September 2, 2011

Mr. Aristotle Hutras, Director
Ohio Retirement Study Council
88 East Broad Street, Suite 1175
Columbus, OH 43215-3506

Dear Mr. Hutras:

In accordance with Ohio Revised Code Section 5505.12 (A), I am attaching the actuarial valuation of the Highway Patrol Retirement System at December 31, 2010.

If you have any questions, please contact me.

Sincerely,

Dan Weiss

Dan Weiss, CPA, JD
Executive Director/Chief Investment Officer
direct dial 614.430.3555
dweiss@ohprs.org

cc: The Honorable Keith Faber, Chair, Government Oversight and Reform Committee and Ohio Retirement Study Council
The Honorable Lynn R. Wachtmann, Chair, House Health and Aging Committee
The Honorable Kirk Schuring, Chair, Health and Aging Subcommittee on Retirement and Pensions

Gabriel Roeder Smith & Company
Consultants & Actuaries

OHIO STATE HIGHWAY PATROL RETIREMENT SYSTEM
ANNUAL ACTUARIAL VALUATION REPORT
DECEMBER 31, 2010

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September 1, 2011

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, 2010 of the Ohio State Highway Patrol Retirement System (HPRS), as established by Chapter 5505 of the Revised Code, are presented in this report.

The purposes of the valuation are as follows:

Measure the financial position of HPRS,
Assist the board in establishing employer and employee contribution rates necessary to fund the benefits provided by HPRS,
Determine the number of years required to amortize the pension unfunded actuarial accrued liabilities based upon established contribution rates,
Provide actuarial reporting and disclosure information for the System's financial report, and analyze the experience of the System over the past year.

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: plan experience differing from that anticipated by the economic and demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements.

Your Executive Director furnished the member statistical data required for the valuation, together with pertinent data on financial operations. We checked for internal and year-to-year consistency, but did not otherwise audit the data. We are not responsible for the accuracy or completeness of the information provided.

Your attention is directed particularly to the summary of results and comments on pages 3 through 7.

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.

The financial assumptions used in making the valuations are shown in the Section F of this report. Assumptions concerning future experience are needed for computing employer contribution rates. As time passes and actual experience develops, assumed and actual experiences are compared. From time to time one or more of the assumptions about the future are changed by the Board after consulting with the actuary. The assumptions used in performing the 2010 valuation were adopted by the Board in conjunction with a five year experience investigation for the period ending December 31, 2009.

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), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,

Brian B. Murphy

Brian B. Murphy, FSA, MAAA

Mita Drazilov

Mita D. Drazilov, ASA, MAAA

BBM:MDD

DECEMBER 31, 2010
SUMMARY

Valuations performed as of odd-numbered years (2011, 2013, 2015, 2017...) 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 with 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, 2011 was determined in accordance with the December 31, 2009 valuation.

The **total employer contribution rate** for the two-year period beginning July 1, 2011 is 26.50%, as established by the Board and Statute based upon the results of the December 31, 2009 actuarial valuation. Based upon preliminary December 31, 2010 actuarial valuation results, the Board at its August, 2011 meeting voted to allocate 24.75% of payroll to the pension program (last year the employer rate for pensions was 23%). 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 a % of Active Payroll		
	Retirement, Survivor & Disability Allowances	Post Retirement Health Care	Totals
Employer	24.75%	1.75%	26.50%
Employee	10.00%	0.00 %	10.00%
Totals	34.75%	1.75%	36.50%

SUMMARY

Items of significant importance for the December 31, 2010 actuarial valuation include:

1. The rate of market value investment return for the calendar year was greater than the actuarial assumed investment return rate of 8.0%. The market value rate of return for calendar year 2010 was approximately 13.1%. This figure will generally differ from other reported return figures due to restated audited asset figures, approximate formulas and treatment of System expenses. Because losses that occurred in 2008 are not yet fully recognized, the funding value rate of return was lower than the assumed investment return rate. The funding value rate of return for calendar year 2010 was approximately 5.8%.

2. The market value of assets currently exceeds the funding value of assets by approximately $19 million. (This is primarily due to the unrecognized portion of investment gains from calendar years 2009 and 2010.) The market value of assets now exceed the funding value of assets, which is a favorable result.

3. Experience in the retiree health plan was less favorable this year, leading to a decrease in the projected solvency period to 2025. In addition, the reallocation of 1.75% of the employer contribution rate to the pension program from the retiree health program decreased the projected solvency period further to 2022.

