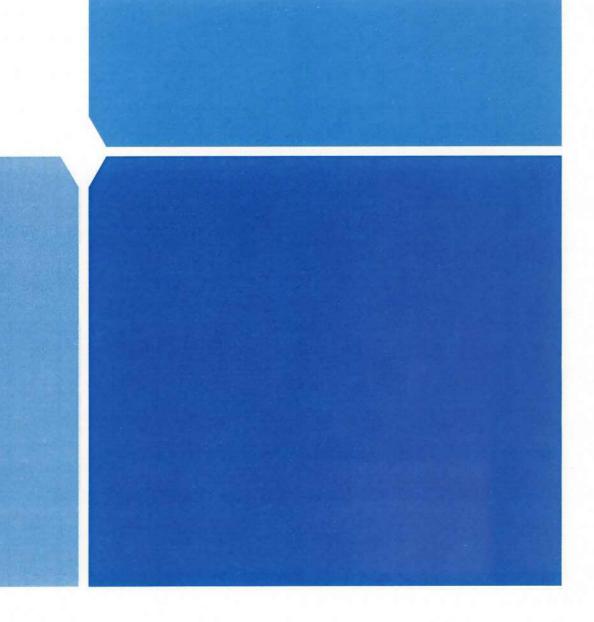


Kentucky Employees Retirement System County Employees Retirement System State Police Retirement System

Actuarial Valuation and Review as of June 30, 2005



# **Kentucky Employees Retirement System**

Actuarial Valuation and Review as of June 30, 2005

Copyright © 2005

THE SEGAL GROUP, INC.,
THE PARENT OF THE SEGAL COMPANY
ALL RIGHTS RESERVED



The Segal Company
2018 Powers Ferry Road, Suite 850 Atlanta, GA 30339-5003
T 678.306.3100 F 678.306.3190 www.segalco.com

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

Bv:

Leon F. (Rocky) Joyner, Jr., FCA, ASA, MAAA

Vice President and Actuary

K. Eric Fredén, FSA, MAAA

Associate Actuary

# **SECTION 1**

Purposei
Significant Issues in Valuation Yeari
Summary of Key Valuation Resultsv

**VALUATION SUMMARY** 

# **SECTION 2**

# **VALUATION RESULTS**

A.	Member Data 1
B.	Financial Information9
C.	Actuarial Experience20
D.	Recommended Contribution 29

# **SECTION 3**

# SUPPLEMENTAL INFORMATION

EXHIBIT A Table of Plan Coverage35
EXHIBIT B Members in Active Service as of June 30, 2005
EXHIBIT C Retired Lives Summary38
EXHIBIT D Beneficiary Summary40
EXHIBIT E Summary Statement of Income and Expenses on an Actuarial Value Basis
EXHIBIT F Table of Financial Information46
EXHIBIT G Table of Amortization Bases50
EXHIBIT H Definitions of Pension Terms54

# **SECTION 4**

# **REPORTING INFORMATION**

EXHIBIT I Summary of Actuarial Valuation Results58
EXHIBIT II Supplementary Information Required by the GASB - Schedule of Funding Progress
EXHIBIT III Supplementary Information Required by the GASB68
EXHIBIT IV Supplementary GASB Information - Schedule of Retirees and Beneficiaries70
EXHIBIT V Actuarial Assumptions and Actuarial Cost Method71
EXHIBIT VI Summary of Plan Provisions76

#### **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.

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

# Non-Hazardous

<u>Plan</u>	July 1, 2006 Rate	July 1, 2005 Rate
Retirement	10.68%	7.85%
Insurance	<u>6.45</u>	<u>5.77</u>
Total	17.13%	13.62%

# Hazardous

<u>Plan</u>	July 1, 2006 Rate	July 1, 2005 Rate
Retirement	9.28%	8.52%
Insurance	<u>14.04</u>	<u>13.07</u>
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%

<sup>\*</sup> 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 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

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

#### Hazardous

	Unrecognized investment	Actuarial value as a
<u>Plan</u>	(gains)/losses as of 6/30/2005	percentage of market value
Retirement	\$6,979,765	101.8%
Insurance	-923,582	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 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 non-hazardous Retirement and Insurance plans would be 47.86%. The corresponding funded ratio for the hazardous plans would be 61.17%.

# **Summary of Key Valuation Results**

	Kentucky No	n-Hazardous	<u>Kentucky</u>	<u> Hazardous</u>	Kentuck	y 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	<u>6.45</u>	<u>5.77</u>	14.04	<u>13.07</u>	<u>N/A</u>	<u>N/A</u>
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

This page intentionally left blank

#### 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, B, 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.

This page intentionally left blank

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

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

Year Ended June 30	Active Members	Vested Terminated Members*	Retired Participants and Beneficiaries	Ratio of Non-Actives 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

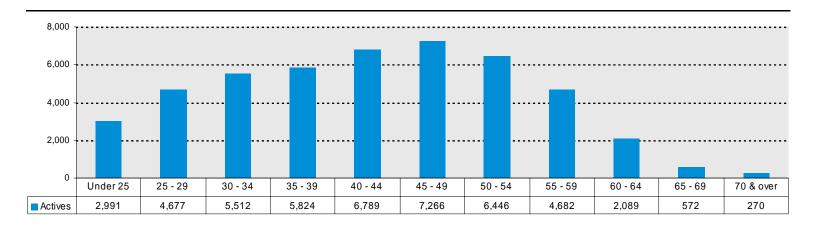
Year Ended June 30	Active Members	Vested Terminated Members*	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives
1997	3,532	77	585	0.19
1998	3,582	96	671	0.21
1999	3,889	96	780	0.23
2000	4,007	113	924	0.26
2001	4,228	123	1,053	0.28
2002	4,211	127	1,208	0.32
2003	4,189	145	1,357	0.36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

<sup>\*</sup>Excludes terminated members due a refund of employee contributions.

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

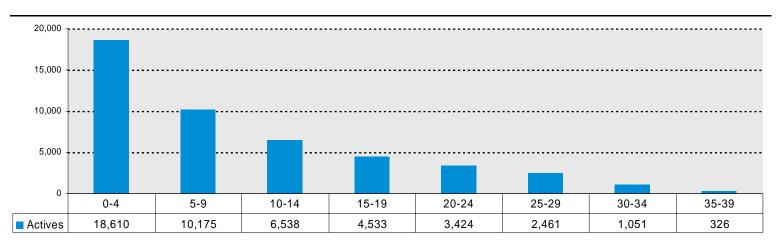
# CHART 2A – Non-Hazardous

Distribution of Active Members by Age as of June 30, 2005



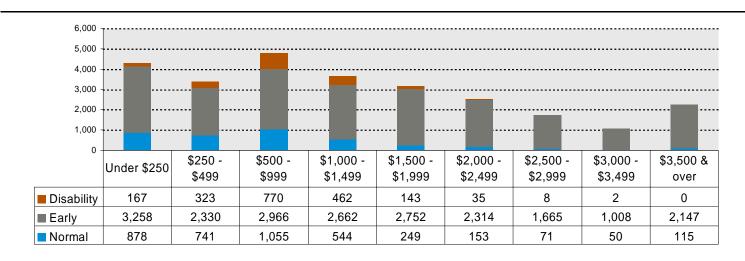
# CHART 3A - Non-Hazardous

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



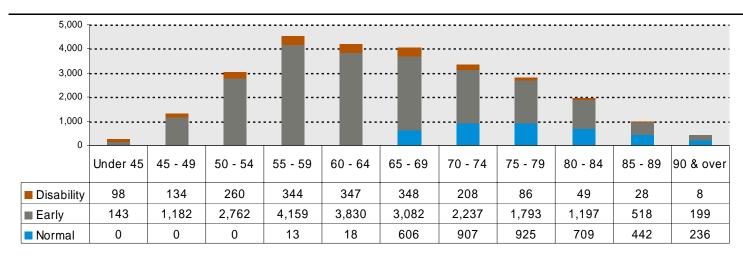
These graphs show a distribution of the current non-hazardous retired participants based on their monthly amount and age, by type of pension.

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



# CHART 5A – Non-Hazardous

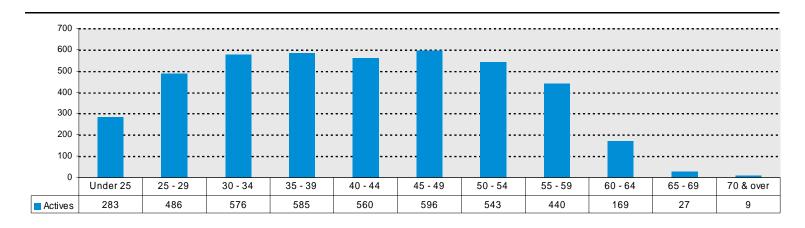
# Distribution of Retired Participants by Type and by Age as of June 30, 2005



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

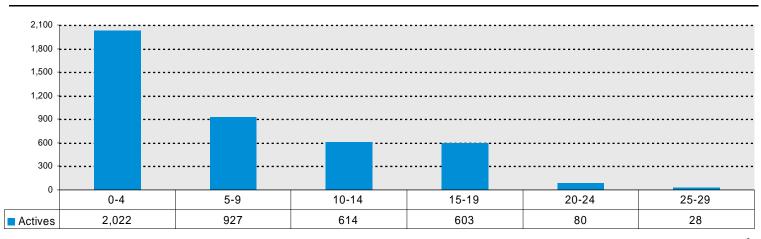
#### CHART 2B - Hazardous

# Distribution of Active Members by Age as of June 30, 2005



# **CHART 3B - Hazardous**

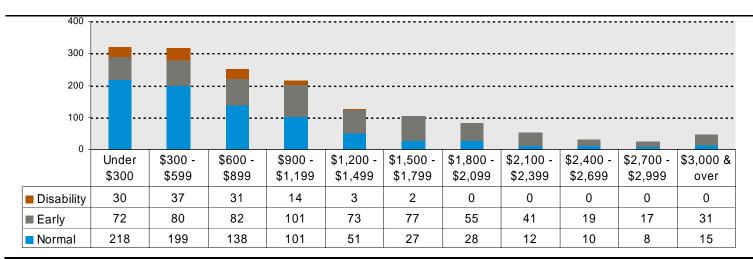
# Distribution of Active Members by Years of Service as of June 30, 2005



SECTION 2: Valuation Results for the Kentucky Employees Retirement System

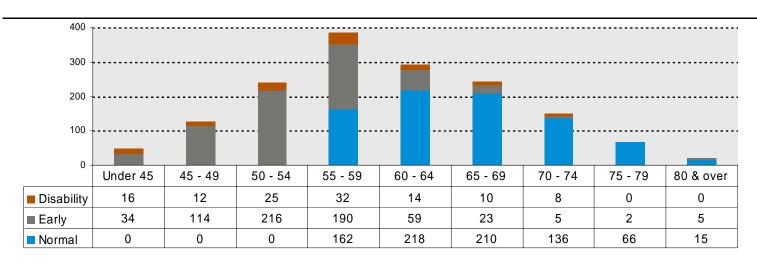
These graphs show a distribution of the current hazardous retired participants based on their monthly amount and age, by type of pension.

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



**CHART 5B - Hazardous** 

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



This page intentionally left blank

#### **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 non-hazardous plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

Adjustment toward market value

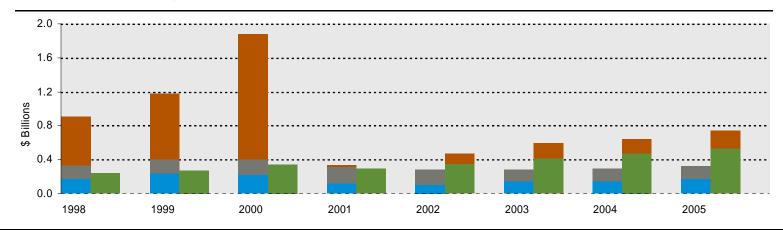
■ Benefits paid

■ Net interest and dividends

■ Net contributions

#### **CHART 6A - Non-Hazardous Retirement**

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



#### **Non-Hazardous Retirement**

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

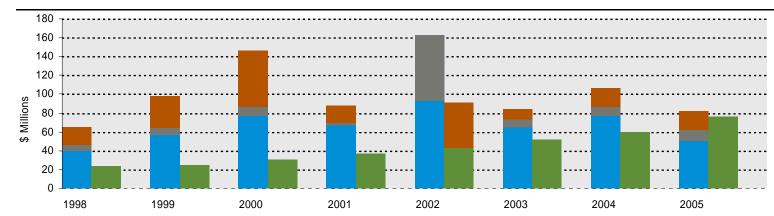
<sup>\*</sup> Net contributions are employer and member contributions minus administrative and investment expenses



<sup>\*\*</sup> Net of stock commissions and securities lending expense

CHART 6B - Non-Hazardous Insurance

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



Adjustment toward market valueBenefits paid

■ Net interest and dividends

■ Net contributions

#### **Non-Hazardous Insurance**

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

<sup>\*</sup> Net contributions are employer and member contributions minus administrative and investment expenses



<sup>\*\*</sup> Net of stock commissions and securities lending expense

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.

