

**Firefighters' Pension System of the City of Kansas City,
Missouri**

*Actuarial Valuation and Review
as of May 1, 2003*

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The Segal Company
6300 S. Syracuse Way, Suite 750 Englewood, CO 80111
T 303.714.9900 F 303.714.9990 www.segalco.com

September 18, 2003

*Board of Trustees
Firefighters' Pension System of the City of Kansas City, Missouri
Kansas City, Missouri*

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of May 1, 2003. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2003 and analyzes the preceding year's experience.

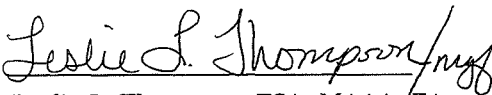
The census information on which our calculations were based was prepared by the Pension System. That assistance is gratefully acknowledged. The actuarial calculations were completed under our supervision.

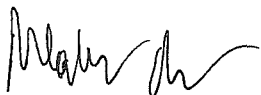
This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably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

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

Sincerely,

THE SEGAL COMPANY

By: 
*Leslie L. Thompson, FSA, MAAA, EA
Senior Vice President and Actuary*


*Wally Malles, ASA, MAAA, EA
Assistant Actuary*

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SECTION 1: Valuation Summary for the Firefighters' Pension System of the City of Kansas City, Missouri

Purpose

This report has been prepared by The Segal Company to present a valuation of the Firefighters' Pension System of the City of Kansas City, Missouri as of May 1, 2003. The valuation was performed to determine whether 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 System, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and pensioners and beneficiaries as of May 1, 2003, provided by the Board;
- The assets of the System as of April 30, 2003, provided by the Pension System;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

SECTION 1: Valuation Summary for the Firefighters' Pension System of the City of Kansas City, Missouri

Significant Issues in Valuation Year

- Based on the scheduled contribution, the effective amortization period the amortization of the unfunded actuarial accrued liability (UAAL) is an infinite number of years as of May 1, 2003. This means that the scheduled contribution is not large enough to cover the principle on the accrued liability (it will cover paying the normal cost and a portion of the interest payment on the UAAL). Last year the effective amortization period was 33 years. The excess of the actuarial accrued liability over the actuarial value of assets increased from \$45.1 million as of May 1, 2002 to \$65.8 million as of May 1, 2003. These increases are primarily due to less than anticipated investment return, resulting in actuarial losses.
- The scheduled City and expected employee contributions are not sufficient to meet the normal cost and amortize the current unfunded actuarial accrued liability. Therefore, we have determined the GASB annual required contribution as of May 1, 2003 based on a 30-year amortization of the unfunded actuarial accrued liability. The GASB annual required contribution amount as of May 1, 2003 is \$9,632,622, which is 22.76% of payroll.
- The actuarial value of assets is greater than market value of assets as of April 30, 2003. This is a dollar difference of approximately \$6.6 million. The actuarial value of assets as a percentage of market value of assets is 102.2% as of April 30, 2003, compared to 95.5% as of the prior year.
- The actuarial valuation report as of May 1, 2003 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected. Declines in asset values will increase the actuarial cost of the System, while increases will decrease the actuarial cost of the System.
- There were no changes in plan provisions, actuarial assumptions, or actuarial methods since the prior valuation.

SECTION 1: Valuation Summary for the Firefighters' Pension System of the City of Kansas City, Missouri

Summary of Key Valuation Results

	2003	2002
Contributions for plan year beginning May 1:		
Scheduled*	\$8,293,818	\$8,172,986
Actual	--	8,215,224
Funding elements for plan year beginning May 1:		
Normal cost, including employee contributions**	\$9,167,746	\$9,003,485
Market value of assets	299,603,224	328,458,377
Actuarial value of assets	306,204,360	313,619,727
Actuarial accrued liability	371,993,884	358,688,291
Unfunded/(Overfunded) actuarial accrued liability	65,789,524	45,068,564
Funding period	Infinite	33 years
GASB 25/27 for plan year beginning May 1:		
Annual required contribution	\$9,632,622	\$8,215,224
Actual contributions	--	8,215,224
Percentage contributed	--	100.0%
Funded ratio	82.31%	87.44%
Covered payroll	\$42,315,396	\$41,698,908
Demographic data for plan year beginning May 1:		
Number of pensioners and beneficiaries (including child beneficiaries)	850	819
Number of refunds due	5	5
Number of active members	818	801
Total anticipated 2003 payroll	\$42,315,396	\$41,698,908
Average anticipated 2003 payroll	51,730	52,059

* Scheduled City contributions are 19.6% of the total anticipated 2003 payroll.

** Excludes adjustment for timing

SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, vested terminated members, pensioners 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, B, and C.

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: 1994 – 2003

Year Ended April 30	Active Members	Vested Terminated Members*	Pensioners and Beneficiaries	Ratio of Non-Actives to Actives
1994	774	1	724	0.94
1995	771	--	752	0.98
1996	772	--	759	0.98
1997	774	--	764	0.99
1998	761	--	781	1.03
1999	786	1	782	1.00
2000	780	--	799	1.02
2001	752	--	808	1.07
2002	801	--	819	1.02
2003	818	--	850	1.04

**Excludes terminated participants due a refund of employee contributions.*

SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

Active Members

System costs are affected by the age, years of service and payroll of active members. In this year's valuation, there are 818 active members with an average age of 38.3, average years of service of 12.8 years and average payroll of \$51,730. The 801 active members in the prior valuation had an average age of 38.6, average service of 13.4 years and average payroll of \$52,059.

Inactive Participants

In addition, there were five members entitled to a return of their employee contributions, totaling \$56,669. Last year, there were five members who were entitled to receive a return of their employee contributions, totaling \$147,695.

