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THE REPORT OF THE  
JUNE 30, 1998 ACTUARIAL VALUATION  
OF THE  
STATE UNIVERSITIES RETIREMENT  
SYSTEM OF ILLINOIS



GABRIEL, ROEDER, SMITH & COMPANY



ACTUARIES & CONSULTANTS

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September 15, 1998

Board of Trustees  
State Universities Retirement System of Illinois  
1901 Fox Drive  
Champaign, Illinois 61820

Dear Members of the Board:

We are pleased to present the report of the actuarial valuation of the State Universities Retirement System of Illinois ("SURS") as of June 30, 1998.

This valuation provides information on the funding status of SURS. In addition, it includes a determination of State contribution level for the fiscal year ending June 30, 2000 under Section 15-155 of the SURS statute and estimates of contribution for subsequent years.

This valuation is based on the provisions of SURS in effect as of June 30, 1998, data on the SURS membership and information on the asset value of the trust fund. All member data and asset information were provided by SURS staff. While certain checks for reasonableness were performed, the data was used unaudited.

The actuarial cost method and the set of actuarial assumptions used in this valuation are those used in the prior actuarial valuation of SURS.

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

Respectfully submitted,

  
Norman S. Losk, F.S.A.

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## SUMMARY OF THE VALUATION



## PURPOSES OF THE ACTUARIAL VALUATION

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At your request we have performed the actuarial valuation of the State Universities Retirement System of Illinois ("SURS") as of June 30, 1998.

The purposes of an actuarial valuation are as follows:

- To determine the funding status of SURS as of the valuation date, and
- To develop the levels of contributions required under Section 15-155 for the fiscal year ending June 30, 2000 and to estimate contributions required under that Section for the subsequent years of the funding period ending in the year 2045.

## REPORT HIGHLIGHTS

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The 1998 Fiscal Year was the year in which two new benefit options were implemented under SURS. While the new Self-Managed Plan ("SMP") and the new Portable defined benefit option were implemented late in the Fiscal Year, their impact on the results of this valuation were minimal.

Far more important was the third successive year of investment performance in the area of 20%. These returns, in conjunction with the full recognition of market values of assets, have produced a dramatic improvement in funding status. The recognized funding ratio as of June 30, 1996 was 50.1% - based on book value of assets. The result of this valuation, with assets based on market value, is a funding ratio of 85.8%.

It is important to note that full recognition of market value will inevitably result in volatility of funding ratios and contribution levels.

The contribution levels set out in this report are substantially lower than those projected last year. This is almost entirely the result of the extreme actuarial gain for investment return realized this year.

## ACTUARIAL ASSUMPTIONS

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The actuarial assumptions and methods used in this valuation are identical to those used in the prior valuation.

It should be noted that the actuarial valuation reflects only the defined benefit portions of SURS. The SMP, being defined contribution in nature, is not reasonably the subject of an actuarial valuation.

The Portable Option was designed to be cost neutral in relation to the traditional SURS benefit package. For that reason and because the number of members having chosen that option as of the valuation date was extremely small (less than 3% of SURS membership), we have not recognized the Portable benefit package in this actuarial valuation. Next year, those having chosen the Portable Option will be valued specifically in relation to the benefit provisions of that option.

## SURS BENEFITS

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The major change in the provisions of SURS during the 1998 Fiscal Year was the commencement of implementation of the Self-Managed Plan – the new defined contribution option.

As of the valuation date, only 845 SURS members had chosen SMP. Thus, we have no substantial factual data relating to the ultimate impact of SMP on the provisions of SURS. It should be noted that 757 (about 90%) of those choosing SMP had less than 5 years of service.

Simultaneously, the new Portable defined benefit option has been implemented. This option provides an enhanced refund at termination for those who leave SURS with at least 5 years of service.

Offsetting this additional cost is the elimination of the survivor benefit package. This program is designed to be cost neutral in relation to the traditional SURS package. As of the valuation date, 2,076 members had chosen the Portable option.

Thus, as of the valuation date, less than 3,000 members out of a total of about 77,000 active members have chosen options other than the traditional provisions of SURS.

## EXPERIENCE DURING 1998

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Overall the system experienced an actuarial gain of about \$712 million in the 1998 Fiscal Year.

This year is the second year in which the market value of assets has been recognized for valuation purposes. Based on market value, the gain from investment return at book value was about \$766 million. There was a loss of about \$5 million from the pay increase assumption. Thus, there was a loss from demographic experience of about \$49 million.

In the prior valuation, the actuarial loss from "new entrants" was over \$166 million. This was unusually large. This year, the loss from new entrants is only about \$26 million. This is the level of loss from new entrants that can be considered normal.

The total gain or loss from liabilities for a retirement system is calculated as follows:

1. AAL - Prior Year (after changes in assumptions and benefits)	\$10,552.2
2. Normal Cost - Prior Year	403.2
3. Benefits Paid in FY 1998	496.2
4. Interest on the above items	<u>903.6</u>
5. Expected AAL 6/30/98 (1+2-3+4)	11,362.8
6. Actual AAL 6/30/98	<u>11,416.1</u>
7. Actuarial (Gain) or Loss on Liabilities (6-5)	53.3

The total actuarial gain is determined as the total of the gain from assets and the gain from liabilities.

