
- Table 3 - Value of Credited Projected Benefits (GASB)
- Table 4 - Value of Accumulated Plan Benefits
- Table 5 - Analysis of Financial Experience
- Description of Actuarial Method and Assumptions
- Summary of Plan Provisions

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

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Chicago, Illinois
October, 1991
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**RESULTS OF ACTUARIAL VALUATION
AS OF JUNE 30, 1991**
Table 1
MEMBER DATA
1. Number of Members

(a) Active	81,023
(b) Inactive	
(i) Eligible for deferred vested pension benefits (2,291 are eligible based on SERS service alone. An additional 918 are eligible when reciprocal service is added to SERS service.)	3,209
(ii) Eligible for Return of contributions only	18,025
(c) Current Benefit Recipients	
(i) Retirement Annuities	24,283
(ii) Survivor Annuities	8,819
(iii) Disability Annuities	1,583
(d) Eligible for Deferred Benefits	
(i) Retirement Annuities	40
(ii) Survivor Annuities	<u>170</u>
(e) Total	137,152

2. Annualized Reported Earnings \$ 2,342,743,054

3. Annualized Benefit Payments Currently Being Made

(a) Retirement	\$ 171,047,327
(b) Survivor	23,520,882
(c) Disability	<u>12,570,631</u>
(d) Total	\$ 207,138,840

Table 1 (Page 2)

VALUATION RESULTS

	Normal Cost	Actuarial Liability
4. Actuarial Liability for Annuitants		
(a) Current Benefit Recipients		
(i) Retirement Annuities		\$ 1,765,612,090
(ii) Survivor Annuities		230,250,907
(iii) Disability Annuities		72,392,278
(b) Eligible for Deferred Benefits		
(i) Retirement Annuities		1,178,359
(ii) Survivor Annuities		<u>8,625,050</u>
(c) Total		\$ 2,078,058,684
5. Actuarial Liability for Inactive Members		
(a) Eligible for deferred vested pension benefits		\$ 64,654,680
(b) Eligible for return of contributions only		<u>6,345,600</u>
(c) Total		\$ 71,000,280
6. Active Members		
(a) Pension Benefits	\$ 97,175,223	\$ 1,594,038,141
(b) Cost-of-Living Adjustments	25,696,558	417,205,140
(c) Death Benefits		
(i) Occupational	1,935,850	18,601,186
(ii) Survivor & Widow	11,692,313	190,801,466
(iii) Non-Occupational	393,367	4,168,215
(iv) Refund	<u>4,529,253</u>	<u>63,821,353</u>
(v) Total	\$ 18,550,783	\$ 277,392,220
(d) Disability		
(i) Occupational	5,070,956	51,546,574
(ii) Non-Occupational	<u>5,282,901</u>	<u>84,325,289</u>
(iii) Total	\$ 10,353,857	\$ 135,871,863
(e) Withdrawal	34,989,524	376,313,884
(f) Expenses	<u>4,118,000</u>	<u>---</u>
(g) Total	\$ 190,883,945	\$ 2,800,821,248

Table 1 (Page 3)

	Normal Cost	Actuarial Liability
7. Total Actuarial Liability		\$ 4,949,880,212
8. Assets (Book)		\$ 2,981,414,553
9. Unfunded Actuarial Liability		\$ 1,968,465,659
10. Total Normal Cost	\$ 190,883,945	
11. Employee Contributions	\$ 116,395,524	
12. Annual Normal Cost to be Provided by the State (% Payroll)	\$ 74,488,421 (3.072%)	

**ANNUAL FUNDING REQUIREMENT
FOR FISCAL YEAR 1993**

13. Projected Unit Credit		
(a) Contribution as a percent of payroll		
(i) Annual Normal Cost as a percent of payroll		3.072%
(ii) Amortization of UAAL per Par. 14-131(f) of the Illinois Pension Code		1.656%
(iii) Total Required Contribution		4.728%
(b) Total contribution based on a payroll of \$2.588 billion for fiscal year 1993		\$ 122,361,000

Table 2A

**TWENTY YEAR PROJECTION OF COSTS AND LIABILITIES
STATE CONTRIBUTION BASED ON SENATE BILL 95**

(All Dollar Amounts in Millions)

