Kentucky Employees Retirement System County Employees Retirement System State Police Retirement System

Actuarial Valuation and Review as of June 30, 2005

## Kentucky Employees Retirement System

Actuarial Valuation and Review
as of June 30, 2005

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## $\stackrel{y}{*}$ SEGAL

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October 13, 2005

## Board of Trustees

Kentucky Employees Retirement System
Perimeter Park West
1260 Louisville Road
Frankfort, Kentucky 40601-6124

## Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2005. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the fiscal year beginning July 1, 2006 and analyzes the preceding year's experience.

The census information on which our calculations were based was prepared by the System and the financial information was provided by the Auditor. That assistance is gratefully acknowledged.

This report is for the purpose of determining statutory funding requirements for the Retirement and Insurance plans. Statutory funding requirements may not take all actuarial liabilities of the plans into account. Specifically, in determining employer funding requirements, state statute limits recognition of retiree and beneficiary Cost of Living Adjustments (COLAs) to only the adjustments granted as of the valuation date. Accordingly, care should be taken in using this report for other purposes.
This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

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

## THE SEGAL COMPANY

By:


Leon F. (Rocky) Joyner, Jr., FCA, ASA, MAAA
Vice President and Actuary

K. Eric Fredén, FSA, MAAA

Associate Actuary

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## SECTION 1: Valuation Summary for the Kentucky Employees Retirement System

## Purpose

This report has been prepared by The Segal Company to present a valuation of the Kentucky Employees Retirement System as of June 30,2005 . 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 Plan, as administered by the Board;
> The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2005, provided by the Board;
> The assets of the Plan as of June 30, 2005, provided by the Auditor;
> Economic assumptions regarding future salary increases and investment earnings; and
> Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

## Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:
> The Kentucky Employees Retirement System's basic financial goal is to establish contributions which fully fund the System's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.
> The retirement contribution rate is determined using the Entry Age Normal Cost (EANC) Method. Under this method the employer contribution required is the sum of the normal cost, administration expenses and the sum of the 30 -year amortization payments established each valuation due to changes in the Unfunded Actuarial Accrued Liability.
> The medical insurance contribution rate is determined in a similar method except that the actual contribution rate is determined by increasing the prior year's rate by an amount necessary to raise the insurance rate to the full EANC amount by the year 2016 .
> The rates calculated in this report may be adopted by the Board for July 1, 2006 through June 30, 2007.

## SECTION 1: Valuation Summary for the Kentucky Employees Retirement System

> The following summarizes the required contributions for the year beginning July 1, 2006 and compares them to the prior valuation amounts.

| Non-Hazardous |  |  |
| :---: | :---: | :---: |
| Plan | July 1, 2006 Rate | July 1, 2005 Rate |
| Retirement | 10.68\% | 7.85\% |
| Insurance | $\underline{6.45}$ | 5.77 |
| Total | 17.13\% | 13.62\% |


| Hazardous |  |  |  |
| :--- | :---: | :---: | :---: |
| $\underline{\text { Plan }}$ | July 1, 2006 Rate |  | July 1, 2005 Rate |
| Retirement | $9.28 \%$ |  | $8.52 \%$ |
| Insurance | $\underline{14.04}$ | $\underline{13.07}$ |  |
| Total | $23.32 \%$ |  | $21.59 \%$ |

> The increase in the total rate is due to:

| Non-Hazardous |  |
| :--- | :---: |
| Retirement plan investment loss | $1.63 \%$ |
| Retiree COLA | 0.34 |
| Insurance Phase-in* | 0.68 |
| Change in administrative expense assumption | 0.04 |
| Changes in plan provisions | -0.06 |
| Other experience | 0.88 |
| Total change | $3.51 \%$ |
| Hazardous |  |
| Retirement plan investment loss | $0.87 \%$ |
| Retiree COLA | 0.18 |
| Insurance Phase-in* | 0.97 |
| Change in administrative expense assumption | 0.08 |
| Changes in plan provisions | -0.23 |
| Other experience | -0.14 |
| Total change | $1.73 \%$ |
| * Includes a portion of all insurance plan gains and losses for the year. |  |

## SECTION 1: Valuation Summary for the Kentucky Employees Retirement System

> Certain plan provisions have changed since the last valuation of the plans. For members whose participation began on or after August 1, 2004, the disability benefit is equal to the benefit calculated as a normal retirement benefit based on service to date of disability retirement, or $20 \%$ of the Final Rate of Pay, if larger, for non-hazardous members. For hazardous members, the minimum disability benefit is $25 \%$ of the Final Rate of Pay. Disability benefits on this basis may be available even after the normal retirement age. For members whose participation began after July 1, 2003, the Retirement System pays $\$ 10$ per month per year of service for non-hazardous members, $\$ 15$ per month per year of service for hazardous duty members and $\$ 10$ per month per year of service for surviving spouses of hazardous duty members. "Line of duty" insurance benefits will be calculated as if the member had at least 20 years of hazardous service. These dollar amounts will be adjusted periodically for general inflation. See Exhibit VI for a summary of all plan provisions. These changes had an immaterial impact on the contribution rate for the Retirement plan, and reduced the contribution rate for the insurance plan by $0.06 \%$ of non-hazardous member payroll and by $0.23 \%$ of hazardous member payroll .
> As indicated in Section 2, Subsection B of this report, the total unrecognized investment losses as of June 30, 2005 are:
Non-Hazardous

| $\underline{\text { Plan }}$ | Unrecognized investment <br> (gains)/losses as of 6/30/2005 | Actuarial value as a <br> percentage of market value |
| :---: | :---: | :---: |
| Retirement | $\$ 216,055,049$ | $104.0 \%$ |
| Insurance | $-3,833,272$ | 99.4 |

## Hazardous

| $\underline{\text { Plan }}$ | Unrecognized investment <br> (gains)/losses as of 6/30/2005 | Actuarial value as a <br> percentage of market value |
| :--- | :---: | :---: |
| Retirement | $\$ 6,979,765$ |  |
| Insurance | $-923,582$ |  |

The investment losses for the Retirement plans will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent they are not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of $8.25 \%$ per year (net of expenses) on a market value basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed $8.25 \%$ rate and all other actuarial assumption are met, the contribution requirements would still increase in each of the next few years.

## SECTION 1: Valuation Summary for the Kentucky Employees Retirement System

> The recommended contributions for the KERS Non-Hazardous Retirement Plan for the years ended June 30, 2003, June 30, 2004 and June 30, 2005 were $\$ 45,578,833, \$ 84,758,932$ and $\$ 129,125,800$, respectively. Actual contributions were $\$ 7,597,450, \$ 21,696,543$ and $\$ 50,332,750$. If the actual contributions had been equal to the recommended amounts, the recommended contribution for the upcoming year would have been reduced by approximately $\$ 9,597,147$, or $0.58 \%$ of payroll.
> The funded ratio for the non-hazardous Retirement Plan on a statutory basis is $73.61 \%$. This ratio is down from $85.12 \%$ last year primarily due to the further recognition of deferred investment losses this year. This ratio is based on the actuarial liabilities and asset values computed for the purpose of meeting funding requirements on the basis required by state law. This basis does not take all actuarial liabilities and investment performance to date into account. It also does not consider the contractual nature of the retiree medical benefits provided by KERS. If the Retirement and Insurance results were combined, if the market value instead of actuarial value of assets were used, and if a $3 \%$ annual cost-of-living adjustment for retirement benefits were assumed to be in effect for all future years, then the funding ratio for the combined nonhazardous Retirement and Insurance plans would be $47.86 \%$. The corresponding funded ratio for the hazardous plans would be $61.17 \%$.

SECTION 1: Valuation Summary for the Kentucky Employees Retirement System

## Summary of Key Valuation Results

|  | Kentucky Non-Hazardous |  | Kentucky Hazardous |  | Kentucky Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | June 30, 2005 | June 30, 2004 | June 30, 2005 | June 30, 2004 | June 30, 2005 | June 30, 2004 |
| Contributions for next fiscal year: |  |  |  |  |  |  |
| Retirement | 10.68\% | 7.85\% | 9.28\% | 8.52\% | N/A | N/A |
| Insurance | 6.45 | 5.77 | $\underline{14.04}$ | $\underline{13.07}$ | N/A | N/A |
| Total | 17.13\% | 13.62\% | 23.32\% | 21.59\% | N/A | N/A |
| Funded status as of valuation date: |  |  |  |  |  |  |
| Retirement |  |  |  |  |  |  |
| Actuarial accrued liability | \$7,579,074,839 | \$7,049,613,171 | \$438,994,257 | \$403,578,036 | \$8,018,069,096 | \$7,453,191,207 |
| Actuarial value of assets | 5,578,685,746 | 6,000,513,743 | 405,288,662 | 397,212,763 | 5,983,974,408 | 6,397,726,506 |
| Unfunded liability on actuarial value of assets | 2,000,389,093 | 1,049,099,428 | 33,705,595 | 6,365,273 | 2,034,094,688 | 1,055,464,701 |
| Funded ratio on actuarial value of assets | 73.61\% | 85.12\% | 92.32\% | 98.42\% | 74.63\% | 85.84\% |
| Market value of assets | \$5,362,630,697 | \$5,258,994,145 | \$398,308,897 | \$366,569,507 | 5,760,939,594 | 5,625,563,652 |
| Unfunded liability on market value of assets | 2,216,444,142 | 1,790,619,026 | 40,685,360 | 37,008,529 | 2,257,129,502 | 1,827,627,555 |
| Funded ratio on market value of assets | 70.76\% | 74.60\% | 90.73\% | 90.83\% | 71.85\% | 75.48\% |
| Insurance |  |  |  |  |  |  |
| Actuarial accrued liability | \$2,680,559,188 | \$2,335,905,365 | \$386,844,695 | \$323,503,563 | \$3,067,403,883 | \$2,659,408,928 |
| Actuarial value of assets | 607,068,351 | 600,586,961 | 187,947,644 | 169,158,879 | 795,015,995 | 769,745,840 |
| Unfunded liability on actuarial value of assets | 2,073,490,837 | 1,735,318,404 | 198,897,051 | 154,344,684 | 2,272,387,888 | 1,889,663,088 |
| Funded ratio on actuarial value of assets | 22.65\% | 25.71\% | 48.58\% | 52.29\% | 25.92\% | 28.94\% |
| Market value of assets | \$610,901,623 | \$587,680,647 | \$188,871,226 | \$162,127,373 | 799,772,849 | 749,808,020 |
| Unfunded liability on market value of assets | 2,069,657,565 | 1,748,224,718 | 197,973,469 | 161,376,190 | 2,267,631,034 | 1,909,600,908 |
| Funded ratio on market value of assets | 22.79\% | 25.16\% | 48.82\% | 50.12\% | 26.07\% | 28.19\% |
| Demographic data as of valuation date: |  |  |  |  |  |  |
| Number of retired participants and beneficiaries | 30,770 | 28,892 | 1,752 | 1,549 | 32,522 | 30,441 |
| Number of vested former members | 5,240 | 4,825 | 307 | 260 | 5,547 | 5,085 |
| Number of former members due a refund | 23,105 | 20,950 | 1,997 | 1,772 | 25,102 | 22,722 |
| Number of active members | 47,118 | 47,599 | 4,274 | 4,014 | 51,392 | 51,613 |
| Total salary | \$1,655,907,288 | \$1,645,412,496 | \$131,687,088 | \$126,664,812 | \$1,787,594,376 | \$1,772,077,308 |
| Average salary | 35,144 | 34,568 | 30,811 | 31,556 | 34,784 | 34,334 |

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## A. MEMBER DATA

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

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

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, $\mathrm{B}, \mathrm{C}$, and D .

The ratio of non-actives to actives has slowly but steadily climbed in both groups for the past decade. As the number of annuitants per active employee rises, cash flow is impacted. The system either becomes more dependent on investment income to cover benefit payments, or contributions must rise to meet these obligations. (For the non-hazardous retirement plan, net contributions have been less than benefit payments in each of the last nine years. In addition, for the hazardous retirement plan benefit payments have exceeded net contributions this year for the first time in ten years.

## Active Members

Plan costs are affected by the age, years of service and salaries of active members. In this year's non-hazardous valuation, there were 47,118 active members with an average age of 42.9 , average years of service of 9.8 years and average salaries of $\$ 35,144$. The 47,599 active members in the prior valuation had an average age of 42.9, average service of 10.0 years and average salaries of \$34,568.

In the hazardous plan, there were 4,274 active members with an average age of 41.9, average years of service of 7.1 years and average salaries of $\$ 30,811$. The 4,014 active members in the prior valuation had an average age of 42.7, average service of 7.6 years and average salaries of \$31,556.

## Inactive Members

In this year's valuation, there were 5,240 non-hazardous members with a vested right to a deferred or immediate vested benefit. In addition, there were 23,105 members entitled to a return of their employee contributions.
For the hazardous plan, there were 307 members with a vested right to a deferred or immediate vested benefit. In addition, there were 1,997 members entitled to a return of their employee contributions.

## Retired Participants and Beneficiaries

As of June 30, 2005, 26,868 non-hazardous retired participants and 3,902 beneficiaries were receiving total monthly benefits of $\$ 42,445,653$. For comparison, in the previous valuation, there were 25,114 retired participants and 3,778 beneficiaries receiving monthly benefits of \$37,450,868.

For the hazardous plan, there were 1,572 retired participants and 180 beneficiaries were receiving total monthly benefits of $\$ 1,636,729$. For comparison, in the previous valuation, there were 1,382 retired participants and 167 beneficiaries receiving monthly benefits of \$1,341,584.

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A historical perspective of how the member population has changed over the past nine valuations can be seen in these charts.

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

CHART 1A - Non-Hazardous
Member Population: 1997-2005

| Year Ended <br> June 30 | Active <br> Members | Vested Terminated <br> Members* | Retired Participants <br> and Beneficiaries | Ratio of Non-Actives <br> to Actives |
| :---: | :---: | :---: | :---: | :---: |
| 1997 | 46,073 | 2,550 | 20,540 | 0.50 |
| 1998 | 46,342 | 2,735 | 20,955 | 0.51 |
| 1999 | 45,824 | 2,978 | 21,941 | 0.54 |
| 2000 | 46,897 | 3,073 | 23,760 | 0.57 |
| 2001 | 47,780 | 3,312 | 25,118 | 0.60 |
| 2002 | 48,555 | 3,415 | 26,703 | 0.62 |
| 2003 | 49,158 | 3,456 | 27,233 | 0.62 |
| 2004 | 47,599 | 4,825 | 28,892 | 0.71 |
| 2005 | 47,118 | 5,240 | 30,770 | 0.76 |

CHART 1B - Hazardous
Member Population: 1997-2005

| Year Ended <br> June 30 | Active <br> Members | Vested Terminated <br> Members* | Retired Participants <br> and Beneficiaries | Ratio of Non-Actives <br> to Actives |
| :---: | :---: | :---: | :---: | :---: |
| 1997 | 3,532 | 77 | 585 | 0.19 |
| 1998 | 3,582 | 96 | 671 | 0.21 |
| 1999 | 3,889 | 96 | 780 | 0.23 |
| 2000 | 4,007 | 113 | 924 | 0.26 |
| 2001 | 4,228 | 123 | 1,053 | 0.28 |
| 2002 | 4,211 | 127 | 1,208 | 0.32 |
| 2003 | 4,189 | 145 | 1,357 | 0.36 |
| 2004 | 4,014 | 260 | 1,549 | 0.45 |
| 2005 | 4,274 | 307 | 1,752 | 0.48 |

*Excludes terminated members due a refund of employee contributions.

## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

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

CHART 2A - Non-Hazardous
Distribution of Active Members by Age as of June 30, 2005


CHART 3A - Non-Hazardous
Distribution of Active Members by Years of Service as of June 30, 2005


These graphs show a distribution of the current non-hazardous retired participants based on their monthly amount and age, by type of pension.

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

CHART 4A - Non-Hazardous
Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2005


CHART 5A - Non-Hazardous
Distribution of Retired Participants by Type and by Age as of June 30, 2005


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

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

CHART 2B - Hazardous
Distribution of Active Members by Age as of June 30, 2005


CHART 3B - Hazardous
Distribution of Active Members by Years of Service as of June 30, 2005


## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

These graphs show a distribution of the current hazardous retired participants based on their monthly amount and age, by type of pension.

CHART 4B - Hazardous
Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2005

| 400300 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 200 |  |  |  |  |  |  |  |  |  |  |  |
| 0 | Under | \$300- | \$600- | \$900- | \$1,200 - | \$1,500 - | \$1,800 - | \$2,100 - | \$2,400 - | $\$ 2,700 \text { - }$ |  |
|  | \$300 | \$599 | \$899 | \$1,199 | $\$ 1,499$ | $\$ 1,799$ | $\$ 2,099$ | $\$ 2,399$ | \$2,699 | \$2,999 | over |
| $\square$ Disability | 30 | 37 | 31 | 14 | 3 | 2 | 0 | 0 | 0 | 0 | 0 |
| Early | 72 | 80 | 82 | 101 | 73 | 77 | 55 | 41 | 19 | 17 | 31 |
| $\square$ Normal | 218 | 199 | 138 | 101 | 51 | 27 | 28 | 12 | 10 | 8 | 15 |

CHART 5B - Hazardous
Distribution of Retired Participants by Type and by Age as of June 30, 2005


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## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

## B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative and investment expenses) and net investment earnings (less common stock commissions and securities lending expense) 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 E and F.

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

The 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

Both the actuarial value and market value of assets are representations of the 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 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.

These charts depict the components of changes in the actuarial value of assets over the last eight years for the two nonhazardous plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

■ Adjustment toward market value $\square$ Benefits paid
Net interest and dividends $\square$ Net contributions

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

## CHART 6A - Non-Hazardous Retirement <br> Comparison of Increases and Decreases in the Actuarial Value of Assets <br> for Years Ended June 30, 1998 - 2005



Non-Hazardous Retirement
Development of the Fund Through June 30, 2005

| Year Ended June 30 | Employer Contributions* | Member Contributions | Net Interest and Dividends** | Adjustment Toward Market Value | Administrative and Investment Expenses | Benefit Payments | Actuarial Value of Assets at End of Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | \$112,188,000 | \$67,595,000 | \$152,888,000 | \$581,509,620 | \$5,037,000 | \$237,066,000 | \$4,356,072,625 |
| 1999 | 107,515,000 | 141,399,000 | 156,952,000 | 777,208,772 | 5,330,000 | 269,477,000 | 5,264,340,397 |
| 2000 | 115,055,000 | 107,834,000 | 182,697,000 | 1,480,107,063 | 5,764,000 | 337,594,000 | 6,806,675,460 |
| 2001 | 21,911,066 | 104,125,142 | 190,953,000 | 23,285,910 | 5,974,401 | 296,233,490 | 6,844,742,687 |
| 2002 | 97,946 | 109,485,664 | 176,702,012 | -119,470,690 | 7,710,547 | 349,762,876 | 6,654,084,196 |
| 2003 | 7,597,450 | 137,124,487 | 149,729,179 | -176,923,267 | 8,138,967 | 412,154,246 | 6,351,318,832 |
| 2004 | 21,696,543 | 129,077,138 | 147,083,414 | -172,421,991 | 8,871,985 | 467,368,208 | 6,000,513,743 |
| 2005 | 50,332,750 | 127,801,019 | 149,248,896 | -207,700,749 | 10,290,307 | 531,219,607 | 5,578,685,746 |

[^0]SECTION 2: Valuation Results for the Kentucky Employees Retirement System

■ Adjustment toward market value ■ Benefits paid

■ Net interest and dividends
■ Net contributions

CHART 6B - Non-Hazardous Insurance
Comparison of Increases and Decreases in the Actuarial Value of Assets
for Years Ended June 30, 1998 - 2005


Non-Hazardous Insurance
Development of the Fund Through June 30, 2005

| Year Ended June 30 | Employer Contributions* | Insurance Appropriation Contributions | Net Interest and Dividends ** | Adjustment Toward Market Value | Administrative and Investment Expenses | Benefit Payments | Actuarial Value of Assets at End of Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | \$39,504,000 | \$0 | \$6,681,000 | \$18,867,211 | \$32,000 | \$23,395,000 | \$210,105,184 |
| 1999 | 56,770,000 | 0 | 7,812,000 | 33,590,703 | 92,000 | 24,481,000 | 283,704,887 |
| 2000 | 76,926,000 | 0 | 9,937,000 | 59,527,365 | 171,000 | 30,364,000 | 399,560,252 |
| 2001 | 66,874,871 | 0 | 3,134,000 | 17,691,919 | 344,092 | 37,286,345 | 449,630,605 |
| 2002 | 93,912,017 | 0 | 69,396,040 | -47,483,602 | 508,748 | 43,695,857 | 521,250,455 |
| 2003 | 65,335,219 | 0 | 8,087,818 | 11,170,428 | 371,356 | 51,587,482 | 553,885,082 |
| 2004 | 78,016,737 | 0 | 9,553,427 | 19,908,331 | 787,370 | 59,989,246 | 600,586,961 |
| 2005 | 49,909,228 | 1,522,726 | 11,773,957 | 19,745,405 | 898,850 | 75,571,076 | 607,068,351 |

[^1]These charts depict the components of changes in the actuarial value of assets over the last eight years for the two hazardous plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

Adjustment toward market value
$\square$ Benefits paid
$\square$ Net interest and dividends
Net contributions

SECTION 2: Valuation Results for the Kentucky Employees Retirement System


Hazardous Retirement
Development of the Fund Through June 30, 2005

| Year Ended June 30 | Employer Contributions* | Member Contributions | Net Interest and Dividends ** | Adjustment Toward Market Value | Administrative and Investment Expenses | Benefit Payments | Actuarial Value of Assets at End of Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | \$16,033,000 | \$6,520,000 | \$7,448,000 | \$27,633,380 | \$303,000 | \$11,834,000 | \$212,214,618 |
| 1999 | 19,444,000 | 8,323,000 | 8,129,000 | 28,803,701 | 349,000 | 16,726,000 | 259,839,319 |
| 2000 | 21,633,000 | 9,375,000 | 10,191,000 | 55,002,145 | 415,000 | 19,412,000 | 336,213,464 |
| 2001 | 10,377,708 | 10,545,410 | 11,390,000 | 2,780,043 | 411,956 | 9,217,194 | 361,677,475 |
| 2002 | 7,764,651 | 10,740,148 | 10,843,431 | -2,881,301 | 482,320 | 11,277,782 | 376,384,302 |
| 2003 | 7,322,607 | 11,553,286 | 11,243,712 | -5,435,260 | 610,152 | 14,532,773 | 385,925,722 |
| 2004 | 9,769,580 | 11,547,337 | 10,131,896 | -1,250,879 | 638,243 | 18,272,650 | 397,212,763 |
| 2005 | 9,758,547 | 11,624,830 | 10,835,835 | -1,042,149 | 846,095 | 22,255,069 | 405,288,662 |

[^2]SECTION 2: Valuation Results for the Kentucky Employees Retirement System
$\square$ Adjustment toward market value $\square$ Benefits paid
$\square$ Net interest and dividends $\square$ Net contributions

CHART 6D - Hazardous Insurance
Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1998-2005


Hazardous Insurance
Development of the Fund Through June 30, 2005

| Year Ended June 30 | Employer Contributions* | Insurance <br> Appropriation Contributions | Net Interest and Dividends ** | Adjustment Toward Market Value | Administrative and Investment Expenses | Benefit Payments | Actuarial Value of Assets at End of Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | \$6,632,000 | \$0 | \$1,770,000 | \$4,654,412 | \$8,000 | \$1,126,000 | \$54,606,786 |
| 1999 | 10,774,000 | 0 | 2,065,000 | 8,430,863 | 13,000 | 1,284,000 | 74,579,649 |
| 2000 | 12,047,000 | 0 | 2,571,000 | 14,603,588 | 19,000 | 1,570,000 | 102,212,237 |
| 2001 | 13,226,298 | 0 | 3,134,000 | 2,815,835 | 33,246 | 1,982,382 | 119,372,742 |
| 2002 | 15,887,398 | 0 | 2,060,266 | 1,076,714 | 73,288 | 2,449,250 | 135,874,582 |
| 2003 | 15,883,263 | 0 | 2,168,713 | 538,694 | 69,044 | 2,936,708 | 151,459,500 |
| 2004 | 14,959,617 | 0 | 2,831,115 | 3,562,500 | 116,907 | 3,536,946 | 169,158,879 |
| 2005 | 15,395,977 | 257,615 | 3,654,656 | 4,517,461 | 183,982 | 4,852,962 | 187,947,644 |

[^3]These charts show the determination of the actuarial value of assets as of the valuation date.

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

CHART 7A - Non-Hazardous Retirement
Determination of Actuarial Value of Assets for Year Ended June 30, 2005

| 1. Market value of assets |  |  | $\begin{array}{r} \text { \$5,362,630,697 } \\ \text { Unrecognized } \end{array}$ |
| :---: | :---: | :---: | :---: |
|  | Original |  |  |
| 2. Unrecognized return* | Amount | Amortization | Return |
| (a) Year ended June 30, 2005 | -\$13,040,421 | -\$2,608,084 | -\$10,432,337 |
| (b) Year ended June 30, 2004 | 144,459,162 | 28,891,832 | 86,675,497 |
| (c) Year ended June 30, 2003 | -337,771,120 | -67,554,224 | -135,108,448 |
| (d) Year ended June 30, 2002 | -785,948,805 | -157,189,761 | -157,189,761 |
| (e) Year ended June 30, 2001 | -1,700,223,672 | -340,044,734 | 0 |
| (f) Total unrecognized return |  |  | -216,055,049 |
| 3. Final actuarial value of assets: $(1)-(2 f)$ |  |  | \$5,578,685,746 |
| 4. Actuarial value as a percentage of market value: $(3) \div(1)$ |  |  | 104.0\% |

CHART 7B - Non-Hazardous Insurance
Determination of Actuarial Value of Assets for Year Ended June 30, 2005

| 1. Market value of assets |  | Original | $\$ 610,901,623$ <br> Unrecognized |
| :--- | ---: | ---: | ---: |
| 2. Unrecognized return* | $\underline{\text { Amount }}$ | $\underline{\text { Amortization }}$ | $\underline{\text { Return }}$ |
| (a) Year ended June 30, 2005 | $-\$ 256,660$ | $-\$ 51,332$ | $-\$ 205,328$ |
| (b) Year ended June 30, 2004 | $36,758,879$ | $-7,064,776$ | $22,055,327$ |
| (c) Year ended June 30, 2003 | $-35,320,860$ | $-3,888,383$ | $-14,128,344$ |
| (d) Year ended June 30, 2002 | $-19,441,916$ | $-3,888,383$ |  |
| (e) Year ended June 30, 2001 | $-66,720,677$ | $\underline{0}$ |  |
| (f) Total unrecognized return |  | $\underline{3,833,272}$ |  |
| 3. Final actuarial value of assets: (1) - (2f) |  | $\underline{\$ 607,068,351}$ |  |
| 4. Actuarial value as a percentage of market value: (3) $\div(1)$ |  | $99.4 \%$ |  |

[^4]These charts show the determination of the actuarial value of the assets as of the valuation date.

## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

## CHART 7C - Hazardous Retirement

 Determination of Actuarial Value of Assets for Year Ended June 30, 2005| 1. Market value of assets |  |  | $\$ 398,308,897$ <br> Unrecognized |
| :--- | ---: | ---: | ---: |
| 2. Unrecognized return* | $\underline{\text { Original }}$ | $\underline{\text { Amount }}$ | $\underline{\text { Amortization }}$ |

CHART 7D - Hazardous Insurance
Determination of Actuarial Value of Assets for Year Ended June 30, 2005

| 1. Market value of assets | Original |  | \$188,871,226 |
| :---: | :---: | :---: | :---: |
|  |  |  | Unrecognized |
| 2. Unrecognized return* | Amount | Amortization | Return |
| (a) Year ended June 30, 2005 | \$1,733,661 | \$346,732 | \$1,386,929 |
| (b) Year ended June 30, 2004 | 12,326,424 | 2,465,285 | 7,395,854 |
| (c) Year ended June 30, 2003 | -8,854,359 | -1,770,872 | -3,541,744 |
| (d) Year ended June 30, 2002 | -21,587,295 | -4,317,459 | -4,317,457 |
| (e) Year ended June 30, 2001 | -14,752,573 | -2,950,515 | 0 |
| (f) Total unrecognized return |  |  | 923,582 |
| 3. Final actuarial value of assets: (1)-(2f) |  |  | \$187,947,644 |
| 4. Actuarial value as a percentage of market value: $(3) \div(1)$ |  |  | 99.5\% |

* Total return on market value basis minus expected return on actuarial basis using the net investment return assumption. See Chart 8 for the calculation of unrecognized return for the current year.

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## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

## CHART 8

Calculation of Unrecognized Return for the Year Ended June 30, 2005

|  |  | Non-Hazardous <br> Retirement | Non-Hazardous <br> Insurance | Hazardous <br> Retirement | Hazardous <br> Insurance |
| :--- | :--- | ---: | ---: | ---: | ---: |
| 1. | Employer and member contributions | $\$ 178,133,769$ | $\$ 51,431,954$ | $\$ 21,383,377$ | $\$ 15,653,592$ |
| 2. | Benefit payments including refunds, or healthcare | $531,219,607$ | $75,571,076$ | $22,255,069$ | $4,852,962$ |
| premiums | $10,290,307$ | 898,850 | 846,095 | 183,982 |  |
| 3. | Administrative and investment expenses | $-363,376,145$ | $-25,037,972$ | $-1,717,787$ | $10,616,648$ |
| 4. | Net cash flow: (1) - (2) - (3) | $5,258,994,145$ | $587,680,647$ | $366,569,507$ | $162,127,373$ |
| 5. | Market value of assets as of June 30, 2004 | $5,362,630,697$ | $610,901,623$ | $398,308,897$ | $188,871,226$ |
| 6. | Market value of assets as of June 30, 2005 | $6,000,513,743$ | $600,586,961$ | $397,212,763$ | $169,158,879$ |
| 7. | Actuarial value of assets as of June 30, 2004 | $5,818,825,671$ | $588,067,975$ | $396,353,870$ | $174,467,203$ |
| 8. | Average actuarial value of assets: $(7)+[0.5 \times(4)]$ | $480,053,118$ | $48,515,608$ | $32,699,194$ | $14,393,544$ |
| 9. | Expected return on an actuarial basis: $8.25 \%$ of (8) | $-13,040,421$ | $-256,660$ |  | 757,983 |

## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

These charts show the change in the actuarial value of assets versus the market value over the past eight years for the nonhazardous plans.

```
- Actuarial Value
--Market Value
```

$\rightarrow$ Actuarial Value

- -Market Value

CHART 9A - Non-Hazardous Retirement
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998-2005


CHART 9B - Non-Hazardous Insurance
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998-2005


These charts show the change in the actuarial value of assets versus the market value over the past eight years for the hazardous plans.
$\rightarrow$ Actuarial Value
——Actuarial Value
--Market Value

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

CHART 9C - Hazardous Retirement
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998-2005


CHART 9D - Hazardous Insurance
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998 - 2005


SECTION 2: Valuation Results for the Kentucky Employees Retirement System

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

## 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.

Chart 10 presents a summary of experience for the year. All four plans experienced losses this year. A discussion of the major components of the actuarial experience is on the following pages.

## CHART 10

Actuarial Experience for Year Ended June 30, 2005

|  |  | Non-Hazardous <br> Retirement | Non-Hazardous <br> Insurance | Hazardous <br> Retirement | Hazardous <br> Insurance |
| :--- | :--- | ---: | ---: | ---: | ---: |
| 1. | Net gain/(loss) from investments* | $-\$ 538,504,971$ | $-\$ 16,996,246$ | $-\$ 22,905,508$ | $-\$ 6,221,427$ |
| 2. | Net gain/(loss) from administrative expenses | $-666,823$ | $-501,521$ | $-120,180$ | $-59,148$ |
| 3. | Net gain/(loss) from other experience** | $-334,431,254$ | $-\underline{37,200,120}$ | $-\underline{3,755,983}$ | $\underline{-2,100,650}$ |
| 4. | Net experience gain/(loss): $(1)+(2)+(3)$ | $-\$ 873,603,048$ | $-\$ 54,697,887$ | $-\$ 26,781,671$ | $-\$ 8,381,225$ |

[^5]** Details in Chart 14

## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

This chart shows the losses due to investment experience.

## 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 System's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is $8.25 \%$. Chart 11 shows the net investment experience for each plan for the year

Since the actual return for the year was less than the assumed return, each plan experienced an actuarial loss during the year ended June 30, 2005 with regard to its investments.

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. Chart 12, which follows, shows the rate of return on an actuarial basis compared to the market value investment return for the last eight years.

