Employees Retirement System of the City of St. Louis

Actuarial Valuation and Review as of October 1, 2002

Supplemental Report to 10/1/2002
Actuarial Valuation Report.
Approved BT 2/28/2003

SEGAL

THE SEGAL COMPANY
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February 28, 2003

Mr. William Duffe
Secretary
Employees Retirement System of the
City of St. Louis
1300 Convention Plaza, Suite 217
St. Louis, Missouri 63103

Re: **Cost Estimates**

Dear Bill:

As you requested, we have calculated the annual cost for the year beginning October 1, 2002, based upon the following changes:

(a) Assuming a 3% across the board salary increase.

(b) Change the amortization period to rolling 30 years (level dollar).

Note that it is probably not reasonable to continue to assume an annual 4.5% increase in Social Security Taxable Wage Base and a COLA of 5%. As you know, there is some relationship between the salary scale and these two items. Because of this, the numbers provided below should be considered illustrative.

	Amount	% of payroll
1. Total normal cost, beginning of year	$13,775,393	5.98%
2. Actuarial accrued liability	541,966,554	
3. Actuarial value of assets	432,590,313	
4. Unfunded actuarial accrued liability: (2) - (3)	109,376,241	
5. Payment on unfunded actuarial accrued liability, beginning of year (30 years; 8% interest rate)	8,995,936	3.91%
6. Total recommended contribution:(1) + (5), adjusted for monthly payments	$23,734,849	10.31%
7. Projected payroll	$230,184,836	

Note that the costs shown here do not include the effect of the change in interest rate credited to member DROP accounts effective January 21, 2003.

Please let us know if you have any questions on the above.

Best regards.

Sincerely

Lall Bachan (bm)

Lall Bachan

LB:bm

284426/01270.001

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January 7, 2003

Board of Trustees
Employees Retirement System of the City of St. Louis
St. Louis, Missouri

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of October 1, 2002. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the year beginning October 1, 2002 and analyzes the preceding year's experience.

The census information on which our calculations were based was prepared by the Department of Personnel and the financial information was provided in the Report of the Secretary. That assistance is gratefully acknowledged. The actuarial calculations were completed under the supervision of Thomas D. Levy, FSA, MAAA, Enrolled Actuary.

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

THE SEGAL COMPANY

By: ______________________
Lall Bachan, ASA, MAAA, EA
Senior Vice President and Actuary

Thomas D. Levy, FSA, MAAA, EA
Senior Vice President and Chief Actuary

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Purpose

This report has been prepared by The Segal Company to present a valuation of the Employees Retirement System of the City of St. Louis as of October 1, 2002. The valuation was performed to determine if the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board,
- The characteristics of covered active participants, inactive vested participants, and retired participants and beneficiaries as of October 1, 2002, provided by the Department of Personnel;
- The assets of the Plan as of September 30, 2002, as shown in the Report of the Secretary;
- Economic assumptions regarding future salary increases and investment earnings, as approved by the Board; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc., as approved by the Board.

Significant Issues in Valuation Year

- The recommended contribution for the year Plan ended September 30, 2002 was $24.3 million, or 11.21% of compensation. Contributions for the year ended September 30, 2002 totaled $12.1 million.
- The recommended contribution for the current Plan year (October 1, 2002 through September 30, 2003) is $32.2 million, or 13.98% of compensation.
- There was an actuarial loss from investments this year of over $56 million. This investment loss, combined with the lower than expected contributions in the prior year, were the primary reasons for the increase in the recommended contribution level from last year to this year. We suggest that the level of contributions to the Fund be increased to the recommended contribution level, consistent with the Ordinance.
- If the current year's actuarial value of assets were 10% lower, the recommended contribution of $32.2 million (13.98% of payroll) would have increased by $4.5 million to a recommended contribution of $36.7 million (15.96% of payroll). Conversely, if the actuarial value were 10% higher, the recommended contribution of $32.2 million would have decreased by $4.6 million to a recommended contribution of $27.6 million (12.01% of payroll). Because the actuarial value of assets involves a smoothing method, a 10% change in market value would not be fully reflected immediately in the actuarial value of assets. Rather, that effect would be spread over a period of years. We have shown the full impact immediately so as to indicate the sensitivity of costs to market fluctuations.

- This was the second year in which active participants could elect to participate in the DROP. As of October 1, 2002, 280 active members are participating in the DROP, compared to 193 active participants in the first year. The retirement pattern of active participants may change due to the existence of the DROP. Once a pattern emerges, we recommend changing the actuarial assumptions to reflect the retirement pattern.

Summary of Key Valuation Results

	2002	2001
Contributions for plan year beginning October 1:		
Recommended	$32,186,050	$24,269,937
Actual	--	12,106,532
Funding elements for plan year beginning October 1:		
Normal cost	$16,543,312	$15,831,675
Market value of assets	382,673,108	423,434,641
Actuarial value of assets	432,590,313	466,630,792
Actuarial accrued liability	574,817,702	542,547,374
Unfunded actuarial accrued liability	142,227,389	75,916,582
GASB 25/27 for plan year beginning October 1:		
Annual required contributions	$32,186,050	$24,269,937
Actual contributions	--	12,106,532
Percentage contributed	--	49.88%
Funded ratio	75.26%	86.01%
Covered payroll	230,184,836	216,527,124
Demographic data for plan year beginning October 1:		
Number of retired participants and beneficiaries	3,796	3,848
Number of vested former participants	2,092	2,072
Number of active participants	6,186	5,980
Total compensation (annual)	$230,184,836	$216,527,124
Average annual compensation	$37,211	$36,209

A. PARTICIPANT DATA

The Actuarial Valuation and Review considers the number and demographics of covered participants, including active participants, vested terminated participants, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A and B.

A historical perspective of how the participant population has changed over the past ten valuations can be seen in this chart.