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

CHART 2

Distribution of Active Members by Age as of April 30, 2003

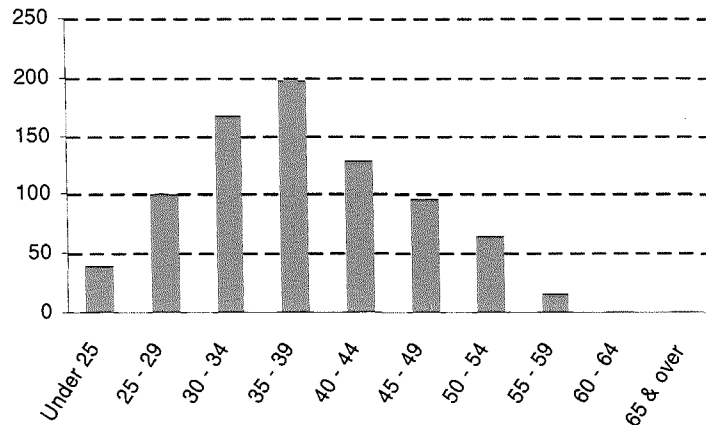
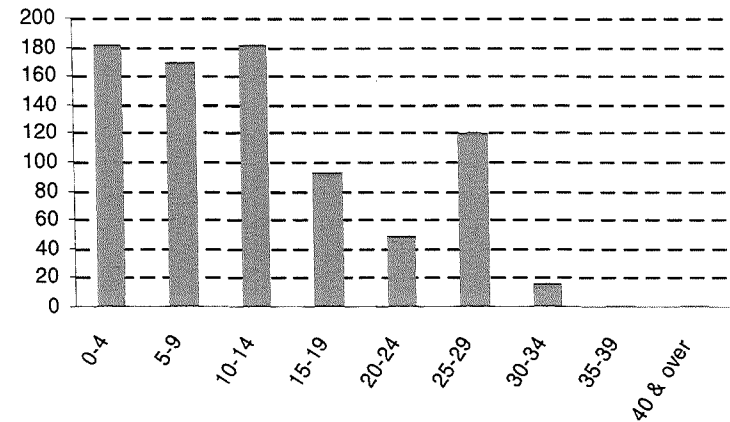


CHART 3

Distribution of Active Members by Years of Service as of April 30, 2003



SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

Pensioners and Beneficiaries

As of April 30, 2003, 635 pensioners and 215 beneficiaries were receiving total monthly benefits of \$1,594,084. For comparison, in the previous valuation, there were 610 pensioners and 209 beneficiaries receiving monthly benefits of \$1,466,605.

Beneficiaries include widows and children of former participants as well as Qualified Domestic Relations Orders (QDROs) recipients.

These graphs show a distribution of the current pensioners and beneficiaries (widows, QDROs, and children) based on their monthly amount and age, by type of pension.

- QDROs
- Children
- Widows
- Vested
- Disability
- Normal

CHART 4
Distribution of Pensioners and Beneficiaries by Type and by Monthly Amount as of April 30, 2003

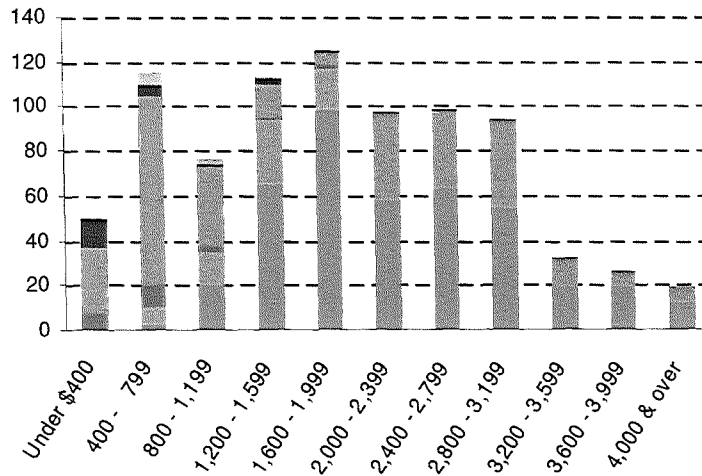
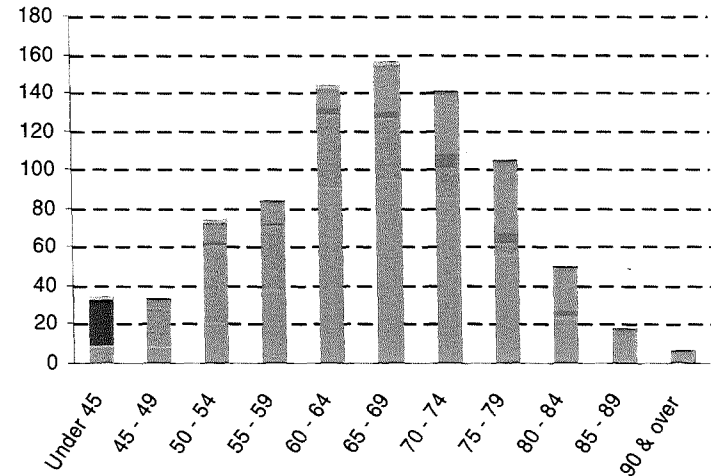


CHART 5
Distribution of Pensioners and Beneficiaries by Type and by Age as of April 30, 2003



SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

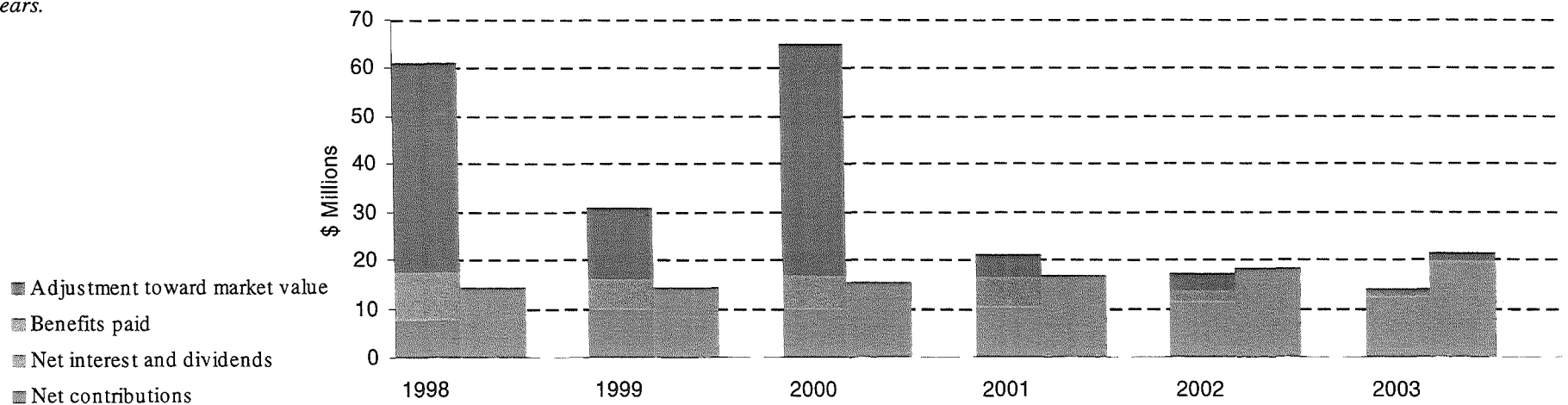
B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment 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 D, E and F.