## CHART 11

Actuarial Value Investment Experience for Year Ended June 30, 2005

|  |  | Non-Hazardous <br> Retirement | Non-Hazardous <br> Insurance | Hazardous <br> Retirement |
| :--- | ---: | ---: | ---: | ---: |
| 1. | Actual return <br> 2. | Hazardous <br> Insurance |  |  |
| 3. | Actual rate of return: $(1) \div(2)$ | $-\$ 58,451,853$ | $\$ 31,519,362$ | $\$ 9,793,686$ |
| 4. | Assumed rate of return | $5,818,825,671$ | $588,067,975$ | $396,353,870$ |
| 5. | Expected return: $(2) \mathrm{x}(4)$ | $-1.00 \%$ | $5.36 \%$ | $2.47 \%$ |
| 6. | Actuarial gain/(loss): $(1)-(5)$ | $8.25 \%$ | $8.25 \%$ | $8.25 \%$ |

## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

CHART 12A - Non-Hazardous Retirement
Investment Return - Actuarial Value vs. Market Value: 1998-2005

|  |  | Net Interest and <br> Dividend Income | Recognition of Capital <br> Appreciation | Actuarial Value <br> Investment Return | Market Value <br> Investment Return |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| June 30 | Amount | Percent | Amount | Percent | Amount | Percent | Amount | Percent |
| 1998 | $\$ 152,888,000$ | $4.19 \%$ | $\$ 581,509,620$ | $15.92 \%$ | $\$ 734,397,620$ | $20.10 \%$ | $\$ 910,518,691$ | $21.82 \%$ |
| 1999 | $156,952,000$ | 3.61 | $777,208,772$ | 17.90 | $934,160,772$ | 21.51 | $814,726,366$ | 16.17 |
| 2000 | $182,697,000$ | 3.51 | $1,480,107,063$ | 28.44 | $1,662,804,063$ | 31.95 | $296,093,000$ | 5.12 |
| 2001 | $190,953,000$ | 2.84 | $23,285,910$ | 0.35 | $214,238,910$ | 3.19 | $-356,720,409$ | -6.02 |
| 2002 | $176,702,012$ | 2.63 | $-119,470,690$ | -1.78 | $57,231,322$ | 0.85 | $-234,794,209$ | -4.38 |
| 2003 | $149,729,179$ | 2.30 | $-176,923,267$ | -2.72 | $-27,194,088$ | -0.42 | $199,823,513$ | 4.11 |
| 2004 | $147,083,414$ | 2.38 | $-172,421,991$ | -2.79 | $-25,338,577$ | -0.41 | $655,017,472$ | 13.74 |
| 2005 | $\underline{149,248,896}$ | 2.56 | $\underline{-207,700,749}$ | -3.56 | $\underline{-58,451,853}$ | -1.00 | $\underline{467,012,697}$ | 9.20 |
| Total | $\$ 1,306,253,501$ |  | $\$ 2,185,594,669$ |  | $\$ 3,491,848,169$ |  | $\$ 2,751,677,121$ |  |
|  |  |  |  |  | Average return | $7.73 \%$ |  | $6.71 \%$ |

CHART 12B - Non-Hazardous Insurance
Investment Return - Actuarial Value vs. Market Value: 1998-2005

| Year Ended June 30 | Net Interest and Dividend Income |  | Recognition of Capital Appreciation |  | Actuarial Value Investment Return |  | Market Value Investment Return |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Percent | Amount | Percent | Amount | Percent | Amount | Percent |
| 1998 | \$6,681,000 | 3.78\% | \$18,867,211 | 10.69\% | \$25,548,211 | 14.47\% | \$41,655,634 | 20.75\% |
| 1999 | 7,812,000 | 3.45 | 33,590,703 | 14.85 | 41,402,703 | 18.30 | 32,809,846 | 12.31 |
| 2000 | 9,937,000 | 3.24 | 59,527,365 | 19.40 | 69,464,365 | 22.63 | 21,484,500 | 6.35 |
| 2001 | 3,134,000 | 0.76 | 17,691,919 | 4.27 | 20,825,919 | 5.03 | -16,271,591 | -4.09 |
| 2002 | 69,396,040 | 14.63 | -47,483,602 | -10.01 | 21,912,438 | 4.62 | 19,539,589 | 4.64 |
| 2003 | 8,087,818 | 1.53 | 11,170,428 | 2.12 | 19,258,247 | 3.65 | 8,234,078 | 1.74 |
| 2004 | 9,553,427 | 1.70 | 19,908,331 | 3.54 | 29,461,758 | 5.24 | 83,165,553 | 16.77 |
| 2005 | 11,773,957 | 2.00 | 19,745,405 | 3.36 | 31,519,362 | 5.36 | 48,258,948 | 8.39 |
| Total | \$126,375,242 |  | \$133,017,760 |  | \$259,393,002 |  | \$238,876,557 |  |
|  |  |  |  |  | Average return | 7.92\% |  | 7.54\% |
| Each year's yiel | hted by the av | asset valu | at year. |  |  |  |  | 22 |

## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

CHART 12C - Hazardous Retirement
Investment Return - Actuarial Value vs. Market Value: 1998-2005

| Year Ended June 30 | Net Interest and Dividend Income |  | Recognition of Capital Appreciation |  | Actuarial Value Investment Return |  | Market Value Investment Return |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Percent | Amount | Percent | Amount, | Percent | Amount | Percent |
| 1998 | \$7,448,000 | 4.33\% | \$27,633,380 | 16.07\% | \$35,081,380 | 20.41\% | \$37,614,603 | 19.57\% |
| 1999 | 8,129,000 | 3.74 | 28,803,701 | 13.24 | 36,932,701 | 16.98 | 33,133,032 | 13.78 |
| 2000 | 10,191,000 | 3.84 | 55,002,145 | 20.72 | 65,193,145 | 24.56 | 11,840,783 | 4.16 |
| 2001 | 11,390,000 | 3.33 | 2,780,043 | 0.81 | 14,170,043 | 4.14 | -7,670,713 | -2.49 |
| 2002 | 10,843,431 | 2.97 | -2,881,301 | -0.79 | 7,962,130 | 2.18 | -10,682,347 | -3.46 |
| 2003 | 11,243,712 | 2.97 | -5,435,260 | -1.44 | 5,808,452 | 1.54 | 14,991,894 | 4.94 |
| 2004 | 10,131,896 | 2.62 | -1,250,879 | -0.32 | 8,881,017 | 2.29 | 43,638,792 | 13.56 |
| 2005 | 10,835,835 | 2.73 | -1,042,149 | -0.26 | 9,793,686 | 2.47 | 33,457,177 | 9.15 |
| Total | \$80,212,874 |  | \$103,609,680 |  | \$183,822,554 |  | \$156,323,221 |  |
|  |  |  |  |  | Average return | 7.60\% |  | 7.66\% |

CHART 12D - Hazardous Insurance
Investment Return - Actuarial Value vs. Market Value: 1998-2005


## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

The actuarial asset valuation method gradually takes into account fluctuations in the market value rate of return. These charts illustrate how this leveling effect has actually worked over the years 1998-2005 for the non-hazardous plans.

$$
\begin{aligned}
& \longrightarrow \text { Actuarial Value } \\
& \longrightarrow \text { Market Value }
\end{aligned}
$$

$\rightarrow$ Actuarial Value ..... - - Market Value

CHART 13A - Non-Hazardous Retirement
Market and Actuarial Rates of Return for Years Ended June 30, 1998-2005


CHART 13B - Non-Hazardous Insurance
Market and Actuarial Rates of Return for Years Ended June 30, 1997-2005


## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

The actuarial asset valuation method gradually takes into account fluctuations in the market value rate of return. These charts illustrate how this leveling effect has actually worked over the years 1998-2005 for the hazardous plans.

```
- Actuarial Value
```

-- Market Value

CHART 13C - Hazardous Retirement
Market and Actuarial Rates of Return for Years Ended June 30, 1998-2005


CHART 13D - Hazardous Insurance
Market and Actuarial Rates of Return for Years Ended June 30, 1998-2005

$\stackrel{H}{4}$ SEGAL

## Administrative Expenses

Current methodology includes an assumption for the cost of administration for the retirement funds but not for the insurance funds. This assumption is modified with each valuation to estimate expenses for the upcoming fiscal year. The following summarizes the past year's experience and presents the assumptions for the next year.

| Plan | Year End 2005 <br> Assumption | Year End 2005 <br> Actual Experience | Gain/(Loss)* for <br> the Year | Year End 2006 |
| :--- | ---: | :---: | ---: | ---: |
| Non-Hazardous Retirement | $\$ 5,300,000$ | $\$ 5,916,003$ | $-\$ 666,823$ | $\$ 6,000,000$ |
| Non-Hazardous Insurance | 0 | 463,299 | $-501,521$ | 0 |
| Hazardous Retirement | 400,000 | 511,021 | $-120,180$ | 500,000 |
| Hazardous Insurance | 0 | 54,640 | $-59,148$ | 0 |

* Includes interest to year-end.


## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

## 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:
> COLAs granted in the year,
> the extent of turnover among the participants,
> retirement experience (earlier or later than expected),
> mortality (more or fewer deaths than expected),
> the number of disability retirements, and
> salary increases different than assumed.
A brief summary of the demographic gain/(loss)
experience of the Funds for the year ended June 30, 2005 is shown in the chart below.

The chart shows elements of the experience losses for the most recent year.

## CHART 14

Experience Due to Changes in Demographics for Year Ended June 30, 2005

|  | Non-Hazardous <br> Retirement | Non-Hazardous <br> Insurance | Hazardous <br> Retirement | Hazardous <br> Insurance |
| :--- | :--- | :---: | ---: | ---: |
| 1. COLA | $-\$ 113,619,258$ | $\mathrm{~N} / \mathrm{A}$ | $-\$ 4,631,983$ | $\mathrm{~N} / \mathrm{A}$ |
| 2.Other | $-220,811,996$ | $-\$ 37,200,120$ | $\underline{876,000}$ | $-\$ 2,100,650$ |
| 3.Total | $-\$ 334,431,254$ | $-\$ 37,200,120$ | $-\$ 3,755,983$ | $-\$ 2,100,650$ |
| 4. <br> Percentage of actuarial <br> accrued liability | $4.4 \%$ | $1.4 \%$ | $0.9 \%$ | $0.5 \%$ |

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## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

## D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded/(overfunded) actuarial accrued liability. This total amount is then divided by the projected salaries for active members to determine the funding rate.

The recommended contribution is based on a 30 -year amortization of bases established each year as specified in the law governing the Plan.

Exhibit G in Section 3 provides details on these amortization bases.

The contribution rates as of June 30, 2005 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Charts 15 and 16 present the recommended contributions and reconciliations from the prior valuation.

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

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

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

## CHART 15A - Non-Hazardous Retirement

## Recommended Contribution

|  | As of June 30 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2005 |  | 2004 |  |
|  | Amount | \% of Salary | Amount | \% of Salary |
| 1. Total normal cost | \$155,968,793 | 9.42\% | \$156,784,156 | 9.53\% |
| 2. Administrative expenses | 6,000,000 | 0.36\% | 5,300,000 | 0.32\% |
| 3. Expected employee contributions | -82,275,825 | -4.97\% | -81,642,757 | -4.96\% |
| 4. Employer normal cost: $(1)+(2)+(3)$ | \$79,692,968 | 4.81\% | \$80,441,399 | 4.89\% |
| 5. Actuarial accrued liability | 7,579,074,839 |  | 7,049,613,171 |  |
| 6. Actuarial value of assets | 5,578,685,746 |  | 6,000,513,743 |  |
| 7. Unfunded actuarial accrued liability: (5) - (6) | \$2,000,389,093 |  | \$1,049,099,428 |  |
| 8. Payment on unfunded actuarial accrued liability | 97,081,138 | 5.87\% | 48,684,401 | 2.96\% |
| 9. Total recommended contribution: $(4)+(8)$ | \$176,774,106 | $\underline{\underline{10.68 \%}}$ | \$129,125,800 | $\underline{\underline{7.85 \%}}$ |
| 10. Projected salary | \$1,655,907,288 |  | \$1,645,412,496 |  |

## CHART 16A - Non-Hazardous Retirement

Reconciliation of Recommended Contribution from June 30, 2004 to June 30, 2005

| Recommended Contribution as of June 30, 2004 | $\$ 129,125,800$ |
| :--- | ---: |
| Effect of COLA for retirees | $\$ 5,692,174$ |
| Effect of investment loss | $26,978,384$ |
| Effect of change in administrative expense assumption | 700,000 |
| Effect of net other changes | $\underline{14,277,748}$ |
| Total change | $\underline{\$ 47,648,306}$ |
| Recommended Contribution as of June 30, 2005 | $\$ 176,774,106$ |

## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

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

CHART 15B - Non-Hazardous Insurance
Recommended Contribution

|  | As of June 30 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2005 |  | 2004 |  |
|  | Amount | \% of Salary | Amount | \% of Salary |
| 1. Employer normal cost | \$98,328,832 | 5.94\% | \$101,368,760 | 6.16\% |
| 2. Actuarial accrued liability | 2,680,559,188 |  | 2,335,905,365 |  |
| 3. Actuarial value of assets | 607,068,351 |  | $\underline{600,586,961}$ |  |
| 4. Unfunded actuarial accrued liability: (2) - (3) | \$2,073,490,837 |  | \$1,735,318,404 |  |
| 5. Payment on unfunded actuarial accrued liability | 121,440,132 | 7.33\% | 101,129,542 | 6.15\% |
| 6. Full EANC contribution: (1) + (5) | \$219,768,964 | $\underline{\underline{13.27 \%}}$ | \$202,498,302 | 12.31\% |
| 7. Projected salary | \$1,655,907,288 |  | \$1,645,412,496 |  |
| 8. Prior year's funding rate | N/A | 5.77\% | N/A | 5.18\% |
| 9. Years to reach full EANC | N/A | 11 | N/A | 12 |
| 10. Additional amount for current year | N/A | 0.68\% | N/A | 0.59\% |
| 11. Total recommended contribution rate: (8) + (10) | N/A | 6.45\% | N/A | 5.77\% |

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

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

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

CHART 15C - Hazardous Retirement
Recommended Contribution

|  | As of June 30 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2005 |  | 2004 |  |
|  | Amount | \% of Salary | Amount | \% of Salary |
| 1. Total normal cost | \$20,486,585 | 15.56\% | \$20,076,404 | 15.85\% |
| 2. Administrative expenses | 500,000 | 0.38\% | 400,000 | 0.32\% |
| 3. Expected employee contributions | -9,969,974 | -7.57\% | -9,561,851 | -7.55\% |
| 4. Employer normal cost: $(1)+(2)+(3)$ | \$11,016,611 | 8.37\% | \$10,914,553 | 8.62\% |
| 5. Actuarial accrued liability | 438,994,257 |  | 403,578,036 |  |
| 6. Actuarial value of assets | 405,288,662 |  | 397,212,763 |  |
| 7. Unfunded actuarial accrued liability: (5) - (6) | \$33,705,595 |  | \$6,365,273 |  |
| 8. Payment on unfunded actuarial accrued liability | 1,203,078 | 0.91\% | -127,081 | -0.10\% |
| 9. Total recommended contribution: (4) + (8) | \$12,219,689 | $\underline{\underline{9.28 \%}}$ | \$10,787,472 | 8.52\% |
| 10. Projected salary | \$131,687,088 |  | \$126,664,812 |  |

CHART 16C - Hazardous Retirement
Reconciliation of Recommended Contribution from June 30, 2004 to June 30, 2005

| Recommended Contribution as of June 30, 2004 | $\$ 10,787,472$ |
| :--- | ---: |
| Effect of COLA for retirees | $\$ 232,056$ |
| Effect of investment loss | $1,147,536$ |
| Effect of change in administrative expense assumption | 100,000 |
| Effect of net other changes | $\underline{-47,375}$ |
| Total change | $\underline{\underline{\$ 1,432,217}}$ |
| Recommended Contribution as of June 30, 2005 | $\$ 12,219,689$ |

## SECTION 2: Valuation Results for the Kentucky Employees Retirement System

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

CHART 15D - Hazardous Insurance
Recommended Contribution

|  | As of June 30 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2005 |  | 2004 |  |
|  | Amount | \% of Salary | Amount | \% of Salary |
| 1. Employer normal cost | \$20,009,306 | 15.19\% | \$19,731,921 | 15.58\% |
| 2. Actuarial accrued liability | 386,844,695 |  | 323,503,563 |  |
| 3. Actuarial value of assets | 187,947,644 |  | 169,158,879 |  |
| 4. Unfunded actuarial accrued liability: (2) - (3) | \$198,897,051 |  | \$154,344,684 |  |
| 5. Payment on unfunded actuarial accrued liability | 11,295,472 | 8.58\% | 8,785,642 | 6.93\% |
| 6. Full EANC contribution: $(1)+(5)$ | \$31,304,778 | $\underline{\underline{23.77 \%}}$ | \$28,517,563 | $\underline{\underline{22.51 \%}}$ |
| 7. Projected salary | \$131,687,088 |  | \$126,664,812 |  |
| 8. Prior year's funding rate | N/A | 13.07\% | N/A | 12.21\% |
| 9. Years to reach full EANC | N/A | 11 | N/A | 12 |
| 10. Additional amount for current year | N/A | 0.97\% | N/A | 0.86\% |
| 11. Total recommended contribution rate: (8) + (10) | N/A | 14.04\% | N/A | 13.07\% |

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SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT A
Table of Plan Coverage

| Category | Non-Hazardous |  |  | Hazardous |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Year Ended June 30 |  | Change From Prior Year | Year Ended June 30 |  | Change From Prior Year |
|  | 2005 | 2004 |  | 2005 | 2004 |  |
| Active members in valuation: |  |  |  |  |  |  |
| Number | 47,118 | 47,599 | -1.0\% | 4,274 | 4,014 | 6.5\% |
| Average age | 42.9 | 42.9 | N/A | 41.9 | 42.7 | N/A |
| Average service | 9.8 | 10.0 | N/A | 7.1 | 7.6 | N/A |
| Total salary | \$1,655,907,288 | \$1,645,412,496 | 0.6\% | \$131,687,088 | \$126,664,812 | 4.0\% |
| Average salary | 35,144 | 34,568 | 1.7\% | 30,811 | 31,556 | -2.4\% |
| Account balances | 866,044,474 | 915,105,103 | -5.4\% | 75,098,321 | 78,817,575 | -4.7\% |
| Total active vested members | 32,766 | 32,482 | 0.9\% | 2,494 | 2,482 | 0.5\% |
| Vested terminated members | 5,240 | 4,825 | 8.6\% | 307 | 260 | 18.1\% |
| Retired participants: |  |  |  |  |  |  |
| Number in pay status | 24,958 | 23,196 | 7.6\% | 1,455 | 1,269 | 14.7\% |
| Average age | 66.4 | 66.8 | N/A | 60.9 | 61.0 | N/A |
| Average monthly benefit | \$1,518 | \$1,429 | 6.2\% | \$1,005 | \$935 | 7.5\% |
| Disabled members: |  |  |  |  |  |  |
| Number in pay status | 1,910 | 1,918 | -0.4\% | 117 | 113 | 3.5\% |
| Average age | 61.7 | 61.3 | N/A | 55.8 | 55.2 | N/A |
| Average monthly benefit | \$850 | \$826 | 2.9\% | \$568 | \$513 | 10.7\% |
| Beneficiaries in pay status | 3,902 | 3,778 | 3.3\% | 180 | 167 | 7.8\% |
| Inactive nonvested members due a refund | 23,105 | 20,950 | 10.3\% | 1997 | 1,772 | 12.7\% |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

## EXHIBIT B - Non-Hazardous

Members in Active Service as of June 30, 2005
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 | 2,991 | 2,867 | 124 | -- | -- | -- | -- | -- | -- | -- |
|  | \$22,762 | \$22,519 | \$28,386 | -- | -- | -- | -- | -- | -- | -- |
| 25-29 | 4,677 | 3,643 | 996 | 38 | -- | -- | -- | -- | -- | -- |
|  | 27,232 | 26,698 | 28,959 | \$33,221 | -- | -- | -- | -- | -- | -- |
| 30-34 | 5,512 | 2,810 | 2,025 | 630 | 47 | -- | -- | -- | -- | -- |
|  | 31,316 | 29,031 | 33,002 | 35,625 | \$37,528 | -- | -- | -- | -- | -- |
| 35-39 | 5,824 | 2,157 | 1,548 | 1,345 | 616 | 158 | -- | -- | -- | -- |
|  | 34,939 | 30,437 | 35,059 | 38,724 | 39,040 | \$47,010 | -- | -- | -- | -- |
| 40-44 | 6,789 | 2,118 | 1,438 | 1,115 | 1,008 | 855 | 255 | -- | -- | -- |
|  | 36,481 | 29,310 | 34,770 | 37,749 | 41,124 | 46,306 | \$48,859 | -- | -- | -- |
| 45-49 | 7,266 | 1,851 | 1,402 | 1,120 | 876 | 852 | 928 | 237 | -- | -- |
|  | 38,464 | 29,922 | 34,040 | 38,149 | 40,788 | 46,183 | 49,300 | \$54,071 | -- | - |
| 50-54 | 6,446 | 1,540 | 1,194 | 1,010 | 777 | 720 | 662 | 460 | 83 | -- |
|  | 39,653 | 32,006 | 33,670 | 37,658 | 40,118 | 45,079 | 49,636 | 57,138 | \$63,911 | -- |
| 55-59 | 4,682 | 1,060 | 887 | 742 | 659 | 550 | 395 | 252 | 122 | 15 |
|  | 40,163 | 31,117 | 35,126 | 38,764 | 39,361 | 45,213 | 49,519 | 62,149 | 67,016 | \$62,470 |
| 60-64 | 2,089 | 409 | 415 | 357 | 382 | 213 | 158 | 81 | 42 | 32 |
|  | 39,111 | 33,225 | 33,630 | 35,547 | 39,236 | 42,657 | 48,279 | 57,471 | 69,136 | 68,954 |
| 65-69 | 572 | 108 | 109 | 128 | 109 | 48 | 41 | 15 | 10 | 4 |
|  | 39,346 | 36,584 | 35,942 | 37,195 | 39,380 | 40,836 | 48,405 | 50,736 | 59,198 | 71,544 |
| 70 \& over | 270 | 47 | 37 | 53 | 59 | 28 | 22 | 6 | 9 | 9 |
|  | 34,645 | 27,457 | 29,984 | 30,511 | 30,211 | 40,208 | 41,535 | 55,290 | 57,413 | 74,092 |
| Total | 47,118 | 18,610 | 10,175 | 6,538 | 4,533 | 3,424 | 2,461 | 1,051 | 266 | 60 |
|  | \$35,144 | \$28,351 | \$33,566 | \$37,699 | \$39,967 | \$45,521 | \$49,230 | \$57,572 | \$65,763 | \$68,276 |

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

## EXHIBIT B - Hazardous

Members in Active Service as of June 30, 2005
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 |
| Under 25 | 283 | 274 | 9 | -- | -- | -- | -- | -- | -- |
|  | \$19,443 | \$19,309 | \$23,523 | -- | -- | -- | -- | -- | -- |
| 25-29 | 486 | 417 | 67 | 2 | -- | -- | -- | -- | -- |
|  | 23,275 | 22,598 | 27,321 | \$28,788 | -- | -- | -- | -- | -- |
| 30-34 | 576 | 347 | 184 | 45 | -- | -- | -- | -- | -- |
|  | 26,889 | 24,381 | 30,209 | 32,658 | -- | -- | -- | -- | -- |
| 35-39 | 585 | 250 | 142 | 135 | 57 | 1 | -- | -- | -- |
|  | 29,939 | 24,301 | 31,671 | 35,972 | \$35,802 | \$44,676 | -- | -- | -- |
| 40-44 | 560 | 204 | 123 | 103 | 108 | 19 | 3 | -- | -- |
|  | 32,005 | 25,693 | 31,662 | 35,848 | 38,410 | 42,660 | \$45,276 | -- | -- |
| 45-49 | 596 | 201 | 120 | 101 | 142 | 24 | 8 | -- | -- |
|  | 35,022 | 27,889 | 34,531 | 38,264 | 39,896 | 49,493 | 50,760 | -- | -- |
| 50-54 | 543 | 163 | 128 | 108 | 113 | 19 | 9 | 3 | -- |
|  | 35,571 | 27,328 | 38,066 | 34,521 | 42,421 | 44,265 | 49,285 | \$60,544 | -- |
| 55-59 | 440 | 118 | 92 | 86 | 129 | 12 | 2 | 1 | -- |
|  | 37,394 | 29,929 | 36,428 | 39,863 | 42,107 | 45,027 | 58,908 | 52,104 | -- |
| 60-64 | 169 | 41 | 55 | 28 | 38 | 5 | 1 | -- | 1 |
|  | 35,489 | 27,274 | 35,214 | 34,883 | 41,778 | 50,213 | 62,544 | -- | \$64,740 |
| 65-69 | 27 | 6 | 4 | 6 | 11 | -- | -- | -- | -- |
|  | 35,236 | 22,626 | 36,000 | 35,968 | 41,437 | -- | -- | -- | -- |
| 70 \& over | 9 | 1 | 3 | -- | 5 | -- | -- | -- | -- |
|  | 39,727 | 19,944 | 41,076 | -- | 42,874 | -- | -- | -- | -- |
| Total | 4,274 | 2,022 | 927 | 614 | 603 | 80 | 23 | 4 | 1 |
|  | \$30,811 | \$24,410 | \$32,971 | \$36,302 | \$40,360 | \$45,944 | \$50,689 | \$58,434 | \$64,740 |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

## EXHIBIT C - Non-Hazardous

## Retired Lives Summary

|  | Male Lives |  | Female Lives |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Monthly Benefits | Number | Monthly Benefits | Number | Monthly Benefits |
| Basic form | 2,734 | \$3,969,621.58 | 7,285 | \$8,528,134.87 | 10,019 | \$12,497,756.45 |
| Straight life (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Joint \& survivor |  |  |  |  |  |  |
| $100 \%$ to beneficiary | 1,692 | 2,360,173.23 | 636 | 570,009.70 | 2,328 | 2,930,182.93 |
| 66-2/3\% to beneficiary | 763 | 1,696,875.65 | 271 | 473,086.94 | 1,034 | 2,169,962.59 |
| $50 \%$ to beneficiary | 987 | 2,009,179.85 | 826 | 1,456,337.47 | 1,813 | 3,465,517.32 |
| Pop-up option | 2,422 | 4,991,793.24 | 1,703 | 2,889,815.92 | 4,125 | 7,881,609.16 |
| 10 years certain | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 10 years certain \& life | 989 | 1,173,074.40 | 1,690 | 1,989,135.50 | 2,679 | 3,162,209.90 |
| Social Security option |  |  |  |  |  |  |
| Age 62 basic | 407 | 799,328.86 | 935 | 1,418,449.96 | 1,342 | 2,217,778.82 |
| Age 62 survivorship | 860 | 1,584,145.77 | 524 | 818,867.29 | 1,384 | 2,403,013.06 |
| Partial deferred (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Widows age 60 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Dependent child | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Refund | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 15 years certain \& life | 381 | 521,579.22 | 394 | 509,675.40 | 775 | 1,031,254.62 |
| 20 years certain \& life | 331 | 605,578.92 | 333 | 498,563.24 | 664 | 1,104,142.16 |
| 5 years certain | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 12 month basic | 33 | 45,948.97 | 107 | 130,999.21 | 140 | 176,948.18 |
| PLSO 24 month basic | 11 | 10,972.00 | 70 | 66,741.77 | 81 | 77,713.77 |
| PLSO 36 month basic | 65 | 36,894.86 | 126 | 74,453.65 | 191 | 111,348.51 |
| PLSO 12 month survivor | 35 | 50,281.82 | 33 | 48,826.25 | 68 | 99,108.07 |
| PLSO 24 month survivor | 34 | 36,837.44 | 31 | 36,343.82 | 65 | 73,181.26 |
| PLSO 36 month survivor | 102 | 78,336.24 | $\underline{58}$ | 37,672.99 | 160 | 116,009.23 |
| Total | 11,846 | \$19,970,622.05 | 15,022 | \$19,547,113.98 | 26,868 | \$39,517,736.03 |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

## EXHIBIT C - Hazardous

Retired Lives Summary

|  | Male Lives |  | Female Lives |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Monthly Benefits | Number | Monthly Benefits | Number | Monthly Benefits |
| Basic form | 229 | \$194,770.49 | 173 | \$121,603.13 | 402 | \$316,373.62 |
| Straight life (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Joint \& survivor |  |  |  |  |  |  |
| 100\% to beneficiary | 146 | 140,993.56 | 10 | 7,547.92 | 156 | 148,541.48 |
| 66-2/3\% to beneficiary | 51 | 50,006.84 | 6 | 4,727.40 | 57 | 54,734.24 |
| $50 \%$ to beneficiary | 86 | 105,628.58 | 11 | 14,311.08 | 97 | 119,939.66 |
| Pop-up option | 315 | 366,395.80 | 54 | 46,604.59 | 369 | 413,000.39 |
| 10 years certain | 18 | 23,663.45 | 5 | 4,988.57 | 23 | 28,652.02 |
| 10 years certain \& life | 80 | 63,832.01 | 35 | 22,612.25 | 115 | 86,444.26 |
| Social Security option |  |  |  |  |  |  |
| Age 62 basic | 43 | 41,460.91 | 17 | 12,065.97 | 60 | 53,526.88 |
| Age 62 survivorship | 97 | 123,933.31 | 12 | 7,325.49 | 109 | 131,258.80 |
| Partial deferred (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Widows age 60 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Dependent child | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Refund | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 15 years certain \& life | 31 | 29,324.20 | 9 | 8,420.42 | 40 | 37,744.62 |
| 20 years certain \& life | 29 | 25,197.88 | 11 | 15,677.30 | 40 | 40,875.18 |
| 5 years certain | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 12 month basic | 5 | 5,101.62 | 6 | 5,508.48 | 11 | 10,610.10 |
| PLSO 24 month basic | 9 | 9,496.96 | 5 | 3,175.28 | 14 | 12,672.24 |
| PLSO 36 month basic | 20 | 19,723.77 | 11 | 7,761.68 | 31 | 27,485.45 |
| PLSO 12 month survivor | 9 | 11,394.03 | 2 | 1,952.51 | 11 | 13,346.54 |
| PLSO 24 month survivor | 8 | 8,578.82 | 3 | 4,076.74 | 11 | 12,655.56 |
| PLSO 36 month survivor | 20 | 15,339.27 | $\underline{6}$ | 7,839.20 | $\underline{26}$ | 23,178.47 |
| Total | 1,196 | \$1,234,841.50 | 376 | \$296,198.01 | 1,572 | \$1,531,039.51 |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

## EXHIBIT D - Non-Hazardous

Beneficiary Summary

|  | Male Lives |  | Female Lives |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Monthly Benefits | Number | Monthly Benefits | Number | Monthly Benefits |
| Basic form | 3 | \$1,129.24 | 19 | \$16,079.98 | 22 | \$17,209.22 |
| Straight life (old plan) | 0 | 0 | 0 | 0.00 | 0 | 0.00 |
| Joint \& survivor |  |  |  |  |  |  |
| 100\% to beneficiary | 219 | 149,531.64 | 1,712 | 1,204,051.84 | 1,931 | 1,353,583.48 |
| 66-2/3\% to beneficiary | 21 | 15,972.66 | 280 | 176,480.54 | 301 | 192,453.20 |
| $50 \%$ to beneficiary | 69 | 34,490.81 | 501 | 213,804.80 | 570 | 248,295.61 |
| Pop-up option | 51 | 63,739.50 | 252 | 248,676.97 | 303 | 312,416.47 |
| 10 years certain | 55 | 58,621.47 | 56 | 56,656.69 | 111 | 115,278.16 |
| 10 years certain \& life | 53 | 41,405.71 | 87 | 91,532.51 | 140 | 132,938.22 |
| Social Security option |  |  |  |  |  |  |
| Age 62 basic | 0 | 0.00 | 3 | 2,361.69 | 3 | 2,361.69 |
| Age 62 survivorship | 27 | 27,956.85 | 173 | 219,009.17 | 200 | 246,966.02 |
| Partial deferred (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Widows age 60 | 0 | 0.00 | 15 | 5,851.27 | 15 | 5,851.27 |
| Dependent child | 2 | 513.92 | 2 | 725.04 | 4 | 1,238.96 |
| Refund | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 15 years certain \& life | 28 | 30,017.03 | 79 | 73,819.92 | 107 | 103,836.95 |
| 20 years certain \& life | 32 | 29,473.45 | 75 | 78,010.80 | 107 | 107,484.25 |
| 5 years certain | 39 | 38,184.70 | 36 | 42,277.27 | 75 | 80,461.97 |
| PLSO 12 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 24 month basic | 1 | 515.27 | 0 | 0.00 | 1 | 515.27 |
| PLSO 36 month basic | 1 | 544.06 | 2 | 284.75 | 3 | 828.81 |
| PLSO 12 month survivor | 1 | 1,026.45 | 1 | 2,400.48 | 2 | 3,426.93 |
| PLSO 24 month survivor | 0 | 0.00 | 3 | 930.11 | 3 | 930.11 |
| PLSO 36 month survivor | $\underline{2}$ | 585.77 | $\underline{2}$ | 1,254.50 | 4 | 1,840.27 |
| Total | 604 | \$493,708.53 | 3,298 | \$2,434,208.33 | 3,902 | \$2,927,916.86 |

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

## EXHIBIT D - Hazardous

Beneficiary Summary

|  | Male Lives |  | Female Lives |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Monthly Benefits | Number | Monthly Benefits | Number | Monthly Benefits |
| Basic form | 2 | \$268.77 | 0 | \$0.00 | 2 | \$268.77 |
| Straight life (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Joint \& survivor |  |  |  |  |  |  |
| 100\% to beneficiary | 7 | 2,725.62 | 71 | 45,579.67 | 78 | 48,305.29 |
| 66-2/3\% to beneficiary | 0 | 0.00 | 4 | 2,041.33 | 4 | 2,041.33 |
| $50 \%$ to beneficiary | 1 | 392.63 | 13 | 4,062.05 | 14 | 4,454.68 |
| Pop-up option | 3 | 1,650.48 | 19 | 10,622.56 | 22 | 12,273.04 |
| 10 years certain | 2 | 2,237.03 | 7 | 4,383.81 | 9 | 6,620.84 |
| 10 years certain \& life | 3 | 1,899.63 | 8 | 5,436.64 | 11 | 7,336.27 |
| Social Security option |  |  |  |  |  |  |
| Age 62 basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Age 62 survivorship | 1 | 18.92 | 10 | 8,090.81 | 11 | 8,109.73 |
| Partial deferred (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Widows age 60 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Dependent child | 6 | 1,621.30 | 7 | 2,005.42 | 13 | 3,626.72 |
| Refund | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 15 years certain \& life | 3 | 1,070.60 | 1 | 710.14 | 4 | 1,780.74 |
| 20 years certain \& life | 0 | 0.00 | 4 | 1,004.35 | 4 | 1,004.35 |
| 5 years certain | 1 | 777.88 | 6 | 8,030.15 | 7 | 8,808.03 |
| PLSO 12 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 24 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 36 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 12 month survivor | 0 | 0.00 | 1 | 1,059.44 | 1 | 1,059.44 |
| PLSO 24 month survivor | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 36 month survivor | $\underline{0}$ | 0.00 | 0 | 0.00 | $\underline{0}$ | 0.00 |
| Total | 29 | \$12,662.86 | 151 | \$93,026.37 | 180 | \$105,689.23 |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT E - Non-Hazardous Retirement
Summary Statement of Income and Expenses on an Actuarial Value Basis

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Contribution income: |  |  |  |  |
| Employer contributions | \$50,332,750 |  | \$21,696,543 |  |
| Member contributions | 127,801,019 |  | 129,077,138 |  |
| Less administrative and investment expenses | -10,290,307 |  | -8,871,985 |  |
| Net contribution income |  | \$167,843,462 |  | \$141,901,696 |
| Investment income: |  |  |  |  |
| Interest, dividends and other income | \$173,414,480 |  | \$158,005,198 |  |
| Recognition of capital appreciation | -207,700,749 |  | -172,421,991 |  |
| Less stock commissions and securities lending expense | -24,165,584 |  | -10,921,784 |  |
| Net investment income |  | $\underline{-58,451,853}$ |  | -25,338,577 |
| Total income available for benefits |  | \$109,391,609 |  | \$116,563,119 |
| Less benefit payments: |  |  |  |  |
| Benefit payments | -\$522,395,758 |  | -\$459,367,064 |  |
| Refunds | -8,823,849 |  | -8,001,144 |  |
| Net benefit payments |  | -\$531,219,607 |  | -\$467,368,208 |
| Change in reserve for future benefits |  | -\$421,827,997 |  | -\$350,805,089 |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT E - Non-Hazardous Insurance
Summary Statement of Income and Expenses on an Actuarial Value Basis

|  | Year Ended June 30, 2005 | Year Ended June 30, 2004 |
| :---: | :---: | :---: |
| Contribution income: |  |  |
| Employer contributions | \$49,909,228 | \$78,016,737 |
| Insurance appropriation contributions | 1,522,726 | 0 |
| Less administrative and investment expenses | -898,850 | -787,370 |
| Net contribution income | \$50,533,104 | \$77,229,367 |
| Investment income: |  |  |
| Interest, dividends and other income | \$14,468,835 | \$10,666,411 |
| Recognition of capital appreciation | 19,745,405 | 19,908,331 |
| Less stock commissions and securities lending expense | -2,694,878 | -1,112,984 |
| Net investment income | 31,519,362 | 29,461,758 |
| Total income available for benefits | \$82,052,466 | \$106,691,125 |
| Less healthcare premium subsidies | -\$75,571,076 | -\$59,989,246 |
| Change in reserve for future benefits | \$6,481,390 | \$46,701,879 |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

## EXHIBIT E - Hazardous Retirement

Summary Statement of Income and Expenses on an Actuarial Value Basis

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Contribution income: |  |  |  |  |
| Employer contributions | \$9,758,547 |  | \$9,769,580 |  |
| Member contributions | 11,624,830 |  | 11,547,337 |  |
| Less administrative and investment expenses | -846,095 |  | -638,243 |  |
| Net contribution income |  | \$20,537,282 |  | \$20,678,674 |
| Investment income: |  |  |  |  |
| Interest, dividends and other income | \$12,550,643 |  | \$10,891,877 |  |
| Recognition of capital appreciation | -1,042,149 |  | -1,250,879 |  |
| Less stock commissions and securities lending expense | -1,714,808 |  | -759,981 |  |
| Net investment income |  | 9,793,686 |  | 8,881,017 |
| Total income available for benefits |  | \$30,330,968 |  | \$29,559,691 |
| Less benefit payments: |  |  |  |  |
| Benefit payments | -\$20,494,754 |  | -\$16,862,790 |  |
| Refunds | -1,760,315 |  | -1,409,860 |  |
| Net benefit payments |  | -\$22,255,069 |  | -\$18,272,650 |
| Change in reserve for future benefits |  | \$8,075,899 |  | \$11,287,041 |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT E-Hazardous Insurance
Summary Statement of Income and Expenses on an Actuarial Value Basis

|  | Year Ended June 30, 2005 | Year Ended June 30, 2004 |
| :---: | :---: | :---: |
| Contribution income: |  |  |
| Employer contributions | \$15,395,977 | \$14,959,617 |
| Insurance appropriation contributions | 257,615 | 0 |
| Less administrative and investment expenses | -183,982 | -116,907 |
| Net contribution income | \$15,469,610 | \$14,842,710 |
| Investment income: |  |  |
| Interest, dividends and other income | \$4,494,802 | \$3,145,808 |
| Recognition of capital appreciation | 4,517,461 | 3,562,500 |
| Less stock commissions and securities lending expense | -840,146 | -314,693 |
| Net investment income | 8,172,117 | 6,393,615 |
| Total income available for benefits | \$23,641,727 | \$21,236,325 |
| Less healthcare premium subsidies | -\$4,852,962 | -\$3,536,946 |
| Change in reserve for future benefits | \$18,788,765 | \$17,699,379 |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

## EXHIBIT F - Non-Hazardous Retiremen

Table of Financial Information

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Cash equivalents |  | \$620,035 |  | \$760,613 |
| Accounts receivable: |  |  |  |  |
| Investment accounts receivable | \$24,572,781 |  | \$177,965 |  |
| Year-end interest receivable | 0 |  | 26,196,011 |  |
| Year-end accounts receivable | 0 |  | 24,758,644 |  |
| Contributions recievable | 26,502,398 |  | 0 |  |
| Total accounts receivable |  | 51,075,179 |  | 51,132,620 |
| Investments: |  |  |  |  |
| Stocks | \$3,247,090,425 |  | \$3,237,197,081 |  |
| Bonds | 1,702,654,601 |  | 1,617,334,320 |  |
| Mortgage | 261,910,512 |  | 255,569,903 |  |
| Short-term investments | 101,249,248 |  | 98,124,620 |  |
| Real estate | 2,442,855 |  | 2,580,396 |  |
| Fixed assets | 285,796 |  | 319,011 |  |
| Total investments at market value |  | 5,315,633,437 |  | 5,211,125,331 |
| Total assets |  | \$5,367,328,651 |  | \$5,263,018,564 |
| Less accounts payable |  | -\$4,697,954 |  | -\$4,024,419 |
| Net assets at market value |  | \$5,362,630,697 |  | \$5,258,994,145 |
| Net assets at actuarial value |  | \$5,578,685,746 |  | \$6,000,513,743 |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