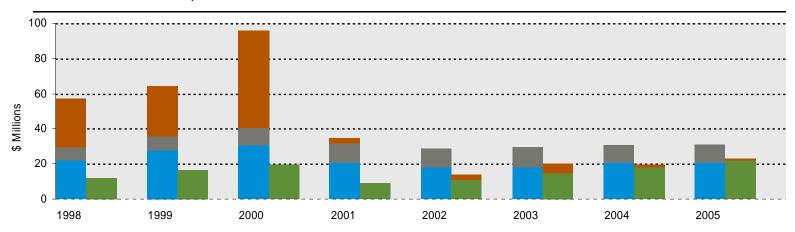
■ Adjustment toward market value
■ Benefits paid

■ Net interest and dividends

Net contributions

#### **CHART 6C – Hazardous Retirement**

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



#### **Hazardous Retirement**

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

<sup>\*</sup> Net contributions are employer and member contributions minus administrative and investment expenses

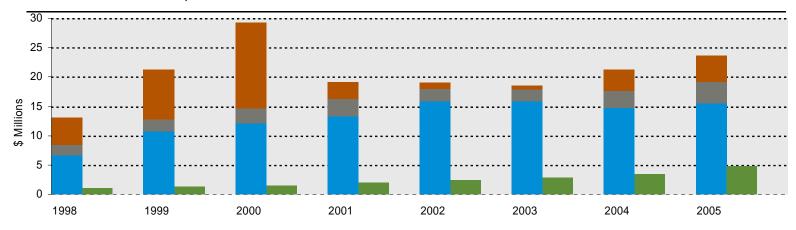


<sup>\*\*</sup> Net of stock commissions and securities lending expense

SECTION 2: Valuation Results for the Kentucky 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



■ Adjustment toward market value

■ Benefits paid

■ Net interest and dividends

■ Net contributions

#### **Hazardous Insurance**

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	\$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

<sup>\*</sup> Net contributions are employer and member contributions minus administrative and investment expenses



<sup>\*\*</sup> Net of stock commissions and securities lending expense

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

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

1.	Market value of assets		_	\$5,362,630,697
		Original		Unrecognized
2.	Unrecognized return*	<u>Amount</u>	<b>Amortization</b>	<u>Return</u>
	(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) – (2f)			\$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	_	_	\$610,901,623
		Original		Unrecognized
2.	Unrecognized return*	<u>Amount</u>	<b>Amortization</b>	<u>Return</u>
	(a) Year ended June 30, 2005	-\$256,660	-\$51,332	-\$205,328
	(b) Year ended June 30, 2004	36,758,879	7,351,776	22,055,327
	(c) Year ended June 30, 2003	-35,320,860	-7,064,172	-14,128,344
	(d) Year ended June 30, 2002	-19,441,916	-3,888,383	-3,888,383
	(e) Year ended June 30, 2001	-66,720,677	-13,344,135	0
	(f) Total unrecognized return			3,833,272
3.	Final actuarial value of assets: (1) – (2f)			\$607,068,351
4.	Actuarial value as a percentage of market value: $(3) \div (1)$			99.4%

<sup>\*</sup> 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.

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

# CHART 7C – Hazardous Retirement Determination of Actuarial Value of Assets for Year Ended June 30, 2005

1.	Market value of assets			\$398,308,897
		Original		Unrecognized
2.	Unrecognized return*	Amount	<b>Amortization</b>	Return
	(a) Year ended June 30, 2005	\$757,983	\$151,597	\$606,386
	(b) Year ended June 30, 2004	11,700,671	2,340,134	7,020,403
	(c) Year ended June 30, 2003	-16,213,796	-3,242,759	-6,485,518
	(d) Year ended June 30, 2002	-40,605,179	-8,121,036	-8,121,036
	(e) Year ended June 30, 2001	-70,167,218	-14,033,444	0
	(f) Total unrecognized return			-6,979,765
3.	Final actuarial value of assets: (1) – (2f)			\$405,288,662
4.	Actuarial value as a percentage of market value: (3) $\div$ (1)			101.8%

#### CHART 7D - Hazardous Insurance

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

Market value of assets			\$188,871,226
	Original		Unrecognized
2. Unrecognized return*	<u>Amount</u>	<u>Amortization</u>	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)			<u>\$187,947,644</u>
4. Actuarial value as a percentage of market value: (3) ÷ (1)			99.5%

<sup>\*</sup> 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.

This page intentionally left blank

CHART 8

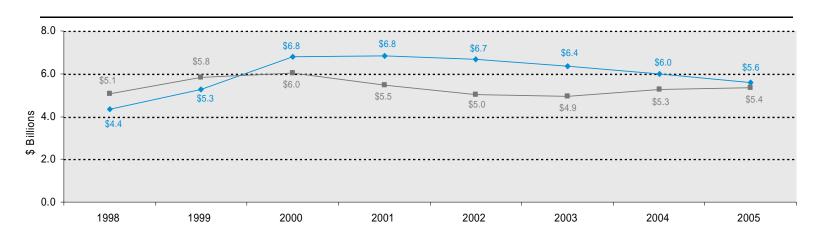
Calculation of Unrecognized Return for the Year Ended June 30, 2005

		Non-Hazardous Retirement	Non-Hazardous Insurance	Hazardous Retirement	Hazardous Insurance
1.	Employer and member contributions	\$178,133,769	\$51,431,954	\$21,383,377	\$15,653,592
2.	Benefit payments including refunds, or healthcare premiums	531,219,607	75,571,076	22,255,069	4,852,962
3.	Administrative and investment expenses	10,290,307	898,850	846,095	183,982
4.	Net cash flow: (1) - (2) - (3)	-363,376,145	-25,037,972	-1,717,787	10,616,648
5.	Market value of assets as of June 30, 2004	5,258,994,145	587,680,647	366,569,507	162,127,373
6.	Market value of assets as of June 30, 2005	5,362,630,697	610,901,623	398,308,897	188,871,226
7.	Actuarial value of assets as of June 30, 2004	6,000,513,743	600,586,961	397,212,763	169,158,879
8.	Average actuarial value of assets: $(7) + [0.5 \text{ x } (4)]$	5,818,825,671	588,067,975	396,353,870	174,467,203
9.	Expected return on an actuarial basis: 8.25% of (8)	480,053,118	48,515,608	32,699,194	14,393,544
10.	Gain/(loss) for the year ended June 30, 2005: (6) - (5) - (4) - (9)	-13,040,421	-256,660	757,983	1,733,661
11.	Unrecognized return as of June 30, 2005: 80% of (10)	-10,432,337	-205,328	606,386	1,386,929

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

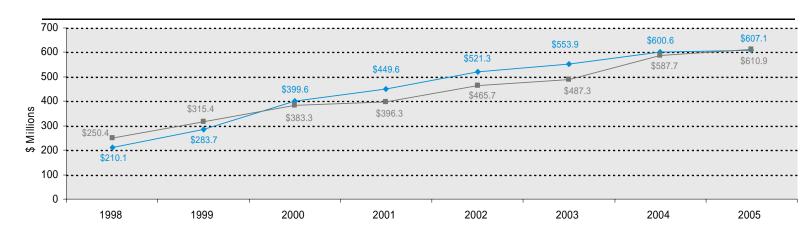
**CHART 9A - Non-Hazardous Retirement** 

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



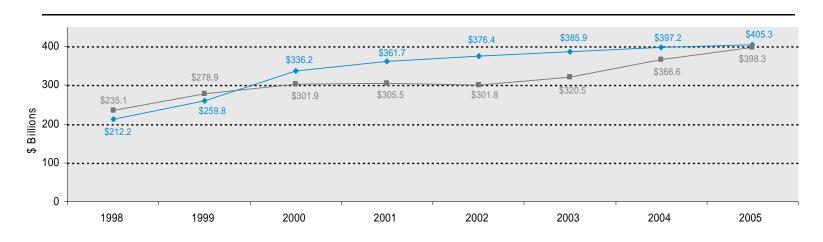
Actuarial Value

Market Value

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

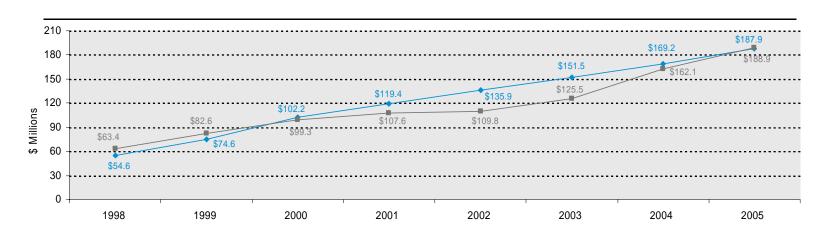
CHART 9C - Hazardous Retirement

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



Actuarial Value

Market Value

#### 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.

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

CHART 10 Actuarial Experience for Year Ended June 30, 2005

		Non-Hazardous Retirement	Non-Hazardous Insurance	Hazardous Retirement	Hazardous 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**	<u>-334,431,254</u>	<u>-37,200,120</u>	<u>-3,755,983</u>	<u>-2,100,650</u>
4.	Net experience gain/(loss): $(1) + (2) + (3)$	-\$873,603,048	-\$54,697,887	-\$26,781,671	-\$8,381,225

<sup>\*</sup> Details in Chart 11

<sup>\*\*</sup> Details in Chart 14

#### **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

	Non-Hazardous Retirement	Non-Hazardous Insurance	Hazardous Retirement	Hazardous Insurance
1. Actual return	-\$58,451,853	\$31,519,362	\$9,793,686	\$8,172,117
2. Average value of assets	5,818,825,671	588,067,975	396,353,870	174,467,203
3. Actual rate of return: $(1) \div (2)$	-1.00%	5.36%	2.47%	4.68%
4. Assumed rate of return	8.25%	8.25%	8.25%	8.25%
5. Expected return: (2) x (4)	\$480,053,118	\$48,515,608	\$32,699,194	\$14,393,544
6. Actuarial gain/(loss): (1) – (5)	<u>-\$538,504,971</u>	<u>-\$16,996,246</u>	<u>-\$22,905,508</u>	<u>-\$6,221,427</u>

**CHART 12A – Non-Hazardous 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	
Year Ended 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	149,248,896	2.56	-207,700,749	-3.56	-58,451,853	-1.00	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

	Net Intere Dividend		•	Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
Year Ended June 30	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%	

SECTION 2: Valuation Results for the Kentucky Employees Retirement System

**CHART 12C – Hazardous Retirement** 

Investment Return - Actuarial Value vs. Market Value: 1998 - 2005

	Net Intere Dividend		Recognition Appreci		oital Actuarial Value Investment Return		Market Value Investment Return	
Year Ended June 30	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

	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
Year Ended June 30	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1998	\$1,770,000	3.90%	\$4,654,412	10.24%	\$6,424,412	14.14%	\$9,312,446	18.15%
1999	2,065,000	3.48	8,430,863	14.21	10,495,863	17.69	9,787,878	14.37
2000	2,571,000	3.22	14,603,588	18.30	17,174,588	21.52	6,166,757	7.02
2001	3,134,000	2.91	2,815,835	2.61	5,949,835	5.52	-2,878,243	-2.74
2002	2,060,266	1.63	1,076,714	0.85	3,136,980	2.49	-11,232,521	-9.83
2003	2,168,713	1.52	538,694	0.38	2,707,407	1.90	2,886,492	2.48
2004	2,831,115	1.80	3,562,500	2.27	6,393,615	4.07	25,288,196	19.28
2005	3,654,656	2.09	4,517,461	2.59	8,172,117	4.68	16,127,205	9.63
Total	\$20,254,750		\$40,200,067		\$60,454,817		\$55,458,210	
					Average return	6.77%		6.59%

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

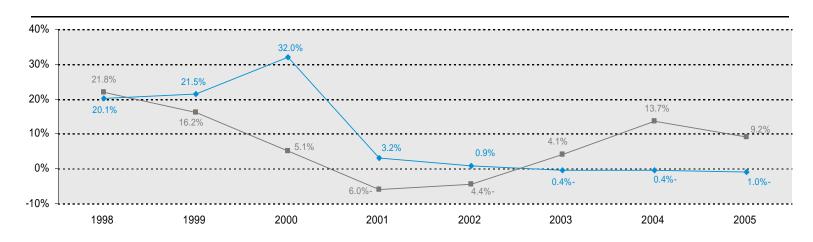
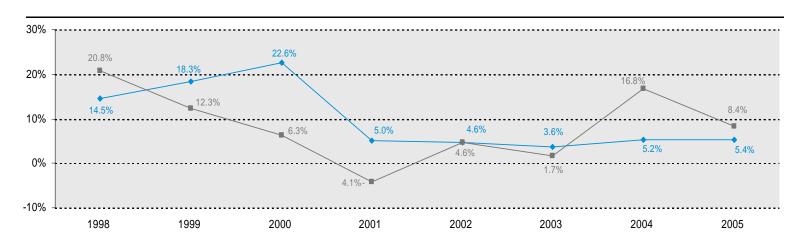


CHART 13B - Non-Hazardous Insurance

Market and Actuarial Rates of Return for Years Ended June 30, 1997 - 2005

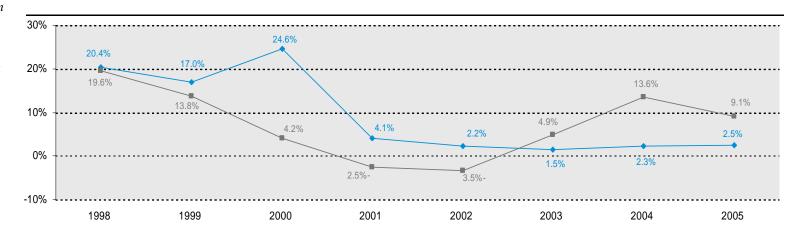


SECTION 2: Valuation Results for the Kentucky Employees Retirement System

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.

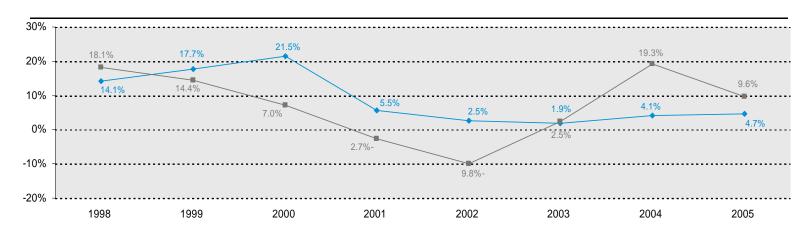
CHART 13C – Hazardous Retirement

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



Actuarial Value

Market Value

#### **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.

<u>Plan</u>	Year End 2005 Assumption	Year End 2005 Actual Experience	Gain/(Loss)* for the Year	Year End 2006 <u>Assumption</u>
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

<sup>\*</sup> Includes interest to year-end.

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

This page intentionally left blank

#### 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.

## **CHART 15A – Non-Hazardous Retirement**

#### **Recommended Contribution**

	As of June 30					
	200	)5	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	<u>-82,275,825</u>	<u>-4.97%</u>	<u>-81,642,757</u>	<u>-4.96%</u>		
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	<u>5,578,685,746</u>		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)	<u>\$176,774,106</u>	10.68%	<u>\$129,125,800</u>	<u>7.85%</u>		
10. Projected salary	\$1,655,907,288		\$1,645,412,496			

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

#### 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	<u>14,277,748</u>
Total change	<u>\$47,648,306</u>
Recommended Contribution as of June 30, 2005	\$176,774,106

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

# CHART 15B – Non-Hazardous Insurance Recommended Contribution

		As of June 30					
		200	05	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		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: $(1) + (5)$	<u>\$219,768,964</u>	<u>13.27%</u>	<u>\$202,498,302</u>	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.