	Fiscal Year Ending, June 30									
	1992	1993	1994	1995	1996	1997	2002	2007	2012	
Basic Data										
1. Number of Active Members	81,023	81,023	81,023	81,023	81,023	81,023	81,023	81,023	81,023	81,023
2. Expected Total Payroll	\$ 2,465	\$ 2,588	\$ 2,718	\$ 2,854	\$ 2,996	\$ 3,146	\$ 4,015	\$ 5,125	\$ 6,540	
Valuation Results Projected Unit Credit										
3. Actuarial Liability (Retired Lives Reserves)	\$ 5,288 (2,196)	\$ 5,645 (2,319)	\$ 6,022 (2,449)	\$ 6,418 (2,585)	\$ 6,837 (2,728)	\$ 7,279 (2,879)	\$ 9,912 (3,781)	\$ 13,419 (4,976)	\$ 18,076 (6,540)	
4. Assets (Book)	\$ 3,189	\$ 3,423	\$ 3,685	\$ 3,980	\$ 4,312	\$ 4,666	\$ 6,840	\$ 9,885	\$ 14,134	
5. Unfunded Actuarial Liability (Funded Percentage)	\$ 2,099 (60.31)	\$ 2,222 (60.63)	\$ 2,336 (61.20)	\$ 2,438 (62.01)	\$ 2,525 (63.07)	\$ 2,613 (64.10)	\$ 3,072 (69.01)	\$ 3,534 (73.66)	\$ 3,942 (78.19)	
6. Annual Normal Cost										
(a) Total	\$ 196	\$ 206	\$ 216	\$ 226	\$ 237	\$ 248	\$ 314	\$ 397	\$ 504	
(b) Employee Contributions	\$ 120	\$ 126	\$ 132	\$ 138	\$ 145	\$ 152	\$ 191	\$ 240	\$ 303	
(c) Balance (% Total Payroll)	\$ 76 (3.07)	\$ 80 (3.07)	\$ 83 (3.07)	\$ 88 (3.07)	\$ 92 (3.07)	\$ 97 (3.07)	\$ 123 (3.07)	\$ 157 (3.07)	\$ 201 (3.07)	
7. State Contribution (% Total Payroll)	\$ 102 (4.12)	\$ 122 (4.73)	\$ 145 (5.33)	\$ 170 (5.94)	\$ 196 (6.55)	\$ 206 (6.55)	\$ 263 (6.55)	\$ 336 (6.55)	\$ 428 (6.55)	
8. Benefit Payments	\$ 235	\$ 252	\$ 271	\$ 291	\$ 310	\$ 331	\$ 444	\$ 592	\$ 786	

Notes: Total payroll as advised by the Board for FY 1992, increasing by 5.00% per annum thereafter.

Normal Cost rate includes Administrative Expenses.

State Contribution based on the requirements of Chapter 108-1/2, Par. 14-131(f) of the Illinois Pension Code.

Benefit payments shown do not include refunds.

Table 2B

**TWENTY YEAR PROJECTION OF COSTS AND LIABILITIES
STATE CONTRIBUTION BASED ON 45% OF BENEFIT PAYMENTS**

(All Dollar Amounts in Millions)

	Fiscal Year Ending, June 30									
	1992	1993	1994	1995	1996	1997	2002	2007	2012	
Basic Data										
1. Number of Active Members	81,023	81,023	81,023	81,023	81,023	81,023	81,023	81,023	81,023	81,023
2. Expected Total Payroll	\$ 2,465	\$ 2,588	\$ 2,718	\$ 2,854	\$ 2,996	\$ 3,146	\$ 4,015	\$ 5,125	\$ 6,540	\$ 81,023
Valuation Results Projected Unit Credit										
3. Actuarial Liability (Retired Lives Reserves)	\$ 5,288 (2,196)	\$ 5,645 (2,319)	\$ 6,022 (2,449)	\$ 6,418 (2,585)	\$ 6,837 (2,728)	\$ 7,279 (2,879)	\$ 9,912 (3,781)	\$ 13,419 (4,976)	\$ 18,076 (6,540)	\$ 18,076 (6,540)
4. Assets (Book)	\$ 3,189	\$ 3,414	\$ 3,651	\$ 3,903	\$ 4,170	\$ 4,453	\$ 6,158	\$ 8,475	\$ 11,621	\$ 11,621
5. Unfunded Actuarial Liability (Funded Percentage)	\$ 2,099 (60.31)	\$ 2,232 (60.47)	\$ 2,370 (60.64)	\$ 2,515 (60.81)	\$ 2,667 (60.99)	\$ 2,826 (61.17)	\$ 3,754 (62.13)	\$ 4,944 (63.16)	\$ 6,455 (64.29)	\$ 6,455 (64.29)
6. Annual Normal Cost										
(a) Total	\$ 196	\$ 206	\$ 216	\$ 226	\$ 237	\$ 248	\$ 314	\$ 397	\$ 504	\$ 504
(b) Employee Contributions	\$ 120	\$ 126	\$ 132	\$ 138	\$ 145	\$ 152	\$ 191	\$ 240	\$ 303	\$ 303
(c) Balance	\$ 76	\$ 80	\$ 83	\$ 88	\$ 92	\$ 97	\$ 123	\$ 157	\$ 201	\$ 201
(% Total Payroll)	(3.07)	(3.07)	(3.07)	(3.07)	(3.07)	(3.07)	(3.07)	(3.07)	(3.07)	(3.07)
7. State Contribution (% Total Payroll)	\$ 102 (4.12)	\$ 113 (4.38)	\$ 122 (4.49)	\$ 131 (4.58)	\$ 139 (4.66)	\$ 149 (4.72)	\$ 200 (4.97)	\$ 266 (5.19)	\$ 354 (5.41)	\$ 354 (5.41)
8. Benefit Payments	\$ 235	\$ 252	\$ 271	\$ 291	\$ 310	\$ 331	\$ 444	\$ 592	\$ 786	\$ 786

Notes: Total payroll as advised by the Board for FY 1992, increasing by 5.00% per annum thereafter.