4. The actuarial assumptions resulting from the January 1, 2005 through December 31, 2009 experience study adopted by the Board have been incorporated for actuarial valuation purposes. The revised assumptions had an upward effect on the computed amortization period.

5. In the December 31, 2008 valuation, it was reported that the then current contribution rates were not sufficient to fund the benefits in accordance with the statutory 30 year requirement. The Board subsequently developed a plan for restoring funding to 30 years and presented such plan to the legislature on September 9, 2009. The plan involved changes to the COLA provisions, changes in the member contribution rate, and a reallocation of the contribution rate from the health plan to the pension plan. It also included a repeal of the HB 1 128th GA changes to 5505.15. None of the changes in the plan have been enacted at the time of this writing.

6. Changes to the retiree health program effective 1/1/2010 (i.e., Medicare Advantage Plan) were reflected in the December 31, 2010 valuation.

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 1.75% employer rate allocation to the retiree health program and based upon the Funding Value of Assets. An infinite amortization period means that the unfunded actuarial accrued liability cannot be amortized given the contribution rate structure.

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 11% of payroll, approximately six times the contribution income. This situation cannot continue indefinitely. It may be necessary for the Board to 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.

Recommendation: The following reserve transfers are recommended as of December 31, 2010:

Transfer To (From)	Total Amount
Pension Reserve Fund:	$48,384,918
Survivor Benefit Fund:	1,495,509
Total	$49,880,427

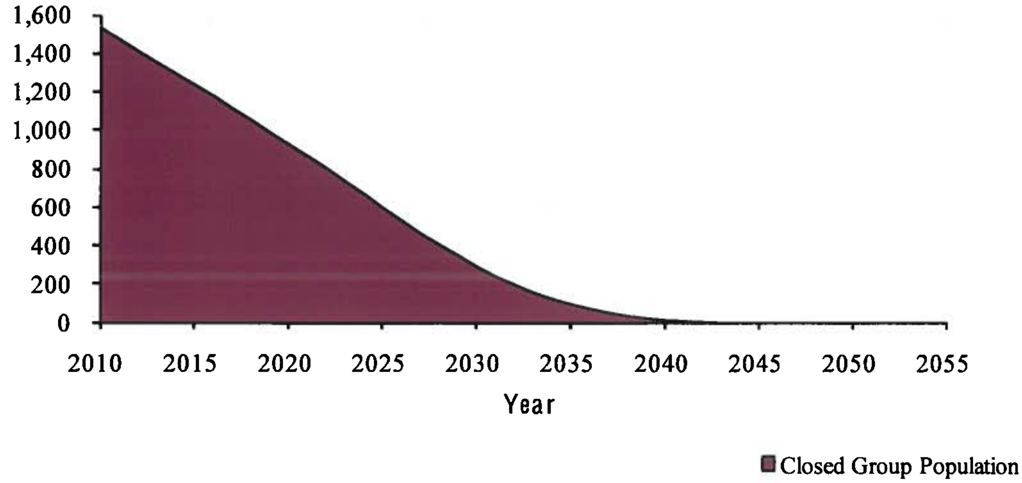
The reserve funds from which the transfers are made are determined as follows: First, the accumulated contributions of members who retired or died with survivor benefits payable prior to January 1, 2011 should be transferred from the Employees' Savings Fund if this has not already been done. The remainder 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.

SUMMARY & RECOMMENDATIONS - DECEMBER 31, 2010 (CONCLUDED)