CHART 1

Participant Population: 1993 – 2002

Year Ended September 30	Active Participants*	Vested Terminated Participants*	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives
1993	5,672	1,538	3,989	0.97
1994	5,755	1,540	3,961	0.96
1995	5,844	1,591	3,931	0.94
1996	5,913	1,680	3,942	0.95
1997	5,928	1,728	3,950	0.96
1998	6,033	1,825	3,925	0.95
1999	5,947	1,942	3,861	0.98
2000	5,948	2,025	3,882	0.99
2001	5,980	2,072	3,848	0.99
2002	6,186	2,092	3,796	0.95

**Beginning in 2001, rehires are included in both the active and vested terminated participant counts.*

Active Participants

Plan costs are affected by the age, years of credited service and compensation of active participants. In this year's valuation, there are 6,186 active participants (including 280 DROP participants) with an average age of 45.0, average years of credited service of 10.9 years and average compensation of $37,211. The 5,980 active participants in the prior valuation had an average age of 45.0, average service of 11.0 years and average compensation of $36,209.

Inactive Participants

In this year's valuation, there were 2,092 participants with a vested right to a deferred or immediate vested benefit.

These graphs show a distribution of active participants by age and by years of credited service.

CHART 2

Distribution of Active Participants by Age as of September 30, 2002

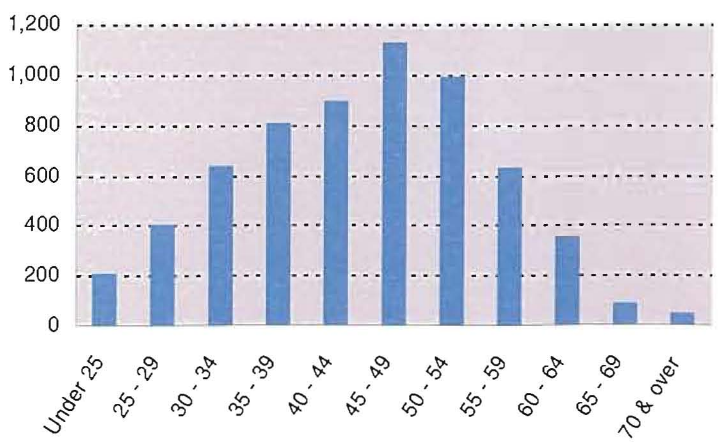
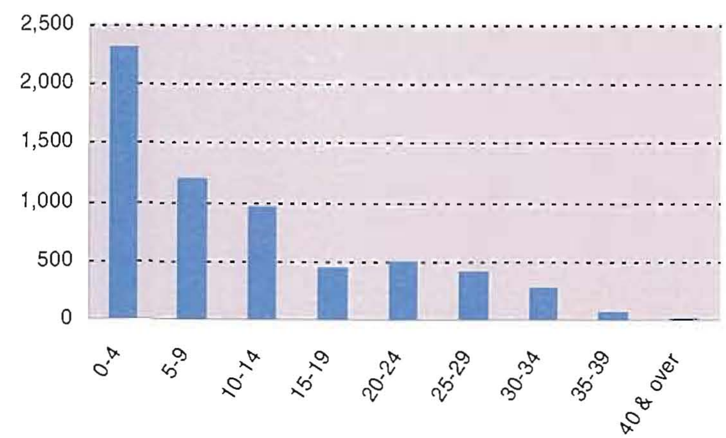


CHART 3

Distribution of Active Participants by Years of Credited Service as of September 30, 2002



Retired Participants and Beneficiaries
As of September 30, 2002, the 3,380 retired participants and 416 beneficiaries (not including DROP participants) had total monthly benefits of $2,218,966. For comparison, in the previous valuation, there were 3,423 retired participants and 425 beneficiaries with monthly benefits of $2,163,540.

These graphs show a distribution of the current retired participants and beneficiaries based on their monthly amount and age.

CHART 4

Distribution of Retired Participants and Beneficiaries by Monthly Amount as of September 30, 2002

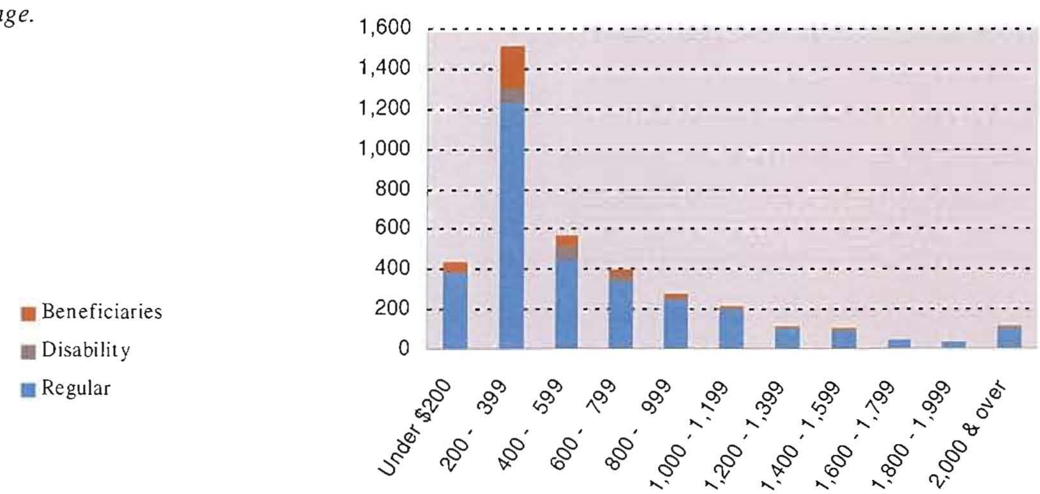
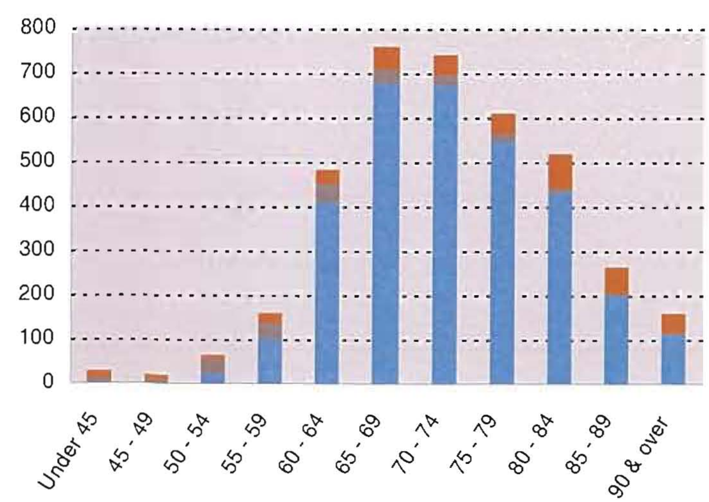