Normal Cost rate includes Administrative Expenses.

State Contribution of \$101.6 million for FY 1992; 45% of benefit payouts thereafter.

Benefit payments shown do not include refunds.

**ACTUARIAL PRESENT VALUE OF
CREDITED PROJECTED BENEFITS AT JUNE 30, 1991**

Table 3

	Vested	Non-Vested	Total
Annuitants			
(a) Participants Currently Receiving Payments	\$ 2,068,255,275	\$ ---	\$ 2,068,255,275
(b) Deferred Benefits	9,803,409	---	9,803,409
Inactive Members			
(a) Employee Contributions	56,285,352	---	56,285,352
(b) Employer Financed	14,714,928	---	14,714,928
Active Members			
(a) Pension Benefits	1,487,731,048	106,307,093	1,594,038,141
(b) Annual Increases	388,977,726	28,227,414	417,205,140
(c) Death Benefits			
(i) Occupational	14,074,099	4,527,087	18,601,186
(ii) Survivor & Widow	174,519,223	16,282,243	190,801,466
(iii) Non-Occupational	3,297,473	870,742	4,168,215
(iv) Refund	56,939,426	6,881,927	63,821,353
(v) Total	<u>248,830,221</u>	<u>28,561,999</u>	<u>277,392,220</u>
(d) Disability			
(i) Occupational	40,744,069	10,802,505	51,546,574
(ii) Non-Occupational	77,783,636	6,541,653	84,325,289
(iii) Total	<u>118,527,705</u>	<u>17,344,158</u>	<u>135,871,863</u>
(e) Withdrawal	<u>302,543,181</u>	<u>73,770,703</u>	<u>376,313,884</u>
(f) Total	2,546,609,881	254,211,367	2,800,821,248
(g) Employee Contributions	1,114,307,000	159,289,927	1,273,596,927
(h) Employer Financed	1,432,302,881	94,921,440	1,527,224,321
Total	\$ 4,695,668,845	\$ 254,211,367	\$ 4,949,880,212

NOTES:

- (1) Credited projected benefits were calculated in accordance with plan provisions in effect on June 30, 1991 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 annual increases were recognized.
- (4) The actuarial assumptions utilized were the same as those adopted for funding purposes.

**ACTUARIAL PRESENT VALUE OF
ACCUMULATED PLAN BENEFITS AT JUNE 30, 1991**
Table 4

	Vested	Non-Vested	Total
Annuitants			
(a) Participants Currently Receiving Payments	\$ 2,068,255,275	\$ ---	\$ 2,068,255,275
(b) Deferred Benefits	9,803,409	---	9,803,409
Inactive Members			
(a) Employee Contributions	56,285,352	---	56,285,352
(b) Employer Financed	14,714,928	---	14,714,928
Active Members			
(a) Pension Benefits	934,512,628	36,078,606	970,591,234
(b) Annual Increases	241,005,631	9,184,609	250,190,240
(c) Death Benefits			
(i) Occupational	13,185,063	7,318,392	20,503,455
(ii) Survivor & Widow	135,780,266	27,184,540	162,964,806
(iii) Non-Occupational	4,320,625	1,708,001	6,028,626
(iv) Refund	55,384,909	6,794,661	62,179,570
(v) Total	<u>208,670,863</u>	<u>43,005,594</u>	<u>251,676,457</u>
(d) Disability			
(i) Occupational	37,087,645	17,425,899	54,513,544
(ii) Non-Occupational	<u>62,067,005</u>	<u>3,543,674</u>	<u>65,610,679</u>
(iii) Total	<u>99,154,650</u>	<u>20,969,573</u>	<u>120,124,223</u>
(e) Withdrawal	<u>217,397,002</u>	<u>50,378,333</u>	<u>267,775,335</u>
(f) Total	1,700,740,774	159,616,715	1,860,357,489
(g) Employee Contributions	1,114,307,000	159,289,927	1,273,596,927
(h) Employer Financed	586,433,774	326,788	586,760,562
Total	\$ 3,849,799,738	\$ 159,616,715	\$ 4,009,416,453

NOTES:

- (1) Accumulated benefits were calculated in accordance with plan provisions in effect on June 30, 1991, based on the 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 annual increases were recognized.
- (4) The actuarial assumptions utilized were the same as those adopted for funding purposes.

