The Report of the Annual Actuarial Valuation of the Ohio State Highway Patrol Retirement System

December 31, 2004

Gabriel, Roeder, Smith & Company
Actuaries • Consultants

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August 16, 2005

The Retirement Board
Ohio State Highway Patrol Retirement System
Columbus, Ohio

Ladies and Gentlemen:

The results of the regular annual **actuarial valuation as of December 31, 2004** of the Ohio State Highway Patrol Retirement System, as established by Chapter 5505 of the Revised Code, are presented in this report.

Your Executive Director furnished the member statistical data required for the valuation, 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 F of this report.

Your attention is directed particularly to the summary of results on pages 2, 3, 4, and 5.

The actuarial calculations were performed in accordance with accepted actuarial procedures. The calculations were based upon provisions of the Retirement System described in Section A 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, F.S.A. Mita D. Drazilov, A.S.A.

BBM:dks:lr

SUMMARY

Valuations performed as of odd-numbered years (2001, 2003, 2005...) form the basis for employer contribution rates, which are effective over two-year periods. Valuations performed as of even-numbered years are intended to provide interim measures of the funding status of the Retirement System, and to provide the Board an opportunity to reallocate the total employer contribution rate between the pension and retiree health programs, if necessary.

The employer contribution rate for the two-year period beginning July 1, 2003 was determined in accordance with the December 31, 2001 valuation. The employer contribution rate for the two-year period beginning July 1, 2005 was determined in accordance with the December 31, 2003 valuation.

The **total employer contribution rate** for the two-year period beginning July 1, 2005 is 25.50%, as established by the Board based upon the results of the December 31, 2003 actuarial valuation. The breakdown between employer, employee, pension and health is shown below assuming that employer and employee rates remain unchanged. This breakdown produces an amortization period of 34 years for pensions.

	Employer Contribution Rates Expressed As % of Active Payroll		
	Retirement, Survivor & Disability Allowances	**Post Retirement Health Care**	**Total**
Employer	22.00%	3.50%	25.50%
Employee	10.00%	0.00 %	10.00%
Total	32.00%	3.50%	35.50%

The previous biennium's (July 1, 2003 to June 30, 2005) total employer contribution rate was 24.50%, as established by the Board based upon the results of the December 31, 2001 actuarial valuation. The allocation of the 25.50% total employer contribution rate between the pension and retiree health programs established by the December 31, 2003 actuarial valuation was 22.00% and 3.50% respectively. This resulted in a computed amortization period of 32 years. (Incorporation of the age 60 maximum retirement age benefit change effective September 16, 2004 lowered the computed amortization period to 29 years). This allocation applies to the period July 1, 2005 through June 30, 2006. This valuation will establish the allocation of the total employer contribution rate for the period July 1, 2006 through June 30, 2007.

Market value investment return in 2004 was close to 12% and exceeded the actuarial assumed investment return rate by about 4%. This helped to offset a portion of the unrecognized investment losses from calendar years 2001 and 2002. The market value of assets now exceeds the funding value of assets as of December 31, 2004.

Favorable experience in the retiree health program during the calendar year has had a positive effect on the solvency period of the retiree health fund. The solvency period has improved since the last actuarial valuation based on intermediate trend assumptions. Effective in 2003 for spouses and in 2004 for retired members, the HPRS Retiree Health Plan became a secondary payer for individuals with other available coverage, for example from other employment. The effect of the change on spouses and members was reflected in this valuation.

Non-investment net cash flow is declining (please see page D-3) and has been negative since 1998. This means that the Retirement System has reached the point wherein a portion of investment return is needed to pay benefits. Eventually, about 3.8% of assets are expected to be needed to pay benefits each year. This is a normal and expected condition.

This valuation indicates that a total employer contribution rate of 25.50% with an employee rate of 10.00% is not quite sufficient to produce an amortization period for the pension program of 30 years or less, based upon the current allocation between pensions and retiree health for the 1 year period beginning July 1, 2006. However, because the market value of assets exceeds the funding value of assets, the amortization period will drop below 30 years fairly rapidly provided that experience is in line with assumptions. In order to achieve a 30-year amortization period as of the December 31, 2004 valuation, the employer contribution rate to the pension program would need to increase to 22.70% from the current 22.00%. Similarly, an additional $10 million of recognized assets would have produced 30 years in this valuation.

Comment on Post Retirement Health Care:

With regard to the retiree health plan, higher contributions are required to extend the solvency of the fund. Historically, contributions have been higher than the 3.5% level. The benefit payout rate currently exceeds 8% of payroll, more than double the contribution income. This situation cannot continue indefinitely. Changes to the retiree health plan and/or increases in contribution rates will need to be a part of the future. The Board may wish considering reviewing the investment return assumption used for solvency projections. Please see pages B-7 and B-10 for details.

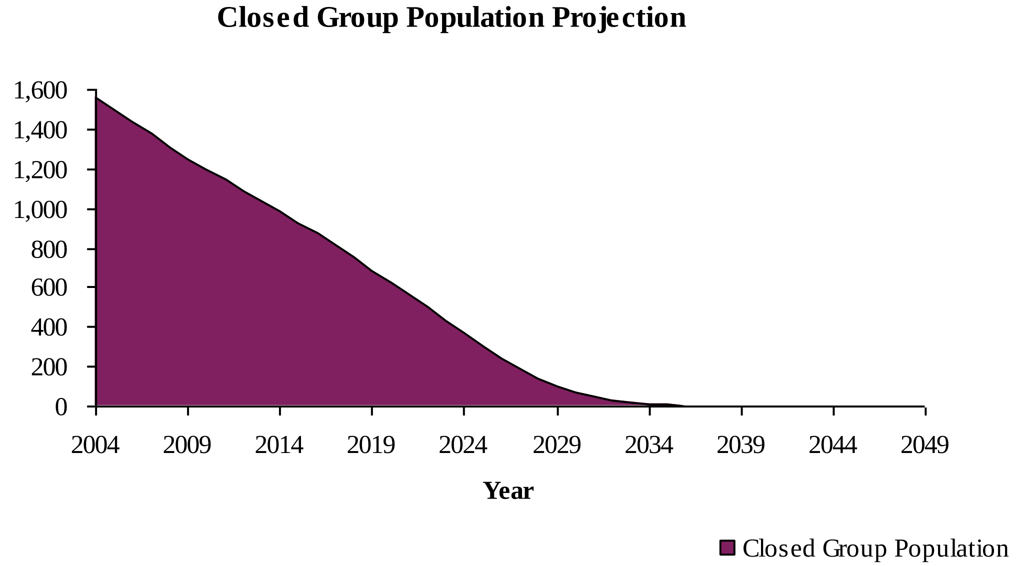
Recommendation: The following reserve transfers are recommended as of December 31, 2004:

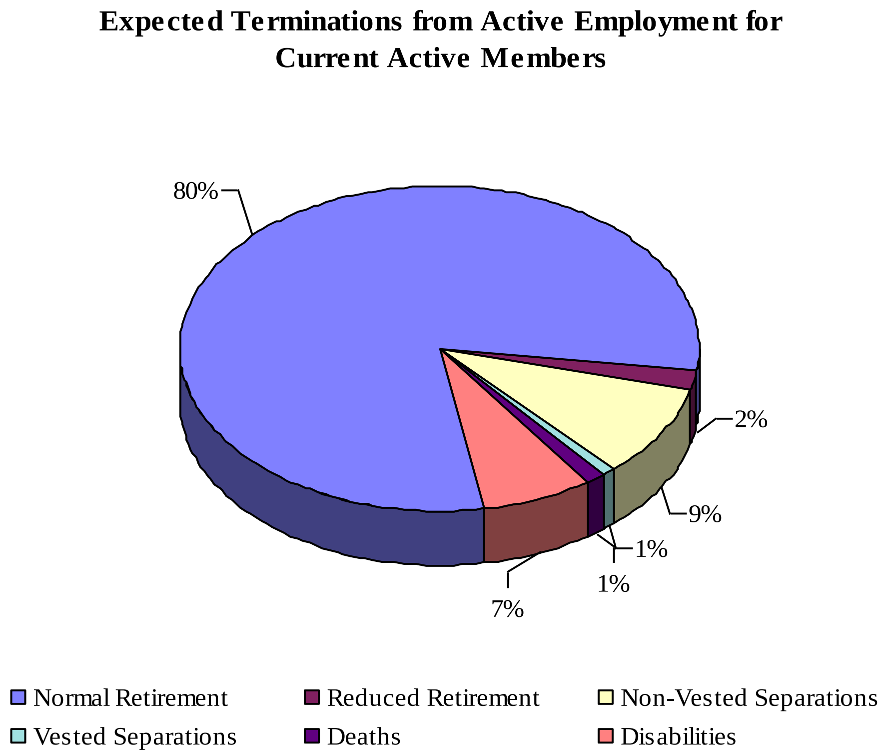
Transfer To (From)	Total Amount
Pension Reserve Fund:	$64,914,746
Survivor Benefit Fund:	5,250,087
Total	$70,164,833

The reserve funds from which the transfers are made are determined as follows: First, the accumulated contributions of members who retired or died with survivor benefits payable prior to January 1, 2005 should be transferred from the Employees' Savings Fund if this has not already been done. The remainder of the transfer should then be taken from the Income Fund or the Employer's Accumulation Fund, as the Board deems appropriate. The purpose of these transfers is to ensure that all pension benefits that have come into pay status since January 1, 1966 are fully funded by the appropriate reserve funds. Benefits effective prior to January 1, 1966 represent a closed group and are paid from the Employer's Accumulation fund.

Conclusion: Based upon the results of the December 31, 2004 regular annual actuarial valuation, it is our opinion that with regard to pension benefits, the Ohio State Highway Patrol Retirement System is in sound condition in accordance with actuarial principles of level-cost financing. A small contribution increase or the passage of time will bring the amortization period to the 30 year target. With regard to the Retiree Health Plan, solvency to 2021 is a relatively favorable result, but most people near retirement will live longer than that and will need a retiree health plan longer than that. A combination of contribution increases and continued cost containment measures will be important for the retiree health plan to accomplish its objectives.

EXPECTED DEVELOPMENT OF PRESENT POPULATION
DECEMBER 31, 2004





The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 1,562 active members. Eventually, 9% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 83% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or by separating from service without withdrawing contributions. 8% of the present population is expected to become eligible for death-in-service or disability benefits. Within 15 years, over half of the covered membership is expected to consist of new hires.

Section A

Retirement, Survivor, and Disability Allowances

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
BENEFITS AND CONDITIONS VALUED
DECEMBER 31, 2004

Age & Service Pension: A member may retire at age 52 to age 60, provided he has 20 or more years of service, or at age 48 with 25 or more years of contributing service. The member's pension equals the sum of 2-1/2% of final average salary (average of salaries during highest 3 years) times years of service not in excess of 20, 2-1/4% of final average salary times years of service in excess of 20 but not in excess of 25 and 2% of final average salary times years of service in excess of 25. The maximum pension payable is 79.25% of the member's final average salary. A member must retire upon attainment of age 60 or completion of 20 years of service, whichever occurs later.

Reduced Retirement: A member who has acquired at least 20 but less than 25 years of service and is between the ages of 48 and 52 is eligible to receive a Pension computed in the same manner as an Age & Service pension but reduced as follows:

Age	Percent of Age & Service Pension
48	75%
49	80
50	86
51	93
52	100

Deferred Pension: A member who has acquired 20 years of service and retires is eligible to receive a pension computed in the same manner as an Age & Service Pension at the attainment of age 52. A reduced benefit is payable if the retirant elects to receive a benefit after age 48 and prior to age 52. The reduction is waived for members with 25 or more years of service. A member, who has acquired 15 years of service and who voluntarily resigns or is discharged, is eligible to receive a pension equal to 1-1/2% of final average salary multiplied by total service. The pension shall begin the first month after attainment of age 55, provided the member does not withdraw his accumulated contributions from the employees' savings fund.

(Continued on Next Page)

Disability Pension:

A. **On-Duty:** A member who is permanently disabled with a duty-related injury is eligible to receive a pension that is the largest of (I) 61.25% of average final salary, or (ii) the Age & Service Pension.

B. **Off-Duty:** A member who is permanently disabled with a non-duty related injury or illness is eligible to receive a pension that is the larger of (I) 50% of average annual salary, or (ii) the Age & Service Pension.

Survivor's Benefits: The spouse of a deceased retirant (other than a deferred retirant) is eligible to receive a pension of $900 a month, or 50% of the computed monthly pension the retirant was receiving, whichever is greater. The surviving spouse of an active member or of a deferred retirant who *was not* yet eligible for an immediate pension benefit is eligible to receive a pension of $900 per month. The surviving spouse of an active member or of a deferred retirant who *was* eligible for an immediate pension benefit is eligible to receive $900 per month or 50% of the immediate benefit for which the retiree was eligible, whichever is greater. The benefit terminates upon death. Each surviving child of a deceased member or retirant is eligible for a pension of $150 a month until attainment of age 18, marriage, or death. The benefit may be continued to age 23 if the child is a full-time student. Each surviving child regardless of age, who was totally dependent upon the deceased member or retirant at his death because of physical or mental disability is eligible to receive a pension of $150 per month until his death or recovery from the disability. If there is no spouse or surviving children, each dependent parent is eligible to receive a pension of $154 a month. Additionally, a $5,000 lump sum benefit is payable upon the death of the retirant.

(Concluded on Next Page)

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
BENEFITS AND CONDITIONS VALUED
DECEMBER 31, 2004
(CONCLUDED)

Minimum Benefit: All members who retired with an Age & Service Pension or Disability Benefit are eligible to receive a minimum benefit of $1,050 per month.

Members' Contributions to the Fund: Members contribute 10.0% of salary to the employees' savings fund. A member who leaves the employ of the State Highway Patrol before a benefit is payable may withdraw the accumulated contributions, without interest, in lieu of any other system provided benefit.

State Contributions: The state contributes the remaining amount necessary to finance the Retirement System on an actuarial basis. By statute, the state's contribution rate can be neither less than the member contribution rate, nor more than three times the member rate.

Post-Retirement Increases: The basic benefit for all retirants is increased by 3 percent each year after age 53. The retirant must have also been receiving monthly benefits for at least twelve months. Benefit recipients receiving survivor benefits are eligible for the increase after receiving benefits for twelve months. Benefit recipients receiving disability benefits are eligible for the increase after receiving benefits for sixty months or age 53 whichever occurs first.

PLUS: A qualified member may elect a partial lump sum benefit of not less than 6 times the monthly amount payable to the member as a single lifetime pension and not more than 60 times that amount.

SAMPLE BENEFIT COMPUTATION FOR MEMBERS

Assumed data in connection with this sample retirement is shown below:

	Data	Description
A.	$40,000	Final Average Compensation
B.	27	Years of Credited Service
C.	50	Age of Retirant
D.	50%	Percentage to continue to spouse after retirant's death (this is automatic)

Sample Computation Steps

E. Benefit Formula:	0.0250 x 20 x $40,000 =	$20,000
	0.0225 x 5 x $40,000 =	$4,500
	0.0200 x 2 x $40,000 =	$1,600
		$26,100

Benefit payable to:

F. Retirant while spouse is alive (E)	$26,100
G. Spouse after retirant's death (D x E)	$13,050
H. Retirant after spouse's death (E)	$26,100

Projected Benefits to Member

Year Ended December 31	Amount Payable
2005	$ 26,100
2006	26,100
2007	26,100
2008	26,883
2009	27,666
2010	28,449
2011	29,232
2012	30,015
2013	30,798

Benefits for years 2014 and later increase by $783 over the previous year's amount.