# CHART 15C – Hazardous Retirement Recommended Contribution

		As of June 30					
		200	)5	200	4		
		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	<u>-9,969,974</u>	<u>-7.57%</u>	<u>-9,561,851</u>	<u>-7.55%</u>		
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)	<u>\$12,219,689</u>	<u>9.28%</u>	<u>\$10,787,472</u>	<u>8.52%</u>		
10.	Projected salary	\$131,687,088		\$126,664,812			

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

# 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	<u>-47,375</u>
Total change	<u>\$1,432,217</u>
Recommended Contribution as of June 30, 2005	\$12,219,689

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

# CHART 15D – Hazardous Insurance Recommended Contribution

			As of June 30						
		200	05	200	)4				
		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: $(1) + (5)$	<u>\$31,304,778</u>	23.77%	<u>\$28,517,563</u>	<u>22.51%</u>				
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%				

This page intentionally left blank

SECTION 3: Supplemental Information for the Kentucky Employees Retirement System

EXHIBIT A

Table of Plan Coverage

		Non-Hazardou	s			
	Year Ende	ed June 30		Year Ende		
Category	2005	2004	Change From Prior Year	2005	2004	Change From Prior Year
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

	Years of Service											
Age	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

	Years of Service												
Age	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

	<u>Ma</u>	<u>le Lives</u>	<u>Fem</u>	ale Lives		<u>Total</u>
		Monthly		Monthly		Monthly
	<u>Number</u>	<u>Benefits</u>	<u>Number</u>	<u>Benefits</u>	Number	<u>Benefits</u>
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	<u>102</u>	78,336.24	<u>58</u>	37,672.99	<u>160</u>	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

	<u>Mal</u>	<u>e Lives</u>	<u>Fema</u>	<u>le Lives</u>	<u>Total</u>		
		Monthly		Monthly		Monthly	
	<u>Number</u>	<u>Benefits</u>	<u>Number</u>	<u>Benefits</u>	<u>Number</u>	<u>Benefits</u>	
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	<u>20</u>	15,339.27	<u>6</u>	7,839.20	<u>26</u>	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	<u>Fem</u>	ale Lives	<u>Total</u>		
		Monthly		Monthly		Monthly	
	<u>Number</u>	<u>Benefits</u>	<u>Number</u>	<u>Benefits</u>	<u>Number</u>	<u>Benefits</u>	
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	<u>2</u>	<u>585.77</u>	<u>2</u>	1,254.50	<u>4</u>	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

	<u>Male</u>	Lives	<u>Femal</u>	e Lives	<u>Total</u>		
	Monthly			Monthly		Monthly	
	<u>Number</u>	<u>Benefits</u>	<u>Number</u>	<u>Benefits</u>	<u>Number</u>	<u>Benefits</u>	
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	<u>0</u>	0.00	<u>0</u>	0.00	<u>0</u>	0.00	
Total	29	\$12,662.86	151	\$93,026.37	180	\$105,689.23	

#### **EXHIBIT E – Non-Hazardous Retirement**

	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	<u>-10,290,307</u>		<u>-8,871,985</u>	
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		<u>-10,921,784</u>	
Net investment income		<u>-58,451,853</u>		-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	<u>-8,823,849</u>		<u>-8,001,144</u>	
Net benefit payments		-\$531,219,607		-\$467,368,208
Change in reserve for future benefits		-\$421,827,997		-\$350,805,089

#### **EXHIBIT E – Non-Hazardous Insurance**

	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	<u>-898,850</u>		<u>-787,370</u>	
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	<u>-2,694,878</u>		<u>-1,112,984</u>	
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

### **EXHIBIT E – Hazardous Retirement**

	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	<u>-846,095</u>		<u>-638,243</u>	
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	<u>-1,714,808</u>		<u>-759,981</u>	
Net investment income		<u>9,793,686</u>		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	<u>-1,760,315</u>		<u>-1,409,860</u>	
Net benefit payments		-\$22,255,069		-\$18,272,650
Change in reserve for future benefits		\$8,075,899		\$11,287,041

### **EXHIBIT E – Hazardous Insurance**

	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	<u>-183,982</u>		<u>-116,907</u>	
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	<u>-840,146</u>		<u>-314,693</u>	
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

#### **EXHIBIT F – Non-Hazardous Retirement**

	Year Ended	Year Ended June 30, 2005		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	<u>285,796</u>		<u>319,011</u>	
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		<u>\$5,362,630,697</u>		<u>\$5,258,994,145</u>
Net assets at actuarial value		\$5,578,685,746		\$6,000,513,743

#### **EXHIBIT F – Non-Hazardous Insurance**

	Year Ended	Year Ended June 30, 2005		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

**EXHIBIT F – Hazardous Retirement** 

	Year Ended	Year Ended June 30, 2005		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	<u>2,105,601</u>		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	<u>23,188</u>		<u>26,021</u>	
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

#### **EXHIBIT F – Hazardous Insurance**

	Year Ended	Year Ended June 30, 2005		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	<u>720,812</u>		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		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		<u>\$188,871,226</u>		\$162,127,373
Net assets at actuarial value		<u>\$187,947,644</u>		\$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

<sup>\*</sup> Level percentage of salary

**EXHIBIT G- Non-Hazardous Insurance** 

**Table of Amortization Bases** 

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding 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	22	-37,611,195
06/30/1998	30	19,914,214	1,403,828	23	23,564,538
06/30/1999	30	-69,145,663	-4,642,229	24	-80,226,797
06/30/2000	30	44,198,913	2,826,076	25	50,199,870
06/30/2001	30	237,627,565	14,470,377	26	263,791,996
06/30/2002	30	36,483,146	2,115,857	27	39,529,449
06/30/2003	30	123,332,414	6,812,116	28	130,258,381
06/30/2004	30	164,749,377	8,666,411	29	169,406,543
06/30/2005	30	304,481,393	<u>15,254,113</u>	30	304,481,393
Total			\$121,440,132		\$2,073,490,837

<sup>\*</sup> 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	<u>1,336,513</u>	30	26,677,621
Total			\$1,203,078		\$33,705,595

<sup>\*</sup> Level percentage of salary

EXHIBIT G- Hazardous Insurance
Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding 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	24	-12,040,648
06/30/2000	30	-3,445,265	-220,290	25	-3,913,035
06/30/2001	30	20,464,709	1,246,203	26	22,718,016
06/30/2002	30	3,711,155	215,230	27	4,021,032
06/30/2003	30	28,620,833	1,580,837	28	30,228,090
06/30/2004	30	19,794,260	1,041,249	29	20,353,808
06/30/2005	30	41,329,389	2,070,548	30	41,329,389
Total			\$11,295,472		\$198,897,051

<sup>\*</sup> Level percentage of salary

#### **EXHIBIT H**

#### **Definitions of Pension Terms**

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

# Assumptions or Actuarial Assumptions:

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

- (a) <u>Investment return</u> the rate of investment yield that the Plan will earn over the long-term future;
- (b) <u>Mortality rates</u> the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) <u>Retirement rates</u> the rate or probability of retirement at a given age;
- (d) <u>Turnover rates</u> 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.

**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.

This page intentionally left blank

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

#### REPORTING INFORMATION

EXHIBIT I Summary of Actuarial Valuation Results	58
EXHIBIT II Supplementary Information Required by the GASB - Schedule of Funding Progress	62
EXHIBIT III Supplementary Information Required by the GASB	68
EXHIBIT IV Supplementary Information Required by the GASB - Schedule of Retirees and Beneficiaries	70
EXHIBIT V Actuarial Assumptions and Actuarial Cost Method	71
EXHIBIT VI Summary of Plan Provisions	76

# 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 follo	wing 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	h 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
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	
<ol> <li>Actuarial value of assets (\$5,362,630,697 at market va &amp; Bressler, PSC)</li> </ol>	ue as reported by Carpenter, Mountjoy	5,578,685,746

# 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		

EXHIBIT I – Hazardous Retirement		
Summary of Actuarial Valuation Results		
The valuation was made with respect to the following data supp	lied to us:	
1. Retired participants as of the valuation date (including 180 beneficiaries in	n 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:		¢20,007,505
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	
<ol> <li>Actuarial value of assets (\$398,308,897 at market value as reported by Ca Bressler, PSC)</li> </ol>	arpenter, Mountjoy &	405,288,662
6. Unfunded actuarial accrued liability		\$33,705,595

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					
<ol> <li>Actuarial value of assets (\$188,871,226 at market value as reported by Carpenter, Mountjoy Bressler, PSC)</li> </ol>	<i>,</i> &	187,947,644				
6. Unfunded actuarial accrued liability		\$198,897,05				

**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) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (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) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (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%

**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) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (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) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (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%

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)	Percent Unfunded [(b) - (a)] / (b)	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

**EXHIBIT II – Total 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) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Percent Unfunded [(b) - (a)] / (b)	Increase in Assets
06/30/1997	3,850,712,243	3,603,966,110	-246,746,133	-6.85%	475,416,666
06/30/1998	4,568,287,243	3,971,749,822	-596,537,421	-15.02%	717,575,000
06/30/1999	5,524,179,716	4,531,905,609	-992,274,107	-21.90%	955,892,473
06/30/2000	7,142,888,924	5,120,191,329	-2,022,697,595	-39.50%	1,618,709,208
06/30/2001***	7,206,420,161	5,729,229,055	-1,477,191,106	-25.78%	63,531,237
06/30/2002	7,030,468,498	6,348,163,928	-682,304,570	-10.75%	-175,951,663
06/30/2003	6,737,244,554	6,877,342,321	140,097,767	2.04%	-293,223,944
06/30/2004	6,397,726,506	7,453,191,207	1,055,464,701	14.16%	-339,518,048
06/30/2005	5,983,974,408	8,018,069,096	2,034,094,688	25.37%	-413,752,098

<sup>\*</sup> Includes capitalized appreciation of investments.

<sup>\*\*</sup> Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

<sup>\*\*\*</sup> Change in asset valuation method effective in this valuation to 5-year smoothing of investment gains/(losses).

This page intentionally left blank

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 Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Percent Unfunded [(b) – (a)] / (b)	Increase in Assets
06/30/1990	\$32,722,932	\$719,493,806	\$686,770,874	95.45%	N/A
06/30/1991	46,549,335	804,674,050	758,124,715	94.22%	13,826,403
06/30/1992	62,465,626	1,001,703,695	939,238,069	93.76%	15,916,291
06/30/1993	77,673,575	1,177,861,283	1,100,187,708	93.41%	15,207,949
06/30/1994	99,083,533	1,444,612,678	1,345,529,145	93.14%	21,409,958
06/30/1995	127,292,191	1,462,174,101	1,334,881,910	91.29%	28,208,658
06/30/1996**	172,646,205	1,222,394,138	1,049,747,933	85.88%	45,354,014
06/30/1997	211,164,347	1,274,464,242	1,063,299,895	83.43%	38,518,142
06/30/1998	264,711,970	1,379,578,155	1,114,866,185	80.81%	53,547,623
06/30/1999	358,284,536	1,422,523,386	1,064,238,850	74.81%	93,572,566
06/30/2000	501,772,489	1,632,642,971	1,130,870,482	69.27%	143,487,953
06/30/2001***	569,003,346	1,984,033,920	1,415,030,574	71.32%	67,230,857
06/30/2002	657,125,037	2,144,502,931	1,487,377,894	69.36%	88,121,691
06/30/2003	705,344,582	2,376,388,656	1,671,044,074	70.32%	48,219,545
06/30/2004	769,745,840	2,659,408,928	1,889,663,088	71.06%	64,401,258
06/30/2005	795,015,995	3,067,403,883	2,272,387,888	74.08%	25,270,155

<sup>\*\*</sup> Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

<sup>\*\*\*</sup> Change in asset valuation method effective in this valuation to 5-year smoothing of investment gains/(losses).

# **EXHIBIT III – Non-Hazardous**

# **Supplementary Information Required by the GASB**

Valuation date	June 30, 2005			
Actuarial cost method	Entry Age Normal Cost Method			
Amortization method	Level percent of salary			
Remaining amortization period	15 to 30 years			
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecog return is equal to the difference between the actual market return and the expected return the actuarial value, and is recognized over a five-year period.			
Actuarial assumptions:				
Investment rate of return	8.25%			
Payroll growth	5.00%			
Plan membership:				
Retired participants and beneficiaries receiving benefits	30,770			
Terminated members entitled to, but not yet receiving benefits	5,240			
Active members	<u>47,118</u>			
Total	83,128			

Total				Contracts in Force – Retirees and Dependents					
10441	100% Paid	<b>75% Paid</b>	50% Paid	25% Paid	0% Paid				
7,927	6,861	270	218	99	479				
802	777	11	9	5	0				
461	391	14	9	5	42				
877	824	23	12	15	3				
1,915	81	213	420	407	794				
11,765	6,740	1,582	<u>1,134</u>	<u>513</u>	<u>1,796</u>				
23,747	15,674	2,113	1,802	1,044	3,108				
	7,927 802 461 877 1,915 11,765	7,927       6,861         802       777         461       391         877       824         1,915       81         11,765       6,740	7,927       6,861       270         802       777       11         461       391       14         877       824       23         1,915       81       213         11,765       6,740       1,582	7,927     6,861     270     218       802     777     11     9       461     391     14     9       877     824     23     12       1,915     81     213     420       11,765     6,740     1,582     1,134	7,927     6,861     270     218     99       802     777     11     9     5       461     391     14     9     5       877     824     23     12     15       1,915     81     213     420     407       11,765     6,740     1,582     1,134     513				

# **EXHIBIT III – Hazardous**

# **Supplementary Information Required by the GASB**

Valuation date	June 30, 2005				
Actuarial cost method	Entry Age Normal Cost Method				
Amortization method	Level percent of salary				
Remaining amortization period	15 to 30 years				
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period.				
Actuarial assumptions:					
Investment rate of return	8.25%				
Payroll growth	5.00%				
Plan membership:					
Retired participants and beneficiaries receiving benefits	1,752				
Terminated members entitled to, but not yet receiving benefits	307				
Active members	<u>4,274</u>				
Total	6,333				

	Contracts in Force – Retirees and Dependents					
Age	Total	100% Paid	75% Paid	50% Paid	25% Paid	0% Paid
Single; Pre-Medicare	570	445	55	52	14	4
Family; Pre-Medicare	145	139	2	3	1	0
Parent Plus; Pre-Medicare	65	58	1	2	3	1
Couple; Pre-Medicare	174	151	9	8	4	2
Medicare Regular	61	5	10	28	18	0
Medicare High Option	<u>567</u>	<u>349</u>	<u>83</u>	<u>108</u>	<u>25</u>	<u>2</u>
Total	1,582	1,147	160	201	65	9

## **EXHIBIT IV – Non-Hazardous**

**Supplementary GASB Information - Schedule of Retirees and Beneficiaries** 

	Added	d to Rolls	Removed	I from Rolls	Rolls –	End of Year		
Valuation Date July 1	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance	% Increase in Annual Allowances	Average 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** 

	Added	to Rolls	Removed	from Rolls	Rolls – E	End of Year		
Valuation Date July 1	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance	% Increase in Annual Allowances	Average 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

## **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:**

		Non-Hazardous				Hazardous				
		<u> </u>	Rate (%)		Rate (%)					
	M	ortality	Disability	Withdrawal*	Мо	ortality	Disability	Withdrawal**		
Age	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		

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

<sup>\*\*</sup>Withdrawal rates during the first five years of employment are 30%, 8%, 4%, 4%, and 4% for hazardous plan members.