The total gain is determined as follows:

1. Actuarial Gain on Assets	(765.7)
2. Actuarial Loss on Liabilities	53.3
3. Total Actuarial (Gain) or Loss (1+2)	(712.4)

See Table 8, Appendix C, for detail of the gains and losses by source.

**STATUTORY APPROPRIATIONS FOR THE 2000 FISCAL YEAR AND BEYOND**

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Section 15-155 of the SURS Statute, which governs the development of State contributions to SURS, provides that:

1. State contributions are determined under the following process:
  - a) The overall objective is to achieve a funding ratio of 90% by the end of fiscal year (“FY”) 2045.
  - b) The State contribution for FY 2010 and each year thereafter to and including FY 2045 are to be based on a (theoretically) constant percentage of the payroll of active members of SURS.
  - c) The State contribution rate (expressed as a percentage of active member payroll) is to grade from the current level to the ultimate level in equal steps from the current valuation to that for the 2010 contribution.
  - d) After FY 2045, the State contribution rate is to be sufficient to maintain the funding level at 90%.
  
2. The dollar amount of State contribution required for a fiscal year shall be certified to the Bureau of the Budget no later than November 15 for the fiscal year commencing on the following June 30. The required amounts are budgeted pursuant to the continuing appropriations process.

Based on **market value of assets**, State contributions for FY 2000 and estimates of the required contributions for the subsequent five fiscal years are set out below. We have developed contributions ignoring the SMP. In addition, we have developed contributions assuming that 15% of current members and 33% of future new members elect the SMP.

Fiscal Year	Required State Contribution			
	No ORP	33% of New Members to ORP		
		SURS	ORP	Total
2000	\$225,012,000	\$226,540,000	\$21,047,000	\$247,587,000
2001	243,731,000	236,626,000	24,651,000	261,277,000
2002	263,413,000	246,919,000	28,143,000	275,062,000
2003	284,299,000	257,618,000	31,702,000	289,320,000
2004	308,621,000	268,886,000	35,426,000	304,312,000
2005	330,473,000	280,750,000	39,389,000	320,139,000



We recommend that the State contribution for FY 2000 be set at \$247,587,000.

Projections of required State contributions for each fiscal year through 2045 assuming no SMP and based on market value of assets, is set out in Table 11, Appendix C.

Estimates of State contributions through 2045, assuming no SMP and assuming that 10% of current members and 33% of future new members elect SMP, are set out in Table 12.

The State contributions set out in this report represent total required contributions. The net State General Fund appropriation is the total shown in this report, adjusted by contributions from such sources as State Pension Fund appropriations and contributions from federal and trust funds.

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## ASSET INFORMATION

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Until the 1997 session of the Legislature, the statute required that the asset value used for actuarial and all other purposes under SURS be the book value of assets. The 1997 Legislature authorized the use of market value of assets in the actuarial process in order to allow compliance with new accounting standards.

The Governmental Accounting Standards Board ("GASB") has promulgated Statements Number 25 and 27 which mandate, among other things, the use of market or market related asset value. These statements are now in effect for the statewide retirement systems in the State of Illinois. It has been agreed that market value, without adjustment, will be used for all actuarial purposes. In this valuation, funding status determinations and contribution projections will be set out based on the market value of assets. The assets of the fund, which are available for benefits, are the total assets of the system reduced by current fund liabilities.

The market value of the assets of the fund, which are available for benefits, has grown from \$8,376.3 million as of June 30, 1997 to \$9,793.8 million as of June 30, 1998. In the last 2 years, the market value of SURS assets have grown by \$2,835.8 – an increase of over 40%.

The detailed determinations of asset values utilized in this valuation and asset growth in the last year are set out in Appendix A.

## FUNDING STATUS

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The funding status of SURS is measured by the Funding Ratio. The Funding Ratio is the ratio of the assets available for benefits to the actuarial accrued liability of the System. Thus, it reflects the portion of benefits earned by SURS members, which are covered by System assets.

A funding ratio of 100% means that all of the benefits earned to date by SURS members are covered by assets. By monitoring changes in the funding ratio each year we can determine whether or not funding progress is being made.

Based on assets at market value, the SURS funding ratio grew from 79.4% at June 30, 1997 to 85.8% at June 30, 1998.

## GASB DISCLOSURE

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The state is now operating under the terms of GASB Statement Number 25. Tables 9 and 10 are Required Supplemental Information tables mandated by that statement.

## APPENDICES



APPENDIX A  
ASSET INFORMATION

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TABLE I - NET ASSETS AVAILABLE FOR BENEFITS

(\$ IN 000'S)

	Fiscal Year 1997		Fiscal Year 1998
	Book	Market	Market
ASSETS			
Accrued Investment Income	\$ 20,700	\$ 20,700	\$ 27,737
Contributions Receivable	11,320	11,320	20,428
Investments - Book	5,732,308	8,358,019	9,761,146
Prepaid Expense	25	25	29
Fixed Assets	<u>13,370</u>	<u>13,370</u>	<u>14,177</u>
Total Assets	\$5,777,723	\$8,403,434	\$9,823,517
ACCOUNTS PAYABLE	27,087	27,087	29,708
NET ASSETS AVAILABLE FOR BENEFITS	<u>\$5,750,637</u>	<u>\$8,376,347</u>	<u>\$9,793,809</u>

TABLE 2 - CHANGE IN ASSETS AVAILABLE FOR BENEFITS  
FISCAL YEAR ENDING JUNE 30, 1998

(\$ IN 000'S)