## EXHIBIT F - Non-Hazardous Insurance

Table of Financial Information

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Cash equivalents |  | \$68,321 |  | \$32,779 |
| Accounts receivable: |  |  |  |  |
| Investment accounts receivable | \$1,589,892 |  | \$33,862 |  |
| Year-end interest receivable | 0 |  | 1,412,579 |  |
| Year-end accounts receivable | 0 |  | 3,989,694 |  |
| Contributions receivable | 2,882,252 |  | 0 |  |
| Total accounts receivable |  | 4,472,144 |  | 5,436,135 |
| Investments: |  |  |  |  |
| Stocks | \$457,485,977 |  | \$422,401,561 |  |
| Bonds | 65,541,189 |  | 56,753,072 |  |
| Short-term investments | 84,209,872 |  | 103,360,672 |  |
| Total investments at market value |  | 607,237,038 |  | 582,515,305 |
| Total assets |  | \$611,777,503 |  | \$587,984,219 |
| Less accounts payable |  | -\$875,880 |  | -\$303,572 |
| Net assets at market value |  | \$610,901,623 |  | \$587,680,647 |
| Net assets at actuarial value |  | \$607,068,351 |  | \$600,586,961 |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

## EXHIBIT F - Hazardous Retirement

Table of Financial Information

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Cash equivalents |  | \$105,988 |  | \$67,320 |
| Accounts receivable: |  |  |  |  |
| Investment accounts receivable | \$1,694,578 |  | \$17,922 |  |
| Year-end interest receivable | 0 |  | 1,729,604 |  |
| Year-end accounts receivable | 0 |  | 2,046,391 |  |
| Contributions receivable | 2,105,601 |  | 0 |  |
| Total accounts receivable |  | 3,800,179 |  | 3,793,917 |
| Investments: |  |  |  |  |
| Stocks | \$241,107,329 |  | \$227,385,966 |  |
| Bonds | 116,546,076 |  | 105,308,294 |  |
| Mortgage | 18,255,371 |  | 17,062,283 |  |
| Short-term investments | 16,899,044 |  | 11,330,548 |  |
| Real estate | 1,941,958 |  | 1,913,077 |  |
| Fixed assets | 23,188 |  | 26,021 |  |
| Total investments at market value |  | 394,772,966 |  | 363,026,189 |
| Total assets |  | \$398,679,133 |  | \$366,887,426 |
| Less accounts payable |  | -\$370,236 |  | -\$317,919 |
| Net assets at market value |  | \$398,308,897 |  | \$366,569,507 |
| Net assets at actuarial value |  | \$405,288,662 |  | \$397,212,763 |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

## EXHIBIT F - Hazardous Insurance

Table of Financial Information

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Cash equivalents |  | \$40,657 |  | \$5,206 |
| Accounts receivable: |  |  |  |  |
| Investment accounts receivable | \$488,096 |  | \$10,591 |  |
| Year-end interest receivable | 0 |  | 412,749 |  |
| Year-end accounts receivable | 0 |  | 616,980 |  |
| Contributions receivable | 720,812 |  | 0 |  |
| Total accounts receivable |  | 1,208,908 |  | 1,040,320 |
| Investments: |  |  |  |  |
| Stocks | \$150,795,960 |  | \$129,646,401 |  |
| Bonds | 20,078,068 |  | 16,490,660 |  |
| Short-term investments | 16,910,390 |  | $\underline{15,050,638}$ |  |
| Total investments at market value |  | 187,784,418 |  | 161,187,699 |
| Total assets |  | \$189,033,983 |  | \$162,233,225 |
| Less accounts payable |  | -\$162,757 |  | -\$105,852 |
| Net assets at market value |  | \$188,871,226 |  | \$162,127,373 |
| Net assets at actuarial value |  | \$187,947,644 |  | \$169,158,879 |

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT G - Non-Hazardous Retirement
Table of Amortization Bases

| Date Established | Initial Years | Initial Amount | Annual Payment* | Years Remaining | Outstanding Balance |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/1990 | 30 | \$256,534,456 | \$26,579,687 | 15 | \$324,885,852 |
| 06/30/1991 | 30 | 103,692,389 | 10,241,152 | 16 | 131,661,408 |
| 06/30/1992 | 30 | -212,448,599 | -20,000,956 | 17 | -269,415,531 |
| 06/30/1993 | 30 | -57,917,315 | -5,197,519 | 18 | -73,106,831 |
| 06/30/1994 | 30 | 59,519,052 | 5,091,308 | 19 | 74,554,168 |
| 06/30/1995 | 30 | 65,659,241 | 5,353,642 | 20 | 81,395,605 |
| 06/30/1996 | 30 | -188,573,585 | -14,655,806 | 21 | -230,789,615 |
| 06/30/1997 | 30 | -277,888,742 | -20,568,878 | 22 | -334,748,878 |
| 06/30/1998 | 30 | -326,522,755 | -23,017,812 | 23 | -386,375,169 |
| 06/30/1999 | 30 | -362,615,121 | -24,344,874 | 24 | -420,727,040 |
| 06/30/2000 | 30 | -964,739,576 | -61,685,400 | 25 | -1,095,723,801 |
| 06/30/2001 | 30 | 584,703,884 | 35,605,656 | 26 | 649,083,803 |
| 06/30/2002 | 30 | 811,152,084 | 47,043,134 | 27 | 878,882,398 |
| 06/30/2003 | 30 | 811,953,677 | 44,847,275 | 28 | 857,550,488 |
| 06/30/2004 | 30 | 871,195,298 | 45,828,013 | 29 | 895,822,411 |
| 06/30/2005 | 30 | 917,439,825 | 45,962,516 | 30 | 917,439,825 |
| Total |  |  | \$97,081,138 |  | \$2,000,389,093 |

[^6]SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT G- Non-Hazardous Insurance
Table of Amortization Bases

| Date <br> Established | Initial <br> Years | Initial <br> Amount | Annual <br> Payment* | Years <br> Remaining | Outstanding <br> Balance |
| ---: | :---: | ---: | ---: | ---: | ---: |
| $06 / 30 / 1996$ | 30 | $\$ 988,745,810$ | $\$ 76,844,629$ | 21 | $\$ 1,210,096,659$ |
| $06 / 30 / 1997$ | 30 | $-31,222,593$ | $-2,311,046$ | $-37,611,195$ |  |
| $06 / 30 / 1998$ | $19,914,214$ | $1,403,828$ | 22 | $23,564,538$ |  |
| $06 / 30 / 1999$ | $-69,145,663$ | $-4,642,229$ | 23 | $-80,226,797$ |  |
| $06 / 30 / 2000$ | 40 | $44,198,913$ | $2,826,076$ | 24 | $20,199,870$ |
| $06 / 30 / 2001$ | 30 | $237,627,565$ | $14,470,377$ | $263,791,996$ |  |
| $06 / 30 / 2002$ | 30 | $123,483,146$ | $6,812,116$ | 26 | $39,529,449$ |
| $06 / 30 / 2003$ | 30 | $164,749,377$ | $8,666,411$ | 27 | $130,258,381$ |
| $06 / 30 / 2004$ | 30 |  | $15,254,113$ | 29 | $169,406,543$ |
| $06 / 30 / 2005$ | 30 |  | $\$ 121,440,132$ | 30 | $304,481,393$ |
| Total | 30 |  |  | $\$ 2,073,490,837$ |  |

* Level percentage of salary

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT G- Hazardous Retirement
Table of Amortization Bases

| Date Established | Initial Years | Initial Amount | Annual Payment* | Years Remaining | Outstanding Balance |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/1990 | 30 | -\$366,782 | -\$38,003 | 15 | -\$464,508 |
| 06/30/1991 | 30 | 8,515,857 | 841,066 | 16 | 10,812,845 |
| 06/30/1992 | 30 | -2,222,347 | -209,223 | 17 | -2,818,256 |
| 06/30/1993 | 30 | 1,873,766 | 168,152 | 18 | 2,365,183 |
| 06/30/1994 | 30 | 2,736,468 | 234,080 | 19 | 3,427,728 |
| 06/30/1995 | 30 | 4,677,834 | 381,415 | 20 | 5,798,956 |
| 06/30/1996 | 30 | -33,735,166 | -2,621,873 | 21 | -41,287,470 |
| 06/30/1997 | 30 | -7,971,975 | -590,073 | 22 | -9,603,157 |
| 06/30/1998 | 30 | -13,896,455 | -979,613 | 23 | -16,443,711 |
| 06/30/1999 | 30 | -13,902,335 | -933,360 | 24 | -16,130,294 |
| 06/30/2000 | 30 | -35,735,060 | -2,284,898 | 25 | -40,586,864 |
| 06/30/2001 | 30 | 18,907,681 | 1,151,387 | 26 | 20,989,546 |
| 06/30/2002 | 30 | 24,131,600 | 1,399,523 | 27 | 26,146,562 |
| 06/30/2003 | 30 | 26,494,066 | 1,463,368 | 28 | 27,981,891 |
| 06/30/2004 | 30 | 35,826,765 | 1,884,617 | 29 | 36,839,523 |
| 06/30/2005 | 30 | 26,677,621 | 1,336,513 | 30 | 26,677,621 |
| Total |  |  | \$1,203,078 |  | \$33,705,595 |

[^7]SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT G- Hazardous Insurance
Table of Amortization Bases

| Date <br> Established | Initial <br> Years | Initial <br> Amount | Annual <br> Payment* | Years <br> Remaining | Outstanding <br> Balance |
| ---: | :---: | ---: | ---: | ---: | ---: |
| $06 / 30 / 1996$ | 30 | $\$ 61,002,123$ | $\$ 4,741,042$ | 21 | $\$ 74,658,690$ |
| $06 / 30 / 1997$ | 30 | $15,100,456$ | $1,117,712$ | 22 | $18,190,234$ |
| $06 / 30 / 1998$ | 30 | $2,832,306$ | 199,660 | 23 | $3,351,475$ |
| $06 / 30 / 1999$ | 30 | $-10,377,564$ | $-696,718$ | $-12,040,648$ |  |
| $06 / 30 / 2000$ | $-3,445,265$ | $-220,290$ | $-3,913,035$ |  |  |
| $06 / 30 / 2001$ | 30 | $1,246,203$ | 24 | $22,718,016$ |  |
| $06 / 30 / 2002$ | 30 | $20,764,709$ | $1,580,230$ | 26 | $4,021,032$ |
| $06 / 30 / 2003$ | 30 | $28,620,833$ | $1,041,249$ | 27 | $30,228,090$ |
| $06 / 30 / 2004$ | 30 | $2,070,548$ | 28 | $20,353,808$ |  |
| $06 / 30 / 2005$ | 30 |  | $\$ 11,295,472$ | 29 | $41,329,389$ |
| Total | 30 |  | 30 | $\$ 198,897,051$ |  |

* Level percentage of salary


## EXHIBIT H <br> Definitions of Pension Terms

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

| Assumptions or Actuarial Assumptions: | The estimates on which the cost of the Plan is calculated including: |
| :---: | :---: |
|  | (a) Investment return - the rate of investment yield that the Plan will earn over the long-term future; |
|  | (b) Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates; |
|  | (c) Retirement rates - the rate or probability of retirement at a given age; |
|  | (d) Turnover rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement. |
| Normal Cost: | The amount of contributions required to fund the benefit allocated to the current year of service. |
| Actuarial Accrued Liability For Actives: | The equivalent of the accumulated normal costs allocated to the years before the valuation date. |
| Actuarial Accrued Liability For Pensioners: | The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and 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 Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time. |

## SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

## Amortization of the Unfunded

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

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

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## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

## REPORTING INFORMATION

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## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

| EXHIBIT I - Non-Hazardous Retirement |  |  |
| :---: | :---: | :---: |
| Summary of Actuarial Valuation Results |  |  |
| The valuation was made with respect to the following data supplied to us: |  |  |
| 1. Retired participants as of the valuation date (including 3,902 beneficiaries in pay status) |  | 30,770 |
| 2. Members inactive during year ended June 30, 2005 with vested rights |  | 5,240 |
| 3. Members active during the year ended June 30, 2005 |  | 47,118 |
| Fully vested | 32,766 |  |
| Not vested | 14,352 |  |
| 4. Inactive nonvested members due a refund as of June 30, 2005 |  | 23,105 |
| The actuarial factors as of the valuation date are as follows: |  |  |
| 1. Total normal cost, including administrative expenses |  | \$161,968,793 |
| 2. Present value of future benefits |  | 9,358,808,243 |
| 3. Present value of future normal costs |  | 1,779,733,404 |
| 4. Actuarial accrued liability |  | 7,579,074,839 |
| Retired participants and beneficiaries | \$4,939,967,757 |  |
| Inactive members with vested rights | 67,846,531 |  |
| Active members | 2,522,827,231 |  |
| Inactive nonvested members due a refund | 48,433,320 |  |
| 5. Actuarial value of assets (\$5,362,630,697 at market value as reported by Carpenter, Mountjoy \& Bressler, PSC) |  | 5,578,685,746 |
| 6. Unfunded actuarial accrued liability |  | \$2,000,389,093 |

## Sumbly

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

1. Retired participants as of the valuation date (including 3,902 beneficiaries in pay status) 30,770
2. Members inactive during year ended June 30, 2005 with vested rights 5,240
3. Members active during the year ended June 30, 2005

Fully vested 32,766


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

## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

| EXHIBIT I - Non-Hazardous Insurance |  |  |
| :---: | :---: | :---: |
| Summary of Actuarial Valuation Results |  |  |
| The actuarial factors as of the valuation date are as follows: |  |  |
| 1. Total normal cost, including administrative expenses |  | \$98,328,832 |
| 2. Present value of future benefits |  | 3,824,867,897 |
| 3. Present value of future normal costs |  | 1,144,308,709 |
| 4. Actuarial accrued liability |  | 2,680,559,188 |
| Retired participants and beneficiaries | \$1,448,911,773 |  |
| Inactive members with vested rights | 101,707,685 |  |
| Active members | 1,129,939,730 |  |
| 5. Actuarial value of assets ( $\$ 610,901,623$ at market value as reported by Carpenter, Mountjoy \& Bressler, PSC) |  | 607,068,351 |
| 6. Unfunded actuarial accrued liability |  | \$2,073,490,837 |

## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

| EXHIBIT I - Hazardous Retirement |  |  |
| :---: | :---: | :---: |
| Summary of Actuarial Valuation Results |  |  |
| The valuation was made with respect to the following data supplied to us: |  |  |
| 1. Retired participants as of the valuation date (including 180 beneficiaries in pay status) |  | 1,752 |
| 2. Members inactive during year ended June 30, 2005 with vested rights |  | 307 |
| 3. Members active during the year ended June 30, 2005 |  | 4,274 |
| Fully vested | 2,494 |  |
| Not vested | 1,780 |  |
| 4. Inactive nonvested members due a refund as of June 30, 2005 |  | 1,997 |
| The actuarial factors as of the valuation date are as follows: |  |  |
| 1. Total normal cost, including administrative expenses |  | \$20,986,585 |
| 2. Present value of future benefits |  | 628,947,978 |
| 3. Present value of future normal costs |  | 189,953,721 |
| 4. Actuarial accrued liability |  | 438,994,257 |
| Retired participants and beneficiaries | \$201,390,551 |  |
| Inactive members with vested rights | 6,519,916 |  |
| Active members | 225,683,707 |  |
| Inactive nonvested members due a refund | 5,400,083 |  |
| 5. Actuarial value of assets ( $\$ 398,308,897$ at market value as reported by Carpenter, Mountjoy \& Bressler, PSC) |  | 405,288,662 |
| 6. Unfunded actuarial accrued liability |  | \$33,705,595 |

The valuation was made with respect to the following data supplied to us:
. Retired participants as of the valuation date (including 180 beneficiaries in pay status)3. Members active during the year ended June 30, 20054,274Not vested1,997

1. Total normal cost, including administrative expenses628,947,978
2. Present value of future normal costs201,390,551Inactive members with vested rights6,519,916Inactive nonvested members due a refund5,400,0836. Unfunded actuarial accrued liability\$33,705,595

## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

| EXHIBIT I - Hazardous Insurance |  |  |
| :---: | :---: | :---: |
| Summary of Actuarial Valuation Results |  |  |
| The actuarial factors as of the valuation date are as follows: |  |  |
| 1. Total normal cost, including administrative expenses |  | \$20,009,306 |
| 2. Present value of future benefits |  | 578,347,752 |
| 3. Present value of future normal costs |  | 191,503,057 |
| 4. Actuarial accrued liability |  | 386,844,695 |
| Retired participants and beneficiaries | \$175,343,661 |  |
| Inactive members with vested rights | 12,539,989 |  |
| Active members | 198,961,045 |  |
| 5. Actuarial value of assets ( $\$ 188,871,226$ at market value as reported by Carpenter, Mountjoy \& Bressler, PSC) |  | 187,947,644 |
| 6. Unfunded actuarial accrued liability |  | \$198,897,051 |

## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

EXHIBIT II - Non-Hazardous Retirement
Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) <br> (b) | Unfunded/ (Overfunded) AAL (UAAL) <br> (b) - (a) | Funded Ratio <br> (a) / (b) | Projected Covered Payroll (c) | UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/2000 | \$6,806,675,460 | \$4,876,825,772 | -\$1,929,849,688 | 139.57\% | \$1,432,316,220 | -134.74\% |
| 06/30/2001 | 6,844,742,687 | 5,444,035,294 | -1,400,707,393 | 125.73\% | 1,525,089,988 | -91.84\% |
| 06/30/2002 | 6,654,084,196 | 6,026,094,764 | -627,989,432 | 110.42\% | 1,597,344,487 | -39.31\% |
| 06/30/2003 | 6,351,318,832 | 6,520,463,188 | 169,144,356 | 97.41\% | 1,658,604,696 | 10.20\% |
| 06/30/2004 | 6,000,513,743 | 7,049,613,171 | 1,049,099,428 | 85.12\% | 1,645,412,496 | 63.76\% |
| 06/30/2005 | 5,578,685,746 | 7,579,074,839 | 2,000,389,093 | 73.61\% | 1,655,907,288 | 120.80\% |

Note: If the actuarial accrued liabilities of the non-hazardous Retirement plan were adjusted to allow for a 3\% annual cost-of-living adjustment for all future years and were combined with the actuarial accrued liabilities of the Insurance plan, the funded ratio on a market value basis of the combined plans would be $47.86 \%$.

## EXHIBIT II - Non-Hazardous Insurance

Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) <br> (b) | Unfunded/ (Overfunded) AAL (UAAL) <br> (b) - (a) | Funded Ratio <br> (a) I (b) | Projected Covered Payroll (c) | UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/2000 | \$399,560,252 | \$1,457,475,358 | \$1,057,915,106 | 27.41\% | \$1,432,316,220 | 73.86\% |
| 06/30/2001 | 449,630,605 | 1,769,583,098 | 1,319,952,493 | 25.41\% | 1,525,089,988 | 86.55\% |
| 06/30/2002 | 521,250,455 | 1,907,683,881 | 1,386,433,426 | 27.32\% | 1,597,344,487 | 86.80\% |
| 06/30/2003 | 553,885,082 | 2,093,210,321 | 1,539,325,239 | 26.46\% | 1,658,604,696 | 92.81\% |
| 06/30/2004 | 600,586,961 | 2,335,905,365 | 1,735,318,404 | 25.71\% | 1,645,412,496 | 105.46\% |
| 06/30/2005 | 607,068,351 | 2,680,559,188 | 2,073,490,837 | 22.65\% | 1,655,907,288 | 125.22\% |

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

EXHIBIT II - Hazardous Retirement
Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) <br> (b) | Unfunded/ (Overfunded) AAL (UAAL) <br> (b) - (a) | Funded Ratio <br> (a) I (b) | Projected Covered Payroll (c) | UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/2000 | \$336,213,464 | \$243,365,557 | -\$92,847,907 | 138.15\% | \$115,135,008 | -80.64\% |
| 06/30/2001 | 361,677,475 | 285,193,761 | -76,483,714 | 126.82\% | 123,647,407 | -61.86\% |
| 06/30/2002 | 376,384,302 | 322,069,164 | -54,315,138 | 116.86\% | 125,371,604 | -43.32\% |
| 06/30/2003 | 385,925,722 | 356,879,133 | -29,046,589 | 108.14\% | 129,088,956 | -22.50\% |
| 06/30/2004 | 397,212,763 | 403,578,036 | 6,365,273 | 98.42\% | 126,664,812 | 5.03\% |
| 06/30/2005 | 405,288,662 | 438,994,257 | 33,705,595 | 92.32\% | 131,687,088 | 25.60\% |

Note: If the actuarial accrued liabilities of the hazardous Retirement plan were adjusted to allow for a $3 \%$ annual cost-of-living adjustment for all future years and were combined with the actuarial accrued liabilities of the Insurance plan, the funded ratio on a market value basis of the combined plans would be $61.17 \%$.

EXHIBIT II - Hazardous Insurance
Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) <br> (b) | Unfunded/ (Overfunded) AAL (UAAL) (b) - (a) | Funded Ratio <br> (a) / (b) | Projected Covered Payroll (c) | UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/2000 | \$102,212,237 | \$175,167,613 | \$72,955,376 | 58.35\% | \$115,135,008 | 63.37\% |
| 06/30/2001 | 119,372,742 | 214,450,822 | 95,078,080 | 55.66\% | 123,647,407 | 76.89\% |
| 06/30/2002 | 135,874,582 | 236,819,050 | 100,944,468 | 57.37\% | 125,371,604 | 80.52\% |
| 06/30/2003 | 151,459,500 | 283,178,335 | 131,718,835 | 53.49\% | 129,088,956 | 102.04\% |
| 06/30/2004 | 169,158,879 | 323,503,563 | 154,344,684 | 52.29\% | 126,664,812 | 121.85\% |
| 06/30/2005 | 187,947,644 | 386,844,695 | 198,897,051 | 48.58\% | 131,687,088 | 151.04\% |

## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

EXHIBIT II - Total Retirement Fund
Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) (b) | Unfunded/ (Overfunded) AAL (UAAL) (b) - (a) | $\begin{gathered} \text { Percent } \\ \text { Unfunded } \\ {[(b)-(a)] I(b)} \end{gathered}$ | Increase in Assets |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/1956 | N/A | \$16,200,000 | \$16,200,000 | 100.00\% | N/A |
| 06/30/1961 | 17,530,559 | 49,201,024 | 31,670,465 | 64.37\% | 4,479,508 |
| 06/30/1966 | 55,752,113 | 127,889,238 | 72,137,125 | 56.41\% | 9,085,814 |
| 06/30/1971 | 125,460,976* | 185,075,453 | 59,614,477 | 32.21\% | 18,353,116 |
| 06/30/1975 | 218,909,209* | 296,343,758 | 77,434,549 | 26.13\% | 26,529,526 |
| 06/30/1976 | 256,376,790* | 387,214,910 | 130,838,120 | 33.79\% | 37,467,581 |
| 06/30/1977 | 296,743,905* | 446,255,236 | 149,511,331 | 33.50\% | 40,367,115 |
| 06/30/1978 | 338,826,998* | 507,324,915 | 168,497,917 | 33.21\% | 42,083,093 |
| 06/30/1979 | 389,418,451* | 592,095,113 | 202,676,662 | 34.23\% | 50,591,453 |
| 06/30/1980 | 460,355,868* | 710,126,703 | 249,770,835 | 35.17\% | 70,937,417 |
| 06/30/1981 | 527,425,266 | 692,160,395 | 164,735,129 | 23.80\% | 67,069,398 |
| 06/30/1982 | 614,446,898 | 810,250,589 | 195,803,691 | 24.17\% | 87,021,632 |
| 06/30/1983 | 710,095,878 | 862,291,959 | 152,196,081 | 17.65\% | 95,648,980 |
| 06/30/1984 | 814,553,823 | 1,016,088,830 | 201,535,007 | 19.83\% | 104,457,945 |
| 06/30/1985 | 934,480,773 | 1,104,429,988 | 169,949,215 | 15.39\% | 119,926,950 |
| 06/30/1986 | 1,079,353,421 | 1,245,083,143 | 166,635,243 | 13.38\% | 144,872,648 |
| 06/30/1987 | 1,264,000,419 | 1,384,259,808 | 120,259,389 | 8.69\% | 184,646,998 |
| 06/30/1988 | 1,426,056,402 | 1,561,743,738 | 135,687,336 | 8.69\% | 162,055,983 |
| 06/30/1989 | 1,588,609,098 | 1,734,607,903 | 145,998,805 | 8.42\% | 162,552,696 |
| 06/30/1990 | 1,799,321,738 | 2,055,489,412 | 256,167,674 | 12.46\% | 210,712,640 |
| 06/30/1991 | 1,913,214,931 | 2,288,611,147 | 375,396,216 | 16.40\% | 113,893,193 |
| 06/30/1992** | 2,354,482,321 | 2,525,190,930 | 170,708,609 | 6.76\% | 441,267,390 |
| 06/30/1993 | 2,585,209,537 | 2,703,771,076 | 118,561,539 | 4.39\% | 230,727,216 |
| 06/30/1994 | 2,729,048,987 | 2,912,050,275 | 183,001,288 | 6.28\% | 143,839,450 |
| 06/30/1995 | 2,983,813,538 | 3,240,852,288 | 257,038,750 | 7.93\% | 244,764,551 |
| 06/30/1996 | 3,375,295,577 | 3,415,404,483 | 40,108,906 | 1.17\% | 391,482,039 |

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## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

EXHIBIT II - Total Retirement Fund (continued)
Supplementary Information Required by the GASB - Schedule of Funding Progress

|  | Actuarial <br> Value <br> Actuarial <br> Valuation <br> Date | Actuarial <br> (a) | Unfunded <br> Accrued Liability <br> (AAL) <br> (b) | Unerfunded) <br> AAL <br> (UAAL) <br> (b) - (a) |
| :---: | :---: | :---: | :---: | :---: |

* Includes capitalized appreciation of investments.
** Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.
*** Change in asset valuation method effective in this valuation to 5 -year smoothing of investment gains/(losses).

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## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

## EXHIBIT II - Total Insurance Fund

Supplementary Information Required by the GASB - Schedule of Funding Progress

|  | Actuarial <br> Value <br> aftuarial <br> Valuation <br> Date | (a) | Actuarial <br> Accrued Liability <br> (AAL) <br> (b) | Unfunded/ <br> (Overfunded) <br> AAL | (UAAL) <br> (b) - (a) |
| :---: | :---: | :---: | :---: | :---: | :---: |

[^8]*** Change in asset valuation method effective in this valuation to 5 -year smoothing of investment gains/(losses).

## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

## EXHIBIT III - Non-Hazardous

## Supplementary Information Required by the GASB



## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

## EXHIBIT III - Hazardous

## Supplementary Information Required by the GASB



SECTION 4: Reporting Information for the Kentucky Employees Retirement System

EXHIBIT IV - Non-Hazardous
Supplementary GASB Information - Schedule of Retirees and Beneficiaries

| Valuation Date July 1 | Added to Rolls |  | Removed from Rolls |  | Rolls - End of Year |  | \% Increase in Annual Allowances | Average Annual Allowance |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Annual Allowance | Number | Annual Allowance | Number | Annual Allowance |  |  |
| 2003 | 2,148 | \$48,272,600 | 1,618 | \$13,060,300 | 27,233 | \$393,048,800 | N/A | \$14,400 |
| 2004 | 2,473 | 57,329,300 | 814 | 6,092,500 | 28,892 | 449,410,400 | 14.34\% | 15,600 |
| 2005 | 2,481 | 56,489,600 | 603 | 5,298,200 | 30,770 | 509,347,800 | 13.34 | 16,600 |

EXHIBIT IV - Hazardous
Supplementary GASB Information - Schedule of Retirees and Beneficiaries

| Valuation Date July 1 | Added to Rolls |  | Removed from Rolls |  | Rolls - End of Year |  | \% Increase in Annual Allowances | Average Annual Allowance |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Annual Allowance | Number | Annual Allowance | Number | Annual Allowance |  |  |
| 2003 | 170 | \$2,333,400 | 21 | \$130,400 | 1,357 | \$12,974,700 | N/A | \$9,600 |
| 2004 | 227 | 3,070,600 | 35 | 155,000 | 1,549 | 16,099,000 | 28.08\% | 10,400 |
| 2005 | 234 | 3,415,500 | 31 | 191,100 | 1,752 | 19,640,700 | 22.00 | 11,200 |

## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

## EXHIBIT V

## Actuarial Assumptions and Actuarial Cost Method

## Mortality Rates:

Healthy: 1983 Group Annuity Mortality Table*

Disabled: Pension Benefit Guaranty Corporation Table for Disabled Lives Receiving Social Security

* Rates increased by 0.05\% for hazardous plan active members.

Termination Rates before Retirement

| Age | Non-Hazardous |  |  |  | Hazardous |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Rate (\%) |  |  |  | Rate (\%) |  |  |  |
|  | Mortality |  | Disability | Withdrawal* | Mortality |  | Disability | Withdrawal** |
|  | Male | Female |  |  | Male | Female |  |  |
| 20 | 0.04 | 0.02 | 0.03 | 2.40 | 0.09 | 0.07 | 0.04 | 3.04 |
| 25 | 0.05 | 0.03 | 0.03 | 2.40 | 0.10 | 0.08 | 0.04 | 3.04 |
| 30 | 0.06 | 0.03 | 0.04 | 2.40 | 0.11 | 0.08 | 0.05 | 3.38 |
| 35 | 0.09 | 0.05 | 0.06 | 2.40 | 0.14 | 0.10 | 0.07 | 2.44 |
| 40 | 0.12 | 0.07 | 0.10 | 2.00 | 0.17 | 0.12 | 0.13 | 1.50 |
| 45 | 0.22 | 0.10 | 0.21 | 1.80 | 0.27 | 0.15 | 0.26 | 0.75 |
| 50 | 0.39 | 0.16 | 0.42 | 1.60 | 0.44 | 0.21 | 0.53 | 0.00 |
| 55 | 0.61 | 0.25 | 0.79 | 1.20 | 0.66 | 0.30 | 0.99 | 0.00 |
| 60 | 0.92 | 0.42 | 1.39 | 0.20 | 0.97 | 0.47 | 1.74 | 0.00 |

*Withdrawal rates during the first five years of employment are $35 \%, 10 \%, 7 \%, 5 \%$, and $4 \%$ for non-hazardous plan members.
**Withdrawal rates during the first five years of employment are $30 \%, 8 \%, 4 \%, 4 \%$, and $4 \%$ for hazardous plan members.

| Non-Hazardous Retirement Rates: | Age | Retirement Probability* |
| :---: | :---: | :---: |
|  | 55-57 | 0.04 |
|  | 58-59 | 0.05 |
|  | 60-61 | 0.06 |
|  | 62 | 0.25 |
|  | 63-64 | 0.10 |
|  | 65 | 0.50 |
|  | 66-67 | 0.20 |
|  | 68 | 0.25 |
|  | 69 | 0.40 |
|  | 70 and older | 1.00 |
| *Retirement prob | 0.25 at first age m | s eligible for |
| Hazardous |  |  |
| Retirement Rates: | 50\% will retire as until age 60. | eligible for u |
| Non-Hazardous |  |  |
| Retirement Age for Inactive |  |  |
| Vested Participants: | 65 |  |
| Hazardous |  |  |
| Retirement Age for Inactive |  |  |
| Vested Participants: | 55 |  |
| Percent Married: | 100\% |  |
| Age of Spouse: | Females 3 years y | than males. |
| Dependent Children: | For a hazardous employee is survive | e's duty-relate two dependent |
| Net Investment Return: | 8.25\% |  |

SECTION 4: Reporting Information for the Kentucky Employees Retirement System


|  | Weighted Medicare Coverage <br> Rate in Effect on Valuation Date |
| :--- | :---: | :---: |
| Low Option | $\underline{\text { High Option }}$ |

## Members with Multiple Service Records:

For active members with service in more than one system, the liability has been valued as follows:

- Service under all systems is aggregated for purposes of determining benefit eligibility.
- Future service is projected only under the system in which the member is currently active.
- The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
- The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

| Non-Hazardous <br> Administrative Expenses: <br> Hazardous <br> Administrative Expenses: | $\$ 6,000,000$ |
| :--- | :--- |
| Actuarial Value of Assets: | Market value of assets less unrecognized return in each of the last five years. <br> Unrecognized return is equal to the difference between the actual market return and <br> the expected return on the actuarial value, and is recognized over a five-year period. |
| Actuarial Cost Method: | Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the <br> participant commenced employment. Normal Cost and Actuarial Accrued Liability <br> are calculated on an individual basis and are allocated by service, with Normal Cost <br> determined as if the current benefit accrual rate had always been in effect. |

## EXHIBIT VI

## Summary of Plan Provisions

This exhibit summarizes the major provisions of the 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: July 1 through June 30

| Non-Hazardous Normal Retirement: |  |
| :---: | :---: |
| Age Requirement | 65 |
| Service Requirement | None |
| Amount | If a member has at least 48 months of service, the monthly benefit is $1.97 \%$ times final average compensation times years of service. For member who were participants in any one of the state retirement systems from January 1, 1998 through January 1, 1999, the benefit factors is $2.00 \%$. For these members who retire between January 1, 1999 and January 31, 2009 with at least 240 months of service, the benefit factor is 2.20\% |
|  | Final compensation is the average salary during the five highest paid fiscal years. If the months of service credit during the highest five-year period is less than forty-eight, one or more additional fiscal years shall be used. For a non-hazardous member whose effective retirement date is between August 1, 2001 and January 1, 2009, and whose total service credit is at least 27 years and whose age and years of service total at least 75 , final compensation is based on three years rather than five years. If the months of service credit during the highest three-year period is less than twenty-four, one or more additional fiscal years shall be used. |

## Hazardous Normal Retirement:

Age Requirement 55

## Service Requirement <br> None

Amount

If a member has at least 60 months of service, the monthly benefit is $2.49 \%$ times final average compensation time years of service.

Final compensation is the average salary during the three highest paid fiscal years. If the months of service credit during the highest three-year period is less than twentyfour, one or more additional fiscal years shall be used.
If a member has less than 60 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.

## Non-Hazardous Early Retirement:

Requirement
Amount

Age 55 with 60 months service or any age with 25 years service.
Normal retirement benefit reduced by $5 \%$ per year for the first five years and $4 \%$ per year for the next five years for each year the member is younger than age 65 or has less than 27 years service, whichever is smaller.

Age 50 with 15 years of service or any age with 20 years service.
Normal retirement benefit reduced by $5.5 \%$ per year for each year the member is younger than age 55 or has less than 20 years service, whichever is smaller.

## Non-Hazardous Disability:

Age Requirement
Service Requirement
Members whose participation began before 8/1/2004

None
60 months

Normal retirement benefit except that service credit will be added to total service for the period from the last day of plan employment to the member's $65^{\text {th }}$ birthday or until the combined total service as of the last day of paid employment and added service equals 25 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For members with

## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Members whose participation
began on or after 8/1/2004

## Hazardous Disability:

Age Requirement
Service Requirement
Members whose participation
began before $8 / 1 / 2004$

Members whose participation
began on or after $8 / 1 / 2004$

None
60 months

Normal retirement benefit except that service credit will be added to total service for the period from the last day of plan employment to the member's $55^{\text {th }}$ birthday or until the combined total service as of the last day of paid employment and added service equals 20 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For employees with 20 of more years of service credit, actual service credit will be used.

A member in a hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than $25 \%$ of the member's final monthly rate of pay plus $10 \%$ of his final monthly rate of pay for each dependent child. The maximum dependent child's benefit is $40 \%$ of the member's final monthly rate of pay.