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Non-Hazardous Retirement Rates:	Age	Retirement Probability*
		0.04
	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

<sup>\*</sup>Retirement probability is 0.25 at first age member is eligible for unreduced retirement benefits.

Hazardous

**Retirement Rates:** 50% will retire as soon as eligible for unreduced benefit and balance will continue

until age 60.

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 younger than males.

**Dependent Children:** For a hazardous 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%

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Salary Increases:	Years of Service	Rate (%)			
	1 2 3 4 or more	12.00 10.00 8.00 6.50			
Payroll Growth:	5.0%	0.30			
Retiree Medical Insurance Election	:	Future retirees w that current retire		l coverage in the sa coverage.	ame proportio
Monthly Contribution Rates:			Medicare Cove Effect on Valua	0	
		<u>Single</u>	<b>Family</b>	Parent Plus	Couple
	Region 1	\$403.28	\$1,008.20	\$604.92	\$907.38
	Region 2	412.53	1,031.33	618.80	928.19
	Region 3	394.80	987.02	592.28	888.28
	Region 4	403.96	1,009.92	605.96	908.92
	Region 5	400.64	1,001.60	600.96	901.4
	Region 6	496.28	1,240.52	744.28	1,116.53
	Region 7	447.52	1,118.80	671.28	1,006.92
	Region 8	405.44	1,013.60	608.16	912.24
		Medicare	Rate	Contracts in	1 Force
		Low Option	High <u>Option</u>	Low Option	High <u>Option</u>
<u>Carrier</u>		<del></del>			
<u>Carrier</u> Anthem Blue Bankers Life		\$119.00 103.13	\$331.30 146.54	1,621 343	11,804 417

#### Weighted Medicare Coverage Rate in Effect on Valuation Date

	<b>Low Option</b>	<b>High Option</b>
All Members	\$116.00	\$323.43
Medical Contribution Rate Increases:	<u>Year</u>	Rate(%)
	2005	10.00
	2006-2010	9.00
	2011-2015	8.00
	2016-2020	7.50
	2021 and thereafter	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.

SECTION 4: Reporting Information for the Kentucky Employees Retirement System

Non-Hazardous Administrative Expenses:	\$6,000,000
Hazardous Administrative Expenses:	\$500,000
Actuarial Value of Assets:	Market value of assets less unrecognized return in each of the last five years. Unrecognized return is equal to the difference between the actual market return and 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 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

#### **Non-Hazardous Normal Retirement:**

Age Requirement 65
Service Requirement None

Amount If

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 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 twenty-

four, 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 Age 55 with 60 months service or any age with 25 years service.

Amount 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.

**Hazardous Early Retirement:** 

Requirement Age 50 with 15 years of service or any age with 20 years service.

Amount 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 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 65<sup>th</sup> 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.

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

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<sup>th</sup> 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 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%.

## **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.

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.

133600/05392.001

# **County Employees Retirement System**

Actuarial Valuation and Review as of June 30, 2005

Copyright © 2005

THE SEGAL GROUP, INC.,
THE PARENT OF THE SEGAL COMPANY
ALL RIGHTS RESERVED



The Segal Company
2018 Powers Ferry Road, Suite 850 Atlanta, GA 30339-5003
T 678.306.3100 F 678.306.3190 www.segalco.com

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:* 

Leon F. (Rocky) Joyner, Jr., FCA, ASA, MAAA

Vice President and Actuary

K. Eric Fredén, FSA, MAAA

Associate Actuary

# **SECTION 1**

Purpose
C' 'C' 'T ' 17.1 '
Significant Issues in Valuation Year
Summary of Key Valuation Results

**VALUATION SUMMARY** 

# **SECTION 2**

# **VALUATION RESULTS**

A.	Member Data	1
B.	Financial Information	9
C.	Actuarial Experience	20
D	Recommended Contribution	29

# **SECTION 3**

# SUPPLEMENTAL INFORMATION

EXHIBIT A Table of Plan Coverage35
EXHIBIT B Members in Active Service as of June 30, 2005
EXHIBIT C Retired Lives Summary38
EXHIBIT D Beneficiary Summary40
EXHIBIT E Summary Statement of Income and Expenses on an Actuarial Value Basis
EXHIBIT F Table of Financial Information46
EXHIBIT G Table of Amortization Bases50
EXHIBIT H Definitions of Pension Terms54

# **SECTION 4**

# **REPORTING INFORMATION**

EXHIBIT I Summary of Actuarial Valuation Results58
EXHIBIT II  Supplementary Information Required by the GASB - Schedule of Funding Progress
EXHIBIT III  Supplementary Information Required by the GASB68
EXHIBIT IV  Supplementary Information Required by the GASB - Schedule of Retirees and Beneficiaries70
EXHIBIT V  Actuarial Assumptions and Actuarial  Cost Method71
EXHIBIT VI Summary of Plan Provisions76

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

## **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.

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

# Non-Hazardous

<u>Plan</u>	July 1, 2006 Rate	July 1, 2005 Rate
Retirement	5.97%	4.55%
Insurance	<u>7.22</u>	<u>6.43</u>
Total	13.19%	10.98%

## Hazardous

<u>Plan</u>	July 1, 2006 Rate	July 1, 2005 Rate
Retirement	13.11%	11.22%
Insurance	<u>15.10</u>	<u>13.79</u>
Total	28.21%	25.01%

> The increase in the total rate is due to:

# Non-Hazardous

Retirement plan investment loss	1.10%
Retiree COLA	0.16
Insurance Phase-in*	0.79
Change in administrative expense assumption	0.07
Change in plan provisions	-0.15
Other experience	0.24
Total change	2.21%

## Hazardous

Retirement plan investment loss	1.34%
Retiree COLA	0.26
Insurance Phase-in*	1.31
Change in administrative expense assumption	0.02
Change in plan provisions	-0.16
Other experience	0.43
Total change	3.20%

<sup>\*</sup> 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:

Unrecognized investment

#### Non-Hazardous

<u>Plan</u>	(gains)/losses as of 6/30/2005	percentage of market value
Retirement	\$165,608,690	103.4%
Insurance	-4,543,418	99.3
Hazardous		
	Unrecognized investment	Actuarial value as a
<u>Plan</u>	(gains)/losses as of 6/30/2005	percentage of market value
Retirement	\$41,107,304	102.9%
Insurance	-1,758,208	99.5

Actuarial value as a

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 County Employees Retirement System

> 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	<u>7.22</u>	<u>6.43</u>	<u>15.10</u>	<u>13.79</u>	<u>N/A</u>	<u>N/A</u>
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%
<u>Insurance</u>						
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

This page intentionally left blank

#### 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, B, 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.

This page intentionally left blank

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

A historical perspective of how the member population has changed over the past nine valuations can be seen in these charts. CHART 1A – Non-Hazardous Member Population: 1997 – 2005

Year Ended June 30	Active Members	Vested Terminated Members*	Retired Participants and Beneficiaries	Ratio of Non-Actives 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** 

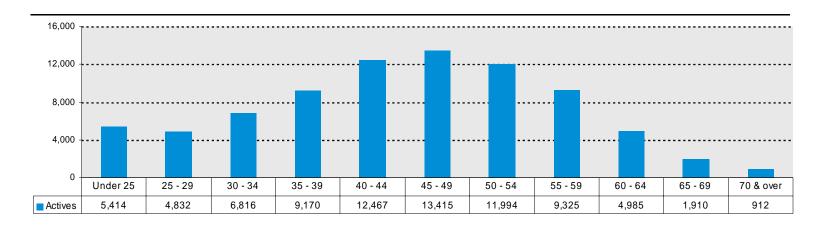
Member Population: 1997 – 2005

Year Ended June 30	Active Members	Vested Terminated Members*	Retired Participants and Beneficiaries	Ratio of Non-Actives 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

<sup>\*</sup>Excludes terminated members due a refund of employee contributions.

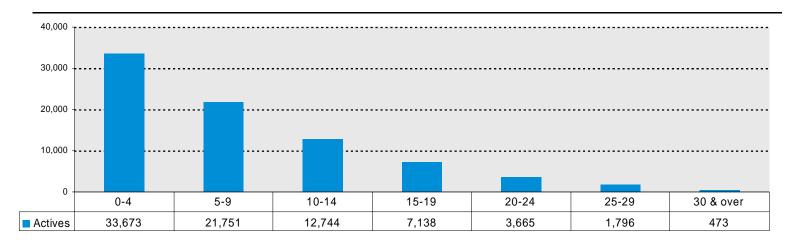
These graphs show a distribution of non-hazardous active members by age and by years of service.

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



## CHART 3A – Non-Hazardous

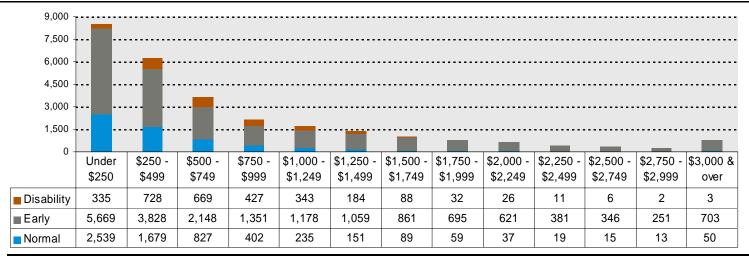
Distribution of Active Members by Years of Service as of June 30, 2005



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

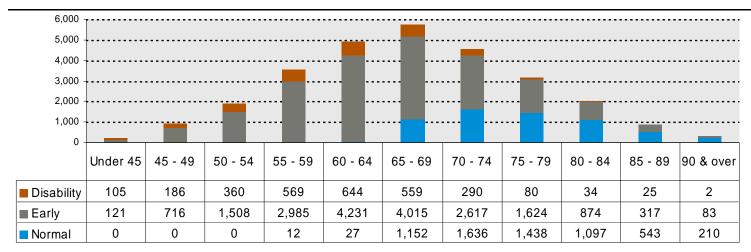
#### **CHART 4A - Non-Hazardous**

## 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

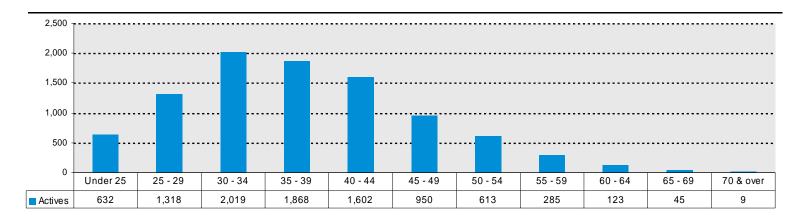


SECTION 2: Valuation Results for the County Employees Retirement System

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

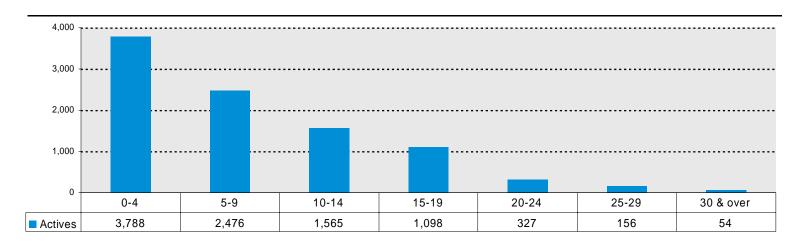
## CHART 2B – Hazardous

## Distribution of Active Members by Age as of June 30, 2005



#### **CHART 3B - Hazardous**

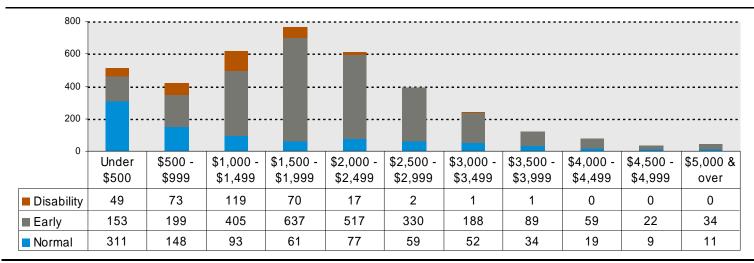
## Distribution of Active Members by Years of Service as of June 30, 2005



SECTION 2: Valuation Results for the County Employees Retirement System

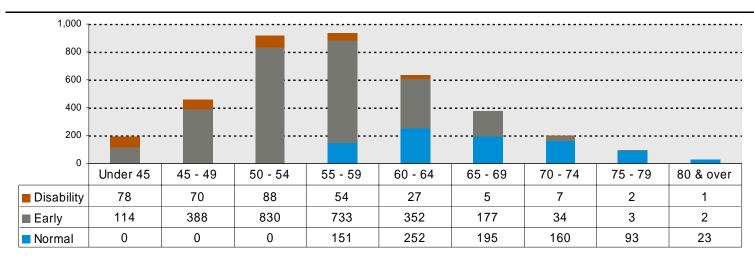
These graphs show a distribution of the current hazardous retired participants based on their monthly amount and age, by type of pension.