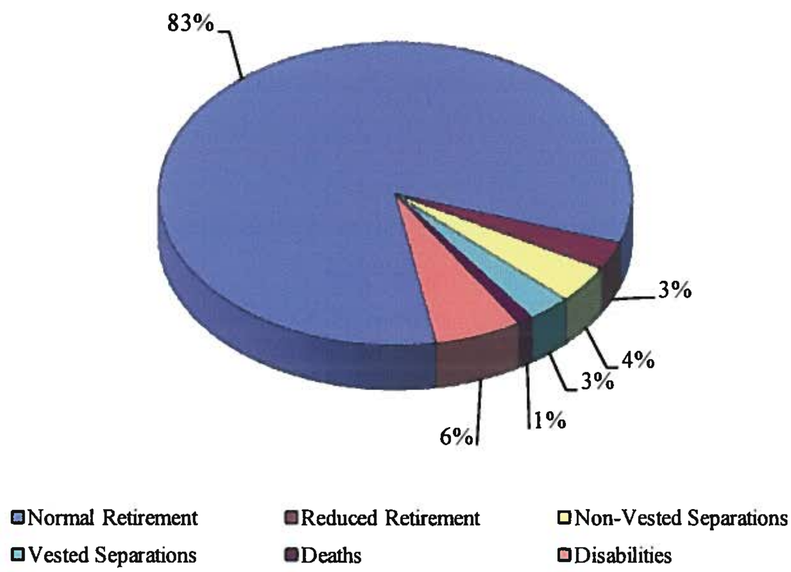
Conclusion: Based upon the results of the December 31, 2010 regular annual actuarial valuation, in the absence of future actuarial gains, the Ohio State Highway Patrol Retirement System will require contribution increases or benefit changes to the pension program to successfully amortize the unfunded actuarial accrued liabilities over a 30-year period. With regard to the Retiree Health Plan, solvency to 2022 is a relatively unfavorable result, since most people presently near retirement will live beyond that date. In addition, given the volatility of health care costs, the Plan may become insolvent sooner than 2022. 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, 2010

Closed Group Population Projection



Expected Terminations from Active Employment for Current Active Members



The charts above show the expected future development of the present population in simplified terms. The retirement system presently covers 1,537 active members. Eventually, 4% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 89% 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, 2010

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 fixed income 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.

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
2011	$ 26,100
2012	26,100
2013	26,100
2014	26,883
2015	27,666
2016	28,449
2017	29,232
2018	30,015
2019	30,798

Benefits for years 2020 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	2010	2009
Normal Cost:		
Age & Service Benefits	16.94%	16.55%
Disability Benefits	2.95%	2.85%
Survivor Benefits	0.20%	0.19%
Separation Benefits	0.88%	0.89%
Purchase of Military Service	0.75%	0.75%
Total Normal Cost	21.72%	21.23%
Less Member Contributions	10.00%	10.00%
Employer Normal Cost	11.72%	11.23%
Unfunded Actuarial Accrued Liabilities	13.03%	11.77%
Amortization Period	N/A	N/A
PENSION EMPLOYER CONTRIBUTION RATE	24.75%	23.00%

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

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, \$1,017,770,449, less pension assets of \$630,971,500 resulted in unfunded actuarial accrued liabilities of \$386,798,949, 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
	$ 98,559	$ 386,799	$ 12,842	13.03%	392.5%
1	102,501	404,397	13,356	13.03%	394.5%
2	106,601	422,869	13,890	13.03%	396.7%
3	110,865	442,263	14,446	13.03%	398.9%
4	115,300	462,632	15,024	13.03%	401.2%
5	119,912	484,030	15,625	13.03%	403.7%
6	124,708	506,515	16,249	13.03%	406.2%
7	129,696	530,149	16,899	13.03%	408.8%
8	134,884	554,999	17,575	13.03%	411.5%
9	140,279	581,134	18,278	13.03%	414.3%
10	145,890	608,629	19,009	13.03%	417.2%
11	151,726	637,564	19,770	13.03%	420.2%
12	157,795	668,024	20,561	13.03%	423.3%
13	164,107	700,099	21,383	13.03%	426.6%
14	170,671	733,885	22,238	13.03%	430.0%
15	177,498	769,485	23,128	13.03%	433.5%
16	184,598	807,008	24,053	13.03%	437.2%
17	191,982	846,572	25,015	13.03%	441.0%
18	199,661	888,301	26,016	13.03%	444.9%
19	207,647	932,329	27,056	13.03%	449.0%
20	215,953	978,797	28,139	13.03%	453.2%
21	224,591	1,027,858	29,264	13.03%	457.7%
22	233,575	1,079,674	30,435	13.03%	462.2%
23	242,918	1,134,419	31,652	13.03%	467.0%
24	252,635	1,192,279	32,918	13.03%	471.9%
25	262,740	1,253,452	34,235	13.03%	477.1%
26	273,250	1,318,150	35,604	13.03%	482.4%
27	284,180	1,386,601	37,029	13.03%	487.9%
28	295,547	1,459,048	38,510	13.03%	493.7%
29	307,369	1,535,751	40,050	13.03%	499.6%
30	319,664	1,616,990	41,652	13.03%	505.8%

An increasing "UAAL as a % of Payroll" indicates that the amortization payment is insufficient to amortize the unfunded actuarial accrued liability (UAAL) and the fund is expected to run out of money at some point. A decreasing "UAAL as a % of Payroll" indicates that the amortization payment is sufficient to amortize the UAAL. A level "UAAL as a % of Payroll" indicates that the amortization payment is sufficient only to pay the "real" interest on the UAAL.