	<u>Book Value</u>	<u>Market Value</u>
1. Assets Available at Beginning of Year	\$5,750,637	\$8,376,347
2. Revenues		
a. Member Contributions	\$ 221,675	\$ 221,675
b. Employer Contributions (includes State)	227,793	227,793
c. Investment Income	225,609	225,609
d. Investment Expense	(13,183)	(13,183)
e. Realized Capital Gains (Losses)	476,317	476,317
f. Unrealized Capital Gains (Losses)	<u>N/A</u>	<u>786,526</u>
Total Revenues	\$1,138,211	\$1,924,737
3. Expenses		
a. Benefits	\$ 466,509	\$ 466,509
b. Refunds	29,680	29,680
c. Administration Expense	8,370	8,370
d. SMP Transfers	1,506	1,506
e. Other	<u>1,210</u>	<u>1,210</u>
Total Expense	\$ 507,275	\$ 507,275
4. Assets Available at End of Year	\$6,381,573	\$9,793,809

APPENDIX B  
MEMBERSHIP DATA

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TABLE 3 - SUMMARY OF DATA CHARACTERISTICS

(\$ IN 000'S)

	June 30, 1997		June 30, 1998	
	Number	Earnings	Number	Earnings
<b>Active Members</b>				
Full time	68,168	\$2,277,415	69,423	\$2,377,578
Part time	7,613	20,600	7,746	22,598
Total	75,781	\$2,298,029	77,156	\$2,400,176
<b>Inactive Members</b>	36,047		38,054	
	Number	Annual Benefits	Number	Annual Benefits
<b>Benefit Recipients</b>				
Retirement	20,119	\$376,293	21,623	\$422,847
Survivor	4,779	32,670	5,152	37,020
Disability	1,260	15,823	1,257	16,178
Total	26,158	\$424,786	28,032	\$476,045



TABLE 4 - DISTRIBUTION OF ACTIVE MEMBERS BY AGE AND YEARS OF SERVICE  
AS OF JUNE 30, 1998

Age	Years of Service								Totals
	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30 & Over	
Under 20	79 217,071	61 303,370							140 520,441
20-24	592 3,472,773	972 14,479,156	60 759,114						1,624 18,711,042
25-29	1,322 9,134,652	3,629 78,338,017	696 17,397,527	36 928,164					5,683 105,798,361
30-34	1,160 9,056,058	3,978 96,354,886	1,995 59,194,562	585 17,623,765	9 225,339				7,727 182,454,610
35-39	1,000 7,771,285	3,942 96,630,324	2,812 92,897,082	1,597 58,170,264	453 14,505,738	42 1,298,934			9,846 271,273,627
40-44	998 7,754,063	3,698 88,560,012	3,329 108,155,538	2,278 98,570,367	1,072 42,728,127	429 15,702,177	21 795,880		11,825 362,266,164
45-49	909 5,664,549	3,317 74,478,510	3,829 112,879,092	2,462 108,786,553	1,633 79,287,863	970 45,795,881	314 13,948,783	32 1,216,855	13,466 442,058,087
50-54	583 3,895,933	2,351 52,154,287	2,982 80,945,348	2,005 86,285,543	1,429 70,041,187	1,219 71,362,087	865 52,591,437	354 19,340,592	11,788 436,616,414
55-59	311 1,826,060	1,425 27,936,742	1,691 44,187,840	1,139 45,964,386	944 44,694,868	858 49,331,877	949 65,033,287	792 55,285,500	8,109 334,260,559
60-64	156 889,778	656 10,510,076	843 21,024,027	454 18,267,285	461 21,342,630	439 24,012,699	431 27,850,415	562 40,168,491	4,002 164,065,401
65 & Over	128 523,717	454 4,590,882	745 11,256,233	228 9,161,268	178 8,124,169	180 9,604,812	152 9,344,784	309 23,188,220	2,374 75,794,085
Age Undetermined	317 1,514,274	262 4,731,558	6 111,134						585 6,356,966
Totals	7,555 51,720,213	24,745 549,067,820	18,988 548,807,497	10,784 443,757,594	6,179 280,949,921	4,137 217,108,467	2,732 169,564,586	2,049 139,199,657	77,169 2,400,175,755

STATE UNIVERSITIES RETIREMENT SYSTEM OF ILLINOIS  
ACTUARIAL VALUATION AS OF JUNE 30, 1998

TABLE 5 - DISTRIBUTION OF BENEFIT RECIPIENTS BY AGE  
NUMBER OF BENEFIT RECIPIENTS AND THEIR ANNUAL BENEFITS  
AS OF JUNE 30, 1998

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Age	Number	Annual Benefit
<b>Retirees and Survivors</b>		
Under 50	524	\$ 2,063,539
50-54	185	2,333,440
55-59	1,824	33,219,756
60-64	3,733	80,203,049
65-69	4,802	102,240,180
70 & Over	<u>15,707</u>	<u>239,806,659</u>
Total	26,775	\$459,866,613
 <b>Disabilitants</b>		
Under 50	296	\$ 3,457,115
50-54	199	2,693,145
55-59	220	3,232,201
60-64	199	2,826,124
65-69	214	2,853,396
70 & Over	<u>129</u>	<u>1,116,469</u>
Total	1,257	\$ 16,178,450

APPENDIX C  
ACTUARIAL DETERMINATIONS

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TABLE 6 - SUMMARY OF ACTUARIAL VALUES