CHART 5

Distribution of Retired Participants and Beneficiaries by Age as of September 30, 2002



B. FINANCIAL INFORMATION

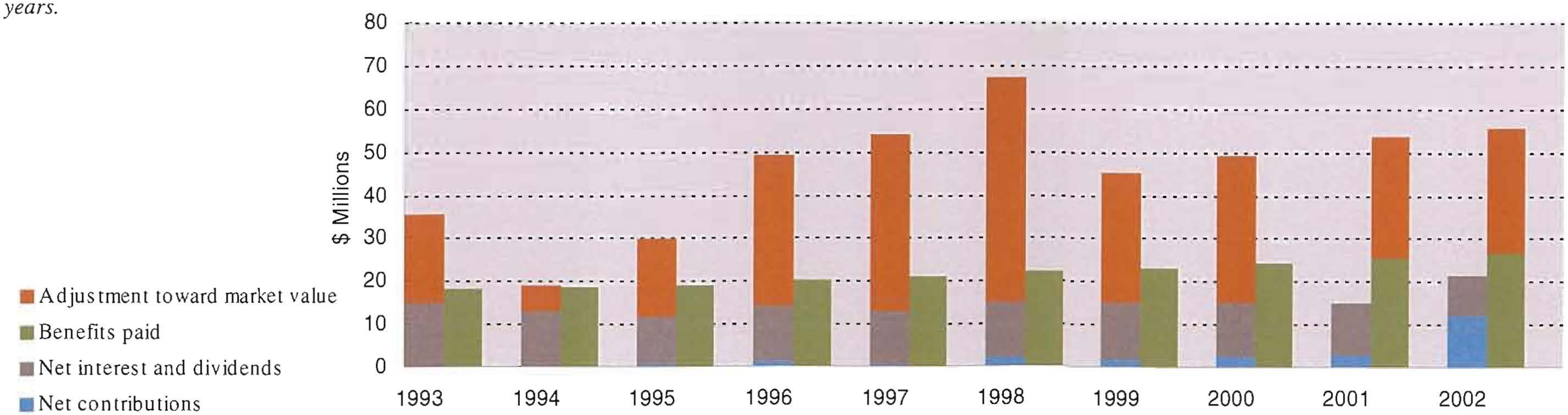
Retirement plan funding anticipates that, over the long term, both net contributions and net investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits C and D.

The chart depicts the components of changes in the actuarial value of assets over the last ten years.

CHART 6

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended September 30, 1993 – 2002



It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 7

Determination of Actuarial Value of Assets for Year Ended September 30, 2002

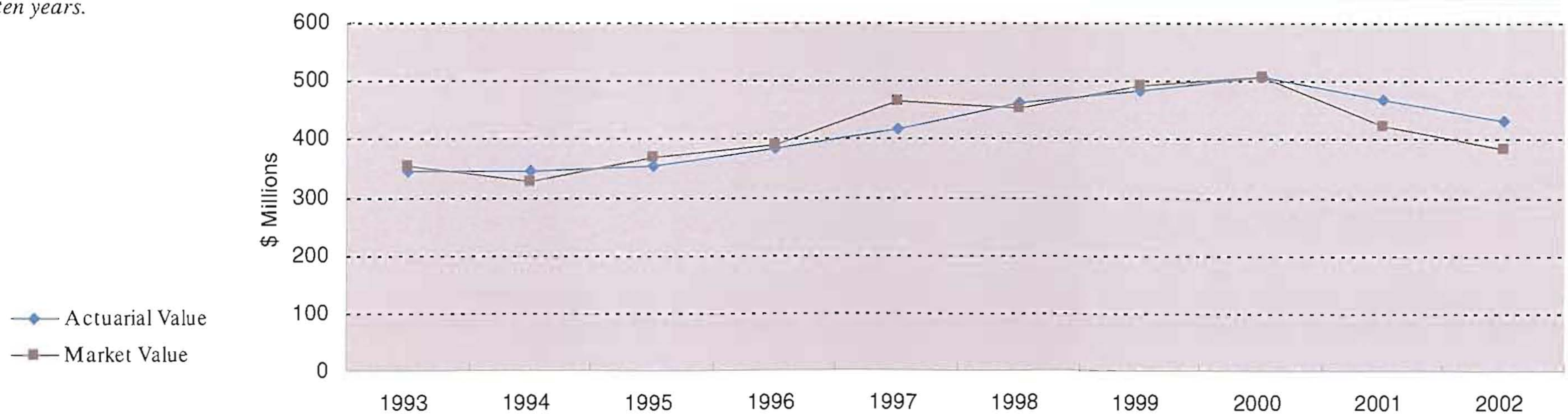
1. September 30, 1999		
A. Market value	$491,991,547	
B. Book value	430,576,672	
C. Excess of market value over book value		$61,414,875
2. September 30, 2000		
A. Market value	$506,214,509	
B. Book value	449,505,221	
C. Excess of market value over book value		$56,709,288
3. September 30, 2001		
A. Market value	$423,434,641	
B. Book value	432,567,605	
C. Excess of market value over book value		-$9,132,964
4. September 30, 2002		
A. Market value	$382,673,108	
B. Book value	416,508,921	
C. Excess of market value over book value		-$33,835,813
5. Average unrealized gain / (loss) at the four most recent valuation dates		$18,788,846
6. Members' savings		$2,707,454
7. Actuarial value of assets: 4(B) + 5 - 6		$432,590,313
8. As a percentage of market value		113.0%

