The Report of the Annual Actuarial Valuation of the Highway and Transportation Employees' and Highway Patrol Retirement System State of Missouri

June 30, 2002

Gabriel, Roeder, Smith & Company

TABLE OF CONTENTS

October 24, 2002

The Retirement Board
Highway and Transportation Employees' and Highway Patrol Retirement System
Jefferson City, Missouri

Ladies and Gentlemen:

The results of the regular annual **actuarial valuation as of** June 30, 2002 of the Highway and Transportation Employees' and Highway Patrol Retirement System, as established by Chapter 104 of the Missouri Revised Statutes, are presented in this report.

The member statistical data required for the valuation was furnished by your Executive Director, together with pertinent data on financial operations. Data was reviewed for reasonableness, but was not audited by the actuary. The actuarial assumptions used in making the valuation are shown in Section E of this report.

Your attention is directed particularly to the summary of results on pages 2, 3 and 4.

The actuarial calculations were performed in accordance with accepted actuarial procedures. The calculations were based upon current plan provisions of the Retirement System, the plan provisions of the Missouri State Employees Year 2000 Plan and upon actuarial assumptions that are internally consistent and reasonably based upon the actual experience of the System.

The cooperation of the Executive Director in furnishing materials requested for this valuation, and the complete and excellent condition of the records, is acknowledged with appreciation.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY

Brian B. Murphy

Brian B. Murphy, F.S.A.   Mark K. Johnson

MKJ/mj/lr

The contribution rate for the plan year beginning July 1, 2003 was determined in accordance with the June 30, 2002 valuation.

Investment experience was poor again this year. The Market Value of Assets dropped from $1.413 Billion to $1.268 Billion during the valuation period. The actuarial asset smoothing process is currently realizing asset losses for the prior three years. Due to these accumulated losses an investment loss on an actuarial basis has been realized for the year. The Actuarial Value of Assets exceeds the Market Value of Assets for the second year in a row. Going forward, investment return for the next several years must exceed the assumed rate in order to prevent further losses from being recognized.

The **total contribution rate** for the plan year beginning July 1, 2003 is shown below. There was a demographic experience gain that partially offset the recognized investment loss. The resulting contribution rates are higher this year than the levels seen in the prior valuation. This is due to the effect of realized losses flowing into the Unfunded Actuarial Accrued Liabilities and a smaller payroll over which these liabilities are amortized. Based upon the results of this valuation, the employer contribution rates allocated between normal cost, unfunded liability and expenses effective July 1, 2003 are:

	Employer Contribution Rates Expressed as % of Active Payroll for Total Benefits		
	Non-Uniformed Employees	**Uniformed Patrol**	**Combined Rate**
Normal Cost	11.51%	13.04%	11.73%
Unfunded Liability	13.58%	24.91%	15.22%
Expenses	0.45%	0.45%	0.45%
Total	25.54%	38.40%	27.40%
Illustrative $	$68,313,343	$17,388,316	$85,701,659

The dollar contribution amounts shown above are illustrative and based on 6/30/2002 valuation payroll. Actual dollar contributions should be based on covered payroll for the fiscal year beginning 7/1/2003. The combined rate of 27.40% is below the actual benefit payout rate. The ability to

SUMMARY & RECOMMENDATIONS

(CONCLUDED)

contribute less than the benefit payout is one of the advantages of a funded retirement plan. For the prior valuation, the total combined dollar contribution illustrated was $79,119,925. This represented a combined rate of 24.19%, although a higher rate was in fact adopted. Unfunded Actuarial Accrued Liabilities were amortized over a 34-year closed period. This is a one-year reduction in the amortization period from the June 30, 2001 valuation. Continued yearly reductions in the amortization period will result in a 30-year period being used for the June 30, 2006 valuation. This is consistent with GASB amortization period requirements. A comparative summary of results can be found on page 4.

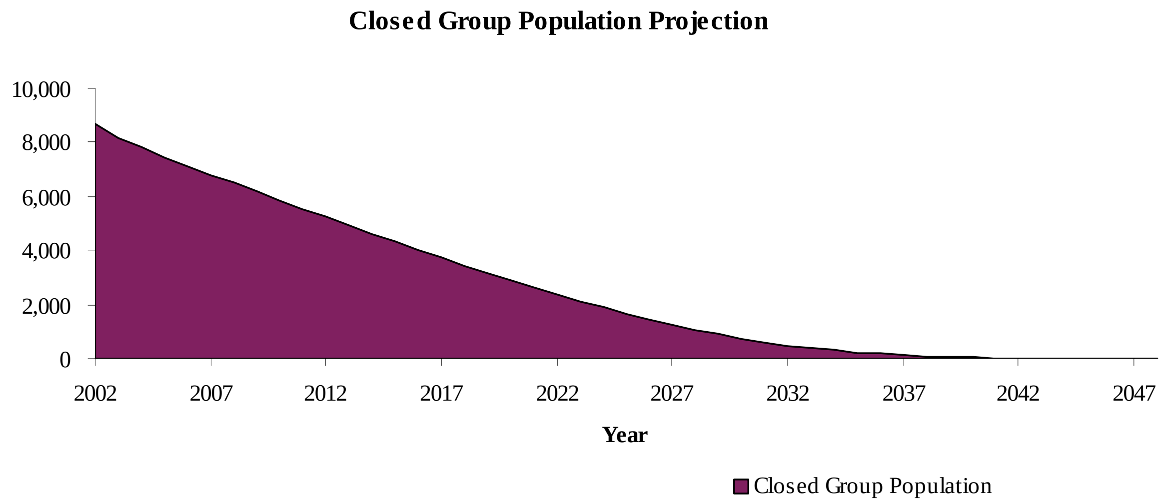
Conclusion: Based upon the results of the June 30, 2002 regular annual actuarial valuation, it is our opinion that the Highway and Transportation Employees' and Highway Patrol Retirement System is in sound condition in accordance with actuarial principles of level percent of payroll financing.

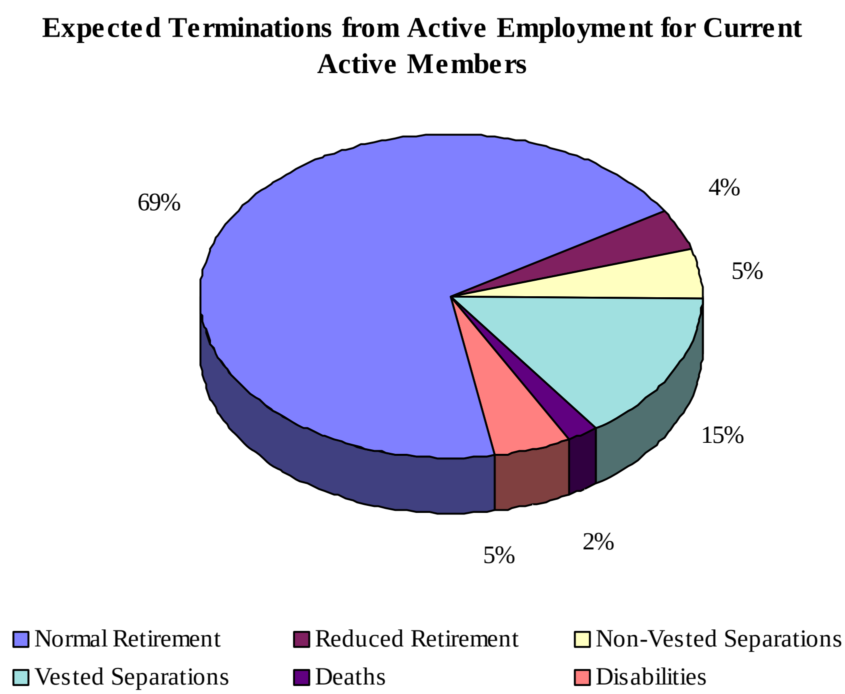
SUMMARY OF KEY VALUATION RESULTS AS OF JUNE 30, 2002

`	2002	2001
Number of Particpants		
Retirees - Regular Pensioners	$ 6,254	$ 6,035
Normal and Work Related Disability Pensioners	85	110
Vested Terminated Employees	1,130	1,018
Active Employees	8,695	9,087
Active Participants on LTD	71	70
Total	16,235	16,320
Valuation Payroll		
Non-Uniformed Employees	267,465,419	276,772,984
Uniformed Patrol Employees	45,282,073	50,276,273
Total	312,747,492	327,049,257
Present Value of Future Benefits	2,754,914,229	2,703,085,090
Entry Age Accrued Liability	2,358,452,163	2,301,402,527
Entry Age Normal Cost		
Non-Uniformed Employees	11.51%	11.51%
Uniformed Patrol Employees	13.04%	12.77%
Unfunded Actuarial Accrued Liability		
Non-Uniformed Employees	13.58%	10.95%
Uniformed Patrol Employees	24.91%	19.58%
Recommended Contribution Rates*		
Total System Benefits		
Non-Uniformed Employees	25.54%	22.67%
Uniformed Patrol Employees	38.40%	32.56%
Book Value of Assets	$1,304,776,991	$1,364,466,366
Market Value of Assets	$1,260,842,815	$1,404,896,990
Actuarial Value of Assets	$1,450,507,432	$1,520,800,409

* *Includes the contribution for expenses of 0.45% of payroll.*

EXPECTED DEVELOPMENT OF PRESENT POPULATION AS OF JUNE 30, 2002





The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 8,695 active members. Eventually, 5% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 88% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or by separating from service with a vested benefit. 7% of the present population is expected to become eligible for death-in-service or disability benefits. Within 13 years, over half of the covered membership is expected to consist of new hires.

SECTION A

Valuation Results

METHOD OF FINANCING FUTURE BENEFITS FOR PRESENT ACTIVE MEMBERS

The valuation was prepared in accordance with Section 104.1066 of the Missouri Revised Statutes, which requires the use of the entry-age normal actuarial cost method for determining normal cost and level percent-of-payroll financing of unfunded actuarial accrued liabilities. Details of the application of these methods are described below.

Normal cost and the allocation of present values between service rendered before and after the valuation date were determined using an individual entry-age actuarial cost method having the following characteristics:

(i) the annual normal costs for each individual active member, payable from the date of employment to the date of retirement, are sufficient to accumulate the value of the member's benefit at the time of retirement.

(ii) for the purposes of determining the normal cost, the benefits of the Year 2000 Plan were used. This creates a normal cost that is a constant percentage of the member's year-by-year projected covered pay even as members transition from the current plan benefits to Year 2000 benefits.

The normal retirement component of the normal cost for the Non-Uniformed group was increased by 0.45% of payroll (5% of the normal retirement normal cost of 9%) to account for anticipated changes in retirement behavior of this group as the transition to Year 2000 occurs.

The ***Present Value of Future Benefits*** was calculated using the benefits assumed to be payable in the future to current active, vested terminated and retired members. It was assumed that current active and retired Uniformed Patrol members hired prior to July 1, 2000 would elect to retain the benefits under the current plan. Active members hired on or after July 1, 2000 have their benefits determined by the Year 2000 Plan. The present value of future benefits for Non-Uniformed active members hired prior to July 1, 2000 was increased by 0.2% to reflect the ability of members to select the plan benefits that are most advantageous to them. These results are derived from a comparative analysis of the type and amount of benefits payable to plan members under various situations. We expect that this assumption will be revised as experience emerges with regard to plan-to-plan transition. The calculated normal and early retirement benefits were increased by 5% to account for the inclusion of unused sick leave in the calculation of Average Compensation.

METHOD OF FINANCING FUTURE BENEFITS FOR PRESENT ACTIVE MEMBERS (CONCLUDED)

The ***Present Value of Future Normal Costs*** was defined as the average normal cost rate multiplied by the present value of future payroll for the group.

The ***Actuarial Accrued Liabilities*** were defined as the difference between the present value of future benefits and the present value of future normal costs.

Actuarial Accrued Liabilities, less pension assets as of June 30, 2002 resulted in ***Unfunded Actuarial Accrued Liabilities*** which were amortized as a level percent of payroll over a period of 34 years. Continued yearly reductions in the amortization period will result in a 30-year period being used for the June 30, 2006 valuation. This is consistent with GASB amortization period requirements.

