GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

OHIO STATE HIGHWAY PATROL RETIREMENT SYSTEM
ANNUAL ACTUARIAL VALUATION REPORT
DECEMBER 31, 2008

Updated 4/12/2006

Kennedy, Cottrell & Associates LLC
ATTN: Mr. Bill Kennedy
383 North Front St.
1st Floor
Columbus, Ohio 43215

TABLE OF CONTENTS

GRS
Gabriel Roeder Smith & Company
Consultants & Actuaries
One Towne Square
Suite 800
Southfield, MI 48076-3723
248.799.9000 phone
248.799.9020 fax
www.gabrielroeder.com

September 4, 2009

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, 2008** 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 and comments on pages 2 through 6.

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

The actuaries submitting this report are Members of the American Academy of Actuaries (MAAA) as indicated, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,

Brian B. Murphy, FSA, MAAA

Mita D. Drazilov, ASA, MAAA

BBM:MDD

SUMMARY

Valuations performed as of odd-numbered years (2009, 2011, 2013...) 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, 2009 was determined in accordance with the December 31, 2007 valuation.

The **total employer contribution rate** for the two-year period beginning July 1, 2009 is 26.50%, as established by the Board based upon the results of the December 31, 2007 actuarial valuation. Based upon preliminary December 31, 2008 actuarial valuation results, the Board at its August, 2009 meeting voted to reallocate 1% of the employer contribution rate to the pension program from the retiree health program. In addition, the figures in this report are based upon a continuation of the member rate at its present (10%) level, since legislation to increase the member rate by 1% has not yet been enacted. The breakdown between employer, employee, pension and health is shown below. This breakdown produces an infinite amortization period for pensions.

	Employer Contribution Rates Expressed As % of Active Payroll		
	Retirement, Survivor & Disability Allowances	**Post Retirement Health Care**	**Totals**
Employer	22.00%	4.50%	26.50%
Employee	10.00%	0.00 %	10.00%
Totals	32.00%	4.50%	36.50%

Items of significant importance for the December 31, 2008 actuarial valuation include:

1. **The rate of market value investment return** for the calendar year was below the actuarial assumed investment return rate of 8.0%. The market value rate of return for calendar year 2008 was approximately (28.3)%. This figure will generally differ from other reported return figures due to restated audited asset figures, approximate formulas and treatment of System expenses. The funding value rate of return was also below the assumed investment return rate. The funding value rate of return for calendar year 2008 was approximately (11.8)%.

2. **The funding value of assets** currently exceeds the market value of assets by approximately $116 million. (This is primarily due to the unrecognized portion of investment losses from calendar year 2008.) The $116 million represents 20% of the December 31, 2008 market value of assets. Due to the market loss in calendar year 2008, the 20% "corridor" on the funding value of assets had an effect. The 20% corridor means that the funding value of assets is not allowed to deviate from the market value of assets by more than 20%.

3. **Favorable trend experience in the retiree health program** during the calendar year had a positive effect on the solvency period of the retiree health fund which was offset by the negative market experience during the calendar year and a 1% reallocation of the employer contribution rate to the pension program. Member monthly premium increases effective July 1, 2008 ($25/$10) were reflected in the December 31, 2008 valuation. In addition, the health care premium contribution scale effective for terminations on or after January 1, 2012 was reflected in the December 31, 2008 valuation. Under the intermediate trend scenario (upon which the GASB 43 retiree health valuation is performed), the solvency period declined from 2025 in the December 31, 2007 actuarial valuation to 2023 in the December 31, 2008 actuarial valuation. The market losses from 2008 that have not been recognized as of yet, in combination with increased contribution requirements in the pension program will most likely exert downward pressure on the retiree health benefits.

4. **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 26.50% with an employee rate of 10.00% produces an infinite amortization period for the pension program, based upon a 4.50% employer rate allocation to the retiree health program and based upon the Funding Value of Assets.

Comment on Post Retirement Health Care:

With regard to the retiree health plan, higher contributions are required to extend the solvency of the fund. The benefit payout rate is approximately 10% of payroll, approximately double the contribution income. This situation cannot continue indefinitely. It may be necessary for the Board to reduce or further reduce the contribution to the health plan in the future to help achieve a 30-year amortization period in the pension program. In addition, changes to the retiree health plan and/or further increases in contribution rates will need to be a part of the future. The Board may wish to consider reviewing the investment return assumption used for solvency projections. Please see pages B-7 and B-11 for details.

Recommendation: The following reserve transfers are recommended as of December 31, 2008:

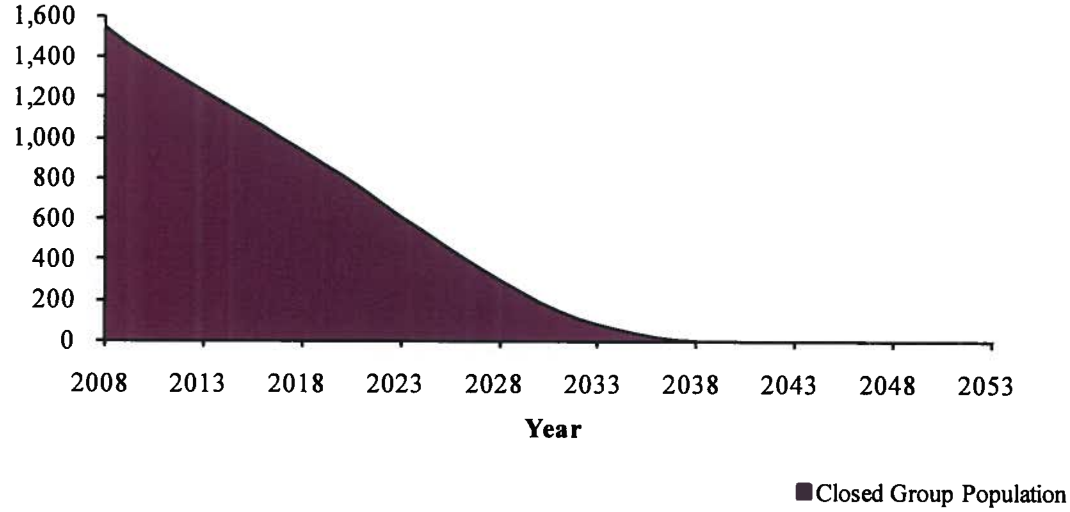
Transfer To (From)	Total Amount
Pension Reserve Fund:	$83,516,565
Survivor Benefit Fund:	933,559
Total	$84,450,124

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, 2009 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 Accumulation Fund.

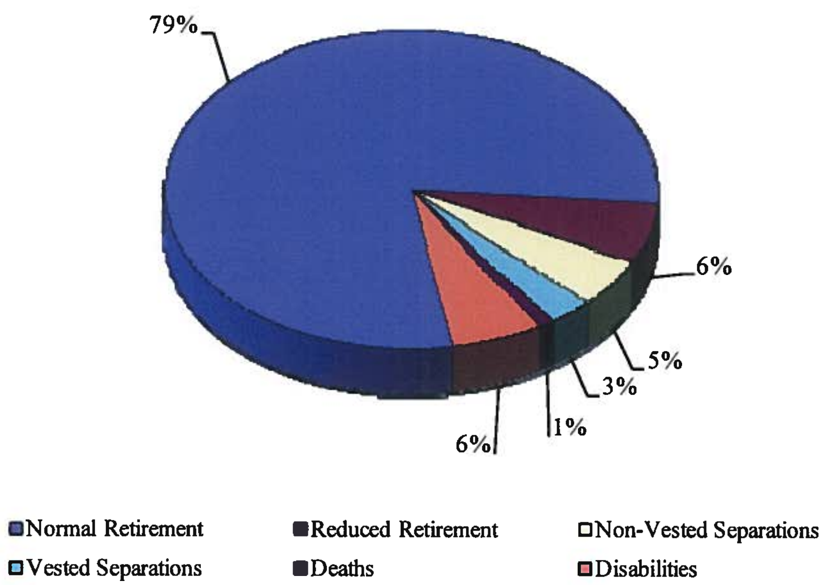
Conclusion: Based upon the results of the December 31, 2008 regular annual actuarial valuation, in the absence of future actuarial gains, the Ohio State Highway Patrol Retirement System will require contribution increases or benefit changes to the pension program to successfully amortize the unfunded actuarial accrued liabilities over a 30-year period. With regard to the Retiree Health Plan, solvency to 2023 is a relatively favorable result, but most people presently near retirement will live beyond that date. 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, 2008

Closed Group Population Projection



Expected Terminations from Active Employment for Current Active Members



The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 1,544 active members. Eventually, 5% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 88% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or by separating from service without withdrawing contributions. 7% of the present population is expected to become eligible for death-in-service or disability benefits. Within 14 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, 2008

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.

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.

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.

Deferred Retirement Option Program (DROP): Members are eligible for a one-time election to "DROP in" upon attainment of unreduced retirement eligibility. The primary features of the DROP include:

a) During participation in the DROP, members continue to make contributions based upon the 10% member contribution rate. While participating in the DROP, 100% of members' contributions are deposited to their DROP account.

b) 100% of the member's computed benefit (based upon service and salary at time of DROP), including any scheduled 3% post-retirement increases, is credited to the member's DROP account.

c) The DROP account is credited with interest annually based upon a rate of return earned on a selected group of cash equivalent type investments (assumed to be 3% for actuarial valuation purposes).

Deferred Retirement Option Program (DROP) (Continued):

d) A member who "DROPs in" must stay in the DROP for a minimum period of time based on age at time of "DROPing in". A minimum participation period of 3 years for members who "DROP in" prior to age 52 and 2 years for members who "DROP in" on or after age 52. After a maximum of 8 years in the DROP program or attaining age 60, the member who entered the DROP program must retire.

e) If the member "DROPs in", the member's annual benefit when the member "DROPs out" (i.e. retires) is based upon the benefit calculations at time of the "DROP in", including any post-retirement increases that may have accrued during the DROP participation period.

f) If, during participation in the DROP, a member becomes disabled due to a duty related injury/illness, the member can choose to 1) have a disability pension benefit calculated based on the assumption that participation in the DROP did not occur, or 2) the member can elect to accept the age/service pension benefit achieved through DROP participation plus the accumulation in the DROP account. Duty disability benefit recipients will not suffer the loss of accumulated interest for early departure from the DROP.

g) Once a member elects to participate in the DROP, their contributions are committed for the minimum period (2 or 3 years). If the member voluntarily discontinues DROP participation prior to the minimum participation period, the member will not receive any interest accumulated in the DROP account but will receive all accumulated pension benefits and pension contributions deposited into the DROP account at the end of the minimum participation period.