Normal retirement benefit based on actual service with no penalty or, if larger, 25\% of the Final Rate of Pay. May apply for disability even after normal retirement age.

| Vesting: |  |
| :---: | :---: |
| Age Requirement | None |
| Service Requirement | 60 months. Service purchased after August 1, 2004 does not count toward vesting insurance benefits. Service purchased by employees who began participating on or after August 1, 2004 does not count toward vesting retirement benefits. |
| Amount | Normal retirement benefit deferred to normal retirement age or reduced benefit payable at early retirement age. |
| Normal Retirement Age | 65 for non-hazardous members and 55 for hazardous members. |
| Pre-Retirement Death Benefit (not in line of duty): |  |
| Requirement | Any age with 60 months service or age 65 with 48 months service. |
| Amount | Benefit equal to the benefit the member would have received had the member retired on the day before the date of death and elected a $100 \%$ joint and survivor form. Benefit is actuarially reduced if member is less than age 55 at date of death. |
| Spouse's Pre-Retirement Death Benefit (in line of duty): |  |
| Requirement | None |
| Amount | The spouse may choose (1) a \$10,000 lump sum payment and monthly payments of $25 \%$ of the member's final monthly rate of pay or (2) benefits based on the member's age, years of service and final compensation at date of death. |
| Dependent Non-Spouse's Death Benefit (in line of duty) - Hazardous Plan: |  |
| Requirement | None |
| Amount | The non-spouse may choose (1) a $\$ 10,000$ lump sum payment or (2) benefits based upon the member's age, years of service and final compensation at date of death. |

Dependent Child's Death Benefit (in line of duty):

| Requirement | None |
| :--- | :--- |
| Amount | $10 \%$ of member's final monthly rate of pay up to a maximum of $40 \%$. |

## SECTION 4: Reporting Information for the Kentucky Employees Retirement System

| Post-Retirement Death Benefit: <br> Lump-sum Benefit <br> Husband and Wife | $\$ 5,000$ <br> The choice of payment option selected by the member will determine the monthly <br> benefits provided to the beneficiary upon the member's death. |
| :--- | :--- |
| Insurance Plan for Retirees: <br> Members whose participation <br> began before July 1, 2003 | The Retirement System pays a portion of medical premiums for retirees, and in the <br> case of hazardous duty retirees, their dependents and beneficiaries. The Insurance <br> Fund will pay 0\%, 25\%, 50\%, 75\%, or 100\% of the premiums depending on retiree <br> eligibility as reported by the System. |
| Members whose participation <br> began on or after July 1, 2003 | The Retirement System pays $\$ 10$ per month per year of service toward medical <br> premiums for non-hazardous retirees, $\$ 15$ per month per year of service for hazardous <br> retirees, and $\$ 10$ per month per year of service for surviving spouses of hazardous <br> employees. "Line of duty" insurance benefits will be calculated as if the member had <br> at least 20 years of hazardous service. |

## County Employees Retirement System

Actuarial Valuation and Review
as of June 30, 2005

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## \% SEGAL

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October 13, 2005
Board of Trustees
County Employees Retirement System
Perimeter Park West
1260 Louisville Road
Frankfort, Kentucky 40601-6124

## Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2005. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the fiscal year beginning July 1, 2006 and analyzes the preceding year's experience.
The census information on which our calculations were based was prepared by the System and the financial information was provided by the Auditor. That assistance is gratefully acknowledged.
This report is for the purpose of determining statutory funding requirements for the Retirement and Insurance Plans. Statutory funding requirements may not take all actuarial liabilities of the plans into account. Specifically, in determining employer funding requirements, state statute limits recognition of retiree and beneficiary Cost of Living Adjustments (COLAs) to only the adjustments granted as of the valuation date. Accordingly, care should be taken in using this report for other purposes.
This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.
Sincerely,
THE SEGAL COMPANY

By:


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## Purpose

This report has been prepared by The Segal Company to present a valuation of the County Employees Retirement System as of June 30, 2005. 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 Plan, as administered by the Board;
> The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2005, provided by the Board;
> The assets of the Plan as of June 30, 2005, provided by the Auditor;
> Economic assumptions regarding future salary increases and investment earnings; and
> Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

## Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:
> The County Employees Retirement System's basic financial goal is to establish contributions which fully fund the System's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.
> The retirement contribution rate is determined using the Entry Age Normal Cost (EANC) Method. Under this method the employer contribution required is the sum of the normal cost, administration expenses and the sum of the 30 -year amortization payments established each valuation due to changes in the Unfunded Actuarial Accrued Liability.
> The medical insurance contribution rate is determined in a similar method except that the actual contribution rate is determined by increasing the prior year's rate by an amount necessary to raise the insurance rate to the full EANC amount by the year 2016 .
> The rates calculated in this report may be adopted by the Board for July 1, 2006 through June 30, 2007.

## SECTION 1: Valuation Summary for the County Employees Retirement System

> The following summarizes the required contributions for the year beginning July 1, 2006 and compares them to the prior valuation amounts.

| Non-Hazardous |  |  |
| :---: | :---: | :---: |
| Plan | July 1, 2006 Rate | July 1, 2005 Rate |
| Retirement | 5.97\% | 4.55\% |
| Insurance | 7.22 | 6.43 |
| Total | 13.19\% | 10.98\% |
| Hazardous |  |  |
| Plan | July 1, 2006 Rate | July 1, 2005 Rate |
| Retirement | 13.11\% | 11.22\% |
| Insurance | $\underline{15.10}$ | $\underline{13.79}$ |
| Total | 28.21\% | 25.01\% |

> The increase in the total rate is due to:

| Non-Hazardous |  |
| :--- | :---: |
| Retirement plan investment loss | $0.10 \%$ |
| Retiree COLA | 0.79 |
| Insurance Phase-in* | 0.07 |
| Change in administrative expense assumption | -0.15 |
| Change in plan provisions | $\underline{0.24}$ |
| Other experience |  |
| Total change | $1.21 \%$ |
| Hazardous | 0.26 |
| Retirement plan investment loss | 1.31 |
| Retiree COLA | 0.02 |
| Insurance Phase-in* | -0.16 |
| Change in administrative expense assumption | $\underline{0.43}$ |
| Change in plan provisions | $3.20 \%$ |
| Other experience |  |
| Total change |  |

* Includes a portion of all insurance plan gains and losses for the year.
> Certain plan provisions have changed since the last valuation of the plans. For members whose participation began on or after August 1, 2004, the non-hazardous normal retirement benefit accrual factor is reduced from $2.20 \%$ to $2.00 \%$ of final average compensation for each year of service. In addition, the disability benefit for such members is equal to the benefit calculated as a normal retirement benefit based on service to date of disability retirement, or $20 \%$ of the Final Rate of Pay, if larger, for non-hazardous members. For hazardous members, the minimum disability benefit is $25 \%$ of the Final Rate of Pay. Disability benefits on this basis may be available even after the normal retirement age. For members whose participation began after July 1, 2003, the Insurance plan of the Retirement System pays $\$ 10$ per month per year of service for non-hazardous members, $\$ 15$ per month per year of service for hazardous duty members and $\$ 10$ per month per year of service for surviving spouses of hazardous duty members "Line of Duty" insurance benefits will be calculated as if the member had art least 20 years of hazardous service. These dollar amounts will be adjusted periodically for general inflation. See Exhibit IV for a summary of all plan provisions. These changes reduced the contribution rate for the non-hazardous Retirement plan by $0.05 \%$ of payroll, and reduced the contribution rate for the Insurance plan by $0.10 \%$ of non-hazardous member payroll and $0.16 \%$ of hazardous member payroll.
> As indicated in Section 2, Subsection B of this report, the total unrecognized investment losses as of June 30, 2005 are:

Non-Hazardous

| $\quad$Plan <br> Retirement | Unrecognized investment <br> (gains)/losses as of 6/30/2005 | Actuarial value as a <br> percentage of market value |
| :--- | :---: | :---: |
| Insurance | $\$ 165,608,690$ |  |

## Hazardous

## Plan

Unrecognized investment
Actuarial value as a
Retirement (gains)/losses as of 6/30/2005
percentage of market value
Insurance
\$41,107,304
102.9\%
$-1,758,208$
99.5

The investment losses for the Retirement plans will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent they are not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of $8.25 \%$ per year (net of expenses) on a market value basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed $8.25 \%$ rate and all other actuarial assumption are met, the contribution requirements would still increase in each of the next few years.
> The funded ratio for the non-hazardous Retirement Plan on a statutory basis is $93.94 \%$. This ratio is down from $105.9 \%$ last year primarily due to further recognition of deferred investment losses this year. This ratio is based on the actuarial liabilities and asset values computed for the purpose of meeting funding requirements on the basis required by state law. This basis does not take all actuarial liabilities and investment performance to date into account. It also does not consider the contractual nature of the retiree medical benefits provided by CERS. If the Retirement and Insurance results were combined, if the market value instead of actuarial value of assets were used, and if a $3 \%$ annual cost-of living adjustment for retirement benefits were assumed to be in effect for all future years, then the funded ratio for the combined non-hazardous Retirement and Insurance plans would be $57.57 \%$. The corresponding funded ratio for the hazardous plans would be $48.17 \%$

SECTION 1: Valuation Summary for the County Employees Retirement System

## Summary of Key Valuation Results

|  | County Non-Hazardous |  | County Hazardous |  | County Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | June 30, 2005 | June 30, 2004 | June 30, 2005 | June 30, 2004 | June 30, 2005 | June 30, 2004 |
| Contributions for next fiscal year: |  |  |  |  |  |  |
| Retirement | 5.97\% | 4.55\% | 13.11\% | 11.22\% | N/A | N/A |
| Insurance | 7.22 | 6.43 | 15.10 | 13.79 | N/A | N/A |
| Total | 13.19\% | 10.98\% | 28.21\% | 25.01\% | N/A | N/A |
| Funded status as of valuation date: |  |  |  |  |  |  |
| Retirement |  |  |  |  |  |  |
| Actuarial accrued liability | \$5,385,156,690 | \$4,936,459,488 | \$1,795,617,335 | \$1,640,830,120 | \$7,180,774,025 | \$6,577,289,608 |
| Actuarial value of assets | 5,059,208,687 | 5,187,851,530 | 1,452,353,023 | 1,457,612,042 | 6,511,561,710 | 6,645,463,572 |
| Unfunded liability on actuarial value of assets | 325,948,003 | -251,392,042 | 343,264,312 | 183,218,078 | 669,212,315 | -68,173,964 |
| Funded ratio on actuarial value of assets | 93.95\% | 105.09\% | 80.88\% | 88.83\% | 90.68\% | 101.04\% |
| Market value of assets | \$4,893,599,997 | \$4,613,335,957 | \$1,411,245,719 | \$1,305,011,472 | \$6,304,845,716 | \$5,918,347,429 |
| Unfunded liability on market value of assets | 491,556,693 | 323,123,531 | 384,371,616 | 335,818,648 | 875,928,309 | 658,942,179 |
| Funded ratio on market value of assets | 90.87\% | 93.45\% | 78.59\% | 79.53\% | 87.80\% | 89.98\% |
| Insurance |  |  |  |  |  |  |
| Actuarial accrued liability | \$2,788,754,654 | \$2,438,734,696 | \$1,283,299,092 | \$1,025,684,477 | \$4,072,053,746 | \$3,464,419,173 |
| Actuarial value of assets | 663,941,949 | 585,399,072 | 359,180,461 | 310,578,162 | 1,023,122,410 | 895,977,234 |
| Unfunded liability on actuarial value of assets | 2,124,812,705 | 1,853,335,624 | 924,118,631 | 715,106,315 | 3,048,931,336 | 2,568,441,939 |
| Funded ratio on actuarial value of assets | 23.81\% | 24.00\% | 27.99\% | 30.28\% | 25.13\% | 25.86\% |
| Market value of assets | \$668,485,367 | \$563,877,594 | \$360,938,669 | \$297,734,286 | 1,029,424,036 | 861,611,880 |
| Unfunded liability on market value of assets | 2,120,269,287 | 1,874,857,102 | 922,360,423 | 727,950,191 | 3,042,629,710 | 2,602,807,293 |
| Funded ratio on market value of assets | 23.97\% | 23.12\% | 28.13\% | 29.03\% | 25.28\% | 24.87\% |
| Demographic data as of valuation date: |  |  |  |  |  |  |
| Number of retired participants and beneficiaries | 31,347 | 29,129 | 4,361 | 4,005 | 35,708 | 33,134 |
| Number of vested former members | 7,771 | 6,927 | 482 | 361 | 8,253 | 7,288 |
| Number of former members due a refund | 41,098 | 37,492 | 1,489 | 1,287 | 42,587 | 38,779 |
| Number of active members | 81,240 | 80,922 | 9,464 | 9,349 | 90,704 | 90,271 |
| Total salary | \$1,885,275,000 | \$1,826,870,880 | \$411,121,728 | \$392,562,624 | \$2,296,396,728 | \$2,219,433,504 |
| Average salary | 23,206 | 22,576 | 43,441 | 41,990 | 25,317 | 24,586 |

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## A. MEMBER DATA

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

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

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, $\mathrm{B}, \mathrm{C}$, and D .

The ratio of non-actives to actives has slowly but steadily climbed in both groups for the past decade. As the number of annuitants per active employee rises, cash flow is impacted. The system either becomes more dependent on investment income to cover benefit payments, or contributions must rise to meet these obligations. (For the two retirement plans, contributions have been less than benefit payments for six consecutive years.)

## Active Members

Plan costs are affected by the age, years of service and salaries of active members. In this year's valuation, there were 81,240 active members with an average age of 45.0 , average years of service of 8.1 years and average salaries of $\$ 23,206$. The 80,922 active members in the prior valuation had an average age of 44.8 , average service of 7.9 years and average salaries of $\$ 22,576$.

In the hazardous plan, there were 9,464 active members with an average age of 38.0 , average years of service of 8.2 years and average salaries of $\$ 43,441$. The 9,349 active members in the prior valuation had an average age of 38.1, average service of 8.1 years and average salaries of \$41,990.

## Inactive Members

In this year's valuation, there were 7,771 non-hazardous members with a vested right to a deferred or immediate vested benefit. In addition, there were 41,098 members entitled to a return of their employee contributions.
For the hazardous plan, there were 482 members with a vested right to a deferred or immediate vested benefit. In addition, there were 1,489 members entitled to a return of their employee contributions.

## Retired Participants and Beneficiaries

As of June 30, 2005, 28,060 non-hazardous retired participants and 3,287 beneficiaries were receiving total monthly benefits of $\$ 23,299,195$. For comparison, in the previous valuation, there were 26,075 retired participants and 3,054 beneficiaries receiving monthly benefits of \$20,627,857.

For the hazardous plan, 3,839 retired participants and 522 beneficiaries were receiving total monthly benefits of $\$ 7,435,388$. For comparison, in the previous valuation, there were 3,514 retired participants and 491 beneficiaries receiving monthly benefits of $\$ 6,629,934$.

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A historical perspective of how the member population has changed over the past nine valuations can be seen in these charts.

SECTION 2: Valuation Results for the County Employees Retirement System

CHART 1A - Non-Hazardous
Member Population: 1997-2005

| Year Ended <br> June 30 | Active <br> Members | Vested Terminated <br> Members* | Retired Participants <br> and Beneficiaries | Ratio of Non-Actives <br> to Actives |
| :---: | :---: | :---: | :---: | :---: |
| 1997 | 69,219 | 2,503 | 17,797 | 0.29 |
| 1998 | 71,426 | 2,839 | 18,976 | 0.31 |
| 1999 | 74,151 | 3,238 | 20,687 | 0.32 |
| 2000 | 77,419 | 3,500 | 22,708 | 0.34 |
| 2001 | 78,773 | 4,080 | 24,415 | 0.36 |
| 2002 | 79,850 | 4,470 | 26,147 | 0.38 |
| 2003 | 82,288 | 4,692 | 27,092 | 0.39 |
| 2004 | 80,922 | 6,927 | 29,129 | 0.45 |
| 2005 | 81,240 | 7,771 | 31,347 | 0.48 |

CHART 1B - Hazardous
Member Population: 1997-2005

| Year Ended <br> June 30 | Active <br> Members | Vested Terminated <br> Members* | Retired Participants <br> and Beneficiaries | Ratio of Non-Actives <br> to Actives |
| :---: | :---: | :---: | :---: | :---: |
| 1997 | 6,513 | 100 | 2,217 | 0.36 |
| 1998 | 6,800 | 117 | 2,392 | 0.37 |
| 1999 | 7,488 | 128 | 2,704 | 0.38 |
| 2000 | 7,951 | 112 | 2,984 | 0.39 |
| 2001 | 8,586 | 148 | 3,221 | 0.39 |
| 2002 | 8,949 | 148 | 3,483 | 0.41 |
| 2003 | 9,286 | 165 | 3,737 | 0.42 |
| 2004 | 9,349 | 361 | 4,005 | 0.47 |
| 2005 | 9,464 | 482 | 4,361 | 0.51 |

*Excludes terminated members due a refund of employee contributions.

## SECTION 2: Valuation Results for the County Employees Retirement System

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

CHART 2A - Non-Hazardous
Distribution of Active Members by Age as of June 30, 2005


## CHART 3A - Non-Hazardous

Distribution of Active Members by Years of Service as of June 30, 2005


These graphs show a distribution of the current non-hazardous retired participants based on their monthly amount and age, by type of pension.

SECTION 2: Valuation Results for the County Employees Retirement System

CHART 4A - Non-Hazardous
Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2005


CHART 5A - Non-Hazardous
Distribution of Retired Participants by Type and by Age as of June 30, 2005


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

SECTION 2: Valuation Results for the County Employees Retirement System

CHART 2B - Hazardous
Distribution of Active Members by Age as of June 30, 2005


CHART 3B - Hazardous
Distribution of Active Members by Years of Service as of June 30, 2005


These graphs show a distribution of the current hazardous retired participants based on their monthly amount and age, by type of pension.

SECTION 2: Valuation Results for the County Employees Retirement System

CHART 4B - Hazardous
Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2005


CHART 5B - Hazardous
Distribution of Retired Participants by Type and by Age as of June 30, 2005


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## B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative and investment expenses) and net investment earnings (less common stock commissions and securities lending expense) 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 E and F.

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

The 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.

Both the actuarial value and market value of assets are representations of the 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 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.

These charts depict the components of changes in the actuarial value of assets over the last eight years for the two nonhazardous plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.
$■$ Adjustment toward market value ■ Benefits paid
$■$ Net interest and dividends
■ Net contribution

SECTION 2: Valuation Results for the County Employees Retirement System


Non-Hazardous Retirement
Development of the Fund Through June 30, 2005

| Year Ended June 30 | Employer Contributions* | Member Contributions | Net Interest and Dividends** | Adjustment Toward Market Value | Administrative and Investment Expenses | Benefit Payments | Actuarial Value of Assets at End of Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | \$107,526,000 | \$74,382,000 | \$113,937,000 | \$448,646,445 | \$5,620,000 | \$142,863,000 | \$3,346,205,003 |
| 1999 | 110,591,000 | 98,566,000 | 120,509,000 | 582,815,432 | 6,519,000 | 179,940,000 | 4,072,227,435 |
| 2000 | 106,587,000 | 96,676,000 | 143,530,000 | 1,086,361,099 | 7,350,000 | 213,998,000 | 5,284,033,534 |
| 2001 | 48,914,000 | 101,597,000 | 155,881,000 | 20,266,015 | 7,820,000 | 179,037,000 | 5,423,834,549 |
| 2002 | 4,663,371 | 121,573,670 | 141,791,936 | -79,867,632 | 10,029,562 | 204,179,174 | 5,397,787,158 |
| 2003 | 11,855,694 | 125,300,584 | 124,381-363 | -121,335,398 | 10,879,055 | 240,530,299 | 5,286,580,047 |
| 2004 | 44,028,465 | 122,484,428 | 130,892,445 | -112,243,733 | 11,913,070 | 271,977,052 | 5,187,851,530 |
| 2005 | 54,616,800 | 127,636,735 | 137,162,844 | -128,420,908 | 14,005,886 | 305,632,428 | 5,059,208,687 |

[^9]These charts depict the components of changes in the actuarial value of assets over the last eight years for the two nonhazardous plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.
$■$ Adjustment toward market value - Benefits paid

- Net interest and dividends

■ Net contributions

## SECTION 2: Valuation Results for the County Employees Retirement System



Non-Hazardous Insurance
Development of the Fund Through June 30, 2005

| Year Ended June 30 | Employer Contributions* | Insurance <br> Appropriation Contributions | Net Interest and Dividends** | Adjustment Toward Market Value | Administrative and Investment Expenses | Benefit Payments | Actuarial Value of Assets at End of Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | \$29,271,000 | \$0 | \$5,373,000 | \$14,824,200 | \$25,000 | \$15,600,000 | \$168,531,296 |
| 1999 | 47,902,000 | 0 | 6,294,000 | 26,753,873 | 52,000 | 17,492,000 | 231,937,169 |
| 2000 | 55,214,000 | 0 | 7,965,000 | 46,582,525 | 114,000 | 21,942,000 | 319,642,694 |
| 2001 | 62,292,000 | 0 | 9,332,000 | 8,274,934 | 244,000 | 27,539,000 | 371,758,628 |
| 2002 | 102,150,788 | 0 | 6,286,566 | 3,397,597 | 401,971 | 32,694,301 | 450,497,307 |
| 2003 | 99,234,843 | 0 | 7,217,788 | 2,804,204 | 309,021 | 39,385,015 | 520,060,105 |
| 2004 | 89,344,241 | 0 | 9,549,993 | 13,804,584 | 708,301 | 46,651,550 | 585,399,072 |
| 2005 | 106,638,253 | 993,727 | 12,681,728 | 17,521,143 | 1,029,817 | 58,262,157 | 663,941,949 |

[^10]These charts depict the components of changes in the actuarial value of assets over the last eight years for the two hazardous plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

■ Adjustment toward market value
■ Benefits paid

- Net interest and dividends
$\square$ Net contributions

SECTION 2: Valuation Results for the County Employees Retirement System


Hazardous Retirement
Development of the Fund Through June 30, 2005

| Year Ended June 30 | Employer Contributions* | Member Contributions | Net Interest and Dividends** | Adjustment Toward Market Value | Administrative and Investment Expenses | Benefit Payments | Actuarial Value of Assets at End of Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | \$42,298,000 | \$16,581,000 | \$32,158,000 | \$126,357,182 | \$902,000 | \$53,264,000 | \$927,057,492 |
| 1999 | 48,291,000 | 22,918,000 | 33,560,000 | 137,945,547 | 939,000 | 44,181,553 | 1,124,651,486 |
| 2000 | 51,739,000 | 28,476,000 | 39,901,000 | 281,307,308 | 1,085,000 | 79,447,000 | 1,445,542,794 |
| 2001 | 20,983,000 | 27,279,000 | 42,810,000 | 8,670,222 | 974,000 | 57,645,000 | 1,486,666,016 |
| 2002 | 10,904,214 | 35,164,272 | 41,988,855 | -22,692,628 | 1,382,853 | 65,136,083 | 1,485,511,793 |
| 2003 | 16,905,556 | 36,202,579 | 34,987,251 | -30,769,513 | 1,507,060 | 74,325,750 | 1,467,004,856 |
| 2004 | 27,640,775 | 38,667,764 | 36,316,694 | -26,431,067 | 1,644,607 | 83,942,373 | 1,457,612,042 |
| 2005 | 39,947,747 | 39,515,038 | 38,557,672 | -28,977,285 | 2,044,131 | 92,258,060 | 1,452,353,023 |

[^11]${ }^{*}$ SEGAL
$\square$ Adjustment toward market value - Benefits paid
$\square$ Net interest and dividends

- Net contributions


## SECTION 2: Valuation Results for the County Employees Retirement System

## CHART 6D - Hazardous Insurance

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1998 - 2005


Hazardous Insurance
Development of the Fund Through June 30, 2005

| Year Ended June 30 | Employer Contributions* | Insurance <br> Appropriation Contributions | Net Interest and Dividend** | Adjustment Toward Market Value | Administrative and Investment Expenses | Benefit Payments | Actuarial Value of Assets at End of Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | \$14,275,000 | \$0 | \$2,757,000 | \$7,753,398 | \$25,000 | \$7,538,000 | \$87,055,079 |
| 1999 | 23,383,000/ | 0 | 3,176,000 | 9,273,144 | 25,000 | 8,272,000 | 114,590,223 |
| 2000 | 55,214,000 | 0 | 4,270,000 | 4,232,689 | 52,000 | 9,597,000 | 168,657,912 |
| 2001 | 32,149,000 | 0 | 5,141,000 | 3,567,337 | 109,000 | 11,531,000 | 197,875,249 |
| 2002 | 45,730,333 | 0 | 3,234,643 | 1,126,092 | 187,302 | 13,095,137 | 234,683,878 |
| 2003 | 45,243,950 | 0 | 3,710,646 | 562,884 | 142,705 | 14,868,573 | 269,190,080 |
| 2004 | 47,036,777 | 0 | 5,025,818 | 6,287,672 | 260,354 | 16,701,831 | 310,578,162 |
| 2005 | 54,106,577 | 1,445,360 | 6,864,339 | 8,606,467 | 435,800 | 21,984,644 | 359,180,461 |

[^12]$\stackrel{H}{*}$ SEGAL

These charts show the determination of the actuarial value of assets as of the valuation date.

## SECTION 2: Valuation Results for the County Employees Retirement System

CHART 7A - Non-Hazardous Retirement
Determination of Actuarial Value of Assets for Year Ended June 30, 2005

| 1. Market value of assets |  | Original | $\$ 4,893,599,997$ <br> Unrecognized |
| :--- | ---: | ---: | ---: |
|  |  | $\underline{\text { Amount }}$ | $\underline{\text { Amortization }}$ |

CHART 7B - Non-Hazardous Insurance
Determination of Actuarial Value of Assets for Year Ended June 30, 2005

| 1. Market value of assets | Original |  | \$668,485,367 |
| :---: | :---: | :---: | :---: |
|  |  |  | Unrecognized |
| 2. Unrecognized return* | Amount | Amortization | Return |
| (a) Year ended June 30, 2005 | \$5,978,318 | \$1,195,664 | \$4,782,654 |
| (b) Year ended June 30, 2004 | 41,589,264 | 8,317,853 | 24,953,558 |
| (c) Year ended June 30, 2003 | -28,828,353 | -5,765,671 | -11,531,342 |
| (d) Year ended June 30, 2002 | -68,307,263 | -13,661,453 | -13,661,453 |
| (e) Year ended June 30, 2001 | -50,864,852 | -10,172,970 | 0 |
| (f) Total unrecognized return |  |  | 4,543,418 |
| 3. Final actuarial value of assets: (1)-(2f) |  |  | \$663,941,949 |
| 4. Actuarial value as a percentage of market value: $(3) \div(1)$ |  |  | 99.3\% |

[^13]These charts show the determination of the actuarial value of the assets as of the valuation date.

## SECTION 2: Valuation Results for the County Employees Retirement System

## CHART 7C - Hazardous Retirement

 Determination of Actuarial Value of Assets for Year Ended June 30, 2005| 1. Market value of assets |  | \$1,411,245,719 |  |
| :---: | :---: | :---: | :---: |
|  | Original |  | Unrecognized |
| 2. Unrecognized return* | Amount | Amortization | Return |
| (a) Year ended June 30, 2005 | \$1,432,785 | \$286,557 | \$1,146,228 |
| (b) Year ended June 30, 2004 | 35,262,776 | 7,052,555 | 21,157,666 |
| (c) Year ended June 30, 2003 | -74,447,276 | -14,889,455 | -29,778,910 |
| (d) Year ended June 30, 2002 | -168,161,440 | -33,632,288 | -33,632,288 |
| (e) Year ended June 30, 2001 | -344,389,248 | -68,877,850 | -0 |
| (f) Total unrecognized return |  |  | -41,107,304 |
| 3. Final actuarial value of assets: (1) - (2f) |  |  | \$1,452,353,023 |
| 4. Actuarial value as a percentage of market value: $(3) \div(1)$ |  |  | 102.9\% |

CHART 7D - Hazardous Insurance
Determination of Actuarial Value of Assets for Year Ended June 30, 2005

| 1. Market value of assets |  |  | \$360,938,669 |
| :---: | :---: | :---: | :---: |
|  | Original |  | Unrecognized |
| 2. Unrecognized return* | Amount | Amortization | Return |
| (a) Year ended June 30, 2005 | \$3,083,518 | \$616,704 | \$2,466,814 |
| (b) Year ended June 30, 2004 | 20,998,596 | 4,199,719 | 12,599,158 |
| (c) Year ended June 30, 2003 | -15,162,699 | -3,032,540 | -6,065,080 |
| (d) Year ended June 30, 2002 | -36,213,421 | -7,242,684 | -7,242,684 |
| (e) Year ended June 30, 2001 | -30,298,823 | -6,059,765 | 0 |
| (f) Total unrecognized return |  |  | 1,758,208 |
| 3. Final actuarial value of assets: (1) - (2f) |  |  | \$359,180,461 |
| 4. Actuarial value as a percentage of market value: $(3) \div(1)$ |  |  | 99.5\% |

[^14]This page intentionally left blank

## SECTION 2: Valuation Results for the County Employees Retirement System

## CHART 8

Calculation of Unrecognized Return for the Year Ended June 30, 2005

|  | Non-Hazardous Retirement | Non-Hazardous Insurance | Hazardous Retirement | Hazardous Insurance |
| :---: | :---: | :---: | :---: | :---: |
| 1. Employer and member contributions | \$182,253,535 | \$107,631,980 | \$79,462,785 | \$55,551,937 |
| 2. Benefit payments including refunds, or healthcare premiums | 305,632,428 | 58,262,157 | 92,258,060 | 21,984,644 |
| 3. Administrative and investment expenses | 14,005,886 | 1,029,817 | 2,044,131 | 435,800 |
| 4. Net cash flow: (1) - (2) - (3) | -137,384,779 | 48,340,006 | -14,839,406 | 33,131,493 |
| 5. Market value of assets as of June 30, 2004 | 4,613,335,957 | 563,877,594 | 1,305,011,472 | 297,734,286 |
| 6. Market value of assets as of June 30,2005 | 4,893,599,997 | 668,485,367 | 1,411,245,719 | 360,938,669 |
| 7. Actuarial value of assets as of June 30, 2004 | 5,187,851,530 | 585,399,072 | 1,457,612,042 | 310,578,162 |
| 8. Average actuarial value of assets: (7) $+[0.5 \mathrm{x}(4)]$ | 5,119,159,140 | 609,569,075 | 1,450,192,339 | 327,143,909 |
| 9. Expected return on an actuarial basis: $8.25 \%$ of (8) | 422,330,629 | 50,289,449 | 119,640,868 | 26,989,372 |
| 10. Gain/(loss) for the year ended June 30, 2005: (6) - (5) - (4) - (9) | -4,681,810 | 5,978,318 | 1,432,785 | 3,083,518 |
| 11. Unrecognized return as of June 30, 2005: $80 \%$ of (10) | -3,745,448 | 4,782,654 | 1,146,228 | 2,466,814 |

## SECTION 2: Valuation Results for the County Employees Retirement System

These charts show the change in the actuarial value of assets versus the market value over the past eight years for the nonhazardous plans.

```
-Actuarial Value
--Market Value
```

$\rightarrow$ Actuarial Value

- Market Value

CHART 9A - Non-Hazardous Retirement
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998-2005


CHART 9B - Non-Hazardous Insurance
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998-2005


These charts show the change in the actuarial value of assets versus the market value over the past eight years for the hazardous plans.
$\rightarrow$ Actuarial Value

- Market Value
-Actuarial Value
- Market Value


## SECTION 2: Valuation Results for the County Employees Retirement System



CHART 9D - Hazardous Insurance
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998-2005


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

## 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.

Chart 10 presents a summary of experience for the year. A discussion of the major components of the actuarial experience is on the following pages.

## CHART 10

Actuarial Experience for Year Ended June 30, 2005

|  | Non-Hazardous <br> Retirement | Non-Hazardous <br> Insurance | Hazardous <br> Retirement | Hazardous <br> Insurance |  |
| :--- | :--- | ---: | ---: | ---: | ---: |
| 1. $\quad$ Net gain/(loss) from investments* | $-\$ 413,588,693$ | $-\$ 20,086,577$ | $-\$ 110,060,481$ | $-\$ 11,518,567$ |  |
| 2. | Net gain/(loss) from administrative expenses | $-1,438,688$ | $-524,828$ | $-77,522$ | $-\mathbf{1 9 8 , 3 5 0}$ |
| 3. | Net gain/(loss) from other experience** | $\underline{-158,856,414}$ | $\underline{30,418,491}$ | $-47,369,167$ | $\underline{-12,337,614}$ |
| 4. $\quad$ Net experience gain/(loss): $(1)+(2)+(3)$ | $-\$ 573,883,795$ | $\$ 9,807,086$ | $-\$ 157,507,170$ | $-\$ 24,054,531$ |  |

[^15]** Details in Chart 14

## SECTION 2: Valuation Results for the County Employees Retirement System

This chart shows the losses due to investment experience.

## 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 System's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is $8.25 \%$. Chart 11 shows the net investment experience for each plan for the year.

Since the actual return for the year was less than the assumed return, each plan experienced an actuarial loss during the year ended June 30, 2005 with regard to its investments.

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. Chart 12, which follows, shows the rate of return on an actuarial basis compared to the market value investment return for the last eight years.

## CHART 11

Actuarial Value Investment Experience for Year Ended June 30, 2005

|  | Non-Hazardous <br> Retirement | Non-Hazardous <br> Insurance | Hazardous <br> Retirement | Hazardous <br> Insurance |
| :--- | :--- | ---: | ---: | ---: |
| 1. | Actual return | $\$ 8,741,936$ | $\$ 30,202,871$ | $\$ 9,580,387$ |
| 2. Average value of assets | $5,119,159,140$ | $609,569,075$ | $\$ 1,450,192,339$ | $\$ 15,470,806$ |
| 3. Actual rate of return: $(1) \div(2)$ | $0.17 \%$ | $4.95 \%$ | $0.66 \%$ | $327,143,909$ |
| 4. Assumed rate of return | $8.25 \%$ | $8.25 \%$ | $8.25 \%$ | $4.73 \%$ |
| 5. Expected return: $(2) \mathrm{x}(4)$ | $\$ 422,330,629$ | $\$ 50,289,448$ | $\$ 119,640,868$ | $8.25 \%$ |
| 6. | Actuarial gain/(loss): $(1)-(5)$ | $\underline{-\$ 413,588,693}$ | $\underline{-\$ 20,086,577}$ | $\underline{\underline{-\$ 110,060,481}}$ |

## SECTION 2: Valuation Results for the County Employees Retirement System

CHART 12A - Non-Hazardous Retirement
Investment Return - Actuarial Value vs. Market Value: 1998-2005

|  | Net Interest and <br> Dividend Income |  | Recognition of Capital <br> Appreciation | Actuarial Value <br> Investment Return | Market Value <br> Investment Return |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| June 30 | Amount | Percent | Amount | Percent | Amount | Percent | Amount | Percent |
| $\mathbf{1 9 9 8}$ | $\$ 113,937,000$ | $4.12 \%$ | $\$ 448,646,445$ | $16.21 \%$ | $\$ 562,583,445$ | $21.33 \%$ | $\$ 673,873,449$ | $21.42 \%$ |
| 1999 | $120,509,000$ | 3.59 | $582,815,432$ | 17.36 | $703,324,432$ | 20.95 | $614,212,590$ | 15.96 |
| 2000 | $143,530,000$ | 3.53 | $1,086,361,099$ | 26.74 | $1,229,891,099$ | 30.27 | $217,824,204$ | 4.88 |
| 2001 | $155,881,000$ | 2.96 | $20,266,015$ | 0.38 | $176,147,015$ | 3.35 | $-239,461,644$ | -5.14 |
| 2002 | $141,791,936$ | 2.64 | $-79,867,632$ | -1.48 | $61,924,304$ | 1.15 | $-185,461,064$ | -4.26 |
| 2003 | $124,381,363$ | 2.33 | $-121,335,398$ | -2.27 | $3,045,965$ | 0.06 | $162,377,892$ | 3.99 |
| 2004 | $130,892,445$ | 2.50 | $-112,243,733$ | -2.15 | $18,648,712$ | 0.36 | $555,832,069$ | 13.50 |
| 2005 | $\underline{137,162,844}$ | 2.68 | $\underline{-128,420,908}$ | -2.51 | $\underline{8,741,936}$ | 0.17 | $\underline{417,648,819}$ | 9.19 |
| Total | $\$ 1,068,085,588$ |  | $\$ 1,696,221,320$ |  | $\$ 2,764,306,908$ |  | $\$ 2,216,846,315$ |  |

CHART 12B - Non-Hazardous Insurance
Investment Return - Actuarial Value vs. Market Value: 1998-2005


## SECTION 2: Valuation Results for the County Employees Retirement System

CHART 12C - Hazardous Retirement
Investment Return - Actuarial Value vs. Market Value: 1998-2005

| Year Ended June 30 | Net Interest and Dividend Income |  | Recognition of Capital Appreciation |  | Actuarial Value Investment Return |  | Market Value Investment Return |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Percent | Amount | Percent | Amount | Percent | Amount | Percent |
| 1998 | \$32,158,000 | 4.20\% | \$126,357,182 | 16.49\% | \$158,515,182 | 20.69\% | \$181,742,476 | 20.83\% |
| 1999 | 33,560,000 | 3.57 | 137,945,547 | 14.67 | 171,505,547 | 18.24 | 143,494,373 | 13.42 |
| 2000 | 39,901,000 | 3.55 | 281,307,308 | 25.02 | 321,208,308 | 28.56 | 54,094,746 | 4.41 |
| 2001 | 42,810,000 | 2.97 | 8,670,222 | 0.60 | 51,480,222 | 3.57 | -58,424,532 | -4.58 |
| 2002 | 41,988,855 | 2.84 | -22,692,628 | -1.54 | 19,296,227 | 1.31 | -47,103,145 | -3.92 |
| 2003 | 34,987,251 | 2.37 | -30,769,513 | -2.09 | 4,217,738 | 0.29 | 47,170,054 | 4.16 |
| 2004 | 36,316,694 | 2.49 | -26,431,067 | -1.81 | 9,885,627 | 0.68 | 155,495,441 | 13.41 |
| 2005 | 38,557,672 | 2.66 | -28,977,285 | -2.00 | 9,580,387 | 0.66 | 121,073,653 | 9.33 |
| Total | \$300,279,472 |  | \$445,409,766 |  | \$745,689,238 |  | \$597,543,066 |  |
|  |  |  |  |  | Average return | 7.36\% |  | 6.47\% |

CHART 12D - Hazardous Insurance
Investment Return - Actuarial Value vs. Market Value: 1998-2005

|  | Net Interest and <br> Dividend Income |  | Recognition of Capital <br> Appreciation | Actuarial Value <br> Investment Return | Market Value <br> Investment Return |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Iune 30 | Amount | Percent | Amount | Percent | Amount | Percent | Amount | Percent |
| $\mathbf{1 9 9 8}$ | $\$ 2,757,000$ | $3.77 \%$ | $\$ 7,753,398$ | $10.59 \%$ | $\$ 10,510,398$ | $14.36 \%$ | $\$ 17,100,114$ | $20.59 \%$ |
| 1999 | $3,176,000$ | 3.36 | $9,273,144$ | 9.80 | $12,449,144$ | 13.16 | $13,451,746$ | 12.11 |
| 2000 | $4,270,000$ | 3.11 | $4,232,689$ | 3.08 | $8,502,689$ | 6.19 | $-17,918,878$ | -11.57 |
| 2001 | $5,141,000$ | 2.87 | $3,567,337$ | 1.99 | $8,708,337$ | 4.87 | $-6,560,963$ | -3.86 |
| 2002 | $3,234,643$ | 1.51 | $1,126,092$ | 0.53 | $4,360,735$ | 2.04 | $-18,622,357$ | -9.81 |
| 2003 | $3,710,646$ | 1.49 | 562,884 | 0.23 | $4,273,530$ | 1.71 | $5,445,820$ | 2.69 |
| 2004 | $5,025,818$ | 1.77 | $6,287,672$ | 2.21 | $11,313,490$ | 3.98 | $44,447,355$ | 18.66 |
| 2005 | $6,864,339$ | 2.10 | $\underline{8,606,467}$ | 2.63 | $15,470,806$ | 4.73 | $\underline{30,072,890}$ | 9.57 |
| Total | $\$ 34,179,446$ |  | $\$ 41,409,683$ |  | $\$ 75,589,129$ |  | $\$ 67,415,727$ | $4.61 \%$ |

## SECTION 2: Valuation Results for the County Employees Retirement System

The actuarial asset valuation method gradually takes into account fluctuations in the market value rate of return. These charts illustrate how this leveling effect has actually worked over the years 1998-2005 for the non-hazardous plans.