COMPUTED CONTRIBUTIONS TO SUPPORT BENEFITS AS OF JUNE 30, 2002

Contributions for	Contributions Expressed as Percents of Payroll	
	Non-Uniformed Employees	Uniformed Patrol
DEVELOPMENT OF NORMAL COST		
Age & service benefits	9.95%	11.96%
Disability benefits	0.47%	0.22%
Survivor benefits	0.32%	0.28%
Separation benefits	0.77%	0.58%
Total Normal Cost	11.51%	13.04%
TOTAL SYSTEM BENEFITS		
Unfunded Actuarial Accrued Liabilities*	13.58%	24.91%
Expense Provision	0.45%	0.45%
Recommended Contribution Rate	25.54%	38.40%

** Amortized as a level-percentage of payroll over 34 years.*

DEVELOPMENT OF LIABILITIES
AS OF JUNE 30, 2002

	Non-Uniformed Employees	Uniformed Patrol
Present Value of Future Benefits - Inactives		
Retirees and Survivors	$1,138,506,846	$320,749,076
Normal and Work Related Disability Pensioners	8,590,355	1,712,133
Vested Terminated Employees	20,102,935	5,567,483
Subtotal PVFB - Inactives	1,167,200,136	328,028,692
Present Value of Future Benefits - Actives		
Age & Service benefits	891,034,226	245,885,181
Disability benefits	42,344,792	3,742,089
Survivor benefits	26,037,638	5,076,672
Separation benefits	37,349,642	8,215,161
Subtotal PVFB - Actives	996,766,298	262,919,103
Total Present Value of Future Benefits	2,163,966,434	590,947,795
less Present Value of Future Entry Age Normal Costs	329,004,286	67,457,780
equals Actuarial Accrued Liability	1,834,962,148	523,490,015
less Actuarial Value of Assets	1,142,553,310	307,954,122
equals Unfunded Actuarial Accrued Liabilities	692,408,838	215,535,893
34 Year Amortization Payment on UAAL	$ 39,280,443	$ 12,201,648
as a % of projected payroll	13.58%	24.91%

FINANCING UNFUNDED ACTUARIAL ACCRUED LIABILITIES WHICH WERE CALCULATED USING A WAGE INFLATION ASSUMPTION OF 4.00% AND AN INVESTMENT RETURN ASSUMPTION OF 8.25% COMPOUNDED ANNUALLY
34 YEAR AMORTIZATION
NON-UNIFORMED EMPLOYEES

Fiscal Year Ending June 30,	Active Employee Payroll	Unfunded Actuarial Accrued Liability at End of Year	Annual Contributions During Fiscal Year		UAAL as % of Payroll
			Dollars	% of Payroll	
2002	$ 267,465,419	$ 692,408,838			
2003	278,164,036	715,433,616	$ 32,765,240	11.78%	257.2%
2004	289,290,597	733,577,534	39,280,443	13.58%	253.6%
2005	300,862,221	751,583,151	40,851,661	13.58%	249.8%
2006	312,896,710	769,373,650	42,485,727	13.58%	245.9%
2007	325,412,578	786,863,261	44,185,156	13.58%	241.8%
2008	338,429,081	803,956,416	45,952,563	13.58%	237.6%
2009	351,966,244	820,546,834	47,790,665	13.58%	233.1%
2010	366,044,894	836,516,522	49,702,292	13.58%	228.5%
2011	380,686,690	851,734,692	51,690,383	13.58%	223.7%
2012	395,914,158	866,056,583	53,757,999	13.58%	218.7%
2013	411,750,724	879,322,181	55,908,319	13.58%	213.6%
2014	428,220,753	891,354,828	58,144,651	13.58%	208.2%
2015	445,349,583	901,959,711	60,470,437	13.58%	202.5%
2016	463,163,566	910,922,222	62,889,255	13.58%	196.7%
2017	481,690,109	918,006,173	65,404,825	13.58%	190.6%
2018	500,957,713	922,951,865	68,021,018	13.58%	184.2%
2019	520,996,022	925,473,984	70,741,859	13.58%	177.6%
2020	541,835,863	925,259,321	73,571,533	13.58%	170.8%
2021	563,509,298	921,964,298	76,514,395	13.58%	163.6%
2022	586,049,670	915,212,279	79,574,970	13.58%	156.2%
2023	609,491,657	904,590,655	82,757,969	13.58%	148.4%
2024	633,871,323	889,647,682	86,068,288	13.58%	140.4%
2025	659,226,176	869,889,045	89,511,020	13.58%	132.0%
2026	685,595,223	844,774,138	93,091,460	13.58%	123.2%
2027	713,019,032	813,712,021	96,815,119	13.58%	114.1%
2028	741,539,793	776,057,040	100,687,723	13.58%	104.7%
2029	771,201,385	731,104,074	104,715,232	13.58%	94.8%
2030	802,049,440	678,083,382	108,903,842	13.58%	84.5%
2031	834,131,418	616,155,011	113,259,995	13.58%	73.9%
2032	867,496,675	544,402,740	117,790,395	13.58%	62.8%
2033	902,196,542	461,827,504	122,502,011	13.58%	51.2%
2034	938,284,404	367,340,273	127,402,091	13.58%	39.2%
2035	975,815,780	259,754,325	132,498,175	13.58%	26.6%
2036	1,014,848,411	137,776,876	137,798,102	13.58%	13.6%
2037	1,055,442,347	0	143,310,026	13.58%	0.0%

FINANCING UNFUNDED ACTUARIAL ACCRUED LIABILITIES WHICH WERE CALCULATED USING A WAGE INFLATION ASSUMPTION OF 4.00% AND AN INVESTMENT RETURN ASSUMPTION OF 8.25% COMPOUNDED ANNUALLY
34 YEAR AMORTIZATION
UNIFORMED EMPLOYEES

Fiscal Year Ending June 30,	Active Employee Payroll	Unfunded Actuarial Accrued Liability at End of Year	Annual Contributions During Fiscal Year		UAAL as % of Payroll
			Dollars	% of Payroll	
2002	$ 45,282,073	$ 215,535,893			
2003	47,093,356	222,234,481	$ 10,649,629	22.61%	471.9%
2004	48,977,090	227,870,509	12,201,648	24.91%	465.3%
2005	50,936,174	233,463,577	12,689,713	24.91%	458.3%
2006	52,973,621	238,989,823	13,197,302	24.91%	451.1%
2007	55,092,566	244,422,605	13,725,194	24.91%	443.7%
2008	57,296,269	249,732,236	14,274,202	24.91%	435.9%
2009	59,588,120	254,885,702	14,845,170	24.91%	427.7%
2010	61,971,645	259,846,351	15,438,977	24.91%	419.3%
2011	64,450,511	264,573,557	16,056,536	24.91%	410.5%
2012	67,028,531	269,022,353	16,698,797	24.91%	401.4%
2013	69,709,672	273,143,033	17,366,749	24.91%	391.8%
2014	72,498,059	276,880,723	18,061,419	24.91%	381.9%
2015	75,397,981	280,174,908	18,783,876	24.91%	371.6%
2016	78,413,900	282,958,924	19,535,231	24.91%	360.9%
2017	81,550,456	285,159,405	20,316,640	24.91%	349.7%
2018	84,812,474	286,695,681	21,129,306	24.91%	338.0%
2019	88,204,973	287,479,124	21,974,478	24.91%	325.9%
2020	91,733,172	287,412,443	22,853,457	24.91%	313.3%
2021	95,402,499	286,388,913	23,767,595	24.91%	300.2%
2022	99,218,599	284,291,540	24,718,299	24.91%	286.5%
2023	103,187,343	280,992,155	25,707,031	24.91%	272.3%
2024	107,314,837	276,350,433	26,735,312	24.91%	257.5%
2025	111,607,430	270,212,826	27,804,725	24.91%	242.1%
2026	116,071,727	262,411,406	28,916,914	24.91%	226.1%
2027	120,714,596	252,762,609	30,073,590	24.91%	209.4%
2028	125,543,180	241,065,877	31,276,534	24.91%	192.0%
2029	130,564,907	227,102,179	32,527,595	24.91%	173.9%
2030	135,787,503	210,632,411	33,828,699	24.91%	155.1%
2031	141,219,003	191,395,659	35,181,847	24.91%	135.5%
2032	146,867,763	169,107,318	36,589,121	24.91%	115.1%
2033	152,742,474	143,457,049	38,052,686	24.91%	93.9%
2034	158,852,173	114,106,568	39,574,793	24.91%	71.8%
2035	165,206,260	80,687,245	41,157,785	24.91%	48.8%
2036	171,814,510	42,797,503	42,804,097	24.91%	24.9%
2037	178,687,090	0	44,516,260	24.91%	0.0%

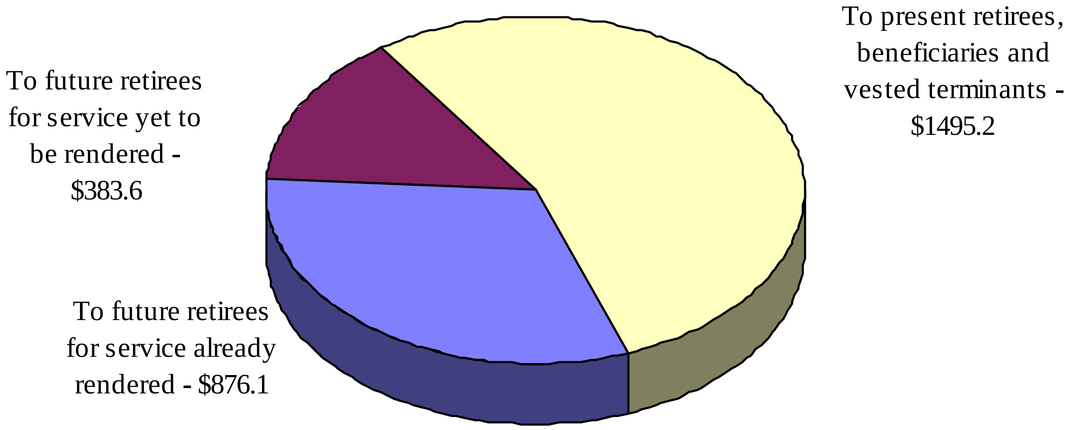
SUMMARY STATEMENT OF SYSTEM RESOURCES & OBLIGATIONS

Present and Expected Future Resources at June 30	2002	2001
A. Present valuation assets		
1. Market value of assets from system financial statements	$ 1,268,150,170	$ 1,413,243,545
2. Market Value Adjustment	190,763,839	116,592,007
3. LTD Assets	(8,406,577)	(9,035,143)
4. Valuation Assets: 1 + 2 + 3	$ 1,450,507,432	$ 1,520,800,409
B. Actuarial present value of expected future contributions		
1. For normal costs	396,462,066	401,682,564
2. For unfunded actuarial accrued liability	907,944,731	780,602,118
3. Total	1,304,406,797	1,182,284,682
C. Total Present and Expected Future Resources	$ 2,754,914,229	$ 2,703,085,091

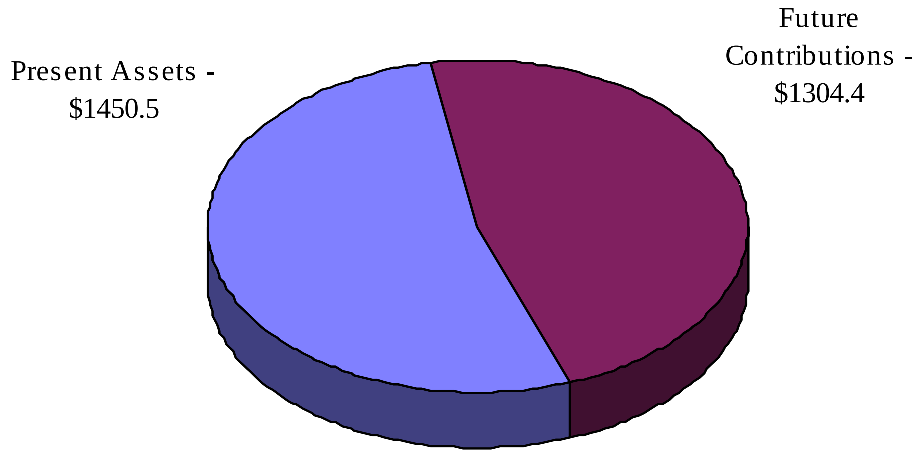
Present and Expected Future Obligations		
A. To present retirants and beneficiaries	$ 1,469,558,410	$ 1,374,726,114
B. To present vested terminated members	25,670,418	22,990,780
C. To present active members		
1. Allocated to service rendered prior to valuation date (actuarial accrued liability)	876,105,998	903,685,633
2. Allocated to service likely to be rendered after valuation date	383,579,403	401,682,564
3. Total	1,259,685,401	1,305,368,197
D. Total Actuarial Present Value of Expected Future Benefit Payments	$2,754,914,229	$2,703,085,091