RETIREMENT SURVIVOR & DISABILITY ALLOWANCES
COMPUTED EMPLOYER CONTRIBUTIONS TO SUPPORT BENEFITS

Contributions for	Contributions Expressed as Percents of Payroll	
Valuation Date - December 31	**2004**	**2003**
Contributions for the Period Beginning July 1	**2006**	**2005**
Normal Cost:		
Age & Service Benefits	17.00%	17.24%
Disability Benefits	2.95%	2.96%
Survivor Benefits	0.27%	0.25%
Separation Benefits	0.86%	0.86%
Purchase of Military Service	0.60%	0.60%
Total Normal Cost	21.68%	21.91%
Less Member Contributions	10.00%	10.00%
Employer Normal Cost	11.68%	11.91%
Unfunded Actuarial Accrued Liabilities	10.32%	10.09%
Amortization Period	34 years	32 years
EMPLOYER CONTRIBUTION RATE IN EFFECT	22.00%	22.00%

The amortization period is the period of years over which the employer contribution rate and the employee contribution rate will finance the unfunded liabilities.

The results shown above as of December 31, 2004 incorporate the age 60 maximum retirement age benefit change which became effective September 16, 2004. The results shown above as of December 31, 2003 do not incorporate that benefit change. If the benefit change had been incorporated as of December 31, 2003, the amortization period would have been 29 years instead of the 32 years shown above.

RETIREMENT, SURVIVOR, & DISABILITY ALLOWANCES
METHOD OF FINANCING FUTURE BENEFITS FOR
PRESENT ACTIVE MEMBERS
DECEMBER 31, 2004

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) each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

Actuarial Accrued Liabilities, $734,464,371, less pension assets of $569,858,387 resulted in unfunded actuarial accrued liabilities of $164,605,984, which were amortized as a level percent of payroll over a period of 34 years. The characteristics of this method are illustrated on the following page. Actuarial accrued liabilities represent the portion of present values not covered by future normal cost contributions.

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES FINANCING UNFUNDED ACTUARIAL ACCRUED LIABILITIES WHICH WERE CALCULATED USING AN INFLATION ASSUMPTION OF 4.00% AND AN INVESTMENT RETURN ASSUMPTION OF 8.00% COMPOUNDED ANNUALLY

Level % of Payroll Amortization: Closed Amortization Completed in 34 Years ($ Thousands)

Year	Active Employee Payroll	Unfunded Actuarial Accrued Liability	Annual Contributions		UAAL as % of Payroll
			Dollars	% of Payroll	
1	$ 85,028	$ 164,606	$ 8,775	10.32%	193.6%
2	88,429	168,655	9,126	10.32%	190.7%
3	91,966	172,664	9,491	10.32%	187.7%
4	95,645	176,614	9,871	10.32%	184.7%
5	99,471	180,485	10,265	10.32%	181.4%
6	103,450	184,256	10,676	10.32%	178.1%
7	107,588	187,902	11,103	10.32%	174.6%
8	111,892	191,395	11,547	10.32%	171.1%
9	116,368	194,706	12,009	10.32%	167.3%
10	121,023	197,802	12,490	10.32%	163.4%
11	125,864	200,647	12,989	10.32%	159.4%
12	130,899	203,200	13,509	10.32%	155.2%
13	136,135	205,417	14,049	10.32%	150.9%
14	141,580	207,250	14,611	10.32%	146.4%
15	147,243	208,646	15,195	10.32%	141.7%
16	153,133	209,546	15,803	10.32%	136.8%
17	159,258	209,886	16,435	10.32%	131.8%
18	165,628	209,597	17,093	10.32%	126.5%
19	172,253	208,601	17,777	10.32%	121.1%
20	179,143	206,815	18,488	10.32%	115.4%
21	186,309	204,147	19,227	10.32%	109.6%
22	193,761	200,497	19,996	10.32%	103.5%
23	201,511	195,756	20,796	10.32%	97.1%
24	209,571	189,805	21,628	10.32%	90.6%
25	217,954	182,513	22,493	10.32%	83.7%
26	226,672	173,739	23,393	10.32%	76.6%
27	235,739	163,328	24,328	10.32%	69.3%
28	245,169	151,112	25,301	10.32%	61.6%
29	254,976	136,907	26,314	10.32%	53.7%
30	265,175	120,514	27,366	10.32%	45.4%
31	275,782	101,715	28,461	10.32%	36.9%
32	286,813	80,275	29,599	10.32%	28.0%
33	298,286	55,937	30,783	10.32%	18.8%
34	310,217	28,421	32,014	10.32%	9.2%

Retirement, Survivor, and Disability Allowances
Actuarial Present Value of Future Benefits
Present Retired Lives and Vested Deferred Cases
December 31, 2004

Benefits Payable	Number	Monthly Amount	Actuarial Value
From Employer Accumulation Fund:			
Regular Retirements Effective Before 1/1/66	2	$ 3,210	$ 111,619
Disability Retirements Effective Before 1/1/66	0	0	0
Total Benefits Payable from Employer Accumulation Fund	2	3,210	111,619
From Pension Reserve Fund:			
Regular Retirements Effective After 1/1/66	938	2,570,685	383,542,885
Disability Retirements Effective After 1/1/66	83	181,872	28,231,039
Total Benefits Payable from Pension Reserve Fund	1,021	2,752,557	411,773,924
From Survivor Benefit Fund:			
Surviving Spouses, Dependent Children & Dependent Parents	259	267,574	29,484,612
Total Benefits Payable from Survivor Benefit Fund	259	267,574	29,484,612
Total Retirement Benefits Payable	1,282	3,023,341	441,370,155
Total Vested Deferred Benefits Payable	9	23,650	3,714,636
Grand Total	**1,291**	**$3,046,991**	**$445,084,791**

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
DEVELOPMENT OF ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 2004

Actuarial Present Value, December 31, of	(1) Total Actuarial Present Value	(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1) - (2)
Age & service allowances based on service rendered before and likely to be rendered after valuation date	$ 430,795,753	$ 150,173,338	$ 280,622,415
Disability allowances likely to be paid to present active members who become totally and permanently disabled	32,207,198	25,262,151	6,945,047
Survivor benefits likely to be paid to spouses and children of present active members who die before retiring	3,279,792	2,159,154	1,120,638
Separation benefits (refunds of contributions and deferred allowances likely to be paid on behalf of present active members)	7,753,938	7,062,458	691,480
Retirement benefits likely to be paid to current retirants and beneficiaries and to present inactive members	445,084,791	0	445,084,791
Total	$ 919,121,472	$ 184,657,101	$ 734,464,371
Member portion	170,615,783	84,701,846	85,913,937
Employer portion	$ 748,505,689	$ 99,955,255	$ 648,550,434

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
SUMMARY STATEMENT OF SYSTEM RESOURCES AND OBLIGATIONS
DECEMBER 31, 2004

PRESENT RESOURCES AND EXPECTED FUTURE RESOURCES

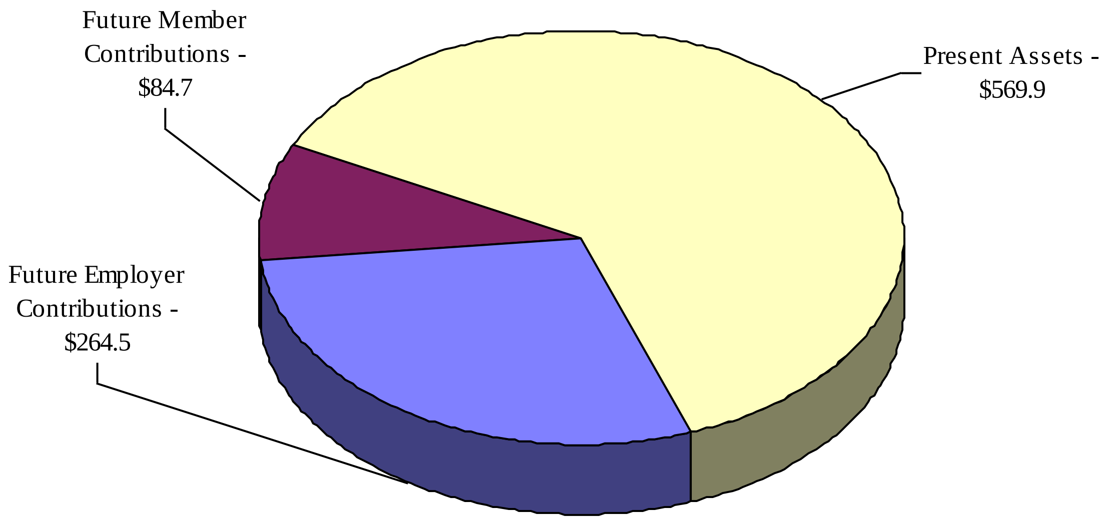
A. Present valuation assets		
1. Net assets from system financial statements	$ 684,569,250	
2. Market Value Adjustment	(21,044,615)	
3. Health Assets	93,666,248	
4. Valuation Assets: 1 + 2 - 3		$ 569,858,387
B. Actuarial present value of expected future Employer contributions		
1. For normal costs	99,955,255	
2. For unfunded actuarial accrued liability	164,605,984	
3. Total		264,561,239
C. Actuarial present value of expected future member contributions		84,701,846
D. Total Present and Expected Future Resources		$ 919,121,472

ACTUARIAL PRESENT VALUE OF EXPECTED FUTURE BENEFIT PAYMENTS

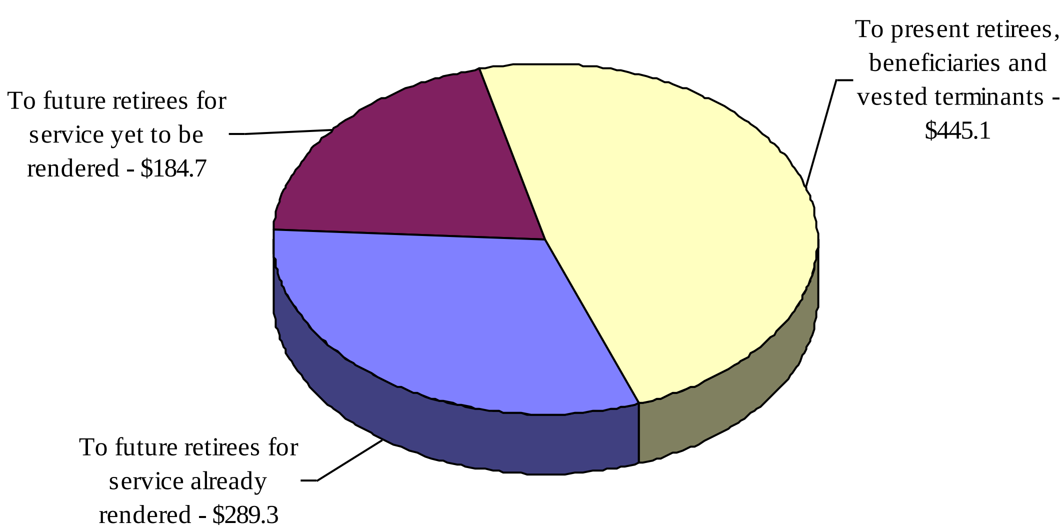
To retirants and beneficiaries	$ 441,370,155
To terminated members	3,714,636
To present active members	
1. Allocated to service rendered prior to valuation date (actuarial accrued liability)	289,379,580
2. Allocated to service likely to be rendered after valuation date	184,657,101
3. Total	474,036,681
Total Actuarial Present Value of Expected Future Benefit Payments	$ 919,121,472

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
FINANCING $919.1 MILLION OF BENEFIT PROMISES
DECEMBER 31, 2004

Sources of Funds



Uses of Funds



RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
COMPARATIVE STATEMENT

Valuation Date December 31	No.	Annual Payroll	Actuarial Accrued Liabilities			Unfunded/ Payroll	% Funded	Funding Years
			Total	Funded	Unfunded			
1988	1,260	$ 40,674,634	$ 214,162,666	$ 158,657,067	$ 55,505,599	1.4	74.1%	30
1989	1,265	43,053,057	239,028,444	166,190,394	72,838,050	1.7	69.5%	30
1990 *#	1,301	45,679,355	261,623,337	188,239,168	73,384,169	1.6	72.0%	30
1991	1,326	48,488,406	289,223,978	222,109,351	67,114,627	1.4	76.8%	23
1992	1,371	50,235,996	309,272,482	258,609,387	50,663,095	1.0	83.6%	18
1993 *	1,467	55,781,585	351,456,425	297,050,305	54,406,120	1.0	84.5%	22
1994	1,465	58,116,787	378,058,385	330,787,044	47,271,341	0.8	87.5%	16
1994 #	1,465	58,116,787	374,006,767	330,787,044	43,219,723	0.7	88.4%	12
1995	1,455	59,825,356	402,450,332	370,425,462	32,024,870	0.5	92.0%	8
1996	1,375	59,239,349	454,514,187	411,316,254	43,197,933	0.7	90.5%	16
1997	1,445	62,233,299	487,392,406	460,667,112	26,725,294	0.4	94.5%	9
1997 *	1,445	62,233,299	496,917,335	460,667,112	36,250,223	0.6	92.7%	17
1998	1,446	65,153,864	532,956,745	509,859,924	23,096,821	0.4	95.7%	10
1999	1,445	66,017,381	564,672,560	546,510,779	18,161,781	0.3	96.8%	7
1999 *	1,445	66,017,381	577,010,085	546,510,779	30,499,306	0.5	94.7%	20
2000	1,489	69,028,285	607,411,320	569,858,387	37,552,933	0.5	93.8%	26
2000 #	1,489	69,028,285	594,222,603	570,039,631	24,182,972	0.4	95.9%	8
2001	1,520	76,344,002	636,715,458	551,279,438	85,436,020	1.1	86.6%	31
2002 #	1,548	78,997,065	668,605,932	492,430,826	176,175,106	2.2	79.6%	32
2003	1,542	81,737,962	702,799,017	545,981,513	156,817,504	1.9	77.7%	32
2004	**1,562**	**81,757,707**	**737,867,378**	**569,858,387**	**168,008,991**	**2.1**	**77.2%**	**37**
2004 *	**1,562**	**81,757,707**	**734,464,371**	**569,858,387**	**164,605,984**	**2.0**	**77.6%**	**34**

* *Plan amended.*
\# *Revised actuarial assumptions or methods.*

While no one or two numeric indices can fully describe the financial condition of a retirement plan, ***the ratio of unfunded actuarial accrued liabilities to active member payroll ("Unfunded/Payroll" above) is significant***. Unfunded actuarial accrued liabilities represent a kind of debt, while active member payroll represents the Plan's capacity to collect contributions to pay toward debt --- thus ***the ratio is a relative index of condition***. ***The lower the ratio, the greater the financial strength***. And vice-versa.

CHANGES IN AVERAGE PAY

Year	Number of Members	Total Payroll	Average Pay	% Change from Prior Year in Average Pay	N.A.E.+	CPI
1990	1,301	$45,679,355	$35,111	3.2%	4.6%	6.2%
1991	1,326	48,488,406	36,567	4.1%	3.7%	3.0%
1992	1,371	50,235,996	36,642	0.2%	5.2%	3.0%
1993	1,467	55,781,585	38,024	3.8%	0.9%	2.7%
1994	1,465	58,116,787	39,670	4.3%	2.7%	2.7%
1995	1,455	59,825,356	41,117	3.6%	4.0%	2.6%
1996	1,375	59,239,349	43,083	4.8%	4.9%	3.3%
1997	1,445	62,233,299	43,068	(0.0)%	5.8%	1.7%
1998	1,446	65,153,864	45,058	4.6%	5.2%	3.4%
1999	1,445	66,017,381	45,687	1.4%	5.6%	2.7%
2000	1,489	69,028,285	46,359	1.5%	5.5%	3.4%
2001	1,520	76,344,002	50,226	8.3%	2.4%	1.6%
2002	1,548	78,997,065	51,032	1.6%	1.0%	2.4%
2003	1,542	81,737,962	53,008	3.9%	2.4%	1.9%
2004	1,562	81,757,707	52,342	(1.3)%	2.9% *	3.3%
		10 Year Average		2.8%	4.0%	2.6%

+ *National Average Earnings published by the Social Security Administration.*
* *Estimated National Average Earnings published by the Social Security Administration.*

Over long periods of time, the change in average pay is an approximate measure of the impact of inflation and "Across the Board" pay increases on member pays. In years when the number of members decreases, the change in average pay may tend to be greater than actual pay increases experienced by members. In years when the number of members increases the change in average pay may tend to be less than actual pay increases experienced by members.