CHART 13A - Non-Hazardous Retirement
Market and Actuarial Rates of Return for Years Ended June 30, 1998-2005


CHART 13B - Non-Hazardous Insurance
Market and Actuarial Rates of Return for Years Ended June 30, 1998-2005


## SECTION 2: Valuation Results for the County Employees Retirement System

The actuarial asset valuation method gradually takes into account fluctuations in the market value rate of return. These charts illustrate how this leveling effect has actually worked over the years 1998-2005 for the hazardous plans.

```
- Actuarial Value
```

- Market Value
- Actuarial Value
- Market Value

CHART 13C - Hazardous Retirement
Market and Actuarial Rates of Return for Years Ended June 30, 1998-2005


CHART 13D - Hazardous Insurance
Market and Actuarial Rates of Return for Years Ended June 30, 1998-2005


## Administrative Expenses

Current methodology includes an assumption for the cost of administration for the retirement funds but not for the insurance funds. This assumption is modified with each valuation to estimate expenses for the upcoming fiscal year. The following summarizes the past year's experience and presents the assumptions for the next year.

| Plan | Year End 2005 <br> Assumption | Year End 2005 <br> Actual Experience | Gain/(Loss)* for <br> the Year | Year End 2006 <br> Assumption |
| :--- | ---: | :---: | ---: | ---: | ---: |
| Non-Hazardous Retirement | $\$ 8,700,000$ | $\$ 10,029,042$ | $-\$ 1,438,688$ | $\$ 10,000,000$ |
| Non-Hazardous Insurance | 0 | 484,830 | $-524,828$ | 0 |
| Hazardous Retirement | 800,000 | 871,614 | $-77,522$ | 900,000 |
| Hazardous Insurance | 0 | 183,233 | $-198,530$ | 0 |

[^16]The chart shows elements of the experience gain/(loss) for the most recent year.
> the number of disability retirements, and
> salary increases different than assumed.
A brief summary of the demographic gain/(loss)
experience of the Funds for the year ended June 30, 2005 is shown in the chart below.

CHART 14
Experience Due to Changes in Demographics for Year Ended June 30, 2005

|  | Non-Hazardous Retirement | Non-Hazardous Insurance | Hazardous Retirement | Hazardous Insurance |
| :---: | :---: | :---: | :---: | :---: |
| 1. COLA | -\$61,490,506 | N/A | -\$21,728,999 | N/A |
| 2. Other | -97,365,908 | \$30,418,491 | -25,640,168 | \$12,337,614 |
| 3. Total | -\$158,856,414 | \$30,418,491 | -\$47,369,167 | \$12,337,614 |
| 4. Percentage of actuarial accrued liability | 2.90\% | 1.10\% | 2.60\% | 1.00\% |

## 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:
> COLAs granted in the year,
> the extent of turnover among the participants,
> retirement experience (earlier or later than expected),
> mortality (more or fewer deaths than expected),

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## SECTION 2: Valuation Results for the County Employees Retirement System

## D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded/(overfunded) actuarial accrued liability. This total amount is then divided by the projected salaries for active members to determine the funding rate.

The recommended contribution is based on a 30 -year amortization of bases established each year as specified in the law governing the Plan.

Exhibit G in Section 3 provides details on these amortization bases.

The contribution rates as of June 30, 2005 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Charts 15 and 16 present the recommended contributions and reconciliations from the prior valuation.

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

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

SECTION 2: Valuation Results for the County Employees Retirement System

## CHART 15A - Non-Hazardous Retirement

## Recommended Contribution

|  | As of June 30 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2005 |  | 2004 |  |
|  | Amount | \% of Salary | Amount | \% of Salary |
| 1. Total normal cost | \$191,093,390 | 10.14\% | \$187,730,598 | 10.28\% |
| 2. Administrative expenses | 10,000,000 | 0.53\% | 8,700,000 | 0.48\% |
| 3. Expected employee contributions | -93,384,705 | -4.95\% | -90,518,789 | -4.95\% |
| 4. Employer normal cost: $(1)+(2)+(3)$ | \$107,708,685 | 5.71\% | \$105,911,809 | 5.80\% |
| 5. Actuarial accrued liability | 5,385,156,690 |  | 4,936,459,488 |  |
| 6. Actuarial value of assets | 5,059,208,687 |  | 5,187,851,530 |  |
| 7. Unfunded/(overfunded) actuarial accrued liability: (5) - (6) | \$325,948,003 |  | -\$251,392,042 |  |
| 8. Payment on unfunded/(overfunded) actuarial accrued liability | 4,799,620 | 0.25\% | -22,788,140 | -1.25\% |
| 9. Total recommended contribution: $(4)+(8)$ | \$112,508,305 | 5.97\% | \$83,123,669 | $\underline{\text { 4.55\% }}$ |
| 10. Projected salary | \$1,885,275,000 |  | \$1,826,870,880 |  |

## CHART 16A - Non-Hazardous Retirement

Reconciliation of Recommended Contribution from June 30, 2004 to June 30, 2005

| Recommended Contribution as of June 30, 2004 | $\$ 83,123,669$ |
| :--- | ---: |
| Effect of COLA for retirees | $\$ 3,080,593$ |
| Effect of investment loss | $20,720,244$ |
| Effect of change in administrative expense assumption | $1,300,000$ |
| Effect of net other changes | $\underline{4,283,799}$ |
| Total change | $\underline{\underline{\$ 29,384,636}}$ |
| Recommended Contribution as of June 30, 2005 | $\$ 112,508,305$ |

## SECTION 2: Valuation Results for the County Employees Retirement System

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

CHART 15B - Non-Hazardous Insurance
Recommended Contribution

|  | As of June 30 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2005 |  | 2004 |  |
|  | Amount | \% of Salary | Amount | \% of Salary |
| 1. Employer normal cost | \$160,978,728 | 8.54\% | \$165,464,221 | 9.06\% |
| 2. Actuarial accrued liability | 2,788,754,654 |  | 2,438,734,696 |  |
| 3. Actuarial value of assets | 663,941,949 |  | 585,399,072 |  |
| 4. Unfunded/(overfunded) actuarial accrued liability: (2) - (3) | \$2,124,812,705 |  | \$1,853,335,624 |  |
| 5. Payment on unfunded/(overfunded) actuarial accrued liability | 124,621,762 | 6.61\% | 107,478,536 | 5.88\% |
| 6. Full EANC contribution: (1) + (5) | \$285,600,490 | $\underline{\underline{15.15 \%}}$ | \$272,942,757 | $\underline{\underline{14.94 \%}}$ |
| 7. Projected salary | \$1,885,275,000 |  | \$1,826,870,880 |  |
| 8. Prior year's funding rate | N/A | 6.43\% | N/A | 5.66\% |
| 9. Years to reach full EANC | N/A | 11 | N/A | 12 |
| 10. Additional amount for current year | N/A | 0.79\% | N/A | 0.77\% |
| 11. Total recommended contribution rate: (8) + (10) | N/A | 7.22\% | N/A | 6.43\% |

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

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

## SECTION 2: Valuation Results for the County Employees Retirement System

CHART 15C - Hazardous Retirement
Recommended Contribution

|  | As of June 30 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2005 |  | 2004 |  |
|  | Amount | \% of Salary | Amount | \% of Salary |
| 1. Total normal cost | \$66,605,976 | 16.20\% | \$63,548,648 | 16.19\% |
| 2. Administrative expenses | 900,000 | 0.22\% | 800,000 | 0.20\% |
| 3. Expected employee contributions | $\underline{-31,383,044}$ | -7.63\% | -29,803,612 | -7.59\% |
| 4. Employer normal cost: $(1)+(2)+(3)$ | \$36,122,932 | 8.79\% | \$34,545,036 | 8.80\% |
| 5. Actuarial accrued liability | 1,795,617,335 |  | 1,640,830,120 |  |
| 6. Actuarial value of assets | 1,452,353,023 |  | 1,457,612,042 |  |
| 7. Unfunded/(overfunded) actuarial accrued liability: (5) - (6) | \$343,264,312 |  | \$183,218,078 |  |
| 8. Payment on unfunded/(overfunded) actuarial accrued liability | 17,766,906 | 4.32\% | 9,514,368 | 2.42\% |
| 9. Total recommended contribution: (4) + (8) | \$53,889,838 | $\underline{\underline{13.11 \%}}$ | \$44,059,404 | $\underline{\underline{11.22 \%}}$ |
| 10. Projected salary | \$411,121,728 |  | \$392,562,624 |  |

CHART 16C - Hazardous Retirement
Reconciliation of Recommended Contribution from June 30, 2004 to June 30, 2005

| Recommended Contribution as of June 30, 2004 | $\$ 44,059,404$ |
| :--- | ---: |
| Effect of COLA for retirees | $\$ 1,088,594$ |
| Effect of investment loss | $5,513,884$ |
| Effect of change in administrative expense assumption | $\underline{100,000}$ |
| Effect of net other changes | $\underline{3,127,956}$ |
| Total change | $\underline{\$ 9,830,434}$ |
| Recommended Contribution as of June 30, 2005 | $\$ 53,889,838$ |

## SECTION 2: Valuation Results for the County Employees Retirement System

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

CHART 15D - Hazardous Insurance
Recommended Contribution

|  | As of June 30 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2005 |  | 2004 |  |
|  | Amount | \% of Salary | Amount | \% of Salary |
| 1. Employer normal cost | \$62,752,542 | 15.26\% | \$56,937,787 | 14.50\% |
| 2. Actuarial accrued liability | 1,283,299,092 |  | 1,025,684,477 |  |
| 3. Actuarial value of assets | 359,180,461 |  | 310,578,162 |  |
| 4. Unfunded/(overfunded) actuarial accrued liability: (2) - (3) | \$924,118,631 |  | \$715,106,315 |  |
| 5. Payment on unfunded/(overfunded) actuarial accrued liability | 53,186,357 | 12.94\% | 41,359,748 | 10.54\% |
| 6. Full EANC contribution: (1) + (5) | \$115,938,899 | $\underline{\underline{28.20 \%}}$ | \$98,297,535 | $\underline{\underline{25.04 \%}}$ |
| 7. Projected salary | \$411,121,728 |  | \$392,562,624 |  |
| 8. Prior year's funding rate | N/A | 13.79\% | N/A | 12.77\% |
| 9. Years to reach full EANC | N/A | 11 | N/A | 12 |
| 10. Additional amount for current year | N/A | 1.31\% | N/A | 1.02\% |
| 11. Total recommended contribution rate: (8) + (10) | N/A | 15.10\% | N/A | 13.79\% |

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SECTION 3: Supplemental Information for the County Employees Retirement System

## EXHIBIT A

Table of Plan Coverage

| Category | Non-Hazardous |  |  | Hazardous |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Year Ended June 30 |  | Change From Prior Year | Year Ended June 30 |  | Change From Prior Year |
|  | 2005 | 2004 |  | 2005 | 2004 |  |
| Active members in valuation: |  |  |  |  |  |  |
| Number | 81,240 | 80,922 | 0.4\% | 9,464 | 9,349 | 1.2\% |
| Average age | 45.0 | 44.8 | N/A | 38.0 | 38.1 | N/A |
| Average service | 8.1 | 7.9 | N/A | 8.2 | 8.1 | N/A |
| Total salary | \$1,885,275,000 | \$1,826,870,880 | 3.2\% | \$411,121,728 | \$392,562,624 | 4.7\% |
| Average salary | 23,206 | 22,576 | 2.8\% | 43,441 | 41,990 | 3.5\% |
| Account balances | 837,513,907 | 814,908,627 | 2.8\% | 264,913,465 | 256,366,204 | 3.3\% |
| Total active vested members | 54,677 | 53,219 | 2.7\% | 6,363 | 6,206 | 2.5\% |
| Vested terminated members | 7,771 | 6,927 | 12.2\% | 482 | 361 | 33.5\% |
| Retired participants: |  |  |  |  |  |  |
| Number in pay status | 25,206 | 23,274 | 8.3\% | 3,507 | 3,205 | 9.4\% |
| Average age | 68.1 | 68.3 | N/A | 58.2 | 57.9 | N/A |
| Average monthly benefit | \$776 | \$737 | 5.3\% | \$1,875 | \$1,828 | 2.6\% |
| Disabled members: |  |  |  |  |  |  |
| Number in pay status | 2,854 | 2,801 | 1.9\% | 332 | 309 | 7.4\% |
| Average age | 61.4 | 60.9 | N/A | 51.0 | 50.7 | N/A |
| Average monthly benefit | \$720 | \$699 | 3.0\% | \$1,159 | \$1,109 | 4.5\% |
| Beneficiaries in pay status | 3,287 | 3,054 | 7.6\% | 522 | 491 | 6.3\% |
| Inactive nonvested members due a refund | 41,098 | 37,492 | 9.6\% | 1,489 | 1,287 | 15.7\% |

SECTION 3: Supplemental Information for the County Employees Retirement System

## EXHIBIT B - Non-Hazardous

Members in Active Service as of June 30, 2005
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 | 5,414 | 5,174 | 240 | -- | -- | -- | -- | -- | -- | -- |
|  | \$16,670 | \$16,476 | \$20,833 | -- | -- | -- | -- | -- | -- | -- |
| 25-29 | 4,832 | 3,640 | 1,135 | 57 | -- | -- | -- | -- | -- | -- |
|  | 21,633 | 20,195 | 25,935 | \$27,779 | -- | -- | -- | -- | -- | -- |
| 30-34 | 6,816 | 4,133 | 2,115 | 551 | 17 | -- | -- | -- | -- | -- |
|  | 22,981 | 19,923 | 26,818 | 30,969 | \$30,347 | -- | -- | -- | -- | -- |
| 35-39 | 9,170 | 4,563 | 2,987 | 1,143 | 410 | 67 | -- | -- | -- | -- |
|  | 22,861 | 19,010 | 23,428 | 31,382 | 35,114 | \$39,516 | -- | -- | -- | -- |
| 40-44 | 12,467 | 4,788 | 4,179 | 1,878 | 964 | 550 | 108 | -- | -- | -- |
|  | 23,506 | 18,891 | 21,679 | 27,742 | 34,011 | 40,567 | \$44,432 | -- | -- | -- |
| 45-49 | 13,415 | 3,959 | 3,968 | 2,869 | 1,320 | 755 | 482 | 62 | -- | -- |
|  | 24,769 | 19,892 | 21,621 | 25,387 | 31,261 | 38,605 | 44,391 | \$49,883 | -- | -- |
| 50-54 | 11,994 | 2,999 | 3,037 | 2,767 | 1,722 | 862 | 462 | 133 | 12 | -- |
|  | 25,109 | 20,472 | 22,436 | 23,938 | 28,439 | 33,584 | 41,853 | 55,985 | \$57,310 | -- |
| 55-59 | 9,325 | 2,406 | 2,128 | 1,917 | 1,496 | 819 | 426 | 104 | 26 | 3 |
|  | 24,588 | 20,227 | 22,221 | 24,688 | 25,941 | 29,725 | 37,566 | 48,871 | 60,118 | \$67,552 |
| 60-64 | 4,985 | 1,240 | 1,248 | 1,008 | 782 | 419 | 212 | 53 | 18 | 5 |
|  | 22,670 | 17,741 | 20,121 | 23,035 | 25,176 | 28,887 | 32,894 | 46,442 | 55,585 | 90,900 |
| 65-69 | 1,910 | 549 | 479 | 382 | 268 | 131 | 67 | 25 | 5 | 4 |
|  | 20,340 | 15,483 | 18,528 | 20,557 | 24,725 | 25,933 | 28,796 | 39,254 | 90,252 | 58,920 |
| 70 \& over | 912 | 222 | 235 | 172 | 159 | 62 | 39 | 10 | 5 | 8 |
|  | 18,189 | 14,490 | 16,115 | 17,034 | 21,379 | 19,760 | 29,271 | 34,009 | 34,166 | 47,261 |
| Total | 81,240 | 33,673 | 21,751 | 12,744 | 7,138 | 3,665 | 1,796 | 387 | 66 | 20 |
|  | \$23,206 | \$19,031 | \$22,561 | \$25,661 | \$28,924 | \$33,868 | \$39,855 | \$50,140 | \$58,688 | \$63,546 |

SECTION 3: Supplemental Information for the County Employees Retirement System

## EXHIBIT B - Hazardous

Members in Active Service as of June 30, 2005
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 | 632 | 615 | 17 | -- | -- | -- | -- | -- | -- | -- |
|  | \$29,520 | \$29,333 | \$36,278 | -- | -- | -- | -- | -- | -- | -- |
| 25-29 | 1,318 | 998 | 318 | 2 | -- | -- | -- | -- | -- | -- |
|  | 37,424 | 35,295 | 44,052 | \$45,630 | -- | -- | -- | -- | -- | -- |
| 30-34 | 2,019 | 871 | 893 | 251 | 4 | -- | -- | -- | -- | -- |
|  | 41,676 | 35,734 | 44,728 | 51,338 | \$48,048 | -- | -- | -- | -- | -- |
| 35-39 | 1,868 | 490 | 549 | 589 | 222 | 18 | -- | -- | -- | -- |
|  | 45,329 | 35,686 | 43,607 | 50,803 | 55,456 | \$56,293 | -- | -- | -- | -- |
| 40-44 | 1,602 | 319 | 295 | 378 | 466 | 134 | 10 | -- | -- | -- |
|  | 48,175 | 34,957 | 42,009 | 49,394 | 56,253 | 61,021 | \$57,139 | -- | -- | -- |
| 45-49 | 950 | 180 | 175 | 179 | 243 | 112 | 56 | 5 | -- | -- |
|  | 49,102 | 37,039 | 40,916 | 48,637 | 54,360 | 62,741 | 62,404 | \$76,512 | -- | -- |
| 50-54 | 613 | 146 | 107 | 108 | 101 | 44 | 78 | 26 | 3 | -- |
|  | 49,841 | 35,828 | 44,872 | 46,120 | 51,204 | 60,532 | 71,054 | 74,486 | \$75,168 | -- |
| 55-59 | 285 | 99 | 78 | 33 | 35 | 13 | 12 | 7 | 7 | 1 |
|  | 44,140 | 36,442 | 39,492 | 44,597 | 50,938 | 50,634 | 66,180 | 80,081 | 75,333 | \$96,864 |
| 60-64 | 123 | 46 | 31 | 17 | 20 | 4 | -- | 2 | 2 | 1 |
|  | 42,995 | 34,109 | 42,453 | 44,651 | 49,853 | 50,730 | -- | 94,440 | 92,166 | 71,124 |
| 65-69 | 45 | 22 | 11 | 7 | 5 | -- | -- | -- | -- | -- |
|  | 37,977 | 30,631 | 45,213 | 43,186 | 47,088 | -- | -- | -- | -- | -- |
| 70 \& over | 9 | 2 | 2 | 1 | 2 | 2 | -- | -- | -- | -- |
|  | 40,984 | 21,408 | 26,400 | 36,336 | 46,740 | 71,712 | -- | -- | -- | -- |
| Total | 9,464 | 3,788 | 2,476 | 1,565 | 1,098 | 327 | 156 | 40 | 12 | 2 |
|  | \$43,441 | \$34,535 | \$43,541 | \$49,730 | \$54,833 | \$60,811 | \$66,682 | \$76,716 | \$78,097 | \$83,994 |

SECTION 3: Supplemental Information for the County Employees Retirement System

## EXHIBIT C - Non-Hazardous

Retired Lives Summary

|  | Male Lives |  | Female Lives |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Monthly Benefits | Number | Monthly Benefits | Number | Monthly Benefits |
| Basic form | 2,797 | \$2,271,068.74 | 9,440 | \$5,250,781.00 | 12,237 | \$7,521,849.74 |
| Straight life (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Joint \& survivor |  |  |  |  |  |  |
| 100\% to beneficiary | 1,765 | 1,542,279.13 | 725 | 344,525.86 | 2,490 | 1,886,804.99 |
| 66-2/3\% to beneficiary | 523 | 785,340.77 | 243 | 207,062.45 | 766 | 992,403.22 |
| $50 \%$ to beneficiary | 768 | 977,696.61 | 673 | 602,725.52 | 1,441 | 1,580,422.13 |
| Pop-up option | 2,056 | 2,676,925.07 | 1,490 | 1,248,271.89 | 3,546 | 3,925,196.96 |
| 10 years certain | 1 | 103.26 | 0 | 0.00 | 1 | 103.26 |
| 10 years certain \& life | 1,172 | 828,996.53 | 2,310 | 1,310,400.64 | 3,482 | 2,139,397.17 |
| Social Security option |  |  |  |  |  |  |
| Age 62 basic | 217 | 360,167.41 | 387 | 323,776.37 | 604 | 683,943.78 |
| Age 62 survivorship | 489 | 793,062.30 | 216 | 189,787.52 | 705 | 982,849.82 |
| Partial deferred (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Widows age 60 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Dependent child | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Refund | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 15 years certain \& life | 480 | 374,847.47 | 447 | 271,839.84 | 927 | 646,687.31 |
| 20 years certain \& life | 313 | 340,683.21 | 352 | 260,241.78 | 665 | 600,924.99 |
| 5 years certain | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 12 month basic | 49 | 41,622.13 | 153 | 110,269.16 | 202 | 151,891.29 |
| PLSO 24 month basic | 17 | 11,676.62 | 93 | 54,323.84 | 110 | 66,000.46 |
| PLSO 36 month basic | 126 | 48,898.99 | 271 | 106,284.91 | 397 | 155,183.90 |
| PLSO 12 month survivor | 76 | 76,955.01 | 46 | 36,351.70 | 122 | 113,306.71 |
| PLSO 24 month survivor | 44 | 29,825.27 | 30 | 13,877.02 | 74 | 43,702.29 |
| PLSO 36 month survivor | $\underline{187}$ | 92,152.05 | 104 | 34,222.65 | 291 | 126,374.70 |
| Total | 11,080 | \$11,252,300.57 | 16,980 | \$10,364,742.15 | 28,060 | \$21,617,042.72 |

SECTION 3: Supplemental Information for the County Employees Retirement System

EXHIBIT C - Hazardous
Retired Lives Summary

|  | Male Lives |  | Female Lives |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Monthly Benefits | Number | Monthly Benefits | Number | Monthly Benefits |
| Basic form | 481 | \$879,591.72 | 136 | \$174,835.00 | 617 | \$1,054,426.72 |
| Straight life (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Joint \& survivor |  |  |  |  |  |  |
| 100\% to beneficiary | 429 | 710,823.84 | 18 | 14,569.39 | 447 | 725,393.23 |
| 66-2/3\% to beneficiary | 188 | 422,332.54 | 3 | 7,022.62 | 191 | 429,355.16 |
| $50 \%$ to beneficiary | 285 | 566,409.41 | 13 | 16,859.05 | 298 | 583,268.46 |
| Pop-up option | 1,323 | 2,731,076.55 | 35 | 54,729.44 | 1,358 | 2,785,805.99 |
| 10 years certain | 29 | 45,455.84 | 1 | 1,285.37 | 30 | 46,741.21 |
| 10 years certain \& life | 146 | 250,709.15 | 25 | 39,292.06 | 171 | 290,001.21 |
| Social Security option |  |  |  |  |  |  |
| Age 62 basic | 92 | 138,607.88 | 5 | 5,592.44 | 97 | 144,200.32 |
| Age 62 survivorship | 282 | 405,268.10 | 9 | 8,059.82 | 291 | 413,327.92 |
| Partial deferred (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Widows age 60 | 0 | 0.00 | 1 | 183.10 | 1 | 183.10 |
| Dependent child | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Refund | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 15 years certain \& life | 47 | 73,717.83 | 6 | 5,383.53 | 53 | 79,101.36 |
| 20 years certain \& life | 91 | 152,676.70 | 8 | 8,683.59 | 99 | 161,360.29 |
| 5 years certain | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 12 month basic | 23 | 23,008.86 | 5 | 5,786.13 | 28 | 28,794.99 |
| PLSO 24 month basic | 13 | 23,329.35 | 3 | 3,711.42 | 16 | 27,040.77 |
| PLSO 36 month basic | 22 | 25,482.96 | 5 | 2,186.49 | 27 | 27,669.45 |
| PLSO 12 month survivor | 26 | 53,194.14 | 1 | 2,629.89 | 27 | 55,824.03 |
| PLSO 24 month survivor | 23 | 32,310.40 | 2 | 1,922.93 | 25 | 34,233.33 |
| PLSO 36 month survivor | 59 | 73,419.29 | 4 | 2,508.64 | $\underline{63}$ | 75,927.93 |
| Total | 3,559 | 6,607,414.56 | 280 | 355,240.91 | 3,839 | 6,962,655.47 |

SECTION 3: Supplemental Information for the County Employees Retirement System

## EXHIBIT D - Non-Hazardous

Beneficiary Summary

|  | Male Lives |  | Female Lives |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Monthly Benefits | Number | Monthly Benefits | Number | Monthly Benefits |
| Basic form | 2 | \$872.07 | 25 | \$14,827.74 | 27 | \$15,699.81 |
| Straight life (old plan) | 0 | 0 | 0 | 0.00 | 0 | 0.00 |
| Joint \& survivor |  |  |  |  |  |  |
| 100\% to beneficiary | 230 | 89,272.23 | 1,307 | 583,321.48 | 1,537 | 672,593.71 |
| 66-2/3\% to beneficiary | 22 | 7,598.08 | 158 | 77,137.25 | 180 | 84,735.33 |
| $50 \%$ to beneficiary | 52 | 14,574.34 | 272 | 94,372.16 | 324 | 108,946.50 |
| Pop-up option | 64 | 31,336.91 | 248 | 162,663.82 | 312 | 194,000.73 |
| 10 years certain | 72 | 37,959.48 | 90 | 62,308.64 | 162 | 100,268.12 |
| 10 years certain \& life | 88 | 41,499.63 | 133 | 74,801.27 | 221 | 116,300.90 |
| Social Security option |  |  |  |  |  |  |
| Age 62 basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Age 62 survivorship | 11 | 7,781.48 | 71 | 77,432.26 | 82 | 85,213.74 |
| Partial deferred (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Widows age 60 | 0 | 0.00 | 4 | 680.26 | 4 | 680.26 |
| Dependent child | 2 | 361.09 | 2 | 615.10 | 4 | 976.19 |
| Refund | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 15 years certain \& life | 30 | 21,293.57 | 90 | 61,780.58 | 120 | 83,074.15 |
| 20 years certain \& life | 37 | 17,148.34 | 67 | 56,981.05 | 104 | 74,129.39 |
| 5 years certain | 95 | 60,766.79 | 92 | 71,137.14 | 187 | 131,903.93 |
| PLSO 12 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 24 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 36 month basic | 0 | 0.00 | 5 | 1,166.23 | 5 | 1,166.23 |
| PLSO 12 month survivor | 0 | 0.00 | 6 | 8,295.47 | 6 | 8,295.47 |
| PLSO 24 month survivor | 0 | 0.00 | 2 | 648.19 | 2 | 648.19 |
| PLSO 36 month survivor | $\underline{6}$ | 2,186.29 | 4 | 1,333.06 | 10 | 3,519.35 |
| Total | 711 | 332,650.30 | 2,576 | 1,349,501.70 | 3,287 | 1,682,152.00 |

## EXHIBIT D - Hazardous

Beneficiary Summary

|  | Male Lives |  | Female Lives |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Monthly Benefits | Number | Monthly Benefits | Number | Monthly Benefits |
| Basic form | 0 | \$0.00 | 20 | \$16,507.00 | 20 | 16,507.00 |
| Straight life (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Joint \& survivor |  |  |  |  |  |  |
| 100\% to beneficiary | 5 | 3,099.14 | 103 | 112,817.45 | 108 | 115,916.59 |
| 66-2/3\% to beneficiary | 0 | 0.00 | 25 | 28,300.98 | 25 | 28,300.98 |
| $50 \%$ to beneficiary | 0 | 0.00 | 31 | 20,749.28 | 31 | 20,749.28 |
| Pop-up option | 0 | 0.00 | 74 | 97,277.89 | 74 | 97,277.89 |
| 10 years certain | 9 | 10,632.48 | 13 | 14,740.25 | 22 | 25,372.73 |
| 10 years certain \& life | 0 | 0.00 | 8 | 6,326.42 | 8 | 6,326.42 |
| Social Security option |  |  |  |  |  |  |
| Age 62 basic | 0 | 0.00 | 2 | 651.86 | 2 | 651.86 |
| Age 62 survivorship | 1 | 2,453.53 | 51 | 68,336.88 | 52 | 70,790.41 |
| Partial deferred (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Widows age 60 | 0 | 0.00 | 3 | 2,355.65 | 3 | 2,355.65 |
| Dependent child | 62 | 20,221.16 | 74 | 23,526.21 | 136 | 43,747.37 |
| Refund | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 15 years certain \& life | 0 | 0.00 | 5 | 5,123.03 | 5 | 5,123.03 |
| 20 years certain \& life | 2 | 2,838.65 | 22 | 25,256.69 | 24 | 28,095.34 |
| 5 years certain | 5 | 2,206.73 | 3 | 7,331.67 | 8 | 9,538.40 |
| PLSO 12 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 24 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 36 month basic | 1 | 810.49 | 2 | 1,024.46 | 3 | 1,834.95 |
| PLSO 12 month survivor | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 24 month survivor | 0 | 0.00 | 1 | 144.76 | 1 | 144.76 |
| PLSO 36 month survivor | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ | $\underline{0.00}$ | $\underline{0}$ | $\underline{0.00}$ |
| Total | 85 | \$42,262.18 | 437 | \$430,470.48 | 522 | \$472,732.66 |

EXHIBIT E - Non-Hazardous Retirement
Summary Statement of Income and Expenses on an Actuarial Value Basis

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Contribution income: |  |  |  |  |
| Employer contributions | \$54,616,800 |  | \$44,028,465 |  |
| Member contributions | 127,636,735 |  | 122,484,428 |  |
| Less administrative and investment expenses | -14,005,886 |  | -11,913,070 |  |
| Net contribution income |  | \$168,247,649 |  | \$154,599,823 |
| Investment income: |  |  |  |  |
| Interest, dividends and other income | \$159,018,977 |  | \$140,474,161 |  |
| Recognition of capital appreciation | -128,420,908 |  | -112,243,733 |  |
| Less stock commissions and securities lending expense | -21,856,133 |  | $\underline{-9,581,716}$ |  |
| Net investment income |  | 8,741,936 |  | 18,648,712 |
| Total income available for benefits |  | \$176,989,585 |  | \$173,248,535 |
| Less benefit payments: |  |  |  |  |
| Benefit payments | -\$294,590,072 |  | -\$260,642,995 |  |
| Refunds | -11,042,356 |  | -11,334,057 |  |
| Net benefit payments |  | -\$305,632,428 |  | -\$271,977,052 |
| Change in reserve for future benefits |  | -\$128,642,843 |  | -\$98,728,517 |

## EXHIBIT E - Non-Hazardous Insurance

Summary Statement of Income and Expenses on an Actuarial Value Basis

|  | Year Ended June 30, 2005 | Year Ended June 30, 2004 |
| :---: | :---: | :---: |
| Contribution income: |  |  |
| Employer contributions | \$106,638,253 | \$89,344,241 |
| Insurance Appropriation contributions | 993,727 | 0 |
| Less administrative and investment expenses | -1,029,817 | -708,301 |
| Net contribution income | \$106,602,163 | \$88,635,940 |
| Investment income: |  |  |
| Interest, dividends and other income | \$15,609,814 | \$10,625,125 |
| Recognition of capital appreciation | 17,521,143 | 13,804,584 |
| Less stock commissions and securities lending expense | -2,928,086 | -1,075,132 |
| Net investment income | 30,202,871 | 23,354,577 |
| Total income available for benefits | \$136,805,034 | \$111,990,517 |
| Less healthcare premium subsidies | -\$58,262,157 | -\$46,651,550 |
| Change in reserve for future benefits | \$78,542,877 | \$65,338,967 |

## EXHIBIT E - Hazardous Retirement

Summary Statement of Income and Expenses on an Actuarial Value Basis

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Contribution income: |  |  |  |  |
| Employer contributions | \$39,947,747 |  | \$27,640,775 |  |
| Member contributions | 39,515,038 |  | 38,667,764 |  |
| Less administrative and investment expenses | -2,044,131 |  | -1,644,607 |  |
| Net contribution income |  | \$77,418,654 |  | \$64,663,932 |
| Investment income: |  |  |  |  |
| Interest, dividends and other income | \$44,757,269 |  | \$39,023,270 |  |
| Recognition of capital appreciation | -28,977,285 |  | -26,431,067 |  |
| Less stock commissions and securities lending expense | -6,199,597 |  | -2,706,576 |  |
| Net investment income |  | 9,580,387 |  | 9,885,627 |
| Total income available for benefits |  | \$86,999,041 |  | \$74,549,559 |
| Less benefit payments: |  |  |  |  |
| Benefit payments | -\$90,119,217 |  | -\$81,421,925 |  |
| Refunds | -2,138,843 |  | -2,520,448 |  |
| Net benefit payments |  | -\$92,258,060 |  | -\$83,942,373 |
| Change in reserve for future benefits |  | -\$5,259,019 |  | -\$9,392,814 |