Both the actuarial value and market value of assets are representations of the Plan's financial status. The actuarial asset value is significant because the Plan's liabilities are compared to its assets to determine what portion, if any, remains unfunded. Amortization of the unfunded liability is an important element in determining the contribution requirement.

This chart shows the change in the actuarial value of assets versus the market value over the past ten years.

CHART 8

Actuarial Value of Assets vs. Market Value of Assets for Years Ended September 30, 1993 – 2002



C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss is $55,730,064, a loss of $56,573,211 from investments and a gain of $843,147 from all other sources. The net experience variation from individual sources other than investments was 0.1% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 9

Actuarial Experience for Year Ended September 30, 2002

1.	Net loss from investments*	-$56,573,211
2.	Net gain from other experience**	843,147
3.	Net experience loss: (1) + (2)	-$55,730,064

* *Details in Chart 10*
** *Details in Chart 13*

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Plan's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.00%, net of all expenses. The actual rate of return for the 2002 plan year was (4.31%).

Since the actual return for the year was less than the assumed return, the Plan experienced an actuarial loss during the year ended September 30, 2002 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 10

Investment Experience for Year Ended September 30, 2002

1. Actual return	-$19,811,891
2. Average value of assets	459,516,498
3. Actual rate of return: (1) ÷ (2)	-4.31%
4. Assumed rate of return	8.00%
5. Expected return: (2) x (4)	36,761,320
6. Actuarial loss: (1) – (5)	-$56,573,211

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last ten years, including five-year and ten-year averages.

CHART 11

Investment Return – Actuarial Value vs. Market Value: 1993 - 2002

Year Ended	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
September 30	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1993	$14,829,675	4.70%	$20,347,344	6.45%	$35,177,019	11.15%	$41,815,900	13.11%
1994	12,711,940	3.82%	5,996,373	1.80%	18,708,313	5.63%	-8,667,755	2.53%
1995	11,376,672	3.42%	17,834,433	5.36%	29,211,105	8.78%	60,953,810	19.33%
1996	12,612,414	3.68%	35,129,695	10.24%	47,742,109	13.92%	40,584,533	11.35%
1997	12,535,107	3.38%	41,030,387	11.05%	53,565,494	14.43%	94,185,458	24.88%
1998	13,156,159	3.25%	52,256,042	12.92%	65,412,201	16.18%	8,336,866	1.85%
1999	13,121,400	2.92%	30,043,185	6.69%	43,164,585	9.61%	61,556,347	13.99%
2000	12,386,611	2.63%	33,982,499	7.21%	46,369,110	9.84%	35,686,796	7.43%
2001	12,001,812	2.42%	-27,909,181	-5.64%	-15,907,369	-3.21%	-57,662,700	-11.68%
2002	9,146,847	1.99%	-28,958,738	-6.30%	-19,811,891	-4.31%	-26,532,945	-6.37%
Total	$123,878,637		$179,752,039		$303,630,676		$250,256,310	
					Five-year average return	5.23%		0.94%
					Ten-year average return	7.64%		7.56%

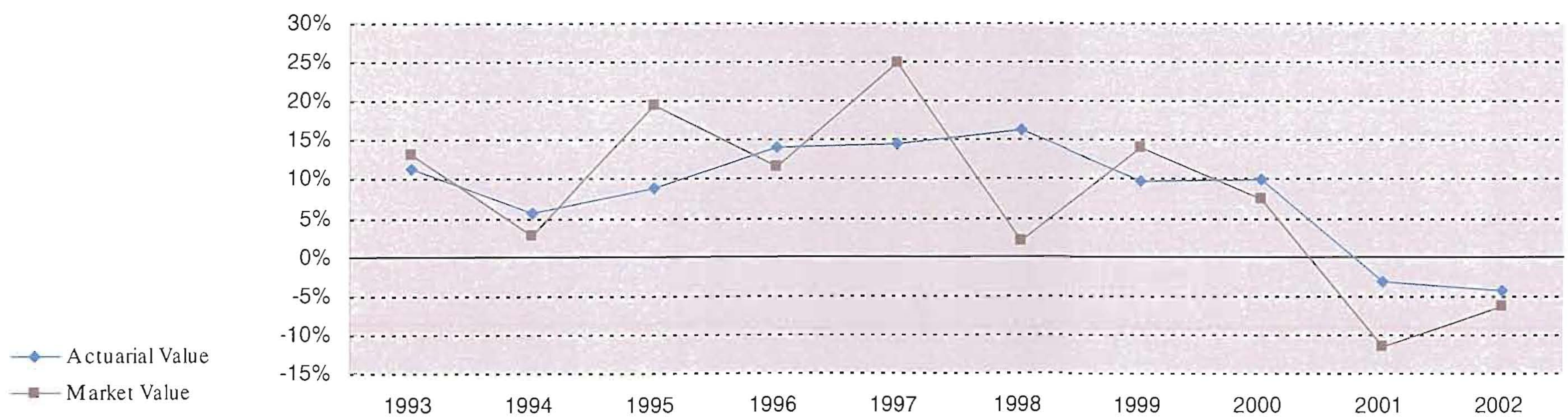
Note: Each year's yield is weighted by the average asset value in that year.