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
2009	$ 26,100
2010	26,100
2011	26,100
2012	26,883
2013	27,666
2014	28,449
2015	29,232
2016	30,015
2017	30,798

Benefits for years 2018 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	**2008**	**2007**
Results for the Period Beginning July 1	**2010**	**2009**
Normal Cost:		
Age & Service Benefits	16.54%	16.14%
Disability Benefits	2.85%	2.85%
Survivor Benefits	0.18%	0.18%
Separation Benefits	0.89%	0.89%
Purchase of Military Service	0.75%	0.75%
Total Normal Cost	21.21%	20.81%
Less Member Contributions	10.00%	10.00%
Employer Normal Cost	11.21%	10.81%
Unfunded Actuarial Accrued Liabilities	10.79%	10.19%
Amortization Period	N/A	27 years
PENSION EMPLOYER CONTRIBUTION RATE	22.00%	21.00%

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

Retirement, Survivor, & Disability Allowances
Method of Financing Future Benefits for Present Active Members
December 31, 2008

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, $904,522,377, less pension assets of $603,265,803 resulted in unfunded actuarial accrued liabilities of $301,256,574, which were amortized as a level percent of payroll over an infinite period. 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 ($ Thousands)

Year	Active Employee Payroll	Unfunded Actuarial Accrued Liability	Annual Contributions Dollars	Annual Contributions % of Payroll	UAAL as % of Payroll
	$ 98,074	$ 301,257	$ 10,582	10.79%	307.2%
1	101,997	314,360	11,005	10.79%	308.2%
2	106,077	328,072	11,446	10.79%	309.3%
3	110,320	342,423	11,904	10.79%	310.4%
4	114,733	357,446	12,380	10.79%	311.5%
5	119,322	373,176	12,875	10.79%	312.7%
6	124,095	389,650	13,390	10.79%	314.0%
7	129,059	406,907	13,925	10.79%	315.3%
8	134,221	424,988	14,482	10.79%	316.6%
9	139,590	443,936	15,062	10.79%	318.0%
10	145,174	463,798	15,664	10.79%	319.5%
11	150,981	484,623	16,291	10.79%	321.0%
12	157,020	506,463	16,942	10.79%	322.5%
13	163,301	529,373	17,620	10.79%	324.2%
14	169,833	553,411	18,325	10.79%	325.9%
15	176,626	578,640	19,058	10.79%	327.6%
16	183,691	605,126	19,820	10.79%	329.4%
17	191,039	632,938	20,613	10.79%	331.3%
18	198,681	662,151	21,438	10.79%	333.3%
19	206,628	692,844	22,295	10.79%	335.3%
20	214,893	725,102	23,187	10.79%	337.4%
21	223,489	759,014	24,114	10.79%	339.6%
22	232,429	794,675	25,079	10.79%	341.9%
23	241,726	832,186	26,082	10.79%	344.3%
24	251,395	871,655	27,126	10.79%	346.7%
25	261,451	913,198	28,211	10.79%	349.3%
26	271,909	956,937	29,339	10.79%	351.9%
27	282,785	1,003,002	30,513	10.79%	354.7%
28	294,096	1,051,533	31,733	10.79%	357.5%
29	305,860	1,102,678	33,002	10.79%	360.5%
30	318,094	1,156,595	34,322	10.79%	363.6%

Retirement, Survivor, and Disability Allowances
Actuarial Present Value of Future Benefits
Present Retired Lives and Vested Deferred Cases
December 31, 2008

Benefits Payable	Number	Monthly Amount	Actuarial Value
From Employer Accumulation Fund:			
Regular Retirements Effective Before 1/1/66	0	$ 0	$ 0
Disability Retirements Effective Before 1/1/66	0	0	0
Total Benefits Payable from Employer Accumulation Fund	0	0	0
From Pension Reserve Fund:			
Regular Retirements Effective After 1/1/66	1,006	3,093,495	443,268,825
Disability Retirements Effective After 1/1/66	102	248,390	37,645,989
Total Benefits Payable from Pension Reserve Fund	1,108	3,341,885	480,914,814
From Survivor Benefit Fund:			
Surviving Spouses, Dependent Children & Dependent Parents	263	286,207	29,320,116
Total Benefits Payable from Survivor Benefit Fund	263	286,207	29,320,116
Total Retirement Benefits Payable	1,371	3,628,092	510,234,930
Total Vested Deferred Benefits Payable	5	11,241	1,392,013
Grand Total	**1,376**	**$3,639,333**	**$511,626,943**

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
DEVELOPMENT OF ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 2008

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	$ 540,373,189	$ 156,403,968	$ 383,969,221
Disability allowances likely to be paid to present active members who become totally and permanently disabled	33,555,091	25,935,016	7,620,075
Survivor benefits likely to be paid to spouses and children of present active members who die before retiring	2,653,751	1,586,539	1,067,212
Separation benefits (refunds of contributions and deferred allowances likely to be paid on behalf of present active members)	8,118,063	7,879,137	238,926
Retirement benefits likely to be paid to current retirants and beneficiaries and to present inactive members	511,626,943	0	511,626,943
Total	$ 1,096,327,037	$ 191,804,660	$ 904,522,377
Member portion	174,948,293	89,988,897	84,959,396
Employer portion	$ 921,378,744	$ 101,815,763	$ 819,562,981

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
SUMMARY STATEMENT OF SYSTEM RESOURCES AND OBLIGATIONS
DECEMBER 31, 2008

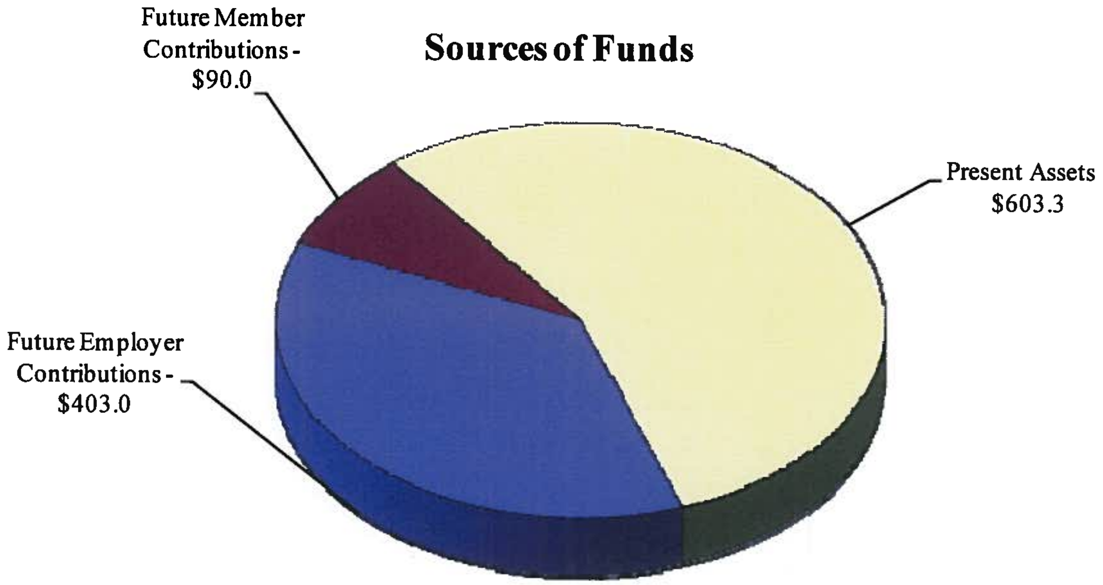
PRESENT RESOURCES AND EXPECTED FUTURE RESOURCES

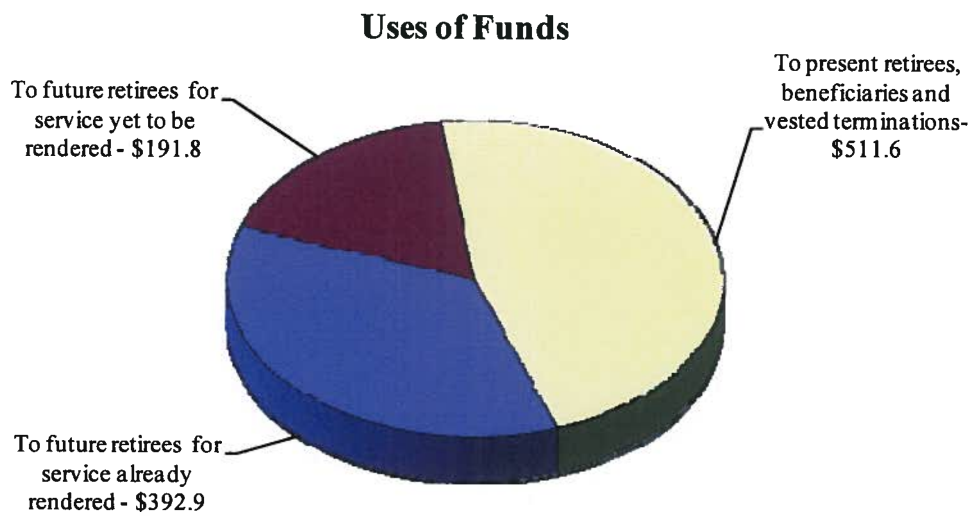
A. Present valuation assets		
1. Net assets from system financial statements	$ 582,542,638	
2. Market Value Adjustment	116,508,528	
3. Health Assets	95,785,363	
4. Valuation Assets: 1 + 2 - 3		$ 603,265,803
B. Actuarial present value of expected future Employer contributions		
1. For normal costs	101,815,763	
2. For unfunded actuarial accrued liability	301,256,574	
3. Total		403,072,337
C. Actuarial present value of expected future member contributions		89,988,897
D. Total Present and Expected Future Resources		$ 1,096,327,037

ACTUARIAL PRESENT VALUE OF EXPECTED FUTURE BENEFIT PAYMENTS

A. To retirants and beneficiaries	$ 510,234,930
B. To terminated members	1,392,013
C. To present active members	
1. Allocated to service rendered prior to valuation date (actuarial accrued liability)	392,895,434
2. Allocated to service likely to be rendered after valuation date	191,804,660
3. Total	584,700,094
D. Total Actuarial Present Value of Expected Future Benefit Payments	$ 1,096,327,037

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
FINANCING $1,096.3 MILLION OF BENEFIT PROMISES
DECEMBER 31, 2008





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			
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	73.7%	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
2005	1,573	83,408,155	766,741,437	591,922,200	174,819,237	2.1	77.2%	37
2005 #	1,573	83,408,155	773,856,164	591,922,200	181,933,964	2.2	76.5%	35
2006 *	1,592	85,878,329	807,760,712	653,493,046	154,267,666	1.8	80.9%	28
2007	1,597	93,752,908	866,255,394	700,860,707	165,394,687	1.8	80.9%	27
2008	**1,544**	**94,301,538**	**904,522,377**	**603,265,803**	**301,256,574**	**3.2**	**66.7%**	**N/A**

* *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
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)%	4.6%	3.3%
2005	1,573	83,408,155	53,025	1.3%	3.7%	3.4%
2006	1,592	85,878,329	53,944	1.7%	4.6%	2.6%
2007	1,597	93,752,908	58,706	8.8%	4.7%	4.1%
2008	1,544	94,301,538	61,076	4.0%	3.8% *	0.1%
		10 Year Average		3.1%	3.8%	2.5%

\+ *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.