SYSTEM RESOURCES & OBLIGATIONS
AS OF JUNE 30, 2002

Uses of Funds



Sources of Funds



GASB No. 25
Schedule of Funding Progress*
June 30, 2002

Year Ending June 30,	Actuarial Asset Value	Entry Age Normal Accrued Liability	Unfunded Accrued Liability (UAAL)	Funded Ratio	Covered Payroll		UAAL as a Percentage of Covered Payroll
1991	$ 560,976,822	$ 841,195,967	$ 280,219,145	66.69%	$ 220,856,988	**	126.88%
1992	622,018,133	904,097,721	282,079,588	68.80%	220,919,382		127.68%
1993	688,963,225	1,000,704,491	311,741,266	68.85%	228,032,159		136.71%
1994	746,946,221	1,204,313,635	457,367,414	62.02%	236,748,214		193.19%
1995	931,031,253	1,330,909,279	499,878,026	69.95%	243,561,510		205.24%
1996	916,553,828	1,429,910,844	513,357,016	64.10%	254,712,739		201.54%
1997	1,015,906,708	1,651,811,690	635,904,982	61.50%	271,070,643		234.59%
1998	1,126,961,804	1,744,052,411	617,090,607	64.62%	278,690,426		221.43%
1999+	1,242,744,403	2,052,700,427	809,956,023	60.54%	288,068,083	**	281.17%
2000#	1,422,796,011	2,188,826,322	766,030,311	65.00%	301,421,805	**	254.14%
2001	1,520,800,409	2,301,402,527	780,602,118	66.08%	323,400,023	**	241.37%
2002	1,450,507,432	2,358,452,163	907,944,731	61.50%	319,532,401	**	284.15%

* *Since the Long Term Disability Plan uses the aggregate funding method, this schedule is not required for the LTD Plan and the assets and liabilities have been excluded.*

** *Values are estimated from contribution rate and amount.*

\+ *Introduction of MSEP 2000 Plan; Change in Actuary*

\# *New assumptions adopted.*

GASB No. 25
Schedule of Employer Contributions
and Development of Net Pension Obligation*
Unformed Patrol Group
June 30, 2002

Year Ending June 30,	Covered Payroll		Actual Employer Contributions	Actual Employer Contribution %	Annual Required Contribution (ARC) %	Annual Pension Cost	Percentage of of APC Contributed	Net Pension Obligation
1991	$ 30,189,436	**	$ 10,545,170	34.93%	34.93%	$ 10,545,170	100.00%	$ 0
1992	30,606,601		11,101,014	36.27%	36.27%	11,101,014	100.00%	0
1993	31,004,803		9,868,829	31.83%	31.83%	9,868,829	100.00%	0
1994	32,715,429		9,739,383	29.77%	29.77%	9,739,383	100.00%	0
1995	35,232,287		14,462,854	41.05%	41.05%	14,462,854	100.00%	0
1996	39,557,621		15,743,114	39.80%	39.80%	15,743,114	100.00%	0
1997	42,242,106		16,546,233	39.17%	39.17%	16,546,233	100.00%	0
1998	43,987,039		16,600,708	37.74%	37.74%	16,600,708	100.00%	0
1999+	43,882,573	**	13,901,999	31.68%	31.68%	13,901,999	100.00%	0
2000#	44,297,237	**	13,484,079	30.44%	30.44%	13,484,079	100.00%	0
2001	50,088,675	**	17,500,983	34.94%	34.94%	17,500,983	100.00%	0
2002	50,591,923	**	16,659,920	32.93%	32.93%	16,659,920	100.00%	0

* *Contributions for the Long Term Disability Plan are de minimus and are excluded from this schedule.*

** *Values are estimated from contribution rate and amount.*

\+ *Introduction of MSEP 2000 Plan; Change in Actuary*

\# *New assumptions adopted.*

GASB No. 25
SCHEDULE OF EMPLOYER CONTRIBUTIONS
AND DEVELOPMENT OF NET PENSION OBLIGATION*
NON-UNIFORMED GROUP
JUNE 30, 2002

Year Ending June 30,	Covered Payroll		Actual Employer Contributions	Actual Employer Contribution %	Annual Required Contribution (ARC) %	Annual Pension Cost	Percentage of of APC Contributed	Net Pension Obligation
1991	$ 190,667,552	**	$ 35,864,567	18.81%	18.81%	$ 35,864,567	100.00%	$ 0
1992	190,312,781		37,929,337	19.93%	19.93%	37,929,337	100.00%	0
1993	197,027,356		41,454,556	21.04%	21.04%	41,454,556	100.00%	0
1994	204,032,785		40,949,380	20.07%	20.07%	40,949,380	100.00%	0
1995	208,329,222		56,144,725	26.95%	26.95%	56,144,725	100.00%	0
1996	215,155,118		56,842,321	26.42%	26.42%	56,842,321	100.00%	0
1997	228,828,537		59,838,662	26.15%	26.15%	59,838,662	100.00%	0
1998	234,703,387		61,140,232	26.05%	26.05%	61,140,232	100.00%	0
1999+	244,185,511	**	54,990,577	22.52%	22.52%	54,990,577	100.00%	0
2000#	257,124,568	**	56,567,405	22.00%	22.00%	56,567,405	100.00%	0
2001	273,311,348	**	63,654,213	23.29%	23.29%	63,654,213	100.00%	0
2002	268,940,479	**	60,780,548	22.60%	22.60%	60,780,548	100.00%	0

* *Contributions for the Long Term Disability Plan are de minimus and are excluded from this schedule.*

** *Values are estimated from contribution rate and amount.*

+ *Introduction of MSEP 2000 Plan; Change in Actuary*

New assumptions adopted.

DEVELOPMENT OF GAIN/(LOSS)
JULY 1, 2001 TO JUNE 30, 2002

	UAAL =	AAL -	Assets
Beginning of Year Values (at July 1)	$780,602,118	$2,301,402,527	$1,520,800,409
Normal Cost	39,204,280	39,204,280	0
Contributions	(78,080,722)	0	78,080,722
Disbursements	$0	(134,398,728)	(134,398,728)
Interest	62,796,021	185,938,937	123,142,916
Expected Value Before Any Changes	804,521,697	2,392,147,016	1,587,625,319
Effect of Changes in Benefits & Methods	0	0	0
Expected Value After Changes	804,521,697	2,392,147,016	1,587,625,319
End of Year Values (at June 30)	907,944,731	2,358,452,163	1,450,507,432
Gain/(Loss) for Year	$(103,423,034)	$33,694,853	$(137,117,887)

The development of gains and losses shown above does not include the LTD valuation.

SECTION B

Summary of Benefits

HIGHWAY & TRANSPORTATION EMPLOYEES' AND HIGHWAY PATROL RETIREMENT SYSTEM

SUMMARY OF BENEFIT PROVISIONS EVALUATED AS OF JUNE 30, 2002

Closed Plan

Participation

Participants include:

All HTEHPRS active members, vested terminated members, retirees and survivors who first became members prior to July 1, 2000 and who do not elect to transfer to the Year 2000 Plan.

Normal Retirement Eligibility (unreduced benefits)

Non-Uniformed Employees: The earlier of attaining:

(1) Age 65 with at least 4 years of creditable service.

(2) Age 60 with at least 15 years of creditable service.

(3) Age 50 with age plus creditable service equal to 80 or more.

Uniformed Patrol Employees: The earlier of attaining:

(1) Age 55 with at least 4 years of creditable service.

(2) Age 50 with age plus creditable service equal to 80 or more.

Average Compensation used for Benefit Determination

The average annual pay of a member for the three consecutive years of service during which pay was highest (overtime pay is included for purposes of determining average pay). Employees retiring from active service shall receive 1/12 of a year of creditable service for every 168 hours of unused sick leave (usable only for benefit computation, not eligibility).

Year 2000 Plan

Participation

Participants include:

(1) All new employees who first become members on or after July 1, 2000.

(2) HTEHPRS active members and vested former members who elect to transfer to the Year 2000 Plan prior to retirement.

(3) HTEHPRS retirees who elect to transfer to the Year 2000 Plan during the election window from July 1, 2000 through July 1, 2001, and their survivors.

Normal Retirement Eligibility (unreduced benefits)

General Employees: The earlier of attaining:

(1) Age 62 with at least 5 years of creditable service.

(2) Age 50 with age plus creditable service equal to 80 or more.

Average Compensation used for Benefit Determination

The average annual pay of a member for the three consecutive years of service during which pay was highest (overtime pay is included for purposes of determining average pay). Employees retiring from active service will receive 1/12 of a year of creditable service for every 168 hours of unused sick leave (usable only for benefit computation, not eligibility).

Closed Plan	Year 2000 Plan

Closed Plan

Normal Retirement Benefit Amount

Non-Uniformed Employees:

Life Benefit: 1.6% of Average Pay times years of credited service.

Uniformed Patrol Employees:

Life Benefit: 2.1333% of Average Pay times years of credited service.

Supplemental Benefit: $90 per month payable until age 65. Offset by any amount earned during gainful employment. This benefit does not apply to uniformed members hired on or after January 1, 1995.

Early Retirement

Eligibility: Non-Uniformed employees

Age 55 with at least 10 years of credited service.

Amount:

Normal retirement amount reduced by 0.6% for each month that retirement precedes eligibility for normal retirement.

Uniformed patrol members are not eligible for early retirement.

Vested Deferred Benefits

Eligibility: Non-Uniformed and Uniformed Patrol employees

Fully vested in accrued pension with 5 years of creditable service. The benefit will commence at the age the individual would have been eligible for early or normal retirement, considering years of creditable service.

Year 2000 Plan

Normal Retirement Benefit Amount

General Employees:

Life Benefit: 1.7% of Average Pay times years of credited service.

Temporary Benefit: If member retires between ages 50 and 62 with age plus credited service equal to 80 or more, a temporary benefit is payable in the amount of 0.8% of average pay times years of credited service. The temporary benefit is payable until the attainment of the minimum age at which reduced social security benefits are payable or death, whichever occurs first.

Early Retirement

Eligibility: General Employees

Age 57 with at least 5 years of credited service.

Amount:

Normal retirement amount reduced by 0.5% for each month that retirement precedes eligibility for normal retirement.

Vested Deferred Benefits

Eligibility: General Employees

Fully vested in accrued pension with 5 years of creditable service. The benefit will commence at the age the individual would have been eligible for early or normal retirement, considering years of creditable service.

Closed Plan	Year 2000 Plan

Closed Plan

Death Prior to Retirement

A death benefit is payable to the surviving spouse or minor children of an active employee who dies after earning 3 years of creditable service. The survivor annuity is equal to the following percentage of the accrued benefit.

Creditable Service	Survivor Percentage	Creditable Service	Survivor Percentage
3 years	25%	7 years	35%
4 years	25%	8 years	40%
5 years	25%	9 years	45%
6 years	30%	10 years	50%

The spouse of an active employee who dies after accruing 5 years of creditable service may elect to receive an annuity as if the employee had retired on the date of death and elected a joint and 50% survivor annuity. If the spouse dies, leaving eligible children, the payment shall continue until the children reach 21 years of age.

The spouse of an active employee with 10 or more years of service may, in lieu of the joint and 50% survivor benefit, receive a reduced joint and 100% survivor benefit calculated as if the member retired as of the date of death.

If the death is duty-related, there is no service requirement and the minimum annuity is 50% of the final average compensation (FAC) to the surviving spouse or eligible children.

Death After Retirement

The benefit payable under the 50% joint and survivor form of payment. Alternate forms of payment including certain periods or other joint and survivor percentages are available as optional forms of payment elected at time of retirement. A member who is not married at retirement but marries thereafter may designate a new spouse as beneficiary. Additionally, a member may designate a new spouse as beneficiary in the event of the death of the spouse the member was married to at the date of retirement (this provision does not apply to period certain annuities.)

Year 2000 Plan

Death Prior to Retirement

The spouse shall receive a benefit computed as if the member had been normal retirement age on the date of death and elected the joint and 100% survivor option form of payment, provided the member had at least 5 years of credited service.
If no eligible spouse survives, 80% of the member’s life income annuity will be paid to eligible children. If the death is duty related, the service requirement is waived, and the minimum spouse benefit is 50% of the member’s final average pay.

Death After Retirement

The benefit payable under the joint and survivor or period certain form of payment, if the member elected an optional form of payment at time of retirement. A member who is not married at retirement but marries thereafter may designate a spouse as beneficiary upon completion of one year of marriage. Additionally, a member may designate a new spouse as beneficiary upon completion of one year of marriage in the event of the death of the spouse the member was married to at the date of retirement (this provision does not apply to period certain annuities).