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

This chart illustrates how this leveling effect has actually worked over the years 1993 - 2002.

CHART 12

Market and Actuarial Rates of Return for Years Ended September 30, 1993 - 2002



Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net gain from this other experience for the year ended September 30, 2002 amounted to $843,147 which is 0.1% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Plan for the year ended September 30, 2002 is shown in the chart below.

The chart shows elements of the experience gain/(loss) for the most recent year.

CHART 13

Experience Due to Changes in Demographics for Year Ended September 30, 2002

1. Turnover	-$1,128,650
2. Retirement (including DROP experience)	-1,535,776
3. Deaths among retired members and beneficiaries	2,989,598
4. Salary increases for continuing actives	-505,266
5. Miscellaneous	1,023,241
6. Total	$843,147

D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount is then divided by the projected compensation for active members to determine the funding rate. The funding rate is 13.98% of compensation as of October 1, 2002, compared to 11.21% as of October 1, 2001.

Section 12.3 of Ordinance #64833 requires the complete amortization of the unfunded accrued liability over 20 years from the passage of the Ordinance (December 29, 1999, or 17.25 years from October 1, 2002).

The chart compares this valuation's recommended contribution with the prior valuation.

CHART 14
Recommended Contribution

	Year Beginning October 1			
	2002		2001	
	Amount	% of Compensation	Amount	% of Compensation
1. Total normal cost, beginning of year	$16.543,312	7.19%	$15,831,675	7.31%
2. Actuarial accrued liability	574,817,702		542,547,374	
3. Actuarial value of assets	432.590.313		466.630.792	
4. Unfunded actuarial accrued liability: (2) – (3)	142,227,389		75,916,582	
5. Payment on unfunded actuarial accrued liability, beginning of year	14,336,140	6.23%	7,453,019	3.44%
6. Total recommended contribution: (1)+(5), adjusted for timing*	32,186,050	13.98%	24,269,937	11.21%
7. Projected compensation	$230,184,836		$216,527,124	

Recommended contributions are assumed to be paid at the end of every month.

The contribution levels as of October 1, 2002 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Recommended Contribution

The chart below details the changes in the recommended contribution from the prior valuation to the current year's valuation.

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

CHART 15

Reconciliation of Recommended Contribution from October 1, 2001 to October 1, 2002

Recommended Contribution as of October 1, 2001	$24,269,937
Effect of contributions less than recommended contribution	1,319,234
Effect of investment loss	5,943,714
Effect of other gains and losses on accrued liability	-88,583
Effect of net other changes	741,748
Total change	7,916,113
Recommended Contribution as of October 1, 2002	$32,186,050

E. INFORMATION REQUIRED BY THE GASB

Governmental Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

Critical information to GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded on an actuarially sound basis and in accordance with the GASB funding requirements. Chart 16 below presents a graphical representation of this information for the Plan.

The other critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the assets of the plan to the liabilities of the plan as calculated under GASB. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other changes.

The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

These graphs show key GASB factors.

CHART 16

Required Versus Actual Contributions, Years Ended September 30

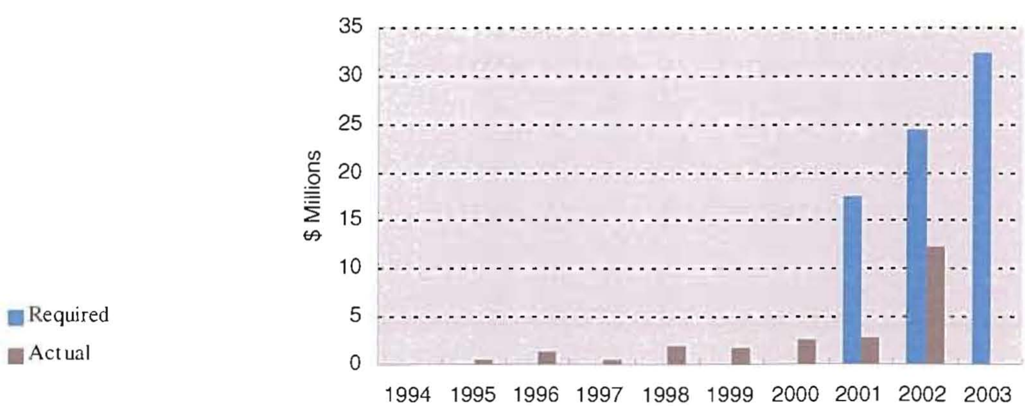


CHART 17

Funded Ratio, Years Ended September 30

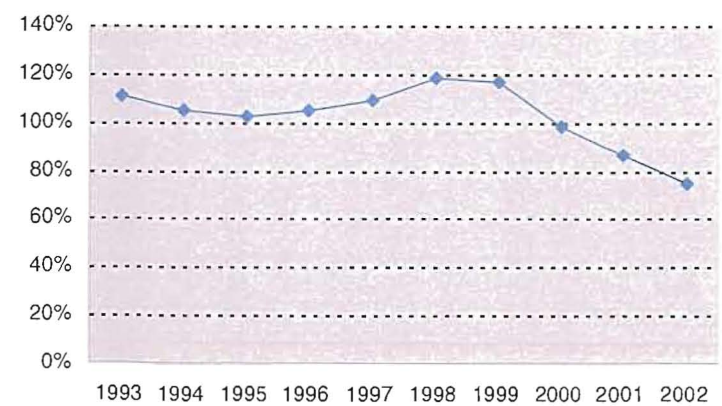


EXHIBIT A

Table of Plan Coverage

	Year Ended September 30		
Category	**2002**	**2001**	**Change From Prior Year**
Active participants in valuation			
Number	6,186	5,980	3.4%
Average age	45.0	45.0	N/A
Average service	10.9	11.0	N/A
Total compensation	$230,187,246	$216,527,124	6.3%
Average compensation	$37,211	$36,209	2.8%
Total active vested participants	3,880	3,800	2.1%
Vested terminated participants	2,092	2,072	1.0%
Retired participants			
Number in pay status	3,380	3,423	-1.3%
Average age	72.8	72.7	N/A
Average monthly benefit	$599	$575	4.2%
Beneficiaries	416	425	-2.1%
DROP participants*			
Number	280	193	44.6%
Average age	60.1	59.0	N/A
Average monthly benefit deposited to account	$1,465	$1,504	1.7%
Average account balance	$19,235	$8,961	N/A