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



**CHART 5B - Hazardous** 

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



This page intentionally left blank

#### **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 non-hazardous plans. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

■ Adjustment toward market value

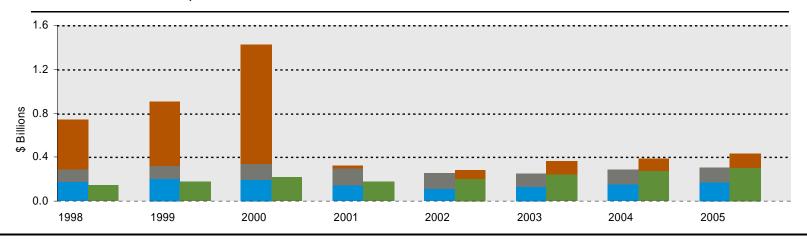
■ Benefits paid

■ Net interest and dividends

Net contributions

#### CHART 6A - Non-Hazardous Retirement

Comparison of Increases and Decreases in the Actuarial Value of Assets 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	\$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

<sup>\*</sup> Net contributions is the sum of employer and member contributions less administrative and investment expenses.



<sup>\*\*</sup> Net of stock commissions and securities lending expense

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

■ Adjustment toward market value

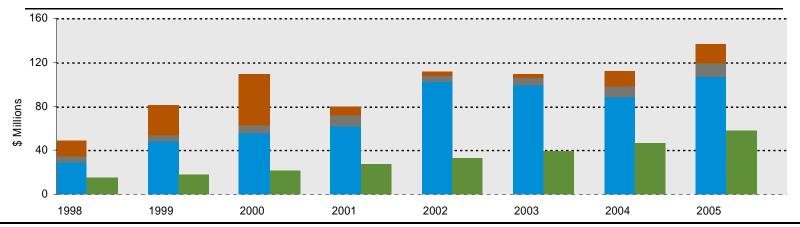
■ Benefits paid

■ Net interest and dividends

Net contributions



for Years Ended June 30, 1998 – 2005



#### **Non-Hazardous Insurance**

Development of the Fund Through June 30, 2005

CHART 6B - Non-Hazardous Insurance

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	\$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

<sup>\*</sup> Net contributions is the sum of employer contributions less administrative and investment expenses.



<sup>\*\*</sup> Net of stock commissions and securities lending expense

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.

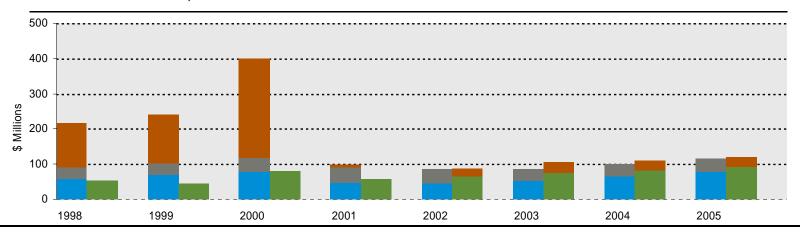
Adjustment toward market valueBenefits paid

■ Net interest and dividends

■ Net contributions

#### **CHART 6C - Hazardous Retirement**

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



#### **Hazardous Retirement**

**Development of the Fund Through June 30, 2005** 

				Adjustment			Actuarial
Year Ended June 30	Employer Contributions*	Member Contributions	Net Interest and Dividends**	Toward Market Value	Administrative and Investment Expenses	Benefit Payments	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

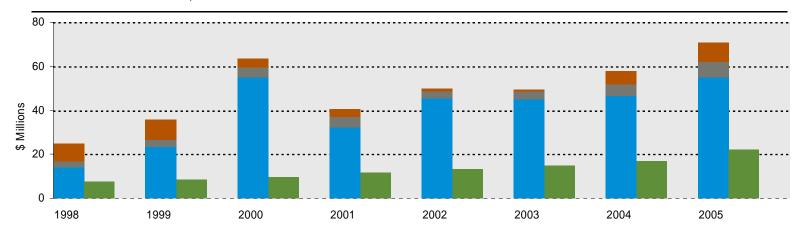
<sup>\*</sup> Net contributions is the sum of employer and member contributions less administrative and investment expenses.



<sup>\*\*</sup> Net of stock commissions and securities lending expense

#### CHART 6D - Hazardous Insurance

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



■ Adjustment toward market value

■ Benefits paid

■ Net interest and dividends

Net contributions

#### **Hazardous Insurance**

**Development of the Fund Through June 30, 2005** 

				Adjustment			Actuarial
Year Ended June 30	Employer Contributions*	Insurance Appropriation Contributions	Net Interest and Dividend**	Toward Market Value	Administrative and Investment Expenses	Benefit Payments	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

<sup>\*</sup> Net contributions is the sum of employer contributions less administrative and investment expenses.



<sup>\*\*</sup> Net of stock commissions and securities lending expense

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

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

1.	Market value of assets			\$4,893,599,997
		Original		Unrecognized
2.	Unrecognized return*	<u>Amount</u>	<b>Amortization</b>	<u>Return</u>
	(a) Year ended June 30, 2005	-\$4,681,810	-\$936,362	-\$3,745,448
	(b) Year ended June 30, 2004	124,531,026	24,906,205	74,718,448
	(c) Year ended June 30, 2003	-278,226,609	-55,645,322	-111,290,644
	(d) Year ended June 30, 2002	-626,456,069	-125,291,214	-125,291,214
	(e) Year ended June 30, 2001	-1,283,110,002	-256,622,000	0
	(f) Total unrecognized return			-165,608,690
3.	Final actuarial value of assets: (1) – (2f)			\$5,059,208,687
4.	Actuarial value as a percentage of market value: (3) $\div$ (1)			103.4%

#### **CHART 7B - Non-Hazardous Insurance**

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

1.	Market value of assets			\$668,485,367
		Original		Unrecognized
2.	Unrecognized return*	<u>Amount</u>	<u>Amortization</u>	<u>Return</u>
	(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)			<u>\$663,941,949</u>
4.	Actuarial value as a percentage of market value: $(3) \div (1)$			99.3%

<sup>\*</sup> 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.

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

# 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*	<u>Amount</u>	<b>Amortization</b>	<u>Return</u>
	(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)			<u>\$1,452,353,023</u>
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*	<u>Amount</u>	<u>Amortization</u>	<u>Return</u>
	(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%

<sup>\*</sup> 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.

This page intentionally left blank

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: $(7) + [0.5 \text{ x } (4)]$	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

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

**CHART 9A - Non-Hazardous Retirement** 

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998 - 2005

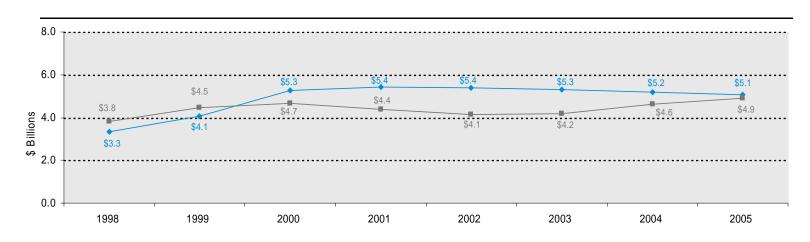
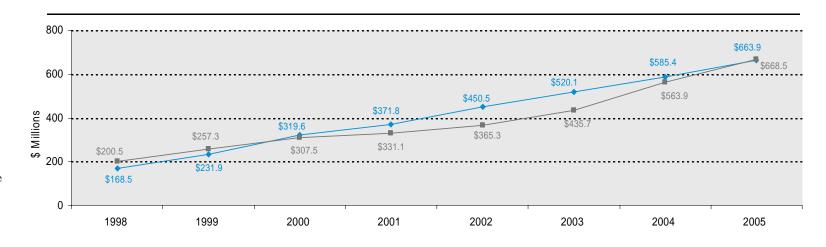


CHART 9B - Non-Hazardous Insurance

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998 - 2005



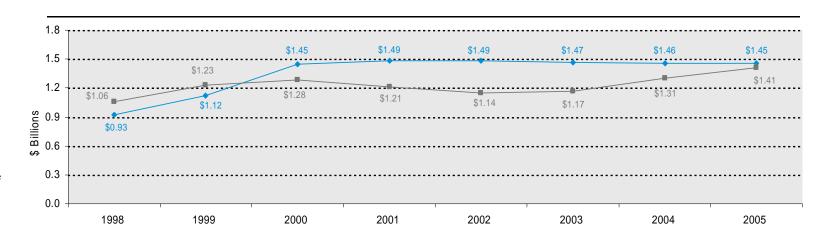
Actuarial Value

Market Value

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

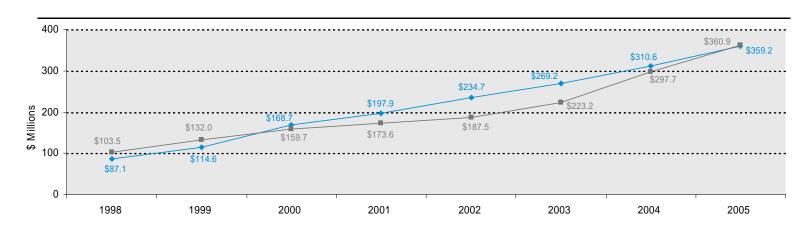
CHART 9C – Hazardous Retirement

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



Actuarial Value

Market Value

#### 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.

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

CHART 10
Actuarial Experience for Year Ended June 30, 2005

		Non-Hazardous Retirement	Non-Hazardous Insurance	Hazardous Retirement	Hazardous Insurance
1.	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	-198,350
3.	Net gain/(loss) from other experience**	<u>-158,856,414</u>	30,418,491	<u>-47,369,167</u>	-12,337,614
4.	Net experience gain/(loss): $(1) + (2) + (3)$	-\$573,883,795	\$9,807,086	-\$157,507,170	-\$24,054,531

<sup>\*</sup> Details in Chart 11

<sup>\*\*</sup> Details in Chart 14

#### **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

	Non-Hazardous Retirement	Non-Hazardous Insurance	Hazardous Retirement	Hazardous Insurance
1. Actual return	\$8,741,936	\$30,202,871	\$9,580,387	\$15,470,806
2. Average value of assets	5,119,159,140	609,569,075	1,450,192,339	327,143,909
3. Actual rate of return: $(1) \div (2)$	0.17%	4.95%	0.66%	4.73%
4. Assumed rate of return	8.25%	8.25%	8.25%	8.25%
5. Expected return: (2) x (4)	\$422,330,629	\$50,289,448	\$119,640,868	\$26,989,373
6. Actuarial gain/(loss): (1) – (5)	<u>-\$413,588,693</u>	<u>-\$20,086,577</u>	<u>-\$110,060,481</u>	<u>-\$11,518,567</u>

**CHART 12A – Non-Hazardous Retirement** 

Investment Return – Actuarial Value vs. Market Value: 1998 - 2005

	Net Intere Dividend		Recognition Appreci	•	Actuarial Investmen		Market \ Investmen	
Year Ended June 30	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1998	\$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	137,162,844	2.68	<u>-128,420,908</u>	-2.51	8,741,936	0.17	417,648,819	9.19
Total	\$1,068,085,588		\$1,696,221,320		\$2,764,306,908		\$2,216,846,315	
					Average return	7.57%		6.68%

## **CHART 12B - Non-Hazardous Insurance**

Investment Return – Actuarial Value vs. Market Value: 1998 - 2005

	Net Intere Dividend		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
Year Ended June 30	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1998	\$5,373,000	3.80%	\$14,824,200	10.48%	\$20,197,200	14.27%	\$32,898,822	20.46%
1999	6,294,000	3.43	26,753,873	14.56	33,047,873	17.99	26,461,016	12.27
2000	7,965,000	3.21	46,582,525	18.74	54,547,525	21.95	17,083,861	6.24
2001	9,332,000	2.77	8,274,934	2.46	17,606,934	5.23	-10,987,582	-3.38
2002	6,286,566	1.55	3,397,597	0.84	9,684,163	2.38	-34,930,434	-9.55
2003	7,217,788	1.50	2,804,204	0.58	10,021,992	2.09	10,793,733	2.73
2004	9,549,993	1.77	13,804,584	2.55	23,354,577	4.32	86,226,079	18.88
2005	12,681,728	2.08	17,521,143	2.87	30,202,871	4095	56,267,767	9.57
Total	\$64,700,075		\$133,963,059		\$198,663,134		\$183,813,262	
					Average return	6.74%		6.61%

SECTION 2: Valuation Results for the County Employees Retirement System

**CHART 12C – Hazardous 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	
Year Ended June 30	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 Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
Year Ended June 30	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1998	\$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	8,606,467	2.63	15,470,806	4.73	30,072,890	9.57
Total	\$34,179,446		\$41,409,683		\$75,589,129		\$67,415,727	
					Average return	4.85%		4.61%

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

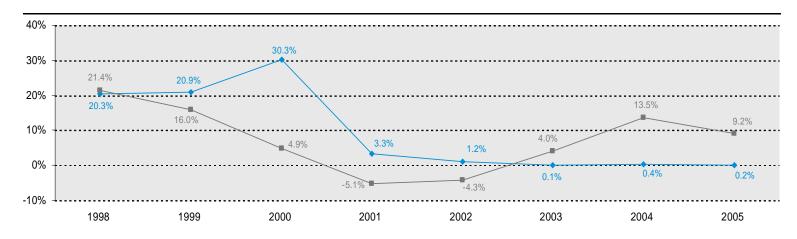
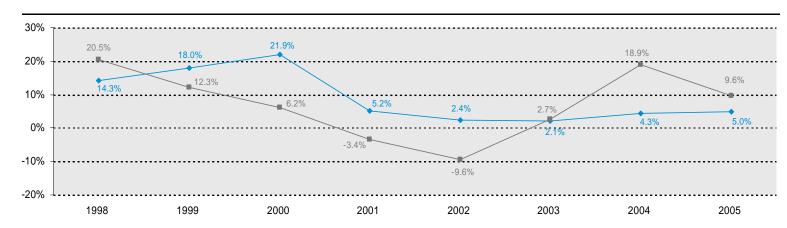


CHART 13B - Non-Hazardous Insurance

Market and Actuarial Rates of Return for Years Ended June 30, 1998 - 2005

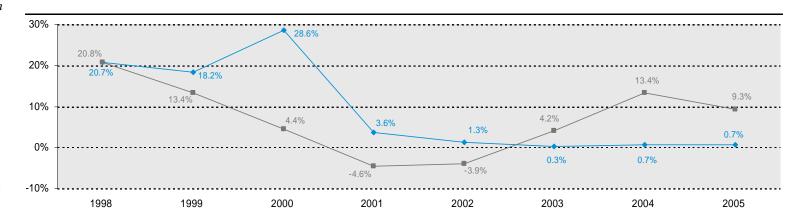


SECTION 2: Valuation Results for the County Employees Retirement System

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.