Closed Plan	Year 2000 Plan
<u>Pop-Up Provision</u> Benefits to members who choose a survivor form of payment and whose spouse precedes the member in death, will "pop-up" or revert to the amount the member would have received had he/she not elected a survivor option.	**<u>Pop-Up Provision</u>** Same.
<u>$5,000 Death Benefit</u> Pensioners who retired from active employment after September 28, 1985 with an immediate pension have a $5,000 lump sum death benefit paid to their designated beneficiary.	**<u>$5,000 Death Benefit</u>** Same.
<u>Purchase of Service</u>	**<u>Purchase of Service</u>**
<u>Military</u>: Prior to retirement, qualifying members may purchase up to a maximum of 4 years military service that includes active service, and/or active and inactive duty training from which they were honorably discharged. All months the member is eligible for must be purchased. This service credit **<u>can</u>** be used to satisfy the vesting requirement. Periods of military service cannot coincide with employment in a state agency.	
<u>Police Service</u>: Prior to retirement, uniformed patrol members only, may purchase up to a maximum of four years of police service. Must purchase all months of service they are eligible for.	
<u>Portability</u>: Provision in section 105.691 allows vested members to acquire (purchase/transfer) service credit for any non-federal, full-time public sector employment within Missouri. Service may purchased/transferred by using the member's own money and/or using the value of the retirement benefit in the prior retirement plan if that plan has an agreement with HTEHPERS. Any non-federal public employment **not covered** by a retirement plan must be purchased.	<u>Portability</u>: Same as Closed Plan. (Section 105.691) In addition, Section 104.1090 provides that in-state vested service with another retirement system may be granted after 10 years of state service if the other retirement plan agrees to transfer assets equal to the accrued liability to HTEHPERS.
<u>Disability</u>	**<u>Disability</u>**
<u>Normal</u>: A member may qualify if he/she is unable to perform their present job or any other position in the Department for which they are suited. The benefit amount is 1.6% (including uniformed patrol) times average compensation times creditable service. The benefit is payable for as long as the member is disabled.	<u>Normal</u>: Same

Closed Plan	Year 2000 Plan
Work related: A member may apply if he/she becomes wholly and permanently incapable of holding any position of gainful employment as a result of an injury sustained while performing Department assigned duties. The benefit amount is 70% of the compensation being received at the time of injury and is payable for as long as the member is disabled.	Work related: Same
Long-Term Disability	**Long-Term Disability**
The plan of benefits, assets and liabilities of the LTD program are the subject of a separate report. At the expiration of LTD benefits, retirement benefits commence in an amount calculated as the product of (a) x (b) x (c), where: (a) equals 1.6% (2.1333% for uniformed) (b) equals average salary at the time of disability (c) creditable service at commencement of retirement benefits. For the purpose of item (c), service is credited until the earlier of the date retirement benefits are claimed, or the age at which unreduced retirement benefits are available.	Same.
Post-Retirement Benefit Adjustments	**Post-Retirement Benefit Adjustments**
For active and inactive employees hired prior to 8/28/97 and current retirees, the benefits of pensioners and their beneficiaries are increased annually by 80% of the increase in the Consumer Price Index (subject to a maximum increase of 5% and a minimum of 4%). These increases are made until the total of the increases reaches 65% at which time the increases will have the minimum removed. For employees hired after 8/28/97 the annual percentage increase is equal to the lesser of: i) 80% of the CPI increase, and ii) 5%.	Benefits are increased to retired members (including survivors) annually in accordance with the following: Annual benefit percentage increase equal to the lesser of: i) 80% of the CPI increase, and ii) 5%.
Member Contributions None	**Member Contributions** None

BackDROP Option

Legislation effective January 1, 2002 provides a Deferred Retirement Option Provision (BackDROP) to members of HTEHPRS. It is available in both the Closed Plan and the Year 2000 Plan.

To be eligible to participate in the BackDROP, a member must have been eligible to retire under normal age and/or service conditions for at least two years. A retroactive starting date is established for BackDROP purposes which, at the earliest, is the later of: 1) the member's normal retirement date or 2) five years prior to the annuity starting date under the retirement plan selected by the member.

The BackDROP period for the accumulation of the BackDROP account is from the retroactive starting date to the annuity starting date. This results in a BackDROP period of two to five years depending upon the individual situation.

A theoretical BackDROP account is accumulated that includes 90% of the value of the benefit payments that would have been paid during the BackDROP period had the member retired at the retroactive starting date with their respective option election. These payments include applicable post-retirement benefit increases.

The member is paid the resulting lump sum value of the BackDROP account as of the annuity starting date or as three equal annual installments beginning at the annuity starting date.

The annuity benefit payable from the actual retirement date is computed with years of service and average pay as of the retroactive starting date for the BackDROP. Post-retirement benefit increases that occurred during the BackDROP period are applied in the calculation of the monthly annuity.

SAMPLE BENEFIT COMPUTATION FOR MEMBERS
RETIRING JUNE 30, 2002
NON-UNIFORM

	Data	Description
A.	$40,000	Final Average Compensation
B.	20	Years of Credited Service
C.	60	Age of Retirant
D.	50%	Automatic percentage to continue to spouse after retirant's death

Sample Computation Steps

E. Retirement Benefit Formula: 0.016 x 20 x $40,000 = $12,800

Benefit payable to:

F.	Retirant while spouse is alive (E)	$12,800
G.	Spouse after retirant's death (D x E)	$6,400
H.	Retirant after spouse's death	$12,800

Year Ended June 30	Annual Amount Payable if Price Inflation is 3.5% and Post-Retirement Increases are 2.8%
2003	$12,800
2004	13,158
2005	13,527
2006	13,906
2007	14,295
2008	14,695
2009	15,107
2010	15,530
2011	15,964
2012	16,411

SAMPLE BENEFIT COMPUTATION FOR MEMBERS RETIRING JUNE 30, 2002
UNIFORM

	Data	Description
A.	$40,000	Final Average Compensation
B.	20	Years of Credited Service
C.	60	Age of Retirant
D.	50%	Automatic percentage to continue to spouse after retirant's death

Sample Computation Steps

E. Retirement Benefit Formula: 0.021333 x 20 x $40,000 = $17,066

Benefit payable to:

F.	Retirant while spouse is alive (E)	$17,066
G.	Spouse after retirant's death (D x E)	$8,533
H.	Retirant after spouse's death	$17,066

Amounts shown below do not include the $1080 supplementary benefit payable to age 65

Year Ended June 30	Annual Amount Payable if Price Inflation is 3.5% and Post-Retirement Increases are 2.8%
2003	$17,066
2004	17,544
2005	18,035
2006	18,540
2007	19,060
2008	19,593
2009	20,142
2010	20,706
2011	21,286
2012	21,882

SAMPLE BENEFIT COMPUTATION FOR MEMBERS
RETIRING JUNE 30, 2002
YEAR 2000

A.	$40,000	Final Average Compensation
B.	20	Years of Credited Service
C.	60	Age of Retirant
D.	0%	Automatic percentage to continue to spouse after retirant's death

Sample Computation Steps

E1.	Retirement Benefit Formula:	0.017 x 20 x $40,000 = $13,600
E2.	Supplemental Benefit Formula	.008 x 20 x $40,000 = $6,400

Benefit payable to:

F1.	Retirant prior to age 62 (E1+E2)	$20,000
F2.	Retirant after age 62 (E1)	$13,600
G.	Spouse after retirant's death (D x E)	$ 0

Year Ended June 30	Annual Amount Payable if Price Inflation is 3.5% and Post-Retirement Increases are 2.8%
2003	$20,000
2004	20,560
2005	21,136
2006	21,727
2007	22,336
2008	22,961
2009	23,604
2010	24,265
2011	24,945
2012	25,643

SECTION C

Financial Information

SUMMARY OF FUND OPERATIONS
JUNE 30, 2002

	Book Value	Market Value
Fund as of July 1, 2001	$1,372,572,721	$1,413,243,545
Contributions		
Employer	77,440,468	77,440,468
Employee	640,254	640,254
Total Contributions	$ 78,080,722	$ 78,080,722
Investment Income		
Interest	$ 28,337,893	$ 28,337,893
Dividends	12,462,175	12,462,175
Realized Capital Gains	33,645,933	33,645,933
Realized Capital Losses	(74,037,844)	(74,037,844)
Miscellaneous Income	20,254	20,254
Adjustment in Book Value	0	0
Securities Lending Income	98,402	98,402
Total Investment Income	$ 526,812	$ 526,812
Increase (Decrease) in Unrealized Appreciation	N/A	(84,859,625)
Benefit Payments		
Retirement Payments	$ 132,558,136	$ 132,558,136
Death Benefits	425,000	425,000
Long Term Disability Payments	515,679	515,679
Refund and Final Settlement	0	0
Total Benefit Payments	$ 133,498,815	$ 133,498,815
Expenses		
Investment	$ 3,926,878	$ 3,926,878
Actuarial	49,000	49,000
Other	1,366,592	1,366,592
Total Expenses	$ 5,342,470	$ 5,342,470
Fund as of June 30, 2002	$1,312,338,971	$1,268,150,170

DEVELOPMENT OF ACTUARIAL VALUE OF RETIREMENT SYSTEM ASSETS
JUNE 30, 2002

Valuation Date of June 30,	1999	2000	2001	2002	2003
A. Actuarial value at beginning of year	$1,134,177,608	$1,289,072,760	$1,431,554,156	$1,529,835,552	
B. Market value at end of year	1,448,562,782	1,477,276,993	1,413,243,545	1,268,150,170	
C. Market value at beginning of year	1,319,372,770	1,448,562,782	1,477,276,993	1,413,243,545	
D. Cash flow					
D1. Contributions	69,242,112	70,519,534	81,353,019	77,440,468	
D2. Benefit Payments	(86,254,388)	(95,402,855)	(111,985,065)	(133,498,815)	
D3. Administrative Expenses	(677,532)	(663,889)	(835,215)	(1,415,592)	
D4. Non-Investment Net Cash Flow	(17,689,808)	(25,547,210)	(31,467,261)	(57,473,939)	
E. Investment income					
E1. Market total (B - C - D4)	146,879,820	54,261,421	(32,566,187)	(87,619,436)	
E2. Assumed Rate of Return	8.25%	8.25%	8.25%	8.25%	8.25%
E3. Amount for Immediate recognition (A+.5xD4)xE2	92,839,948	105,294,680	116,805,193	123,840,633	
E4. Amount for Phased-In Recognition	54,039,872	(51,033,259)	(149,371,380)	(211,460,069)	
F. Phased in recognition of investment income					
F1. Current Year (33 1/3% of E4)	18,013,291	(17,011,086)	(49,790,460)	(70,486,690)	TBA
F2. First Prior Year	0	18,013,291	(17,011,086)	(49,790,460)	$(70,486,690)
F3. Second Prior Year	0	0	18,013,290	(17,011,087)	(49,790,460)
F4. Total Recognized Investment Gain (F1 + F2 + F3)	18,013,291	1,002,205	(48,788,256)	(137,288,237)	(120,277,150)
F5. Phase-In of Initial (BOY) difference between MVA and AVA	61,731,721	61,731,721	61,731,720	0	0
G. Actuarial value at end of year (A + D4 + E3 + F4)	1,289,072,760	1,431,554,156	1,529,835,552	1,458,914,009	
Less LTD Assets	8,012,962	8,758,145	9,035,143	8,406,577	
H. Plan AVA	1,281,059,798	1,422,796,011	1,520,800,409	1,450,507,432	
Difference between market and actuarial values	159,490,022	45,722,837	(116,592,007)	(190,763,839)	
Recognized actuarial rate of return	15.34%	13.17%	9.16%	(0.90)%	

This schedule reflects a change in asset valuation method adopted following an experience study. The asset value used in the 6/30/1999 valuation was different than the amount shown in the schedule above.

ALLOCATION OF ASSETS BETWEEN GROUPS

The division between the Uniformed Patrol and Non-Uniformed groups is in proportion to their present value of future benefits, as shown below:

	as of June 30, 2002	as of June 30, 2001
1. Assets Allocated to Retirement Benefits	$ 1,450,507,432	$ 1,520,800,409
2. Present Value Future Benefits		
a) Uniformed Patrol	590,947,795	587,537,359
b) Non-Uniformed	2,163,966,434	2,115,547,731
c) Total	2,754,914,229	2,703,085,090
3. Asset Allocation*		
a) Uniformed Patrol		
(2a) / (2c) x (1)	307,954,122	322,877,873
b) Non-Uniformed		
(2b) / (2c) x (1)	1,142,553,310	1,197,922,536
Total Assets Allocated	1,450,507,432	1,520,800,409

** Asset allocation ratio fixed at 2000 level. For the 6/30/2000 valuation, the Present Value of Future Benefits was $539,940,808 for the Uniformed group and $2,003,256,696 for the Non-Uniformed group. It is recommended that separate accounting be maintained going forward.*

SECTION D

Summary of Member Data

COUNT AND AVERAGE SALARY OF UNIFORMED PATROL ACTIVE MEMBERS AS OF JUNE 30, 2002 BY ATTAINED AGE AND YEARS OF SERVICE

Attained Age	Count by Complete Years of Service to Valuation Date								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
20-24	24								24
25-29	98	37							135
30-34	53	202	23						278
35-39	17	74	96	18					205
40-44	3	15	41	69	14				142
45-49	1	3	6	24	52	40			126
50-54				4	18	60	16		98
55-59					1	3	13	9	26
60-64								1	1
Totals	**196**	**331**	**166**	**115**	**85**	**103**	**29**	**10**	**1,035**

Age	Average Salary by Complete Years of Service to Valuation Date								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
20-24	32,112								$32,112
25-29	33,096	35,531							33,764
30-34	35,528	37,843	41,296						37,687
35-39	33,254	37,558	43,721	48,085					41,012
40-44	33,573	37,299	41,804	49,482	53,224				46,011
45-49	31,906	36,647	45,458	47,857	57,394	58,288			54,597
50-54				51,310	54,597	61,571	65,561		60,522
55-59					52,764	57,085	66,576	63,011	63,715
60-64								68,316	68,316
Totals	**$34,509**	**$37,485**	**$42,975**	**$48,988**	**$56,060**	**$60,165**	**$66,016**	**$63,541**	**$43,751**

Average Age: 37.3 years
Average Service: 12.2 years

The Uniformed Patrol group includes 68 active members hired on or after July 1, 2000.