## EXHIBIT E - Hazardous Insurance

Summary Statement of Income and Expenses on an Actuarial Value Basis

|  | Year Ended June 30, 2005 | Year Ended June 30, 2004 |
| :---: | :---: | :---: |
| Contribution income: |  |  |
| Employer contributions | \$54,106,577 | \$47,036,777 |
| Insurance Appropriation contributions | 1,445,360 |  |
| Less administrative and investment expenses | -435,800 | -260,354 |
| Net contribution income | \$55,116,137 | \$46,776,423 |
| Investment income: |  |  |
| Interest, dividends and other income | \$8,452,232 | \$5,589,010 |
| Recognition of capital appreciation | 8,606,467 | 6,287,672 |
| Less stock commissions and securities lending expense | -1,587,893 | $\underline{-563,192}$ |
| Net investment income | 15,470,806 | 11,313,490 |
| Total income available for benefits | \$70,586,943 | \$58,089,913 |
| Less healthcare premium subsidies | -\$21,984,644 | -\$16,701,831 |
| Change in reserve for future benefits | \$48,602,299 | \$41,388,082 |

## EXHIBIT F - Non-Hazardous Retirement

Table of Financial Information

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Cash equivalents |  | \$568,976 |  | \$813,273 |
| Accounts receivable: |  |  |  |  |
| Investment accounts receivable | \$22,679,788 |  | \$242,770 |  |
| Year-end interest receivable | 0 |  | 23,285,315 |  |
| Year-end accounts receivable | 0 |  | 25,041,039 |  |
| Contributions receivable | 26,845,575 |  | 572,838 |  |
| Total accounts receivable |  | 49,525,363 |  | 49,141,962 |
| Investments: |  |  |  |  |
| Stocks | \$2,804,717,023 |  | \$2,754,886,293 |  |
| Bonds | 1,589,888,984 |  | 1,443,631,252 |  |
| Mortgage | 270,871,946 |  | 247,087,021 |  |
| Short-term investments | 179,377,744 |  | 118,667,313 |  |
| Real estate | 2,395,898 |  | 2,495,681 |  |
| Fixed assets | 474,964 |  | 531,136 |  |
| Total investments at market value |  | 4,847,726,559 |  | 4,567,298,696 |
| Total assets |  | \$4,897,820,898 |  | \$4,617,253,931 |
| Less accounts payable |  | -\$4,220,901 |  | -\$3,917,974 |
| Net assets at market value |  | \$4,893,599,997 |  | \$4,613,335,957 |
| Net assets at actuarial value |  | \$5,059,208,687 |  | \$5,187,851,530 |

EXHIBIT F - Non-Hazardous Insurance
Table of Financial Information

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Cash equivalents |  | \$49,843 |  | \$30,008 |
| Accounts receivable: |  |  |  |  |
| Investment accounts receivable | \$1,651,050 |  | \$36,997 |  |
| Year-end interest receivable | 0 |  | 1,364,324 |  |
| Year-end accounts receivable | 0 |  | 8,363,612 |  |
| Contributions receivable | 10,526,974 |  | $\underline{\square}$ |  |
| Total accounts receivable |  | 12,178,024 |  | 9,764,933 |
| Investments: |  |  |  |  |
| Stocks | \$526,692,915 |  | \$450,829,317 |  |
| Bonds | 64,851,134 |  | 51,847,439 |  |
| Short-term investments | 65,472,182 |  | 52,303,176 |  |
| Total investments at market value |  | 657,016,231 |  | 554,979,932 |
| Total assets |  | \$669,244,098 |  | \$564,774,873 |
| Less accounts payable |  | -\$758,731 |  | -\$897,279 |
| Net assets at market value |  | \$668,485,367 |  | \$563,877,594 |
| Net assets at actuarial value |  | \$663,941,949 |  | \$585,399,072 |

EXHIBIT F - Hazardous Retirement
Table of Financial Information

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Cash equivalents |  | \$96,951 |  | \$227,908 |
| Accounts receivable: |  |  |  |  |
| Investment accounts receivable | \$6,227,892 |  | \$68,840 |  |
| Year-end interest receivable | 0 |  | 6,412,170 |  |
| Year-end accounts receivable | 0 |  | 9,716,164 |  |
| Contributions receivable | 10,133,680 |  | 344,812 |  |
| Total accounts receivable |  | 16,361,572 |  | 16,541,986 |
| Investments: |  |  |  |  |
| Stocks | \$822,879,336 |  | \$788,757,059 |  |
| Bonds | 434,811,956 |  | 394,924,326 |  |
| Mortgage | 74,211,580 |  | 69,112,719 |  |
| Short-term investments | 61,359,681 |  | 34,290,213 |  |
| Real estate | 2,423,942 |  | 2,416,314 |  |
| Fixed assets | 42,678 |  | 47,562 |  |
| Total investments at market value |  | 1,395,729,173 |  | 1,289,548,193 |
| Total assets |  | \$1,412,187,696 |  | \$1,306,318,087 |
| Less accounts payable |  | -\$941,977 |  | -\$1,306,615 |
| Net assets at market value |  | \$1,411,245,719 |  | \$1,305,011,472 |
| Net assets at actuarial value |  | \$1,452,353,023 |  | \$1,457,612,042 |

## EXHIBIT F - Hazardous Insurance

Table of Financial Information

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Cash equivalents |  | \$28,451 |  | \$7,071 |
| Accounts receivable: |  |  |  |  |
| Investment accounts receivable | \$916,788 |  | \$19,080 |  |
| Year-end interest receivable | 0 |  | 745,380 |  |
| Year-end accounts receivable | 0 |  | 3,811,142 |  |
| Contributions receivable | 4,208,379 |  |  |  |
| Total accounts receivable |  | 5,125,167 |  | 4,575,602 |
| Investments: |  |  |  |  |
| Stocks | \$283,617,912 |  | \$232,519,309 |  |
| Bonds | 37,420,652 |  | 30,331,059 |  |
| Short-term investments | 35,090,880 |  | 30,509,232 |  |
| Total investments at market value |  | 356,129,444 |  | 293,359,600 |
| Total assets |  | \$361,283,062 |  | \$297,942,273 |
| Less accounts payable |  | -\$344,393 |  | -\$207,987 |
| Net assets at market value |  | \$360,938,669 |  | \$297,734,286 |
| Net assets at actuarial value |  | \$359,180,461 |  | \$310,578,162 |

EXHIBIT G- Non-Hazardous Retirement
Table of Amortization Bases

| Date Established | Initial Years | Initial Amount | Annual Payment* | Years Remaining | Outstanding Balance |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/1990 | 30 | \$93,672,421 | \$9,705,455 | 15 | \$118,630,627 |
| 06/30/1991 | 30 | 61,472,822 | 6,071,347 | 16 | 78,053,927 |
| 06/30/1992 | 30 | -125,111,651 | -11,778,626 | 17 | -158,659,658 |
| 06/30/1993 | 30 | -28,358,370 | -2,544,889 | 18 | -35,795,696 |
| 06/30/1994 | 30 | 59,026,195 | 5,049,148 | 19 | 73,936,806 |
| 06/30/1995 | 30 | -35,766,009 | -2,916,245 | 20 | -44,337,948 |
| 06/30/1996 | 30 | -188,502,047 | -14,650,247 | 21 | -230,702,062 |
| 06/30/1997 | 30 | -200,122,489 | -14,812,745 | 22 | -241,070,503 |
| 06/30/1998 | 30 | -311,976,854 | -21,992,417 | 23 | -369,162,971 |
| 06/30/1999 | 30 | -379,088,077 | -25,450,818 | 24 | -439,839,915 |
| 06/30/2000 | 30 | -804,685,873 | -51,451,574 | 25 | -913,939,349 |
| 06/30/2001 | 30 | 250,075,433 | 15,228,392 | 26 | 277,610,458 |
| 06/30/2002 | 30 | 529,261,185 | 30,694,743 | 27 | 573,453,917 |
| 06/30/2003 | 30 | 391,393,784 | 21,618,160 | 28 | 413,373,250 |
| 06/30/2004 | 30 | 633,089,111 | 33,302,770 | 29 | 650,985,394 |
| 06/30/2005 | 30 | 573,411,726 | 28,727,166 | 30 | 573,411,726 |
| Total |  |  | \$4,799,620 |  | \$325,948,003 |

* Level percentage of salary

EXHIBIT G - Non-Hazardous Insurance
Table of Amortization Bases

| Date <br> Established | Initial <br> Years | Initial <br> Amount | Annual <br> Payment* | Years <br> Remaining | Outstanding <br> Balance |
| ---: | ---: | ---: | ---: | ---: | ---: |
| $06 / 30 / 1996$ | 30 | $\$ 901,011,537$ | $\$ 70,025,983$ | 21 | $\$ 1,102,721,284$ |
| $06 / 30 / 1997$ | 30 | $29,886,573$ | $2,212,156$ | 22 | $36,001,808$ |
| $06 / 30 / 1998$ | 30 | $62,468,342$ | $4,403,627$ | 23 | $73,918,941$ |
| $06 / 30 / 1999$ | 30 | $-21,106,379$ | $-1,417,018$ | 24 | $-24,488,843$ |
| $06 / 30 / 2000$ | 70 | $70,199,744$ | $4,488,568$ | 25 | $79,730,875$ |
| $06 / 30 / 2001$ | 30 | $72,855,413$ | $15,093,203$ | 26 | $275,145,998$ |
| $06 / 30 / 2002$ | 30 | $96,412,030$ | $4,190,153$ | 27 | $78,282,450$ |
| $06 / 30 / 2003$ | 30 | $162,167,375$ | $5,325,201$ | 28 | $101,826,232$ |
| $06 / 30 / 2004$ | 30 | $234,922,407$ | $\underline{11,769,300}$ | 29 | $166,751,553$ |
| $06 / 30 / 2005$ | 30 |  | $\$ 124,621,762$ | 30 | $234,922,407$ |
| Total |  |  |  | $\$ 2,124,812,705$ |  |

[^17]EXHIBIT G - Hazardous Retirement
Table of Amortization Bases

| Date Established | Initial Years | Initial Amount | Annual Payment* | Years Remaining | Outstanding Balance |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/1990 | 30 | \$68,584,978 | \$7,106,130 | 15 | \$86,858,856 |
| 06/30/1991 | 30 | 29,934,803 | 2,956,503 | 16 | 38,009,138 |
| 06/30/1992 | 30 | -12,941,304 | -1,218,358 | 17 | -16,411,443 |
| 06/30/1993 | 30 | -7,291,213 | -654,316 | 18 | -9,203,419 |
| 06/30/1994 | 30 | 1,854,577 | 158,642 | 19 | 2,323,062 |
| 06/30/1995 | 30 | 24,831,672 | 2,024,694 | 20 | 30,783,009 |
| 06/30/1996 | 30 | -65,565,268 | -5,095,687 | 21 | -80,243,386 |
| 06/30/1997 | 30 | -62,908,989 | -4,656,422 | 22 | -75,781,098 |
| 06/30/1998 | 30 | -50,329,820 | -3,547,938 | 23 | -59,555,399 |
| 06/30/1999 | 30 | -97,060,446 | -6,516,343 | 24 | -112,615,144 |
| 06/30/2000 | 30 | -194,399,700 | -12,429,907 | 25 | -220,793,655 |
| 06/30/2001 | 30 | 79,413,115 | 4,835,877 | 26 | 88,157,045 |
| 06/30/2002 | 30 | 143,568,600 | 8,326,326 | 27 | 155,556,422 |
| 06/30/2003 | 30 | 195,752,270 | 10,812,139 | 28 | 206,745,113 |
| 06/30/2004 | 30 | 149,965,899 | 7,888,747 | 29 | 154,205,164 |
| 06/30/2005 | 30 | 155,230,047 | 7,778,819 | 30 | 155,230,047 |
| Total |  |  | \$17,766,906 |  | \$343,264,312 |

* Level percentage of salary

EXHIBIT G - Hazardous Insurance
Table of Amortization Bases

| Date <br> Established | Initial <br> Years | Initial <br> Amount | Annual <br> Payment* | Years <br> Remaining | Outstanding <br> Balance |
| ---: | ---: | ---: | ---: | ---: | ---: |
| $06 / 30 / 1996$ | 30 | $\$ 318,111,968$ | $\$ 24,723,439$ | 21 | $\$ 389,327,799$ |
| $06 / 30 / 1997$ | 30 | $53,367,623$ | $3,950,186$ | 22 | $64,287,424$ |
| $06 / 30 / 1998$ | 30 | $15,379,222$ | $1,084,139$ | 23 | $18,198,270$ |
| $06 / 30 / 1999$ | 30 | $-13,162,362$ | $-883,681$ | 24 | $-15,271,734$ |
| $06 / 30 / 2000$ | 30 | $17,607,673$ | $1,125,834$ | 25 | $19,998,296$ |
| $06 / 30 / 2001$ | 30 | $82,316,738$ | $5,012,694$ | 26 | $91,380,377$ |
| $06 / 30 / 2002$ | 30 | $10,745,007$ | 623,162 | 27 | $11,642,203$ |
| $06 / 30 / 2003$ | 30 | $108,196,487$ | $5,976,102$ | 28 | $114,272,468$ |
| $06 / 30 / 2004$ | 30 | $194,519,744$ | $1,815,863$ | 29 | $35,495,555$ |
| $06 / 30 / 2005$ | 30 |  | $\$ 53,758,619$ | 30 | $\underline{194,787,973}$ |
| Total |  |  |  | $\$ 924,118,631$ |  |

[^18]
## EXHIBIT H <br> Definitions of Pension Terms

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

| Assumptions or Actuarial Assumptions: | The estimates on which the cost of the Plan is calculated including: |
| :---: | :---: |
|  | (a) Investment return - the rate of investment yield that the Plan will earn over the long-term future; |
|  | (b) Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates; |
|  | (c) Retirement rates - the rate or probability of retirement at a given age; |
|  | (d) Turnover rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement. |
| Normal Cost: | The amount of contributions required to fund the benefit allocated to the current year of service. |
| Actuarial Accrued Liability For Actives: | The equivalent of the accumulated normal costs allocated to the years before the valuation date. |
| Actuarial Accrued Liability For Pensioners: | The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and 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 Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time. |

## SECTION 3: Supplemental Information for the County Employees Retirement System

## Amortization of the Unfunded

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

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

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## SECTION 4: Reporting Information for the County Employees Retirement System

## REPORTING INFORMATION

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## SECTION 4: Reporting Information for the County Employees Retirement System

| EXHIBIT I - Non-Hazardous Retirement |  |  |
| :---: | :---: | :---: |
| Summary of Actuarial Valuation Results |  |  |
| The valuation was made with respect to the following data supplied to us: |  |  |
| 1. Retired participants as of the valuation date (including 3,287 beneficiaries in pay status) |  | 31,347 |
| 2. Members inactive during year ended June 30, 2005 with vested rights |  | 7,771 |
| 3. Members active during the year ended June 30, 2005 |  | 81,240 |
| Fully vested | 54,677 |  |
| Not vested | 26,563 |  |
| 4. Inactive nonvested members due a refund as of June 30, 2005 |  | 41,098 |
| The actuarial factors as of the valuation date are as follows: |  |  |
| 1. Total normal cost, including administrative expenses |  | \$201,093,390 |
| 2. Present value of future benefits |  | 7,498,487,576 |
| 3. Present value of future normal costs |  | 2,113,330,886 |
| 4. Actuarial accrued liability |  | 5,385,156,690 |
| Retired participants and beneficiaries | \$2,673,500,272 |  |
| Inactive members with vested rights | 72,328,615 |  |
| Active members | 2,570,946,335 |  |
| Inactive nonvested members due a refund | 68,381,468 |  |
| 5. Actuarial value of assets (\$4,893,599,997 at market value as reported by Carpenter, Mountjoy \& Bressler, PSC) |  | 5,059,208,687 |
| 6. Unfunded actuarial accrued liability |  | \$325,948,003 |

## Sumbly

The valuation was made with respect to the following data supplied to us:The actuarial factors as of the valuation date are as follows

## SECTION 4: Reporting Information for the County Employees Retirement System

| EXHIBIT I - Non-Hazardous Insurance |  |  |
| :---: | :---: | :---: |
| Summary of Actuarial Valuation Results |  |  |
| The actuarial factors as of the valuation date are as follows: |  |  |
| 1. Total normal cost, including administrative expenses |  | \$160,978,728 |
| 2. Present value of future benefits |  | 4,555,347,434 |
| 3. Present value of future normal costs |  | 1,766,592,779 |
| 4. Actuarial accrued liability |  | 2,788,754,654 |
| Retired participants and beneficiaries | \$1,012,106,665 |  |
| Inactive members with vested rights | 132,112,442 |  |
| Active members | 1,644,535,547 |  |
| 5. Actuarial value of assets ( $\$ 668,485,367$ at market value as reported by Carpenter, Mountjoy \& Bressler, PSC) |  | 663,941,949 |
| 6. Unfunded actuarial accrued liability |  | \$2,124,812,705 |

## SECTION 4: Reporting Information for the County Employees Retirement System

| EXHIBIT I - Hazardous Retirement |  |  |
| :---: | :---: | :---: |
| Summary of Actuarial Valuation Results |  |  |
| The valuation was made with respect to the following data supplied to us: |  |  |
| 1. Retired participants as of the valuation date (including 522 beneficiaries in pay status) |  | 4,361 |
| 2. Members inactive during year ended June 30,2005 with vested rights |  | 482 |
| 3. Members active during the year ended June 30, 2005 |  | 9,464 |
| Fully vested | 6,363 |  |
| Not vested | 3,101 |  |
| 4. Inactive nonvested members due a refund as of June 30, 2005 |  | 1,489 |
| The actuarial factors as of the valuation date are as follows: |  |  |
| 1. Total normal cost, including administrative expenses |  | \$67,505,976 |
| 2. Present value of future benefits |  | 2,448,229,718 |
| 3. Present value of future normal costs |  | 652,612,383 |
| 4. Actuarial accrued liability |  | 1,795,617,335 |
| Retired participants and beneficiaries | \$944,739,105 |  |
| Inactive members with vested rights | 9,480,734 |  |
| Active members | 835,565,030 |  |
| Inactive nonvested members due a refund | 5,832,466 |  |
| 5. Actuarial value of assets ( $\$ 1,411,245,719$ at market value as reported Carpenter, Mountjoy \& Bressler, PSC) |  | 1,452,353,023 |
| 6. Unfunded actuarial accrued liability |  | \$343,264,312 |

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

1. Retired participants as of the valuation date (including 522 beneficiaries in pay status) 4,361
2. Members inactive during year ended June 30, 2005 with vested rights,
6,363Not vestedInactive nonvested members due a refund as of June 30, 2005\$67,505,976
652,612,383
3. Actuarial accrued liability9944,739,105Active members835,565,030
Bressler, PSC) ..... $\$ 343,264,312$

## SECTION 4: Reporting Information for the County Employees Retirement System

| EXHIBIT I - Hazardous Insurance |  |
| :--- | ---: |
| Summary of Actuarial Valuation Results |  |
| The actuarial factors as of the valuation date are as follows: |  |
| 1. Total normal cost, including administrative expenses  <br> 2. Present value of future benefits $\$ 62,752,542$  <br> 3. Present value of future normal costs $1,895,646,984$  <br> 4. Actuarial accrued liability $612,347,891$  <br> $\quad$ Retired participants and beneficiaries $1,283,299,092$  <br> $\quad$ Inactive members with vested rights $\$ 565,434,903$ $20,669,223$ |  |
| Active members | $697,194,966$ |

SECTION 4: Reporting Information for the County Employees Retirement System

EXHIBIT II - Non-Hazardous Retirement
Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) <br> (b) | Unfunded/ (Overfunded) AAL (UAAL) <br> (b) - (a) | Funded Ratio <br> (a) I (b) | Projected Covered Payroll (c) | UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/2000 | \$5,284,033,534 | \$3,368,601,134 | -\$1,915,432,400 | 156.86\% | \$1,575,632,580 | -121.57\% |
| 06/30/2001 | 5,423,834,549 | 3,706,282,212 | -1,717,552,337 | 146.34\% | 1,597,653,320 | -107.50\% |
| 06/30/2002 | 5,397,787,158 | 4,165,355,149 | -1,232,432,009 | 129.59\% | 1,688,460,789 | -72.99\% |
| 06/30/2003 | 5,286,580,047 | 4,417,597,802 | -868,982,245 | 119.67\% | 1,796,451,180 | -48.37\% |
| 06/30/2004 | 5,187,851,530 | 4,936,459,488 | -251,392,042 | 105.09\% | 1,826,870,880 | -13.76\% |
| 06/30/2005 | 5,059,208,687 | 5,385,156,690 | 325,948,003 | 93.95\% | 1,885,275,000 | 17.29\% |

Note: If the actuarial accrued liabilities of the non-hazardous Retirement plan were adjusted to allow for a $3 \%$ annual cost of living adjustment for all future years and were combined with the actuarial accrued liabilities of the Insurance plan, the funded ratio on a market value basis of the combined plans would be $57.57 \%$.

EXHIBIT II - Non-Hazardous Insurance
Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) <br> (b) | Unfunded/ (Overfunded) AAL (UAAL) <br> (b) - (a) | Funded Ratio <br> (a) I (b) | Projected Covered Payroll (c) | UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/2000 | \$319,642,694 | \$1,466,716,928 | \$1,147,074,234 | 21.79\% | \$1,575,632,580 | 72.80\% |
| 06/30/2001 | 371,758,628 | 1,793,710,768 | 1,421,952,140 | 20.73\% | 1,597,653,320 | 89.00\% |
| 06/30/2002 | 450,497,307 | 1,977,577,038 | 1,527,079,731 | 22.78\% | 1,688,460,789 | 90.44\% |
| 06/30/2003 | 520,060,105 | 2,176,963,259 | 1,656,903,154 | 23.89\% | 1,796,451,180 | 92.23\% |
| 06/30/2004 | 585,399,072 | 2,438,734,696 | 1,853,335,624 | 24.00\% | 1,826,870,880 | 101.45\% |
| 06/30/2005 | 663,941,949 | 2,788,754,654 | 2,124,812,705 | 23.81\% | 1,885,275,000 | 112.71\% |

SECTION 4: Reporting Information for the County Employees Retirement System

EXHIBIT II - Hazardous Retirement
Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) <br> (b) | Unfunded/ (Overfunded) AAL (UAAL) (b) - (a) | Funded Ratio <br> (a) / (b) | Projected Covered Payroll (c) | UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/2000 | \$1,445,542,794 | \$1,084,553,697 | -\$360,989,097 | 133.28\% | \$291,062,928 | -124.02\% |
| 06/30/2001 | 1,486,666,016 | 1,193,860,442 | -292,805,574 | 124.53\% | 322,819,064 | -90.70\% |
| 06/30/2002 | 1,485,511,793 | 1,327,291,273 | -158,220,520 | 111.92\% | 346,319,146 | -45.69\% |
| 06/30/2003 | 1,467,004,856 | 1,499,628,782 | 32,623,926 | 97.82\% | 374,700,732 | 8.71\% |
| 06/30/2004 | 1,457,612,042 | 1,640,830,120 | 183,218,078 | 88.83\% | 392,562,624 | 46.67\% |
| 06/30/2005 | 1,452,353,023 | 1,795,617,335 | 343,264,312 | 80.88\% | 411,121,728 | 83.49\% |

Note: If the actuarial accrued liabilities of the hazardous Retirement plan were adjusted to allow for a 3\% annual cost of living adjustment for all future years and were combined with the actuarial accrued liabilities of the Insurance plan, the funded ratio on a market value basis of the combined plans would be 48.17\%.

## EXHIBIT II - Hazardous Insurance

Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) <br> (b) | Unfunded/ (Overfunded) AAL (UAAL) (b) - (a) | Funded Ratio <br> (a) I (b) | Projected Covered Payroll (c) | UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/2000 | \$168,657,912 | \$599,936,029 | \$431,278,117 | 28.11\% | \$291,062,928 | 148.17\% |
| 06/30/2001 | 197,875,249 | 721,605,292 | 523,730,043 | 27.42\% | 322,819,064 | 162.24\% |
| 06/30/2002 | 234,683,878 | 781,184,974 | 546,501,096 | 30.04\% | 346,319,146 | 157.80\% |
| 06/30/2003 | 269,190,080 | 935,650,662 | 666,460,582 | 28.77\% | 374,700,732 | 177.86\% |
| 06/30/2004 | 310,578,162 | 1,025,684,477 | 715,106,315 | 30.28\% | 392,562,624 | 182.16\% |
| 06/30/2005 | 359,180,461 | 1,283,299,092 | 924,118,631 | 27.99\% | 411,121,728 | 224.78\% |

## SECTION 4: Reporting Information for the County Employees Retirement System

EXHIBIT II - Total Retirement Fund
Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) (b) | Unfunded/ (Overfunded) AAL (UAAL) (b) - (a) | $\begin{gathered} \text { Percent } \\ \text { Unfunded } \\ {[(b)-(a)] I(b)} \end{gathered}$ | Increase in Assets |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/1960 | \$864,451 | \$5,602,131 | \$4,737,680 | 84.57\% | \$864,451 |
| 06/30/1965 | 5,613,214 | 12,510,487 | 6,897,273 | 55.13\% | 1,255,742 |
| 06/30/1971 | 23,420,022* | 40,305,948 | 16,885,927 | 41.89\% | 4,850,170 |
| 06/30/1975 | 60,854,631* | 85,322,085 | 24,467,454 | 28.68\% | 11,704,780 |
| 06/30/1976 | 78,734,622* | 128,824,236 | 50,089,614 | 38.88\% | 17,879,991 |
| 06/30/1977 | 100,425,591* | 152,900,347 | 52,474,756 | 34.32\% | 21,690,969 |
| 06/30/1978 | 124,799,954* | 175,194,867 | 50,394,913 | 28.77\% | 24,374,363 |
| 06/30/1979 | 153,091,905* | 213,834,377 | 60,742,472 | 28.41\% | 28,291,951 |
| 06/30/1980 | 190,230,941* | 266,018,621 | 75,787,680 | 28.49\% | 37,139,036 |
| 06/30/1981 | 233,770,245 | 260,872,162 | 27,101,917 | 10.39\% | 43,539,304 |
| 06/30/1982 | 285,534,889 | 306,087,531 | 20,552,642 | 6.71\% | 51,764,644 |
| 06/30/1983 | 343,155,769 | 340,705,763 | -2,450,006 | -0.72\% | 57,620,880 |
| 06/30/1984 | 406,187,431 | 421,336,269 | 15,148,838 | 3.60\% | 63,031,662 |
| 06/30/1985 | 478,043,221 | 463,618,532 | -14,424,689 | -3.11\% | 71,855,790 |
| 06/30/1986 | 603,815,800 | 535,948,094 | -67,867,706 | -12.66\% | 125,772,579 |
| 06/30/1987 | 727,730,727 | 678,442,760 | -49,287,967 | -7.26\% | 123,914,927 |
| 06/30/1988 | 839,578,896 | 829,346,323 | -10,232,573 | -1.23\% | 111,848,169 |
| 06/30/1989 | 1,078,052,635 | 1,113,868,548 | 35,815,913 | 3.22\% | 238,473,739 |
| 06/30/1990 | 1,270,066,267 | 1,432,323,666 | 162,257,399 | 11.33\% | 192,013,632 |
| 06/30/1991 | 1,396,227,005 | 1,654,338,706 | 258,111,701 | 15.60\% | 126,160,738 |
| 06/30/1992** | 1,735,038,908 | 1,861,978,403 | 126,939,495 | 6.82\% | 338,811,903 |
| 06/30/1993 | 1,985,680,709 | 2,079,930,047 | 94,249,338 | 4.53\% | 250,641,801 |
| 06/30/1994 | 2,173,354,772 | 2,330,344,241 | 156,989,469 | 6.74\% | 187,674,063 |
| 06/30/1995 | 2,454,128,060 | 2,603,575,921 | 149,447,861 | 5.74\% | 280,773,288 |
| 06/30/1996 | 2,880,028,538 | 2,778,316,473 | -101,712,065 | -3.66\% | 425,900,478 |
| 06/30/1997 | 3,514,025,868 | 3,144,928,093 | -369,096,965 | -11.74\% | 633,997,330 |

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## SECTION 4: Reporting Information for the County Employees Retirement System

EXHIBIT II - Total Retirement Fund (continued)
Supplementary Information Required by the GASB - Schedule of Funding Progress

|  | Actuarial <br> Value <br> Actuarial <br> Valuation <br> Date | Assets <br> (a) | Actuarial <br> Accrued Liability <br> (AAL) <br> (b) | Unfunded/ <br> (Overfunded) <br> AAL | (UAAL) <br> (b) - (a) |
| :--- | :---: | :---: | :---: | :---: | :---: |

* Includes capitalized appreciation of investments.
** Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.
*** Change in asset valuation method effective in this valuation to 5-year smoothing of investment gains/(losses).

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## SECTION 4: Reporting Information for the County Employees Retirement System

## EXHIBIT II - Total Insurance Fund

Supplementary Information Required by the GASB - Schedule of Funding Progress

|  | Actuarial <br> Actuarial <br> Valuation <br> Date | Value <br> of Assets <br> (a) | Actuarial <br> Accrued Liability <br> (AAL) <br> (b) | Unfunded/ <br> (Overfunded) <br> AAL | (UAAL) <br> (b) - (a) |
| :---: | :---: | :---: | :---: | :---: | :---: |

[^19]
## SECTION 4: Reporting Information for the County Employees Retirement System

## EXHIBIT III - Non-Hazardous

## Supplementary Information Required by the GASB



## SECTION 4: Reporting Information for the County Employees Retirement System

## EXHIBIT III - Hazardous

## Supplementary Information Required by the GASB



SECTION 4: Reporting Information for the County Employees Retirement System

EXHIBIT IV - Non-Hazardous
Supplementary Information Required by the GASB - Schedule of Retirees and Beneficiaries

| Valuation Date July 1 | Added to Rolls |  | Removed from Rolls |  | Rolls - End of Year |  | \% Increase <br> in Annual <br> Allowances | Average Annual Allowance |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Annual Allowance | Number | Annual Allowance | Number | Annual Allowance |  |  |
| 2003 | 2,411 | \$24,855,000 | 1,466 | \$8,111,100 | 27,092 | \$219,848,200 | N/A | \$8,100 |
| 2004 | 2,805 | 28,181,800 | 768 | 3,587,800 | 29,129 | 247,534,300 | 12.59\% | 8,500 |
| 2005 | 2,808 | 30,397,300 | 590 | 3,161,200 | 31,347 | 279,590,300 | 12.95 | 8,900 |

EXHIBIT IV - Hazardous
Supplementary Information Required by the GASB - Schedule of Retirees and Beneficiaries

| Valuation Date July 1 | Added to Rolls |  | Removed from Rolls |  | Rolls - End of Year |  | \% Increase in Annual Allowances | Average Annual Allowance |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Annual Allowance | Number | Annual Allowance | Number | Annual Allowance |  |  |
| 2003 | 293 | \$6,258,300 | 39 | \$355,100 | 3,737 | \$72,322,200 | N/A | \$19,400 |
| 2004 | 343 | 6,712,500 | 75 | 605,100 | 4,005 | 79,559,200 | 10.01\% | 19,900 |
| 2005 | 403 | 8,536,100 | 47 | 502,700 | 4,361 | 89,224,700 | 12.15 | 20,500 |

## SECTION 4: Reporting Information for the County Employees Retirement System

## EXHIBIT V

## Actuarial Assumptions and Actuarial Cost Method

## Mortality Rates:

Healthy: 1983 Group Annuity Mortality Table*

Disabled: Pension Benefit Guaranty Corporation Table for Disabled Lives Receiving Social Security

* Rates increased by $0.05 \%$ for hazardous plan active members.

Termination Rates before Retirement

| Age | Non-Hazardous |  |  |  | Hazardous |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Rate (\%) |  |  |  | Rate (\%) |  |  |  |
|  | Mortality |  | Disability | Withdrawal* | Mortality |  | Disability | Withdrawal |
|  | Male | Female |  |  | Male | Female |  |  |
| 20 | 0.04 | 0.02 | 0.03 | 2.40 | 0.09 | 0.07 | 0.04 | 3.04 |
| 25 | 0.05 | 0.03 | 0.03 | 2.40 | 0.10 | 0.08 | 0.04 | 3.04 |
| 30 | 0.06 | 0.03 | 0.04 | 2.40 | 0.11 | 0.08 | 0.05 | 3.38 |
| 35 | 0.09 | 0.05 | 0.06 | 2.40 | 0.14 | 0.10 | 0.07 | 2.44 |
| 40 | 0.12 | 0.07 | 0.10 | 2.00 | 0.17 | 0.12 | 0.13 | 1.50 |
| 45 | 0.22 | 0.10 | 0.21 | 1.80 | 0.27 | 0.15 | 0.26 | 0.75 |
| 50 | 0.39 | 0.16 | 0.42 | 1.60 | 0.44 | 0.21 | 0.53 | 0.00 |
| 55 | 0.61 | 0.25 | 0.79 | 1.20 | 0.66 | 0.30 | 0.99 | 0.00 |
| 60 | 0.92 | 0.42 | 1.39 | 0.20 | 0.97 | 0.47 | 1.74 | 0.00 |

*Withdrawal rates during the first five years of employment are $35 \%, 10 \%, 7 \%, 5 \%$, and $4 \%$ for non-hazardous plan members.

| Non-Hazardous Retirement Rates: | Age | Retirement Probability* |
| :---: | :---: | :---: |
|  | 55-57 | 0.04 |
|  | 58-59 | 0.05 |
|  | 60-61 | 0.06 |
|  | 62 | 0.25 |
|  | 63-64 | 0.10 |
|  | 65 | 0.50 |
|  | 66-67 | 0.20 |
|  | 68 | 0.25 |
|  | 69 | 0.40 |
|  | 70 and older | 1.00 |
| *Retirement prob | 0.25 at first age m | eligible for |
| Hazardous |  |  |
| Retirement Rates: | $60 \%$ will retire as until age 55. | eligible for $u$ |
| Non-Hazardous |  |  |
| Retirement Age for Inactive |  |  |
| Vested Participants: | 65 |  |
| Hazardous |  |  |
| Retirement Age for Inactive |  |  |
| Vested Participants: | 55 |  |
| Percent Married: | 100\% |  |
| Age of Spouse: | Females 3 years | than males. |
| Dependent Children: | For a hazardous | e’s duty-related |
|  | is survived by tw | dent children |
| Net Investment Return: | 8.25\% |  |

SECTION 4: Reporting Information for the County Employees Retirement System


|  | Weighted Medicare Coverage <br> Rate in Effect on Valuation Date |
| :--- | :---: | :---: |
| Low Option | $\underline{\text { High Option }}$ |

Members with Multiple Service Records:

For active members with service in more than one system, the liability has been valued as follows:

- Service under all systems is aggregated for purposes of determining benefit eligibility.
- Future service is projected only under the system in which the member is currently active.
- The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
- The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

## SECTION 4: Reporting Information for the County Employees Retirement System

| Non-Hazardous <br> Administrative Expenses: <br> Hazardous <br> Administrative Expenses:$\quad \$ 10,000,000$ |  |
| :--- | :--- |
| Actuarial Value of Assets: | Market value of assets less unrecognized return in each of the last five years. <br> Unrecognized return is equal to the difference between the actual market return and <br> the expected return on the actuarial value, and is recognized over a five-year period. |
| Actuarial Cost Method: | Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the <br> participant commenced employment. Normal Cost and Actuarial Accrued Liability <br> are calculated on an individual basis and are allocated by service, with Normal Cost <br> determined as if the current benefit accrual rate had always been in effect. |

## EXHIBIT VI

Summary of Plan Provisions

This exhibit summarizes the major provisions of the 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: | July 1 through June 30 |
| :---: | :---: |
| Non-Hazardous Normal Retirement: |  |
| Age Requirement | 65 |
| Service Requirement | None |
| Members whose participation began before 8/1/2004 | If a member has at least 48 months of service, the monthly benefit is $2.20 \%$ times final average compensation times years of service. |
|  | Final compensation is the average salary during the five highest paid fiscal years. If the months of service credit during the highest five-year period is less than forty-eight, one or more additional fiscal years shall be used. |
|  | If a member has less than 48 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest. |
| Members whose participation began on or after 8/1/2004 | Monthly benefit as calculated above but with a benefit factor of 2.0\% instead of 2.2\%. |
| Hazardous Normal Retirement: |  |
| Age Requirement | 55 |
| Service Requirement | None |
| Amount | If a member has at least 60 months of service, the monthly benefit is $2.50 \%$ times final average compensation times years of service. |
|  | Final compensation is the average salary during the three highest paid fiscal years. If the months of service credit during the highest three-year period is less than twentyfour, one or more additional fiscal years shall be used. |

If a member has less than 60 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.

## Non-Hazardous Early Retirement:

Requirement
Amount

Hazardous Early Retirement:
Requirement
Amount

Age 55 with 60 months service or any age with 25 years service
Normal retirement benefit reduced by 5\% per year for the first five years and 4\% per year for the next five years for each year the member is younger than age 65 or has less than 27 years service, whichever is smaller.

Age 50 with 15 years of service or any age with 20 years service.
Normal retirement benefit reduced by $5.5 \%$ per year for each year the member is younger than age 55 or has less than 20 years service, whichever is smaller.