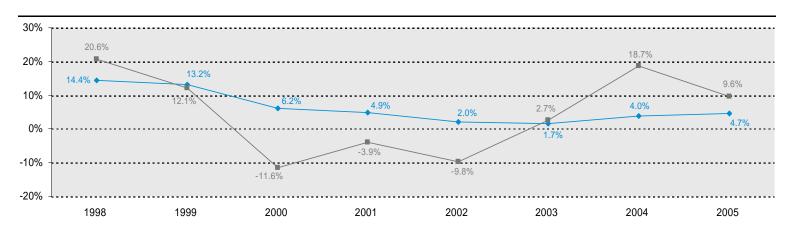
#### **CHART 13C – Hazardous Retirement**

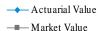
Market and Actuarial Rates of Return for Years Ended June 30, 1998 - 2005



#### **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.

<u>Plan</u>	Year End 2005 Assumption	Year End 2005 Actual Experience	Gain/(Loss)* for the Year	Year End 2006 <u>Assumption</u>
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

<sup>\*</sup> Includes interest to year-end.

## **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 gain/(loss) for the most recent year.

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	<u>-97,365,908</u>	<u>\$30,418,491</u>	<u>-25,640,168</u>	\$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%

This page intentionally left blank

#### 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.

## **CHART 15A – Non-Hazardous Retirement**

#### **Recommended Contribution**

			As of Ju	ıne 30	
		2005		200	)4
		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	<u>-93,384,705</u>	<u>-4.95%</u>	<u>-90,518,789</u>	<u>-4.95%</u>
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	<u>5,059,208,687</u>		<u>5,187,851,530</u>	
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)	<u>\$112,508,305</u>	<u>5.97%</u>	<u>\$83,123,669</u>	<u>4.55%</u>
10.	Projected salary	\$1,885,275,000		\$1,826,870,880	

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

#### **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	4,283,799
Total change	<u>\$29,384,636</u>
Recommended Contribution as of June 30, 2005	\$112,508,305

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

# CHART 15B – Non-Hazardous Insurance Recommended Contribution

		As of June 30				
		200	05	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		<u>585,399,072</u>		
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)	<u>\$285,600,490</u>	<u>15.15%</u>	<u>\$272,942,757</u>	<u>14.94%</u>	
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.

# CHART 15C – Hazardous Retirement Recommended Contribution

		As of June 30				
		2005		200	4	
		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	<u>-31,383,044</u>	<u>-7.63%</u>	<u>-29,803,612</u>	<u>-7.59%</u>	
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: $(4) + (8)$	<u>\$53,889,838</u>	<u>13.11%</u>	<u>\$44,059,404</u>	11.22%	
10.	Projected salary	\$411,121,728		\$392,562,624		

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

## **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	100,000
Effect of net other changes	<u>3,127,956</u>
Total change	<u>\$9,830,434</u>
Recommended Contribution as of June 30, 2005	\$53,889,838

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

# CHART 15D – Hazardous Insurance Recommended Contribution

		As of June 30				
		200	05	200	04	
		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: $(1) + (5)$	<u>\$115,938,899</u>	<u>28.20%</u>	<u>\$98,297,535</u>	<u>25.04%</u>	
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%	

This page intentionally left blank

SECTION 3: Supplemental Information for the County Employees Retirement System

EXHIBIT A

Table of Plan Coverage

		Non-Hazardou	s	Hazardous			
	Year Ende	ed June 30		Year Ende			
Category	2005	2004	Change From Prior Year	2005	2004	Change From Prior Year	
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 \$23,206	33,673 \$19,031	21,751 \$22,561	12,744 \$25,661	7,138 \$28,924	3,665 \$33,868	1,796 \$39,855	387 \$50,140	66 \$58,688	20 \$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 \$43,441	3,788 \$34,535	2,476 \$43,541	1,565 \$49,730	1,098 \$54,833	327 \$60,811	156 \$66,682	40 \$76,716	12 \$78,097	2 \$83,994		

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

EXHIBIT C – Non-Hazardous Retired Lives Summary

	<u>Ma</u>	Male Lives		ale Lives	<u>Total</u>		
	<u>Number</u>	Monthly <u>Benefits</u>	<u>Number</u>	Monthly <u>Benefits</u>	<u>Number</u>	Monthly <u>Benefits</u>	
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	<u>187</u>	92,152.05	<u>104</u>	34,222.65	<u>291</u>	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		<u>Fema</u>	le Lives	<u>Total</u>		
	Number	Monthly <u>Benefits</u>	Number	Monthly <u>Benefits</u>	Number	Monthly <u>Benefits</u>	
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	<u>59</u>	73,419.29	<u>4</u>	2,508.64	<u>63</u>	75,927.93	
Total	3,559	6,607,414.56	280	355,240.91	3,839	6,962,655.47	

EXHIBIT D – Non-Hazardous Beneficiary Summary

	<u>Male</u>	Lives	<u>Fema</u>	Female Lives		<u>Total</u>
	Number	Monthly <u>Benefits</u>	Number	Monthly <u>Benefits</u>	Number	Monthly <u>Benefits</u>
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	<u>6</u>	2,186.29	<u>4</u>	1,333.06	<u>10</u>	<u>3,519.35</u>
Total	711	332,650.30	2,576	1,349,501.70	3,287	1,682,152.00

EXHIBIT D – Hazardous Beneficiary Summary

	<u>Male</u>	Lives	<u>Fema</u>	le Lives		<u>Total</u>
	<u>Number</u>	Monthly Benefits	Number	Monthly Benefits	Number	Monthly <u>Benefits</u>
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	<u>0</u>	<u>0</u>	<u>0</u>	0.00	<u>0</u>	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	<u>-14,005,886</u>		<u>-11,913,070</u>	
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		<u>-9,581,716</u>	
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		<u>-11,334,057</u>	
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	<u>-1,029,817</u>		<u>-708,301</u>	
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	<u>-2,928,086</u>		<u>-1,075,132</u>	
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	<u>-2,044,131</u>		-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	<u>-6,199,597</u>		<u>-2,706,576</u>	
Net investment income		9,580,387		<u>9,885,627</u>
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		<u>-2,520,448</u>	
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	<u>-435,800</u>		<u>-260,354</u>	
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	<u>-1,587,893</u>		<u>-563,192</u>	
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	<u>26,845,575</u>		<u>572,838</u>	
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	<u>474,964</u>		<u>531,136</u>	
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		<u>\$4,893,599,997</u>		\$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	Year Ended June 30, 2005		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		<u>0</u>	
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	<u>65,472,182</u>		<u>52,303,176</u>	
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		<u>\$663,941,949</u>		\$585,399,072

EXHIBIT F – Hazardous Retirement Table of Financial Information

	Year Ended	Year Ended June 30, 2005		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		<u>344,812</u>	
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	<u>42,678</u>		<u>47,562</u>	
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		<u>\$1,411,245,719</u>		\$1,305,011,472
Net assets at actuarial value		<u>\$1,452,353,023</u>		<u>\$1,457,612,042</u>

EXHIBIT F – Hazardous Insurance Table of Financial Information

	Year Ended	Year Ended June 30, 2005		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		<u>\$359,180,461</u>		\$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

<sup>\*</sup> Level percentage of salary

EXHIBIT G – Non-Hazardous Insurance Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding 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	30	70,199,744	4,488,568	25	79,730,875
06/30/2001	30	247,855,413	15,093,203	26	275,145,998
06/30/2002	30	72,249,680	4,190,153	27	78,282,450
06/30/2003	30	96,412,030	5,325,201	28	101,826,232
06/30/2004	30	162,167,375	8,530,589	29	166,751,553
06/30/2005	30	234,922,407	11,769,300	30	234,922,407
Total			\$124,621,762		\$2,124,812,705

<sup>\*</sup> Level percentage of salary

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	<u>7,778,819</u>	30	155,230,047
Total			\$17,766,906		\$343,264,312

<sup>\*</sup> Level percentage of salary

EXHIBIT G – Hazardous Insurance Table of Amortization Bases

Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding 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	34,519,744	1,815,863	29	35,495,555
06/30/2005	30	194,787,973	9,758,619	30	194,787,973
Total			\$53,186,357		\$924,118,631

<sup>\*</sup> Level percentage of salary

#### **EXHIBIT H**

#### **Definitions of Pension Terms**

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

## Assumptions or Actuarial Assumptions:

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

- (a) <u>Investment return</u> the rate of investment yield that the Plan will earn over the long-term future;
- (b) <u>Mortality rates</u> the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) <u>Retirement rates</u> the rate or probability of retirement at a given age;
- (d) <u>Turnover rates</u> 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.

**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.

This page intentionally left blank

#### REPORTING INFORMATION

EXHIBIT I Summary of Actuarial Valuation Results	58
EXHIBIT II Supplementary Information Required by the GASB - Schedule of Funding Progress	62
EXHIBIT III Supplementary Information Required by the GASB	68
EXHIBIT IV Supplementary Information Required by the GASB - Schedule of Retirees and Beneficiaries	70
EXHIBIT V Actuarial Assumptions and Actuarial Cost Method	71
EXHIBIT VI Summary of Plan Provisions	76

E	HIBIT I – Non-Hazardous Retirement		
Sι	mmary of Actuarial Valuation Results		
Th	e 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	
ŀ.	Inactive nonvested members due a refund as of June 30, 2005		41,098
Γh	e actuarial factors as of the valuation date are as follows:		
١.	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
ŀ.	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
	a bresser, rise)		

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				
<ol> <li>Actuarial value of assets (\$668,485,367 at market value as reported by Carpenter, Mount Bressler, PSC)</li> </ol>	tjoy &	663,941,949			
6. Unfunded actuarial accrued liability		\$2,124,812,705			

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:		
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
l. 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	
6. Actuarial value of assets (\$1,411,245,719 at market value as reported Carpenter, Mountjoy & Bressler, PSC)		1,452,353,023
5. Unfunded actuarial accrued liability		\$343,264,312

EXHIBIT I – Hazardous Insurance		EXHIBIT I – Hazardous Insurance					
Summary of Actuarial Valuation Results							
The actuarial factors as of the valuation date are as follows:							
. Total normal cost, including administrative expenses		\$62,752,542					
2. Present value of future benefits		1,895,646,984					
3. Present value of future normal costs		612,347,891					
Actuarial accrued liability		1,283,299,092					
Retired participants and beneficiaries	\$565,434,903						
Inactive members with vested rights	20,669,223						
Active members	697,194,966						
<ol> <li>Actuarial value of assets (\$360,938,669 at market value as reported by Carpenter, Mounty Bressler, PSC)</li> </ol>	joy &	359,180,461					
5. Unfunded actuarial accrued liability		\$924,118,631					

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) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (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) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (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) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (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) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (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%

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)	Percent Unfunded [(b) - (a)] / (b)	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

#### **EXHIBIT II – Total 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) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Percent Unfunded [(b) - (a)] / (b)	Increase in Assets
06/30/1998	4,273,262,495	3,529,912,902	-743,349,593	-21.06%	759,236,627
06/30/1999	5,196,878,921	3,955,132,659	-1,241,746,262	-31.40%	923,616,426
06/30/2000	6,729,576,328	4,453,154,831	-2,276,421,497	-51.12%	1,532,697,407
06/30/2001***	6,910,500,565	4,900,142,654	-2,010,357,911	-41.03%	180,924,237
06/30/2002	6,883,298,951	5,492,646,422	-1,390,652,529	-25.32%	-27,201,614
06/30/2003	6,753,584,903	5,917,226,584	-836,358,319	-14.13%	-129,714,048
06/30/2004	6,645,463,572	6,577,289,608	-68,173,964	-1.04%	-108,121,331
06/30/2005	6,511,561,710	7,180,774,025	669,212,315	9.32%	-133,901,862

<sup>\*</sup> Includes capitalized appreciation of investments.

<sup>\*\*</sup> Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

<sup>\*\*\*</sup> Change in asset valuation method effective in this valuation to 5-year smoothing of investment gains/(losses).

This page intentionally left blank

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 Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Percent Unfunded [(b) – (a)] / (b)	Increase in Assets
06/30/1990	\$29,430,397	\$700,151,838	\$670,720,901	95.80%	N/A
06/30/1991	42,420,744	823,012,809	780,592,065	94.85%	12,989,807
06/30/1992	56,955,901	1,041,905,457	984,949,556	94.53%	14,535,157
06/30/1993	74,253,872	1,244,258,042	1,170,004,170	94.03%	17,297,971
06/30/1994	99,514,895	1,551,138,800	1,451,623,905	93.88%	25,261,023
06/30/1995	125,453,940	1,679,893,225	1,554,439,285	92.53%	25,939,045
06/30/1996**	167,536,241	1,386,659,746	1,219,123,505	87.92%	42,082,301
06/30/1997	204,520,777	1,541,360,457	1,336,839,680	86.73%	36,984,536
06/30/1998	255,586,375	1,706,626,110	1,451,039,735	85.02%	51,065,598
06/30/1999	346,527,392	1,801,154,401	1,454,627,009	80.76%	90,941,017
06/30/2000	488,300,606	2,066,652,957	1,578,352,351	76.37%	141,773,214
06/30/2001***	569,633,878	2,515,316,060	1,945,682,182	77.35%	81,333,272
06/30/2002	685,181,185	2,758,762,012	2,073,580,827	75.16%	115,547,307
06/30/2003	789,250,185	3,112,613,921	2,323,363,736	74.64%	104,069,000
06/30/2004	895,977,234	3,464,419,173	2,568,441,939	74.14%	106,727,049
06/30/2005	1,023,122,410	4,072,053,746	3,048,931,336	74.87%	127,145,176

<sup>\*\*</sup> Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

<sup>\*\*\*</sup> Change in asset valuation method effective in this valuation to 5-year smoothing of investment gains/(losses).