COUNT AND AVERAGE SALARY OF NON-UNIFORMED ACTIVE MEMBERS AS OF JUNE 30, 2002 BY ATTAINED AGE AND YEARS OF SERVICE

Attained	Count by Complete Years of Service to Valuation Date								
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	Total
15-19	9								9
20-24	294	5							299
25-29	486	170							656
30-34	390	401	128	3					922
35-39	357	287	308	178	6				1,136
40-44	334	250	244	383	210	14			1,435
45-49	201	201	185	233	253	235	11		1,319
50-54	152	132	125	170	114	213	110	4	1,020
55-59	78	71	89	89	58	62	81	61	589
60-64	32	24	36	35	27	21	19	42	236
65-99	7	6	7	4	1	3	2	9	39
Totals	**2,340**	**1,547**	**1,122**	**1,095**	**669**	**548**	**223**	**116**	**7,660**

Attained	Average Salary by Complete Years of Service to Valuation Date								
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	Total
15-19	20,126								$20,126
20-24	28,994	23,202							28,897
25-29	31,224	30,996							31,165
30-34	29,477	34,839	36,916	42,141					32,883
35-39	29,027	32,814	39,914	40,070	39,944				34,724
40-44	29,691	30,474	34,982	43,093	37,219	38,350			35,490
45-49	30,917	32,766	34,254	38,565	39,904	39,863	40,020		36,411
50-54	28,929	29,746	36,013	36,468	39,309	42,749	44,456	34,826	36,903
55-59	31,439	28,766	33,661	34,706	34,667	38,022	48,108	48,963	37,064
60-64	31,735	32,160	30,128	32,376	35,103	39,545	40,271	49,524	36,562
65-99	31,602	25,286	29,922	34,689	28,882	40,376	27,093	50,601	35,404
Totals	**$29,896**	**$32,237**	**$36,259**	**$39,552**	**$38,296**	**$40,728**	**$45,052**	**$48,806**	**$34,917**

Average Age: 41.5 years
Average Service: 11.6 years

The Non-Uniformed group includes 1,123 active members hired on or after July 1, 2000.

GROWTH OF ACTIVE MEMBER PAYROLL

Actuarial Valuation for June 30,	Number	Covered Payroll	Average Pay	% Change in Average Pay from Prior Year
1989	8,181	$194,452,400	$23,769	(0.5)%
1990	8,256	211,414,753	25,607	7.7%
1991	8,308	220,856,988	26,584	3.8%
1992	8,591	228,503,592	26,598	0.1%
1993	8,658	236,236,082	27,285	2.6%
1994	8,849	242,864,780	27,445	0.6%
1995	8,904	250,529,253	28,137	2.5%
1996	9,023	264,196,115	29,280	4.1%
1997	8,997	280,209,116	31,145	6.4%
1998	8,871	284,889,796	32,115	3.1%
1999	9,140	298,673,247	32,678	1.8%
2000	9,171	312,532,009	34,078	4.3%
2001	9,087	327,049,257	35,991	5.6%
2002	8,695	312,747,492	35,969	(0.1)%
			Ten Year Average	3.1%

COUNT AND AVERAGE MONTHLY BENEFITS OF UNIFORMED PATROL RETIRED MEMBERS AS OF JUNE 30, 2002 BY ATTAINED AGE AND YEARS OF BENEFIT PAYMENT

Attained Age	Count by Complete Years of Benefit Payment								
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	Total
<40	1								1
40-44	2	2							4
45-49			1	1					2
50-54	40	3	1	1					45
55-59	101	49	1	2					153
60-64	30	99		2					131
65-69	6	33	51	1					91
70-74	4	7	52	20		1	1		85
75-79	8	6	7	23	12	1			57
80-84	5	5	2	7	21	3	1		44
85+	14	7	4	15		9	10		59
Totals	**211**	**211**	**119**	**72**	**33**	**14**	**12**		**672**

Attained Age	Average Benefit by Complete Years of Benefit Payment								
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	Total
<40	696								$ 696
40-44	1,811	911							1,361
45-49			2,452	42					1,247
50-54	3,203	1,954	1,697	193					3,020
55-59	3,464	3,226	2,498	654					3,344
60-64	3,845	3,485		655					3,524
65-69	2,801	3,792	4,100	1,090					3,869
70-74	1,786	2,699	4,687	2,933		251	178		3,869
75-79	1,875	1,469	1,599	3,422	2,543	371			2,537
80-84	1,517	1,334	1,553	2,123	2,998	1,342	235		2,260
85+	1,028	1,409	1,489	581		2,216	1,475		1,248
Totals	**$3,121**	**$3,223**	**$4,031**	**$2,290**	**$2,832**	**$1,757**	**$1,263**		**$3,150**

As of June 30, 2002 there were no Uniformed Patrol retired members or beneficiaries receiving benefits under the Year 2000 Plan.

Count and Average Monthly Benefits of Non-Uniformed Retired Members as of June 30, 2002 by Attained Age and Years of Benefit Payment

Attained Age	Count by Complete Years of Benefit Payment								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
<40	8	15	5						28
40-44	4	5							9
45-49	15	4	2	2					23
50-54	260	12	4	2	1	1			280
55-59	479	108	18	7	4	1			617
60-64	552	298	28	11	4	2			895
65-69	318	514	173	8	7	7	1		1,028
70-74	131	345	396	60	13	4	6		955
75-79	84	114	265	199	28	11			701
80-84	76	115	49	172	125	7	1		545
85+	97	180	44	15	92	59	14		501
Totals	**2,024**	**1,710**	**984**	**476**	**274**	**92**	**22**		**5,582**

Attained Age	Average Benefit by Complete Years of Benefit Payment								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
<40	357	238	107						$ 249
40-44	855	637							734
45-49	984	1,026	571	94					878
50-54	2,407	750	543	255	119	86			2,278
55-59	2,081	1,875	694	327	151	58			1,969
60-64	1,795	1,709	1,035	374	250	80			1,714
65-69	1,596	1,670	1,658	396	233	137	1,869		1,615
70-74	1,110	1,556	1,845	1,019	248	144	95		1,548
75-79	867	788	1,660	1,296	658	152			1,256
80-84	666	368	786	1,171	1,010	459	82		849
85+	686	287	492	494	862	829	801		572
Totals	**$1,718**	**$1,351**	**$1,589**	**$1,130**	**$ 842**	**$605**	**$ 624**		**$1,467**

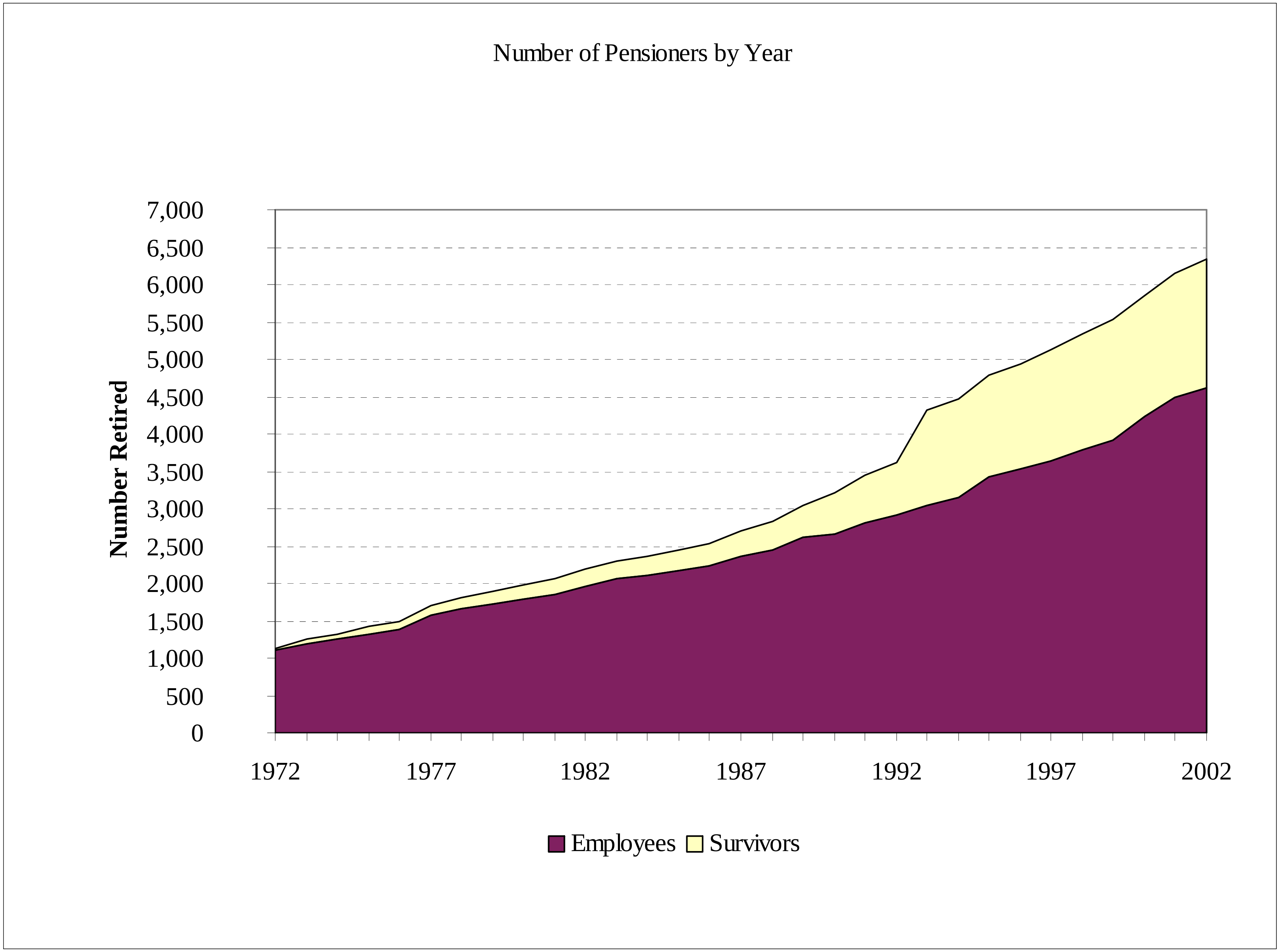
As of June 30, 2002 there were 1,154 Non-Uniformed retired members or beneficiaries receiving benefits under the Year 2000 Plan.

GROWTH OF PENSION POPULATION BY YEAR

Year	Retired Employees	Survivors	Total*	% Increase	Annual Benefits	Active Payroll	Benefits as a % of Payroll
1972	1,102	35	1,137				
1973	1,197	50	1,247	9.7 %	$ -	$ -	$ -
1974	1,262	65	1,327	6.4 %	-	-	-
1975	1,327	96	1,423	7.2 %	-	-	-
1976	1,389	103	1,492	4.8 %	-	-	-
1977	1,573	130	1,703	14.1 %	-	-	-
1978	1,658	145	1,803	5.9 %	-	-	-
1979	1,730	174	1,904	5.6 %	-	-	-
1980	1,797	186	1,983	4.1 %	-	-	-
1981	1,860	204	2,064	4.1 %	-	-	-
1982	1,957	225	2,182	5.7 %	-	-	-
1983	2,061	244	2,305	5.6 %	-	-	-
1984	2,107	261	2,368	2.7 %	-	-	-
1985	2,164	280	2,444	3.2 %	-	-	-
1986	2,227	312	2,539	3.9 %	-	-	-
1987	2,369	341	2,710	6.7 %	-	-	-
1988	2,440	380	2,820	4.1 %	-	-	-
1989	2,610	441	3,051	8.2 %	-	-	-
1990	2,669	543	3,212	5.3 %	-	-	-
1991	2,814	632	3,446	7.3 %	-	-	-
1992	2,908	699	3,607	4.7 %	-	-	-
1993	3,047	1,269	4,316	19.7 %	-	-	-
1994	3,156	1,307	4,463	3.4 %	-	-	-
1995	3,419	1,365	4,784	7.2 %	-	-	-
1996	3,536	1,405	4,941	3.3 %	-	-	-
1997	3,646	1,486	5,132	3.9 %	-	-	-
1998	3,781	1,549	5,330	3.9 %	80,686,152	284,889,796	28.3%
1999	3,924	1,600	5,524	3.6 %	91,512,311	298,673,247	30.6%
2000	4,236	1,621	5,857	6.0 %	100,794,676	312,532,009	32.3%
2001	4,482	1,663	6,145	4.9 %	115,998,915	327,049,257	35.5%
2002	4,623	1,716	6,339	3.2 %	125,623,460	312,747,492	40.2%