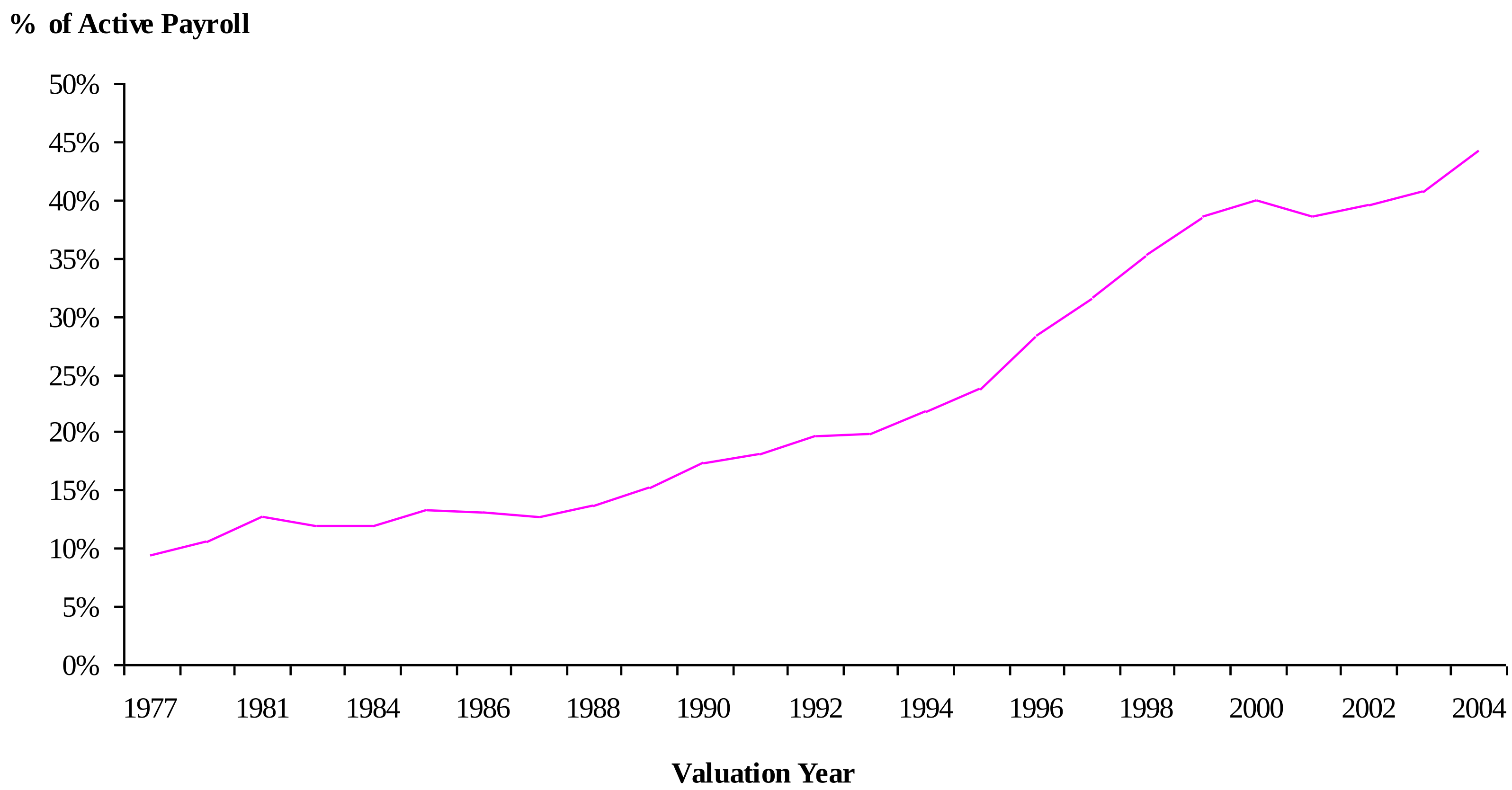
Retirement, Survivor, and Disability Benefits in Pay Status Comparative Statement

Valuation Date December 31	Number of People	Monthly Pensions	Active Payroll	Average Amount	% of Active Member Pays
1970(6/30) #	193	$ 54,607	$ 10,223,188	$ 283	6.4%
1974 #*	288	96,045	16,942,378	333	6.8%
1977 *	346	148,133	18,995,363	428	9.4%
1979 #	402	191,356	21,558,774	476	10.7%
1981 *	445	250,287	23,539,234	562	12.8%
1983	488	299,519	30,234,935	614	11.9%
1984	504	319,789	32,020,914	634	12.0%
1985 #	530	359,208	32,500,428	678	13.3%
1986	544	382,419	34,757,277	702	13.2%
1987 *#	558	427,132	39,938,921	765	12.8%
1988	575	466,519	40,674,634	811	13.8%
1989	599	544,631	43,053,057	909	15.2%
1990 *#	654	660,112	45,679,355	1,009	17.3%
1991	675	732,576	48,488,406	1,085	18.1%
1992	706	819,869	50,235,996	1,161	19.6%
1993 *	723	927,168	55,781,585	1,282	19.9%
1994 #	764	1,057,577	58,116,787	1,384	21.8%
1995 *#	826	1,184,405	59,825,356	1,434	23.8%
1996	911	1,402,909	59,239,349	1,540	28.4%
1997 *	984	1,645,613	62,233,299	1,672	31.7%
1998	1,060	1,914,091	65,153,864	1,806	35.3%
1999 *	1,123	2,123,471	66,017,381	1,891	38.6%
2000 #	1,174	2,300,464	69,028,285	1,960	40.0%
2001	1,207	2,460,308	76,344,002	2,038	38.7%
2002	1,231	2,603,108	78,997,065	2,115	39.5%
2003	1,253	2,770,149	81,737,962	2,211	40.7%
2004	**1,282**	**3,023,341**	**81,757,707**	**2,358**	**44.4%**

* *Plan amended.*
\# *Revised actuarial assumptions or methods.*

Pensions expressed as a % of payroll exceed contribution income by a considerable margin. This is a normal and expected condition in a funded plan such as HPRS, but it does have implications for cash flow and investment planning.

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES BEING PAID EXPRESSED AS A % OF ACTIVE MEMBER PAYROLL DECEMBER 31, 2004



The employer contribution rate for the year ended June 30, 2007 is scheduled to be 22.00%.

SHORT-TERM SOLVENCY TEST

The HPRS financing objective is to pay for the benefits through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to the system are level in concept and soundly executed, the system will *pay all promised benefits when due – the ultimate test of financial soundness.*

Short-term solvency test is one means of checking a system's progress under its funding program. In a short-term solvency test, the plan's present assets (cash and investments) are compared with: 1) Active member contributions on deposit; 2) The liabilities for future benefits to present retired lives; 3) The liabilities for service already rendered by active members. In a system that has been following the discipline of level percent financing, the liabilities for active member contributions on deposit (1) and the liabilities for future benefits to present retired lives (2) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by active members (3) will be partially covered by the remainder of present assets. Generally, if the system has been using level cost financing, the funded portion of column 3 will increase over time.

Accrued Liabilities and Assets Allocated to Retirement, Survivor and Disability Allowances

Val'n Year	(1) Active Member Contributions	(2) Retirants, Beneficiaries & Vested Deferreds	(3) Active Members (Employer Financed Portion)	Valuation Assets	Portion of Accrued Liabilities Covered By Reported Assets (1)	(2)	(3)
1990 *#	$33,450,086	$99,323,100	$128,850,151	$188,239,168	100%	100%	43%
1991	37,105,492	108,596,896	143,521,590	222,109,351	100%	100%	53%
1992	40,347,533	120,178,654	148,746,295	258,609,387	100%	100%	66%
1993 *	44,494,424	137,111,461	169,850,540	297,050,305	100%	100%	68%
1994 #	47,947,979	156,363,745	169,695,043	330,787,044	100%	100%	75%
1995	50,547,938	176,541,660	175,360,734	370,425,462	100%	100%	82%
1995 *	50,547,938	187,922,028	189,287,398	370,425,462	100%	100%	70%
1995 *#	50,547,938	189,010,261	184,793,495	370,425,462	100%	100%	71%
1996	52,297,873	218,164,080	184,052,234	411,316,254	100%	100%	77%
1997	53,264,614	256,268,302	177,859,490	460,667,112	100%	100%	85%
1997 *	53,264,614	260,095,357	183,557,364	460,667,112	100%	100%	80%
1998	53,797,385	291,066,407	188,092,953	509,859,924	100%	100%	88%
1999	55,558,145	325,395,987	183,718,428	546,510,779	100%	100%	90%
1999 *	55,558,145	333,340,728	188,111,212	546,510,779	100%	100%	84%
2000	59,455,707	360,125,257	187,830,356	569,858,387	100%	100%	80%
2000 #	59,455,707	358,422,165	176,344,731	570,039,631	100%	100%	86%
2001	63,969,216	374,228,361	198,517,881	551,279,438	100%	100%	57%
2002	68,794,904	391,098,788	208,712,240	492,430,826	100%	100%	16%
2002 #	68,794,904	391,098,788	203,176,113	527,604,456	100%	100%	33%
2003	73,358,075	412,818,959	216,621,983	545,981,513	100%	100%	28%
2004	**77,100,466**	**445,084,791**	**215,682,121**	**569,858,387**	**100%**	**100%**	**22%**
2004 *	**77,100,466**	**445,084,791**	**212,279,114**	**569,858,387**	**100%**	**100%**	**22%**

* *Plan amendment.*
\# *Assumption or method change.*

SUMMARY OF UNFUNDED ACCRUED LIABILITIES

Each time a new benefit is added which applies to service already rendered, an "unfunded accrued liability" is created. Also, if actual financial experiences are less favorable than assumed financial experiences, the difference is added to unfunded accrued liabilities.

In an inflationary economy, the value of the dollar is decreasing. This environment results in employee pays increasing in dollar amounts resulting in unfunded accrued liabilities increasing in dollar amounts, all at a time when the actual substance of these items may be decreasing. Looking at just dollar amounts of unfunded accrued liabilities can be misleading. Unfunded accrued liabilities divided by active employee payroll provides an index, which aids understanding. The smaller ratio of unfunded liabilities to active member payroll, the stronger the system. Observation of this relative index over a period of years will give an indication of whether the system is becoming financially stronger or weaker.

Summary of Assets and Actuarial Accrued Liabilities for Retirement, Survivor, and Disability Allowances

Valuation Year	Actuarial Accrued Liability (AAL)	Valuation Assets	Unfunded Actuarial Accrued Liability (UAAL)	Ratio of Assets to AAL	Active Member Payroll	UAAL as a % of Active Member Payroll
1990 *#	$261,623,337	$188,239,168	$73,384,169	72.0%	45,679,355	160.7%
1991	289,223,978	222,109,351	67,114,627	76.8%	48,488,406	138.4%
1992	309,272,482	258,609,387	50,663,095	83.6%	50,235,996	100.9%
1993 *	351,456,425	297,050,535	54,405,890	84.5%	55,781,585	97.5%
1994 #	374,006,767	330,787,044	43,219,723	88.4%	58,116,787	74.4%
1995	402,450,332	370,425,462	32,024,870	92.0%	59,825,356	53.5%
1995 *	427,757,364	370,425,462	57,331,902	86.6%	59,825,356	95.8%
1995 *#	424,351,694	370,425,462	53,926,232	87.3%	59,825,356	90.1%
1996	454,514,187	411,316,254	43,197,933	90.5%	59,239,349	72.9%
1997	487,392,406	460,667,112	26,725,294	94.5%	62,233,299	42.9%
1997 *	496,917,335	460,667,112	36,250,223	92.7%	62,233,299	58.2%
1998	532,956,745	509,859,924	23,096,821	95.7%	65,153,864	35.4%
1999	564,672,560	546,510,779	18,161,781	96.8%	66,017,381	27.5%
1999 *	577,010,085	546,510,779	30,499,306	94.7%	66,017,381	46.2%
2000	607,411,320	570,039,631	37,371,689	93.8%	69,028,285	54.1%
2000 #	594,222,603	570,039,631	24,182,972	95.9%	69,028,285	35.0%
2001	636,715,458	551,279,438	85,436,020	86.6%	76,344,002	111.9%
2002	668,605,932	492,430,826	176,175,106	73.7%	81,757,707	215.5%
2002 #	663,069,805	527,604,456	135,465,349	79.6%	78,997,065	171.5%
2003	702,799,017	545,981,513	156,817,504	77.7%	81,737,962	191.9%
2004	737,867,378	569,858,387	168,008,991	77.2%	81,757,707	205.5%
2004 *	**734,464,371**	**569,858,387**	**164,605,984**	**77.6%**	**81,757,707**	**201.3%**

* *Plan amendment.*
\# *Assumption or method change.*

The figures on this page do not include liabilities and assets related to post-retirement Health Care and Medicare reimbursement.

GASB STATEMENT NO. 25
SCHEDULE OF EMPLOYER CONTRIBUTIONS

Year Ended December 31	Actual Contribution	Percent of Required Contributed
1999	$13,569,730	100%
2000	13,210,189	100%
2001	13,901,313	100%
2002	14,923,893	100%
2003	16,361,339	100%
2004	**17,205,610**	**100%**

The Board adopted all contribution rates as recommended by the Actuary.

The amounts reported in this schedule do not include contributions for post-employment Health Care benefits.

GASB STATEMENT NO. 25
ANNUAL REQUIRED CONTRIBUTION

For purposes of Governmental Accounting Standards Board (GASB) Statement No. 25, the System's Annual Required Contribution for the plan year ending December 31, 2005 will be ½ of the employer contribution for the period from July 1, 2004 to June 30, 2005 (21.00% of payroll, based upon an amortization period of 32 years) plus ½ of the employer contribution for the period from July 1, 2005 to June 30, 2006 (22.00% of payroll, based upon an amortization period of 32 years). The System's Annual Required Contribution for the plan year ending December 31, 2006 will be ½ of the employer contribution for the period from July 1, 2005 to June 30, 2006 (22.00% of payroll, based upon an amortization period of 32 years) plus ½ of the employer contribution for the period from July 1, 2006 to June 30, 2007 (22.70% of payroll, based upon an amortization period of 30 years).

It is important to notice that if the employer makes contributions at the currently scheduled rates, the employer contribution for calendar year 2006 is likely to fall short of the Annual Required Contribution which would, in this case, result in a Net Pension Obligation.

GASB STATEMENT NO. 25
NOTES TO TREND DATA

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation Date	December 31, 2004
Actuarial Cost Method	Entry Age
Amortization Method	Level Percent Open
Remaining Amortization Period	30 years for retirement allowances in determining the Annual Required Contribution
Asset Valuation Method	4 year smoothed market 20 % Corridor
Actuarial Assumptions:	
Investment Rate of Return	8.0%
Projected Salary Increases	4.3% - 7.7%
* Includes Wage Inflation at	4.0%

OTHER REQUESTED CAFR INFORMATION

As of December 31, 2004, the actuarial present value of credited projected benefits for current employees is shown below:

	Actuarial Present Value of Credited Projected Benefits
Current Employees	
Accumulated employee contributions	
including allocated investment income	$ 77,100,466
Employer - financed vested	99,402,759
Employer - financed non-vested	81,244,370

As of December 31, 2004, there were 283 vested active members and 1,279 non-vested active members.