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
ACTUARIAL PRESENT VALUE OF FUTURE BENEFITS
PRESENT RETIRED LIVES AND VESTED DEFERRED CASES
DECEMBER 31, 2010

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	1,051	3,422,918	503,544,758
Disability Retirements Effective After 1/1/66	114	287,165	47,240,957
Total Benefits Payable from Pension Reserve Fund	1,165	3,710,083	550,785,715
From Survivor Benefit Fund:			
Surviving Spouses, Dependent Children & Dependent Parents	259	301,471	31,294,317
Total Benefits Payable from Survivor Benefit Fund	259	301,471	31,294,317
Total Retirement Benefits Payable	1,424	4,011,554	582,080,032
Total Vested Deferred Benefits Payable	4	11,022	1,634,357
Grand Total	1,428	$4,022,576	$583,714,389

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
DEVELOPMENT OF ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 2010

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	$ 587,721,138	$ 161,782,062	$ 425,939,076
Disability allowances likely to be paid to present active members who become totally and permanently disabled	33,971,468	27,144,347	6,827,121
Survivor benefits likely to be paid to spouses and children of present active members who die before retiring	2,997,108	1,717,115	1,279,993
Separation benefits (refunds of contributions and deferred allowances likely to be paid on behalf of present active members)	7,832,929	7,823,059	9,870
Retirement benefits likely to be paid to current retirants and beneficiaries and to present inactive members	583,714,389	0	583,714,389
Total	$ 1,216,237,032	$ 198,466,583	$ 1,017,770,449
Member portion	198,794,269	90,920,773	107,873,496
Employer portion	$ 1,017,442,763	$ 107,545,810	$ 909,896,953

Retirement, Survivor, and Disability Allowances
Summary Statement of System Resources and Obligations
December 31, 2010

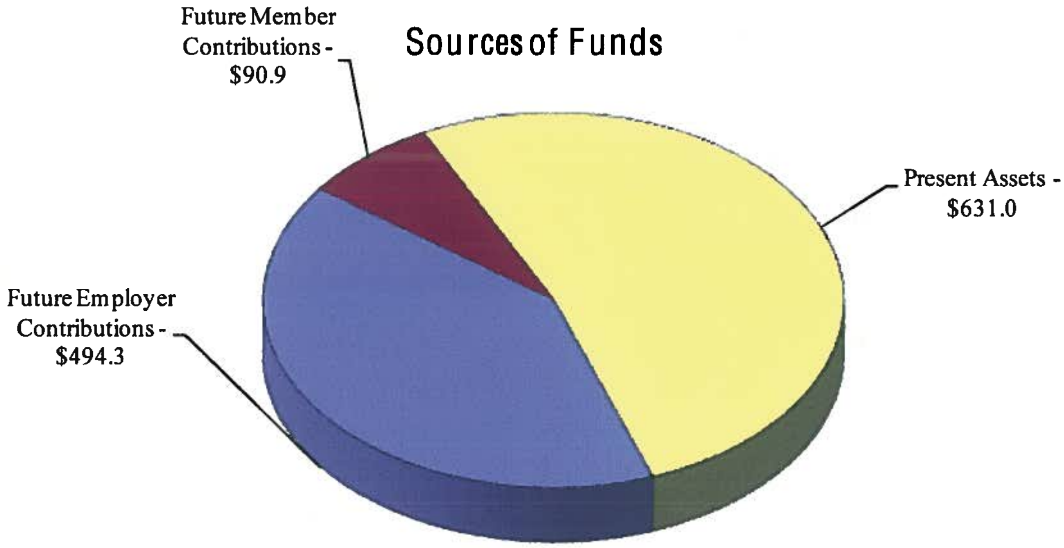
Present Resources and Expected Future Resources