AS OF JUNE 30, 1998

(\$ IN 000's)

	APV of Projected Benefits	Projected Unit Credit Values	
		Actuarial Accrued Liability (AAL)	Normal Cost (NC)
<b>1. Active Members</b>			
a. Retirement	\$ 8,132,239	\$ 4,828,477	\$303,491
b. Death	403,300	246,419	16,559
c. Disability	1,368,195	828,840	69,424
d. Termination	<u>664,328</u>	<u>418,126</u>	<u>44,844</u>
Total - Active Members	\$10,568,062	\$ 6,321,862	\$434,318
<b>2. Benefit Recipients</b>			
a. Retirement	\$ 4,238,070	\$ 4,238,070	0
b. Survivor	342,293	342,293	0
c. Disability	<u>211,836</u>	<u>211,836</u>	<u>0</u>
Total - Benefit Recipients	\$ 4,792,199	\$ 4,792,199	\$ 0
<b>3. Other Inactive</b>	\$ 302,034	\$ 302,034	
<b>4. Grand Total</b>	<u>\$15,662,295</u>	<u>\$11,416,095</u>	<u>\$434,318</u>

TABLE 7 - ANALYSIS OF CHANGE IN UNFUNDED  
ACTUARIAL ACCRUED LIABILITY  
FOR THE YEAR ENDING JUNE 30, 1998  
(\$ IN 000's)

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1. Unfunded Actuarial Accrued Liability (UAAL) as of June 30, 1997	\$2,175,869	
2. Contributions to Maintain UAAL		
(a) Interest on 1 to June 30, 1998	\$ 184,949	
(b) Member Contributions - including ERO contributions	221,675	
(c) Employer Normal Cost	196,007	
(d) Employer ERO Contributions	<u>3,251</u>	
Total		\$ 605,882
3. Contributions Paid		
(a) Member Contributions	\$ 221,675	
(b) State Appropriations	201,624	
(c) Employer ERO Payments	3,251	
(d) Reciprocity	213	
(e) Federal, Trust Funds & Other	<u>22,705</u>	
Total		\$ 449,468
4. Interest on [2-3] to June 30, 1998		\$ 2,425
5. Increase in UAAL from Contribution Shortfall [2 - 3 + 4]		\$ 158,840
6. Net Actuarial (Gains) & Losses		(712,423)
7. Unfunded Actuarial Accrued Liability as of June 30, 1998 [1 + 5 + 6]		\$1,622,286

TABLE 8 - ANALYSIS OF ACTUARIAL GAINS AND LOSSES IN FY 1998

(\$ IN 000's)

	Amount of (Gain) or Loss	
	FY 1997	FY 1998
Investment Return	\$(312,322)	\$(765,736)
Salary Increase	(44,026)	5,238
Age and Service Retirement	(182)	21,688
General Employment Termination	6,587	(13,841)
Disability Incidence	2,931	5,505
In Service Mortality	488	1,187
Benefit Recipient	14,654	33,962
New Entrants	165,519	26,352
Other	<u>8,532</u>	<u>(26,778)</u>
Total Actuarial (Gain) Loss	\$(157,817)	\$(712,423)

TABLE 9 - SCHEDULE OF FUNDING STATUS

(\$ IN 1,000'S)

Year	Assets*	AAL	UAAL	Funding Ratio	Payroll	UAAL as % of Payroll
1991	\$3,529,800	\$ 6,647,500	\$3,117,700	53.10%	\$1,768,549	176.29%
1992	3,901,500	7,359,600	3,458,100	53.01	1,947,913	177.53
1993	4,188,500	7,838,200	3,649,700	53.44	2,106,167	173.29
1994	4,446,900	8,585,500	4,138,600	51.80	2,140,139	193.38
1995	4,673,287	9,378,486	4,705,199	49.83	2,237,025	210.33
1996	5,082,891	10,155,039	5,072,148	50.05	2,330,038	217.69
1997	5,750,637	10,552,216	4,801,579	54.50	2,298,029	208.94
1997*	8,376,347	10,552,216	2,175,869	79.38	2,298,029	94.68
1998	9,793,809	11,416,095	1,622,286	85.79	2,377,578	68.23

\* Book Value up to second 1997 value, then Market Value

AAL - Actuarial Accrued Liability

UAAL - Unfunded Actuarial Accrued Liability

TABLE 10 - SCHEDULE OF EMPLOYER CONTRIBUTIONS

(\$ IN 1,000'S)

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Year	Total ARC*	Member Contributions	Net State ARC	Actual State Contribution	State Cont. as Percent of Net ARC
1991	\$570,068	\$152,381	\$417,687	\$117,574	28.15%
1992	610,125	170,426	439,699	108,639	24.71
1993	651,793	175,701	476,092	127,807	26.85
1994	706,778	183,070	523,708	133,783	25.55
1995	739,463	185,899	553,564	128,116	23.14
1996	787,111	197,006	590,105	147,368	24.97
1997	837,013	202,182	634,831	182,041	28.68
1998**	589,767	221,675	368,093	227,793	61.88

\* ARC - Annual Required Contribution as defined in GASB Statements #25 and 27

\*\* Assets at market value.