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

CHART 6
Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended April 30, 1998 – 2003



SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

It is desirable to have level and predictable System 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 System costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

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 April 30, 2003

1. Actuarial value of assets	\$313,619,727
2. Contributions, interest and dividends, less benefit payments and all expenses	-5,765,083
3. Preliminary actuarial value of assets: (1) + (2)	307,854,644
4. Market value of assets	299,603,224
5. Adjustment toward market value: 20% of [(4) - (3)]	-1,650,284
6. Adjustment to be within 10% corridor	0
7. Final actuarial value of assets: (3) + (5) + (6)	<u>\$306,204,360</u>
8. Actuarial value as a percentage of market value: (7) ÷ (4)	102.2%

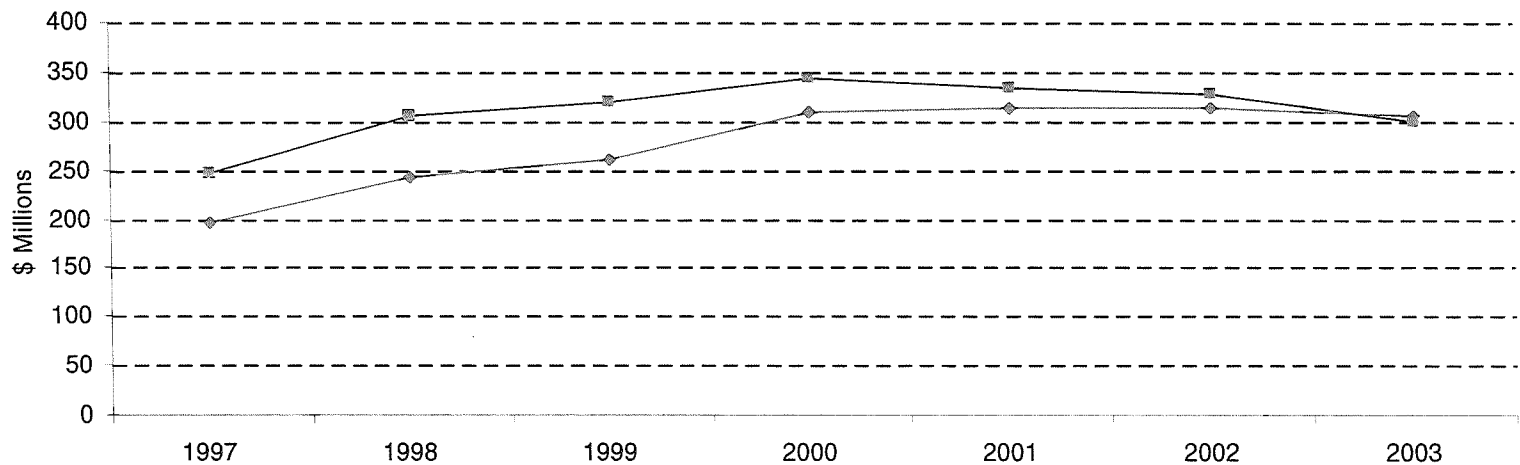
SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

Both the actuarial value and market value of assets are representations of the Pension System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Pension System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued 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 seven years.

CHART 8

Actuarial Value of Assets vs. Market Value of Assets as of April 30, 1997 – 2003



SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

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 gain/(loss) is (\$20,089,376), (\$24,588,898) from investments and \$4,499,522 from all other sources. The net experience variation from individual sources other than investments was 1.2% 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 April 30, 2003

1. Net gain/(loss) from investments*	-\$24,588,898
2. Net gain/(loss) from other experience**	<u>4,499,522</u>
3. Net experience gain/(loss): (1) + (2)	-\$20,089,376

* Details in Chart 10

** Details in Chart 13

SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

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 Pension System's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.00% per annum, net of investment and administrative expenses. The actual rate of return on an actuarial value basis for the 2003 plan year was 0.06%.

Since the actual return for the year was less than the assumed return, the Pension System experienced an actuarial loss during the year ended April 30, 2003 with regard to its investments.

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

CHART 10

Actuarial Value Investment Experience for Year Ended April 30, 2003

1. Actual return	\$196,217
2. Average value of assets	309,813,935
3. Actual rate of return: (1) ÷ (2)	0.06%
4. Assumed rate of return	8.00%
5. Assumed return: (2) x (4)	24,785,115
6. Actuarial gain/(loss): (1) - (5)	<u>-\$24,588,898</u>

SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

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 six years, including the five-year average.

Based upon this experience and future expectations, we have maintained the assumed rate of investment return.