* *DROP participants also included in active participant statistics*

EXHIBIT B

Participants in Active Service During Year Ended September 30, 2002
By Age, Years of Credited Service, and Average Compensation

		Years of Credited Service								
Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 20	7	7	- -	- -	- -	- -	- -	- -	- -	- -
	$21,239	21.239	- -	- -	- -	- -	- -	- -	- -	- -
20 - 24	190	189	1	- -	- -	- -	- -	- -	- -	- -
	25,868	25,858	27,560	- -	- -	- -	- -	- -	- -	- -
25 - 29	405	365	40	- -	- -	- -	- -	- -	- -	- -
	28,817	28,790	29,068	- -	- -	- -	- -	- -	- -	- -
30 - 34	644	434	174	34	2	- -	- -	- -	- -	- -
	31,758	30,637	34,399	32,380	34,743	- -	- -	- -	- -	- -
35 - 39	807	353	225	181	45	3	- -	- -	- -	- -
	34,258	30,473	36,370	37,608	39,547	39,745	- -	- -	- -	- -
40 - 44	865	284	203	206	96	65	11	- -	- -	- -
	37,583	33,304	36,622	40,706	41,131	43,546	41,104	- -	- -	- -
45 - 49	1,129	282	225	205	115	173	116	13	- -	- -
	39,284	32,605	35,957	40,295	45,231	45,815	44,288	41,579	- -	- -
50 - 54	1,015	192	180	149	79	140	146	125	4	- -
	41,730	32,213	37,617	39,291	46,925	47,416	50,116	45,702	42,705	- -
55 - 59	627	129	79	98	44	60	90	93	33	1
	42,222	32,355	38,053	40,789	44,124	46,367	49,997	49,830	42,570	33.306
60 - 64	353	53	56	59	48	39	28	39	17	14
	39,356	32,633	36,171	35,471	45,508	43,218	47,925	40,661	35,242	46,293
65 - 69	93	12	12	18	9	19	12	5	5	1
	40,106	44,104	32,146	39,866	41,163	39,353	45.635	42,125	39,649	22,628
70 & over	51	7	9	12	4	4	5	1	5	4
	39,996	24,786	36,738	28,383	56,889	56,521	31.692	29,770	75,169	44,330
Total	6,186	2,307	1,204	962	442	503	408	276	64	20
	37,211	30,602	36,049	39,040	43,960	45,637	47,682	46,064	42,951	44,068

EXHIBIT C

Summary Statement of Income and Expenses

	Year Ended September 30, 2002		Year Ended September 30, 2001	
Contribution income		$12,106,532		$2,768,208
Prior year adjustment for employer contributions		0		-2,515,432
Investment income:				
Interest, dividends and other income	$11,697,325		$14,468,916	
Adjustment toward market value	-28,958,738		-27,909,181	
Less investment and administrative fees	-2.550.478		-2.467.104	
Net investment income		-19,811,891		-15,907,369
Total income available for benefits		-$7,705.359		-$15,654,593
Less benefit payments:				
Retirement payments	$26,075,121		$25,285,458	
DROP distributions	267,577		29,555	
Contribution refunds	0		12,317	
Pension service transfer payments	3,640		53,359	
Member contributions	-11.218		-10.745	
Net benefit payments		-26,335,120		-25,369,944
Change in reserve for future benefits		-$34,040,479		-$41,024,537

EXHIBIT D
Table of Financial Information

	Year Ended September 30, 2002		Year Ended September 30, 2001	
Cash equivalents		$400,846		$166,737
Accounts receivable:				
Accrued interest and dividends	$2,365,593		$2,891,311	
Contributions	803,048		347,590	
Total accounts receivable		3,168,641		3,238,901
Investments:				
Debt securities	$174,362,420		$196,967,568	
Managed funds	65,393,176		79,991,185	
Common stock and other	139,782,551		143,495,242	
Total investments at market value		379,538,147		420,453,995
Total assets		$383,107,634		$423,859,633
Less accounts payable		-$434,526		-$424,992
Net assets at market value*		$382,673,108		$423,434,641
Net assets at actuarial value*		$432,590,313		$466,630,792

* *Includes $5,662,024 DROP account balances in 2002 and $1,753,315 in 2001.*

EXHIBIT E

Development of Unfunded Actuarial Accrued Liability

		Year Ended September 30, 2002
1. Unfunded actuarial accrued liability at beginning of year		$75,916,582
2. Normal cost at beginning of year		15,831,675
3. Total contributions		-12,106,532
4. Interest		
(a) For whole year on (1) + (2)	$7,339,861	
(b) For half year on (3)	-484,261	
(c) Total interest		6,855,600
5. Expected unfunded actuarial accrued liability		$86,497,325
6. Changes due to:		
(a) (Gain)/Loss	$55,730,064	
(b) Assumptions	0	
(c) Funding method	0	
(d) Plan provisions	0	
(e) Total changes		55,730,064
7. Unfunded actuarial accrued liability at end of year		$142,227,389

EXHIBIT F
Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial Assumptions: The estimates on which the cost of the Plan is calculated including:

(a) Investment return — the rate of investment yield which the Plan will earn over the long-term future;

(b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;

(c) Retirement rates — the rate or probability of retirement at a given age;

(d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost: The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial Accrued Liability For Actives: The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability For Pensioners: The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and of the interest which the sum is expected to earn before it is entirely paid out in benefits.