#### **EXHIBIT III – Non-Hazardous**

#### **Supplementary Information Required by the GASB**

Valuation date	June 30, 2005					
Actuarial cost method	Entry Age Normal Cost Method					
Amortization method	Level percent of salary					
Remaining amortization period	15 to 30 years					
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period.					
Actuarial assumptions:						
Investment rate of return	8.25%					
Payroll growth	5.00%					
Plan membership:						
Retired participants and beneficiaries receiving benefits	31,347					
Terminated members entitled to, but not yet receiving benefits	7,771					
Active members	<u>81,240</u>					
Total	120,358					

	Contracts in Force – Retirees and Dependents							
Age	Total	100% Paid	75% Paid	50% Paid	25% Paid	0% Paid		
Single; Pre-Medicare	6,012	4,203	583	532	239	455		
Family; Pre-Medicare	286	263	7	9	5	2		
Parent Plus; Pre-Medicare	255	196	8	5	4	42		
Couple; Pre-Medicare	736	598	53	56	27	2		
Medicare Regular	2,853	76	350	776	863	788		
Medicare High Option	<u>11,007</u>	<u>4,733</u>	2,087	<u>1,883</u>	<u>883</u>	<u>1,421</u>		
Total	21,149	10,069	3,088	3,261	2,021	2,710		

#### **EXHIBIT III – Hazardous**

#### **Supplementary Information Required by the GASB**

Valuation date	June 30, 2005					
Actuarial cost method	Entry Age Normal Cost Method					
Amortization method	Level percent of salary					
Remaining amortization period	15 to 30 years					
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period.					
Actuarial assumptions:						
Investment rate of return	8.25%					
Payroll growth	5.00%					
Plan membership:						
Retired participants and beneficiaries receiving benefits	4,361					
Terminated members entitled to, but not yet receiving benefits	482					
Active members	<u>9.464</u>					
Total	14,307					

	Contracts in Force – Retirees and Dependents							
Age	Total	100% Paid	75% Paid	50% Paid	25% Paid	0% Paid		
Single; Pre-Medicare	1,220	1,087	66	46	15	6		
Family; Pre-Medicare	661	646	10	4	1	0		
Parent Plus; Pre-Medicare	145	177	7	7	4	0		
Couple; Pre-Medicare	918	896	17	4	1	0		
Medicare Regular	55	7	9	22	17	0		
Medicare High Option	1,004	<u>843</u>	<u>73</u>	<u>56</u>	<u>26</u>	<u>6</u>		
Total	4,053	3,656	182	139	64	12		

#### **EXHIBIT IV – Non-Hazardous**

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

	Added to Rolls		Removed from Rolls		Rolls – End of Year			
Valuation Date July 1	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance	% Increase in Annual Allowances	Average 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

	Added	to Rolls	Removed	from Rolls	Rolls – E	End of Year		
Valuation Date July 1	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance	% Increase in Annual Allowances	Average 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

#### **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:**

		Non	-Hazardous		Hazardous <u>Rate (%)</u>				
		<u>F</u>	Rate (%)						
	Мо	ortality	Disability	Withdrawal*	Мо	rtality	Disability	Withdrawal	
Age	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	

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

SECTION 4: Reporting Information for the County Employees Retirement System

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

<sup>\*</sup>Retirement probability is 0.25 at first age member is eligible for unreduced retirement benefits.

Hazardous

**Retirement Rates:** 60% will retire as soon as eligible for unreduced benefit and balance will continue

until age 55.

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 younger than males.

**Dependent Children:** For a hazardous 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%

SECTION 4: Reporting Information for the County Employees Retirement System

Salary Increases:	Years of Service	Rate (%)			
	1 2 3 4 or more	12.00 10.00 8.00 6.50			
Payroll Growth:	5.0%	0.30			
Retiree Medical Insurance Election	:	Future retirees w that current retire		l coverage in the sa	ame proportion
Monthly Contribution Rates:			Medicare Cove Effect on Valua	0	
		<u>Single</u>	<b>Family</b>	Parent Plus	<b>Couple</b>
	Region 1	\$403.28	\$1,008.20	\$604.92	\$907.38
	Region 2	412.53	1,031.33	618.80	928.19
	Region 3	394.80	987.02	592.28	888.28
	Region 4	403.96	1,009.92	605.96	908.92
	Region 5	400.64	1,001.60	600.96	901.44
	Region 6	496.28	1,240.52	744.28	1,116.53
	Region 7	447.52	1,118.80	671.28	1,006.92
	Region 8	405.44	1,013.60	608.16	912.24
		Medicare	Rate	Contracts in	<u> Force</u>
<u>Carrier</u>		Low Option	High Option	Low Option	High Option
Anthem Blue	e Seniors Medicare	\$119.00 103.13	\$331.30 146.54	2,296 603	11,283 585

#### Weighted Medicare Coverage Rate in Effect on Valuation Date

	Trace in Effect on Anatom Pare				
	<b>Low Option</b>	<b>High Option</b>			
All Members	\$116.00	\$323.43			
Medical Contribution Rate Increases:	<u>Year</u>	Rate(%)	_		
	2005	10.00			
	2006-2010	9.00			
	2011-2015	8.00			
	2016-2020	7.50			
	2021 and thereafter	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.

SECTION 4: Reporting Information for the County Employees Retirement System

Non-Hazardous Administrative Expenses:	\$10,000,000
Hazardous Administrative Expenses:	\$900,000
Actuarial Value of Assets:	Market value of assets less unrecognized return in each of the last five years. Unrecognized return is equal to the difference between the actual market return and 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 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

#### **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 twenty-

four, 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 Age 55 with 60 months service or any age with 25 years service.

Amount 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.

#### **Hazardous Early Retirement:**

Requirement Age 50 with 15 years of service or any age with 20 years service.

Amount 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 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 65<sup>th</sup> 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.

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

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<sup>th</sup> 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 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%.

#### **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.

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.

133579/05392.001

## **State Police Retirement System**

Actuarial Valuation and Review as of June 30, 2005

Copyright © 2005

THE SEGAL GROUP, INC.,
THE PARENT OF THE SEGAL COMPANY
ALL RIGHTS RESERVED



The Segal Company
2018 Powers Ferry Road, Suite 850 Atlanta, GA 30339-5003
T 678.306.3100 F 678.306.3190 www.segalco.com

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

## **SECTION 1**

Purposei
Significant Issues in Valuation Yeari
Summary of Key
Valuation Resultsiv

**VALUATION SUMMARY** 

## **SECTION 2**

## VALUATION RESULTS

A.	Member Data	
B.	Financial Information	
C.	Actuarial Experience 1	
D.	Recommended Contribution 1	•

## **SECTION 3**

## SUPPLEMENTAL INFORMATION

Table of Plan Coverage
EXHIBIT B Members in Active Service as of June 30, 2005
EXHIBIT C Retired Lives Summary24
EXHIBIT D Beneficiary Summary25
EXHIBIT E Summary Statement of Income and Expenses on an Actuarial Value Basis
EXHIBIT F Table of Financial Information 28
EXHIBIT G Table of Amortization Bases 30
EXHIBIT H Definitions of Pension Terms 32

## **SECTION 4**

## REPORTING INFORMATION

EXHIBIT I Summary of Actuarial Valuation Results
EXHIBIT II  Supplementary Information Required by the GASB - Schedule of Funding Progress 39
EXHIBIT III Supplementary Information Required by the GASB43
EXHIBIT IV Supplementary GASB Information - Schedule of Retirees and Beneficiaries
EXHIBIT V Actuarial Assumptions and Actuarial Cost Method45
EXHIBIT VI Summary of Plan Provisions50

#### **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.

<u>Plan</u>	July 1, 2006 Rate	July 1, 2005 Rate
Retirement	20.64%	14.49%
Insurance	<u>21.66</u>	<u>20.34</u>
Total	42.30%	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	1.22
Total change	7.47%

<sup>\*</sup> 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:

<u>Plan</u>	Unrecognized investment losses as of 6/30/2005	Actuarial value as a 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%.

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

## **Summary of Key Valuation Results**

	June 30, 2005	June 30, 2004
Contributions for next fiscal year:		
Retirement	20.64%	14.49%
Insurance	<u>21.66</u>	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, B, 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.

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 June 30	Active Members	Vested Terminated Members*	Retired Participants and Beneficiaries	Ratio of Non-Actives 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

<sup>\*</sup>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

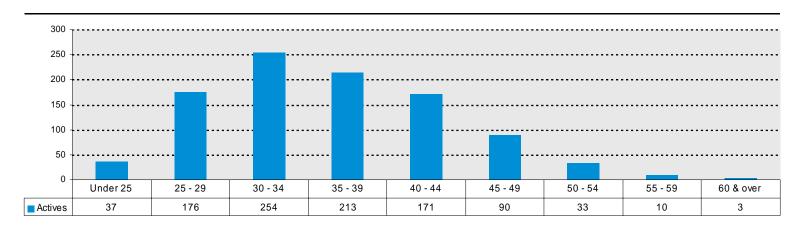
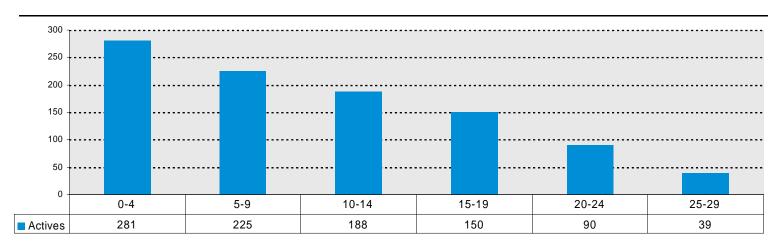
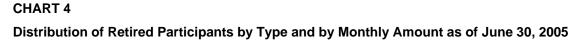


CHART 3

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



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



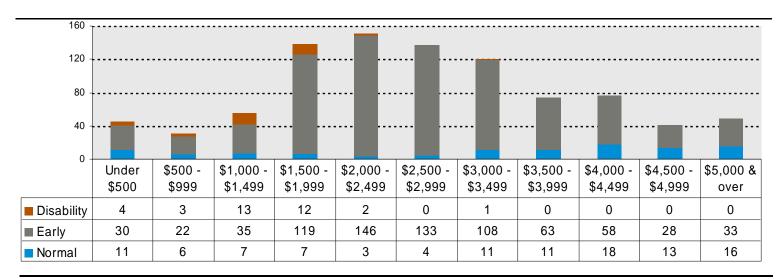
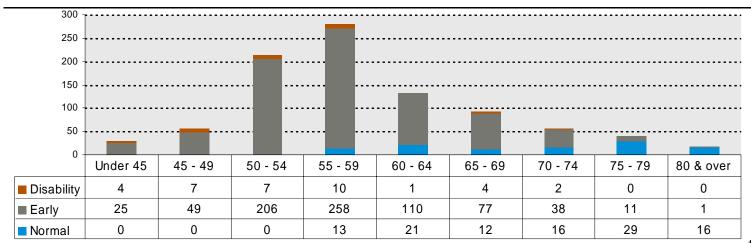


CHART 5
Distribution of Retired Participants by Type and by Age as of June 30, 2005



#### **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.

■ Adjustment toward market value

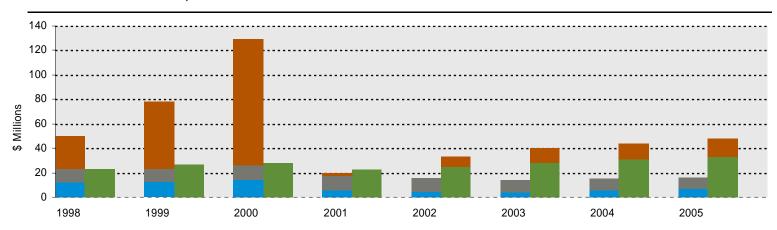
■ Benefits paid

■ Net interest and dividends

■ Net contributions

#### **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

<sup>\*</sup> Net contributions are employer and member contributions minus administrative and investment expenses



<sup>\*\*</sup> Net of stock commissions and securities lending expense

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

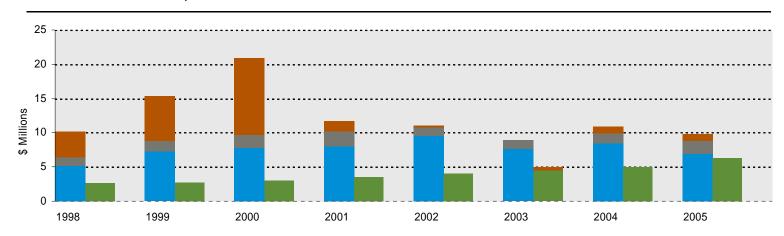
■ Benefits paid

■ 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 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

<sup>\*</sup> Net contributions are employer contributions minus administrative and investment expenses



<sup>\*\*</sup> Net of stock commissions and securities lending expense

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

## **CHART 7A – Retirement**

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

Market value of assets			\$339,405,873
	Original		Unrecognized
2. Unrecognized return*	<u>Amount</u>	<u>Amortization</u>	<u>Return</u>
(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)			<u>\$353,511,622</u>
4. Actuarial value as a percentage of market value: (3) ÷ (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	<u>Amortization</u>	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) ÷ (1)			100.8%

<sup>\*</sup> 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.