CHART 11

Investment Return – Actuarial Value vs. Market Value: 1998 - 2003

Year Ended April 30	Net Interest and Dividend Income		Adjustment Toward Market		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1998	\$9,578,995	4.94	\$43,630,769	22.51	\$53,209,764	27.45	\$64,857,213	23.82
1999	6,336,592	2.62	14,901,188	6.17	21,237,780	8.79	19,902,793	6.42
2000	6,884,245	2.67	48,186,422	18.70	55,070,667	21.37	29,911,717	9.08
2001	6,236,109	2.03	4,637,434	1.51	10,873,543	3.54	-5,022,522	-1.50
2002	2,204,155	0.71	3,709,662	1.19	5,913,817	1.90	2,202,729	0.67
2003	<u>1,846,501</u>	0.60	<u>-1,650,284</u>	-0.53	<u>196,217</u>	0.06	<u>-21,243,569</u>	-6.54
Total	\$33,086,597		\$113,415,191		\$146,501,788		\$90,608,361	
					Five-year average return	6.54%		1.58%

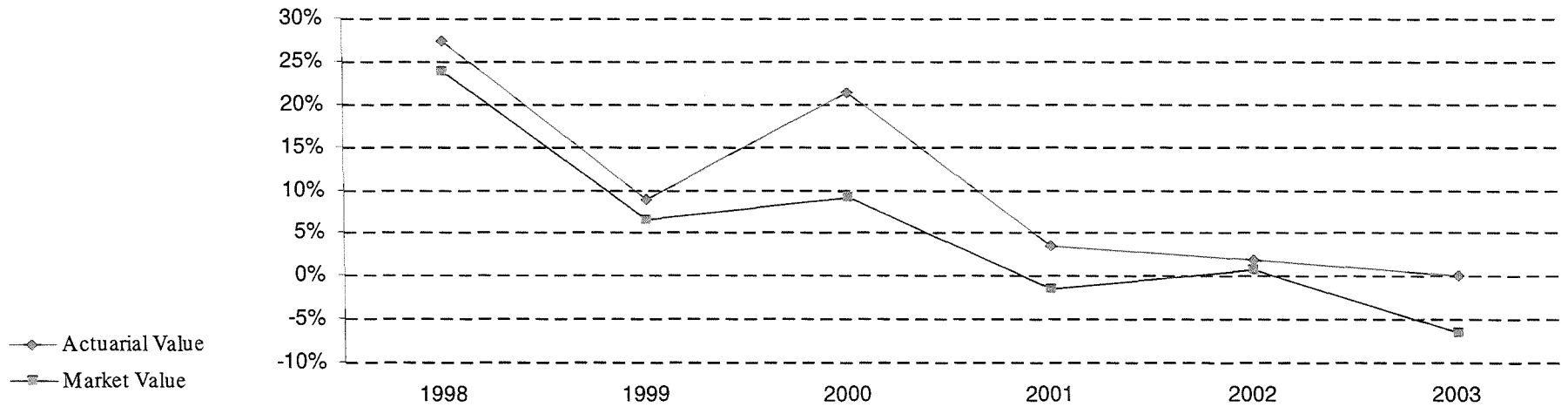
Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

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 1998 - 2003 .

CHART 12
Market and Actuarial Rates of Return: 1998 - 2003



SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

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 new members,

- the number of disability retirements, and
- salary increases different than assumed.

The net gain from this other experience for the year ended April 30, 2003 amounted to \$4,499,522 which is 1.2% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Pension System for the year ended April 30, 2003 is shown in the chart below.

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

CHART 13
Experience for Year Ended April 30, 2003

1. Turnover	-\$755,601
2. Retirement	1,729,691
3. Deaths among pensioners and beneficiaries	-428,742
4. Disability	381,122
5. Salary increases for continuing actives	4,247,375
6. New members	-485,106
7. Pre-retirement mortality	1,868
8. Miscellaneous	<u>-191,085</u>
9. Total	<u>\$4,499,522</u>

SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

D. SCHEDULED CONTRIBUTION

The scheduled City contribution is established as 19.60% of payroll. The calculated normal cost is 13.03% of payroll. The amount available for amortization is 6.57% of payroll. If all actuarial assumptions are met, the unfunded actuarial accrued liability will not be paid off.

The contribution rates as of May 1, 2003 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the System's 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.

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

CHART 14
Scheduled Contribution

	Year Beginning May 1			
	2003		2002	
	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost, adjusted for timing*	\$9,555,661	22.58%	\$9,384,449	22.51%
2. Expected employee contributions, adjusted for timing*	<u>-4,041,120</u>	<u>-9.55%</u>	<u>-3,982,246</u>	<u>-9.55%</u>
3. City normal cost: (1) + (2)	\$5,514,541	13.03%	\$5,402,203	12.96%
4. Actuarial accrued liability	371,993,884		358,688,291	
5. Actuarial value of assets	<u>306,204,360</u>		<u>313,619,727</u>	
6. Unfunded/(overfunded) actuarial accrued liability: (4) – (5)	\$65,789,524		\$45,068,564	
7. Amount available for amortization	2,779,277	6.57%	2,770,783	6.64%
8. Scheduled City contribution: (3) + (7), adjusted for timing*	<u>8,293,818</u>	<u>19.60%</u>	<u>8,172,986</u>	<u>19.60%</u>
9. Total anticipated 2003 payroll	\$42,315,396		\$41,698,908	
10. Effective amortization period	Infinite		33 years	

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

SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

Reconciliation of Scheduled Contribution

The chart below details the changes in the scheduled 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 Scheduled Contribution from May 1, 2002 to May 1, 2003

Scheduled Contribution as of May 1, 2002	\$8,172,986
Effect of change in amortization period	-1,374,208
Effect of contributions (more)/less than scheduled contribution	-6,414
Effect of investment (gain)/loss	1,532,090
Effect of other gains and losses on accrued liability	-280,357
Effect of net other changes	<u>249,721</u>
Total change	<u>120,832</u>
Scheduled Contribution as of May 1, 2003	\$8,293,818

SECTION 2: Valuation Results for the Firefighters' Pension System of the City of Kansas City, Missouri

E. INFORMATION REQUIRED BY THE GASB

Government 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 System.

The other critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the System 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 V.

These graphs show key GASB factors.