** Includes non-LTD disabled members.*

GROWTH OF PENSION POPULATION BY YEAR



COUNT OF VESTED TERMINATED MEMBERS
AS OF JUNE 30, 2002
BY ATTAINED AGE AND YEARS OF SERVICE

UNIFORMED PATROL

Attained	Count by Complete Years of Service to Valuation Date								
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	Total
25-29		2							2
30-34		30							30
35-39		11	11						22
40-44		6	6						12
45-49			10	4	2				16
50-54			11	4	4	1			20
55-59			2						2
60-64			1						1
Totals		**49**	**41**	**8**	**6**	**1**			**105**

NON-UNIFORMED

Attained	Count by Complete Years of Service to Valuation Date								
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	Total
25-29		20							20
30-34		106	11						117
35-39	1	128	56	11	1				197
40-44		127	76	37	6				246
45-49		67	57	39	15	2	1		181
50-54		51	65	25	19	4			164
55-59		15	36	24	5				80
60-64		6	9	3	1				19
65 and over			1						1
Totals	**1**	**520**	**311**	**139**	**47**	**6**	**1**		**1,025**

COUNT AND AVERAGE MONTHLY BENEFITS OF DISABLED RETIRED MEMBERS AS OF JUNE 30, 2002 BY ATTAINED AGE AND YEARS OF RETIREMENT

Attained Age	Count by Complete Years of Retirement								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
<40	3			1					4
40-44	4	2							6
45-49	3	2		2					7
50-54	10	4	1		2				17
55-59	5	2		2	2	2			13
60-64	4	1	1	1			1		8
65-69		1	1	3	3				8
70-74				2	2				4
75-79				5	5	1			11
80-84					3	1			4
85+					2		1		3
Totals	**29**	**12**	**3**	**16**	**19**	**4**	**2**		**85**

Attained Age	Average Benefit by Complete Years of Retirement								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
<40	1,610			56					$1,222
40-44	1,490	366							1,116
45-49	1,100	1,248		476					964
50-54	961	2,097	1,216		162				1,149
55-59	931	1,277		726	290	233			746
60-64	858	765	1,454	256			244		769
65-69		771	1,190	1,076	540				851
70-74				326	414				370
75-79				690	870	627			766
80-84					171	858			343
85+					380		517		426
Totals	**$1,096**	**$1,309**	**$1,287**	**$628**	**$472**	**$488**	**$381**		**$860**

SECTION E

Assumptions Used in the Valuation

APPENDIX

SUMMARY OF VALUATION METHOD AND ASSUMPTIONS

JUNE 30, 2002

The actuarial assumptions used in the valuation are shown in this Appendix of the report. The assumptions were established for the June 30, 2000 actuarial valuation, following a five-year actuarial investigation. They were adopted by the Board after obtaining the advice of the Actuary and other professionals.

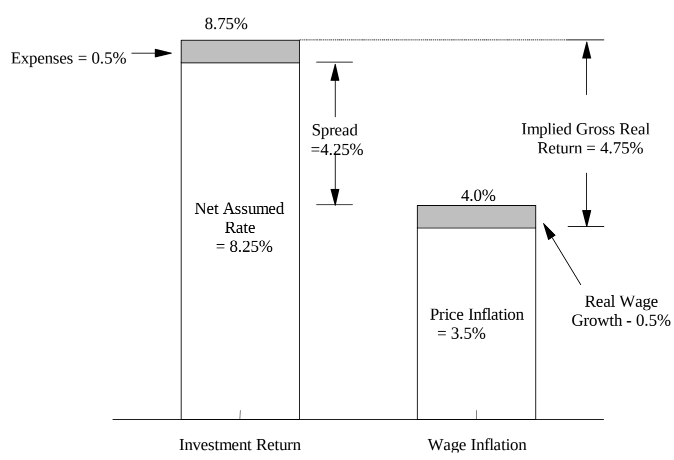
Economic Assumptions

The investment return rate used in making the valuations was 8.25% per year, compounded annually (net after investment expenses). The ***wage inflation rate*** was assumed to be 4.00%. The real rate of return is the portion of total investment return, which is more than the rate of wage inflation. The 8.25% investment return rate and 4.00% wage inflation rate translates to an assumed real rate of return net of expenses of 4.25%.

Pay increase assumptions for merit and seniority for individual active members are shown on page E-4. Part of the total assumed pay increase at each age is for merit and/or seniority, and the other 4.00% recognizes wage inflation. ***The active member payroll*** is assumed to increase 4.0% annually.

The price inflation rate is assumed to be 3.5% annually. This is the inflation rate upon which the post-retirement increases are based. The difference between wage and price inflation of 0.5% is attributable to overall productivity increases and societal factors.

The number of active members is assumed to continue at the present number.



Non-Economic Assumptions

The mortality tables, for post-retirement mortality, used in evaluating allowances to be paid to non-disabled pensioners were the 1971 Group Annuity Mortality Tables to the year 2000 set back 1 year for males and 7 years for females. Pre-retirement mortality used was 50% of the 71GAM2000 tables set back 1 year for males and 7 years for females. Disabled pension mortality was based on PBGC Disabled Mortality tables. Related values are shown on page E-4.

The probabilities of age and service retirement are shown on page E-5.

The probabilities of withdrawal from service are shown on pages E-7 and E-8***. The probabilities of disability*** are shown on page E-6.

The entry age normal actuarial cost method of valuation was used in determining liabilities and normal cost. The normal cost was calculated as if everyone were in the Year 2000 plan.

> Differences in the past between assumed experience and actual experience ("actuarial gains and losses") become part of actuarial accrued liabilities.
>
> Unfunded actuarial accrued liabilities are amortized to produce payments (principal & interest) which are level percent of payroll contributions.

Employer contributions were assumed to be ***paid in equal installments*** throughout the employer fiscal year.

Present assets (cash & investments) were used with a market value adjustment. Assets may be used in the valuation prior to the final audit. The exact method is shown on page C-2.

The data about persons now covered and about present assets were furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (M.A.A.A.) who has experience performing public plan valuations.

AGE BASED SALARY SCALE

	Salary Increase Assumptions for an Individual Member					
	Non-Uniform			Uniform		
Age	Merit & Seniority	Base (Economic)	Increase Next Year	Merit & Seniority	Base (Economic)	Increase Next Year
20	3.00%	4.00%	7.00%	4.00%	4.00%	8.00%
21	3.00%	4.00%	7.00%	4.00%	4.00%	8.00%
22	3.00%	4.00%	7.00%	3.50%	4.00%	7.50%
23	3.00%	4.00%	7.00%	3.50%	4.00%	7.50%
24	3.00%	4.00%	7.00%	3.50%	4.00%	7.50%
25	3.00%	4.00%	7.00%	3.50%	4.00%	7.50%
26	3.00%	4.00%	7.00%	3.50%	4.00%	7.50%
27	3.00%	4.00%	7.00%	3.50%	4.00%	7.50%
28	2.95%	4.00%	6.95%	3.20%	4.00%	7.20%
29	2.90%	4.00%	6.90%	2.90%	4.00%	6.90%
30	2.85%	4.00%	6.85%	2.60%	4.00%	6.60%
31	2.80%	4.00%	6.80%	2.30%	4.00%	6.30%
32	2.70%	4.00%	6.70%	2.00%	4.00%	6.00%
33	2.50%	4.00%	6.50%	1.90%	4.00%	5.90%
34	2.30%	4.00%	6.30%	1.80%	4.00%	5.80%
35	2.20%	4.00%	6.20%	1.70%	4.00%	5.70%
36	2.10%	4.00%	6.10%	1.60%	4.00%	5.60%
37	2.00%	4.00%	6.00%	1.50%	4.00%	5.50%
38	1.90%	4.00%	5.90%	1.30%	4.00%	5.30%
39	1.80%	4.00%	5.80%	1.10%	4.00%	5.10%
40	1.70%	4.00%	5.70%	0.90%	4.00%	4.90%
41	1.60%	4.00%	5.60%	0.80%	4.00%	4.80%
42	1.50%	4.00%	5.50%	0.70%	4.00%	4.70%
43	1.50%	4.00%	5.50%	0.60%	4.00%	4.60%
44	1.40%	4.00%	5.40%	0.50%	4.00%	4.50%
45	1.30%	4.00%	5.30%	0.40%	4.00%	4.40%
46	1.00%	4.00%	5.00%	0.30%	4.00%	4.30%
47	0.90%	4.00%	4.90%	0.30%	4.00%	4.30%
48	0.90%	4.00%	4.90%	0.30%	4.00%	4.30%
49	0.80%	4.00%	4.80%	0.30%	4.00%	4.30%
50	0.80%	4.00%	4.80%	0.30%	4.00%	4.30%
51	0.70%	4.00%	4.70%	0.30%	4.00%	4.30%
52	0.70%	4.00%	4.70%	0.30%	4.00%	4.30%
53	0.60%	4.00%	4.60%	0.30%	4.00%	4.30%
54	0.60%	4.00%	4.60%	0.30%	4.00%	4.30%
55	0.60%	4.00%	4.60%	0.30%	4.00%	4.30%
56	0.60%	4.00%	4.60%	0.30%	4.00%	4.30%
57	0.60%	4.00%	4.60%	0.30%	4.00%	4.30%
58	0.50%	4.00%	4.50%	0.30%	4.00%	4.30%
59	0.40%	4.00%	4.40%	0.30%	4.00%	4.30%
60	0.30%	4.00%	4.30%	0.30%	4.00%	4.30%
Ref.	200			201		

POST-RETIREMENT MORTALITY

	Regular		Disabled			Regular		Disabled	
Age	Male	Female	Male	Female	Age	Male	Female	Male	Female
21	0.00042	0.00035	0.04830	0.02630	61	0.01086	0.00646	0.06240	0.03390
22	0.00043	0.00036	0.04830	0.02630	62	0.01195	0.00705	0.06430	0.03470
23	0.00045	0.00037	0.04830	0.02630	63	0.01313	0.00767	0.06570	0.03550
24	0.00047	0.00038	0.04830	0.02630	64	0.01441	0.00831	0.06680	0.03620
25	0.00049	0.00039	0.04830	0.02630	65	0.01593	0.00901	0.06780	0.03700
26	0.00051	0.00040	0.04610	0.02570	66	0.01770	0.00987	0.06870	0.03780
27	0.00054	0.00042	0.04360	0.02530	67	0.01974	0.01086	0.06970	0.03860
28	0.00057	0.00043	0.04110	0.02470	68	0.02204	0.01195	0.07090	0.03940
29	0.00060	0.00045	0.03880	0.02420	69	0.02451	0.01313	0.07230	0.04020
30	0.00063	0.00047	0.03620	0.02370	70	0.02740	0.01441	0.07390	0.04110
31	0.00067	0.00049	0.03390	0.02320	71	0.03068	0.01593	0.07570	0.04210
32	0.00071	0.00051	0.03200	0.02270	72	0.03419	0.01770	0.07760	0.04330
33	0.00076	0.00054	0.03020	0.02220	73	0.03768	0.01974	0.07960	0.04470
34	0.00081	0.00057	0.02880	0.02180	74	0.04106	0.02204	0.08180	0.04650
35	0.00087	0.00060	0.02780	0.02140	75	0.04455	0.02451	0.08420	0.04920
36	0.00093	0.00063	0.02720	0.02120	76	0.04837	0.02740	0.08690	0.05290
37	0.00100	0.00067	0.02710	0.02100	77	0.05286	0.03068	0.09080	0.05780
38	0.00107	0.00071	0.02730	0.02080	78	0.05835	0.03419	0.09620	0.06310
39	0.00116	0.00076	0.02760	0.02080	79	0.06463	0.03768	0.10430	0.06860
40	0.00125	0.00081	0.02820	0.02090	80	0.07136	0.04106	0.11280	0.07460
41	0.00135	0.00087	0.02880	0.02100	81	0.07875	0.04455	0.12210	0.08130
42	0.00148	0.00093	0.02970	0.02130	82	0.08647	0.04837	0.13220	0.08850
43	0.00166	0.00100	0.03050	0.02160	83	0.09449	0.05286	0.14320	0.09620
44	0.00187	0.00107	0.03140	0.02190	84	0.10293	0.05835	0.15510	0.10430
45	0.00213	0.00116	0.03220	0.02240	85	0.11166	0.06463	0.16810	0.11280
46	0.00242	0.00125	0.03300	0.02290	86	0.12064	0.07136	0.18250	0.12210
47	0.00275	0.00135	0.03400	0.02350	87	0.12994	0.07875	0.19800	0.13220
48	0.00311	0.00148	0.03530	0.02420	88	0.13951	0.08647	0.21500	0.14320
49	0.00350	0.00166	0.03670	0.02490	89	0.14955	0.09449	0.23300	0.15510
50	0.00392	0.00187	0.03830	0.02570	90	0.16012	0.10293	0.25250	0.16820
51	0.00437	0.00213	0.04010	0.02640	91	0.17131	0.11166	0.27390	0.18250
52	0.00486	0.00242	0.04200	0.02720	92	0.18291	0.12064	0.29720	0.19800
53	0.00536	0.00275	0.04390	0.02810	93	0.19478	0.12994	0.32260	0.21500
54	0.00590	0.00311	0.04600	0.02880	94	0.20689	0.13951	0.34950	0.23300
55	0.00646	0.00350	0.04820	0.02950	95	0.22134	0.14955	0.37890	0.25250
56	0.00705	0.00392	0.05060	0.03010	96	0.23700	0.16012	0.41090	0.27390
57	0.00767	0.00437	0.05310	0.03070	97	0.25325	0.17131	0.44580	0.29720
58	0.00831	0.00486	0.05550	0.03150	98	0.27090	0.18291	0.48380	0.32260
59	0.00901	0.00536	0.05810	0.03230	99	0.29016	0.19478	0.52430	0.34950
60	0.00987	0.00590	0.06030	0.03310	100	0.30913	0.20689	0.56840	0.37890
Ref	#152sb1x1	#154sb2x1	#250sb0x1	#251sb0x1		#152sb1x1	#154sb2x1	#250sb0x1	#251sb0x1

Pre-Retirement mortality is 50% of the regular post-retirement mortality values.

