# PUBLIC SCHOOL RETIREMENT SYSTEM OF THE SCHOOL DISTRICT OF KANSAS CITY, MISSOURI <br> ACTUARIAL VALUATION <br> AS OF JANUARY 1, 2002 

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## PURPOSE OF THE REPORT

This report is submitted in accordance with Section 169.291-14 Revised Statues of Missouri (R.S. Mo.) 1986 and amendments which require the actuary to make an annual valuation of the assets and liabilities of the System. The purpose of the actuarial valuation is twofold: (1) to determine the employers' annual required contribution and (2) to develop information to measure the relative financial condition of the System.

The employers' required annual contribution to the Retirement System is computed in accordance with the principles of GASB Statement No. 25 and generally accepted actuarial standards. The amount of the annual required contribution is stated in Section 2 of this report. Details regarding the computation of the contribution are in Section 4. A description of the actuarial cost method and assumptions appears in Section 3. A summary of provisions of the current law upon which this report is based may be found in Exhibit A.

Information concerning the financial condition and factors affecting it will be found throughout the report. There is no generally accepted single measure or standard for determining whether or not a retirement system is "actuarially sound." The financial health of a retirement system is measured best on a relative basis. Results are compared over a period of years to determine whether adequate progress is being made in the funding of the System's liabilities. Another relative measure is the stability of the contribution rate, with recognition for changes in funding requirements due to changes in benefit provisions. The actuarial balance sheet also provides an indication of the relative financial condition of the Plan.

## COMMENTS

This report is based on the Retirement System's benefits, assets and membership as of January 1, 2002. It reflects a $\$ 636$ payment as of February, 2003 to supplement health care costs for eligible retired members and a 1.5\% COLA effective January 1, 2003 for members who retired prior to January 1, 2002, payable beginning February 1, 2003. The Board's current policy is to grant COLA's annually up to a $100 \%$ cumulative increase, provided statutory safeguards are met. The current funding level will only provide a cumulative maximum of $40 \%$, so the results in this report assume a cumulative maximum of $40 \%$, not $100 \%$.

Actuarial experience for 2001 was unfavorable, which resulted in an increase in the actuarially required contribution rate from the prior year. The annual required contribution rate for the 2002 Plan Year increased to $7.07 \%$ of covered payroll from $6.63 \%$ for the 2001

Plan Year. The 2002 rate is below the statutory $7.50 \%$ which became effective January 1 , 1999.

Under the actuarial funding method used to determine the contribution, actuarial gains (or losses) result in a decrease (or increase) in the Unfunded Actuarial Accrued Liability (UAAL). Actuarial gains (or losses) result from differences between the actual experience of the System and the expected experience projected by the actuarial assumptions. The assumptions are based on the long-term expected experience of the System. Actuarial gains (or losses) reflect short-term deviations between actual and expected experience. Since the UAAL is redetermined on an annual basis, the contribution required to amortize the UAAL will usually fluctuate from year to year.

The funded status of the System is highly leveraged with respect to the UAAL. It decreased to a negative $\$ 16,977,755$ on January 1,2002 from a negative $\$ 13,539,734$ on January 1 , 2001. The $\$ 3$ million decrease in the UAAL is the net result of favorable actuarial experience. Investment experience was unfavorable for 2001. The actuarial value of assets had a $6.58 \%$ rate of return or a loss of $\$ 13,336,579$. Experience from non-investment sources, including data adjustments, was favorable and resulted in an overall net gain of $\$ 2,377,595$. Modest percentage deviations from expected increases in the present value of benefits or assets, resulting from favorable or unfavorable experience, can result in significant decreases or increases in the UAAL. Thus, with a system as well funded as this System, significant fluctuations in the UAAL can be expected.

The annual employer required contribution rate is $7.07 \%$ of covered payroll, which is below the statutory rate of $7.50 \%$. As is the case with the UAAL, the annual required rate is subject to fluctuation as the result of deviations in experience. The rate could increase significantly should there be a significant change in the active membership of the System.

In our opinion, the Retirement System has been and will continue to be funded on a sound actuarial basis provided the required statutory contributions are made.

Respectfully submitted,


## SECTION 2

## SUMMARY OF PRINCIPAL VALUATION RESULTS AND COMPARISON WITH THE PRIOR YEAR

|  | January 1, 2001 | January 1, 2002 |
| :---: | :---: | :---: |
| Plan Members |  |  |
| Active Members | 5.012 | 5,014 |
| Retired Members \& Beneficiaries | 2,865 | 2,861 |
| Inactive Members* | 1,030 | 1,512 |
| Total | 8,943 | 9.387 |
| Annual Covered Compensation | \$165,795,367 | \$171,523,233 |
| Actuarial Present Value of Future Benefits | 889,396,724 | 926.350.778 |
| Actuarial Present Value of Projected Accrued Benefits | 689,617.246 | 713,372,054 |
| Unfunded Actuarial Accrued Liability | $(13,539,734)$ | (16.977, 755) |
| Assets |  |  |
| Actuarial Value Market Value | $\begin{aligned} & 696,071,310 \\ & 692,197,993 \end{aligned}$ | $\begin{aligned} & 718,703,692 \\ & 661,680,491 \end{aligned}$ |
| Employer Normal Cost - Due December 31 As a \% of Covered Compensation | $\begin{array}{r} 12,199,082 \\ 7.36 \% \end{array}$ | $\begin{array}{r} 13,642,056 \\ 7.95 \% \end{array}$ |
| Annual Required Employer Contribution |  |  |
| Due December 31 <br> As a \% of Covered Compensation | $\begin{array}{r} \$ 10,996,382 \\ 6.63 \% \end{array}$ | $\begin{array}{r} \$ 12.133,966 \\ 7.07 \% \end{array}$ |
| Projected Actual - Due December 31 of the following year | \$ 12,434,653 | \$ 12,864,242 |
| As a \% of Covered Compensation | 7.50\% | $7.50 \%$ |
| Ratio of Assets to Actuarial Present Value of Projected Accrued Benefits |  |  |
| At Actuarial Value | 101\% | 101\% |
| At Market Value | 100\% | 93\% |

## SECTION 3

## ACTUARIAL METHODOLOGY

## INTRODUCTION

The actuarial valuation of a defined benefit retirement system is comprised of two separate processes.

First, the actuarial present value, as of the valuation date, of both current and projected benefits to be paid under the Plan is determined. In determining the actuarial present value of these benefits, actuarial assumptions must be made as to the number of participants eventually receiving benefits, the amount of benefits to be paid, and the portion of the benefit obligation to be covered by future investment earnings.

Second, the financing of these benefit obligations on an advance basis is established. An actuarial cost method is applied to establish the NORMAL COST rate, which is the rate at which future costs will accrue annually after the valuation date. The actuarial cost method is applied to determine the ACTUARIAL ACCRUED LIABILITY, which is the amount of cost that has accrued as of the valuation date.

## ACTUARIAL ASSUMPTIONS

The true cost of a member's retirement benefit is not known until he or his beneficiary has received the final benefit payment. Consequently, the exact cost of system benefits for the current employee group will not be determinable for 50 to 75 years. Since provisions for this cost must be made prior to the exact determination, a model is established that will estimate the future cost of system benefits. The model utilizes parameters which require assumptions as to the future occurrences of various events affecting the demographic profile of the employee group and the assets of the system. Such actuarial assumptions include death, retirement, termination, disability, salary increases and investment return. Current and long-term economic factors, the nature of the employer's business and significant features of the system must be considered in the selection of a set of actuarial assumptions to assure the reasonableness of the results predicted by the assumptions.