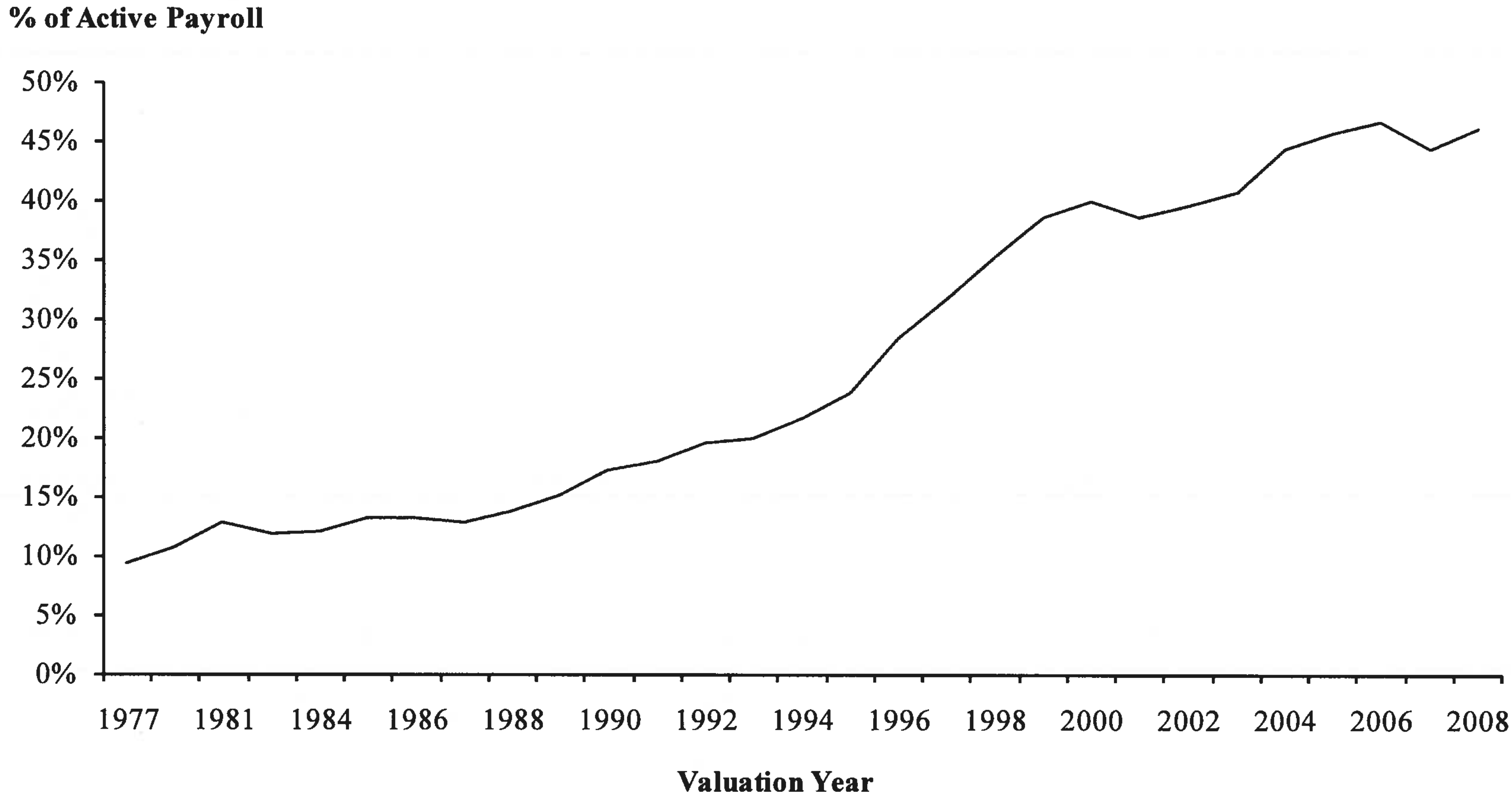
RETIREMENT, SURVIVOR, AND DISABILITY BENEFITS IN PAY STATUS
COMPARATIVE STATEMENT

Valuation Date December 31	Number of People	Monthly Pensions	Active Payroll	Average Amount	% of Active Member Pays
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	635	12.0%
1985 #	530	359,208	32,500,428	678	13.3%
1986	544	382,419	34,757,277	703	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%
2005 #	1,301	3,177,731	83,408,155	2,443	45.7%
2006 *	1,337	3,341,805	85,878,329	2,499	46.7%
2007	1,359	3,470,329	93,752,908	2,554	44.4%
2008	**1,371**	**3,628,092**	**94,301,538**	**2,646**	**46.2%**

* *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, 2008



The employer contribution rate for the year ended June 30, 2010 is scheduled to be 21.00%.

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

Valuation 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)
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	570,039,631	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%
2005	77,779,569	462,913,927	226,047,941	591,922,200	100%	100%	23%
2005 #	77,779,569	463,476,318	232,600,277	591,922,200	100%	100%	22%
2006 *	82,720,940	482,998,754	242,041,018	653,493,046	100%	100%	36%
2007	89,279,853	509,179,659	267,795,882	700,860,707	100%	100%	38%
2008	**94,749,356**	**511,626,943**	**298,146,078**	**603,265,803**	**100%**	**99%**	**0%**

* *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
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%	78,997,065	223.0%
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%
2005	766,741,437	591,922,200	174,819,237	77.2%	83,408,155	209.6%
2005 #	773,856,164	591,922,200	181,933,964	76.5%	83,408,155	218.1%
2006 *	807,760,712	653,493,046	154,267,666	80.9%	85,878,329	179.6%
2007	866,255,394	700,860,707	165,394,687	80.9%	93,752,908	176.4%
2008	**904,522,377**	**603,265,803**	**301,256,574**	**66.7%**	**94,301,538**	**319.5%**

* *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 Contributions	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%
2005	18,467,789	100%
2006	19,263,941	98%
2007	19,956,700	**92%**
2008	**20,302,216**	**96%**

This information is presented in draft form for review by the System's auditor. Please let us know if there are any changes so that we may maintain consistency with the System's financial statements.

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, 2009 will be ½ of the employer contribution for the period from July 1, 2008 to June 30, 2009 (21.00% of payroll, based upon an amortization period of 28 years) plus ½ of the employer contribution for the period from July 1, 2009 to June 30, 2010 (21.00% of payroll, based upon an amortization period of 27 years). The System's Annual Required Contribution for the plan year ending December 31, 2010 will be ½ of the employer contribution for the period from July 1, 2009 to June 30, 2010 (21.00% of payroll, based upon an amortization period of 27 years) plus ½ of the employer contribution for the period from July 1, 2010 to June 30, 2011 (28.60% of payroll, based upon an amortization period of 30 years).

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, 2008
Actuarial Cost Method	Entry Age
Amortization Method	Level Percent Open
Remaining Amortization Period	Infinite 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% - 14.0%
* Includes Wage Inflation at	4.0%

OTHER REQUESTED CAFR INFORMATION

As of December 31, 2008, 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	$ 94,749,356
Employer - financed vested	197,374,002
Employer - financed non-vested	48,173,435

As of December 31, 2008, there were 654 vested active members and 890 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 2008 applicable to spouses under age 65 is $80 per month and $25 for spouses 65 and older. 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 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 $10.00 for generic, $20.00 for brand and $60.00 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 ESI for retail/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 the pension benefit.

POST-RETIREMENT HEALTH CARE AND MEDICARE REIMBURSEMENT

Year	Covered Lives	Amounts Paid to Vendors (Including Medicare Part B)							Member Premiums and Other Adjustments	Net Paid by OHPRS	Per Covered Life	Payroll	% of Payroll
		Medical	Drugs	Medicare Part B	Dental	Vision	Wellness	Total					
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%
2005	1,958	6,015,277	2,980,755	422,045	364,139	124,658		9,906,874	(552,570)	9,354,304	4,777	83,408,155	11.2%
2006	2,078	4,999,822	2,832,743	503,034	408,667	127,266		8,871,532	(198,141)	8,673,391	4,174	85,878,328	10.1%
2007	2,085	6,580,455	3,513,662	572,127	464,402	130,029		11,260,675	(980,539)	10,280,136	4,931	93,752,908	11.0%
2008#	**2,103**	**5,087,073**	**3,274,896**	**632,293**	**453,002**	**121,599**	**$79,679**	**9,648,542**	**(784,381)**	**8,864,161**	**4,215**	**94,301,538**	**9.4%**

 # Member premiums and other adjustments for calendar year 2008 include member premiums totaling $784,381.

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

POST-RETIREMENT HEALTH CARE AND ME DICARE REIMBURSEMENT

ASSUMPTIONS FOR HEALTH CARE COVERAGES
DECEMBER 31, 2008

Development of Health Care Rates: Based on the 2008 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	$444.71	$0.00	$444.71	$451.52
B. One person with Medicare*	284.83	0.00	284.83	272.66
C. Two persons without Medicare	889.42	80.00	809.42	823.05
D. Two persons with Medicare*	569.66	25.00	544.66	520.32
E. Child	190.53	25.00	165.53	157.81
F. Medicare Part B Reimbursement	96.40	0.00	96.40	96.40

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 $96.40.*

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

		Claims									
			Member and			Population	Medical	Price		Secondary Provision	
Source	**Year**	**Gross**	**Adjustments**	**Net**	**Enrollees**	**Adjusted**	**CPI**	**Adjusted**	**Weight**	**Adjustment**	**Recognized**
Fin Stmnt	2004	$7,448,054	$641,707	$6,806,347	1,928	$7,424,143	310.1	$8,716,964	0.00	1.00	$ -
Fin Stmnt	2005	9,906,874	552,570	9,354,304	1,958	10,047,038	323.2	11,318,461	0.10	1.00	1,131,846
Fin Stmnt	2006	9,244,039	570,648	8,673,391	2,078	8,777,739	336.2	9,506,171	0.20	1.00	1,901,234
Fin Stmnt	2007	11,260,675	980,539	10,280,136	2,085	10,368,885	351.1	10,752,808	0.30	1.00	3,225,842
Fin Stmnt	2008	9,648,542	784,381	8,864,161	2,103	8,864,161	364.1	8,864,161	0.40	1.00	3,545,664
								(Base for coming year) Recognized:			**$ 9,804,586**
								Growth Factors: Population			1.022
								Price			1.072
								First Year Projection:			**$ 10,741,748**

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	$ 116.20	$ 181.28	51	$ 318.30	$ 351.91	86	$ 353.21	$ 309.86
17	117.36	183.09	52	339.66	367.50	87	354.81	310.46
18	118.54	184.93	53	361.67	384.06	88	354.81	310.46
19	119.72	186.77	54	384.48	401.35	89	354.81	310.46
20	120.92	188.64	55	408.07	419.35	90	354.81	310.46
21	122.13	190.53	56	432.37	438.03	91	354.81	310.46
22	123.35	192.43	57	457.35	457.35	92	354.81	310.46
23	124.58	194.36	58	481.24	474.41	93	354.81	310.46
24	125.83	196.30	59	505.48	491.83	94	354.81	310.46
25	127.09	198.26	60	530.01	509.55	95	354.81	310.46
26	128.36	200.25	61	554.75	527.53	96	354.81	310.46
27	129.64	202.25	62	579.63	545.71	97	354.81	310.46
28	130.94	204.27	63	604.26	564.35	98	354.81	310.46
29	132.25	206.32	64	628.87	583.11	99	354.81	310.46
30	133.57	208.38	65	246.20	226.72	100	354.81	310.46
31	134.90	210.46	66	254.15	232.67	101	354.81	310.46
32	136.25	212.57	67	261.93	238.53	102	354.81	310.46
33	137.62	214.69	68	269.51	244.28	103	354.81	310.46
34	138.99	216.84	69	276.87	249.90	104	354.81	310.46
35	140.38	219.01	70	283.99	255.37	105	354.81	310.46
36	141.79	221.20	71	290.85	260.67	106	354.81	310.46
37	143.20	223.41	72	297.43	265.78	107	354.81	310.46
38	144.64	225.64	73	303.70	270.68	108	354.81	310.46
39	146.08	227.90	74	309.66	275.36	109	354.81	310.46
40	147.54	230.18	75	315.28	279.80	110	354.81	310.46
41	158.04	237.62	76	320.56	283.99	111	354.81	310.46
42	169.53	245.73	77	325.48	287.92	112	354.81	310.46
43	182.02	254.53	78	330.04	291.56	113	354.81	310.46
44	195.54	264.05	79	334.23	294.92	114	354.81	310.46
45	210.07	274.32	80	338.05	297.98	115	354.81	310.46
46	225.62	285.33	81	341.48	300.73	116	354.81	310.46
47	242.19	297.11	82	344.55	303.18	117	354.81	310.46
48	259.76	309.66	83	347.25	305.31	118	354.81	310.46
49	278.32	322.98	84	349.58	307.14	119	354.81	310.46
50	297.84	337.07	85	351.56	308.65	120	354.81	310.46

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 5 to10-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 5 - 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, 2008

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, 2008 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 No. 43 and No. 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, 2008

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 (Optimistic): The Alternate A assumption assumes that the employer share of per capita costs would increase at 6% next year, 5.5% the second year, 5% the third year, 4.5% the fourth year and no faster than 4% per year thereafter.