TABLE I I - PROJECTED STATE CONTRIBUTION LEVELS 1999 - 2045

ASSUMES NO SMP

ASSETS AT MARKET VALUE

Fiscal Year	Total Payroll	State Contribution		Assets EOY	AAL	Funding Ratio
		% of Pay	Dollars			
1999	\$ 2,515,854,679	8.238%	\$ 216,679,000	\$ 9,793,809,468	\$ 11,416,094,174	85.79%
2000	2,630,323,826	8.555	225,011,792	10,452,872,942	12,136,200,798	86.13
2001	2,747,406,531	8.871	243,731,371	11,136,141,289	12,960,540,069	85.92
2002	2,866,884,622	9.188	263,412,871	11,852,915,352	13,828,697,280	85.71
2003	2,991,070,220	9.505	284,298,823	12,603,644,867	14,740,580,707	85.50
2004	3,121,868,486	9.822	306,621,084	13,389,824,670	15,695,730,348	85.31
2005	3,259,578,706	10.139	330,472,846	14,212,244,513	16,695,307,915	85.13
2006	3,404,504,647	10.455	355,951,558	15,072,061,158	17,738,671,619	84.97
2007	3,557,300,779	10.772	383,196,298	15,970,873,689	18,826,010,672	84.83
2008	3,718,434,197	11.089	412,333,659	16,910,160,604	19,958,449,614	84.73
2009	3,888,782,700	11.406	443,542,998	17,917,991,149	21,136,144,881	84.77
2010	4,069,784,076	11.723	477,080,438	18,974,888,667	22,385,494,080	84.76
2011	4,261,660,182	11.723	499,573,115	20,080,519,024	23,682,801,344	84.79
2012	4,464,801,890	11.723	523,386,402	21,222,141,431	25,026,617,212	84.80
2013	4,680,631,874	11.723	548,687,071	22,399,428,872	26,414,485,483	84.80
2014	4,910,223,653	11.723	575,600,968	23,612,728,731	27,845,277,722	84.80
2015	5,154,651,974	11.723	604,254,078	24,863,649,229	29,319,316,086	84.80
2016	5,414,259,674	11.723	634,686,590	26,154,989,173	30,838,895,015	84.81
2017	5,689,637,514	11.723	666,967,758	27,486,290,967	32,408,440,959	84.81
2018	5,982,374,666	11.723	701,283,870	28,857,011,423	34,025,041,058	84.81
2019	6,293,956,439	11.723	737,809,044	30,271,286,329	35,685,952,017	84.83
2020	6,624,737,931	11.723	776,584,904	31,733,417,110	37,396,638,966	84.86
2021	6,975,758,162	11.723	817,733,251	33,247,751,509	39,162,745,763	84.90
2022	7,348,199,221	11.723	861,392,654	34,817,569,040	40,988,608,242	84.94
2023	7,743,051,089	11.723	907,679,164	36,448,540,877	42,876,761,522	85.01
2024	8,161,802,606	11.723	956,767,310	38,147,888,682	44,833,542,142	85.09
2025	8,605,482,886	11.723	1,008,777,731	39,923,447,784	46,867,606,485	85.18
2026	9,075,571,511	11.723	1,063,883,870	41,783,167,266	48,987,816,237	85.29
2027	9,572,787,859	11.723	1,122,170,057	43,738,446,380	51,203,201,035	85.42
2028	10,098,690,754	11.723	1,183,819,024	45,797,001,419	53,528,229,415	85.56
2029	10,654,443,717	11.723	1,248,967,165	47,970,537,166	55,969,198,119	85.71
2030	11,241,583,360	11.723	1,317,794,609	50,269,556,669	58,540,077,100	85.87
2031	11,861,521,670	11.723	1,390,466,878	52,706,024,038	61,251,406,084	86.05
2032	12,516,194,164	11.723	1,467,210,861	55,292,329,054	64,116,567,699	86.24
2033	13,206,897,083	11.723	1,548,178,511	58,042,589,192	67,148,788,150	86.44
2034	13,935,751,066	11.723	1,633,618,419	60,967,582,633	70,363,773,453	86.65
2035	14,704,425,054	11.723	1,723,726,227	64,083,365,715	73,769,714,098	86.87
2036	15,515,301,749	11.723	1,818,781,248	67,404,813,569	77,384,698,084	87.10
2037	16,370,380,818	11.723	1,919,017,891	70,946,057,378	81,223,642,715	87.35
2038	17,272,059,522	11.723	2,024,717,177	74,723,026,565	85,299,214,685	87.60
2039	18,223,042,393	11.723	2,136,196,144	78,750,044,247	89,627,133,114	87.86
2040	19,225,754,872	11.723	2,253,739,115	83,044,418,750	94,219,245,063	88.14
2041	20,283,477,615	11.723	2,377,730,663	87,623,179,274	99,092,291,065	88.43
2042	21,398,944,088	11.723	2,508,491,221	92,504,447,552	104,261,548,083	88.72
2043	22,575,384,841	11.723	2,646,399,488	97,707,338,325	109,743,584,637	89.03
2044	23,816,237,005	11.723	2,791,858,383	103,250,750,867	115,555,380,528	89.35
2045	25,125,096,341	11.723	2,945,289,419	109,154,060,777	121,712,944,110	90.00