Unfunded Actuarial Accrued Liability: The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

Amortization of the Unfunded Actuarial Accrued Liability: Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment Return: The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments and net of expenses, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

EXHIBIT I

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1.	Pensioners as of the valuation date (including 416 beneficiaries)		3,796
2.	Participants inactive during year ended September 30, 2002 with vested rights (including 45 rehires also included as actives)		2,092
3.	Participants active during the year ended September 30, 2002 (including 280 participants in the DROP)		6,186
	Fully vested	3,880	
	Not vested	2,306	

The actuarial factors as of the valuation date are as follows:

1.	Normal cost		$16,543,312
2.	Actuarial accrued liability		574,817,702
	Pensioners and beneficiaries	$234,389,550	
	Inactive participants with vested rights	33,458,299	
	Active participants	306,969,853	
3.	Actuarial value of assets ($382,673,108 at market value)		432,590,313
4.	Unfunded actuarial accrued liability		$142,227,389

EXHIBIT I (continued)

Summary of Actuarial Valuation Results

The determination of the recommended contribution is as follows:

1.	Employer normal cost	$16,543,312
2.	Payment on unfunded actuarial accrued liability	14,336,140
3.	Total recommended contribution: (1)+(2), adjusted for timing*	32,186,050
4.	Projected compensation	230,184,836
5.	Total recommended contribution as a percentage of compensation	13.98%

**Recommended contributions are assumed to be paid at the end of every month.*

EXHIBIT II

Supplementary Information Required by the GASB – Schedule of Employer Contributions

Plan Year Ended September 30	Annual Required Contributions	Actual Contributions	Percentage Contributed
1997	0	$407,168	N/A
1998	0	1,816,739	N/A
1999	0	1,651,025*	N/A
2000	0	2,535,798**	N/A
2001	17,492,110	2,768,207	15.8%
2002	24,269,937	12,106,532	49.9%
2003	32,186,050	--	--

* *Does not include $264,544 adjustment made the following year.*

** *Does not include -$2,515,432 adjustment made the following year.*

EXHIBIT III

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll* [(b) - (a) / (c)]
10/01/1997	$415,345,946	$381,345,566	-$34,000,380	108.92%	$176,908,292	0.00%
10/01/1998	460,683,063	390,780,537	-69,902,526	117.89%	188,141,151	0.00%
10/01/1999	482,750,053	415,594,927	-67,155,126	116.16%	193,273,578	0.00%
10/01/2000	507,655,329	515,673,757	8,018,428	98.45%	204,696,581	3.92%
10/01/2001	466,630,792	542,547,374	75,916,582	86.01%	216,527,124	35.06%
10/01/2002	432,590,313	574,817,702	142,227,389	75.26%	230,184,836	61.79%

* *Not less than zero*

EXHIBIT IV

Supplementary Information Required by the GASB

Valuation Date	October 1, 2002
Actuarial Cost Method	Projected Unit Credit
Amortization Method	Level dollar amount for unfunded liability
Remaining Amortization Period	17.25 years as of October 1, 2002
Asset Valuation Method	One-quarter of the difference between the book value of assets and the market value of assets for each of the previous four years is added to the current book value reduced by the amount of members' savings
Actuarial Assumptions:	
Investment Rate of Return	8.00% per year, net of expenses
Projected Salary Increases	According to assumption scale included in Exhibit V
Cost of Living Adjustments	5.0% per year; maximum cumulative increase of 25%
Membership of the Plan	
Retirees and Beneficiaries receiving benefits	3,796
Terminated plan members entitled to, but not yet receiving benefits	2,092
Active plan members	6,186
Total	12,074

EXHIBIT V
Actuarial Assumptions and Actuarial Cost Method

Mortality Rates:

Healthy: 1994 Group Annuity Mortality Table

Disabled: 1983 Railroad Retirement Board Disabled Life Mortality Table

Mortality and Disability Rates before Retirement:

	Mortality Rate (%)		Disability Rate (%)	
Age	Male	Female	Male	Female
20	0.05	0.03	0.00	0.00
25	0.07	0.03	0.00	0.00
30	0.08	0.04	0.00	0.00
35	0.09	0.05	0.00	0.00
40	0.11	0.07	0.20	0.10
45	0.16	0.10	0.30	0.20
50	0.26	0.14	0.90	0.50
55	0.44	0.23	1.10	0.70
60	0.80	0.44	0.70	0.50

Withdrawal Rates before Retirement:

Withdrawal Rate (%)

With Less Than Four Years of Creditable Service			With Four or More Years of Creditable Service		
Creditable Service	Male	Female	Age	Male	Female
0	20.0	18.0	20	25.00	13.90
1	13.0	12.2	25	17.80	12.34
2	11.5	11.5	30	10.24	9.14
3	10.5	10.5	35	7.38	6.74
			40	5.74	5.56
			45	4.44	4.78
			50	3.64	3.84
			55	3.16	3.16

Retirement Rates:

Age	Retirement Rate (%)	Age	Retirement Rate (%)
55	6.0	63	15.0
56	3.5	64	20.0
57 – 59	5.0	65	40.0
60	10.0	66	25.0
61	15.0	67 – 69	20.0
62	25.0	70	100.0

In addition, the first year that a participant satisfies the requirements under the "Rule of 85," retirement is assumed to occur at the greater of 10% or the age-related rate in the table above.