ANALYSIS OF FINANCIAL EXPERIENCE

Table 5

**Gains and Losses in Actuarial Liability
for Fiscal Year ending June 30, 1991**

Activity	Gain (Loss)
1. Actuarial Gains and Losses	
(a) Age & Service Retirements	\$ (19,232,881)
(b) Incidence of Disability	(889,305)
(c) In-Service Mortality	(5,776,927)
(d) Retiree Mortality	(1,867,193)
(e) Disabled Mortality	619,073
(f) Termination of Employment	(12,967,263)
(g) Salary Increases	(15,879,462)
(h) Investment Income	(43,333,979)
(i) Other	<u>(4,811,500)</u>
(j) Total Actuarial Gain (Loss)	\$ (104,139,437)
2. Contribution Income	\$ (93,869,035)
3. Non Recurring Items	
(a) Legislation	
(i) Change in AAI for Survivors and Widows	\$ (1,884,332)
(ii) AAI for Disabled Members	(2,195,238)
(iii) AAI for Occupational Death Annuities	(5,185,082)
(iv) Repayment of Refunds at 2.5% Interest (plus effect of Purchased Service)	(8,478,498)
(b) Benefit Recipients Not Reported Last Year	<u>(10,206,953)</u>
(c) Total Non Recurring Gain (Loss)	\$ (27,950,103)
4. Total Financial Gain (Loss)	\$ (225,958,575)

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:

<u>Age</u>	<u>Males</u>	<u>Females</u>
20	.188	.377
25	.126	.144
30	.085	.096
35	.062	.072
40	.047	.056
45	.038	.041
50	.032	.030
55+	.030	.030

It is assumed that terminated employees will not be rehired.

The rates apply only to employees who have not fulfilled the service requirement necessary for retirement at any give age.

Salary Increases

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

<u>Age</u>	<u>Annual Increase</u>	<u>Age</u>	<u>Annual Increase</u>
20	9.2%	45	6.7%
25	8.7	50	6.2
30	8.2	55	5.7
35	7.7	60	5.2
40	7.2	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:

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

<u>Age</u>	<u>Rate of Recovery Male/Female</u>	<u>Rate of Mortality Male</u>	<u>Rate of Mortality Female</u>
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

Employees are assumed to retire in accordance with the following rates:

<u>Age</u>	<u>General Employees</u>	<u>Alternative Formula Employees*</u>
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 employee 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:

<u>Age</u>	<u>Rate of Remarriage</u>	<u>Age</u>	<u>Rate of Remarriage</u>
20	0.144	40	0.028
25	0.094	45	0.018
30	0.059	50	0.010
35	0.040	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:

<u>Age At Death Of Employee</u>	<u>Age of Youngest Child</u>	<u>Age At Death Of Employee</u>	<u>Age of Youngest Child</u>
20	2	40	6
25	3	45	8
30	4	50	10
35	5	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 \$28,000. If a birthdate was not available, the member was assumed to be age 40.

SUMMARY OF RETIREMENT SYSTEM PLAN (As of July 1, 1991)

- 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.
- 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.
- 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.

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

<u>For Each Year Of Credit</u>	<u>General Employees</u>		<u>Court Reporters</u>	
	<u>Covered*</u>	<u>Not Covered*</u>	<u>Covered*</u>	<u>Not Covered*</u>
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%

<u>For Each Year Of Credit</u>	<u>Department Of Corrections **</u>		<u>Alternative Formula</u>	
	<u>Covered*</u>	<u>Not Covered*</u>	<u>Covered*</u>	<u>Not Covered*</u>
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).

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 compensation. 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 (before any reduction for Social Security benefits) 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:

If the member's death occurs before retirement 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). If the member's death occurs after retirement the initial 3% increase applies on the January 1 on or after the survivor annuity begins.

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:

If the member's death occurs before retirement increases of 3% of the current annuity are granted to widows effective each January 1 occurring on or after the first anniversary of the annuity (i.e., increases are compounded). If the member's death occurs after retirement the initial 3% increase applies on the January 1 on or after the widow's annuity begins.

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.

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

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

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 the 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

**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 the member's 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.

C. Annual Increases in Annuity

A one time increase of 7% of the original annuity is granted to members on the January 1 following the fourth anniversary of the annuity. Increases of 3% of the current annuity are then granted to members each January 1 following the 7% increase (i.e., the 3% increases are compounded).

**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 the 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. Annual Increases in Annuity

A one time increase of 7% of the original annuity is granted to members on the January 1 following the fourth anniversary of the annuity. Increases of 3% of the current annuity are then granted to members each January 1 following the 7% increase (i.e., the 3% increases are compounded).

D. 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.

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.