CHART 16
Required Versus Actual Contributions

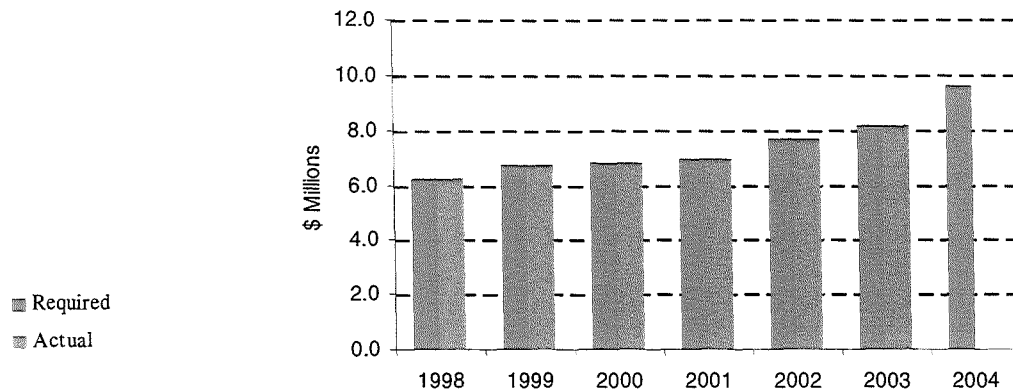
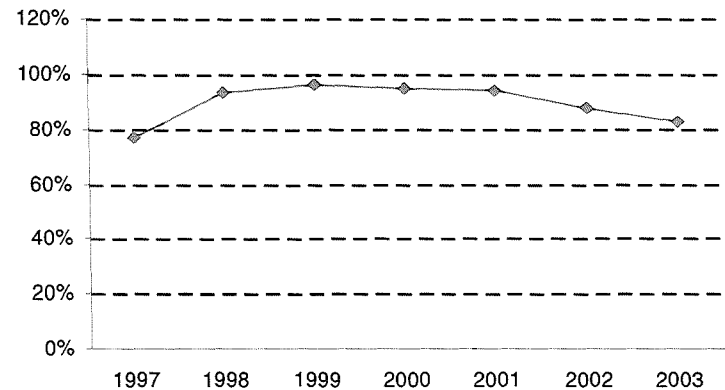


CHART 17
Funded Ratio



SECTION 3: Supplemental Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT A

Table of System Coverage

Category	Year Ended April 30		Change From Prior Year
	2003	2002	
Active members in valuation			
Number	818	801	2.1%
Average age	38.3	38.6	N/A
Average service	12.8	13.4	N/A
Total anticipated 2003 payroll	\$42,315,396	\$41,698,908	1.5%
Average anticipated 2003 payroll	51,730	52,059	-0.6%
Account balances	41,971,750	41,255,635	1.7%
Eligible to retire on:			
Normal pension	141	119	18.5%
Deferred pension	325	323	0.6%
Total active vested members	466	442	5.4%
Vested terminated members	0	0	N/A
Pensioners			
Number in pay status	635	610	4.1%
Average age	65.3	65.4	N/A
Average monthly benefit	\$2,229	\$2,118	5.2%
Beneficiaries in pay status*	215	209	2.9%
Members due refunds	5	5	0.0%
New disabilities	25	19	31.6%
Eligible to retire on normal pension	19	15	26.7%

* Widows, QDROs, and children

SECTION 3: Supplemental Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT B

**Members in Active Service as of April 30, 2003
By Age, Years of Service, and Average Salary**

Age	Years of Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	40	40	--	--	--	--	--	--	--	--
	\$32,785	\$32,785	--	--	--	--	--	--	--	--
25 - 29	100	61	36	3	--	--	--	--	--	--
	38,654	33,933	\$45,190	\$56,204	--	--	--	--	--	--
30 - 34	167	55	68	44	--	--	--	--	--	--
	45,609	34,858	47,442	56,213	--	--	--	--	--	--
35 - 39	198	20	51	89	38	--	--	--	--	--
	53,614	33,665	46,753	57,930	\$63,216	--	--	--	--	--
40 - 44	130	5	12	45	47	20	1	--	--	--
	58,308	39,269	46,023	58,237	61,777	\$62,434	\$58,548	--	--	--
45 - 49	98	--	1	1	7	24	65	--	--	--
	60,241	--	43,368	53,580	62,458	58,811	60,893	--	--	--
50 - 54	66	--	1	--	1	6	51	7	--	--
	63,503	--	52,524	--	63,984	55,408	65,012	\$60,945	--	--
55 - 59	17	1	1	--	--	--	4	9	2	--
	63,794	118,980	49,248	--	--	--	62,625	60,360	\$61,266	--
60 - 64	1	--	--	--	--	--	--	1	--	--
	82,944	--	--	--	--	--	--	82,944	--	--
65 & over	1	--	--	--	--	--	--	--	--	1
	63,984	--	--	--	--	--	--	--	--	\$63,984
Total	818	182	170	182	93	50	121	17	2	1
	\$51,730	\$34,545	\$46,675	\$57,539	\$62,440	\$59,852	\$62,667	\$61,929	\$61,266	\$63,984

SECTION 3: Supplemental Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT C

Reconciliation of Member Data

	Active Members	Child Beneficiaries	Pensioners	Widow Beneficiaries and QDROs	Total
Number as of May 1, 2002	801	22	610	187	1,620
New members	62	0	N/A	N/A	62
Terminations – with vested rights	0	0	0	0	0
Terminations – without vested rights	-5	0	N/A	N/A	-5
Retirements	-15	0	15	N/A	0
New disabilities	-25	0	25	N/A	0
Died with beneficiary	0	0	-12	12	0
Died without beneficiary	0	0	-3	-10	-13
Certain period expired	N/A	-1	0	0	-1
Child beneficiary	0	2	0	-2	0
Show-up beneficiaries	<u>0</u>	<u>1</u>	<u>0</u>	<u>4</u>	<u>5</u>
Number as of May 1, 2003	818	24	635	191	1,668