While care is taken in the selection of actuarial assumptions, actual experience is expected to deviate from these assumptions over the short term. The suitability of actuarial assumptions is measured by how closely the experience of the system, on a long-term basis,
conforms to projected results. Deviations from projected results are called actuarial gains and losses. Periodic actuarial valuations measure the extent of these gains and losses as of a valuation date. If either actuarial gains or losses predominate, then it is possible that one or more of the actuarial assumptions is no longer appropriate. Thus, actuarial assumptions must be continually monitored for reasonableness and subsequent cost estimates may be modified accordingly. While individual assumptions are intended to be representative, it is the aggregate effect of all actuarial assumptions working together that determines their appropriateness. The most recent analysis of the experience of the Retirement System was for the five-year period ending December 31, 1998.

## ACTUARIAL LIABILITIES

Actuarial liabilities include the actuarial present value of all future benefits and expenses. To determine the actuarial present value of all future benefits, the probability of future events which establish benefit payments is forecast utilizing the actuarial assumptions. System provisions and current member data are used to forecast the amount of benefits to be paid. Assumptions for survival among retired members and beneficiaries are used to estimate the duration of these benefit payments. Each probable benefit payment is then discounted to the valuation date using the actuarial assumption for investment return. These discounted payments are then summed to arrive at the total actuarial present value of benefits.

## ACTUARIAL ASSETS

The actuarial assets at any time are equal to the sum of present assets, valued on an actuarial basis, plus future assets. Future assets will result from future contributions and future investment return on all assets.

## ASSET VALUATION METHOD

Effective January 1, 1999, the Actuarial Value of Assets is determined using the assumed yield method. Under this method, an expected actuarial asset value is determined by taking the Actuarial Value of Assets as of the previous valuation, increased by deposits and decreased by withdrawals, and adjusted by the valuation interest rate to the current valuation date. The expected actuarial asset value is compared to the market value and $20 \%$ of the difference between (a) expected assets and (b) Market Value of Assets reduced by the addition to the Investment Stabilization Reserve on the valuation date is added to the expected value. The result is the Actuarial Value of Assets.

The purpose of developing the Actuarial Value of Assets is to smooth fluctuations in Market Value between successive valuations, thereby also smoothing contribution requirements. Assets were valued at Market Value as of January 1, 1999. In order to protect the System's funding requirements against a significant shortfall in the rate of return, the Board of Trustees adopted a policy establishing an Investment Stabilization Reserve effective January 1, 2000.

## ACTUARIAL COST METHOD

To determine the funding requirements of the System, it is necessary to employ an actuarial cost method. The choice of the cost method does not affect the balance sheet financial status, which is a function only of the System provisions, actuarial assumptions, member data and assets. However, the actuarial cost method has a direct impact on the incidence of the funding requirements. The actuarial cost method allocates the actuarial present value of future employer contributions between the past and future, and thus establishes the UNFUNDED ACTUARIAL ACCRUED LIABILITY and the NORMAL COST.

The actuarial cost method used is commonly referred to as the "entry age actuarial cost method." Entry age is determined at the date each member would have entered the System. On each actuarial valuation date, the annual cost accruals (individual normal costs for each member) are determined as a level percentage of pay for each year from entry age until retirement or termination. The sum of these individual normal costs for all active members whose attained ages are under the assumed retirement age is the normal cost for the plan year. The excess of all normal costs falling due prior to the actuarial valuation date, accumulated with interest, over the actuarial value of plan assets is the unfunded actuarial accrued liability.

The funding requirements, or Annual Required Contribution, for each plan year is equal to the sum of the "normal contribution rate" and the "unfunded accrued liability rate." The normal contribution rate is equal to the normal cost of the Plan divided by covered compensation. The unfunded accrued liability rate is equal to the annual payment necessary to amortize the unfunded accrued actuarial liability over thirty years from the actuarial valuation date, divided by covered compensation.

## SECTION 4

## RESULTS OF THE ACTUARIAL VALUATION

 AS OF JANUARY 1, 2002This section of the report shows the development of the principal elements of the actuarial valuation and the analyses of the various elements affecting the results. The actuarial valuation is based on:

- Membership data as of January 1,2002 - This data is summarized in Exhibits $F, G$ and $H$.
- The statutes in effect on January 1,2002 - A summary of the principal provisions governing the System appears in Exhibit A.
- Actuarial assumptions and methods -- The assumptions appear in Exhibits B through E. The actuarial cost method is described in Section 3.
- System assets as of January 1,2002 - Fund values and summaries of fund activities and investment performance during 2000 are described later in Section 5 under "Valuation of the System's Assets."


## DETERMINATION OF THE ANNUAL CONTRIBUTION

The Annual Required Contribution is comprised of two elements -- the "normal cost contribution" and the "unfunded actuarial accrued liability contribution." The determination of the Annual Required Contribution follows in Table $A$.
(1) Actuarial Present Value of all Future Benefits
(a) Active Members
(i) Retirement benefits \$421,675,348
(ii) Vested withdrawal benefits 57,866,444
(iii) Refund of contributions 3,659,739
(iv) Survivor benefits

19,497,453
(v) Disability benefits

17,557,761
Total
(b) Retired Members and Beneficiaries
(c) Inactive Members*
(d) Total Actuarial Present Value of Future Benefits
(2) Employer Normal Cost as of January 1, 2002
(3) Total Covered Compensation
(4) Employer Normal Cost Rate:
(2) / (3)
(5) Actuarial Present Value of Future Covered Compensation of Current Members
(6) Actuarial Present Value of Future Employer Normal Costs: (4) $\times(5)$
(7) Actuarial Present Value of Future Member Contributions
(8) Actuarial Accrued Liability: (1) - (6) - (7)
(9) Actuarial Value of Assets as of January 1. 2002
(10) Unfunded Actuarial Accrued Liability: (8) - (9)
(11) Payment to Amortize the Unfunded Actuarial Accrued Liability over 30 years from January 1, 2002
(12) Normal Cost Contribution due by December 31, 2002: (2) adjusted for interest at $8 \%$
(13) Annual Required Contribution due December 31, 2002
(14) Contribution Rate: (13)/(3)
*Includes former Members entitled to refunds.

TABLE B
ACTUARIAL BALANCE SHEET AS OF JANUARY 1, 2002

## ACTUARIAL ASSETS

Actuarial Value of Present Assets$\$ 718,703,692$
Actuarial Present Value of Future Member Contributions ..... $113.337,470$
Actuarial Present Value of Future Employer Contributions ..... 113,337,600
Total Present and Future Assets ..... $\$ 945,378,762$
ACTUARIAL LIABILITIES
Actuarial Present Value of Benefits Now Payable ..... $\$ 395,539,333$
Actuarial Present Value of Benefits Payablein the Future
Active Members - Plan A ..... \$ 224,397
Active Members -- Plan B ..... 520,032,348
Terminated Members ..... $10,554,700$
530,811,445
Total Liabilities for Benefits ..... \$926,350,778
Actuarial Surplus / (Deficit) ..... $\$ 19,027,985$

## DETERMINATION OF ACTUARIAL GAINS / (LOSSES)

Actuarial gain / (loss) experience is measured by comparing the Expected Unfunded Actuarial Accrued Liability to the Actual Unfunded Actuarial Accrued Liability. As is shown below, the Retirement System experienced a net loss during 2001. Unfavorable investment experience offset favorable non-investment experience, and increased the UAAL by about $\$ 4.8$ million.
(1) Unfunded Actuarial Accrued Liability as of January 1, 2001
\$ $(13,539,734)$
(2) Employer Normal Cost for the 2001 Plan Year
$11,295,446$
(3) Interest on (1) and (2) to December 31, 2001
$(179.543)$
(4) Employer Contribution Paid in the 2001 Plan Year
$12,176,329$
(5) Interest on (4) to December 31, 2001