SECTION B

Post-Retirement Health Care and Medicare Reimbursement

Benefits Provided

Since July 1, 1974, the Retirement System has made Health Care available for every benefit recipient and eligible dependents under a hospitalization and health care policy administered by Aetna Life & Casualty Company and Medical Mutual of Ohio. This Plan is secondary to Medicare or any other Health Care coverage. Each year the Board establishes participant premium rates, any necessary co-payments for the retirant, spouse, or dependent children, and any other changes in plan design for the following calendar year. The premium for 2004 applicable to spouses under age 65 is $80 per month. The dependent child premium is $25 per family.

Basic Plan coverage provides for payment of 100% of all reasonable and customary hospital expenses. All hospital admissions must be pre-certified 14 days prior to an elective admission. Emergency confinements require notification within 48 hours following admission. If a covered person is in a network area, he or she must use a preferred provider for the maximum benefit.

All other medical expenses are covered at the rate of 80% of reasonable and customary charges.

Designated surgical procedures require a second opinion. Also designated outpatient procedures must be pre-certified. For in-network activity, the annual out-of-pocket maximum is $750 per individual or $1,500 per family (out of network amounts are $5,000 and $10,000, respectively). Each covered person under the age of 65 must meet a $100 annual deductible. Each covered person over 65 must meet a $25 annual deductible. The maximum lifetime benefit is $2,000,000 per person. If the covered person is in a network area and uses non-network providers, the annual deductible for the individual is $1,000.

A mail-order prescription drug plan is also available. Each prescription submitted via mail order requires a co-payment of $5.00 for generic, $10.00 for brand and $30.00 for non formulary for up to a 90-day supply. Drugs purchased retail/over-the-counter have a co-payment of $5.00 for generic, $10.00 for brand and $30.00 for non formulary for up to a 34 day supply.

Administration: The medical program is administered by the AETNA and Medical Mutual of Ohio for hospital-medical-surgical coverage and by Medco for mail order prescription drug coverage.

Stop Loss Coverage: The program is fully self-insured and stop loss coverage is maintained.

Medicare Premiums: The Medicare Part B (no cap) basic premium amount is reimbursed to eligible benefit recipients upon proof of coverage.

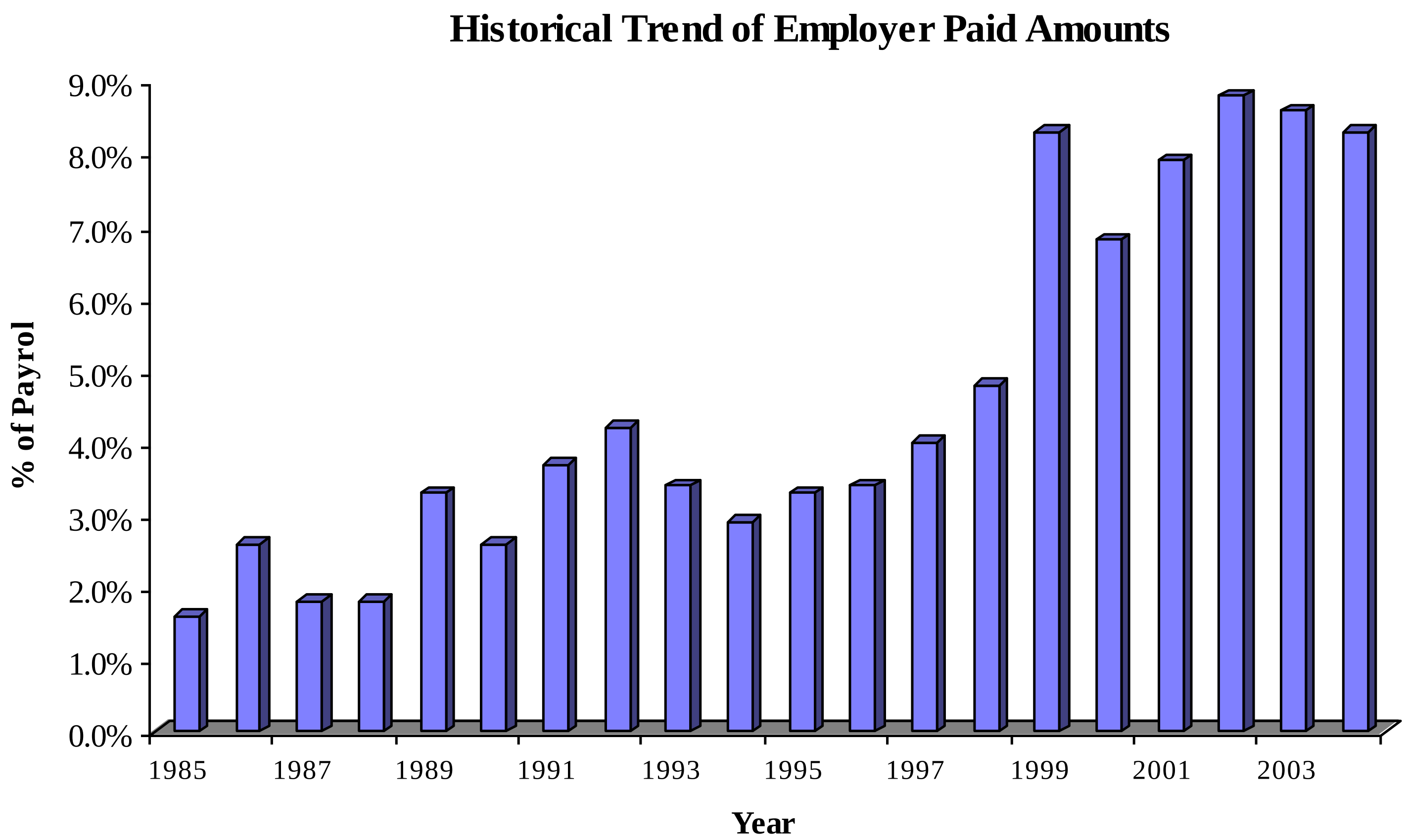
Dental/Vision: System pays premiums for all benefit recipients. The premium for dependents is deducted from pension benefit.

Post-Retirement Health Care and Medicare Reimbursement

Year	Covered Lives	Medical	Drugs	Medicare Part B	Dental	Vision	Total	Member Premiums and Other Adjustments	Net Paid by OHPRS	Per Covered Life	Payroll	% of Payroll
		Amounts Paid to Vendors (Including Medicare Part B)										
1985	697	$ 427,361	$ 60,015	$ 28,272			$ 515,648		$ 515,648	$ 740	$ 32,500,428	1.6%
1986	715	787,245	80,911	30,457			898,613		898,613	1,257	34,757,277	2.6%
1987	731	559,832	115,544	38,037			713,413		713,413	976	39,938,912	1.8%
1988	761	522,747	145,847	57,461			726,055		726,056	954	40,674,634	1.8%
1989	810	1,043,650	186,795	77,869			1,308,314	$ 97,864	1,406,178	1,736	43,053,057	3.3%
1990	925	1,009,153	213,716	77,363			1,300,232	(94,251)	1,205,981	1,304	45,679,355	2.6%
1991	976	1,267,327	251,004	86,740			1,605,071	180,583	1,785,654	1,830	48,488,406	3.7%
1992	1,045	1,643,276	298,493	97,117			2,038,886	76,046	2,114,932	2,024	50,235,996	4.2%
1993	1,081	1,553,628	299,410	118,109			1,971,147	(90,525)	1,880,622	1,740	55,781,585	3.4%
1994	1,133	1,239,008	320,360	141,384			1,700,752	3,314	1,704,066	1,504	58,116,787	2.9%
1995	1,225	1,512,523	364,096	149,440			2,026,059	(66,834)	1,959,225	1,599	59,825,356	3.3%
1996	1,379	1,353,932	491,525	155,769			2,001,226	21,382	2,022,608	1,467	59,239,349	3.4%
1997	1,499	1,623,640	849,321	166,743			2,639,704	(140,526)	2,499,178	1,667	62,233,299	4.0%
1998	1,602	2,147,334	1,122,248	171,223			3,440,805	(311,917)	3,128,888	1,953	65,153,864	4.8%
1999	1,772	3,315,914	1,364,990	197,606			4,878,510	619,894	5,498,404	3,103	66,017,381	8.3%
2000	1,848	3,190,885	1,684,300	203,157			5,078,342	(358,082)	4,720,260	2,554	69,028,285	6.8%
2001	1,900	3,730,167	1,960,825	231,046			5,922,038	138,317	6,060,355	3,190	76,344,002	7.9%
2002	1,943	4,147,534	2,431,297	260,772	$194,893	$80,909	7,115,405	(200,021)	6,915,384	3,559	78,997,065	8.8%
2003	1,912	4,256,046	2,681,414	290,506	209,429	82,097	7,519,492	(507,642)	7,011,850	3,667	81,737,962	8.6%
2004	**1,928**	**4,074,972**	**2,710,367**	**347,585**	**230,994**	**84,136**	**7,448,054**	**(641,707)**	**6,806,347**	**3,530**	**81,757,707**	**8.3%**

Separate information for dental and vision was not available for years prior to 2002.

POST-RETIREMENT HEALTH CARE AND MEDICARE REIMBURSEMENT



ASSUMPTIONS FOR HEALTH CARE COVERAGES
DECEMBER 31, 2004

Development of Health Care Rates: Based on the 2004 retired life data, the HPRS portion of the total health care rates was developed as follows:

		Age/Gender Weighted HPRS Monthly Rates			
		This Year			Prior Year
		Gross Rate	Member Paid	Net Rate	Net Rate
A.	One person without Medicare	$342.59	$0.00	$342.59	$324.03
B.	One person with Medicare*	226.18	0.00	226.18	211.24
C.	Two persons without Medicare	685.18	80.00	605.18	578.06
D.	Two persons with Medicare*	452.36	0.00	452.36	422.48
E.	Child	186.55	25.00	161.55	132.87
F.	Medicare Part B Reimbursement	78.20	0.00	78.20	66.60

The above rates are estimates that are suitable for the purpose of this valuation. Use of the above rates for any other purpose would require review. Pre-Medicare rates are lower than would be expected when compared with other retired groups. This may be attributable to a higher than average amount of coordination of benefit claims for younger HPRS retirees. Many younger retirees likely have other employment. Please see page B-5 for age specific rates used for valuation purposes. Employment related primary coverage for recipients and dependents have been reflected in the age based specific premium rates.

** Does not include Medicare Part B monthly premium of $78.20.*

Ohio HPRS First Year Projection of Health Care Claims Cost Based on 5 Year Averages

Year	Claims: Gross	Claims: Member and Adjustments	Claims: Net	Enrollees	Population Adjusted	Medical CPI	Price Adjusted	Weight	Secondary Provision Adjustment	Recognized
2000	$ 5,078,342	$ 358,082	$ 4,720,260	1,848	$ 4,924,600	260.8	$ 5,855,516	0.00	0.97	$ -
2001	5,922,038	(138,317)	6,060,355	1,900	6,149,665	272.8	6,990,510	0.10	0.97	678,079
2002	7,115,405	200,021	6,915,384	1,943	6,861,997	285.6	7,450,649	0.20	0.97	1,445,426
2003	7,519,492	507,642	7,011,850	1,912	7,070,527	297.1	7,379,907	0.30	0.96	2,125,413
2004	7,448,054	641,707	6,806,347	1,928	6,806,347	310.1	6,806,347	0.40	1.00	2,722,539

(Base for coming year) Recognized:		**$ 6,971,458**
Growth Factors:	Population	1.011
	Price	1.091
First Year Projection:		**$ 7,689,525**

ASSUMPTIONS FOR HEALTH CARE COVERAGES
AGE SPECIFIC HPRS MONTHLY GROSS RATES

Age	Gross Rate		Age	Gross Rate		Age	Gross Rate	
	Male	Female		Male	Female		Male	Female
16	$ 91.57	$ 142.86	51	$ 250.83	$ 277.32	86	$ 278.35	$ 244.19
17	92.49	144.29	52	267.67	289.61	87	279.62	244.66
18	93.41	145.73	53	285.01	302.65	88	279.62	244.66
19	94.34	147.19	54	302.99	316.28	89	279.62	244.66
20	95.29	148.66	55	321.57	330.46	90	279.62	244.66
21	96.24	150.14	56	340.73	345.18	91	279.62	244.66
22	97.20	151.65	57	360.41	360.41	92	279.62	244.66
23	98.18	153.16	58	379.24	373.86	93	279.62	244.66
24	99.16	154.69	59	398.34	387.58	94	279.62	244.66
25	100.15	156.24	60	417.67	401.55	95	279.62	244.66
26	101.15	157.80	61	437.16	415.71	96	279.62	244.66
27	102.16	159.38	62	456.77	430.04	97	279.62	244.66
28	103.18	160.97	63	476.18	444.73	98	279.62	244.66
29	104.22	162.58	64	495.57	459.52	99	279.62	244.66
30	105.26	164.21	65	194.03	178.67	100	279.62	244.66
31	106.31	165.85	66	200.29	183.36	101	279.62	244.66
32	107.37	167.51	67	206.42	187.98	102	279.62	244.66
33	108.45	169.19	68	212.39	192.51	103	279.62	244.66
34	109.53	170.88	69	218.19	196.94	104	279.62	244.66
35	110.63	172.59	70	223.81	201.25	105	279.62	244.66
36	111.73	174.31	71	229.21	205.42	106	279.62	244.66
37	112.85	176.06	72	234.39	209.45	107	279.62	244.66
38	113.98	177.82	73	239.34	213.32	108	279.62	244.66
39	115.12	179.59	74	244.03	217.00	109	279.62	244.66
40	116.27	181.39	75	248.46	220.51	110	279.62	244.66
41	124.54	187.25	76	252.62	223.81	111	279.62	244.66
42	133.59	193.64	77	256.50	226.90	112	279.62	244.66
43	143.44	200.58	78	260.10	229.77	113	279.62	244.66
44	154.09	208.09	79	263.40	232.42	114	279.62	244.66
45	165.54	216.17	80	266.40	234.83	115	279.62	244.66
46	177.80	224.86	81	269.11	237.00	116	279.62	244.66
47	190.86	234.14	82	271.53	238.93	117	279.62	244.66
48	204.70	244.03	83	273.65	240.61	118	279.62	244.66
49	219.32	254.52	84	275.49	242.05	119	279.62	244.66
50	234.71	265.62	85	277.06	243.24	120	279.62	244.66

Eligibility for Medicare Coverage: All benefit recipients were assumed to be eligible for Medicare on attainment of age 65.

Health Care Inflation: If the price for any product or service were to increase faster than wages for an indefinite period, eventually that product or service would be priced out of the market and either the product or service would not be offered or substituted with an affordable product or service. For this reason, health care inflation was assumed to equal wage inflation in the long term. The assumed point in time when health care inflation reduces to wage growth inflation is uncertain. Our assumptions are based on an approximate 10-year horizon. Short-term assumptions are described on page B-8.

Retiree health valuations require an assumption about how the health costs that the System is absorbing will change over the years. This assumption includes more than just "health inflation". It includes the impact of:

- The introduction of new procedures and medications and how they are priced.
- The utilization of services and products by covered retirees and their dependents and how that utilization changes over the years.

Retiree health valuations use a health cost trend assumption that changes over the years. The near term rates reflect the fact that currently employers are seeing sharp increases in the cost of health goods and services. If this trend is projected to continue for years to come, it implies that years from now virtually all our expenditures will be for health care. The seemingly more reasonable alternative is that in the not too distant future inflation in medical expenses will decrease to a level at or near wage inflation. It is on this basis that we project premium rates will continue to exceed wage inflation for the next 8 - 10 years, but by less each year until leveling off at an ultimate rate, assumed to be 4.0% in this valuation.