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.

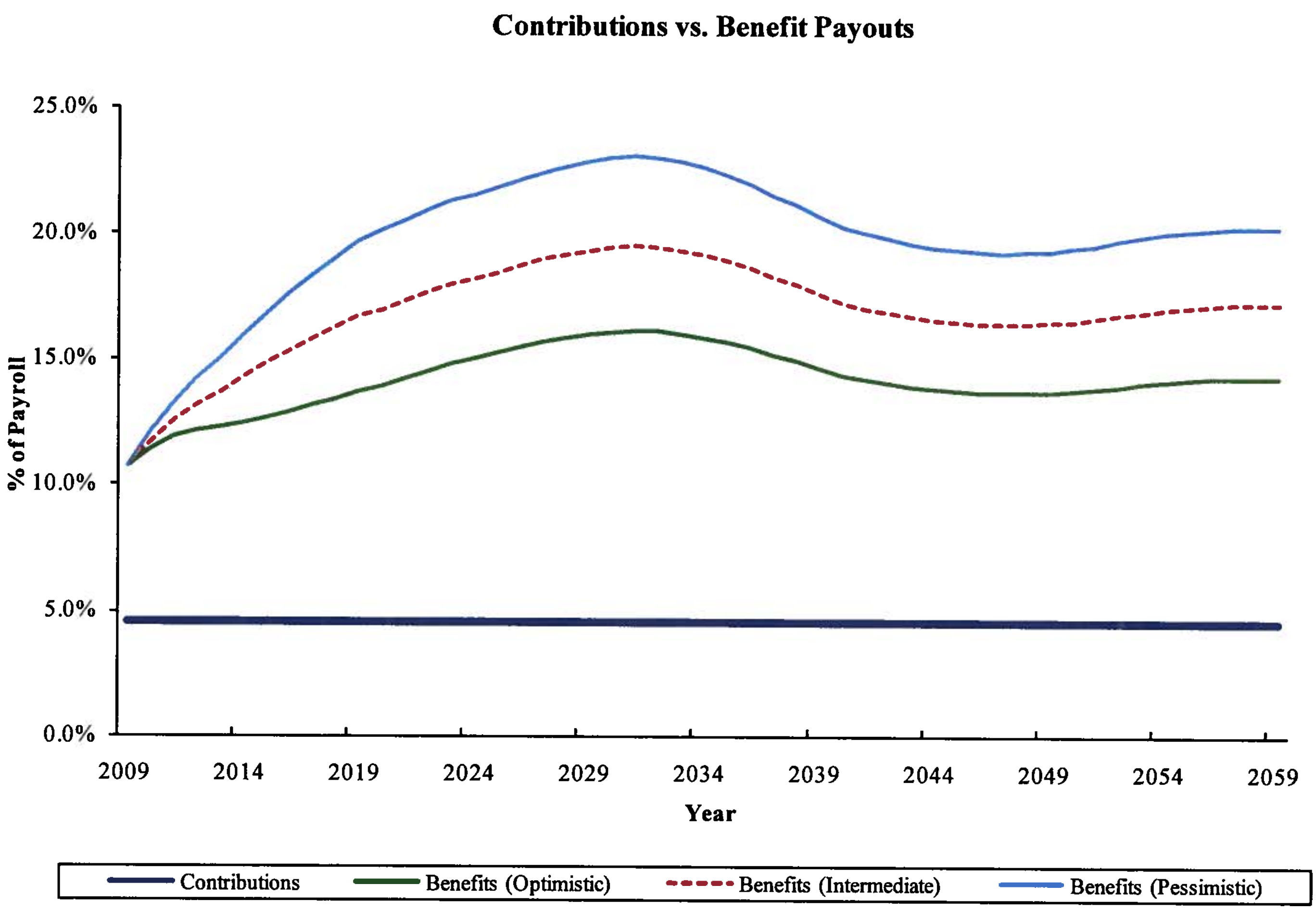
Alternate C (Pessimistic): This scenario envisions poorer experience than the other two.

No trend was applied to the $80 monthly spouse premium.

	Health Trend Above Wage Inflation Assumption of 4.0%				
	Medical and Prescription Drug			Medicare	
Year	Alt. A Optimistic	Alt. B Intermediate	Alt. C Pessimistic	Part D	Part B
2009					
2010	2.00%	5.00%	8.00%	3.00%	5.00%
2011	1.50%	4.50%	7.25%	2.70%	4.50%
2012	1.00%	4.00%	6.50%	2.40%	4.00%
2013	0.50%	3.50%	5.75%	2.10%	3.50%
2014	0.00%	3.00%	5.00%	1.80%	3.00%
2015	0.00%	2.50%	4.25%	1.50%	2.50%
2016	0.00%	2.00%	3.50%	1.20%	2.00%
2017	0.00%	1.50%	2.75%	0.90%	1.50%
2018	0.00%	1.00%	2.00%	0.60%	1.00%
2019	0.00%	0.50%	1.25%	0.30%	0.50%
2020	0.00%	0.00%	1.00%	0.00%	0.00%
2021	0.00%	0.00%	0.00%	0.00%	0.00%
2022	0.00%	0.00%	0.00%	0.00%	0.00%
2023 & Later	0.00%	0.00%	0.00%	0.00%	0.00%

Year Ended 12/31	Projected Benefits as % of Payroll		
	Alt. A Optimistic	Alt. B Intermediate	Alt. C Pessimistic
2009	10.7%	10.7%	10.7%
2010	11.3%	11.7%	12.0%
2011	11.8%	12.5%	13.2%
2012	12.1%	13.1%	14.2%
2013	12.2%	13.6%	15.0%
2014	12.4%	14.2%	15.9%
2015	12.6%	14.8%	16.8%
2016	12.9%	15.3%	17.6%
2017	13.1%	15.8%	18.3%
2018	13.4%	16.3%	19.0%
2023	14.8%	18.0%	21.3%
2028	15.8%	19.1%	22.6%
2033	15.9%	19.3%	22.8%
2038	14.9%	17.9%	21.1%
2043	13.9%	16.7%	19.6%
2048	13.6%	16.4%	19.3%
2053	14.0%	16.9%	19.9%
2058	14.2%	17.2%	20.3%

Under the intermediate assumption, the payout under the retiree health plan is expected to nearly double as a percentage of payroll within 50 years.


Contributions vs. Benefit Payouts
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
% of Payroll
2009
2014
2019
2024
2029
2034
2039
2044
2049
2054
2059
Year
Contributions
Benefits (Optimistic)
Benefits (Intermediate)
Benefits (Pessimistic)

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, 2009 to June 30, 2010	Contributions Expressed as Percents of Payroll
Normal Cost	8.30%
UAL Payment (30 year amortization)	11.07%
Total (Annual Required Contribution)	**19.37%**
Current Employer Contribution Rate Allocation	4.50%

Accrued Health and Medicare Reimbursement Liabilities, $324,170,387 were more than applicable assets of $95,785,363.

The calculations above show the employer's annual required contribution (ARC) for the year ended June 30, 2011. The System's ARC for the year ended December 31, 2010 will be ½ of 21.16% and ½ of the 19.37% shown above.

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, 2008
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% - 14.0%
* Includes Wage Inflation at	4.0%
Health Trend	Intermediate Trend (See Page B-8)

POST-RETIREMENT HEALTH AND MEDICARE REIMBURSEMENT RESULTS WITH ALTERNATE HEALTH INFLATION ASSUMPTIONS DECEMBER 31, 2008

Optimistic, Intermediate and Pessimistic assumption sets 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 (Employer Rate Allocation)		Funding Level 2 (Lowest Employer Rate to Maintain Solvency of Fund Indefinitely)		
Assumption Set	**%**	**Fund Solvent Until**	**%**	**Fund Solvent Until**	**Prior Valuation %**
A (Optimistic)	4.50%	2026	9.10%	Indefinitely	9.80%
B (Intermediate)	4.50%	2023	11.70%	Indefinitely	12.70%
C (Pessimistic)	4.50%	2021	14.30%	Indefinitely	15.60%

The above results show that:

- Under the optimistic 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 9.10% of payroll.

- Under the intermediate assumptions, the employer rate will need to be raised prior to 2023 in order to maintain the solvency of the fund. The ultimate rate needed to support the plan would be 11.70% of payroll if the increase were made today.

- Under the pessimistic 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 14.30% of payroll if the increase were made today.

The following pages show projected fund activity based upon Alternate Assumptions A, B and C, and Funding Levels 1 and 2.

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

Fiscal Year	Fund Balance BOY	Contributions	Benefits	Net	Investment Return %	Investment Return $	Fund Balance EOY		% of Payroll	
							Nominal $	Real $	Contrib.	Benefits
2009	$95,785	$4,738	$10,444	$(5,703)	8.00%	$7,438	$97,520	$97,520	4.50%	10.71%
2010	97,520	4,917	11,397	(6,480)	8.00%	7,546	98,586	94,794	4.50%	11.35%
2011	98,586	5,119	12,307	(7,188)	8.00%	7,603	99,001	91,532	4.50%	11.85%
2012	99,001	5,356	13,003	(7,647)	8.00%	7,618	98,972	87,986	4.50%	12.08%
2013	98,972	5,600	13,632	(8,032)	8.00%	7,601	98,541	84,233	4.50%	12.22%
2014	98,541	5,849	14,367	(8,518)	8.00%	7,547	97,570	80,195	4.50%	12.41%
2015	97,570	6,100	15,185	(9,085)	8.00%	7,447	95,932	75,816	4.50%	12.65%
2016	95,932	6,365	16,016	(9,651)	8.00%	7,293	93,574	71,109	4.50%	12.86%
2017	93,574	6,628	16,922	(10,294)	8.00%	7,079	90,359	66,024	4.50%	13.10%
2018	90,359	6,892	17,919	(11,027)	8.00%	6,793	86,125	60,510	4.50%	13.38%
2019	86,125	7,160	19,001	(11,841)	8.00%	6,422	80,706	54,522	4.50%	13.68%
2020	80,706	7,453	20,018	(12,565)	8.00%	5,960	74,101	48,135	4.50%	13.89%
2021	74,101	7,753	21,166	(13,413)	8.00%	5,398	66,086	41,277	4.50%	14.16%
2022	66,086	8,053	22,450	(14,397)	8.00%	4,718	56,407	33,877	4.50%	14.49%
2023	56,407	8,380	23,719	(15,339)	8.00%	3,907	44,975	25,972	4.50%	14.76%
2024	44,975	8,742	24,975	(16,233)	8.00%	2,957	31,699	17,601	4.50%	14.96%
2025	31,699	9,117	26,319	(17,202)	8.00%	1,857	16,354	8,732	4.50%	15.16%
2026	16,354	9,502	27,792	(18,290)	8.00%	586	(1,350)	(693)	4.50%	15.39%

Funding Level 1 is the present contribution rate for post-retirement Health Care and Medicare reimbursement. The fund remains solvent until 2026 in this projection.