0

0
(7) Expected Unfunded Actuarial Accrued Liability on January 1, 2002:
$(1)+(2)+(3)-(4)-(5)+(6)$
$(14,600,160)$
(8) Actual Unfunded Actuarial Accrued Liability on January 1, 2002
$(16,977,755)$
(9) Actuarial Gain / (Loss) for the 2001 Plan Year: (7) - (8) 2,377,595
(10) Investment Gain / (Loss)
$(9,659,694)$
(11) Actuarial Gain / (Loss) From Non-investment Experience: (9) - (10)
$12,037,289$

## PROJECTED BENEFIT OBLIGATION FUNDED STATUS

As of January 1, 2002 the Projected Benefit Obligation was:
Retired Members and Beneficiaries currently receiving benefits and terminated members not yet receiving benefits ..... \$ 406.094,033
Current Active Members- Accumulated Member Contributions,Including Interest119,968,776

- Employer-financed Vested Benefits ..... 187,309,245
Total Projected Benefit Obligation ..... \$713.372,054
As of January 1, 2002 the Projected Benefit Obligation was funded as follows:
Net Assets Available for Benefits at Actuarial Value ..... $\$ 718,703,692$
Unfunded Projected Benefit Obligation atActuarial Value$(5,331,638)$
Actuarial Value Funding Ratio101\%
Net Assets Available for Benefits at Market Value ..... \$ 661,680,491
Unfunded Projected Benefit Obligation at Market Value51,691,563
Market Value Funding Ratio ..... 93\%


## PRIORITIZED SOLVENCY TEST

The Funding objective of the Retirement System is to meet long-term benefit promises through contributions that remain approximately level from year to year as a percentage of covered compensation. If the contributions are level in concept and realistically determined, the System will pay all benefits when due -- the ultimate test of financial soundness. Testing for level contribution rates is the long-term solvency test.

A prioritized solvency test is an additional means of checking a system's progress under its funding program. In a prioritized solvency test, the Plan's present assets (cash and investments) are compared with:

- Active member contributions, accumulated with interest;
- The liabilities for future benefits to present inactive members and beneficiaries; and
- The liabilities for service already rendered by active members.

In a system that has been following the discipline of level percent of payroll financing, the liabilities for active member accumulated contributions (liability 1) and the liabilities for future benefits to inactive members and beneficiaries (liability 2) will be fully covered by assets (except in unusual circumstances). In addition, the liabilities for service already rendered by active members (liability 3) are normally partially covered by the remainder of the present assets. Generally, if the system has been using level cost financing, the funded portion of liability 3 will increase over time. Liability 3 being fully funded does not necessarily result from level percent of payroll funding methods.

The schedule below illustrates the history of the liabilities of the system and is indicative of the system following the discipline of level percent of compensation funding.

| Valuation Date January 1 | Active Member's Accumulated Contributions | Retirants, Beneficiaries and Inactive Members | Active Members (EmployerFinanced) | Valuation Assets | Percent Covered by Valuation Assets |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) |  | (1) | (2) | (3) |
| 1987 | \$ 54, 703,473 | \$ 60,096.766 | \$ 45,027,324 | \$157,538,001 | 100\% | 100\% | 95\% |
| 1988 | 60,631.019 | 68,133,929 | 45,164,333 | 172,932,203 | 100\% | 100\% | 98\% |
| 1989 | 68,032,000 | 72,476,675 | 50,436,314 | 192,074,767 | 100\% | 100\% | 102\% |
| 1990 | 77,843,936 | 79,855,895 | 52,384,902 | 220,844,765 | 100\% | 100\% | 121\% |
| 1991 | 86,392,672 | 77,212,948 | 62,859,420 | 241,369,537 | 100\% | 100\% | 124\% |
| 1992 | 91,688,784 | 101.408,720 | 69,055,820 | 278,065,508 | 100\% | 100\% | 123\% |
| 1993 | 98,482,791 | 102,336,338 | 61,479,865 | 307,050,085 | 100\% | 100\% | 173\% |
| 1994 | 99,547,061 | 123,475,760 | 121,674,513 | 336,466,320 | 100\% | 100\% | 93\% |
| 1995 | 110,658,079 | 144,027,489 | 124,562,502 | 353,451,344 | 100\% | 100\% | 79\% |
| 1996 | 108,123,636 | 177.617.507 | 117.169,151 | 389,103,803 | 100\% | 100\% | 88\% |
| 1997 | 104,554,877 | 231,762,583 | 91,329,968 | 428,419,710 | 100\% | 100\% | 101\% |
| 1998 | 115,847,655 | 228,328,855 | 108,592,620 | 482,599,919 | 100\% | 100\% | 127\% |
| 1999 | 117,478,379 | 274,442,924 | 172,607,724 | 624,225,667 | 100\% | 100\% | 135\% |
| 2000 | 113,334,820 | 343,382,932 | 184,049,309 | 660,830,255 | 100\% | 100\% | 111\% |
| 2001 | 115,781,706 | 389,055,603 | 184,779,937 | 696,071,310 | 100\% | 100\% | 103\% |
| 2002 | 119,968,776 | 406,094,033 | 187,309,245 | 718,703,692 | 100\% | 100\% | 103\% |

## TABLE F

## INFORMATION REQUIRED FOR ACCOUNTING PURPOSES

The following information is required to satisfy the reporting requirements of the Governmental Accounting Standards Board Statement No. 25 on Financial Reporting for Deferred Benefit Plans.

| Actuarial Valuation Date | Actuarial Value of Assets | Actuarial Accrued Liability (AAL) | Unfunded Actuarial Accrued Liability (UAAL) | Funded Ratio | Covered Payroll | UAAL as a Percentage of Covered Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (a) | (b) | (b) - (a) | (a)/(b) | (c) | ( $(\mathrm{b})$ - (a) ) / (c) |
| 1/1/92 | \$278,065,508 | \$269.684,410 | \$ (8.381.098) | 103.1\% | \$161,409,393 | -5.2\% |
| 1/1/93 | 307,050,085 | 267.393.528 | $(39.656 .557)$ | 114.8 | 161,499,360 | -24.6 |
| 1/1/94 | 336,466,320 | 348,744,907 | 12,278,587 | 96.5 | 176,250,680 | 7.0 |
| 1/1/95 | 353,329,957 | 386,874,780 | 33,544,823 | 91.3 | 185,374,096 | 18.1 |
| 1/1/96 | 389,103,803 | 409,428,594 | 20.324,791 | 95.0 | 171,262,008 | 11.9 |
| 1/1/97 | 428,419,710 | 429,517.108 | 1,097,398 | 99.7 | 161,802,480 | 0.7 |
| 1/1/98 | 482,599,919 | 442,614,693 | $(39,985,225)$ | 102.3 | 168,328,728 | -23.8 |
| 1/1/99 | 624,225,667 | 564.056.509 | $(60,169,158)$ | 110.7 | 153,733,920 | -39.1 |
| 1/1/00 | 660.830.255 | 640,614,688 | $(20,215,567)$ | 103.2 | 151.091,616 | -13.4 |
| 1/1/01 | 696,071,310 | 682,531.577 | $(13,539,734)$ | 102.0 | 165,795,367 | -8.2 |
| 1/1/02 | 718,703,692 | 701,725.938 | $(16,977,755)$ | 102.4 | 171,523,233 | -9.9 |
|  | Schedule of Employer Contributions |  |  |  |  |  |
|  | Year Ended 12/31 | Annual Required Contribution |  |  | Percentage Contributed |  |
|  | 1992 | \$ 3,212.047 |  |  | 190.8\% |  |
|  | 1993 | 3,036,188 |  |  | 115.6 |  |
|  | 1994 | 9.217.911 |  |  | 33.9 |  |
|  | 1995 | 11.011,221 |  |  | 31.7 |  |
|  | 1996 | $\begin{aligned} & 9.443,721 \\ & 7.055,431 \end{aligned}$ |  |  | 110.0 |  |
|  | 1997 |  |  |  | 121.0 |  |
|  | 1998 | 5,999,525 |  |  | 164.9 |  |
|  | 1999 | 5,249,589 |  |  | 222.3 |  |
|  | 2000 | 9,309,354 |  |  | 154.3 |  |
|  | 2001 | $10.996 .382$ |  |  | 110.7 |  |
|  | 2002 |  |  |  | * |  |

*To be determined at the end of the year.