The trend assumption is established by reviewing the System's historical trends and evaluating their relationship with national trends. Comparative trends obtained from a variety of resources including trend surveys from major insurers and benefit consulting groups. This information is added to information we have collected from analysis done in conjunction with many retiree health valuations we have completed for other clients.

This analysis is done separately for the prescription drug program and the remainder of the medical benefits since the trends and forces driving the trends are quite different in these two segments. Review of the System's recent experience indicates trends typical of our comparative trends for both prescription drug and medical, that is in the high teens for prescription drugs and low teens for medical. Trends are predicted to moderate in the near term but are still high in the 10% to 14% area. The trends used in this valuation are found on page B-8.

POST-RETIREMENT HEALTH PREMIUM AND MEDICARE REIMBURSEMENT SELECTION OF ASSUMPTIONS DECEMBER 31, 2004

In order to prepare actuarial studies of the coverages, it is necessary to make assumptions regarding future events such as:

1. When people will retire and how long people will live after retirement.
2. Whether or not people will quit employment prior to eligibility for a benefit.
3. Whether or not people will die in service or become disabled.
4. Rates of Investment Return and pay increases.
5. The proportion of retirees electing coverage for a spouse after retirement.
6. Rates of increase in health care premium.
7. Effect of managed care program on future claims.

Regarding items 1 through 4, the assumptions from the regular December 31, 2004 valuations were used. It was assumed that eligible retirees would elect coverage under this program. It was further assumed that 90% of males and 50% of females who retire would elect coverage for a spouse at retirement, and that coverage would be available to surviving spouses of deceased retirees and active members.

For purposes of the solvency projections, an investment return assumption of 8.0% was chosen by default to be the same rate used in the Pension Plan valuations. It is uncertain how much longer retiree health fund assets can be invested in the same manner as pension assets given the current solvency period of the retiree health fund. For purposes of GASB Statements 43 and 45 reporting, an investment return assumption of 6.5% was used. The rates of pay growth used in the Retirement System valuations are 4.00% per year. Stability can only be achieved if the rate of increase in Health Care premiums is brought in line with the rate of growth of employee pays. Consequently, it was assumed that average Health Care cost increases would eventually stabilize at 4.00% per year. Higher or lower rates of increase could, however be possible for an extended period before that happens

POST-RETIREMENT HEALTH PREMIUM AND MEDICARE REIMBURSEMENT SELECTION OF ASSUMPTIONS DECEMBER 31, 2004

Three alternate assumptions for near term health care cost increases were considered and are shown below. A brief description of each of the alternate assumptions follows:

Alternate A (Valuation): The Alternate A assumption assumes that benefits will be periodically adjusted so that the employer share of per capita costs would increase no faster than 4.00% per year. This may lead to some curtailment of benefits as the population ages.

Alternate B (Intermediate): In the middle of the range of probable conditions is the view that short-term Health Care trends will rise somewhat over the next few years before declining to the level of overall GDP growth. This is the assumption set upon which Governmental Accounting Standards Board (GASB) statements 43 and 45 information is based.

Alternate C (Pessimistic): This scenario envisions poorer experience than the other two.

For alternates B and C, trend for Medicare Part B was 1% higher than the numbers presented below for years 2006 through 2013. No trend was applied to the $80 monthly spouse premium.

	Health Trend Above Wage Inflation Assumption of 4.0%		
Year	Alt. A Valuation	Alt. B Intermediate	Alt. C Pessimistic
2005			
2006	0.00%	3.20%	5.20%
2007	0.00%	6.00%	8.00%
2008	0.00%	5.00%	7.00%
2009	0.00%	4.00%	6.00%
2010	0.00%	3.00%	5.00%
2011	0.00%	2.00%	4.00%
2012	0.00%	1.00%	3.00%
2013	0.00%	0.00%	2.00%
2014	0.00%	0.00%	1.00%
2015	0.00%	0.00%	0.00%
2016	0.00%	0.00%	0.00%
2017	0.00%	0.00%	0.00%
2018	0.00%	0.00%	0.00%
2019 & Later	0.00%	0.00%	0.00%

POST-RETIREMENT HEALTH CARE AND MEDICARE REIMBURSEMENT
PROJECTED BENEFITS
DECEMBER 31, 2004

	Projected Benefits as % of Payroll		
Year Ended 12/31	Alt. A Valuation	Alt. B Intermediate	Alt. C Pessimistic
2005	9.2%	9.2%	9.2%
2006	9.5%	9.8%	10.0%
2007	9.7%	10.7%	11.1%
2008	9.9%	11.5%	12.2%
2009	10.1%	12.2%	13.2%
2010	10.4%	12.9%	14.1%
2011	10.6%	13.3%	15.0%
2012	10.6%	13.5%	15.5%
2013	10.7%	13.6%	15.8%
2014	10.8%	13.7%	16.2%
2019	12.1%	15.4%	18.1%
2024	13.6%	17.3%	20.4%
2029	14.6%	18.6%	21.8%
2034	14.6%	18.6%	21.9%
2039	14.0%	17.9%	21.0%
2044	13.7%	17.5%	20.6%
2049	14.1%	18.0%	21.1%
2054	14.6%	18.6%	21.9%
2059	14.7%	18.7%	22.0%
2064	14.4%	18.4%	21.6%
2074	14.1%	17.9%	21.1%
2084	14.5%	18.5%	21.8%
2094	14.4%	18.3%	21.6%
2103	14.3%	18.2%	21.4%

POST-RETIREMENT HEALTH CARE AND MEDICARE REIMBURSEMENT
GASB 43/45 REPORTING
ALTERNATIVE B: INTERMEDIATE HEALTH TREND

Determination of the Annual Required Contribution for the Period July 1, 2006 to June 30, 2007	**Contributions Expressed as Percents of Payroll**
Normal Cost	9.14%
UAL Payment (30 year amortization)	9.09%
Total (Annual Required Contribution)	**18.23%**
Current Employer Contribution Rate Allocation	3.50%

Accrued Health and Medicare Reimbursement Liabilities, $256,258,160 were more than applicable assets of $93,666,248.

The calculations above show the employer's annual required contribution (ARC) for the year ended June 30, 2007. The Plan's ARC for the year ended December 31, 2006 will also be the 18.23% shown above. The Plan's ARC for the year ended December 21, 2007 will be ½ of the 18.23% and ½ the computed employer rate of as the December 31, 2005 valuation.

GASB STATEMENTS 43/45
NOTES TO TREND DATA

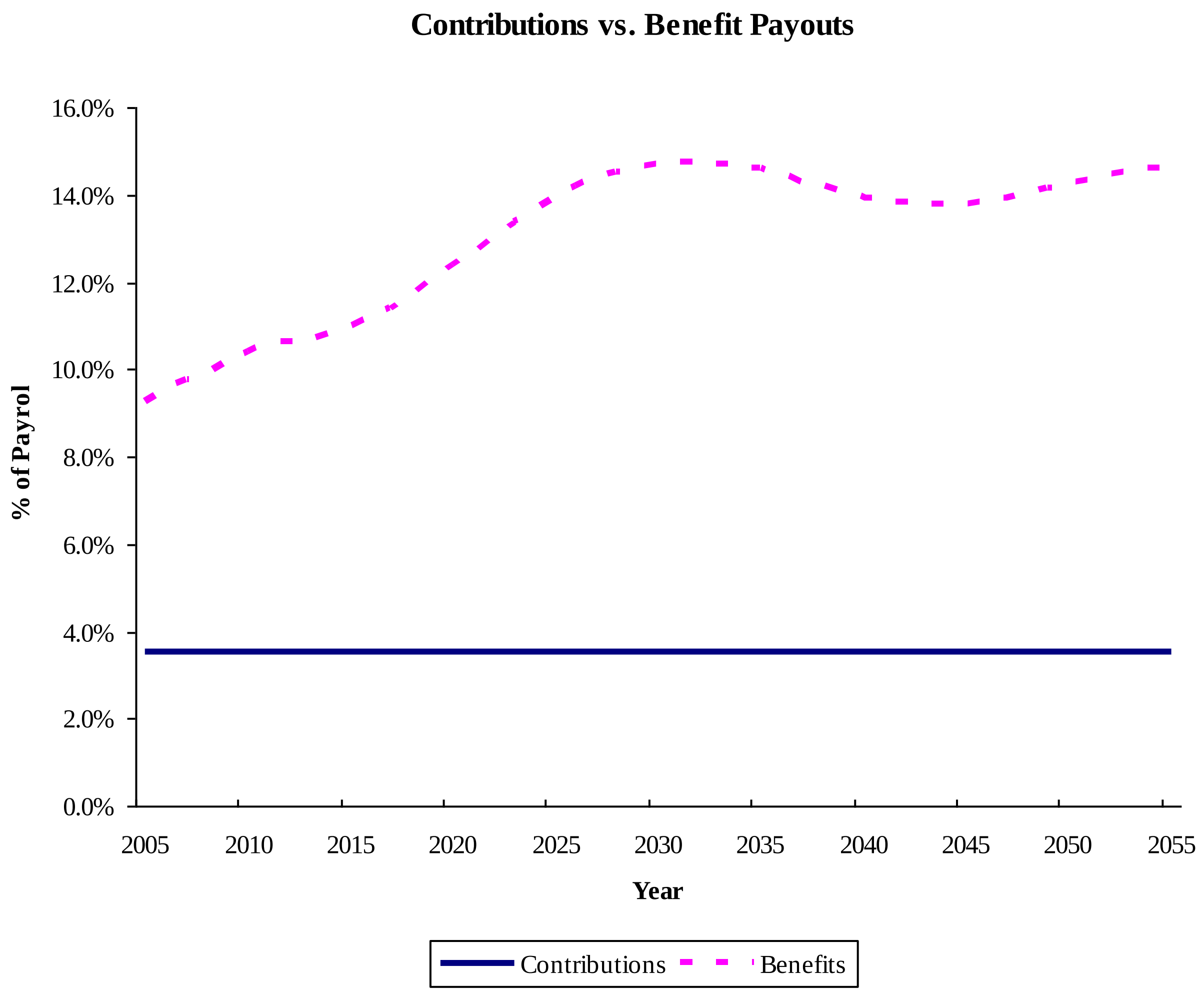
The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation Date	December 31, 2004
Actuarial Cost Method	Entry Age
Amortization Method	Level Percent Open
Remaining Amortization Period	30 years for retiree health benefits in determining the Annual Required Contribution
Asset Valuation Method	4 year smoothed market 20 % Corridor
Actuarial Assumptions:	
Investment Rate of Return	6.5%
Projected Salary Increases	4.3% - 7.7%
* Includes Wage Inflation at	4.0%
Health Trend	Intermediate Trend (See Page B-8)

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
HEALTH INFLATION: 4.00% PER YEAR
ALTERNATE A

Fiscal Year	Fund Balance BOY	Contributions	Benefits	Net	Investment Return %	Investment Return $	Fund Balance EOY		% of Payroll	
							Nominal $	Real $	Contrib.	Benefits
2005	$93,666	$2,977	$7,853	$(4,876)	8.00%	$7,301	$96,091	$96,091	3.50%	9.23%
2006	96,091	3,096	8,391	(5,295)	8.00%	7,478	98,274	94,494	3.50%	9.49%
2007	98,274	3,217	8,941	(5,724)	8.00%	7,636	100,186	92,628	3.50%	9.73%
2008	100,186	3,340	9,476	(6,136)	8.00%	7,773	101,823	90,520	3.50%	9.93%
2009	101,823	3,469	10,061	(6,592)	8.00%	7,886	103,117	88,145	3.50%	10.15%
2010	103,117	3,607	10,687	(7,080)	8.00%	7,970	104,007	85,486	3.50%	10.37%
2011	104,007	3,752	11,321	(7,569)	8.00%	8,022	104,460	82,556	3.50%	10.56%
2012	104,460	3,903	11,839	(7,936)	8.00%	8,043	104,567	79,462	3.50%	10.62%
2013	104,567	4,058	12,364	(8,306)	8.00%	8,037	104,298	76,210	3.50%	10.66%
2014	104,298	4,219	13,004	(8,785)	8.00%	7,997	103,510	72,725	3.50%	10.79%
2019	92,575	5,085	17,595	(12,510)	8.00%	6,912	86,977	50,227	3.50%	12.11%
2024	48,636	6,138	23,909	(17,771)	8.00%	3,189	34,054	16,163	3.50%	13.63%
2025	34,054	6,380	25,362	(18,982)	8.00%	1,975	17,047	7,780	3.50%	13.91%
2026	17,047	6,635	26,849	(20,214)	8.00%	566	(2,601)	(1,141)	3.50%	14.16%

CONTRIBUTIONS VS. BENEFIT PAYOUTS
VALUATION RESULTS
ALTERNATIVE A: HEALTH INFLATION 4.00% PER YEAR



POST-RETIREMENT HEALTH AND MEDICARE REIMBURSEMENT RESULTS WITH ALTERNATE HEALTH INFLATION ASSUMPTIONS DECEMBER 31, 2004

Intermediate and Pessimistic assumption Alternates B and C were described on page B-8. For each assumption set, two questions are asked.

Question 1. How long will the Health Care fund remain solvent if the present employer contribution rate allocation, "Funding Level 1", is not changed?

Question 2. What is the lowest employer contribution rate, "Funding Level 2", that would maintain the solvency of the fund indefinitely?

The answers to these questions are summarized below. In reviewing the answers, it is important to keep in mind that the alternates are intended to be helpful in understanding the range of potential outcomes. They are not predictions.

	Funding Level 1 (Recommended Employer Rate)		Funding Level 2 (Lowest Employer Rate to Maintain Solvency of Fund Indefinitely)		
Assumption Set	**%**	**Fund Solvent Until**	**%**	**Fund Solvent Until**	**Prior Valuation %**
A (Valuation)	3.50%	2026	8.20%	Indefinitely	7.00%
B (Intermediate)	3.50%	2021	11.30%	Indefinitely	11.10%
C (Pessimistic)	3.50%	2018	13.70%	Indefinitely	13.60%

The above results show that

- Under the valuation assumptions, the employer rate will need to be raised prior to 2026 in order to maintain the solvency of the fund. The ultimate rate needed to support the plan would be 8.20% of payroll.
- Under the intermediate assumptions, the employer rate will need to be raised prior to 2021 in order to maintain the solvency of the fund. The ultimate rate needed to support the plan would be 11.30% of payroll if the increase were made today.
- Under the pessimistic assumptions, the employer rate will need to be raised prior to 2018 in order to maintain the solvency of the fund. The ultimate rate needed to support the plan would be 13.70% of payroll if the increase were made today.