JOINT LIFE RETIREMENT VALUES
(8.25% INTEREST)

Sample Attained	Present Value of $1 Monthly for Life		Future Life Expectancy (years)	
Ages	Men	Women	Men	Women
50	$182.67	$184.82	29.17	34.67
55	170.40	172.61	24.82	30.06
60	155.98	158.31	20.70	25.67
65	139.48	141.76	16.82	21.50
70	121.62	123.47	13.32	17.57
75	103.29	104.62	10.36	13.99
80	85.27	86.19	7.83	10.91
Ref:	#152sb1x1	#154sb2x1		

The present values shown above are for illustrative purposes only and include the value of future post-retirement increases at 2.8% per year and a 50% survivor benefit. Males are assumed to be 3 years older than their female spouse.

RATES OF RETIREMENT

Age	Non-Uniform				Uniform	
	Male		Female		Male	Female
	Normal	Early	Normal	Early	Normal	
50	0.1200		0.1200		0.5000	0.5000
51	0.1200		0.1200		0.2000	0.2000
52	0.1200		0.1200		0.2500	0.2500
53	0.1200		0.1200		0.1500	0.1500
54	0.1200		0.1200		0.2500	0.2500
55	0.1200	0.0800	0.1200	0.0600	0.3000	0.3000
56	0.1200	0.0800	0.1200	0.0600	0.3000	0.3000
57	0.1200	0.0800	0.1200	0.0600	0.3000	0.3000
58	0.1200	0.0800	0.1500	0.0600	0.3000	0.3000
59	0.1200	0.0800	0.1500	0.0600	0.3000	0.3000
60	0.1600		0.1000		1.0000	1.0000
61	0.1800		0.1000		1.0000	1.0000
62	0.5000		0.5000		1.0000	1.0000
63	0.4000		0.1500		1.0000	1.0000
64	0.3000		0.1500		1.0000	1.0000
65	0.4000		0.5000		1.0000	1.0000
66	0.3500		0.5000		1.0000	1.0000
67	0.3500		0.5000		1.0000	1.0000
68	0.3500		0.5000		1.0000	1.0000
69	0.3500		0.5000		1.0000	1.0000
70	1.0000		1.0000		1.0000	1.0000
Ref	466	469	467	470	468	468

The rates of retirement used were the above rates with the following adjustments:

- For Non-Uniformed members retiring prior to age 62, rates were reduced by 80% of the original value for the first 2 years of eligibility, 60% for the third year, 40% for the fourth and 20% for the fifth. For Uniformed members retiring prior to age 62, rates were reduced by 40% of the original value for the first 2 years of eligibility, 30% for the third year, 20% for the fourth and 10% for the fifth.
- At five full years of eligibility 100% of the original rate was used. For members retiring prior to age 62 and 6 or more years form initial eligibility, 110% of the original rates were used.
- For members retiring at age 62 or later who were eligible for the BackDROP, 150% of the original retirement rates were used.
- Members with a normal retirement age of 62 or greater did not have the above rates adjusted.

RATES OF DISABILITY

Age	Non-Uniform		Uniform		Age	Non-Uniform		Uniform	
	Male	Female	Male	Female		Male	Female	Male	Female
21	0.0001	0.0006	0.0003	0.0003	51	0.0042	0.0059	0.0029	0.0029
22	0.0001	0.0006	0.0003	0.0003	52	0.0048	0.0068	0.0032	0.0032
23	0.0001	0.0006	0.0004	0.0004	53	0.0054	0.0081	0.0037	0.0037
24	0.0001	0.0006	0.0004	0.0004	54	0.0060	0.0097	0.0042	0.0042
25	0.0001	0.0007	0.0004	0.0004	55	0.0066	0.0063	0.0000	0.0000
26	0.0001	0.0007	0.0004	0.0004	56	0.0066	0.0079	0.0000	0.0000
27	0.0001	0.0007	0.0004	0.0004	57	0.0066	0.0097	0.0000	0.0000
28	0.0001	0.0007	0.0005	0.0005	58	0.0066	0.0116	0.0000	0.0000
29	0.0001	0.0008	0.0005	0.0005	59	0.0066	0.0135	0.0000	0.0000
30	0.0001	0.0008	0.0005	0.0005	60	0.0000	0.0000	0.0000	0.0000
31	0.0002	0.0009	0.0005	0.0005	61	0.0000	0.0000	0.0000	0.0000
32	0.0003	0.0010	0.0006	0.0006	62	0.0000	0.0000	0.0000	0.0000
33	0.0004	0.0011	0.0006	0.0006	63	0.0000	0.0000	0.0000	0.0000
35	0.0006	0.0012	0.0007	0.0007	65	0.0000	0.0000	0.0000	0.0000
36	0.0007	0.0013	0.0008	0.0008	66	0.0000	0.0000	0.0000	0.0000
37	0.0007	0.0014	0.0008	0.0008	67	0.0000	0.0000	0.0000	0.0000
38	0.0008	0.0016	0.0009	0.0009	68	0.0000	0.0000	0.0000	0.0000
39	0.0008	0.0017	0.0009	0.0009	69	0.0000	0.0000	0.0000	0.0000
40	0.0009	0.0019	0.0010	0.0010	70	0.0000	0.0000	0.0000	0.0000
41	0.0011	0.0022	0.0010	0.0010	71	0.0000	0.0000	0.0000	0.0000
42	0.0014	0.0024	0.0012	0.0012	72	0.0000	0.0000	0.0000	0.0000
43	0.0016	0.0027	0.0012	0.0012	73	0.0000	0.0000	0.0000	0.0000
44	0.0019	0.0031	0.0014	0.0014	74	0.0000	0.0000	0.0000	0.0000
45	0.0021	0.0034	0.0015	0.0015	75	0.0000	0.0000	0.0000	0.0000
46	0.0024	0.0038	0.0017	0.0017	76	0.0000	0.0000	0.0000	0.0000
47	0.0027	0.0041	0.0019	0.0019	77	0.0000	0.0000	0.0000	0.0000
48	0.0030	0.0045	0.0021	0.0021	78	0.0000	0.0000	0.0000	0.0000
49	0.0033	0.0049	0.0023	0.0023	79	0.0000	0.0000	0.0000	0.0000
50	0.0036	0.0053	0.0026	0.0026	80	0.0000	0.0000	0.0000	0.0000
Ref	#226x0.6	#227x1	#228x1	#228x1		#226x0.6	#227x1	#228x1	#228x1

RATES OF SEPARATION FROM ACTIVE EMPLOYMENT
LESS THAN 5 YEARS OF SERVICE

	Non-Uniform		Uniform	
Service	Male	Female	Male	Female
0-1	0.2000	0.1600	0.0500	0.0500
1-2	0.1000	0.0900	0.0400	0.0400
2-3	0.0700	0.0800	0.0300	0.0300
3-4	0.0600	0.0700	0.0200	0.0200
4-5	0.0500	0.0600	0.0200	0.0200
Ref	228	229	230	230

RATES OF SEPARATION FROM ACTIVE EMPLOYMENT
MORE THAN 5 YEARS OF SERVICE

	Non-Uniform		Uniform	
Age	**Male**	**Female**	**Male**	**Female**
25	0.0400	0.0550	0.0250	0.0250
26	0.0390	0.0550	0.0250	0.0250
27	0.0390	0.0530	0.0250	0.0250
28	0.0380	0.0530	0.0230	0.0230
29	0.0360	0.0520	0.0210	0.0210
30	0.0340	0.0520	0.0180	0.0180
31	0.0320	0.0510	0.0160	0.0160
32	0.0300	0.0510	0.0140	0.0140
33	0.0290	0.0500	0.0140	0.0140
34	0.0270	0.0480	0.0140	0.0140
35	0.0250	0.0460	0.0140	0.0140
36	0.0240	0.0440	0.0140	0.0140
37	0.0220	0.0420	0.0140	0.0140
38	0.0210	0.0390	0.0130	0.0130
39	0.0190	0.0370	0.0120	0.0120
40	0.0180	0.0350	0.0110	0.0110
41	0.0160	0.0330	0.0100	0.0100
42	0.0150	0.0300	0.0100	0.0100
43	0.0140	0.0300	0.0100	0.0100
44	0.0130	0.0300	0.0090	0.0090
45	0.0130	0.0300	0.0090	0.0090
46	0.0120	0.0300	0.0080	0.0080
47	0.0110	0.0300	0.0080	0.0080
48	0.0100	0.0290	0.0080	0.0080
49	0.0090	0.0280	0.0070	0.0070
50	0.0080	0.0260	0.0070	0.0070
51	0.0070	0.0240	0.0060	0.0060
52	0.0060	0.0230	0.0030	0.0030
53	0.0060	0.0210	0.0030	0.0030
54	0.0050	0.0190	0.0020	0.0020
55	0.0040	0.0140	0.0020	0.0020
56	0.0030	0.0090	0.0020	0.0020
57	0.0020	0.0040	0.0010	0.0010
58	0.0010	0.0030	0.0010	0.0010
59	0.0010	0.0020	0.0010	0.0010
60	0.0010	0.0010	0.0010	0.0010
Ref	#391x1	#392x1	#393x1	#393x1

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Administrative Expenses:	0.45% of payroll, based upon actual results from previous year.
Marriage Assumption:	90% of participants are assumed to be married for purposes of death-in-service benefits.
Pay Increase Timing:	Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing:	Decrements of all types are assumed to occur mid-year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Benefit Service:	Exact fractional service is used to determine the amount of benefit payable.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Other:	Disability and turnover decrements do not operate during retirement eligibility.
Miscellaneous Loading Factors:	The calculated normal and early retirement benefits were increased by 5% to account for the inclusion of unused sick leave in the calculation of Average Compensation. The present value of future retirement and vested benefits for the Closed Plan Non-Uniformed active members was increased by 0.23% to account for the transition of some members into the Year 2000 Plan. The Normal Cost for the normal retirement decrement for Non-Uniformed members was increased by 0.45% to account for anticipated changes in the pattern of retirements due to the Year 2000 Plan. Differences in benefits between the Closed Plan and the Year 2000 Plan are not expected to yield significant changes in the pattern of retirements for the Uniformed group.

SECTION F

Financial Principles and Operational Techniques

FINANCIAL PRINCIPLES AND OPERATIONAL TECHNIQUES OF THE RETIREMENT SYSTEM

Promises Made, and To Be Paid For. As each year is completed, the Retirement System in effect hands an "IOU" to each member then acquiring a year of service credit -- the "IOU" says: "The Highway and Transportation Employees' and Highway Patrol Retirement System owes you one year's worth of retirement benefits, payments in cash commencing when you qualify for retirement."

The principal related financial question is: When shall the money required to cover the "IOU" be contributed? This year, when the benefit of the member's service is received? Or, some future year when the "IOU" becomes a cash demand?

The objective of level percent-of-payroll financing is that this year's taxpayers contribute the money to cover the IOUs being handed out this year. By following this objective, ***the employer contribution rate will remain approximately level from year to year*** --- and will not have to be increased for future generations of taxpayers.

(There are systems which have a design for deferring contributions to future taxpayers, lured by a lower contribution rate now and putting aside the consequence that the contribution rate must then relentlessly grow much greater over decades of time.)

An inevitable by-product of the level-cost design is the accumulation of reserve assets, for decades, and the income produced when the assets are invested. ***Invested assets are a by-product and not the objective***. Investment income becomes the 3rd contributor for benefits to employees, and is interlocked with the contribution amounts required from employees and employer.