CHART 8

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

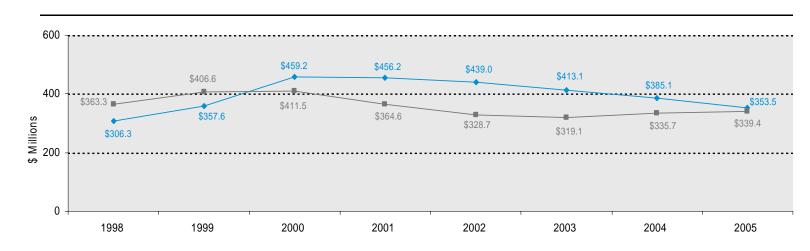
		Retirement	Insurance
1.	Employer and member contributions	\$7,079,879	\$6,974,102
2.	Benefit payments including refunds, or healthcare premiums	33,051,482	6,220,807
3.	Administrative and investment expenses	384,146	109,972
4.	Net cash flow: (1) - (2) - (3)	-26,355,749	643,323
5.	Market value of assets 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: $(7) + [0.5 \text{ x } (4)]$	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

SECTION 2: Valuation Results for the State Police Retirement System

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

#### **CHART 9A - Retirement**

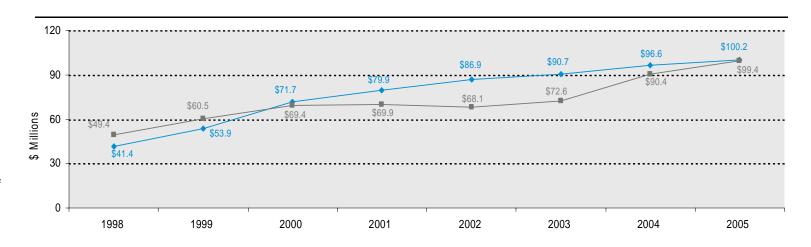
Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998-2005



→ Actuarial Value
 Market Value

**CHART 9B - Insurance** 

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 1998 - 2005



→ Actuarial Value
 — Market Value

#### 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.

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

## 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**	<u>-11,600,737</u>	<u>-2,130,827</u>
4.	Net experience gain/(loss): $(1) + (2) + (3)$	-\$47,505,888	-\$7,236,164

<sup>\*</sup> Details in Chart 11

<sup>\*\*</sup> Details in Chart 14

#### **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	Insurance
1. Actual return	-\$5,209,824	\$2,940,852
2. Average value of assets	371,899,321	96,944,569
3. Actual rate of return: $(1) \div (2)$	-1.40%	3.03%
4. Assumed rate of return	8.25%	8.25%
5. Expected return: (2) x (4)	\$30,681,694	\$7,997,927
6. Actuarial gain/(loss): (1) – (5)	<u>-\$35,891,518</u>	<u>-\$5,057,075</u>

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	
Year Ended 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	
				Av	erage return	7.45%		6.65%

#### **CHART 12B – Insurance**

Investment Return – Actuarial Value vs. Market Value: 1998 - 2005

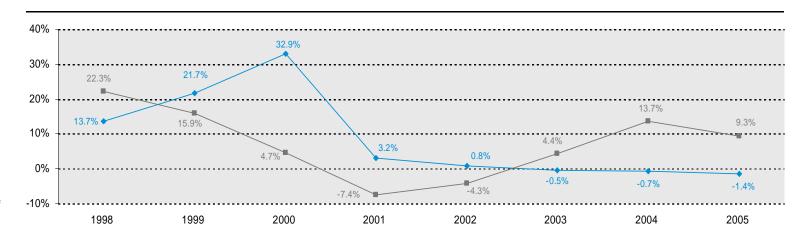
Year Ended June 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1998	\$1,344,000	3.83%	\$3,687,017	10.50%	\$5,031,017	14.32%	\$8,320,673	20.88%
1999	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%

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.

→ Actuarial Value
 Market Value

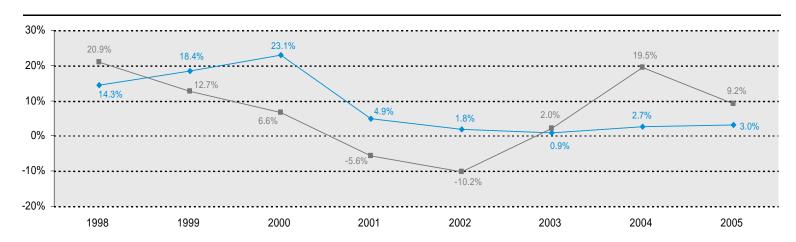
#### CHART 13A - Retirement

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



#### **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.

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

<sup>\*</sup> Includes interest to year-end.

#### **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

	Retirement	Insurance
1. COLA	-\$7,814,691	N/A
2. Other	<u>-3,786,046</u>	- <u>\$2,130,827</u>
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.

# CHART 15A – Retirement Recommended Contribution

	As of June 30				
	2005		200	)4	
	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	<u>-3,421,774</u>	<u>-7.83%</u>	<u>-3,433,859</u>	<u>-7.83%</u>	
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)	<u>\$9,023,665</u>	<u>20.64%</u>	\$6,352,777	<u>14.49%</u>	
10. Projected salary	\$43,720,092		\$43,835,208		

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

#### **CHART 16A – Retirement**

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

Recommended Contribution as of June 30, 2004		
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	<u>473,265</u>	
Total change	<u>\$2,670,888</u>	
Recommended Contribution as of June 30, 2005	\$9,023,665	

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: $(1) + (5)$	<u>\$15,233,320</u>	34.84%	\$12,554,648	<u>28.64%</u>
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%

This page intentionally left blank

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT A

Table of Plan Coverage

	<u>Year End</u>			
Category	2005 2004		Change From Prior Year	
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%	

This page intentionally left blank

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

Years of Service									
Age	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	
	71,519				50,796		67,756	73,728	\$77,47
60 - 64	1			1					-
	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	
	\$44,296	\$29,992	\$40,392	\$48,684	\$54,427	\$58,589	\$66,343	\$71,077	\$77,47

SECTION 3: Supplemental Information for the State Police Retirement System

EXHIBIT C
Retired Lives Summary

	<u>Mal</u>	e Lives	<u>Femal</u>	e Lives		<u>Total</u>
	<u>Number</u>	Monthly Benefits	<u>Number</u>	Monthly <u>Benefits</u>	<u>Number</u>	Monthly <u>Benefits</u>
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	<u>5</u>	11,100.05	<u>0</u>	0.00	<u>5</u>	11,100.05
Total	910	\$2,507,211.73	7	\$19,701.11	917	\$2,526,912.84

**EXHIBIT D**Beneficiary Summary

	Male	Lives	<u>Fema</u>	le Lives		Total
	<u>Number</u>	Monthly Benefits	<u>Number</u>	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	<u>0</u>	0.00	<u>0</u>	0.00	<u>0</u>	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	<u>-384,146</u>		-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	<u>-1,462,755</u>		<u>-695,188</u>	
Net investment income		<u>-5,209,824</u>		-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	<u>-130,832</u>		<u>-95,981</u>	
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 J	June 30, 2005	Year Ended J	une 30, 2004
Contribution income:				
Employer contributions	\$6,631,031		\$8,455,498	
Insurance appropriation contributions	343,071		0	
Less administrative and investment expenses	<u>-109,972</u>		<u>-88,416</u>	
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	<u>-442,803</u>		<u>-177,729</u>	
Net investment income		<u>2,940,852</u>		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		<u>0</u>	
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	<u>-5,830,993</u>		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		<u>\$339,405,873</u>		\$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, 200	
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	<u>278,253</u>		<u>0</u>	
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		<u>6,526,520</u>	
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	<u>2,544,256</u>	30	50,784,900
Total			\$4,902,858		\$105,081,954

<sup>\*</sup> Level percentage of salary

SECTION 3: Supplemental Information for the State Police Retirement System

**EXHIBIT G- Insurance** 

**Table of Amortization Bases** 

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

<sup>\*</sup> Level percentage of salary

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

#### **EXHIBIT H**

#### **Definitions of Pension Terms**

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

## Assumptions or Actuarial Assumptions:

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

- (a) <u>Investment return</u> the rate of investment yield that the Plan will earn over the long-term future;
- (b) <u>Mortality rates</u> the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) <u>Retirement rates</u> the rate or probability of retirement at a given age;
- (d) <u>Turnover rates</u> 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.

This page intentionally left blank

## REPORTING INFORMATION

EXHIBIT I Summary of Actuarial Valuation Results	36
EXHIBIT II Supplementary Information Required by the GASB – Schedule of Funding Progress	39
EXHIBIT III Supplementary Information Required by the GASB	43
EXHIBIT IV Supplementary Information required by the GASB – Schedule of Retirees and Beneficiaries	44
EXHIBIT V Actuarial Assumptions and Actuarial Cost Method	45
EXHIBIT VI Summary of Plan Provisions	50

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	
<ol> <li>Actuarial value of assets (\$339,405,873 at market value as reported by Carpenter, Mountjoy &amp; Bressler, PSC)</li> </ol>		353,511,622
		\$105,081,954

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	
<ol> <li>Actuarial value of assets (\$99,408,106 at market value as reported by Carpenter, Mo Bressler, PSC)</li> </ol>	untjoy &	100,207,082
6. Unfunded actuarial accrued liability		\$133,952,428

This page is intentionally left blank

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) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (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 (a) / (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%

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%.

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) (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

**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) (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

<sup>\*</sup> Includes capitalized appreciation of investments.

<sup>\*\*</sup> Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

<sup>\*\*\*</sup> 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 Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Percent Unfunded [(b) – (a)]/(b)	Increase in Assets
06/30/1990	\$6,516,517	\$64,784,801	\$58,268,284	89.94%	N/A
06/30/1991	8,931,544	74,163,248	65,231,704	87.96%	2,415,027
06/30/1992	11,717,956	88,407,634	76,689,678	86.75%	2,786,412
06/30/1993	14,285,479	95,290,099	81,004,620	85.01%	2,567,523
06/30/1994	17,410,672	110,193,139	92,782,467	84.20%	3,125,193
06/30/1995	21,200,195	118,995,732	97,795,537	82.18%	3,789,523
06/30/1996**	27,809,267	101,132,886	73,323,619	72.50%	6,609,072
06/30/1997	33,876,483	117,361,754	83,485,271	71.13%	6,067,216
06/30/1998	41,410,500	124,501,076	83,090,576	66.74%	7,534,017
06/30/1999	53,929,859	125,797,150	71,867,291	57.13%	12,519,359
06/30/2000	71,711,712	138,867,085	67,155,373	48.36%	17,781,853
06/30/2001***	79,863,577	158,261,479	78,397,902	49.54%	8,151,865
06/30/2002	86,867,391	165,445,412	78,578,021	47.49%	7,003,814
06/30/2003	90,747,967	184,501,205	93,753,238	50.81%	3,880,576
06/30/2004	96,622,908	197,604,301	100,981,393	51.10%	5,874,941
06/30/2005	100,207,082	234,159,510	133,952,428	57.21%	3,584,174

<sup>\*\*</sup> Change in asset valuation method effective in this valuation from book value to a five year average of market to book values.

<sup>\*\*\*</sup> Change in asset valuation method effective in this valuation to 5-year smoothing of investment gains/(losses).

EXHIBIT III	
Supplementary	/ Information Required by the GASB

Valuation date	June 30, 2005
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level percent of salary
Remaining amortization period	15 to 30 years
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period.
Actuarial assumptions:	
Investment rate of return	8.25%
Payroll growth	5.00%
Plan membership:	
Retired participants and beneficiaries receiving benefits	1,036
Terminated members entitled to, but not yet receiving benefits	42
Active members	<u>987</u>
Total	2,065

		Contra	cts in Force – R	etirees and Dep	endents	
Age	Total	100% Paid	75% Paid	50% Paid	25% Paid	0% Paid
Single; Pre-Medicare	257	253	1	2	0	1
Family; Pre-Medicare	149	149	0	0	0	0
Parent Plus; Pre-Medicare	34	31	1	1	1	0
Couple; Pre-Medicare	239	238	1	0	0	0
Medicare Regular	10	6	0	4	0	0
Medicare High Option	<u>348</u>	<u>342</u>	<u>4</u>	<u>1</u>	<u>1</u>	<u>0</u>
Total	1,037	1,019	7	8	2	1

**EXHIBIT IV – Retirement** 

**Supplementary GASB Information - Schedule of Retirees and Beneficiaries** 

	Added	l to Rolls	Removed	from Rolls	Rolls – E	End of Year		
Valuation Date July 1	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance	% Increase in Annual Allowances	Average 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

## **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 (%)

	Mort	ality	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

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

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 Service	Rate (%)
	1	12.00
	2	10.00
	3	8.00
	4 or more	6.50
Payroll Growth:	5.0%	

SECTION 4: Reporting Information for the State Police Retirement System

Retiree Medical Insurance Election:		vill select medica ees have selected	l coverage in the s coverage.	ame proportion
Monthly Contribution Rates:	Pre-Medicare Coverage <u>Rate in Effect on Valuation Date</u>			
	<b>Single</b>	Family	<b>Parent Plus</b>	Couple
Region 1	\$403.28	\$1,008.20	\$604.92	\$907.38
Region 2	412.53	1,031.33	618.80	928.19
Region 3	394.80	987.02	592.28	888.28
Region 4	403.96	1,009.92	605.96	908.92
Region 5	400.64	1,001.60	600.96	901.44
Region 6	496.28	1,240.52	744.28	1,116.53
Region 7	447.52	1,118.80	671.28	1,006.92
Region 8	405.44	1,013.60	608.16	912.24
	Medicare	Rate	Contracts i	n Force
<u>Carrier</u>	Low <u>Option</u>	High <u>Option</u>	Low <u>Option</u>	High <u>Option</u>
Anthem Blue Seniors	\$119.00	\$331.30	8	341
Bankers Life Medicare	103.13	146.54	2	6
The Hartford	135.23	298.98	0	1

All Members

\$323.43

**High Option** 

Weighted Medicare Coverage Rate in Effect on Valuation Date

**Low Option** 

\$116.00

<b>Medical Contribution Rate Increases:</b>	<u>Year</u>	Rate(%)
	2005	10.00
	2006-2010	9.00
	2011-2015	8.00
	2016-2020	7.50
	2021 and thereafter	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.
Unrecognized return is equal to the difference between the actual market return and 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 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

<b>Normal</b>	Retirer	nent:
numai	<b>Neure</b>	ուլու.

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 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 twenty-

four, 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 Age 50 with 15 years of service or any age with 20 years service.

Amount 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<sup>th</sup> 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 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):**

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%.

#### **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.

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.

133569/05392.001