If the assumption is made that health care inflation exceeds wage inflation by 2% per year each and every year in the future, the employer rate would need to be raised prior to 2019 in order to maintain the solvency of the fund. The following pages show projected fund activity based upon Alternate Assumptions B and C, and Funding Levels 1 and 2.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
INTERMEDIATE ASSUMPTIONS: B
FUNDING LEVEL 1

Fiscal Year	Fund Balance BOY	Contributions	Benefits	Net	Investment Return %	Investment Return $	Fund Balance EOY		% of Payroll	
							Nominal $	Real $	Contrib.	Benefits
2005	$93,666	$2,977	$7,855	$(4,878)	8.00%	$7,301	$96,089	$96,089	3.50%	9.24%
2006	96,089	3,096	8,699	(5,603)	8.00%	7,466	97,952	94,185	3.50%	9.83%
2007	97,952	3,217	9,846	(6,629)	8.00%	7,574	98,897	91,436	3.50%	10.71%
2008	98,897	3,340	10,972	(7,632)	8.00%	7,610	98,875	87,900	3.50%	11.50%
2009	98,875	3,469	12,120	(8,651)	8.00%	7,568	97,792	83,593	3.50%	12.23%
2010	97,792	3,607	13,250	(9,643)	8.00%	7,443	95,592	78,570	3.50%	12.86%
2011	95,592	3,752	14,303	(10,551)	8.00%	7,231	92,272	72,924	3.50%	13.34%
2012	92,272	3,903	15,100	(11,197)	8.00%	6,940	88,015	66,884	3.50%	13.54%
2013	88,015	4,058	15,774	(11,716)	8.00%	6,579	82,878	60,558	3.50%	13.61%
2014	82,878	4,219	16,575	(12,356)	8.00%	6,142	76,664	53,863	3.50%	13.75%
2015	76,664	4,386	17,499	(13,113)	8.00%	5,615	69,166	46,726	3.50%	13.96%
2016	69,166	4,557	18,475	(13,918)	8.00%	4,984	60,232	39,126	3.50%	14.19%
2017	60,232	4,731	19,567	(14,836)	8.00%	4,233	49,629	30,998	3.50%	14.47%
2018	49,629	4,906	20,849	(15,943)	8.00%	3,341	37,027	22,237	3.50%	14.87%
2019	37,027	5,085	22,342	(17,257)	8.00%	2,281	22,051	12,734	3.50%	15.38%
2020	22,051	5,277	23,751	(18,474)	8.00%	1,035	4,612	2,561	3.50%	15.75%
2021	4,612	5,483	25,233	(19,750)	8.00%	(411)	(15,549)	(8,302)	3.50%	16.11%

Funding Level 1 is the present contribution rate for post-retirement Health Care and Medicare reimbursement. The fund remains solvent until 2021 in this projection.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
INTERMEDIATE ASSUMPTIONS: B
FUNDING LEVEL 2

Fiscal Year	Fund Balance BOY	Contributions	Benefits	Net	Investment Return %	Investment Return $	Fund Balance EOY Nominal $	Fund Balance EOY Real $	% of Contrib.
2005	$93,666	$9,610	$7,855	$1,755	8.00%	$7,563	$102,984	$102,984	11.30%
2006	102,984	9,995	8,699	1,296	8.00%	8,290	112,570	108,240	11.30%
2007	112,570	10,385	9,846	539	8.00%	9,027	122,136	112,922	11.30%
2008	122,136	10,784	10,972	(188)	8.00%	9,763	131,711	117,091	11.30%
2009	131,711	11,201	12,120	(919)	8.00%	10,501	141,293	120,778	11.30%
2010	141,293	11,645	13,250	(1,605)	8.00%	11,240	150,928	124,052	11.30%
2011	150,928	12,114	14,303	(2,189)	8.00%	11,988	160,727	127,025	11.30%
2012	160,727	12,601	15,100	(2,499)	8.00%	12,759	170,987	129,936	11.30%
2013	170,987	13,101	15,774	(2,673)	8.00%	13,573	181,887	132,903	11.30%
2014	181,887	13,622	16,575	(2,953)	8.00%	14,434	193,368	135,858	11.30%
2019	244,116	16,419	22,342	(5,923)	8.00%	19,295	257,488	148,693	11.30%
2024	312,955	19,816	30,383	(10,567)	8.00%	24,619	327,007	155,211	11.30%
2029	383,484	24,306	39,911	(15,605)	8.00%	30,063	397,942	155,246	11.30%
2034	458,730	30,179	49,673	(19,494)	8.00%	35,929	475,165	152,362	11.30%
2039	549,924	37,039	58,571	(21,532)	8.00%	43,144	571,536	150,630	11.30%
2044	670,980	45,091	69,868	(24,777)	8.00%	52,700	698,903	151,397	11.30%
2049	820,129	54,555	86,806	(32,251)	8.00%	64,337	852,215	151,734	11.30%
2054	985,626	66,002	108,603	(42,601)	8.00%	77,168	1,020,193	149,296	11.30%
2064	1,370,605	98,296	159,831	(61,535)	8.00%	107,219	1,416,289	140,018	11.30%
2074	1,917,402	145,632	231,190	(85,558)	8.00%	150,014	1,981,858	132,365	11.30%
2084	2,573,417	214,661	352,309	(137,648)	8.00%	200,438	2,636,207	118,945	11.30%
2094	3,132,858	318,875	517,506	(198,631)	8.00%	242,785	3,177,012	96,839	11.30%
2104	3,311,282	471,548	761,297	(289,749)	8.00%	253,461	3,274,994	67,439	11.30%

Funding Level 2 is the lowest funding level that will keep the fund solvent indefinitely, i.e., throughout the entire 100-year projection period assuming all assumptions are realized.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
PESSIMISTIC ASSUMPTIONS: C
FUNDING LEVEL 1

Fiscal Year	Fund Balance BOY	Contributions	Benefits	Net	Investment Return %	Investment Return $	Fund Balance EOY		% of Payroll	
							Nominal $	Real $	Contrib.	Benefits
2005	$93,666	$2,977	$7,856	$(4,879)	8.00%	$7,301	$96,088	$96,088	3.50%	9.24%
2006	96,088	3,096	8,875	(5,779)	8.00%	7,459	97,768	94,008	3.50%	10.03%
2007	97,768	3,217	10,239	(7,022)	8.00%	7,544	98,290	90,875	3.50%	11.14%
2008	98,290	3,340	11,627	(8,287)	8.00%	7,536	97,539	86,712	3.50%	12.18%
2009	97,539	3,469	13,089	(9,620)	8.00%	7,423	95,342	81,499	3.50%	13.20%
2010	95,342	3,607	14,581	(10,974)	8.00%	7,194	91,562	75,257	3.50%	14.15%
2011	91,562	3,752	16,040	(12,288)	8.00%	6,840	86,114	68,057	3.50%	14.96%
2012	86,114	3,903	17,261	(13,358)	8.00%	6,362	79,118	60,123	3.50%	15.48%
2013	79,118	4,058	18,367	(14,309)	8.00%	5,764	70,573	51,567	3.50%	15.84%
2014	70,573	4,219	19,497	(15,278)	8.00%	5,043	60,338	42,393	3.50%	16.17%
2015	60,338	4,386	20,611	(16,225)	8.00%	4,186	48,299	32,629	3.50%	16.45%
2016	48,299	4,557	21,755	(17,198)	8.00%	3,185	34,286	22,272	3.50%	16.71%
2017	34,286	4,731	23,036	(18,305)	8.00%	2,020	18,001	11,243	3.50%	17.04%
2018	18,001	4,906	24,541	(19,635)	8.00%	665	(969)	(582)	3.50%	17.51%

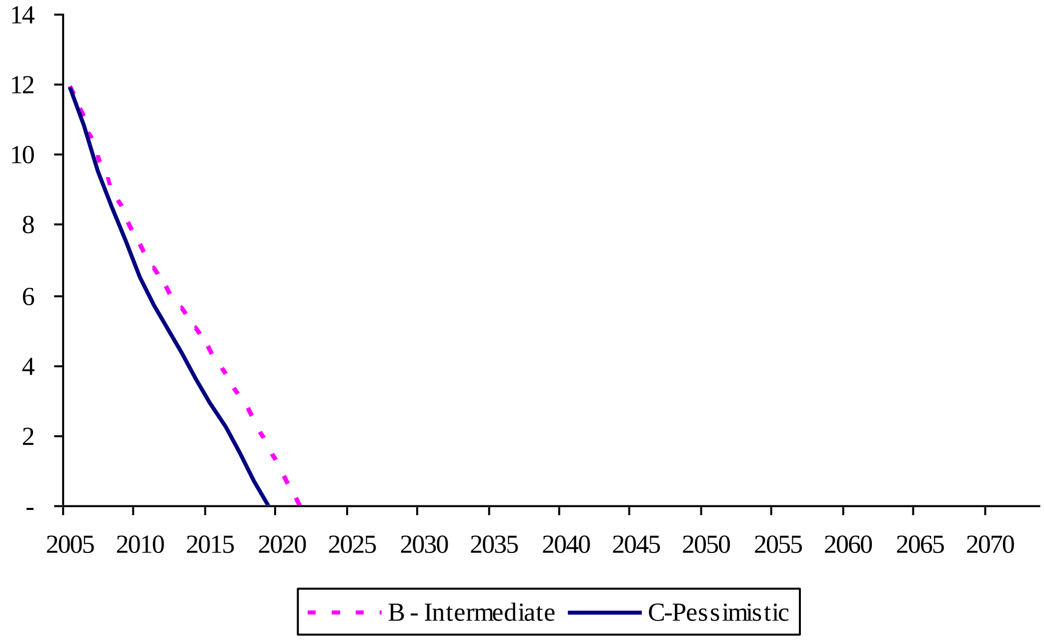
Funding Level 1 is the present contribution rate for post-retirement Health Care and Medicare reimbursement. The fund remains solvent until 2018 in this projection.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
PESSIMISTIC ASSUMPTIONS: C
FUNDING LEVEL 2

Fiscal Year	Fund Balance BOY	Contributions	Benefits	Net	Investment Return %	Investment Return $	Fund Balance EOY Nominal $	Fund Balance EOY Real $	% of Payroll Contrib.	% of Payroll Benefits
2005	$ 93,666	$ 11,651	$ 7,856	$ 3,795	8.00%	$ 7,643	$ 105,104	$ 105,104	13.70%	9.24%
2006	105,104	12,118	8,875	3,243	8.00%	8,536	116,883	112,388	13.70%	10.03%
2007	116,883	12,591	10,239	2,352	8.00%	9,444	128,679	118,971	13.70%	11.14%
2008	128,679	13,074	11,627	1,447	8.00%	10,351	140,477	124,884	13.70%	12.18%
2009	140,477	13,580	13,089	491	8.00%	11,258	152,226	130,123	13.70%	13.20%
2010	152,226	14,118	14,581	(463)	8.00%	12,160	163,923	134,733	13.70%	14.15%
2011	163,923	14,687	16,040	(1,353)	8.00%	13,060	175,630	138,803	13.70%	14.96%
2012	175,630	15,278	17,261	(1,983)	8.00%	13,972	187,619	142,575	13.70%	15.48%
2013	187,619	15,884	18,367	(2,483)	8.00%	14,911	200,047	146,172	13.70%	15.84%
2014	200,047	16,516	19,497	(2,981)	8.00%	15,886	212,952	149,617	13.70%	16.17%
2019	269,842	19,906	26,295	(6,389)	8.00%	21,335	284,788	164,458	13.70%	18.10%
2024	346,510	24,024	35,741	(11,717)	8.00%	27,258	362,051	171,845	13.70%	20.38%
2029	424,081	29,468	46,918	(17,450)	8.00%	33,237	439,868	171,602	13.70%	21.81%
2034	505,985	36,589	58,370	(21,781)	8.00%	39,619	523,823	167,965	13.70%	21.86%
2039	605,061	44,906	68,820	(23,914)	8.00%	47,461	628,608	165,671	13.70%	21.00%
2044	737,111	54,668	82,099	(27,431)	8.00%	57,886	767,566	166,271	13.70%	20.57%
2049	899,303	66,142	102,008	(35,866)	8.00%	70,528	933,965	166,289	13.70%	21.13%
2054	1,076,833	80,020	127,629	(47,609)	8.00%	84,267	1,113,491	162,950	13.70%	21.85%
2064	1,478,256	119,174	187,829	(68,655)	8.00%	115,550	1,525,151	150,781	13.70%	21.59%
2074	2,031,869	176,563	271,706	(95,143)	8.00%	158,793	2,095,519	139,956	13.70%	21.08%
2084	2,641,280	260,253	414,039	(153,786)	8.00%	205,230	2,692,724	121,495	13.70%	21.80%
2094	2,995,847	386,601	608,176	(221,575)	8.00%	230,918	3,005,190	91,602	13.70%	21.55%
2104	2,619,603	571,700	894,703	(323,003)	8.00%	196,814	2,493,414	51,344	13.70%	21.44%

Funding Level 2 is the lowest funding level that will keep the fund solvent indefinitely, i.e., throughout the entire 100-year projection period assuming all assumptions are realized.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT PROJECTED FUNDING RATIOS BASED ON 3.50% EMPLOYER CONTRIBUTION RATE DECEMBER 31, 2004



The ***funding ratio*** is the ratio of the fund balance at the beginning of the year to the projected benefit payout during the year. It is one measure of the Plans ability to pay benefits. A funding ratio on the order of about 15 to 25 is expected in a plan that is funding health care payouts as a level percentage of payroll. Given the experience of the last several years, very few, if any plans, are likely to be able to report such a funded ratio.

APPROXIMATE IRC SECTION 401(H) COMPUTATION
($ IN THOUSANDS)

Year	(1) Covered Pay	(2) EANC %	(3) Pension PUCNC %	(4) PUCNC $	(5) Health Contribution	(6) (4) + (5)	(7) Sum of (5)	(8) Sum of (6)	(9) IRC Ratio (7) / (8)
1985	$32,550	22.16%	23.05%	$ 7,502.8	$1,114.8	$8,617.6	$ 1,114.8	$ 8,617.6	12.9%
1986	34,735	22.16%	23.05%	8,006.4	1,229.0	9,235.4	2,343.8	17,853.0	13.1%
1987	39,894	21.59%	22.45%	8,956.2	1,351.4	10,307.6	3,695.2	28,160.6	13.1%
1988	40,725	21.59%	22.45%	9,142.8	1,478.2	10,621.0	5,173.4	38,781.6	13.3%
1989	43,048	22.75%	23.66%	10,185.2	1,752.8	11,938.0	6,926.2	50,719.6	13.7%
1990	45,640	22.75%	23.66%	10,798.4	1,835.5	12,633.9	8,761.7	63,353.5	13.8%
1991	48,586	22.15%	23.04%	11,194.2	2,165.1	13,359.3	10,926.8	76,712.8	14.2%
1992	50,255	22.15%	23.04%	11,578.8	2,542.7	14,121.5	13,469.5	90,834.3	14.8%
1993	54,715	22.36%	23.25%	12,721.2	2,563.5	15,284.7	16,033.0	106,119.0	15.1%
1994	58,341	22.36%	23.25%	13,564.3	3,053.4	16,617.7	19,086.4	122,736.7	15.6%
1995	56,833	23.79%	24.74%	14,060.5	3,122.0	17,182.5	22,208.4	139,919.2	15.9%
1996	60,909	23.79%	24.74%	15,068.9	2,860.8	17,929.7	25,069.2	157,848.9	15.9%
1997	61,714	24.47%	25.45%	15,706.2	2,548.8	18,255.0	27,618.0	176,103.9	15.7%
1998	65,848	24.45%	25.55%	16,824.2	2,719.5	19,543.7	30,337.5	195,647.6	15.5%
1999	69,030	24.96%	26.08%	18,003.0	3,278.9	21,281.9	33,616.4	216,929.5	15.5%
2000	68,505	24.96%	26.08%	17,866.1	3,254.0	21,120.1	36,870.4	238,049.6	15.5%
2001	74,140	23.10%	23.63%	17,519.3	3,521.7	21,041.0	40,392.1	259,090.6	15.6%
2002	79,594	23.14%	23.71%	18,871.7	3,780.7	22,652.4	44,172.8	281,743.0	15.7%
2003	80,641	21.88%	22.72%	18,321.6	3,395.7	21,717.3	47,568.5	303,460.3	15.7%
2004	**81,931**	**21.91%**	**22.83%**	**18,704.8**	**2,867.6**	**21,572.4**	**50,436.1**	**325,032.7**	**15.5%**

The approximate computations above indicate compliance with IRC Section 401(h) because the ratio in column 9 is below 25%. The ratio in column 9 would appear lower if the computations were extended farther into the past.

SECTION C

Gain/Loss Analysis

GAIN/(LOSS) ANALYSIS

Purpose of Gain/Loss Analysis. Regular actuarial valuations provide information about the composite change in unfunded actuarial accrued liabilities -- whether or not the liabilities are increasing or decreasing, and by how much.

However, valuations do not show the portion of the change attributable to each risk area within the Retirement System: the rate of investment income on plan assets; the rates of withdrawal of active members who leave covered employment; the rates of mortality; the rates of disability; the rates of salary increases; the assumed ages at actual retirement. In an actuarial valuation, assumptions are made as to what these rates will be for the next year and for decades in the future.