TABLE 12  
 PROJECTED EFFECT OF SMP ON STATE CONTRIBUTIONS FOR RETIREMENT  
 ACTUARIAL VALUATION AS OF JUNE 30, 1998

15% OF EXISTING MEMBERS TO SMP  
 45% SELECT PORTABLE SURS

	Base Line Contributions		33% of New Members to SMP			
			SURS Cont.	SMP Cont.	Total Contribution	
	\$	% of Pay			\$	% of Pay
2000	\$ 225.012	8.55%	\$ 226.540	\$ 21.047	\$ 247.587	9.41%
2001	243.731	8.87	236.626	24.651	261.277	9.51
2002	263.413	9.19	246.919	28.143	275.062	9.59
2003	284.299	9.50	257.618	31.702	289.320	9.67
2004	306.621	9.82	268.886	35.426	304.312	9.75
2005	330.473	10.14	280.750	39.389	320.139	9.82
2006	355.952	10.46	293.235	43.612	336.847	9.89
2007	383.196	10.77	306.399	48.150	354.549	9.97
2008	412.334	11.09	320.281	52.443	372.724	10.02
2009	443.543	11.41	334.957	58.020	392.977	10.11
2010	477.080	11.72	350.551	63.981	414.532	10.19
2011	499.573	11.72	367.078	70.339	437.417	10.26
2012	523.386	11.72	384.576	77.121	461.697	10.34
2013	548.687	11.72	403.166	84.333	487.499	10.42
2014	575.601	11.72	422.942	91.969	514.911	10.49
2015	604.254	11.72	443.996	100.008	544.004	10.55
2016	634.687	11.72	466.357	108.476	574.833	10.62
2017	666.968	11.72	490.077	117.416	607.493	10.68
2018	701.284	11.72	515.292	126.799	642.091	10.73
2019	737.809	11.72	542.130	136.779	678.909	10.79
2020	776.585	11.72	570.622	147.204	717.826	10.84
2021	817.733	11.72	600.857	58.093	758.950	10.88
2022	861.393	11.72	632.937	169.459	802.396	10.92

(Continued on next page)

TABLE 12  
 PROJECTED EFFECT OF SMP ON STATE CONTRIBUTIONS FOR RETIREMENT  
 ACTUARIAL VALUATION AS OF JUNE 30, 1998  
 (CONCLUDED)

15% OF EXISTING MEMBERS TO SMP  
 45% SELECT PORTABLE SURS

	Base Line Contributions		33% of New Members to SMP			
			SURS Cont.	SMP Cont.	Total Contribution	
	\$	% of Pay			\$	% of Pay
2023	\$ 907.679	11.72%	\$ 666.948	\$ 181.310	\$ 848.258	10.96%
2024	956.767	11.72	703.017	193.667	896.684	10.99
2025	1,008.778	11.72	741.233	206.558	947.791	11.01
2026	1,063.884	11.72	781.724	219.975	1,001.699	11.04
2027	1,122.170	11.72	824.552	233.961	1,058.513	11.06
2028	1,183.819	11.72	869.851	248.541	1,118.392	11.07
2029	1,248.967	11.72	917.721	263.818	1,181.539	11.09
2030	1,317.795	11.72	968.294	279.763	1,248.057	11.10
2031	1,390.467	11.72	1,021.692	296.404	1,318.096	11.11
2032	1,467.211	11.72	1,078.082	313.787	1,391.869	11.12
2033	1,548.179	11.72	1,137.576	331.972	1,469.548	11.13
2034	1,633.618	11.72	1,200.356	351.024	1,551.380	11.13
2035	1,723.726	11.72	1,266.566	370.964	1,637.530	11.14
2036	1,818.781	11.72	1,336.411	391.745	1,728.156	11.14
2037	1,919.018	11.72	1,410.063	413.751	1,823.814	11.14
2038	2,024.717	11.72	1,487.729	436.875	1,924.604	11.14
2039	2,136.196	11.72	1,569.642	461.184	2,030.826	11.14
2040	2,253.739	11.72	1,656.010	486.753	2,142.763	11.15
2041	2,377.731	11.72	1,747.117	513.666	2,260.783	11.15
2042	2,508.491	11.72	1,843.198	542.001	2,385.199	11.15
2043	2,646.399	11.72	1,944.531	571.852	2,516.383	11.15
2044	2,791.858	11.72	2,051.412	603.315	2,654.727	11.15
2045	<u>2,945.289</u>	11.72	<u>2,164.150</u>	<u>636.489</u>	<u>2,800.639</u>	11.15
Total	\$51,668.893		\$38,350,667	\$10,383.935	\$48,734.602	

APPENDIX D  
ACTUARIAL METHOD AND ASSUMPTIONS

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## PROJECTED UNIT CREDIT METHOD

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The Projected Unit Credit Method is mandated under Section 15-155 as the actuarial valuation to be used for all purposes under SURS.

The concept of this method is that funding of benefits should occur as benefits are accrued (earned) by active members of SURS.

The Normal Cost (NC) for a fiscal year under this method is the actuarial present value of all benefits expected to be accrued during the fiscal year. The Actuarial Accrued Liability (AAL) under this method is the actuarial present value of all benefits accrued to the valuation date. To the extent that the assets of the fund are insufficient to cover the AAL, an Unfunded Actuarial Accrued Liability (UAAL) develops. Under the classical application of this method, the contribution for a year is the NC for that year plus an amount to amortize the UAAL.

Under Section 15-155, the employer/State contribution is determined such that the assets of SURS reach 90% of the AAL by the end of FY 2045.