Post-Retirement Health Care & Medicare Reimbursement
Cash Flow Projection
Optimistic Assumptions: A
Funding Level 2

Fiscal Year	Fund Balance BOY	Contributions	Benefits	Net	Investment Return %	Investment Return $	Fund Balance EOY		% of Payroll	
							Nominal $	Real $	Contrib.	Benefits
2009	$95,785	$9,224	$10,444	$(1,217)	8.00%	$7,615	$102,183	$102,183	9.10%	10.71%
2010	102,183	9,536	11,397	(1,861)	8.00%	8,101	108,423	104,253	9.10%	11.35%
2011	108,423	9,896	12,307	(2,411)	8.00%	8,579	114,591	105,946	9.10%	11.85%
2012	114,591	10,308	13,003	(2,695)	8.00%	9,061	120,957	107,530	9.10%	12.08%
2013	120,957	10,733	13,632	(2,899)	8.00%	9,562	127,620	109,090	9.10%	12.22%
2014	127,620	11,172	14,367	(3,195)	8.00%	10,083	134,508	110,556	9.10%	12.41%
2015	134,508	11,624	15,185	(3,561)	8.00%	10,620	141,567	111,882	9.10%	12.65%
2016	141,567	12,096	16,016	(3,920)	8.00%	11,171	148,818	113,089	9.10%	12.86%
2017	148,818	12,569	16,922	(4,353)	8.00%	11,734	156,199	114,133	9.10%	13.10%
2018	156,199	13,050	17,919	(4,869)	8.00%	12,304	163,634	114,967	9.10%	13.38%
2023	193,391	15,771	23,719	(7,948)	8.00%	15,157	200,600	115,842	9.10%	14.76%
2028	228,140	19,347	30,876	(11,529)	8.00%	17,796	234,407	111,260	9.10%	15.77%
2033	256,940	24,044	38,607	(14,563)	8.00%	19,980	262,357	102,351	9.10%	15.93%
2038	287,162	29,993	44,567	(14,574)	8.00%	22,397	294,985	94,587	9.10%	14.86%
2043	335,759	36,725	50,670	(13,945)	8.00%	26,310	348,124	91,749	9.10%	13.85%
2048	405,163	44,501	60,451	(15,950)	8.00%	31,783	420,996	91,196	9.10%	13.63%
2053	487,183	53,683	75,207	(21,524)	8.00%	38,125	503,784	89,697	9.10%	13.99%
2058	569,365	65,050	93,045	(27,995)	8.00%	44,444	585,814	85,729	9.10%	14.25%
2068	752,548	96,783	132,730	(35,947)	8.00%	58,784	775,385	76,657	9.10%	13.66%
2078	1,022,774	143,352	194,376	(51,024)	8.00%	79,807	1,051,557	70,232	9.10%	13.53%
2088	1,246,575	211,536	297,256	(85,720)	8.00%	96,341	1,257,196	56,724	9.10%	14.01%
2098	1,207,837	314,056	432,424	(118,368)	8.00%	91,953	1,181,422	36,011	9.10%	13.73%
2108	557,012	464,643	638,396	(173,753)	8.00%	37,700	420,959	8,668	9.10%	13.70%

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
INTERMEDIATE ASSUMPTIONS: B
FUNDING LEVEL 1

Fiscal	Fund Balance				Investment	Investment	Fund Balance EOY		% of Payroll	
Year	BOY	Contributions	Benefits	Net	Return %	Return $	Nominal $	Real $	Contrib.	Benefits
2009	$95,785	$4,738	$10,444	$(5,706)	8.00%	$7,437	$97,516	$97,516	4.50%	10.71%
2010	97,516	4,917	11,729	(6,812)	8.00%	7,532	98,236	94,458	4.50%	11.68%
2011	98,236	5,119	13,026	(7,907)	8.00%	7,547	97,876	90,492	4.50%	12.54%
2012	97,876	5,356	14,142	(8,786)	8.00%	7,483	96,573	85,853	4.50%	13.14%
2013	96,573	5,600	15,225	(9,625)	8.00%	7,346	94,294	80,603	4.50%	13.64%
2014	94,294	5,849	16,468	(10,619)	8.00%	7,124	90,799	74,630	4.50%	14.23%
2015	90,799	6,100	17,784	(11,684)	8.00%	6,803	85,918	67,902	4.50%	14.81%
2016	85,918	6,365	19,072	(12,707)	8.00%	6,372	79,583	60,477	4.50%	15.31%
2017	79,583	6,628	20,399	(13,771)	8.00%	5,823	71,635	52,343	4.50%	15.80%
2018	71,635	6,892	21,773	(14,881)	8.00%	5,143	61,897	43,488	4.50%	16.26%
2019	61,897	7,160	23,176	(16,016)	8.00%	4,319	50,200	33,913	4.50%	16.69%
2020	50,200	7,453	24,401	(16,948)	8.00%	3,347	36,599	23,774	4.50%	16.94%
2021	36,599	7,753	25,783	(18,030)	8.00%	2,216	20,785	12,982	4.50%	17.25%
2022	20,785	8,053	27,333	(19,280)	8.00%	901	2,406	1,445	4.50%	17.64%
2023	2,406	8,380	28,856	(20,476)	8.00%	(616)	(18,686)	(10,791)	4.50%	17.96%

Funding Level 1 is the present contribution rate for post-retirement Health Care and Medicare reimbursement. The fund remains solvent until 2023 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 Payroll Contrib.	% of Payroll Benefits
2009	$95,785	$11,759	$10,444	$1,315	8.00%	$7,715	$104,815	$104,815	11.70%	10.71%
2010	104,815	12,148	11,729	419	8.00%	8,402	113,636	109,265	11.70%	11.68%
2011	113,636	12,596	13,026	(430)	8.00%	9,074	122,280	113,055	11.70%	12.54%
2012	122,280	13,107	14,142	(1,035)	8.00%	9,742	130,987	116,447	11.70%	13.14%
2013	130,987	13,634	15,225	(1,591)	8.00%	10,416	139,812	119,512	11.70%	13.64%
2014	139,812	14,181	16,468	(2,287)	8.00%	11,095	148,620	122,155	11.70%	14.23%
2015	148,620	14,746	17,784	(3,038)	8.00%	11,770	157,352	124,358	11.70%	14.81%
2016	157,352	15,334	19,072	(3,738)	8.00%	12,441	166,055	126,188	11.70%	15.31%
2017	166,055	15,926	20,399	(4,473)	8.00%	13,108	174,690	127,644	11.70%	15.80%
2018	174,690	16,531	21,773	(5,242)	8.00%	13,768	183,216	128,725	11.70%	16.26%
2023	216,813	19,949	28,856	(8,907)	8.00%	16,993	224,899	129,874	11.70%	17.96%
2028	255,588	24,439	37,473	(13,034)	8.00%	19,932	262,486	124,587	11.70%	19.13%
2033	286,989	30,347	46,769	(16,422)	8.00%	22,311	292,878	114,258	11.70%	19.29%
2038	320,644	37,791	53,750	(15,959)	8.00%	25,021	329,706	105,721	11.70%	17.92%
2043	378,293	46,234	60,904	(14,670)	8.00%	29,684	393,307	103,657	11.70%	16.65%
2048	463,678	56,034	72,654	(16,620)	8.00%	36,438	483,496	104,735	11.70%	16.38%
2053	567,699	67,663	90,629	(22,966)	8.00%	44,509	589,242	104,912	11.70%	16.85%
2058	676,806	82,029	112,277	(30,248)	8.00%	52,950	699,508	102,367	11.70%	17.19%
2068	948,683	122,054	160,004	(37,950)	8.00%	74,396	985,129	97,393	11.70%	16.46%
2078	1,419,196	180,709	234,100	(53,391)	8.00%	111,427	1,477,232	98,662	11.70%	16.29%
2088	2,045,287	266,720	358,487	(91,767)	8.00%	159,999	2,113,519	95,361	11.70%	16.89%
2098	2,832,709	395,942	521,118	(125,176)	8.00%	221,674	2,929,207	89,286	11.70%	16.55%
2108	3,954,297	585,749	769,204	(183,455)	8.00%	309,100	4,079,942	84,014	11.70%	16.51%

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	Fund Balance				Investment	Investment	Fund Balance EOY		% of Payroll	
Year	BOY	Contributions	Benefits	Net	Return %	Return $	Nominal $	Real $	Contrib.	Benefits
2009	$95,785	$4,738	$10,444	$(5,709)	8.00%	$7,437	$97,513	$97,513	4.50%	10.71%
2010	97,513	4,917	12,061	(7,144)	8.00%	7,519	97,888	94,123	4.50%	12.01%
2011	97,888	5,119	13,732	(8,613)	8.00%	7,491	96,766	89,466	4.50%	13.22%
2012	96,766	5,356	15,239	(9,883)	8.00%	7,351	94,234	83,774	4.50%	14.16%
2013	94,234	5,600	16,723	(11,123)	8.00%	7,100	90,211	77,113	4.50%	14.99%
2014	90,211	5,849	18,395	(12,546)	8.00%	6,721	84,386	69,359	4.50%	15.90%
2015	84,386	6,100	20,159	(14,059)	8.00%	6,196	76,523	60,477	4.50%	16.79%
2016	76,523	6,365	21,887	(15,522)	8.00%	5,509	66,510	50,542	4.50%	17.57%
2017	66,510	6,628	23,650	(17,022)	8.00%	4,649	54,137	39,557	4.50%	18.31%
2018	54,137	6,892	25,454	(18,562)	8.00%	3,598	39,173	27,522	4.50%	19.01%
2019	39,173	7,160	27,277	(20,117)	8.00%	2,339	21,395	14,454	4.50%	19.64%
2020	21,395	7,453	28,928	(21,475)	8.00%	864	784	509	4.50%	20.08%
2021	784	7,753	30,575	(22,822)	8.00%	(838)	(22,876)	(14,288)	4.50%	20.45%