The objective of a gain and loss analysis is to determine the portion of the change in unfunded actuarial accrued liabilities attributable to each risk area.

The fact that actual experience differs from assumed experience is to be expected. The future cannot be predicted with precision. Changes in the valuation assumption for a risk area should be made when the differences between assumed and actual experience have been observed to be sizable and persistent. One year's gain and loss analysis may or may not be indicative of ***long-term trends, which are the basis of financial assumptions***.

DEVELOPMENT OF TOTAL GAIN/(LOSS)
JANUARY 1, 2004 TO DECEMBER 31, 2004

Unfunded Accrued Liabilities (UAL), January 1	$156,817,504
Normal Cost	18,470,116
Contributions	25,652,704
Interest	12,258,097
Expected UAL Before Any Changes	161,893,013
Effect of Changes in Benefits	(3,403,007)
Expected UAL After All Changes	158,490,006
Actual UAL	164,605,984
Gain/(Loss) for Year From Financial Experience	**$(6,115,978)**

This page measures the actual gain or loss for the year after adjusting for the effect of benefit and assumption changes.

ANALYSIS OF FINANCIAL EXPERIENCE
FOR THE YEAR ENDED DECEMBER 31, 2004 AND 2003

Gains and Losses in Pension Accrued Liabilities Resulting from Differences Between Assumed Experience and Actual Experience

TYPE OF ACTIVITY	Gain or (Loss) for Year Ended 12/31 2004	2003
Age & Service Retirements. If members retire at older ages or with lower final average pay than assumed, there is a gain. If younger ages or higher average pays, a loss.	**$ 143,945**	$ 360,013
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	**530,593**	922,921
Death-in-Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	**(63,567)**	(61,743)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	**72,037**	16,440
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	**10,509,323**	544,991
Contribution Income. If more contributions are received than expected, there is a gain. If less, there is a loss.	**0**	0
Investment Income. If there is greater investment return on pension assets than assumed, there is a gain. If less return, a loss.	**(9,723,198)**	(14,482,283)
Other. Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, valuation methods, etc.	**(7,585,111)**	(4,693,807)
Gain (or Loss) During Year From Financial Experience	**$ (6,115,978)**	$ (17,393,468)
Non-Recurring Items (Effect of Benefit/Assumption Changes)	**3,403,007**	0
Composite Gain (or Loss) During Year	**$ (2,712,971)**	$ (17,393,468)

INVESTMENT GAIN LOSS
DEVELOPMENT OF PORTION ATTRIBUTABLE TO RETIREMENT, SURVIVOR AND DISABILITY ALLOWANCES
JANUARY 1, 2004 TO DECEMBER 31, 2004

Assets, Beginning of Year	$545,981,513
Net Cash Flow	(9,690,816)
Assumed Investment Return	43,290,888
Expected Assets End of Year	$579,581,585
Actual Assets End of Year	569,858,387
Gain/(Loss) for Year	**$(9,723,198)**

The total investment gain (loss) was $(9,589,558). This amount includes health assets.

ACTIVE MEMBER POPULATION RECONCILIATION
JANUARY 1, 2004 TO DECEMBER 31, 2004

	Actual	Expected
Active Members Beginning of Year	1,542	
Plus New Hires	85	
Minus Retirements	39	36.5
Minus Deaths	1	1.0
Minus Disabilities	4	6.5
Minus Other Terminations*	26	19.6
Returned to Active Status	5	
Plus or Minus Data Correction	0	
Active Members End of Year	**1,562**	

** Includes 4 members who took a leave of absence and 1 member who transferred out of the System.*

SECTION D

Financial Information

CURRENT ASSET INFORMATION
FURNISHED FOR THE VALUATION
DECEMBER 31, 2004

Balance Sheet

Current Assets (Market Value)		Fund Balance	
Cash & short-term investments	$ 10,836,845	Employees' Savings Fund	$ 85,913,937
Fixed Income	143,390,258	Employers Accumulation Fund	2,925,144
Stocks	474,694,107	Pension Reserve Fund	346,859,178
Real Estate	53,090,046	Survivors Benefit Fund	24,234,525
Other short-term	36,493	Health Care Fund	88,752,123
Accruals & Receivables	2,521,501	Income Fund	135,884,343
Total Current Assets	$ 684,569,250	Total Fund Balance	$ 684,569,250

Revenues and Expenditures

	2004	2003
Balance - January 1	$623,986,737	$513,415,930
Revenues*		
Employee contributions	8,575,705	8,432,565
Employer contributions (net)	19,944,601	19,435,529
Investment income (net)	74,959,242	123,998,447
Miscellaneous	0	0
Total	103,479,548	151,866,541
Expenditures		
Benefit payments	35,107,531	32,994,853
Health insurance	6,948,650	7,181,129
Refund of member contributions	155,989	386,931
Administrative expenses	604,865	652,821
Death benefit	80,000	80,000
Total	42,897,035	41,295,734
Net Addition to Assets	60,582,513	110,570,807
Balance - December 31	$684,569,250	$623,986,737

* *Revenues include transfers to and from systems.*

CAFR Asset Information Furnished for the Valuation
December 31, 2004

Additions by Source

	Pension Benefits					Other Postemployment Benefits		
	Contributions		Net Investment	Transfers from		Employer	Net Investment	
Year	Member*	Employer	Income	Other Systems	Total	Contributions	Income	Total
1995	$7,303,832	$10,774,957	$69,700,220	$356,435	$ 88,135,444	$3,114,150	$ 12,251,272	$ 15,365,422
1996	6,223,468	12,176,108	54,183,754	494,651	73,077,981	2,530,817	9,444,391	11,975,208
1997	6,146,774	12,236,515	66,159,004	330,119	84,872,412	2,543,372	11,536,686	14,080,058
1998	6,573,762	13,101,039	13,029,413	503,509	33,207,723	2,687,150	1,396,472	4,083,622
1999	6,708,497	13,569,730	33,612,434	444,135	54,334,796	2,783,534	6,878,890	9,662,424
2000	6,954,301	13,210,189	(14,120,288)	925,998	6,970,200	3,346,581	(3,114,980)	231,601
2001	7,042,044	13,901,313	(17,920,157)	999,380	4,022,580	3,521,665	(2,900,183)	621,482
2002	7,563,173	14,923,893	(42,921,956)	999,176	(19,435,714)	3,780,715	(6,673,383)	(2,892,668)
2003	8,136,974	16,361,339	105,112,725	763,419	130,374,457	3,395,749	18,885,722	22,281,471
2004	**8,192,944**	**17,205,609**	**62,907,281**	**856,496**	**89,162,330**	**2,867,602**	**12,051,961**	**14,919,563**

** Does not include service purchases.*

Deductions by Type

	Pension Benefits					Other Postemployment Benefits		
			Transfers to			Health		
Year	Benefits#	Refunds	Other Systems	Administrative	Total	Care	Administrative	Total
1995	$13,606,017	$207,795	$127,478	$1,657,047	$15,598,337	$1,959,225	$ 291,261	$2,250,486
1996	15,920,148	67,323	140,376	2,134,192	18,262,039	2,022,608	371,996	2,394,604
1997	18,683,246	231,705	98,810	704,542	19,718,303	2,499,178	122,856	2,622,034
1998	21,539,636	164,054	281,606	648,144	22,633,440	3,128,888	114,378	3,243,266
1999	24,324,038	529,654	196,414	449,167	25,499,273	5,498,402	78,854	5,577,256
2000	27,042,946	363,067	904,972	549,168	28,860,153	4,720,260	95,423	4,815,683
2001	29,457,281	306,452	448,381	524,922	30,737,036	6,179,096	90,422	6,269,518
2002	31,325,089	266,137	1,054,264	462,200	33,107,690	7,025,043	78,635	7,103,678
2003	33,074,853	386,931	789,387	559,052	34,810,223	7,181,129	93,769	7,274,898
2004	**35,187,531**	**155,989**	**602,345**	**518,834**	**36,464,699**	**6,948,650**	**86,031**	**7,034,681**

 # Includes death benefits.

DEVELOPMENT OF FUNDING VALUE OF RETIREMENT SYSTEM ASSETS
DECEMBER 31, 2004

		2002	2003	2004	2005	2006	2007
A.	Funding Value From Prior Year	$ 645,070,362	$ 616,099,116	$ 636,515,677			
B.	Market Value End of Year	513,415,930	623,986,737	684,569,250			
C.	Market Value Beginning of Year	575,955,680	513,415,930	623,986,737			
D.	Non-Investment Net Cash Flow	(12,403,576)	(12,774,819)	(13,771,864)			
E.	Investment Return:						
	E1. Market Total: B - C - D	(50,136,174)	123,345,626	74,354,377			
	E2. For Immediate Recognition (8.0%)	51,109,486	48,776,937	50,370,380			
	E3. Amount for Phased-In Recognition E1-E2	(101,245,660)	74,568,689	23,983,997			
F.	Phased-In Recognition of Investment Return:						
	F1. Current Year: 25% x E3	(25,311,415)	18,642,172	5,995,999			
	F2. First Prior Year	(23,038,227)	(34,227,729)	18,642,172	$ 5,995,999		
	F3. Second Prior Year	0	0	(34,227,729)	18,642,172	$ 5,995,999	
	F4. Third Prior Year	0	0	0	(34,227,728)	18,642,173	$ 5,996,000
	F5. Total Recognized Phase-ins	$ (48,349,642)	$ (15,585,557)	$ (9,589,558)	$ (9,589,557)	$ 24,638,172	$ 5,996,000
G.	Funding Value End of Year:						
	G1. Preliminary Funding Value End of Year: A + D + E2 + F5	$ 635,426,630	$ 636,515,677	$ 663,524,635			
	G2. Corridor Percent	20%	20%	20%			
	G3. Upper Corridor Limit: (100% + G2) x B	$ 616,099,116	$ 748,784,084	$ 821,483,100			
	G4. Lower Corridor Limit: (100% - G2) x B	$ 410,732,744	$ 499,189,390	$ 547,655,400			
	G5. Funding Value End of Year	$ 616,099,116	$ 636,515,677	$ 663,524,635			
H.	Difference between Market Value and Funding Value	$ (102,683,186)	$ (12,528,940)	$ 21,044,615			
I.	Funding Value Rate of Return	(2.6)%	5.4 %	6.5 %			
J.	Market Value Rate of Return	(8.8)%	24.3 %	12.0 %			
K.	Ratio of Funding Value to Market Value	120%	102%	97%			

The asset valuation method recognizes assumed investment income (line E2) fully each year. Differences between actual and expected investment income (line E3) are phased in over a closed 4-year period. When investment markets are performing well, Funding Value will tend to lag market value. When investment markets are performing poorly, Funding Value will tend to exceed market value. From a Funding standpoint, the asset valuation method is *neutral*.

SEPARATION OF ASSETS BETWEEN PENSIONS AND HEALTH
DECEMBER 31, 2004

	Pension	Health	Total
A. Market Value Beginning of Year	$535,234,614	$88,752,123	$623,986,737
B. Member Contributions	8,575,705	0	8,575,705
C. Employer Contributions	17,076,999	2,867,602	19,944,601
D. Benefits Paid	35,107,531	6,948,650	42,056,181
E. Refunds of Member Contributions	155,989	0	155,989
F. Death Benefits	80,000	0	80,000
G. Net External Cash Flow (B + C - D - E - F)	(9,690,816)	(4,081,048)	(13,771,864)
H. Other Changes in Market Value	62,388,447	11,965,930	74,354,377
I. Market Value End of Year (A + G + H)	587,932,245	96,637,005	684,569,250
J. Funding Value Adjustment	(18,073,858)	(2,970,757)	(21,044,615)
K. Funding Value End of Year (I + J)	$569,858,387	$93,666,248	$663,524,635

Line J is allocated in proportion to Line I.

SECTION E

Summary of Member Data

ACTIVE MEMBERS AS OF DECEMBER 31, 2004
BY ATTAINED AGE AND YEARS OF SERVICE

Attained	Years of Service to Valuation Date							Totals	
Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30 Up**	**No.**	**Payroll**
20-24	61	1						62	$ 2,216,785
25-29	181	77						258	11,002,204
30-34	101	183	101	1				386	18,628,466
35-39	49	60	195	41	1			346	18,544,392
40	1	9	19	27				56	3,251,115
41		3	14	22	4			43	2,513,716
42	2	1	13	21	14			51	2,926,595
43		2	11	21	15			49	3,028,498
44			4	10	24	2		40	2,436,646
45			7	10	31	5		53	3,266,605
46			3	10	27	15		55	3,461,800
47				6	16	18		40	2,571,346
48				5	12	19	1	37	2,275,808
49				2	5	10		17	995,471
50				1	7	10		18	1,144,145
51				2	6	12	2	22	1,594,269
52				2	4	7	1	14	817,728
53					2	2	2	6	409,862
54					1		2	3	231,632
55					2	2	2	6	440,624
Totals	**395**	**336**	**367**	**181**	**171**	**102**	**10**	**1,562**	**$ 81,757,707**

While not used in valuations, the following group averages are computed and shown for their general interest.

Age: 36.2 years.

Service: 11.5 years.

Annual Pay: $52,342

ACTIVE MEMBERS
BY AGES OF ENTRY INTO SERVICE
DECEMBER 31, 2004

Entry Age Nearest Birthday	Number	Cumulative Number	Percent	Cumulative Percent
Less than 18	1	1	0.06%	0.06%
18	6	7	0.39%	0.45%
19	39	46	2.49%	2.94%
20	61	107	3.91%	6.85%
21	169	276	10.82%	17.67%
22	236	512	15.11%	32.78%
23	186	698	11.91%	44.69%
24	185	883	11.84%	56.53%
25	143	1,026	9.16%	65.69%
26	142	1,168	9.09%	74.78%
27	96	1,264	6.14%	80.92%
28	71	1,335	4.55%	85.47%
29	39	1,374	2.49%	87.96%
30	67	1,441	4.29%	92.25%
31	32	1,473	2.05%	94.30%
32	28	1,501	1.79%	96.09%
33	30	1,531	1.93%	98.02%
34	18	1,549	1.15%	99.17%
35	11	1,560	0.70%	99.87%
36	0	1,560	0.00%	99.87%
37	0	1,560	0.00%	99.87%
38	1	1,561	0.07%	99.94%
39	1	1,562	0.06%	100.00%
40 & Up	0	1,562	0.00%	100.00%
Total	**1,562**			

AGE AND SERVICE PENSIONS BEING PAID DECEMBER 31, 2004
BY ATTAINED AGES

Attained Ages	Number	Monthly Pensions	Number Married	Average Age of Spouse
48	10	$ 31,666	7	47
49	26	84,240	21	46
50	13	39,876	12	48
51	10	27,716	9	50
52	25	87,613	22	50
53	40	112,747	34	49
54	44	132,404	42	51
55	38	117,790	35	52
56	54	160,205	49	54
57	74	221,696	66	55
58	46	145,027	44	57
59	41	127,976	36	57
60	55	165,405	53	57
61	40	112,890	38	58
62	54	152,158	50	58
63	39	109,811	37	59
64	29	85,797	28	60
65	28	83,825	26	62
66	27	65,615	27	63
67	28	75,099	27	64
68	20	48,069	19	65
69	15	38,569	14	67
70	15	33,728	13	66
71	9	18,815	8	68
72	15	33,095	14	67
73	14	30,509	14	71
74	16	37,683	15	70
75	17	31,067	15	73
76	16	27,991	15	73
77	16	26,936	14	74
78	9	14,312	8	75
79	11	17,711	9	76
80	9	15,581	7	78
81	6	9,399	3	74
82	5	7,969	3	78
83	6	9,779	6	81
84	5	9,065	3	81
85 & Over	15	24,061	10	80
Totals	**940**	**$ 2,573,895**	**853**	