This contribution is determined as a level percentage of pay for all years except that the contribution rates through 2010 shall grade in equal steps to the desired level contribution rate.

ACTUARIAL ASSUMPTIONS  
(ADOPTED EFFECTIVE JULY 1, 1996)

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*Rate of Investment Return.* For all purposes under the system the rate of investment return is assumed to be 8.5% per annum.

*Effective Rate of Interest:* The assumed rate credited to member accounts is 9.0% per annum.

*Annual Compensation Increases.* Each member's compensation is assumed to increase by 5.5% each year, except that rate is increased for members with less than 6 years of service, as follows:

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

*Mortality.* Uninsured Pensions Mortality Table for 1994 ("UP94") without adjustment.

*Disability.* A table of disability incidence with sample rates follows:

Age	Males	Females
20	0.0000	0.0000
30	0.0012	0.0017
40	0.0018	0.0028
50	0.0042	0.0062
60	0.0176	0.0162
70	0.0100	0.0200

ACTUARIAL ASSUMPTIONS  
(ADOPTED EFFECTIVE JULY 1, 1996)  
(CONTINUED)

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*Retirement.* Upon eligibility, active members are assumed to retire as follows:

Age	Males	Females
50-55	.060	.070
56	.050	.050
57	.060	.050
58	.070	.050
59	.090	.070
60	.110	.100
61	.140	.110
62	.150	.140
63	.140	.120
64	.170	.160
65	.240	.240
66	.220	.180
67	.210	.220
68	.240	.200
69	.280	.230
70	1.000	1.000

ACTUARIAL ASSUMPTIONS  
 (ADOPTED EFFECTIVE JULY 1, 1996)  
 (CONTINUED)

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*General Turnover.* A table of termination rates based on experience in the 1986-91 period. The assumption consists of a table of ultimate turnover rates by age and a set of multipliers for adjustment of those ultimate rates for those with less than 10 years of service. A sample of the ultimate rates follows:

<u>Age</u>	<u>ALL Members</u>
20	.0650
30	.0546
40	.0312
50	.0172
60	.0339
70	.0696

The adjustment factors for the first 10 years of service follow:

<u>Service Year</u>	<u>ALL Members</u>
0	5.75
1	5.75
2	4.70
3	3.90
4	3.20
5	2.50
6	2.15
7	1.80
8	1.50
9	1.25

Part time members with less than 3 years of service are assumed to terminate at the valuation date.



ACTUARIAL ASSUMPTIONS  
(ADOPTED EFFECTIVE JULY 1, 1996)  
(CONTINUED)

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*Operational Expenses.* The amount of operational expenses incurred in the latest fiscal year are supplied by SURS staff and incorporated in the Normal Cost.

*Marital Status.* Members are assumed to be married in the following proportions:

<u>Age</u>	<u>Males</u>	<u>Females</u>
20	25%	40%
30	70%	75
40	80%	80
50	85%	85
60	85%	70

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

APPENDIX E  
SUMMARY OF BENEFIT PROVISIONS  
OF TRADITIONAL SURS

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## MEMBERSHIP

Any employee of a public institution of higher education or community college in the state of Illinois who is expected to be employed for at least 4 months or an academic term, if lesser, is a member of SURS except the following employees are not members:

1. A student employed temporarily at less than full time,
2. A person receiving a retirement benefit or disability retirement annuity from SURS,
3. An employee participating in the Social Security System by virtue of such employment or a part time employee participating in a special optional plan.

## MEMBER CONTRIBUTIONS

Most members contribute a total of 8% of compensation, broken down as follows:

Retirement Annuity	6.5%
Survivor Benefits	1.0%
Annual Increases in Retirement Benefits	.5%

Police officers and firefighters contribute a total of 9.5% of compensation, with the additional 1.5% allocated to the retirement annuity.

Since January 1, 1981, the member contributions under SURS have been "picked up" by employers.

## EFFECTIVE RATE OF INTEREST

The interest rate credited to member contribution accounts for most purposes under the system is called the Effective Rate of Interest ("ERI"). The ERI is established annually by the Board. While in recent years this rate has been 8%, it will be at 8.5% for the year beginning July 1, 1997.

For the purpose of withdrawal of contributions at termination, this rate is set at 4.5% by statute.

## RETIREMENT BENEFITS

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### NORMAL RETIREMENT:

#### *Eligibility*

For police officers and firefighters, separation from service on or after the attainment of the earlier of:

1. Age 55 with 20 years of service, or
2. Age 50 with 25 years of service.

For other members, separation from service on or after attainment of the earlier of:

1. Age 62 with 5 years of service,
2. Age 60 with 8 years of service, and
3. 35 years of service regardless of age. Over the next five years this service requirement will grade to thirty years in steps of one year each year. \*

#### *Initial Benefit Amount*

There are 3 alternate formulae. The initial benefit is the largest produced by one of the three:

1. General Formula: The following percentages of high 4 consecutive year average compensation for each year of service:

<u>Year of Service</u>	<u>General*</u>	<u>Police/Fire</u>
1 <sup>st</sup> 10 Years	2.20%	2.25%
Next 10 Years	2.20	2.50
Next 10 Years	2.20	2.75
Over 30	2.20	2.75

\* Amended by legislation enacted in 1997.