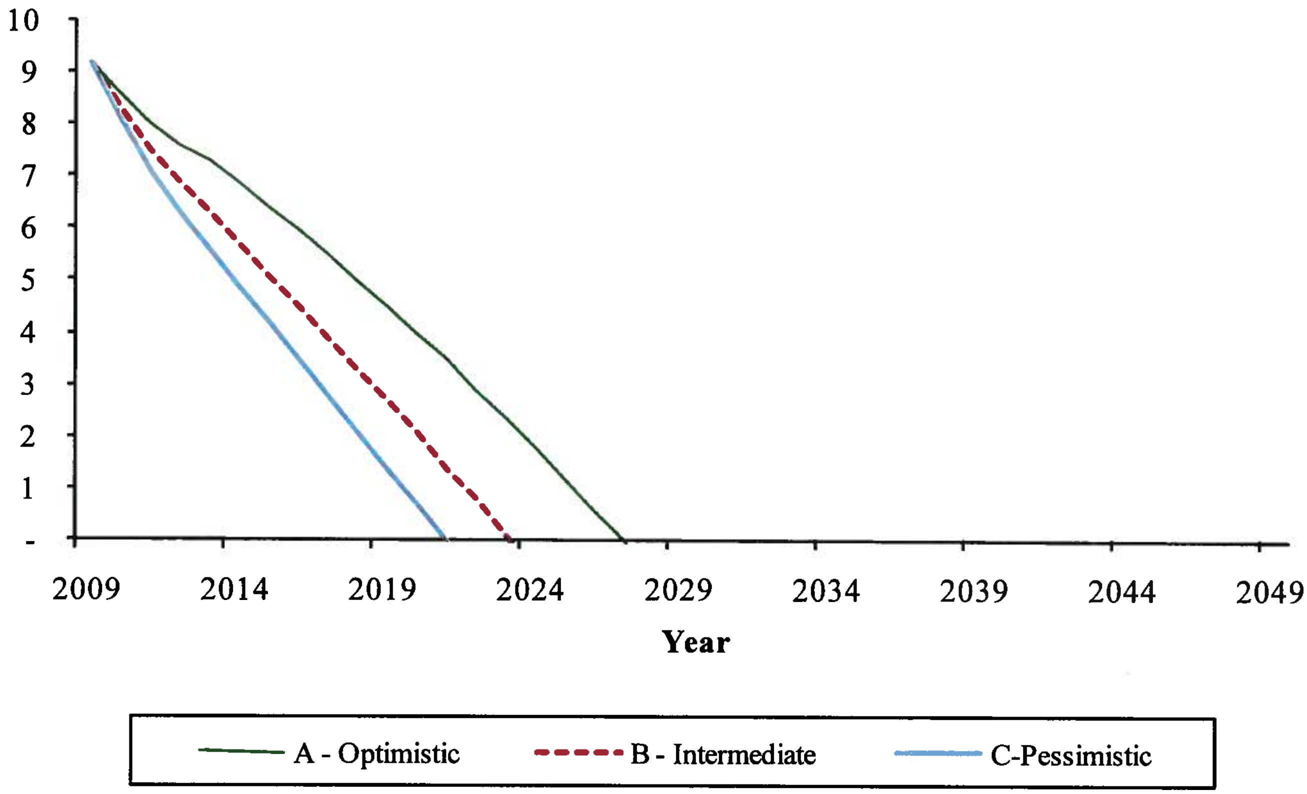
Funding Level 1 is the present contribution rate for post-retirement Health Care and Medicare reimbursement. The fund remains solvent until 2021 in this projection.

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

Fiscal	Fund Balance				Investment	Investment	Fund Balance EOY		% of Payroll	
Year	BOY	Contributions	Benefits	Net	Return %	Return $	Nominal $	Real $	Contrib.	Benefits
2009	$ 95,785	$ 14,294	$ 10,444	$ 3,847	8.00%	$ 7,815	$ 107,447	$ 107,447	14.30%	10.71%
2010	107,447	14,759	12,061	2,698	8.00%	8,702	118,847	114,276	14.30%	12.01%
2011	118,847	15,297	13,732	1,565	8.00%	9,570	129,982	120,176	14.30%	13.22%
2012	129,982	15,906	15,239	667	8.00%	10,425	141,074	125,414	14.30%	14.16%
2013	141,074	16,535	16,723	(188)	8.00%	11,278	152,164	130,070	14.30%	14.99%
2014	152,164	17,190	18,395	(1,205)	8.00%	12,126	163,085	134,044	14.30%	15.90%
2015	163,085	17,868	20,159	(2,291)	8.00%	12,956	173,750	137,317	14.30%	16.79%
2016	173,750	18,573	21,887	(3,314)	8.00%	13,769	184,205	139,981	14.30%	17.57%
2017	184,205	19,284	23,650	(4,366)	8.00%	14,564	194,403	142,048	14.30%	18.31%
2018	194,403	20,012	25,454	(5,442)	8.00%	15,337	204,298	143,537	14.30%	19.01%
2023	241,810	24,126	34,192	(10,066)	8.00%	18,947	250,691	144,768	14.30%	21.28%
2028	284,002	29,531	44,336	(14,805)	8.00%	22,136	291,333	138,279	14.30%	22.64%
2033	316,631	36,649	55,282	(18,633)	8.00%	24,595	322,593	125,850	14.30%	22.80%
2038	351,282	45,588	63,326	(17,738)	8.00%	27,402	360,946	115,738	14.30%	21.11%
2043	414,151	55,743	71,581	(15,838)	8.00%	32,507	430,820	113,544	14.30%	19.57%
2048	509,487	67,568	85,399	(17,831)	8.00%	40,055	531,711	115,180	14.30%	19.25%
2053	625,901	81,643	106,756	(25,113)	8.00%	49,080	649,868	115,707	14.30%	19.85%
2058	746,728	99,007	132,405	(33,398)	8.00%	58,419	771,749	112,939	14.30%	20.28%
2068	1,048,074	147,324	188,562	(41,238)	8.00%	82,218	1,089,054	107,667	14.30%	19.40%
2078	1,584,489	218,066	275,695	(57,629)	8.00%	124,484	1,651,344	110,290	14.30%	19.19%
2088	2,311,331	321,904	422,601	(100,697)	8.00%	180,930	2,391,564	107,907	14.30%	19.91%
2098	3,257,028	477,828	613,989	(136,161)	8.00%	255,186	3,376,053	102,906	14.30%	19.49%
2108	4,686,462	706,855	906,172	(199,317)	8.00%	367,047	4,854,192	99,958	14.30%	19.45%

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
4.50% EMPLOYER CONTRIBUTION RATE
DECEMBER 31, 2008



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 Plan's 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) Pension EANC %	(3) Pension PUCNC %	(4) Pension 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%
2005	85,828	21.68%	22.59%	19,388.5	3,006.4	22,394.9	53,442.5	347,427.6	15.4%
2006	87,563	20.99%	21.83%	19,115.0	3,384.8	22,499.8	56,827.3	369,927.4	15.4%
2007	95,032	20.78%	21.92%	20,831.0	4,575.1	25,406.1	61,402.4	395,333.5	15.5%
2008	**93,029**	**20.81%**	**21.89%**	**20,364.0**	**4,668.0**	**25,032.0**	**66,070.4**	**420,365.5**	**15.7%**

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, 2008 TO DECEMBER 31, 2008

Unfunded Accrued Liabilities (UAL), January 1	$165,394,687
Normal Cost	19,964,580
Contributions	29,173,201
Interest	12,863,230
Expected UAL Before Any Changes	169,049,296
Effect of Changes in Benefits	0
Expected UAL After All Changes	169,049,296
Actual UAL	301,256,574
Gain/(Loss) for Year From Financial Experience	**$(132,207,278)**

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, 2008 AND 2007

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	
	2008	**2007**
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.	**$ 127,547**	$ 590,891
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	**1,169,481**	738,713
Death-in-Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	**(72,528)**	(190,263)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	**776,377**	(166,202)
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	**(357,076)**	(14,289,526)
Investment Income. If there is greater investment return on pension assets than assumed, there is a gain. If less return, a loss.	**(139,408,285)**	11,307,544
Other. Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, valuation methods, etc.	**5,557,206**	(7,732,825)
Gain (or Loss) During Year From Experience	**$ (132,207,278)**	$ (9,741,668)
Non-Recurring Items (Effect of Benefit/Assumption Changes)	**0**	0
Composite Gain (or Loss) During Year	**$ (132,207,278)**	$ (9,741,668)

INVESTMENT GAIN (LOSS)
DEVELOPMENT OF PORTION ATTRIBUTABLE TO RETIREMENT, SURVIVOR AND DISABILITY ALLOWANCES
JANUARY 1, 2008 TO DECEMBER 31, 2008

Assets, Beginning of Year	$700,860,707
Net Cash Flow	(13,707,188)
Assumed Investment Return	55,520,569
Expected Assets End of Year	$742,674,088
Actual Assets End of Year	603,265,803
Gain/(Loss) for Year	**$(139,408,285)**

The total investment gain (loss) was ($159,333,670), including the loss on health assets.

ACTIVE MEMBER POPULATION RECONCILIATION
JANUARY 1, 2008 TO DECEMBER 31, 2008

	Actual	Expected
Active Members Beginning of Year	1,597	
Plus New Hires	0	
Minus Retirements	27	44.8
Minus Deaths	0	0.8
Minus Disabilities	4	6.9
Minus Other Terminations*	31	19.3
Returned to Active Status	9	
Plus or Minus Data Correction	0	
Active Members End of Year	**1,544**	

* *Includes 1 member who took a leave of absence and 0 members who transferred out of the System.*

SECTION D
FINANCIAL INFORMATION

CURRENT ASSET INFORMATION FURNISHED FOR THE VALUATION DECEMBER 31, 2008

Balance Sheet

Current Assets (Market Value)	
Cash & short-term investments	$ 14,793,573
Fixed Income	126,361,068
Stocks	311,279,643
Real Estate	9,578,623
Alternatives	119,452,827
Other short-term	9,926
Accruals & Receivables	(10,059,670)
Total Current Assets	$ 571,415,990

Fund Balance	
Employees' Savings Fund	$ 84,959,396
Employer Accumulation Fund	70,120,738
Pension Reserve Fund	397,398,249
Survivors Benefit Fund	28,386,557
Health Care Fund	79,560,088
Income Fund	(89,009,038)
Total Fund Balance	$ 571,415,990

Revenues and Expenditures

	2008
Net Assets Held in Trust for Pension and Postemployment Health Care Benefits	$833,704,076
DROP Liabilities	5,631,135
Total	839,335,211
Revenues*	
Employee contributions	
For non-DROP members	8,870,985
For DROP members	795,680
Employer contributions (net)	25,002,598
Investment income (net)	
Non-DROP investment income	(238,393,511)
DROP investment income	215,843
Miscellaneous	0
Total	(203,508,405)
Expenditures	
Benefit payments	
Retirees and Beneficiaries	42,914,734
From DROP account	450,415
Health insurance	8,546,663
Refund of member contributions	570,827
Administrative expenses	711,529
Death benefit	90,000
Total	53,284,168
Net Addition to Assets	(256,792,573)
Net Assets Held in Trust for Pension and Postemployment Health Care Benefits	$571,415,990
DROP Liabilities	11,126,648
Total	582,542,638

** Revenues include transfers to and from systems.*

CAFR Asset Information Furnished for the Valuation December 31, 2008

Additions by Source

	Pension Benefits					Other Postemployment Benefits		
	Contributions							
Year	Member*	Employer	Net Investment Income	Transfers from Other Systems	Total	Employer Contributions	Net Investment Income	Total
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
2005	8,582,130	18,467,789	35,511,228	1,180,951	63,742,098	3,006,385	8,603,479	11,609,864
2006	8,610,088	19,263,941	85,757,656	648,282	114,279,967	3,384,780	15,312,122	18,696,902
2007	8,901,454	19,956,700	51,176,733	717,017	80,751,904	4,575,072	10,475,428	15,050,500
2008	**9,666,665**	**20,302,216**	**(207,368,115)**	**632,894**	**(176,766,340)**	**4,667,972**	**(30,809,552)**	**(26,141,580)**