## SECTION 5

## VALUATION OF THE SYSTEM'S ASSETS

This section of the report shows the development of the actuarial value of the assets of the System and provides information regarding investment results and the various assets of the System.

The amount of assets used in the actuarial valuation is known as the "actuarial value of assets." The method is discussed in Section 3 and the development of the actuarial value of assets is shown in Table G.

As shown in Table $G$, the fund had a rate of return of $6.58 \%$ on an actuarial value basis and $-1.26 \%$ on a market value basis, below the assumed rate of return of $8.00 \%$ for 2001 . The drop in the market value of assets would have resulted in a rate of return below $7.00 \%$, so the balance in the Investment Stabilization Reserve was reduced to $\$ 0$. This increased the rate of return on an actuarial basis from below $6.00 \%$ to $6.58 \%$. The rate of return on an actuarial value basis is intended to be a stable rate of return and fluctuate less than rates of return on a market value basis. Thus, the rate of return on an actuarial basis is not always a fair measure of the investment performance of the fund. A better indicator of actual performance during the year is the rate of return on a market value basis, also presented in Table G.

TABLE G

## DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS

(1) Assets on January 1, 2001
(2) Contributions

## Members <br> Employers

$\frac{\text { Expected }}{\$ 696,071,310} \frac{\text { Market }}{\$ 692,197,993} \frac{\text { Actuarial }}{\$ 696,071,310}$

$$
\begin{array}{lll}
12,840,821 & 12,840,821 & 12,840,821 \\
12,176,329 & 12,176,329 & 12,176,329
\end{array}
$$

(3) Benefits Paid

Retired Members \& Beneficiaries
Refunds to Withdrawn Members
39,498,736
39,498,736
39,498,736
3.691,837

3,691,837
3,691,837
(4) Expenses
Administrative
Investment
(5) Investment Increment
(6) Assets on January 1, 2002
(7) Yield for the 2001 Plan Year

| $1.125,641$ | $1.125,641$ | $1.125,641$ |
| ---: | ---: | ---: | ---: |
| 2.726 .489 | $2,726.489$ | $2.726,489$ |
| $54,317,630$ | $-18,491,949)$ | $\$ 44,657,935$ |
| $\$ 728,363,387$ | $\$ 661,680.491$ | $\$ 718,703,692$ |
| $8.00 \%$ | $-1.26 \%$ | $6.58 \%$ |

Development of the Actuarial Value of Assets as of January 1, 2002
(8) Expected Value of Assets on January 1, 2002
\$728,363,387
(9) Addition to Investment Stabilization Reserve
(10) Investment Stabilization Reserve
(11) Market Value of Assets on January 1,2002
(12) Excess of Market Value over Expected Value:
(11) - (8) - (10)
$(66,682,896)$
(13) Additional investment increment: $20 \% \times(12)$
$(13,336,580)$
(14) Actuarial Value of Assets on January 1, 2002 :
$(8)-(9)+(13)$
$\$ 718,703,692$

## EXHIBITS

## EXHIBIT A

## SUMMARY OF PLAN PROVISIONS OF CURRENT LAW

## Effective Date

January 1, 1944, amended in 1978, 1981, 1982, 1984, 1990, 1993, 1994, 1995, 1996, 1998, 2000 and 2001.

## Eligibility

All regular employees of the School District of Kansas City, Missouri, the Library District or the Retirement System and certain employees of charter schools become members as a condition of employment. Regular employment means working at least five hours per day, five days per week, nine months per year. Temporary and part-time employees are excluded.

## Service

Creditable service is membership service, which is service for which required contributions have been made.

For Plan A members, creditable service will not exceed 40 years.
For Plan B members, there is no cap on creditable service. Prior to 1990, creditable service could not exceed 35 years.

## Annual Compensation

A member's annual compensation level will be the regular compensation shown on the salary and wage schedules, excluding extra pay, overtime pay, or any pay not on the schedule.

For Plan A members, annual compensation is limited to $\$ 3,000$.
For Plan B members, annual compensation will be limited to the scheduled level for a principal with a master's degree for all years prior to 1989. For years after 1988, there is no limitation on annual compensation.

## Average Final Compensation

For Plan A members, the average final compensation is the average annual compensation paid in the five years of creditable service when earnings have been highest, subject to a maximum of $\$ 3,000$.

For Plan B members, the average final compensation is the highest average annual compensation paid during any four consecutive years of service.

## Normal Retirement

Eligibility -- Plan A members may retire after the completion of five years of creditable service and the attainment of age 62.

Plan B members may retire after (a) the completion of five years of creditable service and the attainment of age 60 , or (b) having a total of at least 75 credits.
with each year of creditable service and year of age, both prorated for fractional years, equal to one credit.

Benefit -- For a Plan A member, the normal retirement benefit payable monthly equals one twelfth of $1.25 \%$ of his average final compensation multiplied by his years of creditable service.

For a Plan B member, the normal retirement benefit payable monthly equals one twelfth of $2.00 \%$ ( $1.75 \%$ for members who retired prior to June 30, 1999) of the member's average final compensation multiplied by years of creditable service, subject to a maximum of $60 \%$ of average final compensation. Any member whose years of creditable service exceeds 34.25 years on August 28, 1993 shall have a maximum greater than 60\%, which shall be equal to $1.75 \%$ times the member's years of creditable service on August 28, 1993.

## Minimum Benefit

Effective January 1, 1996, any member with at least 20 years of creditable service at retirement is entitled to a minimum benefit of $\$ 300$ per month, or the actuarial equivalent of $\$ 300$ if an option was elected. Any member with at least ten years of creditable service, but less than 20 years, is entitled to a minimum benefit of $\$ 150$ per month, plus $\$ 15$ for each full year of creditable service in excess of ten years, or its actuarial equivalent if an option was elected. Beneficiaries of deceased members who elected an option and who retired with at least ten years of creditable service receive the actuarial equivalent of the minimum benefit.

Under both Plan A and Plan B, if a member's accumulated contributions provides more than one-half of the member's retirement benefit (under the actuarial assumptions adopted by the Board of Trustees), the member's benefit will be increased by this excess.

## Early Retirement

Eligibility - A member with 30 years of creditable service and under the age of 50 may retire early at any time.
Benefit - A member eligible for early retirement will receive a reduced benefit, calculated as for normal retirement and recognizing service and compensation to actual retirement date. The reduction in benefit will provide a benefit which is actuarially equivalent to the normal retirement benefit that would be payable at the member's minimum normal retirement date.

## Disability Retirement

Eligibility - A member with at least five years of creditable service who is certified to be totally incapacitated for performance of duty by the Medical Board is eligible for a disability retirement.
Benefit - A disabled member will receive an unreduced benefit, calculated as for normal retirement, based on service and average final compensation at actual retirement date. The minimum disability retirement benefit will be the lesser of (a) $25 \%$ of the member's average final compensation, or (b) the member's service retirement allowance calculated on the member's average final compensation and the maximum number of years of creditable service the member would have earned had the member remarried an employee until age 60.