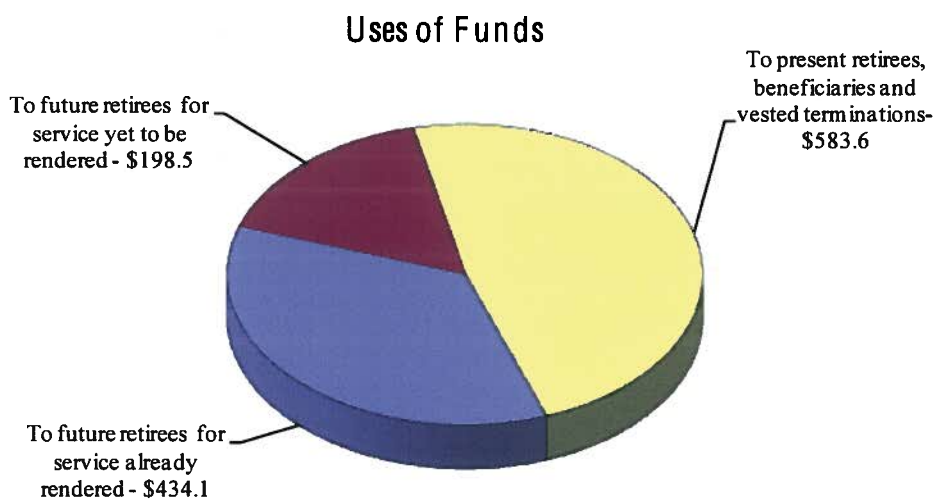
A. Present valuation assets		
1. Net assets from system financial statements	$ 754,509,648	
2. Market value adjustment	(18,799,811)	
3. Health assets	104,738,337	
4. Valuation assets: 1 + 2 - 3		$ 630,971,500
B. Actuarial present value of expected future Employer contributions		
1. For normal costs	107,545,810	
2. For unfunded actuarial accrued liability	386,798,949	
3. Total		494,344,759
C. Actuarial present value of expected future member contributions		90,920,773
D. Total Present and Expected Future Resources		$ 1,216,237,032

Actuarial Present Value of Expected Future Benefit Payments

A. To retirants and beneficiaries	$ 582,080,032
B. To terminated members	1,634,357
C. To present active members	
1. Allocated to service rendered prior to valuation date (actuarial accrued liability)	434,056,060
2. Allocated to service likely to be rendered after valuation date	198,466,583
3. Total	632,522,643
D. Total Actuarial Present Value of Expected Future Benefit Payments	$ 1,216,237,032

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES FINANCING $1,216.2 MILLION OF BENEFIT PROMISES DECEMBER 31, 2010





RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
COMPARATIVE STATEMENT

Valuation Date		Annual	Actuarial Accrued Liabilities			Unfunded/	%	Funding
December 31	No.	Payroll	Total	Funded	Unfunded	Payroll	Funded	Years
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
2009	1,547	94,824,789	940,084,346	620,356,505	319,727,841	3.4	66.0%	N/A
2010	1,537	94,767,852	981,351,514	630,971,500	350,380,014	3.7	64.3%	N/A
2010 #	1,537	94,767,852	1,017,770,449	630,971,500	386,798,949	4.1	62.0%	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
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%	4.5%	4.1%
2008	1,544	94,301,538	61,076	4.0%	2.3%	0.1%
2009	1,547	94,824,789	61,296	0.4%	(1.5)%	2.7%
2010	1,537	94,767,852	61,658	0.6%	5.8% *	1.5%
		10 Year Average		2.9%	3.0%	2.4%

+ 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.