** Does not include service purchases.*

Deductions by Type

	Pension Benefits					Other Postemployment Benefits		
Year	Benefits#	Refunds	Transfers to Other Systems	Administrative	Total	Benefits	Administrative	Total
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
2005	37,716,268	495,640	403,975	561,817	39,177,700	8,932,259	92,344	9,024,603
2006	40,408,244	299,128	914,949	572,616	42,194,937	7,980,823	92,761	8,073,584
2007	44,741,510	98,628	330,539	605,165	45,775,842	10,652,642	97,101	10,749,743
2008	**43,455,149**	**570,827**	**282,987**	**613,447**	**44,922,410**	**8,864,161**	**98,082**	**8,962,243**

 # Includes death benefits.

DEVELOPMENT OF FUNDING VALUE OF RETIREMENT SYSTEM ASSETS
DECEMBER 31, 2008

		2006	2007	2008	2009	2010	2011
A.	Funding Value From Prior Year	$ 687,811,479	$ 758,350,258	$ 812,041,063			
B.	Market Value End of Year	794,427,257	833,704,076	582,542,638			
C.	Market Value Beginning of Year	711,718,909	794,427,257	833,704,076			
D.	Non-Investment Net Cash Flow	(17,696,053)	(21,673,076)	(17,903,377)			
E.	Investment Return:						
	E1. Market Total: B - C - D	100,404,401	60,949,895	(233,258,061)			
	E2. For Immediate Recognition (8.0%)	54,317,076	59,801,098	64,247,150			
	E3. Amount for Phased-In Recognition E1-E2	46,087,325	1,148,797	(297,505,211)			
F.	Phased-In Recognition of Investment Return:						
	F1. Current Year: 25% x E3	11,521,831	287,199	(74,376,303)			
	F2. First Prior Year	(2,242,247)	11,521,831	287,199	$ (42,868,253)		
	F3. Second Prior Year	5,995,999	(2,242,247)	11,521,831	287,199	$ (42,868,253)	
	F4. Third Prior Year	18,642,173	5,996,000	(2,242,248)	11,521,832	287,200	$ (42,868,253)
	F5. Total Recognized Phase-ins	$ 33,917,756	$ 15,562,783	$ (64,809,521)	$ (31,059,222)	$ (42,581,053)	$ (42,868,253)
G.	Funding Value End of Year:						
	G1. Preliminary Funding Value End of Year: A + D + E2 + F5	$ 758,350,258	$ 812,041,063	$ 793,575,315			
	G2. Corridor Percent	20%	20%	20%			
	G3. Upper Corridor Limit: (100% + G2) x B	953,312,708	1,000,444,891	699,051,166			
	G4. Lower Corridor Limit: (100% - G2) x B	635,541,806	666,963,261	466,034,110			
	G5. Funding Value End of Year	$ 758,350,258	$ 812,041,063	$ 699,051,166			
H.	Difference between Market Value and Funding Value	$ 36,076,999	$ 21,663,013	$ (116,508,528)	$ (85,449,306)	$ (42,868,253)	
I.	Funding Value Rate of Return	13.0 %	10.1 %	(11.8)%			
J.	Market Value Rate of Return	14.3 %	7.8 %	(28.3)%			
K.	Ratio of Funding Value to Market Value	95%	97%	120%			

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, 2008

	Pension	Health	Total
A. Market Value Beginning of Year	$724,410,252	$114,924,959	$839,335,211
B. Member Contributions			
B1. Pension Contributions	8,870,985		8,870,985
B2. DROP Contributions	795,680		795,680
B3. Retiree Health Contributions		784,381	784,381
C. Employer Contributions			
C1. System Contributions	20,302,216	4,350,474	24,652,690
C2. Transfers	349,907		349,907
C3. Medicare Part D Reimbursement		317,498	317,498
D. Benefits Paid			
D1. Pension Benefits	42,914,734		42,914,734
D2. Benefit Payments from DROP Account	450,415		450,415
D3. HPRS Paid Retiree Health Benefits		8,231,868	8,231,868
D4. HPRS Paid Medicare Part B Benefits		632,293	632,293
D5. Member Paid Retiree Health Benefits		784,381	784,381
E. Refunds of Member Contributions	570,827	0	570,827
F. Death Benefits	90,000	0	90,000
G. Net External Cash Flow (B + C - D - E - F)	(13,707,188)	(4,196,189)	(17,903,377)
H. Other Changes in Market Value	(207,981,562)	(30,907,634)	(238,889,196)
I. Market Value End of Year (A + G + H)	502,721,502	79,821,136	582,542,638
J. Funding Value Adjustment	100,544,301	15,964,227	116,508,528
K. Funding Value End of Year (I + J)	$603,265,803	$95,785,363	$699,051,166

Line J is allocated in proportion to Line I.

SECTION E

SUMMARY OF MEMBER DATA

Active Members as of December 31, 2008
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	12							12	$ 543,903
25-29	127	52						179	8,991,739
30-34	68	169	91	3				331	18,441,067
35-39	28	95	155	114				392	23,508,686
40	1	12	19	37	4			73	4,571,376
41		8	14	38	3			63	4,156,169
42		6	7	33	10			56	3,653,243
43		1	6	24	12	1		44	2,972,369
44		4	6	23	23			56	3,780,256
45		1	4	17	22	2		46	3,118,461
46		1	1	13	25	8		48	3,167,049
47			2	15	16	11		44	3,108,475
48				4	10	17		31	2,169,136
49				6	14	19	2	41	2,842,588
50				4	8	12	7	31	2,256,316
51					8	14	4	26	1,873,834
52					7	8	7	22	1,528,783
53					3	5	4	12	841,176
54					1	8	2	11	779,127
55					1	2	8	11	964,544
56					1	3	3	7	476,641
57						1	3	4	299,152
58							1	1	70,789
59						2	1	3	186,659
Totals	**236**	**349**	**305**	**331**	**168**	**113**	**42**	**1,544**	**$ 94,301,538**

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

Age: 38.3 years.

Service: 13.5 years.

Annual Pay: $61,076

***Includes 111 DROP members.**

Active Members
By Ages of Entry into Service
December 31, 2008

Entry Age Nearest Birthday	Number	Cumulative Number	Percent	Cumulative Percent
Less than 18	1	1	0.06%	0.06%
18	7	8	0.46%	0.52%
19	51	59	3.30%	3.82%
20	53	112	3.43%	7.25%
21	156	268	10.11%	17.36%
22	212	480	13.73%	31.09%
23	184	664	11.92%	43.01%
24	200	864	12.95%	55.96%
25	145	1,009	9.39%	65.35%
26	124	1,133	8.03%	73.38%
27	99	1,232	6.41%	79.79%
28	82	1,314	5.31%	85.10%
29	39	1,353	2.53%	87.63%
30	59	1,412	3.82%	91.45%
31	31	1,443	2.01%	93.46%
32	31	1,474	2.01%	95.47%
33	34	1,508	2.20%	97.67%
34	20	1,528	1.29%	98.96%
35	13	1,541	0.85%	99.81%
36	0	1,541	0.00%	99.81%
37	0	1,541	0.00%	99.81%
38	2	1,543	0.13%	99.94%
39	0	1,543	0.00%	99.94%
40 & Up	1	1,544	0.06%	100.00%
Total	**1,544**			

Age and Service Pensions Being Paid December 31, 2008
By Attained Ages

Attained Ages	Number	Monthly Pensions	Number Married	Average Age of Spouse
44	1	$1,050		
48	11	37,647	10	48
49	19	65,117	14	46
50	23	70,993	17	48
51	18	57,216	14	47
52	16	51,685	14	51
53	36	120,625	32	51
54	23	74,551	23	54
55	18	62,627	16	54
56	32	112,733	28	52
57	46	146,886	38	55
58	45	153,855	39	55
59	40	142,214	35	56
60	55	175,562	48	58
61	72	236,863	62	59
62	46	160,203	44	61
63	40	137,502	36	61
64	53	174,167	53	61
65	38	116,719	34	63
66	52	161,900	49	62
67	39	119,474	36	63
68	28	90,443	26	64
69	28	91,792	27	66
70	26	68,610	26	67
71	27	78,765	26	67
72	18	46,376	17	69
73	14	39,812	13	71
74	14	34,853	13	70
75	9	20,509	9	71
76	13	31,596	11	71
77	11	24,845	11	75
78	16	40,870	15	74
79	15	29,743	12	76
80	14	26,150	13	77
81	13	24,244	11	78
82	6	10,036	5	77
83	6	10,791	5	81
85 & Over	25	44,471	16	84
Totals	**1,006**	**$ 3,093,495**	**898**	

DISABILITY PENSIONS BEING PAID DECEMBER 31, 2008
BY ATTAINED AGE

Attained Ages	Number	Monthly Pensions	Number Married	Average Age of Spouse
30	1	$1,938		
34	1	2,454	1	34
36	2	5,346	2	37
37	1	2,530	1	24
38	2	4,672	2	35
39	1	2,619	1	44
40	4	10,199	2	35
41	3	6,958	2	31
42	4	8,929	2	42
43	2	3,035	1	52
44	5	14,534	3	44
45	4	9,418	4	42
46	2	6,476	2	38
47	3	10,918	3	48
48	5	12,734	5	47
49	4	10,834	3	44
50	7	16,155	4	49
51	7	18,218	5	52
52	4	11,026	3	51
53	2	6,087	2	55
55	3	7,973	3	53
56	3	7,248	2	55
57	3	8,507	3	55
58	1	1,698	1	53
59	4	8,668	2	57
60	6	12,311	5	57
61	1	2,359	1	61
62	3	7,294	2	56
64	2	5,184	1	66
65	2	3,842	2	64
66	1	2,373		N/A
67	1	1,514	1	61
71	1	2,962	1	68
73	1	1,514	1	69
78	1	1,608	1	73
79	2	3,256	1	75
81	1	1,633	1	79
82	1	1,644	0	N/A
86	1	1,722	1	86
Totals	**102**	**$248,390**	**77**	

Dependents Being Paid as of December 31, 2008
Tabulated by Attained Age

Attained Ages	Number	Monthly Pensions
12 & Under	8	$1,358
13	1	185
14	1	185
15	1	155
16	3	522
17	4	716
18	4	753
19	3	522
20	1	209
21	1	185
22	7	2,038
23	1	195
29	1	954
31	1	1,089
35	1	1,108
36	1	1,177
38	1	1,108
40	1	1,244
42	1	1,177
43	1	1,152
44	2	2,106
46	3	3,373
49	2	417
51	2	2,511
53	2	2,539
54	3	3,355
55	1	927
56	1	1,296
57	5	6,254
58	3	4,053
59	2	2,550
60	4	5,288
61	7	9,580
62	5	7,187
63	5	6,933
64	5	7,268
65	4	4,903
66	7	9,578
67	1	1,224
68	4	4,688
69	4	4,901
70-79	71	87,098
80-89	64	75,819
90 & Over	13	16,330
Totals	**263**	**$286,207**

ACTIVE MEMBER VALUATION DATA, 1998 TO 2008

Actuarial Valuation as of December 31	Number of Active Members	Annual Payroll	Average Annual Salary	% Increase in Average Pay
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)
2005	1,573	83,408,155	53,025	1.3
2006	1,592	85,878,329	53,944	1.7
2007	1,597	93,752,908	58,706	8.8
2008	**1,544**	**94,301,538**	**61,076**	**4.0**

RETIRANTS AND BENEFICIARIES VALUATION DATA, 1998 TO 2008

Actuarial Valuation	Added to Rolls		Removed from Rolls		Number of People	Total Monthly Benefits	Average Benefit
as of December 31	No.	Monthly Benefits	No.	Monthly Benefits			
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
2005	45	194,666	26	40,276	1,301	3,177,731	2,443
2006	70	215,820	34	51,746	1,337	3,341,805	2,499
2007	53	184,644	31	56,120	1,359	3,470,329	2,554
2008	**45**	**211,061**	**33**	**53,298**	**1,371**	**3,628,092**	**2,646**

Of the 1,371 retirants and beneficiaries as of December 31, 2008, 1,006 are service retirees, 102 are disability retirees and 263 are survivor beneficiaries. The average monthly benefits are $3,075 for service retirees, $2,435 for disability retirees and $1,088 for survivor beneficiaries.