Disability benefits are payable immediately.

## Termination Benefits

## Vested Benefits

Eligibility - A member who has at least five years of creditable service earns a vested interest in his or her accrued benefit, provided the member leaves his or her contributions in the system. Prior to 1990, there was also a minimum vesting eligibility age of 40 .
Benefit - The vested benefit is calculated as a normal retirement benefit based on service and average final compensation at date of termination and is payable at minimum normal retirement date.

## Non-vested Benefits

Benefit - If the member's termination is for reasons other than death or retirement and if the member has not met the vesting or retirement requirements, the member's contributions with interest will be refunded.

## Death Benefit

Prior to Retirement - For a member who dies while actively employed, the member's accumulated contributions with interest will be paid to the member's designated beneficiary.
If an active Plan B member dies, or an inactive Plan B member dies before retirement and while eligible to retire, the member's designated dependent beneficiary has the option of selecting a monthly benefit under option 1 or receiving a refund of contributions accumulated with interest. The dependent beneficiary is either the member's spouse or person determined by the Board of Trustees to have been dependent upon the deceased member. If the beneficiary elects option 1, such benefit shall be calculated as if the deceased member had at least ten years of creditable service at the time of death. If the beneficiary is a child, the benefit is only payable until age nineteen (19).
Post Retirement - The optional form of benefit payment selected under either Plan A or B will determine what, if any, benefits are payable upon death after retirement.

Plan B members are guaranteed to receive at least their accumulated contributions at retirement, if they die before electing an option.

## Optional Forms of Benefit Payments

Plan B members may elect from the following optional forms of benefit payment:
Option 1 - Upon a retirant's death, the retirant's designated beneficiary will receive for life, the same level of monthly retirement benefit. In the event the retirant's designated beneficiary predeceases the retirant, the retirant's monthly retirement benefit will be adjusted to the amount it would have been, had the retirant not elected an option.
Option 2 - Upon a retirant's death, the retirant's designated beneficiary will receive for life, a monthly benefit equal to one-half of the retirant's retirement benefit. In the event the retirant's designated beneficiary predeceases the retirant, the retirant's monthly retirement benefit will be adjusted to the amount it would have been, had the retirant not elected an option.

Option 3 - Upon a retirant's death, no benefits are payable to the retirant's estate or any beneficiary. Retirement benefits payable under this option will be actuarially increased from the normal form.

Each of the above options produces benefits which are actuarially equivalent to the normal form of benefit which is a monthly annuity payable for the lifetime of the retirant. These options are not available under disability retirement, only service retirement.

## Cost-of-Living Allowances

The Board of Trustees shall determine annually whether or not the system can provide an increase in benefits for those retirants who, as of the January 1 preceding the date of such increase, have been retired at least one (1) year (three (3) years prior to January 1, 2002). Any such increase also applies to optional retirement allowances paid to a retirant's beneficiary. The Board makes its determination as follows:
(1) The actuary recommends to the Board what portion of the investment return is available for increases and the amount available to be paid on the first day of the 14th month following the end of the valuation year. The actuary's recommendation is subject to the following safeguards:
(a) The system's funded ratio as of the January 1st of the year preceding the year of the proposed increase must be at least $100 \%$ after adjusting for the effect of proposed increase. The funded ratio is the ratio of assets to the pension benefit obligation.
(b) The actuarially required contribution rate, after adjusting for the effect of the proposed increase, may not exceed the statutory contribution rate.
(c) The actuary must certify that the proposed increase will not impair the actuarial soundness of the system.
(2) The Board reviews the actuary's recommendation and shall, in their discretion, determine if an increase may be granted. In accordance with Board policy, if an increase is permissible, the amount of the increase will be equal to the lesser of $3 \%$ or the percentage increase in the CPI for the preceding year, subject to a cumulative increase of $100 \%$ subsequent to December 31, 2000.
(3) This provision does not guarantee an annual increase to any retired member.

## Administration of the Retirement System

The Board of Trustees is responsible for the general administration and proper operation of the Retirement System. The Board consists of 12 members - four members appointed by the Board of Education, one member appointed by the Board of Trustees of the Library District, four members elected by and from the members of the Retirement System, two members elected by and from the retirants of the Retirement System, and the Superintendent of Schools of the School District of Kansas City, Missouri.

Administrative Expenses are paid out of the General Reserve Fund.

## Employee Contributions

Plan A members contribute $5 \%$ of earnable annual compensation up to $\$ 3,000$, for a maximum contribution of $\$ 150$ per year.

Plan B members contribute $7.5 \%$ of earnable annual compensation. Prior to January 1, 1999, Plan B members contributed 5.9\%. Prior to 1990, Plan B members contributed $5.0 \%$ of earnable annual compensation plus $2.0 \%$ of earnable annual compensation in excess of $\$ 6,500$, the contribution earnings base.

## Employer Contributions

The employers of members contribute at the rate of $1.99 \%$ of covered compensation effective July 1. 1993; 3.99\% effective July 1, 1995; $5.99 \%$ effective July 1, 1996; and 7.50\% effective January 1, 1999. Prior to July 1, 1993, employer contributions were actuarially determined.

## EXHIBIT B

## ACTUARIAL ASSUMPTIONS

The following actuarial assumptions were used in the valuation:

| Interest - | 8\% per annum. |  |  |
| :---: | :---: | :---: | :---: |
| Expenses - | The rate of interest assumed is net of investment expenses. Administrative and other expenses are assumed to equal $0.5 \%$ of covered compensation. |  |  |
| Mortality - | The 1983 Group Annuity Mortality Table is used for active members and retired members and beneficiaries. Rates are shown in Exhibit $C$. |  |  |
| Disability Mortality - | The 1983 Group Annuity Mortality Table with ages set up five years is used for members retired for disability. The rates used are shown in Exhibit D. |  |  |
| Withdrawal - | Withdrawals are assumed to occur at rates based on actual experience of the Retirement System. During the first four years of membership, withdrawals are assumed to occur at the following rates: |  |  |
|  | Year of Membership | Non-Charter School Employees | Charter School Employee |
|  | 1st | 25.0\% | 75.0\% |
|  | 2nd | 15.0\% | 50.0\% |
|  | 3 rd | 12.5\% | 25.0\% |
|  | 4th | 10.0\% | 15.0\% |

The rates used after the first four years of membership are shown in Exhibit $E$.

Salary Scale -

Disability -
Salaries are assumed to increase at rates based on the actual experience of the Retirement System. Rates are shown in Exhibit $E$.

Disabilities are assumed to occur at rates based on the actual experience of the Retirement System. The rates used are shown in Exhibit E.

Retirement -

Family Structure -
All members are assumed to be married and female spouses are assumed to be five years younger.

Usage of Cash-Out Option - Members terminating, in vested status are given the option of taking a refund of their accumulated member contributions (and thereby forfeiting the employerprovided benefit) or deferring their vested benefit. Terminating vested members are assumed to take a refund, unless the refund is less than the actuarial present value of their vested deferred benefit.

Cost-of-Living-Adjustments - In accordance with the Board policy of automatically granting a COLA of up to $3 \%$ per year, it is assumed the annual COLA of $3 \%$ will be provided up to a lifetime cumulative maximum of $40 \%$.