Disability Pensions Being Paid December 31, 2004
By Attained Age

Attained Ages	Number	Monthly Pensions	Number Married	Average Age of Spouse
33	2	$4,758	1	29
36	1	2,125	1	38
37	1	2,030	1	26
38	3	5,733	1	38
39	1	1,821	1	48
40	4	9,543	3	39
41	6	12,875	5	39
42	1	2,589	1	37
43	2	5,425	2	44
44	5	11,481	5	42
45	3	7,239	3	41
46	4	8,535	3	46
47	7	17,761	3	47
48	4	10,197	3	47
49	2	5,467	2	51
51	3	7,217	3	49
52	2	4,103	1	48
53	3	7,667	3	47
54	1	1,557	1	49
55	3	7,449	2	53
56	6	11,205	5	53
57	1	2,146	1	57
58	3	6,620	2	52
60	2	4,726	1	62
61	2	3,520	2	60
62	1	2,176		
63	2	2,775	2	54
67	1	2,714	1	64
69	1	1,388	1	65
74	1	1,470	1	69
75	2	2,982	1	71
77	1	1,496	1	75
78	1	1,506	1	78
82	1	1,576	1	82
Totals	**83**	**$181,872**	**65**	

DEPENDENTS BEING PAID AS OF DECEMBER 31, 2004
TABULATED BY ATTAINED AGE

Attained Ages	Number	Monthly Pensions
12 & Under	16	$2,689
16	1	191
17	1	167
18	5	885
19	1	191
20	1	191
21	3	539
27	1	981
31	1	1,006
32	1	1,075
34	1	1,006
36	1	1,123
38	1	1,075
39	1	1,050
40	1	1,050
42	2	2,242
45	2	381
47	2	2,284
49	2	2,329
50	2	2,197
52	1	1,194
53	4	4,516
54	3	3,599
55	1	1,346
56	3	3,834
57	5	5,676
58	4	4,902
59	3	3,528
60	4	4,600
61	3	3,709
62	7	8,700
63	1	1,122
64	4	4,250
65	4	4,466
66	3	4,299
67	4	5,321
68	4	4,592
69	4	4,053
70	4	4,568
71	2	2,296
72	10	11,576
73	3	3,487
70-79	94	103,920
80-89	36	42,768
90 & Over	2	2,600
Totals	**259**	**$267,574**

ACTIVE MEMBER VALUATION DATA, 1995 TO 2004

Actuarial Valuation as of December 31	Number of Active Members	Annual Payroll	Average Annual Salary	% Increase in Average Pay
1995	1,455	$59,825,356	$41,117	3.6 %
1996	1,375	59,239,349	43,083	4.8
1997	1,445	62,233,299	43,068	(0.0)
1998	1,446	65,153,864	45,058	4.6
1999	1,445	66,017,381	45,687	1.4
2000	1,489	69,028,285	46,359	1.5
2001	1,520	76,344,002	50,226	8.3
2002	1,548	78,997,065	51,032	1.6
2003	1,542	81,737,962	53,008	3.9
2004	**1,562**	**81,757,707**	**52,342**	**(1.3)**

RETIRANTS AND BENEFICIARIES VALUATION DATA, 1995 TO 2004

Actuarial Valuation as of December 31	Added to Rolls		Removed from Rolls		Number of People	Monthly Amounts Pensions	Average Amount
	No.	Monthly Benefits	No.	Monthly Benefits			
1995	68		6		826	$ 1,184,405	$1,434
1996	113		28		911	1,402,909	1,540
1997	96		23		984	1,645,613	1,672
1998	96		20		1,060	1,914,091	1,806
1999	82		19		1,123	2,123,471	1,891
2000	78		27		1,174	2,300,464	1,960
2001	53	$181,427	20	$21,583	1,207	2,460,308	2,038
2002	55	184,301	31	41,501	1,231	2,603,108	2,115
2003	48	196,385	26	29,344	1,253	2,770,149	2,211
2004	**58**	**287,345**	**29**	**34,153**	**1,282**	**3,023,341**	**2,358**

Of the 1,282 retirants and beneficiaries as of December 31, 2004, 940 are service retirees, 83 are disability retirees and 259 are survivor beneficiaries. The average monthly benefits are $2,738 for service retirees, $2,191 for disability retirees and $1,033 for survivor beneficiaries.

NUMBER OF RETIRED LIVES COVERED BY AETNA & OTHER CARRIERS COMPARATIVE SCHEDULE

	Census Date									
	12/04	**12/03**	**12/02**	**12/01**	**12/00**	**12/99**	**12/98**	**12/97**	**12/96**	**12/95**
Recipients:										
w/o Medicare A	**808**	791	773	771	761	724	656	589	534	460
Medicare A	**411**	394	386	368	346	339	337	333	322	298
Spouses:										
w/o Medicare A	**373**	403	483	471	447	429	373	354	324	277
w Medicare A	**176**	165	158	155	151	146	139	130	117	111
Dependent Children	**130**	129	111	105	110	107	75	70	59	54
Orphans	**30**	30	32	30	33	27	22	23	23	25
Total	**1,928**	1,912	1,943	1,900	1,848	1,772	1,602	1,499	1,379	1,225

A summary of recipients and dependents covered by AETNA and Medical Mutual of Ohio follows:

	AETNA		Medical Mutual		
	Network	**Non-Network**	**Network**	**Non-Network**	**Total**
2001	899	493	468	40	1,900
2002	880	491	516	56	1,943
2003	815	486	546	65	1,912
2004	**783**	**494**	**568**	**83**	**1,928**

DEFERRED PENSIONS AS OF DECEMBER 31, 2004
TABULATED BY ATTAINED AGE

Attained Ages	Number	Monthly Pensions
46	3	$7,190
47	3	10,709
49	2	2,803
50	1	2,948
Totals	**9**	**$23,650**

A ***deferred retirant*** is a member who has left active service with at least 15 (and in most cases 20) years of service credit, and has not withdrawn his accumulated contributions. Such members are entitled to a pension upon attaining eligibility age.

SECTION F

Assumptions Used in the Valuation

Appendix

Summary of Valuation Method and Assumptions
December 31, 2004

The actuarial assumptions used in the valuation are shown in this Appendix of the report. The assumptions were established for the December 31, 2000 actuarial valuation, following a 5 year experience study. They were adopted by the Board after obtaining the advice of the Actuary and other professionals. The payroll growth assumption was established for the December 31, 2002 actuarial valuation.

Economic Assumptions

The investment return rate used in making the valuations was 8.0% per year, compounded annually (net after administrative expenses). The real rate of return is defined to be the portion of total investment return, which is more than the wage inflation rate. Considering other financial assumptions, the 8.0% investment return rate translates to an assumed real rate of return over wage growth of 4.0%. In order to assume a 4.0% real return over wage growth, it would be necessary to realize about a 5.0% real return over price inflation, after accounting for expenses and the difference between wage increases and price increases. Based on our experience with other public employee retirement systems, both nationally and statewide, and published results of national surveys, the assumed investment return rate remains reasonable. The current assumed rate probably would be close to the average for retirement systems with asset allocations similar to HPRS. The economic assumptions were last reviewed as part of the 5 year experience study for the period January 1, 1995 through December 31, 1999. It is scheduled to be reviewed again following the December 31, 2004 actuarial valuation.

Pay increase assumptions for individual active members are shown for sample ages on page F-4. Part of the assumed increase at each age is for merit and/or seniority, and the other 4.0% recognizes changes in wage levels due to broad economic effects, including inflation and real wage growth. No specific price inflation assumption is required to perform the actuarial valuation.

The active member payroll is assumed to increase 4.0% annually, which is the portion of the individual pay increase assumptions attributable to broad economic effects.

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 were the 1983 Group Annuity Mortality Male and Female Tables. This assumption was last reviewed and updated as part of the 5 year experience study for the period January 1, 1995 through December 31, 1999. As shown in that study, the current assumption allows some margin for future mortality improvement. It is scheduled to be reviewed again following the December 31, 2004 actuarial valuation. Related values are shown on page F-3.

The probabilities of age and service retirement are shown on page F-4.

The probabilities of withdrawal from service, disability and death-in-service are shown for sample ages on page F-4. For disability retirement, impaired longevity was recognized by basing benefit values on an adjusted age that is the actual age plus 10 years. Fifty percent of disability retirements are assumed to be non-duty related and fifty percent are assumed to be duty related.

The entry age normal actuarial cost method of valuation was used in determining liabilities and normal cost.

> 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 that spreads differences between actual and assumed return over a closed four-year period. Funding value is not permitted to deviate from market value by more than 20%. Details of the method may be found in the body of the report on page D-3. Assets may be used in the valuation prior to the final audit.

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.

SINGLE LIFE RETIREMENT VALUES
(8.00% INTEREST)

Sample Attained Ages	Present Value of $1 Monthly for Life		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	$132.10	$140.42	29.18	34.92
55	124.57	134.74	24.82	30.24
60	115.04	127.24	20.64	25.67
65	103.26	117.61	16.69	21.29
70	90.18	105.53	13.18	17.13
75	76.40	91.57	10.15	13.37
80	62.65	77.16	7.64	10.20

The present values shown above are for illustrative purposes only and do not include the value of future post-retirement increases.

SEPARATIONS FROM ACTIVE EMPLOYMENT & SALARY SCALE

Sample Ages	Percent of Active Members Separating Within Next Year				Salary Increase Assumptions for an Individual Member			
	Disability	Death: Men	Death: Women	Other	Service	Merit & Seniority	Base (Economic)	Increase Next Year
20	0.08%	0.02%	0.01%	2.57%	0-4	3.70%	4.00%	7.70%
25	0.08%	0.02%	0.01%	2.24%	5-9	2.00%	4.00%	6.00%
30	0.23%	0.03%	0.02%	1.91%	10-14	1.50%	4.00%	5.50%
35	0.42%	0.04%	0.02%	1.56%	15 & Up	0.30%	4.00%	4.30%
40	0.70%	0.06%	0.03%	0.84%				
45	0.85%	0.11%	0.05%	0.41%				
50	1.13%	0.20%	0.08%	0.15%				
55	1.32%	0.31%	0.13%	0.00%				

Probabilities of Age & Service Retirement		
Retirement Ages	Percents of Eligible Members Retiring Within Next Year with an Unreduced Benefit	Percents of Eligible Members Retiring Within Next Year with a Reduced Benefit
48	40%	2%
49	35%	2%
50	25%	2%
51	30%	2%
52	25%	
53	25%	
54	40%	
55	25%	
56	25%	
57	25%	
58	30%	
59	35%	
60 & Over	100%	

In addition, it was assumed that 100% of eligible members age 55 and older would retire upon attaining 34 years of service. A member was assumed eligible for unreduced retirement at age 48 or greater with 25 or more years of service or age 52 or greater with 20 or more years of service. A member was assumed eligible for reduced retirement at age 48 or greater with 20 or more years of service.

ADDITIONS TO AND REMOVALS FROM ACTIVE MEMBERSHIP
ACTUAL AND EXPECTED NUMBERS

Year Ended December 31	Number Added During Year A	Number Added During Year E	Retirement A	Retirement E	Disability Retirement A	Disability Retirement E	Died-in Service A	Died-in Service E	Other Terminations A	Other Terminations E	Active Members
1995	62	100.2	50	57.9	4	1.7	0	3.6	18	37.0	1,455
1996	5	87.3	64	64.1	6	3.5	3	1.8	12	17.9	1,375
1997	161	81.9	73	60.7	3	3.4	1	1.7	14	16.1	1,445
1998	109	72.7	74	49.1	7	3.5	0	1.6	27	18.5	1,446
1999	86	61.8	53	37.5	14	3.5	2	1.6	18	19.2	1,445
2000	120	55.7	42	31.2	8	3.5	1	1.5	25	19.5	1,489
2001	113	51.4	28	24.8	10	6.0	1	0.9	43	19.7	1,520
2002	92	53.8	35	26.7	3	6.2	0	0.9	26	20.0	1,548
2003	64	61.0	32	33.5	6	6.3	0	1.0	32	20.2	1,542
2004	**90**	**63.6**	**39**	**36.5**	**4**	**6.5**	**1**	**1.0**	**26**	**19.6**	**1,562**
Total	**902**	**689.4**	**490**	**422.0**	**65**	**44.1**	**9**	**15.6**	**241**	**207.7**	

A: Actual

E: Expected

The following pages summarize the removals from active membership by age group and years of accrued service.

AGE AND SERVICE RETIREMENTS
DURING CALENDAR YEAR 2004

Age Group	15-19	20-24	25-29	30 Plus	Total
Under 20					
20-24					
25-29					
30-34					
35-39					
40-44					
45					
46					
47					
48		2	16		18
49			4	1	5
50		1	2		3
51			2		2
52			3	1	4
53	1		3	1	5
54				1	1
55					
56					
57					
58					
59				1	1
60 & Over					
Totals	**1**	**3**	**30**	**5**	**39**

DISABILITY RETIREMENTS
DURING CALENDAR YEAR 2004

	Years of Accrued Service							
Age Group	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30 Plus**	**Total**
Under 20								
20-24								
25-29								
30-34			1					1
35-39								
40-44		1	1	1				3
45-49								
50 & Over								
Totals		**1**	**2**	**1**				**4**

DEATH-IN-SERVICE TERMINATIONS DURING CALENDAR YEAR 2004

Age Group	Years of Accrued Service							
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Total
Under 20								
20-24								
25-29								
30-34								
35-39								
40-44								
45-49				1				1
50 & Over								
Totals				**1**				**1**

WITHDREW AND ELIGIBLE FOR DEFERRED BENEFIT TERMINATIONS DURING CALENDAR YEAR 2004

Age Group	Years of Accrued Service							
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Total
Under 20								
20-24								
25-29								
30-34								
35-39								
40-44								
45-49						4		4
50 & Over					1			1
Totals					**1**	**4**		**5**

WITHDREW AND PENDING CONTRIBUTIONS TERMINATION DURING CALENDAR YEAR 2004

Age Group	Years of Accrued Service							
	0-4	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30 Plus**	**Total**
Under 20								
20-24								
25-29								
30-34								
35-39								
40-44								
45-49								
50 & Over								
Totals								**0**

WITHDREW AND REFUNDED TERMINATIONS* DURING CALENDAR YEAR 2004

Age Group	Years of Accrued Service							
	0-4	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30 Plus**	**Total**
Under 20								
20-24	1							1
25-29	2	1						3
30-34	3	2	2					7
35-39	1	3						4
40-44								
45-49			1					1
50 & Over								
Totals	**7**	**6**	**3**					**16**

** In addition to the 16 terminations above, there were also 4 members who took a leave of absence and 1 member who transferred out of the System.*

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Administrative Expenses:	Assumed investment return is net of administrative and investment expenses.
Marriage Assumption:	100% of participants are assumed to be married for purposes of death-in-service benefits.
Pay Increase Timing:	Beginning of 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. For death-in-service, two children are assumed to receive benefits for a 10 year period.
Miscellaneous Loading Factors:	A load of 0.6% of payroll is used of measure the effect of military service purchases.

SECTION G

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 Ohio State 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.

August 16, 2005

Mr. Richard Curtis, Director
Ohio State Highway Patrol Retirement System
6161 Busch Boulevard, Suite 119
Columbus, Ohio 43229

Dear Richard:

Enclosed are 20 bound copies of the December 31, 2004 actuarial valuation of the Ohio State Highway Patrol Retirement System.

An additional 10 unbound, 3-hole punched copies are enclosed for your convenience.

Sincerely,

Brian B. Murphy

BBM:dks:lr
Enclosures

cc: Clark, Schaefer, Hacket & Co. (+1 report copy).

Clark, Schaefer, Hacket & Co. (+1 report copy).
150 East Campus View Blvd.
Suite 100
Columbus, OH 43235-4600