SECTION 3: Supplemental Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT D

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended April 30, 2003	Year Ended April 30, 2002
Contribution income:		
City contributions	\$8,215,224	\$7,709,082
Employee contributions	4,003,110	3,753,099
Less administrative expenses	<u>-33,947</u>	<u>-37,178</u>
Net contribution income	\$12,184,387	\$11,425,003
Investment income:		
Interest, dividends and other income	\$3,453,090	\$3,819,552
Adjustment toward market value	-1,650,284	3,709,662
Less investment expenses	<u>-1,606,589</u>	<u>-1,615,397</u>
Net investment income	\$196,217	\$5,913,817
Total income available for benefits	\$12,380,604	\$17,338,820
Less benefit payments:		
Benefit payments	\$17,927,448	\$16,682,702
Funeral benefits	30,000	34,000
Refund of contributions	<u>1,838,523</u>	<u>1,422,325</u>
Net benefit payments	\$19,795,971	\$18,139,027
Change in reserve for future benefits	-\$7,415,367	-\$800,207

SECTION 3: Supplemental Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT E

Table of Financial Information

	Year Ended April 30, 2003	Year Ended April 30, 2002
Cash equivalents	\$7,927,442	\$7,944,867
Accounts receivable:		
Contributions	\$416,493	\$870,372
Investment income	63,340	11,844
Sale of investments	<u>671,764</u>	<u>1,625,323</u>
Total accounts receivable	\$1,151,597	\$2,507,539
Investments:		
Common stock	\$191,748,787	\$206,244,717
Corporate bonds	98,801,620	112,073,179
Foreign securities	<u>1,226,106</u>	<u>2,601,618</u>
Net investments	<u>\$291,776,513</u>	<u>\$320,919,514</u>
Total assets	\$300,855,552	\$331,371,920
Less accounts payable:		
Purchase of investments	-\$732,581	-\$2,372,844
Administrative expenses payable	<u>-519,747</u>	<u>-540,699</u>
Total accounts payable	-\$1,252,328	-\$2,913,543
Net assets at market value	<u>\$299,603,224</u>	<u>\$328,458,377</u>
Net assets at actuarial value	<u>\$306,204,360</u>	<u>\$313,619,727</u>

SECTION 3: Supplemental Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT F

Development of the Fund Through April 30, 2003

Year Ended April 30	City Contributions	Employee Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
1998	\$6,261,872	\$3,264,100	\$53,209,764	\$1,658,051	\$14,487,887	\$243,758,960
1999	6,732,893	3,122,134	21,237,780	36,761	14,335,928	260,479,078
2000	6,798,148	3,193,758	55,070,667	28,683	15,500,743	310,012,225
2001	6,990,611	3,405,594	10,873,543	38,942	16,823,097	314,419,934
2002	7,709,082	3,753,099	5,913,817	37,178	18,139,027	313,619,727
2003	8,215,224	4,003,110	196,217	33,947	19,795,971	306,204,360

** Net of investment expenses*

SECTION 3: Supplemental Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT G

Development of Unfunded Actuarial Accrued Liability for Year Ended April 30, 2003

1. Unfunded Actuarial Accrued Liability at Beginning of Year		\$45,068,564
2. Plus: Expected Changes Due to:		
Normal cost	\$9,003,485	
Interest on unfunded and normal cost	<u>4,325,764</u>	
Subtotal	\$13,329,249	
3. Less: Expected Changes Due to:		
Scheduled City and expected employee contributions	-\$12,155,232	
Interest on expected contributions	<u>-476,661</u>	
Subtotal	-\$12,631,893	
Scheduled change		\$697,356
4. Plus: Deficient (Surplus) Contributions:		
Scheduled City and expected employee contributions	\$12,155,232	
Actual City and employee contributions	<u>-12,218,334</u>	
Deficient (surplus) contributions	-\$63,102	
Interest on deficient (surplus contributions)	<u>-2,670</u>	
Deficient (surplus) contributions with interest		-\$65,772
5. Plus: Actuarial (Gains)/Losses		
Investment earnings	\$24,588,898	
Salary increases	-4,247,375	
Disability	-381,122	
Turnover	755,601	
Retirement	-1,729,691	
New members	485,106	
Pre-retirement mortality	-1,868	
Post-retirement mortality	428,742	
Miscellaneous	<u>191,085</u>	
Total		<u>\$20,089,376</u>
6. Unfunded Actuarial Accrued Liability at End of Year		<u>\$65,789,524</u>

SECTION 3: Supplemental Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT H

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 System is calculated including:

- (a) Investment return — the rate of investment yield that the System 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 necessary 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 the interest that 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 System exceeds the assets of the System. 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.

SECTION 3: Supplemental Information for the Firefighters' Pension System of the City of Kansas City, Missouri

Amortization of the Unfunded

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

Investment Return:

The rate of earnings of the System from its investments, including interest, dividends and capital gain and loss adjustments, 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.

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

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 215 beneficiaries in pay status)		850
2. Members active during the year ended April 30, 2003		818
Fully vested	466	
Not vested	352	
3. Members due refunds as of April 30, 2003		5

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT I (continued)

Summary of Actuarial Valuation Results

The detail of the scheduled contribution as of the valuation date is as follows:

1. Actuarial accrued liability:		\$371,993,884
Pensioners and beneficiaries	\$209,203,667	
Active participants	162,733,548	
Due refund	56,669	
2. Actuarial value of assets (\$299,603,224 at market value)		306,204,360
3. Unfunded actuarial accrued liability: (1) – (2)		65,789,524
4. Portion of unfunded/(overfunded) actuarial accrued liability that can be amortized		2,779,277
5. Normal cost, payable monthly:		
Amount		9,555,661
As a percent of payroll		22.58%
6. Total scheduled contribution: (4) + (5)		
Amount		12,334,938
As a percent of payroll		29.15%
7. Expected employee contribution (9.55% of payroll)		4,041,120
8. Scheduled City contribution: (6) – (7)		
Amount		8,293,818
As a percent of payroll		19.60%
9. Expected City contribution (19.60% of payroll)		8,293,818
10. Total anticipated 2003 payroll		\$42,315,396
11. Effective amortization period		Infinite

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT I (continued)

Summary of Actuarial Valuation Results

The determination of the GASB annual required contribution (ARC) as of the valuation date is as follows:

1. Actuarial accrued liability:		\$371,993,884
Pensioners and beneficiaries	\$209,203,667	
Active participants	162,733,548	
Due refund	56,669	
2. Actuarial value of assets (\$299,603,224 at market value)		306,204,360
3. Unfunded actuarial accrued liability: (1) – (2)		65,789,524
4. Amortization of unfunded/(overfunded) actuarial accrued liability over 30 years		4,118,081
5. Normal cost, payable monthly:		
Amount		9,555,661
As a percent of payroll		22.58%
6. Total required contribution: (4) + (5)		
Amount		13,673,742
As a percent of payroll		32.31%
7. Expected employee contribution (9.55% of payroll)		4,041,120
8. Annual required contribution (ARC): (6) – (7)		
Amount		9,632,622
As a percent of payroll		22.76%
9. Expected City contribution (19.60% of payroll)		8,293,818
10. Difference in contributions: (9) – (8)		
Amount		-1,338,804
As a percent of payroll		-3.16%
11. Total anticipated 2003 payroll		\$42,315,396

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT II

Supplementary Information Required by the GASB – Schedule of City Contributions

Plan Year Ended April 30	Annual Required Contributions*	Actual Contributions	Percentage Contributed
1999	\$6,732,893	\$6,732,893	100.0%
2000	6,798,148	6,798,148	100.0%
2001	6,990,611	6,990,611	100.0%
2002	7,709,082	7,709,082	100.0%
2003	8,215,224	8,215,224	100.0%
2004	9,632,622	--	--

** Actual contributions are shown for plan year's ended April 30, 1999 through April 30, 2003 since the effective amortization period is allowable by GASB. The annual required contribution for the plan year ended April 30, 2004 is based on a 30-year amortization period, which is allowable by GASB.*

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT III

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial 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)]
05/01/1998	\$243,758,960	\$261,215,900	\$17,456,940	93.32%	\$31,535,100	55.36%
05/01/1999	260,479,078	269,962,700	9,483,622	96.49%	33,092,300	28.66%
05/01/2000	310,012,225	326,277,600	16,265,375	95.01%	33,712,200	48.25%
05/01/2001	314,419,934	334,755,400	20,335,466	93.93%	36,046,956	56.41%
05/01/2002	313,619,727	358,688,291	45,068,564	87.44%	41,698,908	108.08%
05/01/2003	306,204,360	371,993,884	65,789,524	82.31%	42,315,396	155.47%

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT IV

Progress of Pension Rolls Through April 30, 2003

Year Ended April 30	Awards	Deaths*	In Force at End of Year	
			Number	Monthly Amount
1997	36	31	764	\$999,800
1998	38	21	781	1,090,300
1999	32	31	782	1,122,400
2000	53	36	799	1,273,900
2001	28	19	808	1,358,300
2002	29	18	819	1,466,605
2003	44	13	850	1,594,084

** Includes certain period expired benefits.*

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT V

Supplementary Information Required by the GASB

Valuation Date	May 1, 2003
Actuarial Cost Method	Entry Age Normal Cost Method
Amortization Method	Open 30-year amortization period; level dollar amount for remaining unfunded/(overfunded) actuarial accrued liability.
Remaining Amortization Period	30 years
Asset Valuation Method	Asset values are gradually adjusted toward market value by adding to the "preliminary asset value" 20% of the difference between the market value and the preliminary asset value. The preliminary asset value is the actuarial asset value at the beginning of the year plus net new money. New money is the sum of contributions, dividends, and interest, less the sum of refunds, expenses and benefit payments. If the actuarial value of assets is less than 90% or more than 110% of the market value, an adjustment is made to the actuarial value to bring the value within this corridor.
Actuarial Assumptions:	
Investment Rate of Return*	8.00% per annum
Projected Salary Increases	3.00% to 8.00% per annum, depending on age
Annual Cost of Living Adjustments	3.00% of original benefit
Membership of the Plan	
Pensioners and beneficiaries receiving benefits	850
Active plan members	818
Members due refunds	<u>5</u>
Total	1,673

* Includes inflation at 3.00%

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT VI

Actuarial Assumptions and Actuarial Cost Method

Mortality Rates:

Healthy: 1971 Group Annuity Mortality Table with 5% of deaths assumed to be Duty related
Disabled: 1983 Railroad Retirement Board Disabled Life Mortality Table

Rates before Retirement:

Sample rates shown below:

Age	Rate (%)			
	Mortality		Disability	Withdrawal
	Male	Female		
20	0.05	0.03	0.03	2.50
25	0.06	0.03	0.05	2.50
30	0.08	0.05	0.13	2.25
35	0.11	0.07	0.30	1.40
40	0.16	0.09	0.60	1.00
45	0.29	0.14	1.12	1.00
50	0.53	0.22	1.90	0.70
55	0.85	0.33	4.50	-
60	1.31	0.55	7.60	-

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

Percentage of Disability Retirements that are Duty Related:

Age	Annual Rate (%)
20 - 24	75.0
25 - 29	66.7
30 - 34	70.6
35 - 39	78.9
40 - 44	81.1
45 - 49	81.9
50 - 54	80.3
55 - 59	78.2
60 and up	75.4

Retirement Rates for Active Employees:

Years of Service	Rate(%)
25	10
26	10
27	5
28	5
29	15
30	25
31	50
32	50
33	50
34	50
35 years, or age 65 if earlier	100

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

Retirement Age for Inactive Vested Members:	50
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics.
Percent Married:	94% of active participants
Age of Spouse:	Females four years younger than males
Eligible Children:	None
Net Investment Return:	8.00%, net of investment and administrative expenses, including inflation at 3.00%.

Salary Increases:	Age	Rate (%)
	Less than 25	8.00
	25 - 29	7.50
	30 - 34	7.00
	35 - 39	6.50
	40 - 44	5.50
	45 - 49	5.00
	50 - 54	4.50
	55 - 59	4.50
	60 - 64	4.00
	65 and up	3.00

Actuarial Value of Assets: Asset values are gradually adjusted toward market value by adding to the "preliminary asset value" 20% of the difference between the market value and the preliminary asset value. The preliminary asset value is the actuarial asset value at the beginning of the year plus net new money. Net new money is the sum of contributions, dividends, and interest, less the sum of refunds, expenses and benefit payments. If the actuarial value of assets is less than 90% or more than 110% of the market value, an adjustment is made to the actuarial value to bring the value within this corridor.