## EXHIBIT C

MORTALITY RATES FOR ACTIVE LIVES AND RETIRED MEMBERS AND BENEFICIARIES

Death Rate

| Male | Age | Female |
| :---: | :---: | :---: |
| . 000377 | 20 | . 000189 |
| . 000392 | 21 | . 000201 |
| . 000408 | 22 | . 000212 |
| . 000424 | 23 | . 000225 |
| . 000444 | 24 | . 000238 |
| . 000464 | 25 | . 000253 |
| . 000488 | 26 | . 000268 |
| . 000513 | 27 | . 000283 |
| . 000542 | 28 | . 000301 |
| . 000572 | 29 | . 000320 |
| . 000607 | 30 | . 000342 |
| . 000645 | 31 | 000364 |
| . 000687 | 32 | 000388 |
| . 000734 | 33 | 000414 |
| . 000785 | 34 | 000443 |
| . 000860 | 35 | . 000476 |
| 000907 | 36 | . 000502 |
| . 000966 | 37 | 000535 |
| 001039 | 38 | 000573 |
| . 001128 | 39 | 000617 |
| . 001238 | 40 | . 000665 |
| . 001370 | 41 | . 000716 |
| . 001527 | 42 | . 000775 |
| . 001715 | 43 | . 000841 |
| . 001932 | 44 | . 000919 |
| . 002183 | 45 | . 001010 |
| . 002471 | 46 | . 001117 |
| . 002790 | 47 | . 001237 |
| . 003138 | 48 | . 001366 |
| . 003513 | 49 | . 001505 |
| . 003909 | 50 | . 001647 |
| . 004324 | 51 | . 001793 |
| . 004755 | 52 | . 001948 |
| . 005200 | 53 | . 002119 |
| . 005660 | 54 | . 002315 |

Death Rate

| Male | Age | Female |
| :---: | :---: | :---: |
| . 017579 | 66 | 007817 |
| . 019804 | 67 | 008681 |
| . 022229 | 68 | 009702 |
| . 024817 | 69 | . 010921 |
| . 027530 | 70 | . 012385 |
| . 030354 | 71 | . 014128 |
| . 033370 | 72 | . 016159 |
| . 036680 | 73 | . 018481 |
| . 040388 | 74 | . 021091 |
| . 044597 | 75 | . 023992 |
| . 049388 | 76 | . 027184 |
| . 054758 | 77 | . 030672 |
| . 060678 | 78 | . 034459 |
| . 067125 | 79 | . 038549 |
| . 074070 | 80 | . 042945 |
| . 081484 | 81 | . 047655 |
| . 089320 | 82 | . 052691 |
| . 097525 | 83 | . 058071 |
| . 106047 | 84 | . 063807 |
| . 114836 | 85 | . 069918 |
| . 124170 | 86 | . 076570 |
| . 133870 | 87 | . 084459 |
| . 144073 | 88 | . 091935 |
| . 154859 | 89 | . 101354 |
| . 166307 | 90 | 111750 |
| . 178214 | 91 | . 123076 |
| . 190460 | 92 | . 135630 |
| . 203007 | 93 | . 149577 |
| . 217904 | 94 | . 165103 |
| . 234086 | 95 | . 182419 |
| . 248436 | 96 | . 201757 |
| . 263954 | 97 | . 222043 |
| . 280803 | 98 | 243899 |
| . 299154 | 99 | . 268185 |
| . 319185 | 100 | . 295187 |

Death Rate

| Male |  | Age |  |
| :---: | :---: | :---: | :---: |
|  | Female |  |  |
| .006131 |  | 55 |  |
| .006618 |  | 56 | .002541 |
| .007139 |  | 57 | .003803 |
| .007719 |  | 58 | .003442 |
| .008384 | 59 | .003821 |  |
| .009158 | 60 | .004241 |  |
| .010064 | 61 | .004702 |  |
| .011133 | 62 | .005210 |  |
| .012391 | 63 | .005769 |  |
| .013868 | 64 | .006385 |  |
| .015592 | 65 | .007064 |  |

Death Rate

| Male | Age | Female |
| :---: | :---: | :---: |
| . 341086 | 101 | 325225 |
| 365052 | 102 | 358897 |
| 393102 | 103 | 395842 |
| 427255 | 104 | 438360 |
| 469531 | 105 | 487816 |
| 521945 | 106 | 545886 |
| 586518 | 107 | 614309 |
| 665268 | 108 | 694884 |
| 760215 | 109 | 789474 |
| 1.000000 | 110 | 1.000000 |

DISABLED LIFE MORTALITY RATES

Death Rate

| Male | Age | Female |
| :---: | :---: | :---: |
| . 000464 | 20 | . 000253 |
| . 000488 | 21 | . 000268 |
| . 000513 | 22 | . 000283 |
| . 000542 | 23 | . 000301 |
| . 000572 | 24 | . 000320 |
| . 000607 | 25 | . 000342 |
| . 000645 | 26 | . 000364 |
| . 000687 | 27 | 000388 |
| . 000734 | 28 | 000414 |
| . 000785 | 29 | 000443 |
| . 000860 | 30 | . 000476 |
| . 000907 | 31 | . 000502 |
| . 000966 | 32 | . 000535 |
| . 001039 | 33 | . 000573 |
| . 001128 | 34 | . 000617 |
| 001238 | 35 | . 000665 |
| . 001370 | 36 | . 000716 |
| . 001527 | 37 | . 000775 |
| . 001715 | 38 | . 000841 |
| . 001932 | 39 | 000919 |
| . 002183 | 40 | . 001010 |
| . 002471 | 41 | . 001117 |
| . 002790 | 42 | . 001237 |
| . 003138 | 43 | . 001366 |
| . 003513 | 44 | . 001505 |
| . 003909 | 45 | . 001647 |
| . 004324 | 46 | . 001793 |
| . 004755 | 47 | . 001948 |
| . 005200 | 48 | . 002119 |
| . 005660 | 49 | . 002315 |
| . 006131 | 50 | . 002541 |
| . 006618 | 51 | . 002803 |
| . 007139 | 52 | . 003103 |
| . 007719 | 53 | 003442 |
| . 008384 | 54 | . 003821 |

Death Rate

| Male | Age | Female |
| :---: | :---: | :---: |
| . 022229 | 63 | . 009702 |
| . 024817 | 64 | . 010921 |
| . 027530 | 65 | . 012385 |
| . 030354 | 66 | . 014128 |
| . 033370 | 67 | . 016159 |
| . 036680 | 68 | 018481 |
| . 040388 | 69 | . 021091 |
| . 044597 | 70 | . 023992 |
| . 049388 | 71 | . 027184 |
| . 054758 | 72 | . 030672 |
| . 060678 | 73 | 034459 |
| . 067125 | 74 | 038549 |
| . 074070 | 75 | . 042945 |
| . 081484 | 76 | . 047655 |
| . 089320 | 77 | . 052691 |
| . 097525 | 78 | . 058071 |
| . 106047 | 79 | . 063807 |
| . 114836 | 80 | . 069918 |
| . 124170 | 81 | . 076570 |
| . 133870 | 82 | . 084459 |
| . 144073 | 83 | . 091935 |
| . 154859 | 84 | . 101354 |
| . 166307 | 85 | 111750 |
| . 178214 | 86 | 123076 |
| . 190460 | 87 | . 135630 |
| . 203007 | 88 | . 149577 |
| 217904 | 89 | 165103 |
| 234086 | 90 | 182419 |
| 248436 | 91 | . 201757 |
| 263954 | 92 | . 222043 |
| 280803 | 93 | . 243899 |
| 299154 | 94 | . 268185 |
| 319185 | 95 | . 295187 |
| 341086 | 96 | . 325225 |
| 365052 | 97 | . 358897 |


| Death Rate |  |  | Death Rate |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Male | Age | Female | Male | Age | Female |
| 009158 | 55 | . 004241 | 393102 | 98 | 395842 |
| . 010064 | 56 | . 004702 | 427255 | 99 | 438360 |
| . 011133 | 57 | . 005210 | 469531 | 100 | 487816 |
| . 012391 | 58 | . 005769 | 521945 | 101 | 545886 |
| 013868 | 59 | . 006385 | . 586518 | 102 | 614309 |
| . 015592 | 60 | . 007064 | 665268 | 103 | 694884 |
| . 017579 | 61 | . 007817 | 760215 | 104 | 789474 |
| . 019804 | 62 | . 008681 | 1.000000 | 105 | 1.000000 |