Number of Retired Lives Covered by AETNA & Other Carriers
Comparative Schedule

	Census Date									
	12/08	12/07	12/06	12/05	12/04	12/03	12/02	12/01	12/00	12/99
Recipients:										
w/o Medicare A	**762**	751	779	806	808	791	773	771	761	724
Medicare A	**398**	503	522	437	411	394	386	368	346	339
Spouses:										
w/o Medicare A	**518**	372	420	375	373	403	483	471	447	429
w Medicare A	**232**	242	156	187	176	165	158	155	151	146
Dependent Children	**167**	154	168	127	130	129	111	105	110	107
Orphans	**26**	63	33	26	30	30	32	30	33	27
Totals	**2,103**	2,085	2,078	1,958	1,928	1,912	1,943	1,900	1,848	1,772

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

	AETNA		Medical Mutual		
	Network	Non-Network	Network	Non-Network	Totals
2002	880	491	516	56	1,943
2003	815	486	546	65	1,912
2004	783	494	568	83	1,928
2005	767	505	588	98	1,958
2006	1,279	22	749	28	2,078
2007	1,264	25	723	73	2,085
2008	**1,262**	**2**	**818**	**21**	**2,103**

DEFERRED PENSIONS AS OF DECEMBER 31, 2008
TABULATED BY ATTAINED AGE

Attained Ages	Number	Monthly Pensions
44	1	$ 2,794
46	1	3,354
47	1	2,987
50	1	1,092
53	1	1,014
Totals	**5**	**$11,241**

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, 2008

The actuarial assumptions used in the valuation are shown in this Appendix of the report. The assumptions were established for the December 31, 2005 actuarial valuation, following a 5-year experience study covering the period January 1, 2000 through December 31, 2004. They were adopted by the Board after obtaining the advice of the Actuary and other professionals.

Economic Assumptions

The investment return rate used in making the valuations was 8.0% 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, 2000 through December 31, 2004. It is scheduled to be reviewed again following the December 31, 2009 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 105% of the RP-2000 Combined Healthy Male and Female Tables. This assumption was last reviewed and updated as part of the 5-year experience study for the period January 1, 2000 through December 31, 2004. 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, 2009 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 the RP-2000 Combined Healthy Male and Female Tables set-forward 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	$135.03	$138.31	30.37	33.14
55	127.41	131.75	25.76	28.47
60	117.65	123.20	21.35	23.95
65	105.90	112.81	17.24	19.72
70	92.57	100.81	13.54	15.86
75	77.83	87.41	10.27	12.40
80	62.54	72.92	7.50	9.38

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

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%	1-2	10.00%	4.00%	14.00%
25	0.08%	0.02%	0.01%	2.24%	3-5	3.00%	4.00%	7.00%
30	0.23%	0.02%	0.01%	1.91%	6-10	1.00%	4.00%	5.00%
35	0.42%	0.04%	0.02%	1.56%	11 & Up	0.30%	4.00%	4.30%
40	0.70%	0.05%	0.04%	0.84%				
45	0.85%	0.08%	0.06%	0.41%				
50	1.13%	0.11%	0.08%	0.15%				
55	1.32%	0.18%	0.14%	0.00%				

In the first year of employment, 8% of active members are assumed to terminate employment.

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%	7%
49	35%	7%
50	25%	7%
51	30%	7%
52	30%	
53	30%	
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.

It was assumed that members eligible to DROP would either retire or "DROP in" at first eligibility for unreduced retirement. Current retirement rates were adjusted according to the following:

Beginning at first age of eligibility, the normal retirement pattern is as follows:

% of current retirement rates = 85%, 0%, 25%, 50%, 100%, 150%, 200%, 200%. 100% of members still working 8 years after first reaching retirement eligibility are assumed to retire.

ADDITIONS TO AND REMOVALS FROM ACTIVE MEMBERSHIP
ACTUAL AND EXPECTED NUMBERS

Year Ended December 31	Number Added During Year		Retirement		Disability Retirement		Death-in-Service		Other Terminations		Active Members
	A	E	A	E	A	E	A	E	A	E	
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
2005	76	60.7	23	33.2	8	6.7	0	1.0	34	19.8	1,573
2006	80	70.4	26	41.9	9	6.7	2	0.8	24	21.0	1,592
2007	53	65.9	17	36.7	4	6.7	3	0.8	24	21.7	1,597
2008	**9**	**71.8**	**27**	**44.8**	**4**	**6.9**	**0**	**0.8**	**31**	**19.3**	**1,544**
Total	**783**	**616.1**	**322**	**346.8**	**70**	**59.0**	**10**	**10.3**	**283**	**200.0**	

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 2008

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			10		10
49			4		4
50			3		3
51			1		1
52					
53				2	2
54				2	2
55			3	1	4
56			1		1
57					
58					
59					
60 & Over					
Totals			**22**	**5**	**27**

Disability Retirements During Calendar Year 2008

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			1	1		1		3
45-49						1		1
50 & Over								
Totals			**1**	**1**		**2**		**4**

DEATH-IN-SERVICE TERMINATIONS DURING CALENDAR YEAR 2008

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 ELIGIBLE FOR DEFERRED BENEFIT TERMINATIONS DURING CALENDAR YEAR 2008

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				1				1
45-49						1		1
50 & Over								
Totals				**1**		**1**		**2**

WITHDREW AND PENDING CONTRIBUTIONS TERMINATION DURING CALENDAR YEAR 2008

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 2008

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	4	3						7
30-34	2	6	2					10
35-39	1	3	3					7
40-44		1		2				3
45-49								
50 & Over								
Totals	**8**	**13**	**5**	**2**				**28**

** In addition to the 28 terminations above, there was also 1 member who took a leave of absence.*

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 0.75% 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:

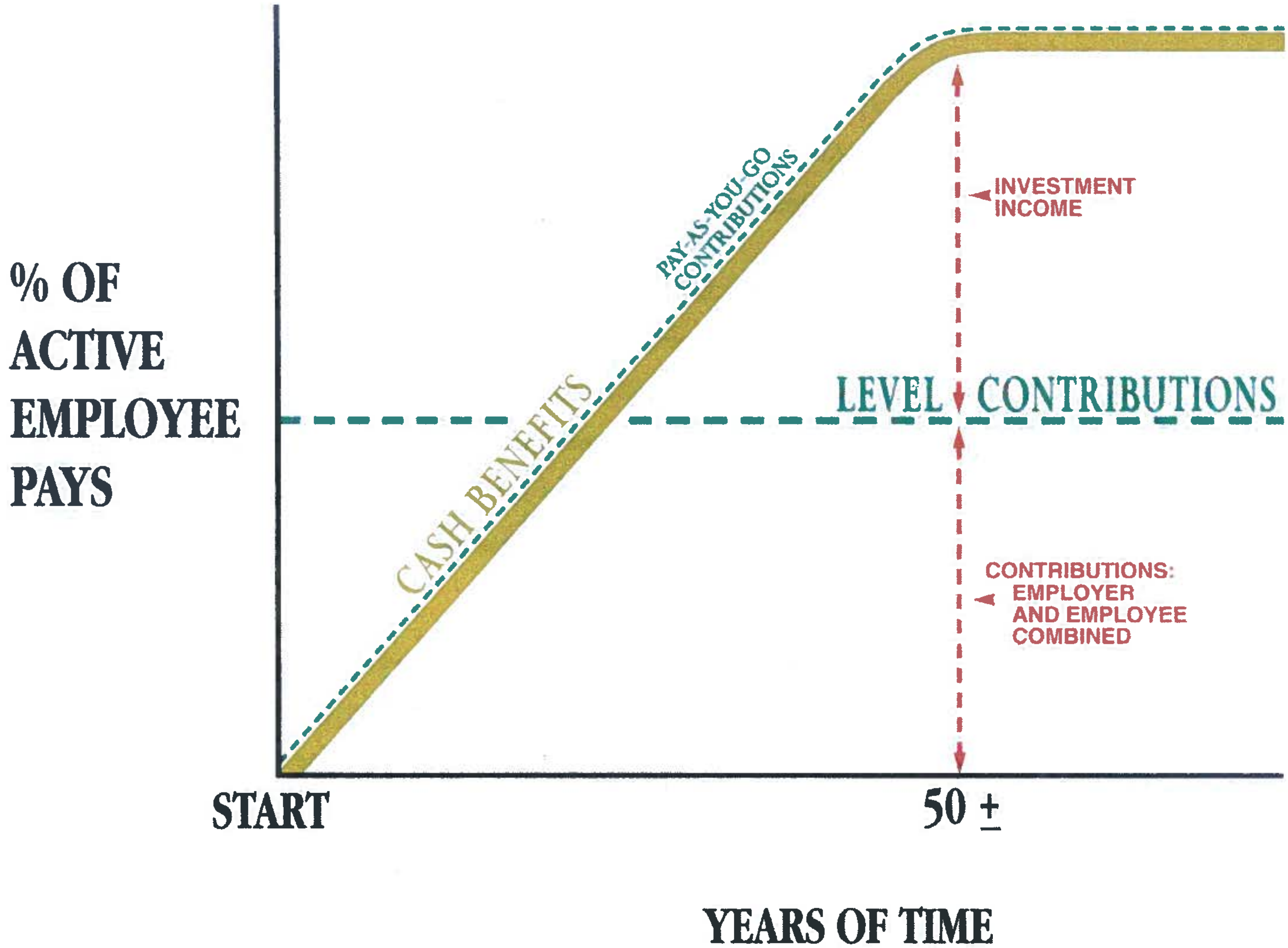
> ***Normal Cost*** (the value assigned to service being rendered this year)
>
> . . . plus . . .
>
> ***Interest on Unfunded Actuarial Accrued Liabilities*** (the difference between liabilities for service already rendered and the accrued assets of the Retirement System).

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***.



CASH BENEFITS LINE. This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

LEVEL CONTRIBUTION LINE. Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

- Economic Risk Areas
  - Rates of investment return
  - Rates of pay increase
  - Changes in active member group size
- Non-Economic Risk Areas
  - Ages at actual retirement
  - Rates of mortality
  - Rates of withdrawal of active members (turnover)
  - Rates of disability

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.

GRS

Gabriel Roeder Smith & Company
Consultants & Actuaries

One Towne Square
Suite 800
Southfield, MI 48076-3723

248.799.9000 phone
248.799.9020 fax
www.gabrielroeder.com

September 4, 2009

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, 2008 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:mrb
Enclosures

cc: Kennedy, Cottrell & Associates LLC (+1 report copy)