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

Actuarial Cost Method: Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

Amortization of Unfunded Actuarial Accrued Liability/(Surplus): Open amortization period; level percentage of payroll, recognizing monthly payments. Payroll is expected to increase 3.0% per year.

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

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

EXHIBIT VII

Summary of Plan Provisions

This exhibit summarizes the major provisions of the Pension System 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:	May 1 through April 30
Membership:	All Firefighters become members as a condition of employment. Membership begins on the first day of employment.
Creditable Service:	Total creditable service is defined as the sum of the service as a Firefighter after becoming a member after July 1, 1953, plus any service earned prior to July 1, 1953, if continuous.
Normal Retirement:	
<i>Age Requirement</i>	None, however, members are required to retire after reaching age 65 regardless of service.
<i>Service Requirement</i>	25 years of service.
<i>Amount</i>	The base pension is 2.5% of average final compensation per year of creditable service to a maximum of 80%. Average final compensation is defined as the average of the two highest years of base compensation in the last ten years. The minimum retirement benefit is \$600 per month.
Duty Disability:	
<i>Age Requirement</i>	None
<i>Service Requirement</i>	None
<i>Amount</i>	The pension is 62.5% of average final compensation at disability with a minimum 62.5% of the current maximum salary payable to the rank of a firefighter. The current maximum monthly salary as of May 1, 2003 is \$4,377.

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

Non-duty Disability:

<i>Age Requirement</i>	Less than 65
<i>Service Requirement</i>	10 years of service.
<i>Amount</i>	The pension is 25% of the average final compensation per month plus 2.5% per year of average final compensation per month for the number of years and months of creditable service in excess of 10 years, not to exceed 80% of the member's average final compensation.

Vesting:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	10 years of service.
<i>Amount</i>	2.5% of average final compensation per year of creditable service to a maximum of 62.5%, payable at age 50.

If employee dies in a deferred status, before age 50, their beneficiary receives a lump sum equal to contributions with interest. If such death occurs after age 50, the widow and children receive the same benefits as the pre-retirement non-duty, but reduced by the ratio of the member's service to 25 years.

Withdrawal (Refund) Benefit:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	Less than 10 years.
<i>Amount</i>	If an employee terminates before becoming eligible for a deferred pension, they receive a return of their contributions with interest. This benefit is reduced by a service charge of 10%, 8%, 6%, 4% or 2% if employee withdraws with less than one year, two years, three years, four years, or five years of service respectively.

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

Pre-Retirement Duty Death Benefit:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	None
<i>Funeral Benefit</i>	A lump-sum payment of \$2,000 is paid to help cover funeral costs.
<i>Surviving Spouse Benefit</i>	100% of the accrued pension is paid with a minimum of 62.5% of the average final compensation. The surviving spouse's benefit for spouses of active firefighters eligible for a service pension is 100% of the regular pension reduced for the election of optional 100% joint and survivor coverage. The minimum benefit is \$275 per month.
<i>Child's Benefit</i>	If there is no surviving spouse or the spouse dies or remarries, the spouse's benefit is divided equally to the children and paid until age 18 (or age 21 if a student). If a surviving spouse exists, \$100 per month until age 18 (or age 21 if a student).
<i>Return of Contributions</i>	A return of accumulated contributions is guaranteed. If there is no surviving spouse or dependent children, or if the spouse remarries, the accumulated contributions or the unpaid balance thereof shall be paid to the estate or to a named beneficiary.

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

Pre-Retirement Non-duty Death Benefit:

<i>Age Requirement</i>	None
<i>Service Requirement</i>	None
<i>Funeral Benefit</i>	A lump-sum payment of \$2,000 is paid to help cover funeral costs.
<i>Surviving Spouse's Benefit</i>	50% of the accrued pension is paid, with a minimum of 25% of average final compensation payable for the life of the surviving spouse. The surviving spouse's benefit for active firefighters eligible for a service pension is 100% of the regular pension, reduced for the election of optional 100% joint and survivor coverage. The minimum benefit is \$275 per month.
<i>Child's Benefit</i>	If no surviving spouse or the spouse dies, the spouse's benefit is divided equally to the children and paid until age 18 (or 21 if student). If a surviving spouse exists, \$100 per month until age 18 (or 21 if student).
<i>Return of Contributions</i>	A return of accumulated contributions is guaranteed. If there is no surviving spouse or dependent children or if the surviving spouse is no longer eligible to receive payments because of remarriage, the accumulated contributions or the unpaid balance thereof shall be paid to the estate or to a named beneficiary.

Post-Retirement Death Benefit(s):

<i>Age Requirement</i>	None
<i>Service Requirement</i>	None
<i>Amount</i>	If married, pension benefits are paid in the form of a Joint and 50% Survivor annuity or in any other available optional form elected by the member and spouse in an actuarially equivalent amount. The minimum benefit is \$275. Payments equal to the amount of the member's accumulated contributions are guaranteed. In addition, a lump-sum payment of \$2,000 is paid to help cover funeral costs.

Cost of Living Adjustment (COLA): A maximum increase of 3% of the original pension will be made annually. This does not apply to funeral benefits. Members must retire on or before January 1st in order to receive a COLA in the next year.

SECTION 4: Reporting Information for the Firefighters' Pension System of the City of Kansas City, Missouri

Contributions:

Pension System

Employees contribute 9.55% of base salary. The City currently contributes 19.6% of payroll.

Interest on Employee Contributions

3.0% per year.

Health Insurance Subsidy

Effective January 1, 2000, the City contribution is 2% of base salary and the member contribution is 1% of base salary.

Contributions and benefits for the Health Insurance Subsidy are separately accounted for under the plan. The assets, liabilities, contributions, and benefits of the Health Insurance Subsidy are excluded from this valuation.

Changes in Plan Provisions:

There have been no changes in the plan provisions since the preceding actuarial valuation.