## EXHIBIT E

ACTIVE MEMBER RATES OF DECREMENT AND SALARY INCREASE

| Attained Age | Withdrawal Rate | Disability Rate | Retirement Rate | Salary Increase Rate |
| :---: | :---: | :---: | :---: | :---: |
| 20 | 18.00\% | 0\% | - | 9.00\% |
| 21 | 17.10 | . 01 | - | 8.85\% |
| 22 | 16.20 | . 02 | - | 8.70\% |
| 23 | 15.30 | . 03 | - | 8.55\% |
| 24 | 14.40 | . 04 | - | 8.40\% |
| 25 | 13.50 | . 05 | - | 8.25\% |
| 26 | 12.60 | . 06 | - | 8.10\% |
| 27 | 11.70 | . 07 | - | 7.95\% |
| 28 | 10.80 | . 08 | - | 7.80\% |
| 29 | 9.90 | 09 | - | 7.65\% |
| 30 | 9.00 | 10 | - | 7.50\% |
| 31 | 8.64 | 10 | - | 7.40\% |
| 32 | 8.28 | 10 | - | 7.30\% |
| 33 | 7.92 | . 10 | - | 7.20\% |
| 34 | 7.56 | . 10 | - | 7.10\% |
| 35 | 7.20 | . 10 | - | 7.00\% |
| 36 | 6.84 | 10 | - | 6.90\% |
| 37 | 6.48 | 10 | - | 6.80\% |
| 38 | 6.12 | 10 | - | 6.70\% |
| 39 | 5.76 | . 10 | - | 6.60\% |
| 40 | 5.40 | . 10 | - | 6.50\% |
| 41 | 5.22 | . 11 | - | 6.40\% |
| 42 | 5.04 | . 12 | - | 6.30\% |
| 43 | 4.86 | . 13 | - | 6.20\% |
| 44 | 4.68 | . 14 | - | 6.10\% |
| 45 | 4.50 | . 15 | 2.0\% | 6.00\% |
| 46 | 4.32 | . 17 | 2.0\% | 5.90\% |
| 47 | 4.14 | . 19 | 2.0\% | 5.80\% |
| 48 | 3.96 | . 21 | 2.0\% | 5.70\% |
| 49 | 3.78 | . 23 | 2.0\% | 5.60\% |
| 50 | 3.60 | . 25 | 2.0\% | 5.50\% |
| 51 | 3.51 | 28 | 2.0\% | 5.45\% |
| 52 | 3.42 | 31 | 2.0\% | 5.40\% |
| 53 | 3.33 | . 34 | 2.0\% | 5.35\% |
| 54 | 3.24 | . 37 | 2.0\% | 5.30\% |
| 55 | 3.15 | . 40 | 2.0\% | 5.25\% |
| 56 | 3.06 | . 42 | 2.0\% | 5.20\% |
| 57 | 2.97 | 44 | 2.0\% | 5.15\% |
| 58 | 2.88 | 46 | 2.0\% | 5.10\% |
| 59 | 2.79 | 48 | 2.0\% | 5.05\% |


| Attained $\qquad$ | Withdrawal $\qquad$ | Disability Rate | Retirement Rate | Salary Increase Rate |
| :---: | :---: | :---: | :---: | :---: |
| 60 | 2.70\% | 50\% | 10.0\% | 5.00\% |
| 61 | 0 | 50 | 10.0\% | 5.00\% |
| 62 | 0 | 50 | 25.0\% | 5.00\% |
| 63 | 0 | 50 | 10.0\% | 5.00\% |
| 64 | 0 | 50 | 10.0\% | 5.00\% |
| 65 | 0 | 0 | 40.0\% | 5.00\% |
| 66 | 0 | 0 | 30.0\% | 5.00\% |
| 67 | 0 | 0 | 30.0\% | 5.00\% |
| 68 | 0 | 0 | 30.0\% | $5.00 \%$ |
| 69 | 0 | 0 | 30.0\% | 5.00\% |
| 70 | 0 | 0 | 100.0\% | 5.00\% |

## EXHIBIT F

AGE - SERVICE DISTRIBUTION AS OF JANUARY 1,2002

| Age Group | Years of Service |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0 | 1 | 2 | 3 | 4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | $45+$ | Total |
| 20-24 | 113 | 38 | 14 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 168 |
| 25-29 | 123 | 86 | 57 | 18 | 25 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 335 |
| 30-34 | 92 | 79 | 75 | 16 | 17 | 106 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 401 |
| 35-39 | 102 | 94 | 57 | 18 | 25 | 121 | 109 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 544 |
| 40-44 | 95 | 79 | 53 | 15 | 35 | 130 | 150 | 85 | 21 | 0 | 0 | 0 | 0 | 0 | 663 |
| 45-49 | 80 | 73 | 55 | 24 | 31 | 147 | 186 | 105 | 85 | 31 | 0 | 0 | 0 | 0 | 817 |
| 50-54 | 85 | 81 | 61 | 11 | 14 | 133 | 239 | 128 | 63 | 80 | 33 | 0 | 0 | 0 | 928 |
| 55-59 | 45 | 51 | 36 | 9 | 19 | 116 | 146 | 97 | 48 | 38 | 62 | 12 | 0 | 0 | 679 |
| 60-64 | 15 | 26 | 5 | 2 | 9 | 54 | 86 | 34 | 30 | 20 | 18 | 30 | 0 | 0 | 329 |
| 65-69 | 4 | 6 | 5 | 3 | 0 | 12 | 24 | 13 | 8 | 9 | 3 | 5 | 5 | 0 | 97 |
| $70+$ | 6 | 10 | 4 | 0 | 3 | 7 | 3 | 3 | 3 | 3 | 1 | 3 | 3 | 4 | 53 |
| Total | 760 | 623 | 422 | 118 | 179 | 852 | 959 | 483 | 258 | 181 | 117 | 50 | 8 | 4 | 5.014 |

## EXHIBIT G <br> ACTIVE MEMBERS <br> ANNUAL EARNINGS BY AGE GROUPS <br> AS OF JANUARY 1, 2002

| Age <br> Group | Number of <br> Members |
| :---: | :---: |
|  | 168 |
| $25-29$ | 335 |
| $30-34$ | 401 |
| $35-39$ | 544 |
| $40-44$ | 663 |
| $45-49$ | 817 |
| $50-54$ | 928 |
| $55-59$ | 679 |
| $60-64$ | 329 |
| $65-69$ | 97 |
| $70+$ | 53 |
| Total | 5.014 |


| Total | Average |
| ---: | ---: |
| $\$ 3,420,000$ | $\$ 20,357$ |
| $8,589,000$ | 25,639 |
| $10,644,000$ | 26,544 |
| $16,141,000$ | 29,671 |
| $20,927,000$ | 31,564 |
| $29,201,000$ | 35,742 |
| $37,475,000$ | 40,383 |
| $27,853,000$ | 41,021 |
| $12,441,000$ | 37,815 |
| $3,572,000$ | 36,825 |
| $1,259,000$ | 23,755 |
| $171,523,000$ | 34,209 |