## Non-Hazardous Disability:

Age Requirement
Service Requirement
Members whose participation began before 8/1/2004

None
60 months

Normal retirement benefit except that service credit will be added to total service for the period from the last day of plan employment to the member's $65^{\text {th }}$ birthday or until the combined total service as of the last day of paid employment and added service equals 25 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For members with at least 25 years of service but less than 27 years service, total service shall be 27 years. For employees with 27 or more years of service credit, actual service will be used.

A contributing member in a non-hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than $25 \%$ of the member's final monthly rate of pay plus $10 \%$ of the member's final monthly rate of pay for each dependent child. The maximum dependent child's benefit is $40 \%$ of the member's final monthly rate of pay.

## SECTION 4: Reporting Information for the County Employees Retirement System

Members whose participation
began on or after 8/1/2004

Normal retirement benefit based on actual service with no penalty or, if larger, 20\% of the Final Rate of Pay. May apply for disability even after normal retirement age.

## Hazardous Disability:

Age Requirement
None
Service Requirement
60 months
Members whose participation began before 8/1/2004

Members whose participation began on or after 8/1/2004

Normal retirement benefit based on actual service with no penalty or, if larger, $25 \%$ of the Final Rate of Pay. May apply for disability even after normal retirement age.

| Vesting: | None |
| :--- | :--- |
| Age Requirement | 60 months. Service purchased after August 1, 2004 does not count toward vesting |
| Service Requirement | insurance benefits. Service purchased by employees who began participating on or <br> after August 1, 2004 does not count toward vesting retirement benefits. |
|  | Normal retirement benefit deferred to normal retirement age or reduced benefit <br> payable at early retirement age. |
| Amount | 65 for non-hazardous members and 55 for hazardous members. |

## Pre-Retirement Death Benefit (not in line of duty):

Requirement
Amount

Any age with 60 months service or age 65 with 48 months service.
Benefit equal to the benefit the member would have received had the member retired on the day before the date of death and elected a $100 \%$ joint and survivor form. Benefit is actuarially reduced if member is less than age 55 at date of death.
Spouse's Pre-Retirement Death Benefit (in line of duty):

Requirement
Amount

None
The spouse may choose (1) a $\$ 10,000$ lump sum payment and monthly payments of $25 \%$ of the member's final monthly rate of pay or (2) benefits based on the member's age, years of service and final compensation at date of death.
Dependent Non-Spouse's Death Benefit (in line of duty) - Hazardous Plan:

Requirement
Amount

None
The non-spouse may choose (1) a $\$ 10,000$ lump sum payment or (2) benefits based upon the member's age, years of service and final compensation at date of death.

## Dependent Child's Death Benefit (in line of duty):

| Requirement | None |
| :--- | :--- |
| Amount | $10 \%$ of member's final monthly rate of pay up to a maximum of $40 \%$. |

## Post-Retirement Death Benefit:

| Lump-sum Benefit | $\$ 5,000$ |
| :--- | :--- |
| Husband and Wife | The choice of payment option selected by the member will determine the monthly <br> benefits provided to the beneficiary upon the member's death. |

## Insurance Plan for Retirees

Members whose participation
began before July 1, 2003

The Retirement System pays a portion of medical premiums for retirees, and in the case of hazardous duty retirees, their dependents and beneficiaries. The Insurance Fund will pay $0 \%, 25 \%, 50 \%, 75 \%$, or $100 \%$ of the premiums depending on retiree eligibility as reported by the System.

## SECTION 4: Reporting Information for the County Employees Retirement System

Members whose participation began on or after July 1, 2003

The Retirement System pays $\$ 10$ per month per year of service toward medical premiums for non-hazardous retirees, $\$ 15$ per month per year of service for hazardous retirees, and $\$ 10$ per month per year of service for surviving spouses of hazardous employees. "Line of duty" insurance benefits will be calculated as if the member had at least 20 years of hazardous service.

## State Police Retirement System

Actuarial Valuation and Review
as of June 30, 2005

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the parent of The Segal Company
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## \% SEGAL

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October 13, 2005

## Board of Trustees

State Police Retirement System

## Perimeter Park West

1260 Louisville Road
Frankfort, Kentucky 40601-6124

## Dear Board Members

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2005. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the fiscal year beginning July 1, 2006 and analyzes the preceding year's experience.
The census information on which our calculations were based was prepared by the System and the financial information was provided by the Auditor. That assistance is gratefully acknowledged.
This report is for the purpose of determining statutory funding requirements for the Retirement and Insurance plans. Statutory funding requirements may not take all actuarial liabilities of the plans into account. Specifically, in determining employer funding requirements, state statute limits recognition of reitree and beneficiary Cost of Living Adjustments (COLAs) to only the adjustments granted as of the valuation date. Accordingly, care should be taken in using this report for other purposes.
This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.
We look forward to reviewing this report at your next meeting and to answering any questions.
Sincerely,
THE SEGAL COMPANY

By:


Leon F. (Rocky) Joyner, Jr., FCA, ASA, MAAA
Vice President and Actuary

K. Eric Fredén, FSA, MAAA

Associate Actuary

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## EXHIBIT VI

Summary of Plan Provisions

## SECTION 1: Valuation Summary for the State Police Retirement System

## Purpose

This report has been prepared by The Segal Company to present a valuation of the State Police Retirement System as of June 30,2005 . 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 Plan, as administered by the Board;
> The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2005, provided by the Board;
> The assets of the Plan as of June 30, 2005, provided by the Auditor;
> Economic assumptions regarding future salary increases and investment earnings; and
> Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

## Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:
> The State Police Retirement System's basic financial goal is to establish contributions which fully fund the System's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.
> The retirement contribution rate is determined using the Entry Age Normal Cost (EANC) Method. Under this method the employer contribution required is the sum of the normal cost, administration expenses and the sum of the 30-year amortization payments established each valuation due to changes in the Unfunded Actuarial Accrued Liability.
> The medical insurance contribution rate is determined in a similar method except that the actual contribution rate is determined by increasing the prior year's rate by an amount necessary to raise the insurance rate to the full EANC amount by the year 2016.
> The rates calculated in this report may be adopted by the Board for July 1, 2006 through June 30, 2007.
> Certain plan provisions have changed since the last valuation of the plans. For members whose participation began on or after August 1, 2004, the disability benefit is equal to the benefit calculated as a normal retirement benefit based on service to date of disability retirement, or $25 \%$ of the Final Rate of Pay, if larger. Disability benefits on this basis may be available even after the normal retirement age. For members whose participation began after July 1, 2003, the Retirement System

## SECTION 1: Valuation Summary for the State Police Retirement System

pays $\$ 15$ per month per year of service for hazardous duty retirees and $\$ 10$ per month per year of service for surviving spouses of hazardous duty employees. "Line of duty" insurance benefits will be calculated as if the member had at least 20 years of hazardous service. These dollar amounts will be adjusted periodically for general inflation. See Exhibit VI for a summary of all plan provisions. These changes had an immaterial impact on the contribution rate for the Retirement plan, and reduced the contribution rate for the Insurance plan by $0.10 \%$ of payroll.
> The following summarizes the required contributions for the year beginning July 1, 2006 and compares them to the prior valuation amounts.

| Plan | July 1, 2006 Rate |  | July 1, 2005 Rate |
| :--- | :--- | :--- | :--- |
|  | Retirement | $20.64 \%$ |  |
| Insurance | $\underline{21.66}$ |  | $\underline{20.39 \%}$ |
| Total | $\underline{42.30 \%}$ |  | $\underline{34.83 \%}$ |

> The increase in the total rate is due to:

| Retirement plan investment loss | $4.11 \%$ |
| :--- | :---: |
| Retiree COLA | 0.90 |
| Insurance Phase-in* | 1.32 |
| Change in administrative expense assumption | 0.02 |
| Changes in plan provisions | -0.10 |
| Other experience | $\mathbf{1 . 2 2}$ |
| Total change | $7.47 \%$ |

* Includes a portion of all insurance plan gains and losses for the year.
> The actuarial valuation report as of June 30, 2005 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 Plan, while increases will decrease the actuarial cost of the Plan. Because the actuarial value of assets involves a smoothing method, changes in market value are not fully reflected immediately in the actuarial value of assets. Rather, that effect is spread over a period of years.


## SECTION 1: Valuation Summary for the State Police Retirement System

> As indicated in Section 2, Subsection B of this report, the total unrecognized investment losses as of June 30, 2005 are:

| Plan | Unrecognized investment <br> losses as of 6/30/2005 | Actuarial value as a <br> percentage of market value |  |
| :--- | :---: | :---: | :---: |
| Retirement | $\$ 14,105,749$ |  | $104.2 \%$ |
| Insurance | 798,976 |  | 100.8 |

These investment losses will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent they are not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of $8.25 \%$ per year (net of expenses) on a market value basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed $8.25 \%$ rate and all other actuarial assumption are met, the contribution requirements would still increase in each of the next few years.
> The funded ratio for the Retirement Plan on a statutory basis is $77.09 \%$. This ratio is down from $88.02 \%$ last year primarily due to the further recognition of deferred investment losses this year. This ratio is based on the actuarial liabilities and asset values computed for the purpose of meeting funding requirements on the basis required by state law. This basis does not take all actuarial liabilities and investment performance to date into account. It also does not consider the contractual nature of the retiree medical benefits provided by SPRS. If the Retirement and Insurance results were combined, if the market value instead of actuarial value of assets were used, and if a $3 \%$ annual cost-of-living adjustment for retirement benefits were assumed to be in effect for all future years, then the funded ratio for the combined Retirement and Insurance plans would be 52.03\%.

## Summary of Key Valuation Results

|  | June 30, 2005 | June 30, 2004 |
| :---: | :---: | :---: |
| Contributions for next fiscal year: |  |  |
| Retirement | 20.64\% | 14.49\% |
| Insurance | $\underline{21.66}$ | $\underline{20.34}$ |
| Total | 42.30\% | 34.83\% |
| Funded status as of valuation date: |  |  |
| Retirement |  |  |
| Actuarial accrued liability | \$458,593,576 | \$437,482,425 |
| Actuarial value of assets | 353,511,622 | 385,077,195 |
| Unfunded liability on actuarial value of assets | 105,081,954 | 52,405,230 |
| Funded ratio on actuarial value of assets | 77.09\% | 88.02\% |
| Market value of assets | \$339,405,873 | \$335,720,408 |
| Unfunded liability on market value of assets | 119,187,703 | 101,762,017 |
| Funded ratio on market value of assets | 74.01\% | 76.74\% |
| Insurance |  |  |
| Actuarial accrued liability | \$234,159,510 | \$197,604,301 |
| Actuarial value of assets | 100,207,082 | 96,622,908 |
| Unfunded liability on actuarial value of assets | 133,952,428 | 100,981,393 |
| Funded ratio on actuarial value of assets | 42.79\% | 48.90\% |
| Market value of assets | \$99,408,106 | \$90,422,080 |
| Unfunded liability on market value of assets | 134,751,404 | 107,182,221 |
| Funded ratio on market value of assets | 42.45\% | 45.76\% |
| Demographic data as of valuation date: |  |  |
| Number of retired participants and beneficiaries | 1,036 | 992 |
| Number of vested former members | 42 | 44 |
| Number of former members due a refund | 210 | 199 |
| Number of active members | 987 | 999 |
| Total salary | \$43,720,092 | \$43,835,208 |
| Average salary | 44,296 | 43,879 |

## A. MEMBER DATA

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

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

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, $\mathrm{B}, \mathrm{C}$, and D .

The ratio of non-actives to actives has slowly but steadily climbed for the past decade. As the number of annuitants per active employee rises, cash flow is impacted. The system either becomes more dependent on investment income to cover benefit payments, or contributions must rise to meet these obligations. (For the retirement plan, contributions have been less than benefit payments for the past eight years.)

## Active Members

Plan costs are affected by the age, years of service and salaries of active members. In this year's valuation, there were 987 active members with an average age of 36.5 , average years of service of 10.6 years and average salaries of $\$ 44,296$. The 999 active members in the prior valuation had an average age of 36.4 , average service of 10.7 years and average salaries of $\$ 43,879$.

## Inactive Members

In this year's valuation, there were 42 members with a vested right to a deferred or immediate vested benefit. In addition, there were 210 members entitled to a return of their employee contributions.

## Retired Participants and Beneficiaries

As of June 30, 2005, 917 retired participants and 119 beneficiaries were receiving total monthly benefits of $\$ 2,748,657$. For comparison, in the previous valuation, there were 878 retired participants and 114 beneficiaries receiving monthly benefits of $\$ 2,567,134$.

SECTION 2: Valuation Results for the State Police Retirement System

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

## CHART 1

Member Population: 1997-2005

| Year Ended <br> June 30 | Active <br> Members | Vested Terminated <br> Members* | Retired Participants <br> and Beneficiaries | Ratio of Non-Actives <br> to Actives |
| :---: | :---: | :---: | :---: | :---: |
| 1997 | 943 | 9 | 669 | 0.72 |
| 1998 | 954 | 11 | 739 | 0.79 |
| 1999 | 985 | 14 | 762 | 0.79 |
| 2000 | 1,023 | 9 | 797 | 0.79 |
| 2001 | 1,016 | 12 | 842 | 0.84 |
| 2002 | 1,002 | 20 | 897 | 0.92 |
| 2003 | 1,019 | 21 | 941 | 0.94 |
| 2004 | 999 | 44 | 992 | 1.04 |
| 2005 | 987 | 42 | 1,036 | 1.09 |

*Excludes terminated members due a refund of employee contribution.

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 June 30, 2005


CHART 3
Distribution of Active Members by Years of Service as of June 30, 2005


SECTION 2: Valuation Results for the State Police Retirement System

CHART 4
Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2005

| 160120 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 120 |  |  |  |  |  |  |  |  |  |  |  |
| 80 |  |  |  |  |  |  |  |  |  |  |  |
| 40 |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 0 | Under | \$500- | \$1,000 - | \$1,500 - | $\$ 2,000 \text { - }$ | \$2,500 - | $\$ 3,000 \text { - }$ | \$3,500- | $\$ 4.000-$ | \$4,500- |  |
|  | $\$ 500$ | $\$ 999$ | $\$ 1,499$ | $\$ 1,999$ | $\$ 2,499$ | $\$ 2,999$ | $\$ 3,499$ | $\$ 3,999$ | $\$ 4,499$ | $\$ 4,999$ | over |
| $\square$ Disability | 4 | 3 | 13 | 12 | 2 | 0 | 1 | 0 | 0 | 0 | 0 |
| $\square$ Early | 30 | 22 | 35 | 119 | 146 | 133 | 108 | 63 | 58 | 28 | 33 |
| - Normal | 11 | 6 | 7 | 7 | 3 | 4 | 11 | 11 | 18 | 13 | 16 |

CHART 5
Distribution of Retired Participants by Type and by Age as of June 30, 2005



These graphs show a distribution of the current retired participants based on their monthly amount and age, by type of pension.

## B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative and investment expenses) and net investment earnings (less common stock commissions and securities lending expense) 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 E and F.

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

The 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.

Both the actuarial value and market value of assets are representations of the 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 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.

These charts depict the components of changes in the actuarial value of assets over the last eight years for the two plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.
$\square$ Adjustment toward market value
■ Benefits paid

- Net interest and dividends
- Net contributions


## SECTION 2: Valuation Results for the State Police Retirement System

CHART 6A - Retirement
Comparison of Increases and Decreases in the Actuarial Value of Assets
for Years Ended June 30, 1998-2005


Retirement
Development of the Fund Through June 30, 2005

| Year Ended June 30 | Employer Contributions* | Member Contributions | Net Interest and Dividends ** | Adjustment Toward Market Value | Administrative and Investment Expenses | Benefit Payments | Actuarial Value of Assets at End of Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | \$9,574,000 | \$2,711,000 | \$11,038,000 | \$26,511,643 | \$234,000 | \$22,925,000 | \$306,318,918 |
| 1999 | 9,463,000 | 3,658,000 | 10,655,000 | 54,221,278 | 214,000 | 26,479,000 | 357,623,196 |
| 2000 | 10,216,000 | 4,202,000 | 11,938,000 | 103,301,378 | 239,000 | 27,873,000 | 459,168,574 |
| 2001 | 1,516,267 | 4,138,298 | 12,131,000 | 2,093,280 | 214,171 | 22,672,539 | 456,160,709 |
| 2002 | -17,643 | 4,417,691 | 11,567,921 | -8,064,723 | 273,673 | 24,834,817 | 438,955,465 |
| 2003 | -20,061 | 4,673,538 | 9,860,621 | -12,149,278 | 298,266 | 27,958,443 | 413,063,576 |
| 2004 | 1,152,752 | 4,875,176 | 9,595,469 | -12,323,070 | 313,604 | 30,973,104 | 385,077,195 |
| 2005 | 2,851,461 | 4,228,418 | 9,597,199 | -14,807,023 | 384,146 | 33,051,482 | 353,511,622 |

[^20]
## SECTION 2: Valuation Results for the State Police Retirement System

These charts depict the components of changes in the actuarial value of assets over the last eight years for the two plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

■ Adjustment toward market value

- Benefits paid
$\square$ Net interest and dividends
■ Net contributions

CHART 6B - Insurance
Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 1998-2005


Insurance
Development of the Fund Through June 30, 2005

| Year Ended June 30 | Employer Contributions* | Insurance <br> Appropriation Contributions | Net Interest and Dividends** | Adjustment Toward Market Value | Administrative and Investment Expenses | Benefit Payments | Actuarial Value of Assets at End of Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | \$5,120,000 | \$0 | \$1,344,000 | \$3,687,017 | \$6,000 | \$2,611,000 | \$41,410,500 |
| 1999 | 7,252,000 | 0 | 1,537,000 | 6,490,359 | 13,000 | 2,747,000 | 53,929,859 |
| 2000 | 7,818,000 | 0 | 1,878,000 | 11,119,853 | 20,000 | 3,014,000 | 71,711,712 |
| 2001 | 8,113,391 | 0 | 2,084,000 | 1,534,784 | 34,638 | 3,545,672 | 79,863,577 |
| 2002 | 9,579,899 | 0 | 1,283,315 | 213,261 | 57,933 | 4,014,728 | 86,867,391 |
| 2003 | 7,654,313 | 0 | 1,296,362 | -502,024 | 49,703 | 4,518,372 | 90,747,967 |
| 2004 | 8,455,498 | 0 | 1,614,498 | 885,401 | 88,416 | 4,992,040 | 96,622,908 |
| 2005 | 6,631,031 | 343,071 | 1,968,913 | 971,939 | 109,972 | 6,220,807 | 100,207,082 |

[^21]These charts show the determination of the actuarial value of assets as of the valuation date.

## SECTION 2: Valuation Results for the State Police Retirement System

## CHART 7A - Retirement

Determination of Actuarial Value of Assets for Year Ended June 30, 2005

| 1. Market value of assets |  |  | \$339,405,873 |
| :---: | :---: | :---: | :---: |
|  | Original |  | Unrecognized |
| 2. Unrecognized return* | Amount | Amortization | Return |
| (a) Year ended June 30, 2005 | -\$640,480 | -\$128,096 | -\$512,384 |
| (b) Year ended June 30, 2004 | 8,827,136 | 1,765,427 | 5,296,282 |
| (c) Year ended June 30, 2003 | -21,265,059 | -4,253,012 | -8,506,024 |
| (d) Year ended June 30, 2002 | -51,918,114 | -10,383,623 | -10,383,623 |
| (e) Year ended June 30, 2001 | -114,461,071 | -22,892,214 | 0 |
| (f) Total unrecognized return |  |  | -14,105,749 |
| 3. Final actuarial value of assets: (1)-(2f) |  |  | \$353,511,622 |
| 4. Actuarial value as a percentage of market value: $(3) \div(1)$ |  |  | 104.2\% |

## CHART 7B - Insurance

## Determination of Actuarial Value of Assets for Year Ended June 30, 2005

| 1. Market value of assets |  | \$99,408,106 |  |
| :---: | :---: | :---: | :---: |
|  | Original |  | Unrecognized |
| 2. Unrecognized return* | Amount | Amortization | Return |
| (a) Year ended June 30, 2005 | \$344,776 | \$68,955 | \$275,821 |
| (b) Year ended June 30, 2004 | 6,867,493 | 1,373,499 | 4,120,496 |
| (c) Year ended June 30, 2003 | -5,900,932 | -1,180,186 | -2,360,372 |
| (d) Year ended June 30, 2002 | -14,174,603 | -2,834,921 | -2,834,921 |
| (e) Year ended June 30, 2001 | -12,422,108 | -2,484,422 | 0 |
| (f) Total unrecognized return |  |  | -798,976 |
| 3. Final actuarial value of assets: (1)-(2f) |  |  | \$100,207,082 |
| 4. Actuarial value as a percentage of market value: $(3) \div(1)$ |  |  | 100.8\% |

* Total return on market value basis minus expected return on actuarial basis using the net investment return assumption. See Chart 8 for the calculation of unrecognized return for the current year.


## SECTION 2: Valuation Results for the State Police Retirement System

## CHART 8

Calculation of Unrecognized Return for the Year Ended June 30, 2005

|  | Retirement | Insurance |
| :---: | :---: | :---: |
| 1. Employer and member contributions | \$7,079,879 | \$6,974,102 |
| 2. Benefit payments including refunds, or healthcare premiums | 33,051,482 | 6,220,807 |
| 3. Administrative and investment expenses | 384,146 | 109,972 |
| 4. Net cash flow: (1) - (2) - (3) | -26,355,749 | 643,323 |
| 5. Market value of assets as of June 30, 2004 | 335,720,408 | 90,422,080 |
| 6. Market value of assets as of June 30, 2005 | 339,405,873 | 99,408,106 |
| 7. Actuarial value of assets as of June 30, 2004 | 385,077,195 | 96,622,907 |
| 8. Average actuarial value of assets: $(7)+[0.5 \times(4)]$ | 371,899,321 | 96,944,569 |
| 9. Expected return on an actuarial basis: $8.25 \%$ of (8) | 30,681,694 | 7,997,927 |
| 10. Gain/(loss) for the year ended June 30, 2005: (6) - (5) - (4) - (9) | -640,480 | 344,776 |
| 11. Unrecognized return as of June 30, 2005: $80 \%$ of (10) | -512,384 | 275,821 |

These charts show the change in the actuarial value of assets versus the market value over the past eight years for the plans.

--Market Value
$\rightarrow$ Actuarial Value

-     - Market Value


## SECTION 2: Valuation Results for the State Police Retirement System

CHART 9A - Retirement
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998-2005


CHART 9B - Insurance
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998-2005


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

## 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.

Chart 10 presents a summary of experience for the year. A discussion of the major components of the actuarial experience is on the following pages.

## CHART 10

Actuarial Experience for Year Ended June 30, 2005

|  |  | Retirement | Insurance |
| :--- | :--- | ---: | ---: |
| 1. | Net gain/(loss) from investments* | $-\$ 35,891,518$ | $-\$ 5,057,075$ |
| 2. | Net gain/(loss) from administrative expenses | $-13,633$ | $-48,262$ |
| 3. | Net gain/(loss) from other experience** | $-11,600,737$ | $\underline{-2,130,827}$ |
| 4. | Net experience gain/(loss): $(1)+(2)+(3)$ | $-\$ 47,505,888$ | $-\$ 7,236,164$ |

[^22]
## SECTION 2: Valuation Results for the State Police Retirement System

## 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 System's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is $8.25 \%$. Chart 11 shows the net investment experience for each plan for the year

Since the actual return for the year was less than the assumed return, each plan experienced an actuarial loss during the year ended June 30, 2005 with regard to its investments.

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. Chart 12, which follows, shows the rate of return on an actuarial basis compared to the market value investment return for the last eight years.

This chart shows the
losses due to
investment experience.

## CHART 11

Actuarial Value Investment Experience for Year Ended June 30, 2005

|  |  | Retirement |
| :--- | :--- | ---: |
| 1. | Actual return | $-\$ 5,209,824$ |
| 2. | Average value of assets | $371,899,321$ |
| 3. | Actual rate of return: $(1) \div(2)$ | $-1.40 \%$ |
| 4. | Assumed rate of return | $8.25 \%$ |
| 5. | Expected return: $(2) \times(4)$ | $\$ 30,681,694$ |
| 6. | Actuarial gain/(loss): $(1)-(5)$ | $\underline{-\$ 35,891,518}$ |

SECTION 2: Valuation Results for the State Police Retirement System

CHART 12A - Retirement
Investment Return - Actuarial Value vs. Market Value: 1998-2005

|  | Net Interest and Dividend Income |  | Recognition of Capital Appreciation |  | Actuarial Value Investment Return |  | Market Value Investment Return |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| June 30 | Amount | Percent | Amount | Percent | Amount | Percent | Amount | Percent |
| 1998 | \$11,038,000 | 4.03\% | \$26,511,643 | 9.67\% | \$37,549,643 | 13.69\% | \$67,163,306 | 22.27\% |
| 1999 | 10,655,000 | 3.56 | 54,221,278 | 18.10 | 64,876,278 | 21.66 | 56,848,150 | 15.94 |
| 2000 | 11,938,000 | 3.40 | 103,301,378 | 29.45 | 115,239,378 | 32.85 | 18,631,485 | 4.66 |
| 2001 | 12,131,000 | 2.69 | 2,093,280 | 0.46 | 14,224,280 | 3.16 | -29,707,210 | -7.37 |
| 2002 | 11,567,921 | 2.59 | -8,064,723 | -1.81 | 3,503,198 | 0.79 | -15,336,844 | -4.33 |
| 2003 | 9,860,621 | 2.31 | -12,149,278 | -2.84 | -2,288,657 | -0.54 | 13,975,133 | 4.41 |
| 2004 | 9,595,469 | 2.40 | -12,323,070 | -3.08 | -2,727,601 | -0.68 | 41,862,956 | 13.66 |
| 2005 | 9,597,199 | 2.58 | -14,807,023 | -3.98 | -5,209,824 | -1.40 | 30,041,214 | 9.31 |
| Total | \$86,383,210 |  | \$138,783,485 |  | \$225,166,695 |  | \$183,478,190 |  |
|  |  |  | Average return |  |  | 7.45\% |  | 6.65\% |

CHART 12B - Insurance
Investment Return - Actuarial Value vs. Market Value: 1998-2005

| Year Ended June 30 | Net Interest and Dividend Income |  | Recognition of Capital Appreciation |  | Actuarial Value Investment Return |  | Market Value Investment Return |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Percent | Amount | Percent | Amount | Percent | Amount | Percent |
| 1998 | \$1,344,000 | 3.83\% | \$3,687,017 | 10.50\% | \$5,031,017 | 14.32\% | \$8,320,673 | 20.88\% |
| 1999 | 1,537,000 | 3.52 | 6,490,359 | 14.87 | 8,027,359 | 18.39 | 6,577,625 | 12.73 |
| 2000 | 1,878,000 | 3.33 | 11,119,853 | 19.74 | 12,997,853 | 23.08 | 4,144,524 | 6.59 |
| 2001 | 2,084,000 | 2.82 | 1,534,784 | 2.07 | 3,618,784 | 4.89 | -4,023,535 | -5.61 |
| 2002 | 1,283,315 | 1.55 | 213,261 | 0.26 | 1,496,576 | 1.81 | -7,387,596 | -10.16 |
| 2003 | 1,296,362 | 1.47 | -502,024 | -0.57 | 794,338 | 0.90 | 1,392,935 | 2.00 |
| 2004 | 1,614,498 | 1.75 | 885,401 | 0.96 | 2,499,899 | 2.70 | 14,493,421 | 19.52 |
| 2005 | 1,968,913 | 2.03 | 971,939 | 1.00 | 2,940,851 | 3.03 | 8,342,703 | 9.19 |
| Total | \$13,006,088 |  | \$24,400,589 |  | \$37,406,677 |  | \$31,860,750 |  |
|  |  |  |  |  | Average return | 6.57\% |  | 5.97\% |

[^23]
## SECTION 2: Valuation Results for the State Police Retirement System

The actuarial asset valuation method gradually takes into account fluctuations in the market value rate of return. These charts illustrate how this leveling effect has actually worked over the years 1996-2005 for the plans.

CHART 13A - Retirement
Market and Actuarial Rates of Return for Years Ended June 30, 1996-2005


CHART 13B - Insurance
Market and Actuarial Rates of Return for Years Ended June 30, 1996-2005

$\stackrel{H}{*}$ SEGAL

## Administrative Expenses

Current methodology includes an assumption for the cost of administration for the retirement funds but not for the insurance funds. This assumption is modified with each valuation to estimate expenses for the upcoming fiscal year. The following summarizes the past year's experience and presents the assumptions for the next year.

|  | Plan | Year End 2005 <br> Assumption | Year End 2005 <br> Actual Experience | Gain/(Loss)* for <br> the Year | Year End 2006 <br> Assumption |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Retirement | $\$ 92,000$ |  | $\$ 104,594$ | $-\$ 13,633$ | $\$ 100,000$ <br> Insurance |
|  | 0 | 44,584 | $-48,262$ | 0 |  |

## SECTION 2: Valuation Results for the State Police Retirement System

## 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:
> COLAs granted in the year,
> the extent of turnover among the participants,
> retirement experience (earlier or later than expected),
> mortality (more or fewer deaths than expected),

The chart shows elements of the experience losses for the most recent year.

CHART 14
Experience Due to Changes in Demographics for Year Ended June 30, 2005

|  | Retirement | Insurance |  |
| :--- | :--- | ---: | ---: |
| 1. COLA | $-\$ 7,814,691$ | $\mathrm{~N} / \mathrm{A}$ |  |
| 2. | Other | $-3,786,046$ | $-\$ 2,130,827$ |
| 3. | Total | $-\$ 11,600,737$ | $-\$ 2,130,827$ |
| 4. | Percentage of actuarial accrued liability | $2.5 \%$ | $0.9 \%$ |

## D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded/(overfunded) actuarial accrued liability. This total amount is then divided by the projected salaries for active members to determine the funding rate.

The recommended contribution is based on a 30 -year amortization of bases established each year as specified in the law governing the Plan.

Exhibit G in Section 3 provides details on these amortization bases.

The contribution rates as of June 30, 2005 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Charts 15 and 16 present the recommended contributions and reconciliations from the prior valuation

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

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

## SECTION 2: Valuation Results for the State Police Retirement System

## CHART 15A - Retirement

## Recommended Contribution

|  | As of June 30 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2005 |  | 2004 |  |
|  | Amount | \% of Salary | Amount | \% of Salary |
| 1. Total normal cost | \$7,442,581 | 17.02\% | \$7,448,348 | 16.99\% |
| 2. Administrative expenses | 100,000 | 0.23\% | 92,000 | 0.21\% |
| 3. Expected employee contributions | -3,421,774 | -7.83\% | -3,433,859 | -7.83\% |
| 4. Employer normal cost: $(1)+(2)+(3)$ | \$4,120,807 | 9.43\% | \$4,106,489 | 9.37\% |
| 5. Actuarial accrued liability | 458,593,576 |  | 437,482,425 |  |
| 6. Actuarial value of assets | 353,511,622 |  | 385,077,195 |  |
| 7. Unfunded actuarial accrued liability: (5) - (6) | \$105,081,954 |  | \$52,405,230 |  |
| 8. Payment on unfunded actuarial accrued liability | 4,902,858 | 11.21\% | 2,246,288 | 5.12\% |
| 9. Total recommended contribution: (4) + (8) | \$9,023,665 | $\underline{\underline{20.64 \%}}$ | \$6,352,777 | $\underline{\underline{14.49 \%}}$ |
| 10. Projected salary | \$43,720,092 |  | \$43,835,208 |  |

## CHART 16A - Retirement

Reconciliation of Recommended Contribution from June 30, 2004 to June 30, 2005

| Recommended Contribution as of June 30, 2004 | $\$ 6,352,777$ |
| :--- | ---: |
| Effect of COLA for retirees | $\$ 391,506$ |
| Effect of investment loss | $1,798,117$ |
| Effect of change in administrative expense assumption | 8,000 |
| Effect of net other changes | $\mathbf{4 7 3 , 2 6 5}$ |
| Total change | $\underline{\underline{2}, 670,888}$ |
| Recommended Contribution as of June 30, 2005 | $\$ 9,023,665$ |

## SECTION 2: Valuation Results for the State Police Retirement System

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

CHART 15B - Insurance
Recommended Contribution

|  | As of June 30 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2005 |  | 2004 |  |
|  | Amount | \% of Salary | Amount | \% of Salary |
| 1. Employer normal cost | \$7,321,024 | 16.75\% | \$6,507,130 | 14.84\% |
| 2. Actuarial accrued liability | 234,159,510 |  | 197,604,301 |  |
| 3. Actuarial value of assets | 100,207,082 |  | 96,622,908 |  |
| 4. Unfunded actuarial accrued liability: (2) - (3) | \$133,952,428 |  | \$100,981,393 |  |
| 5. Payment on unfunded actuarial accrued liability | 7,912,296 | 18.09\% | 6,047,518 | 13.80\% |
| 6. Full EANC contribution: (1) + (5) | \$15,233,320 | 34.84\% | \$12,554,648 | 28.64\% |
| 7. Projected salary | \$43,720,092 |  | \$43,835,208 |  |
| 8. Prior year's funding rate | N/A | 20.34\% | N/A | 19.59\% |
| 9. Years to reach full EANC | N/A | 11 | N/A | 12 |
| 10. Additional amount for current year | N/A | 1.32\% | N/A | 0.75\% |
| 11. Total recommended contribution rate: (8) + (10) | N/A | 21.66\% | N/A | 20.34\% |

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SECTION 3: Supplemental Information for the State Police Retirement System

## EXHIBIT A

Table of Plan Coverage

| Category | Year Ended June 30 |  | Change From Prior Year |
| :---: | :---: | :---: | :---: |
|  | 2005 | 2004 |  |
| Active members in valuation: |  |  |  |
| Number | 987 | 999 | -1.2\% |
| Average age | 36.5 | 36.4 | N/A |
| Average service | 10.6 | 10.7 | N/A |
| Total salary | \$43,720,092 | \$43,835,208 | -0.3\% |
| Average salary | 44,296 | 43,879 | 1.0\% |
| Account balances | 35,670,717 | 37,658,106 | 5.3\% |
| Total active vested members | 769 | 760 | 1.2\% |
| Vested terminated members | 42 | 44 | -4.5\% |
| Retired participants: |  |  |  |
| Number in pay status | 882 | 843 | 4.6\% |
| Average age | 59.4 | 59.1 | N/A |
| Average monthly benefit | \$2,811 | \$2,744 | 2.4\% |
| Disabled members: |  |  |  |
| Number in pay status | 35 | 35 | 0.0\% |
| Average age | 54.8 | 53.6 | N/A |
| Average monthly benefit | \$1,364 | \$1,364 | 0.0\% |
| Beneficiaries in pay status | 119 | 114 | 4.4\% |
| Inactive nonvested members due a refund | 210 | 199 | 5.5\% |

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## SECTION 3: Supplemental Information for the State Police Retirement System

## EXHIBIT B

Members in Active Service as of June 30, 2005
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 |
| Under 25 | 37 | 37 | -- | -- | -- | -- | -- | -- | -- |
|  | \$26,084 | \$26,084 | -- | -- | -- | -- | -- | -- | - - |
| 25-29 | 176 | 138 | 38 | -- | -- | -- | -- | -- | -- |
|  | 32,105 | 30,447 | \$38,126 | -- | -- | -- | -- | -- | -- |
| 30-34 | 254 | 70 | 125 | 58 | 1 | -- | -- | -- | -- |
|  | 39,581 | 30,195 | 41,387 | \$46,760 | \$54,504 | -- | -- | -- | -- |
| 35-39 | 213 | 23 | 45 | 92 | 51 | 2 | -- | -- | -- |
|  | 46,668 | 32,356 | 40,330 | 49,850 | 52,699 | \$53,718 | -- | - - | -- |
| 40-44 | 171 | 11 | 14 | 35 | 78 | 29 | 4 | -- | -- |
|  | 51,969 | 30,519 | 38,043 | 48,874 | 55,628 | 58,911 | \$65,088 | -- | -- |
| 45-49 | 90 | -- | 3 | 2 | 17 | 51 | 17 | -- | -- |
|  | 58,325 | -- | 39,512 | 44,982 | 54,455 | 59,005 | 65,046 | -- | -- |
| 50-54 | 33 | 1 | -- | -- | 1 | 8 | 15 | 8 | -- |
|  | 64,148 | 31,608 | - | -- | 53,400 | 55,991 | 67,866 | \$70,746 | -- |
| 55-59 | 10 | -- | -- | -- | 1 | -- | 3 | 1 | 5 |
|  | 71,519 | -- | -- | -- | 50,796 | -- | 67,756 | 73,728 | \$77,479 |
| 60-64 | 1 | -- | -- | 1 | - - | -- | -7. | - - | -- |
|  | 53,724 | -- | -- | 53,724 | -- | -- | -- | -- | -- |
| 65-69 | 1 | - | -- | -- | 1 | -- | -- | -- | -- |
|  | 52,956 | -- | -- | -- | 52,956 | -- | -- | -- | -- |
| 70 \& over | 1 | 1 | -- | -- | -- | -- | -- | -- | -- |
|  | 35,832 | 35,832 | -- | -- | -- | -- | -- | -- | -- |
| Total | 987 | 281 | 225 | 188 | 150 | 90 | 39 | 9 | 5 |
|  | \$44,296 | \$29,992 | \$40,392 | \$48,684 | \$54,427 | \$58,589 | \$66,343 | \$71,077 | \$77,479 |