Retirement Age for Inactive Vested Participants:	For members who terminate employment with 30 or more years of credited service or are eligible for a Rule of 85 pension, immediate commencement of benefits is assumed. All others are assumed to retire at age 62.
DROP Participants:	Participants in the DROP are assumed to remain in the DROP for 5 years. The standard retirement rates are assumed.

Unknown Data for Participants:	Same as those exhibited by Participants with similar known characteristics. For inactive vested participants with unknown benefit amounts, $250 per month is assumed.
Rehires:	A 0.4% load on active accrued liability and normal cost has been added to reflect the cost of rehires.
Sick Leave:	Sick leave may be used to increase either Final Average Compensation, Credited Service, or both. The valuation assumes: • 100 hours accrued each year • 50% of accrued hours are "banked" • 25% of banked hours are used first to increase Final Average Compensation • The remainder of available banked hours is used to increase Credited Service
Percent Married:	1960 U.S. census, varies by sex and age
Age of Spouse:	Female (or male) spouses 3 years younger (or older) than their spouses.

Net Investment Return:	8.00% per year, net of expenses

Salary Increases:

Age	Rate (%)
20	8.50
25	7.50
30	7.00
35	6.50
40	5.50
45	5.50
50	5.00
55 & over	4.50

Increase in Social Security Taxable Wage Base: 4.5% per year

Cost-of-Living Adjustment: 5% per year for 5 years

Actuarial Value of Assets: The sum of:

(a) The book value of assets at the beginning of the year, plus
(b) 25% of the difference between market value and book value for each of the last four years, less
(c) The Members' Savings Fund

Actuarial Cost Method: Projected Unit Credit Actuarial Cost Method

Changes in Assumptions: There have been no changes in actuarial assumptions since the last valuation.

EXHIBIT VI
Summary of Plan Provisions

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year:	October 1 through September 30
Final Average Compensation:	One-half the sum of: (a) The total compensation earned during the last two highest consecutive years of Creditable Service prior to termination; and (b) The balance of sick leave pay as of the date of retirement less sick leave hours paid upon termination and less sick leave hours considered as Creditable Service. Said balance cannot exceed 25% of a member's total sick leave pay as of the date of retirement.
Benefit Compensation Base:	Amount of annual compensation with respect to which old age and survivor's insurance benefits would be provided under the Social Security Act as revised on December 1, 1973 to become effective in 1974 (old law) calculated when the member terminates employment.
Normal Retirement:	
Age Requirement	65
Service Requirement	Five years of service
Amount	1.30% of Final Average Compensation up to the Benefit Compensation Base plus 2.05% of Final Average Compensation in excess of the Benefit Compensation Base times Credited Service (minimum $200 per month for retirees with 12 or more years of service)

Rule of 85 Retirement:	
Age and Service Requirement	Sum of age and creditable service at date of termination equals or exceeds 85
Amount	1.3% of Final Average Compensation plus 0.75% of Final Average Compensation in excess of the Benefit Compensation Base times Creditable Service
Early Service Retirement:	
Age and Service Requirement	Age 60 with five years of service; or age 55 with 20 years of Creditable Service; or any age with 30 years of Creditable Service
Amount	Normal retirement amount reduced by 1/3% for each month benefit begins before age 65.
Disability:	
Age Requirement	None
Service Requirement	Five years of Creditable Service and a member at disablement
Amount	Normal service retirement amount based on Credited Service and Final Average Compensation at disability, payable immediately

DROP (Deferred Retirement Option Plan):

Members who have achieved eligibility for retirement can continue active employment and defer receipt of their retirement allowance for a period not to exceed five years. During the DROP period, the member's retirement allowance will be paid directly into a separate account.

Service during the DROP period shall not be counted as Creditable Service, nor shall it count toward determination of retirement allowance. A member's DROP account shall not be adjusted for any cost-of-living increases during participation in the DROP. No member returning to non-DROP status shall make any withdrawal from his/her DROP account until after termination of employment.

The account balance is credited with 8.00% interest annually. In no event does the total account balance exceed the accumulated value of five-years-payments with interest.

The annuity awarded upon full termination and subsequent benefit receipt reflects the unused sick-leave conversion to Credited Service and/or Final Average Compensation. During participation in the DROP, the annual deposit to the account does NOT reflect any conversion of unused sick leave as each participant continues to accrue sick leave hours.

Vesting:

Age Requirement	None
Service Requirement	Five years of service
Amount	Normal or early service retirement amount

Spouse's Pre-Retirement Death Benefit:

Age Requirement	None
Service Requirement	Five years of Creditable Service and active
Amount	100% of the benefit employee would have received had the employee survived to the earliest retirement age, retired on the date of death, and elected the Joint and Survivor option. The pension is payable on the day the participant would have been eligible for an early service retirement benefit. Note: Other death benefits may be payable to members who have terminated employment

Post-Retirement Death Benefits: If married, the employee and spouse may elect to have pension benefits paid in the form of a 100% joint and survivor annuity. A member may also elect a ten year certain and life equivalent form of benefit. If elected, the benefit amount otherwise payable is reduced to reflect the coverage. If not elected, benefits are payable for the life of the employee without reduction.

Cost-of-Living Adjustment:	Based on the change in the Consumer Price Index for the fiscal year, subject to a maximum increase per year of 5.0% (3.0% for retirements between March 21, 1972 and March 26, 1974; none for retirements prior to March 21, 1972), with a cumulative percentage increase (equal to the sum of the annual percentage increases) limited to 25.0%. If the change is less than 1.0%, no adjustment is made. If the change is a decrease, the cost-of-living adjustment shall be zero unless the decrease is 5.0% or more. Adjustments begin on the second January 1 after payments begin.
Creditable Service:	Years of Creditable Service are the number of years and months during which the participant receives compensation.
Membership:	Immediate upon employment

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