## EXHIBIT H

RETIRED MEMBERS AND BENEFICIARIES AS OF JANUARY 1, 2002

Number of Members and Beneficiaries

| Option | Service <br> Retirements | 2,205 | Disability <br> Retirements | Survivors $\&$ <br> Beneficiaries | Total |
| :---: | ---: | :---: | ---: | ---: | ---: |
|  | 208 | 115 | 144 | 2,464 |  |
| 1 | 108 | 1 | 0 | 209 |  |
| 2 | 79 | 1 | 0 | 109 |  |
| 3 | 2,600 | 0 | 0 | 79 |  |
| Total |  | 117 | 144 | 2.861 |  |

Amount of Monthly Benefits

| Option | Service Retirements | Disability Retirements | Survivors \& Beneficiaries | Total |
| :---: | :---: | :---: | :---: | :---: |
| None | \$2,599,069 | \$94,713 | \$120,557 | \$2,814,339 |
| 1 | 257,475 | 837 | 0 | 258,312 |
| 2 | 154,425 | 669 | 0 | 155,094 |
| 3 | 109,106 | 0 | 0 | 109.106 |
| Total | \$3,120,075 | \$96,219 | \$120,557 | \$3,336.851 |

## APPENDIX

## DEFINITIONS OF ACTUARIAL TERMS

Accrued Benefit is the benefit earned by a participant as of the date at which the determination is made payable in the form of an annual benefit commencing at Normal Retirement Age. The accrued benefit also includes the eligibility provisions, factors and optional forms of payment associated with it.

Accumulated Plan Benefits are the accrued benefits and any other benefits, whether vested or not, that have been earned by the participants covered by the plan as of the date at which the determination is made. These other benefits include any death, early retirement or disability benefits provided under the plan. The present value of accumulated plan benefits as of the valuation date is determined for purposes of financial reporting.

Actuarial Accrued Liability is equal to the actuarial present value of future benefits less the present value of future annual normal costs. (See Annual Normal Cost.)

Actuarial Assumptions are the bases for estimates of future events affecting pension costs. These assumptions include projections of mortality, withdrawals, disability, ages at retirement, rates of investment earnings, plan expenses and other relevant factors.

Actuarial Cost Method is the method for allocating the actuarial present value of a pension plan's benefits and expenses to various time periods. The allocation is usually in the form of an annual normal cost and amortization of an actuarial accrued liability. An actuarial cost method is also referred to as a "funding method."

Actuarial Gain/(Loss) is the difference between the plan's actual experience and that expected based upon a set of actuarial assumptions. It is determined in accordance with a particular actuarial cost method for the period between two actuarial valuation dates. A gain occurs when the experience of the plan is more favorable (in terms of cost) than the assumptions projected; a loss occurs when experience is less favorable. Actuarial gains/(losses) are also referred to as experience gains/(losses).

Actuarial Present Value -- See Present Value.

Actuarial Valuation is the determination, as of a valuation date, of the annual normal cost, actuarial accrued liability, actuarial value of assets and related actuarial present values for a pension plan.

Actuarial Value of Assets is the value of cash, investments and other property belonging to a pension plan determined by the actuary for the purpose of an actuarial valuation.

Amortization is the spreading of a present value or a cost over a period of years. A plan's unfunded actuarial accrued liability is amortized over a period of years.

Annual Normal Cost is that portion of the actuarial present value of pension plan benefits and expenses which is allocated to a valuation year by the actuarial cost method. The annual normal cost may differ depending upon the actuarial cost method used:

## Contribution Amounts

(a) The Minimum Contribution* is the contribution required for a plan year in order to ensure funding which satisfies the funding requirements of ERISA. It normally consists of the annual normal cost plus the amortization payment for the unfunded actuarial accrued liability as determined by the actuarial cost method. The Absolute Minimum Contribution is the contribution required to avoid a funding deficiency in the Funding Standard Account.
(b) The Maximum Deduction* is the largest contribution to the plan which is currently deductible. The law limits how rapidly the unfunded actuarial accrued liabilities may be amortized. The Maximum Deduction normally consists of the annual normal cost plus the amortization payment (limit adjustment) based on the shortest period permitted by law.

Credit Balance* is the cumulative excess of credits over charges to the Funding Standard Account.

Current Liability* means the present value of all liabilities to participants and beneficiaries under the plan determined as if the plan terminated and based on the plan's actuarial assumptions including reasonable withdrawal and mortality rates. The interest rate used to determine current liability must be within a specified permissible range and may or may not equal the actuarial assumed rate of interest for purposes of determining contribution amounts.

ERISA is the Employee Retirement Income Security Act of 1974, as amended to date--the primary federal act governing pension and welfare plans.

Fiscal Year is the year on which the plan sponsor maintains its financial records.
Funded means provided by plan assets. A liability is "fully funded" when assets exceed or equal the liability.

Funding Deficiency* is an excess of cumulative charges over credits in the plan's Funding Standard Account. The deficiency must be eliminated, under penalty of an excise tax, unless the Internal Revenue Service grants a funding waiver under special procedures.

Funding Standard Account* is the account a plan is required to maintain in compliance with the minimum funding standards set by ERISA.

Future Service is service with the employer after the valuation date.
Maximum Deduction* -- See Contribution Amounts.
Member -- See participant.

## Minimum Contribution* -- See Contribution Amounts.

Normal Retirement Age is an age defined in the plan for purposes of establishing when benefits must be paid and the amount of benefit that is to be treated as non-forfeitable.

Normal Retirement Benefit is the benefit payable when it commences at the normal retirement age.

Offsettable Bases* are the charge and credit amortization bases which are established as the result of the establishment of the plan and plan amendments. Bases created as a result of actuarial gains/(losses) or changes in actuarial assumptions are not offsettable bases.

Participant is a person covered by a pension plan in accordance with its terms including active participants, retired participants and beneficiaries, vested terminations and vested transfers.

Plan Year is the year on which the plan maintains its financial records.
Present Value is the value of an amount or series of amounts payable at various times, determined as of a given date by the application based on a particular set of actuarial assumptions. It is a single sum which reflects the time value of money (through discounts for investment yield) and the probabilities of payment (taking into account death, disability, withdrawal and age at retirement).

Projected Benefit Obligation is the actuarial present value of a participant's projected benefit at his or her expected retirement date, prorated for service credited on the valuation date over service expected to be credited at the expected retirement date. For retired participants and terminated vested participants entitled to deferred benefits, the projected benefit obligation is the actuarial present value of the benefit to which the participant is entitled on the valuation date.

Rate of Return is the actual or expected investment income (including interest, dividends, realized gains/(losses) and unrealized appreciation/(depreciation)) as a percentage of a plan's average assets. The rate can be measured on various bases--for example, an actuarial rate based on the actuarial value of assets, a market rate based on the market value of assets, etc.

Unfunded means not provided by the value of assets.
Unfunded Actuarial Accrued Liability is the excess of the actuarial accrued liability over the actuarial value of assets.

Unfunded Old Liabilitv* is the unfunded current liability of the plan as of the beginning of the first plan year beginning after 1987, determined without regard to any plan amendment adopted after October 16, 1987 that increases plan liabilities.

Unfunded Old Liability Amount* is the amount necessary to amortize the unfunded old liability under the plan in equal annual installments over a period of 18 plan years beginning with the first plan year beginning after 1988.

## Valuation -- See Actuarial Valuation.

Valuation Date is the date as of which the actuarial status of the plan is determined.
Vested Benefit is a benefit that is not forfeited if the participant has a permanent break in service.
*--These terms are used primarily for private plans covered by ERISA.