## SECTION 3: Supplemental Information for the State Police Retirement System

## EXHIBIT C <br> Retired Lives Summary

|  | Male Lives |  | Female Lives |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Monthly Benefits | Number | Monthly Benefits | Number | Monthly Benefits |
| Basic form | 87 | \$237,211.04 | 4 | \$9,612.07 | 91 | \$246,823.11 |
| Straight life (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Joint \& survivor |  |  |  |  |  |  |
| 100\% to beneficiary | 115 | 292,415.11 | 1 | 3,044.45 | 116 | 295,459.56 |
| 66-2/3\% to beneficiary | 72 | 230,728.31 | 1 | 2,556.66 | 73 | 233,284.97 |
| $50 \%$ to beneficiary | 72 | 220,150.62 | 0 | 0.00 | 72 | 220,150.62 |
| Pop-up option | 289 | 887,887.92 | 0 | 0.00 | 289 | 887,887.92 |
| 10 years certain | 4 | 15,609.36 | 0 | 0.00 | 4 | 15,609.36 |
| 10 years certain \& life | 28 | 79,791.26 | 0 | 0.00 | 28 | 79,791.26 |
| Social Security option |  |  |  |  |  |  |
| Age 62 basic | 36 | 80,672.20 | 0 | 0.00 | 36 | 80,672.20 |
| Age 62 survivorship | 159 | 336,020.98 | 1 | 4,487.93 | 160 | 340,508.91 |
| Partial deferred (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Widows age 60 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Dependent child | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Refund | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 15 years certain \& life | 10 | 25,449.08 | 0 | 0.00 | 10 | 25,449.08 |
| 20 years certain \& life | 29 | 75,186.79 | 0 | 0.00 | 29 | 75,186.79 |
| 5 years certain | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 12 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 24 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 36 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 12 month survivor | 3 | 8,748.67 | 0 | 0.00 | 3 | 8,748.67 |
| PLSO 24 month survivor | 1 | 6,240.34 | 0 | 0.00 | 1 | 6,240.34 |
| PLSO 36 month survivor | 5 | 11,100.05 | $\underline{0}$ | $\underline{0.00}$ | $\underline{5}$ | 11,100.05 |
| Total | 910 | \$2,507,211.73 | 7 | \$19,701.11 | 917 | \$2,526,912.84 |

## SECTION 3: Supplemental Information for the State Police Retirement System

## EXHIBIT D

Beneficiary Summary

|  | Male Lives |  | Female Lives |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Monthly Benefits | Number | Monthly Benefits | Number | Monthly Benefits |
| Basic form | 0 | \$0.00 | 4 | \$2,587.13 | 4 | \$2,587.13 |
| Straight life (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Joint \& survivor |  |  |  |  |  |  |
| 100\% to beneficiary | 2 | 3,561.86 | 52 | 119,873.09 | 54 | 123,434.95 |
| 66-2/3\% to beneficiary | 0 | 0.00 | 2 | 3,341.23 | 2 | 3,341.23 |
| $50 \%$ to beneficiary | 1 | 1,102.37 | 13 | 18,762.11 | 14 | 19,864.48 |
| Pop-up option | 0 | 0.00 | 10 | 24,065.90 | 10 | 24,065.90 |
| 10 years certain | 0 | 0.00 | 1 | 2,496.09 | 1 | 2,496.09 |
| 10 years certain \& life | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Social Security option |  |  |  |  |  |  |
| Age 62 basic | 0 | 0.00 | 1 | 1,866.02 | 1 | 1,866.02 |
| Age 62 survivorship | 0 | 0.00 | 18 | 27,657.33 | 18 | 27,657.33 |
| Partial deferred (old plan) | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Widows age 60 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Dependent child | 5 | 1,477.46 | 2 | 493.82 | 7 | 1,971.28 |
| Refund | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 15 years certain \& life | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 20 years certain \& life | 0 | 0.00 | 7 | 14,440.10 | 7 | 14,440.10 |
| 5 years certain | 0 | 0.00 | 1 | 19.75 | 1 | 19.75 |
| PLSO 12 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 24 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 36 month basic | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 12 month survivor | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 24 month survivor | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| PLSO 36 month survivor | 0 | $\underline{0.00}$ | $\underline{0}$ | 0.00 | $\underline{0}$ | 0.00 |
| Total | 8 | \$6,141.69 | 111 | \$215,602.57 | 119 | \$221,744.26 |

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT E-Retirement
Summary Statement of Income and Expenses on an Actuarial Value Basis

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Contribution income: |  |  |  |  |
| Employer contributions | \$2,851,461 |  | \$1,152,752 |  |
| Member contributions | 4,228,418 |  | 4,875,176 |  |
| Less administrative and investment expenses | -384,146 |  | -313,604 |  |
| Net contribution income |  | \$6,695,733 |  | \$5,714,324 |
| Investment income: |  |  |  |  |
| Interest, dividends and other income | \$11,059,954 |  | \$10,290,657 |  |
| Recognition of capital appreciation | -14,807,023 |  | -12,323,070 |  |
| Less stock commissions and securities lending expense | -1,462,755 |  | -695,188 |  |
| Net investment income |  | -5,209,824 |  | -2,727,601 |
| Total income available for benefits |  | \$1,485,909 |  | \$2,986,723 |
| Less benefit payments: |  |  |  |  |
| Benefit payments | -\$32,920,650 |  | -\$30,877,123 |  |
| Refunds | -130,832 |  | -95,981 |  |
| Net benefit payments |  | -\$33,051,482 |  | -\$30,973,104 |
| Change in reserve for future benefits |  | -\$31,565,573 |  | -\$27,986,381 |

## SECTION 3: Supplemental Information for the State Police Retirement System

## EXHIBIT E - Insurance

Summary Statement of Income and Expenses on an Actuarial Value Basis

|  | Year Ended June 30, 2005 | Year Ended June 30, 2004 |
| :---: | :---: | :---: |
| Contribution income: |  |  |
| Employer contributions | \$6,631,031 | \$8,455,498 |
| Insurance appropriation contributions | 343,071 | 0 |
| Less administrative and investment expenses | -109,972 | -88,416 |
| Net contribution income | \$6,864,130 | \$8,367,082 |
| Investment income: |  |  |
| Interest, dividends and other income | \$2,411,716 | \$1,792,227 |
| Recognition of capital appreciation | 971,939 | 885,401 |
| Less stock commissions and securities lending expense | -442,803 | -177,729 |
| Net investment income | 2,940,852 | 2,499,899 |
| Total income available for benefits | \$9,804,982 | \$10,866,981 |
| Less healthcare premium subsidies | -\$6,220,807 | -\$4,992,040 |
| Change in reserve for future benefits | \$3,584,174 | \$5,874,941 |

## SECTION 3: Supplemental Information for the State Police Retirement System

## EXHIBIT F - Retirement

Table of Financial Information

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Cash equivalents |  | \$106,820 |  | \$85,665 |
| Accounts receivable: |  |  |  |  |
| Investment accounts receivable | \$1,584,556 |  | \$10,349 |  |
| Year-end interest receivable | 0 |  | 1,717,564 |  |
| Year-end accounts receivable | 0 |  | 965,435 |  |
| Contributions receivable | 1,012,310 |  | $\underline{0}$ |  |
| Total accounts receivable |  | 2,596,866 |  | 2,693,348 |
| Investments: |  |  |  |  |
| Stocks | \$214,138,647 |  | \$205,072,335 |  |
| Bonds | 111,321,647 |  | 107,005,876 |  |
| Mortgage | 16,699,734 |  | 16,860,141 |  |
| Real estate | 489,665 |  | 493,000 |  |
| Fixed assets | 4,990 |  | 5,576 |  |
| Short-term investments | -5,830,993 |  | 3,606,746 |  |
| Total investments at market value |  | 336,823,666 |  | 333,043,674 |
| Total assets |  | \$339,527,352 |  | \$335,822,687 |
| Less accounts payable |  | -\$121,479 |  | -\$102,279 |
| Net assets at market value |  | \$339,405,873 |  | \$335,720,408 |
| Net assets at actuarial value |  | \$353,511,622 |  | \$385,077,195 |

## SECTION 3: Supplemental Information for the State Police Retirement System

## EXHIBIT F - Insurance

Table of Financial Information

|  | Year Ended June 30, 2005 |  | Year Ended June 30, 2004 |  |
| :---: | :---: | :---: | :---: | :---: |
| Cash equivalents |  | \$19,814 |  | \$4,897 |
| Accounts receivable: |  |  |  |  |
| Investment accounts receivable | \$263,275 |  | \$4,004 |  |
| Year-end interest receivable | 0 |  | 236,497 |  |
| Year-end accounts receivable | 0 |  | 352,513 |  |
| Contributions receivable | 278,253 |  | $\underline{0}$ |  |
| Total accounts receivable |  | 541,528 |  | 593,014 |
| Investments: |  |  |  |  |
| Stocks | \$79,248,508 |  | \$73,925,782 |  |
| Bonds | 11,297,649 |  | 9,444,815 |  |
| Short-term investments | 8,388,693 |  | 6,526,520 |  |
| Total investments at market value |  | 98,934,850 |  | 89,897,117 |
| Total assets |  | \$99,496,192 |  | \$90,495,028 |
| Less accounts payable |  | -\$88,086 |  | -\$72,948 |
| Net assets at market value |  | \$99,408,106 |  | \$90,422,080 |
| Net assets at actuarial value |  | \$100,207,082 |  | \$96,622,908 |

## SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT G - Retirement
Table of Amortization Bases

| Date Established | Initial Years | Initial Amount | Annual Payment* | Years Remaining | Outstanding Balance |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/1990 | 30 | \$8,982,071 | \$930,638 | 15 | \$11,375,269 |
| 06/30/1991 | 30 | 9,963,656 | 984,058 | 16 | 12,651,158 |
| 06/30/1992 | 30 | -24,502,117 | -2,306,750 | 17 | -31,072,223 |
| 06/30/1993 | 30 | -3,706,436 | -332,617 | 18 | -4,678,494 |
| 06/30/1994 | 30 | 10,380,135 | 887,925 | 19 | 13,002,266 |
| 06/30/1995 | 30 | 22,729,292 | 1,853,273 | 20 | 28,176,756 |
| 06/30/1996 | 30 | -17,793,855 | -1,382,926 | 21 | -21,777,370 |
| 06/30/1997 | 30 | -31,021,470 | -2,296,159 | 22 | -37,368,920 |
| 06/30/1998 | 30 | 12,716,788 | 896,454 | 23 | 15,047,805 |
| 06/30/1999 | 30 | -31,317,924 | -2,102,590 | 24 | -36,336,864 |
| 06/30/2000 | 30 | -77,707,399 | -4,968,607 | 25 | -88,257,856 |
| 06/30/2001 | 30 | 26,106,163 | 1,589,740 | 26 | 28,980,632 |
| 06/30/2002 | 30 | 44,465,495 | 2,578,797 | 27 | 48,178,314 |
| 06/30/2003 | 30 | 61,350,968 | 3,388,646 | 28 | 64,796,249 |
| 06/30/2004 | 30 | 50,162,333 | 2,638,720 | 29 | 51,580,332 |
| 06/30/2005 | 30 | 50,784,900 | 2,544,256 | 30 | 50,784,900 |
| Total |  |  | \$4,902,858 |  | \$105,081,954 |

* Level percentage of salary

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT G- Insurance
Table of Amortization Bases

| Date Established | Initial Years | Initial Amount | Annual Payment* | Years Remaining | Outstanding Balance |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/1996 | 30 | \$73,323,619 | \$5,698,660 | 21 | \$89,738,603 |
| 06/30/1997 | 30 | 8,088,952 | 598,731 | 22 | 9,744,073 |
| 06/30/1998 | 30 | -2,668,212 | -188,092 | 23 | -3,157,301 |
| 06/30/1999 | 30 | -13,378,283 | -898,177 | 24 | -15,522,258 |
| 06/30/2000 | 30 | -6,431,546 | -411,233 | 25 | -7,304,767 |
| 06/30/2001 | 30 | 9,773,380 | 595,152 | 26 | 10,849,496 |
| 06/30/2002 | 30 | -1,482,959 | -86,005 | 27 | -1,606,785 |
| 06/30/2003 | 30 | 13,657,060 | 754,331 | 28 | 14,423,997 |
| 06/30/2004 | 30 | 5,446,888 | 286,526 | 29 | 5,600,861 |
| 06/30/2005 | 30 | 31,186,509 | 1,562,403 | 30 | 31,186,509 |
| Total |  |  | \$7,912,296 |  | \$133,952,428 |

[^24]
## EXHIBIT H <br> Definitions of Pension Terms

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

| Assumptions or Actuarial Assumptions: | The estimates on which the cost of the Plan is calculated including: |
| :---: | :---: |
|  | (a) Investment return - the rate of investment yield that the Plan will earn over the long-term future; |
|  | (b) Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates; |
|  | (c) Retirement rates - the rate or probability of retirement at a given age; |
|  | (d) Turnover rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement. |
| Normal Cost: | The amount of contributions required to fund the benefit allocated to the current year of service. |
| Actuarial Accrued Liability For Actives: | The equivalent of the accumulated normal costs allocated to the years before the valuation date. |
| Actuarial Accrued Liability For Pensioners: | The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and 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 Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time. |

## SECTION 3: Supplemental Information for the State Police Retirement System

## Amortization of the Unfunded

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

Investment Return:
The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, 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.

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## SECTION 4: Reporting Information for the State Police Retirement System

## REPORTING INFORMATION

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## SECTION 4: Reporting Information for the State Police Retirement System

| EXHIBIT I - Retirement |  |  |
| :---: | :---: | :---: |
| Summary of Actuarial Valuation Results |  |  |
| The valuation was made with respect to the following data supplied to us: |  |  |
| 1. Retired participants as of the valuation date (including 119 beneficiaries in pay status) |  | 1,036 |
| 2. Members inactive during year ended June 30, 2005 with vested rights |  | 42 |
| 3. Members active during the year ended June 30, 2005 |  | 987 |
| Fully vested | 760 |  |
| Not vested | 218 |  |
| 4. Inactive nonvested members due a refund as of June 30, 2005 |  | 210 |
| The actuarial factors as of the valuation date are as follows: |  |  |
| 1. Total normal cost, including administrative expenses |  | \$7,542,581 |
| 2. Present value of future benefits |  | 534,855,363 |
| 3. Present value of future normal costs |  | 76,261,787 |
| 4. Actuarial accrued liability |  | 458,593,576 |
| Retired participants and beneficiaries | \$339,769,169 |  |
| Inactive members with vested rights | 1,088,284 |  |
| Active members | 117,195,213 |  |
| Inactive nonvested members due a refund | 540,910 |  |
| 5. Actuarial value of assets ( $\$ 339,405,873$ at market value as reported by Carpenter, Mountjoy \& Bressler, PSC) |  | 353,511,622 |
| 6. Unfunded actuarial accrued liability |  | \$105,081,954 |

The valuation was made with respect to the following data supplied to us:
Retired participants as of the valuation date (including 119 beneficiaries in pay status) 1,036
2. Members inactive during year ended June 30, 2005 with vested rights 42

Fully vested 760
Not vested 218

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

## SECTION 4: Reporting Information for the State Police Retirement System

| EXHIBIT I - Insurance |  |  |
| :---: | :---: | :---: |
| Summary of Actuarial Valuation Results |  |  |
| The actuarial factors as of the valuation date are as follows: |  |  |
| 1. Total normal cost, including administrative expenses |  | \$7,321,024 |
| 2. Present value of future benefits |  | 310,879,331 |
| 3. Present value of future normal costs |  | 76,719,821 |
| 4. Actuarial accrued liability |  | 234,159,510 |
| Retired participants and beneficiaries | \$139,093,506 |  |
| Inactive members with vested rights | 2,492,188 |  |
| Active members | 92,573,816 |  |
| 5. Actuarial value of assets (\$99,408,106 at market value as reported by Carpenter, Mountjoy \& Bressler, PSC) |  | 100,207,082 |
| 6. Unfunded actuarial accrued liability |  | \$133,952,428 |

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SECTION 4: Reporting Information for the State Police Retirement System

EXHIBIT II - Retirement
Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) <br> (b) | Unfunded/ (Overfunded) AAL (UAAL) (b) - (a) | Funded Ratio <br> (a) / (b) | Projected Covered Payroll (c) | UAAL as a Percentage of Covered Payroll $[(b)-(a)] /(c)$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/2000 | \$459,168,574 | \$336,579,763 | -\$122,588,811 | 136.42\% | \$43,596,396 | -281.19\% |
| 06/30/2001 | 456,160,709 | 356,211,860 | -99,948,849 | 128.06\% | 44,209,944 | -226.08\% |
| 06/30/2002 | 438,955,465 | 380,790,346 | -58,165,119 | 115.27\% | 43,961,844 | -132.31\% |
| 06/30/2003 | 413,063,576 | 414,881,459 | 1,817,883 | 99.56\% | 43,760,832 | 4.15\% |
| 06/30/2004 | 385,077,195 | 437,482,425 | 52,405,230 | 88.02\% | 43,835,208 | 119.55\% |
| 06/30/2005 | 353,511,622 | 458,593,576 | 105,081,954 | 77.09\% | 43,720,092 | 240.35\% |

EXHIBIT II - Insurance
Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) (b) | Unfunded/ (Overfunded) AAL (UAAL) (b) - (a) | Funded Ratio <br> (a) I (b) | Projected Covered Payroll (c) | UAAL as a Percentage of Covered Payroll [(b) - (a)]/ (c) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/2000 | \$71,711,712 | \$138,867,085 | \$67,155,373 | 51.64\% | \$43,596,396 | 154.04\% |
| 06/30/2001 | 79,863,577 | 158,261,479 | 78,397,902 | 50.46\% | 44,209,944 | 177.33\% |
| 06/30/2002 | 86,867,391 | 165,445,412 | 78,578,021 | 52.51\% | 43,961,844 | 178.74\% |
| 06/30/2003 | 90,747,967 | 184,501,205 | 93,753,238 | 49.19\% | 43,760,832 | 214.24\% |
| 06/30/2004 | 96,622,908 | 197,604,301 | 100,981,393 | 48.90\% | 43,835,208 | 230.37\% |
| 06/30/2005 | 100,207,082 | 234,159,510 | 133,952,428 | 42.79\% | 43,720,092 | 306.39\% |

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## SECTION 4: Reporting Information for the State Police Retirement System

EXHIBIT II - Retirement Fund
Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) <br> (b) | Unfunded/ (Overfunded) AAL (UAAL) (b) - (a) | Percent Unfunded [(b) - (a)] / (b) | Increase in Assets |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/1958 | N/A | \$1,450,000 | \$1,450,000 | 100.00\% | N/A |
| 06/30/1963 | 2,544,782 | 4,553,258 | 2,008,476 | 44.11\% | 619,167 |
| 06/30/1968 | 5,791,036 | 9,079,139 | 3,288,103 | 36.22\% | 789,709 |
| 06/30/1971 | 9,386,839* | 11,828,727 | 2,441,888 | 20.64\% | 1,339,726 |
| 06/30/1974 | 14,557,986* | 17,737,434 | 3,179,448 | 17.93\% | 1,935,105 |
| 06/30/1975 | 17,012,636* | 23,182,081 | 6,169,455 | 26.61\% | 2,454,650 |
| 06/30/1976 | 20,461,762* | 28,693,129 | 8,231,367 | 28.69\% | 3,449,126 |
| 06/30/1977 | 24,125,252* | 34,561,413 | 10,436,161 | 30.20\% | 3,663,490 |
| 06/30/1978 | 28,509,145* | 49,950,102 | 21,440,957 | 42.92\% | 4,383,893 |
| 06/30/1979 | 33,903,221* | 55,391,206 | 21,487,985 | 38.79\% | 5,394,076 |
| 06/30/1980 | 40,917,165* | 67,580,562 | 26,663,397 | 39.45\% | 7,013,944 |
| 06/30/1981 | 48,230,303 | 71,526,728 | 23,296,425 | 32.57\% | 7,313,138 |
| 06/30/1982 | 57,330,130 | 78,713,172 | 21,383,042 | 27.17\% | 9,099,827 |
| 06/30/1983 | 65,757,086 | 81,944,546 | 16,187,460 | 19.75\% | 8,426,956 |
| 06/30/1984 | 74,980,517 | 91,180,668 | 16,200,151 | 17.77\% | 9,223,431 |
| 06/30/1985 | 85,016,242 | 99,269,825 | 14,253,583 | 14.36\% | 10,035,725 |
| 06/30/1986 | 96,667,699 | 105,559,951 | 8,892,252 | 8.42\% | 11,651,457 |
| 06/30/1987 | 110,194,604 | 111,541,989 | 1,347,385 | 1.21\% | 13,526,905 |
| 06/30/1988 | 120,998,549 | 120,128,367 | -870,182 | -0.72\% | 10,803,945 |
| 06/30/1989 | 131,350,553 | 134,550,773 | 3,200,220 | 2.38\% | 10,352,004 |
| 06/30/1990 | 145,025,551 | 154,007,622 | 8,982,071 | 5.83\% | 13,674,998 |
| 06/30/1991 | 150,818,074 | 170,009,955 | 19,191,881 | 11.29\% | 5,792,523 |
| 06/30/1992** | 187,791,001 | 182,996,056 | -4,794,955 | -2.62\% | 36,972,937 |
| 06/30/1993 | 200,320,968 | 191,653,594 | -8,667,374 | -4.52\% | 12,529,957 |
| 06/30/1994 | 205,320,509 | 206,763,310 | 1,442,801 | 0.70\% | 4,999,541 |
| 06/30/1995 | 217,504,443 | 241,690,631 | 24,186,188 | 10.01\% | 12,183,934 |
| 06/30/1996 | 237,515,346 | 244,540,812 | 7,025,466 | 2.87\% | 20,010,903 |

## SECTION 4: Reporting Information for the State Police Retirement System

EXHIBIT II - Retirement Fund (continued)
Supplementary Information Required by the GASB - Schedule of Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) <br> (b) | Unfunded/ (Overfunded) AAL (UAAL) (b) - (a) | Percent Unfunded [(b) - (a)] / (b) | Increase in Assets |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 06/30/1997 | 279,643,275 | 255,784,758 | -23,858,517 | -9.33\% | 42,127,929 |
| 06/30/1998 | 306,318,918 | 294,427,019 | -11,891,899 | -4.04\% | 26,675,643 |
| 06/30/1999 | 357,623,196 | 314,021,673 | -43,601,523 | -13.88\% | 51,304,278 |
| 06/30/2000 | 459,168,574 | 336,579,763 | -122,588,811 | -36.42\% | 101,545,378 |
| 06/30/2001*** | 456,160,709 | 356,211,860 | -99,948,849 | -28.06\% | -3,007,865 |
| 06/30/2002 | 438,955,465 | 380,790,346 | -58,165,119 | -15.27\% | -17,205,244 |
| 06/30/2003 | 413,063,576 | 414,881,459 | 1,817,883 | 0.44\% | -25,891,889 |
| 06/30/2004 | 385,077,195 | 437,482,425 | 52,405,230 | 11.98\% | -27,986,381 |
| 06/30/2005 | 353,511,622 | 458,593,576 | 105,081,954 | 22.91\% | -31,565,573 |

* Includes capitalized appreciation of investments.
** Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.
*** Change in asset valuation method effective in this valuation to 5 -year smoothing of investment gains/(losses).


## SECTION 4: Reporting Information for the State Police Retirement System

## EXHIBIT II - Insurance Fund

Supplementary Information Required by the GASB - Schedule of Funding Progress

|  | Actuarial <br> Actuarial <br> Valuation <br> Date | Value <br> of Assets <br> (a) | Actuarial <br> Accrued Liability <br> (AAL) <br> (b) | Unfunded/ <br> (Overfunded) <br> AAL |
| :---: | :---: | :---: | :---: | :---: |
| $06 / 30 / 1990$ | $\$ 6,516,517$ | $\$ 64,784,801$ | (UAAL) <br> (b) $-\mathbf{( a )}$ | Percent <br> Unfunded <br> [(b) - (a)]/(b) |

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## SECTION 4: Reporting Information for the State Police Retirement System

## EXHIBIT III

## Supplementary Information Required by the GASB



SECTION 4: Reporting Information for the State Police Retirement System

## EXHIBIT IV - Retirement

Supplementary GASB Information - Schedule of Retirees and Beneficiaries

| Valuation Date July 1 | Added to Rolls |  | Removed from Rolls |  | Rolls - End of Year |  | \% Increase in Annual Allowances | Average Annual Allowance |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Annual Allowance | Number | Annual Allowance | Number | Annual Allowance |  |  |
| 2003 | 53 | \$2,040,300 | 9 | \$135,000 | 941 | \$28,115,500 | N/A | \$29,900 |
| 2004 | 62 | 2,580,100 | 11 | 189,900 | 992 | 30,805,600 | 9.57\% | 31,100 |
| 2005 | 50 | 1,813,000 | 6 | 159,600 | 1,036 | 32,983,900 | 7.07 | 31,800 |

SECTION 4: Reporting Information for the State Police Retirement System

| EXHIBIT V |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Actuarial Assumptions and Actuarial Cost Method |  |  |  |  |
| Mortality Rates: |  |  |  |  |
| Healthy: | 1983 Group Annuity Mortality Table* |  |  |  |
| Disabled: | Pension Benefit Guaranty Corporation Table for Disabled Lives Receiving Social Security |  |  |  |
| * Rates increased by 0.05\% for active members. |  |  |  |  |
| Termination Rates before Retirement: |  |  |  |  |
| Rate (\%) |  |  |  |  |
|  |  |  | Disability | Withdrawal |
| Age | Male | Female |  |  |
| 20 | 0.09 | 0.07 | 0.04 | 1.82 |
| 25 | 0.10 | 0.08 | 0.04 | 1.82 |
| 30 | 0.11 | 0.08 | 0.05 | 2.03 |
| 35 | 0.14 | 0.10 | 0.07 | 1.46 |
| 40 | 0.17 | 0.12 | 0.13 | 0.90 |
| 45 | 0.27 | 0.15 | 0.26 | 0.45 |
| 50 | 0.44 | 0.21 | 0.53 | 0.00 |
| 55 | 0.66 | 0.30 | 0.99 | 0.00 |
| 60 | 0.97 | 0.47 | 1.74 | 0.00 |


| Retirement Rates: | $60 \%$ will retire as soon as eligible for unreduced benefit and balance will continue until age 55. |
| :---: | :---: |
| Retirement Age for Inactive Vested Participants: | 55 |
| Percent Married: | 100\% |
| Age of Spouse: | Females 3 years younger than males. |
| Dependent Children: | For an employee's duty related death benefits, it is assumed that the employee is survived by two dependent children each age 6. |
| Net Investment Return: | 8.25\% |
| Salary Increases: | Years of  <br> Service Rate (\%) |
|  | $1 \quad 12.00$ |
|  | 210.00 |
|  | $3 \quad 8.00$ |
|  | 4 or more $\quad 6.50$ |
| Payroll Growth: | 5.0\% |

SECTION 4: Reporting Information for the State Police Retirement System

| Retiree Medical Insurance Election: | Future retirees will select medical coverage in the same proportion that current retirees have selected coverage. |  |  |
| :---: | :---: | :---: | :---: |
|  | Pre-Medicare Coverage <br> Rate in Effect on Valuation Date |  |  |
|  | Single Family | Parent Plus | Couple |
|  | \$403.28 \$1,008.20 | \$604.92 | \$907.38 |
|  | 412.53 1,031.33 | 618.80 | 928.19 |
|  | $394.80 \quad 987.02$ | 592.28 | 888.28 |
|  | 403.96 1,009.92 | 605.96 | 908.92 |
|  | 400.64 1,001.60 | 600.96 | 901.44 |
|  | 496.28 1,240.52 | 744.28 | 1,116.53 |
|  | 447.52 1,118.80 | 671.28 | 1,006.92 |
|  | 405.44 1,013.60 | 608.16 | 912.24 |
|  | Medicare Rate | Contracts | Force |
|  | Low <br> Option High <br> Option |  | High Option |
|  | \$119.00 \$331.30 | 8 | 341 |
|  | 103.13 146.54 | 2 | 6 |
|  | 135.23 298.98 | 0 | 1 |
|  | Weighted Medi <br> Rate in Effect on | re Coverage aluation Date |  |
|  | Low Option | High 0 |  |
| All Members | \$116.00 | \$323 |  |


| Medical Contribution Rate Increases: | Year | Rate(\%) |
| :--- | :---: | :---: |
| 2005 | 10.00 |  |
|  | $2006-2010$ | 8.00 |
|  | $2011-2015$ | 7.50 |
| $2016-2020$ | 7.00 |  |

Members with Multiple Service Records: For active members with service in more than one system, the liability has been valued as follows:

- Service under all systems is aggregated for purposes of determining benefit eligibility
- Future service is projected only under the system in which the member is currently active.
- The actual benefit under each system is determined based only on service (past and projected future service, if applicable) under that system.
- The liability is determined under each system based on the actuarial assumptions used for the system in which the member is currently active. This liability is then included in the valuation of the system in which the service has been earned (or is projected to be earned).

For inactive members with service in more than one system, the benefit attributable to the service under each system is determined, and the liability for that benefit is then included in the valuation of the system in which the service was earned.

| Administrative Expenses: | $\$ 100,000$ |
| :--- | :--- |
| Actuarial Value of Assets: | Market value of assets less unrecognized return in each of the last five years. <br> Unrecognized return is equal to the difference between the actual market return and <br> the expected return on the actuarial value, and is recognized over a five-year period. |

## SECTION 4: Reporting Information for the State Police Retirement System

## 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 service, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

## EXHIBIT VI

## Summary of Plan Provisions

This exhibit summarizes the major provisions of the 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:

July 1 through June 30

## Normal Retirement:

Age Requirement
Service Requirement
Amount

55
None
If a member has at least 60 months of service, the monthly benefit is $2.50 \%$ times final average compensation time years of service.

Final compensation is the average salary during the three highest paid fiscal years. If the months of service credit during the highest three-year period is less than twentyfour, one or more additional fiscal years shall be used.
If a member has less than 60 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.

## Early Retirement:

Requirement
Amount

Age 50 with 15 years of service or any age with 20 years service.
Normal retirement benefit reduced by $5.5 \%$ per year for each year the member is younger than age 55 or has less than 20 years service, whichever is smaller.

| Disability: |  |
| :---: | :---: |
| Age Requirement | None |
| Service Requirement | 60 months |
| Members whose participation began before 8/1/2004 | Normal retirement benefit except that service credit will be added to total service for the period from the last day of plan employment to the member's $55^{\text {th }}$ birthday or until the combined total service as of the last day of paid employment and added service equals 20 years. The total amount of service credit added shall not exceed the member's actual service credit on the last day of paid employment. For employees with 20 of more years of service credit, actual service credit will be used. |
|  | A member in a hazardous position who is disabled in the line of duty is entitled to a retirement benefit of not less than $25 \%$ of the member's final monthly rate of pay plus $10 \%$ of his final monthly rate of pay for each dependent child. The maximum dependent child's benefit is $40 \%$ of the member's final monthly rate of pay. |
| Members whose participation began on or after 8/1/2004 | Normal retirement benefit based on actual service with no penalty or, if larger, $25 \%$ of the Final Rate of Pay. May apply for disability even after normal retirement age. |
| Vesting: |  |
| Age Requirement | None |
| Service Requirement | 60 months. Service purchased after August 1, 2004 does not count toward vesting insurance benefits. Service purchased by employees who began participating on or after August 1, 2004 does not count toward vesting retirement benefits. |
| Amount | Normal retirement benefit deferred to normal retirement age or reduced benefit payable at early retirement age. |
| Normal Retirement Age | 55 |

## Pre-Retirement Death Benefit (not in line of duty):

Requirement Any age with 60 months service or age 65 with 48 months service

Amount Benefit equal to the benefit the member would have received had the member retired on the day before the date of death and elected a $100 \%$ joint and survivor form.
Benefit is actuarially reduced if member is less than age 55 at date of death.

## Spouse's Pre-Retirement Death Benefit (in line of duty):

Requirement
Amount

None
The spouse may choose (1) a $\$ 10,000$ lump sum payment and monthly payments of $25 \%$ of the member's final monthly rate of pay or (2) benefits based on the member's age, years of service and final compensation at date of death.
Dependent Non-Spouse's Death Benefit (in line of duty):

Requirement
Amount

None
The non-spouse may choose (1) a $\$ 10,000$ lump sum payment or (2) benefits based upon the member's age, years of service and final compensation at date of death.

Dependent Child's Death Benefit (in line of duty):

| Requirement | None |
| :--- | :--- |
| Amount | $10 \%$ of member's final monthly rate of pay up to a maximum of $40 \%$. |

Post-Retirement Death Benefit:
Lump-sum Benefit \$5,000
Husband and Wife
The choice of payment option selected by the member will determine the monthly benefits provided to the beneficiary upon the member's death.

## Insurance Plan for Retirees

Members whose participation began before July 1, 2003

The Retirement System pays a portion of medical premiums for retirees, and in the case of hazardous duty retirees, their dependents and beneficiaries. The Insurance Fund will pay $0 \%, 25 \%, 50 \%, 75 \%$, or $100 \%$ of the premiums depending on retiree eligibility as reported by the System.

## SECTION 4: Reporting Information for the State Police Retirement System

Members whose participation began on or after July 1, 2003

The Retirement System pays $\$ 10$ per month per year of service toward medical premiums for non-hazardous retirees, $\$ 15$ per month per year of service for hazardous retirees, and $\$ 10$ per month per year of service for surviving spouses of hazardous employees. "Line of duty" insurance benefits will be calculated as if the member had at least 20 years of hazardous service.


[^0]:    * Net contributions are employer and member contributions minus administrative and investment expenses
    ** Net of stock commissions and securities lending expense

[^1]:    * Net contributions are employer and member contributions minus administrative and investment expenses
    ** Net of stock commissions and securities lending expense

[^2]:    * Net contributions are employer and member contributions minus administrative and investment expenses
    ** Net of stock commissions and securities lending expense

[^3]:    * Net contributions are employer and member contributions minus administrative and investment expenses
    ** Net of stock commissions and securities lending expense

[^4]:    * Total return on market value basis minus expected return on actuarial basis using the net investment return assumption. See Chart 8 for the calculation of unrecognized return for the current year.

[^5]:    * Details in Chart 11

[^6]:    * Level percentage of salary

[^7]:    * Level percentage of salary

[^8]:    ** Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

[^9]:    * Net contributions is the sum of employer and member contributions less administrative and investment expenses.
    ** Net of stock commissions and securities lending expense

[^10]:    * Net contributions is the sum of employer contributions less administrative and investment expenses.
    ** Net of stock commissions and securities lending expense

[^11]:    * Net contributions is the sum of employer and member contributions less administrative and investment expenses.
    ** Net of stock commissions and securities lending expense

[^12]:    * Net contributions is the sum of employer contributions less administrative and investment expenses.
    ** Net of stock commissions and securities lending expense

[^13]:    * Total return on market value basis minus expected return on actuarial basis using the net investment return assumption. See Chart 8 for the calculation of unrecognized return for the current year.

[^14]:    * Total return on market value basis minus expected return on actuarial basis using the net investment return assumption. See Chart 8 for the calculation of unrecognized return for the current year.

[^15]:    * Details in Chart 11

[^16]:    * Includes interest to year-end.

[^17]:    * Level percentage of salary

[^18]:    * Level percentage of salary

[^19]:    ** Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.
    *** Change in asset valuation method effective in this valuation to 5 -year smoothing of investment gains/(losses).

[^20]:    * Net contributions are employer and member contributions minus administrative and investment expenses
    ** Net of stock commissions and securities lending expense

[^21]:    * Net contributions are employer contributions minus administrative and investment expenses
    ** Net of stock commissions and securities lending expense

[^22]:    * Details in Chart 11
    ** Details in Chart 14

[^23]:    Note: Each year's yield is weighted by the average asset value in that year.

[^24]:    * Level percentage of salary

[^25]:    Note: If the actuarial accrued liabilities of the Retirement plan were adjusted to allow for a 3\% annual cost of living adjustment for all future years and were combined with the actuarial accrued liabilities of the Insurance plan, the funded ratio on a market value basis of the combined plans would be 52.03\%.

[^26]:    ** Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.
    *** Change in asset valuation method effective in this valuation to 5 -year smoothing of investment gains/(losses).