(Concluded on Next Page)

Translated to actuarial terminology, this level-cost objective means that the contribution rates must total at least the following:

> ***Normal Cost*** (the value assigned to service being rendered this year)
>
> . . . plus . . .
>
> ***Interest on Unfunded Actuarial Accrued Liabilities*** (the difference between liabilities for service already rendered and the accrued assets of the Retirement System).

Computing Contributions To Support System Benefits From a given schedule of benefits and from the employee data and asset data furnished by the system, the actuary determines the contribution rates to support the benefits, by means of ***an actuarial valuation***.

An actuarial valuation has a number of ingredients such as: the rate of investment return which plan assets will earn; the rates of withdrawal of active members who leave covered employment; the rates of mortality; the rates of disability; the rates of pay increases and the assumed age or ages at actual retirement.

In an actuarial valuation the actuary must assume what the above rates will be, for the next year and for decades in the future. Only the subsequent actual experience of the plan can indicate the degree of accuracy of the assumptions.

Reconciling Differences Between Assumed Experience and Actual Experience Once actual experience has occurred and has been observed, it will not coincide exactly with assumed experience, regardless of the skill of the actuary and the many calculations made. Most retirement systems cope with such differences by having annual actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is ***continuing adjustments to the financial position***.

THE ACTUARIAL VALUATION PROCESS

The ***actuarial valuation*** is the mathematical process by which the contribution rate is determined, and the flow of activity constituting the valuation may be summarized as follows:

A. ***Covered people data*** furnished by plan administrator, including:

Retired lives now receiving benefits

Former employees with vested benefits not yet payable

Active employees

B. + ***Asset data*** (cash & investments), furnished by the plan administrator

C. + ***Benefit provisions*** which specify eligibility and amounts of pensions

D. + ***Assumptions concerning future experience in various risk areas***, which are established by the Retirement Board after consulting with the actuary

E. + ***The funding method*** for employer contributions (the long-term, planned pattern for employer contributions)

F. + ***Mathematically combining the assumptions, the funding method, and the data***

G. = Determination of:

Plan Financial Position and/or

New Employer Contribution Rate

MEANING OF "UNFUNDED ACTUARIAL ACCRUED LIABILITIES"

"Actuarial accrued liabilities" are ***the portion of the present value of plan promises to pay benefits in the future that are not covered by future normal cost contributions***. A liability has been established ("accrued") because the service has been rendered but the resulting monthly cash benefit may not be payable until years in the future. Actuarial accrued liabilities are the result of complex mathematical calculations, which are made by the plan's actuary.

If "actuarial accrued liabilities" exceed the plan's accrued assets (cash & investments), the difference is ***"unfunded actuarial accrued liabilities."*** This is the usual condition. If the plan's assets equaled the plan's "actuarial accrued liabilities," then the plan would be termed "fully funded." This is an unusual condition.

Each time a plan adds a new benefit, which applies to service already rendered, an "actuarial accrued liability" is created, which is also an "unfunded actuarial accrued liability" because the plan can't print instant cash to cover the value of the new benefit promises. Payment for such unfunded actuarial accrued liabilities is spread over a period of years, commonly in the 20-50 year range.

Unfunded actuarial accrued liabilities can occur in another way: if actual plan experience is less favorable than assumed plan experience, the difference is added to unfunded actuarial accrued liabilities. In plans where benefits are directly related to an employee's pay near time of retirement, unfunded actuarial accrued liabilities rose dramatically during the 1970's. Unexpected rates of pay increase created additional actuarial accrued liabilities, which could not be matched by reasonable investment results. More recent experience has generally been more favorable with some reductions in unfunded actuarial accrued liabilities.

The existence of unfunded actuarial accrued liabilities is not bad, but ***the changes from year to year in the amount of unfunded actuarial accrued liabilities are important***, --- "bad" or "good" or somewhere in between.

Even though unfunded actuarial accrued liabilities don't constitute a bill payable immediately, it is important that policy-makers prevent the amount from becoming unreasonably high and ***it is vital for plans to have a sound method for making payments toward them*** so that they are controlled.

SECTION G

Long Term Disability Benefits Plan Actuarial Valuation

SUMMARY OF KEY VALUATION RESULTS AND COMMENTS AS OF JUNE 30, 2002

This portion of the valuation report summarizes the results of the actuarial valuation of the long-term disability benefits provided by HTEHPRS.

The results of this valuation indicate that the LTD Trust Fund assets are greater than the Present Value of Future Benefits for this program and no additional contribution is warranted.

	2002	2001
Number of Particpants		
Pensioners	71	70
Active Employees	8,695	9,087
Valuation Payroll	312,747,492	327,049,257
Book Value of Assets	8,406,577	9,035,143
Market Value of Assets	7,307,355	8,346,555
Actuarial Value of Assets	8,406,577	9,035,143
Present Value of Future Benefits	4,737,717	5,259,491
Present Value of Future Normal Cost	0	0
Recommended Contribution Rate	0.00%	0.00%

DETERMINATION OF NORMAL COST AS OF JUNE 30, 2002

	Year Ended June 30	
	2002	**2001**
1. Present Value of Future Benefits:		
a) Retirees	$ 1,811,508	$ 1,983,552
b) Actives	2,926,209	3,275,939
c) Total	4,737,717	5,259,491
2. Provision for Expenses (4%)	189,509	210,380
3. Trust Fund Assets	8,406,577	9,035,143
4. Present Value of Future Normal Costs: (1c) + (2) - (3)	0	0
5. Present Value of Future Salaries	3,372,045,196	3,539,338,258
6. Normal Cost Accrual rate: (4)/(5)	0.00000%	0.00000%
7. Expense Loading Factor	1.000	1.000
8. Total Normal Cost Percentage: (5) x (6) x (7)	0.00000%	0.00000%
9. Recommended Contribution as a Percentage of Payroll	0.00%	0.00%

SCHEDULE OF CASH FLOW

	2001-2002	2000-2001
Valuation Assets, Beginning of Year	$9,035,143	$8,758,145
External Cash Flow		
Contributions	-	-
Benefits	(515,679)	(490,433)
Expenses	(31,189)	(23,832)
Total	(546,868)	(514,265)
Investment Income	(81,698)	791,263
Adjustment for Change in Asset Method	-	-
Valuation Assets, End of Year	8,406,577	9,035,143

DEVELOPMENT OF LONG TERM DISABILITY ASSET ALLOCATION

	Year Ended June 30	
	2002	2001
1. Market value LTD Assets at July 1	$ 8,346,555	$ 9,037,874
2. Contributions for LTD	0	0
3. LTD Benefits Paid	515,679	490,433
4. Mean Investable LTD Funds (1) + .5 x [(2) - (3)]	8,088,716	8,792,658
5. Market Value for Total Assets at July 1	1,413,243,545	1,477,276,994
6. Total Contributions	78,080,722	81,353,019
7. Total Benefits Paid	133,498,815	111,985,065
8. Mean Investable Total Funds (5) + .5 x [(6) - (7)]	1,385,534,499	1,461,960,971
9. Total Fund Market Return	(84,332,813)	(29,438,821)
10. Total Fund Expenses	5,342,470	3,962,582
11. LTD Market Return [(4)/(8)] x (9)	(492,333)	(177,054)
12. LTD Expenses [(4)/(8)] x (10)	31,189	23,832
13. Market Value LTD assets at June 30 (1)+(2)-(3)+(11)-(12)	7,307,355	8,346,555
14. Book Value Total Fund at June 30	1,312,338,971	1,372,572,721
15. Actuarial Value Total Fund at June 30	1,458,914,009	1,529,835,552
16. Market Value Total Fund at June 30	1,268,150,170	1,413,243,545
17. Book Value LTD assets at June 30 [(14)/(16)] x (13)	7,561,980	8,106,355
18. Actuarial Value LTD assets at June 30 [(15)/(16)] x (13)	8,406,577	9,035,143

SUMMARY OF PROVISIONS EVALUATED AS OF JUNE 30, 2002

Coverage. All employees are covered on the first day of employment.

Eligibility Requirements. All employees who are unable to perform their present job or any other occupation and whose disability has been diagnosed as being of such a nature as to exist for more than one year may qualify for LTD benefits. Disabilities resulting from war, declared or undeclared, or any act of war are not covered.

Amount of Benefits. Eligible employees will receive LTD benefits equal to 60% of their salary immediately prior to becoming disabled, less any primary Social Security benefits, less any benefits provided at the cost of the Department or Patrol including Workers Compensation indemnity benefits. The minimum monthly benefit is 15% of salary, or $50, whichever is greater.

Cost of Living Adjustments. LTD recipients are not eligible to receive cost of living adjustments.

Duration of Benefits. Benefits commence after the later of a 180-day waiting period, the expiration of sick leave, or application for disability benefits. If benefits begin before age 60, benefits end at the earlier of age 65 or the age at which regular retirement benefits are claimed. If benefits begin on or after age 60, benefits continue until the earlier of the age at which retirement benefits are claimed, or the expiration of the period shown in the following table:

LTD Benefit Schedule

Age at Disability	Benefit Period (months)
60	60
61	48
62	42
63	36
64	30
65	24
66	21
67	18
68	15
69 and Over	12

Benefits will also cease if the disabled employee regains more than 50% of their earning capacity.

SAMPLE BENEFIT COMPUTATION FOR LTD RETIRING JULY 1, 2002

	Data	Description
A.	$40,000	Salary Immediately Prior to Disablement
B.	$11,000	Social Security Disability PIA

Sample Computation Steps

C. LTD Retirement Benefit Formula: 0.60 x $ 40,000 - $ 11,000 = $13,000

Benefit payable to:

D. Retirant until normal retirement (C) $13,000

Projected Benefits to Member

Year Ended June 30	Amount Payable
2001	$13,000
2002	$13,000
2003	$13,000
2004	$13,000
2005	$13,000
2006	$13,000
2007	$13,000
2008	$13,000
2009	$13,000
2010	$13,000

SCHEDULE OF LONG TERM DISABILITY RECIPIENTS
AS OF JUNE 30, 2002
NUMBER AND AVERAGE BENEFITS BY AGE

Age	Number	Percent	Benefit Amount	Average Benefit
Less than 20	0	0%	$ 0	$ 0
20-24	0	0%	0	0
25-29	1	1%	887	887
30-34	3	4%	3,819	1,273
35-39	3	4%	1,847	616
40-44	16	23%	14,219	889
45-49	10	14%	10,331	1,033
50-54	15	21%	11,798	787
55-59	11	16%	6,924	629
60-64	12	17%	5,697	475
65-69	0	0%	0	0
70 & Over	0	0%	0	0
TOTAL	**71**	**100%**	**$55,522**	**$ 782**

Summary of Actuarial Methods as of June 30, 2002

The actuarial cost method of valuation used in determining all benefit liabilities and normal cost was the aggregate cost method. Normal costs were computed as the level percentage of future active participant covered pay required to fund the difference between the present value of all future benefits and the actuarial value of assets.

Assets are valued on a market-related basis. At each year-end (June 30), the funding asset value is moved toward market value, by immediate recognition of assumed earnings and a three-year phase-in of the difference between actual and assumed earnings.

Duration of benefits: It was assumed that LTD benefits would be paid until first eligibility for normal retirement benefits.

Miscellaneous and Technical Assumptions

Operating Expenses	4% of the Present Value of Future Benefits for all future expenses.
Surviving Spouses	90% of employees dying in-service will have an eligible beneficiary the same age. Note that surviving spouse benefits are not payable from the LTD plan.
Disability Benefit	All future disabilities are assumed covered by LTD benefits.
Offsets to LTD Benefits	It was assumed Workers Compensation indemnity benefits would be zero, and that Social Security Disability PIA benefits would apply.

October 24, 2002

Mr. Norm Robinson, Executive Director
Highway and Transportation Employees' and
Highway Patrol Retirement System
1913 Williams Street
Jefferson City, MO 65109

Dear Norm:

Enclosed are 20 bound copies of the June 30, 2002 actuarial valuation of the Highway and Transportation Employees' and Highway Patrol Retirement System.

An additional unbound, 3-hole punched copy is enclosed for your convenience.

Sincerely,

Mark K. Johnson

MKJ\mj
Enclosures

CC: Brian B. Murphy

BC: Norman Jones
Brad Armstrong
Mita Drazilov
Judy Kermans

October 24, 2002

Mr. Norm Robinson, Executive Director
Highway and Transportation Employees' and
Highway Patrol Retirement System
1913 Williams Street
Jefferson City, MO 65109

Dear Norm:

Enclosed are 20 bound copies of the June 30, 2002 actuarial valuation of the Highway and Transportation Employees' and Highway Patrol Retirement System.

An additional unbound, 3-hole punched copy is enclosed for your convenience.

Sincerely,

Mark K. Johnson

ZAG/mj/lr
Enclosures

CC: Brian B. Murphy