2. Money Purchase Formula:

- a) The member contributions for retirement benefit accumulated with interest at the ERI plus
- b) An imputed employer contribution match at \$1.40 per dollar of member contribution accumulated with interest at the ERI.
- c) The total of the accumulations in (a) and (b) is converted into an annuity using a life annuity factor which takes neither the automatic 50% spousal or survivor benefit nor the automatic annual increases into account.

3. Minimum Benefit - A benefit for each year of service, up to 30, based on final annual pay, as follows:

Under 3,500	\$ 8
\$3,500 - \$4,500	9
\$4,500 - \$5,500	10
\$5,500 - \$6,500	11
\$6,500 - \$7,500	12
\$7,500 - \$8,500	13
\$8,500 - \$9,500	14
Over \$9,500	15

*Maximum Benefit*

80% of high 4 year average compensation. \*

*Benefit Duration*

The Normal Retirement benefit is payable for the lifetime of the retired member. If the retiree has a spouse at date of retirement and if that spouse survives the retiree the spouse will receive, upon the death of the retiree, a survivor benefit equal to 50% of the monthly benefit being paid to the retiree as of the date of death. Such benefit will continue for the lifetime of the surviving spouse.

\* Amended by legislation enacted in 1997.

### *Annual Increases*

Each January 1 subsequent to retirement date the monthly benefit being paid each retiree shall be increased by 3%. The adjustment for the first January after retirement shall be proportional.

## EARLY RETIREMENT

### *Eligibility*

For members other than police and fire employees, separation from service on or after attainment of age 55 with 8 years of service but not eligible for Normal Retirement.

### *Benefits*

The benefit amounts and all terms of benefit payment are the same as that for Normal Retirement, except that the benefit amounts calculated under the General Formula and the Minimum Formula shall be reduced by .5% for each month by which the retirement date precedes the 60<sup>th</sup> birthday.

### *"Buy Down" of Early Retirement Reduction*

A member retiring on an early retirement prior to September 1, 1997 may make an additional contribution at retirement and eliminate the reduction applied to his early retirement benefit. The contribution is 7% of final compensation multiplied by the lesser of:

1. the number of years by which 60 exceeds the member's age, and
2. the number of years by which 35 exceeds the member's years of service.

Each employer may limit participation in this option to 15% of those eligible in any year.

## BENEFITS ON DEATH BEFORE RETIREMENT

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### SURVIVOR BENEFITS

#### *Eligibility*

Death of an active member with at least 1.5 years of service or a terminated member with at least 10 years of service. For this purpose, service under the State Employees' Retirement System, the State Teachers' Retirement System, and the Chicago Teacher's Retirement System is recognized.

#### *Benefits*

An annuity to the surviving spouse equal to the greater of:

1. 50% of the benefit accrued to the date of the death of the member, and
2. the applicable benefit from the following list:
  - a) \$400 per month to a single survivor (spouse, child or dependent parent), or
  - b) \$600 to two or more survivors.

#### *Benefit Duration*

Surviving spouse may receive a lifetime benefit commencing at the later of the member's date of death and the spouse's attainment of age 50. Benefits are payable to a spouse at an earlier date so long as there is a surviving dependent, unmarried child under age 18 (over 18 if disabled).

#### *Annual Adjustments*

Survivor annuities are subject to the same annual adjustments made to retirement benefits.

## LUMP SUM DEATH BENEFIT

### *Eligibility*

Death of member prior to retirement.

### *Benefit*

The following are payable to the member's beneficiary:

1. Refund of accumulated member contributions for retirement and annual adjustment,
2. \$1,000
3. If survivor benefits not payable,
  - a) Refund of the accumulated member contribution for survivor benefits, and
  - b) \$5,000 to a dependent beneficiary or \$2,500 to a non-dependent beneficiary



## BENEFITS FOR DISABILITY

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### DISABILITY BENEFIT

#### *Eligibility*

Disablement for over 60 days after 2 years of service. The service requirement is waived if the disablement is accidental.

Disability definition - "His occupation".

Pregnancy and childbirth are, by definition, disablement.

#### *Benefit*

50% of the basic compensation paid at date of disablement. This base benefit level is offset dollar for dollar by each of the following:

1. Earnings while disabled in excess of the disability benefit.
2. Other disability insurance either fully or partially employer provided.
3. Worker's compensation benefits.

#### *Duration of Benefit*

Benefits become payable 60 days after disablement and continue to the earlier of the following:

1. Recovery or death
2. Benefits paid equal 50% of total compensation during the period of SURS service
3. If disablement occurs prior to age 65, the attainment of age 70
4. If disablement occurs at or after attainment of age 65, completion of 5 years in disablement.

If, at discontinuance of the disability benefit, the member is eligible for a retirement benefit (based on service, which includes the period of disability), the member may retire and receive that benefit.

### *Annual Adjustment*

On January 1 following the 4<sup>th</sup> anniversary of commencement of the disability benefit, the benefit is increased by 7%. On each subsequent anniversary, the benefit is increased by an additional 3%.

## DISABILITY RETIREMENT ANNUITY

### *Eligibility*

Continuing disablement after discontinuation of the disability benefit as a result of reaching the "50% of total earnings" limitation. Disability is defined in accordance with the Social Security disability definition.

### *Benefit*

35% of the compensation being earned at disablement.

### *Duration of Benefit*

Benefits become payable upon discontinuance of the disability benefit and continue to the earlier of the following:

1. Recovery or death
2. Election to receive a retirement benefit

### *Annual Adjustments*

None.