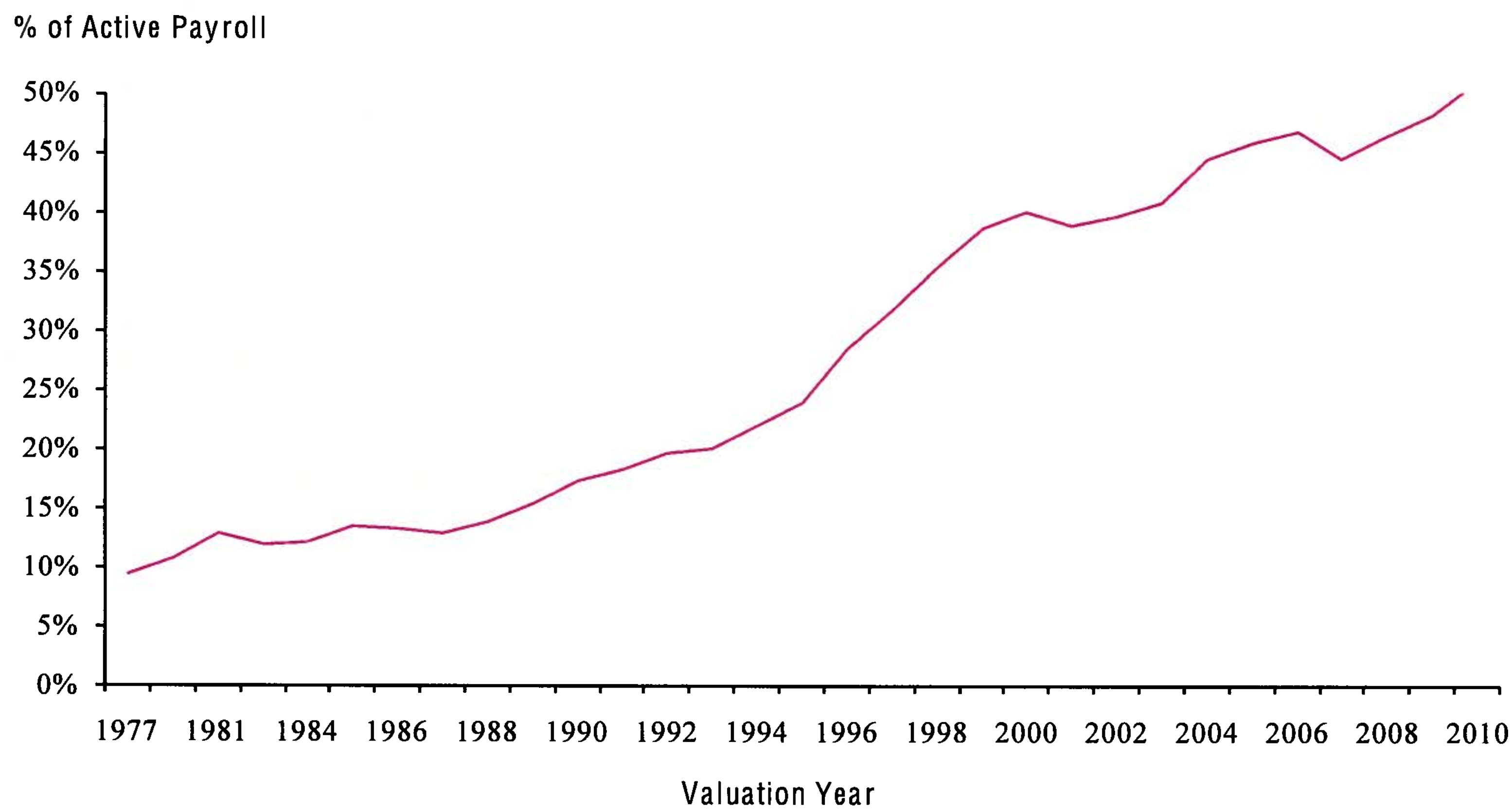
RETIREMENT, SURVIVOR, AND DISABILITY BENEFITS IN PAY STATUS
COMPARATIVE STATEMENT

Valuation Date December 31	Number of People	Monthly Pensions	Active Payroll	Average Amount	% of Active Member Pays
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%
2009	1,385	3,793,054	94,824,789	2,739	48.0%
2010 #	1,424	4,011,554	94,767,852	2,817	50.8%

* *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, 2010



SHORT-TERM SOLVENCY TEST

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

Short-term solvency test is one means of checking a system's progress under its funding program. In a short-term solvency test, the plan's present assets (cash and investments) are compared with: 1) Active member contributions on deposit; 2) The liabilities for future benefits to present retired lives; 3) The liabilities for service already rendered by active members. In a system that has been following the discipline of level percent financing, the liabilities for active member contributions on deposit (1) and the liabilities for future benefits to present retired lives (2) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by active members (3) will be partially covered by the remainder of the 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	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	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	333,340,728	188,111,212	546,510,779	100%	100%	84%
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	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	212,279,114	569,858,387	100%	100%	22%
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%
2009	101,131,517	528,087,050	310,865,779	620,356,505	100%	98%	0%
2010	104,503,065	557,380,154	319,468,295	630,971,500	100%	94%	0%
2010 #	104,503,065	583,714,389	329,552,995	630,971,500	100%	90%	0%

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

SUMMARY OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES

Each time a new benefit is added which applies to service already rendered, an "unfunded actuarial accrued liability" is created. Also, if actual financial experiences are less favorable than assumed financial experiences, the difference is added to unfunded actuarial 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 actuarial 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 actuarial accrued liabilities can be misleading. Unfunded actuarial 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
1996	$454,514,187	$411,316,254	$43,197,933	90.5%	$59,239,349	72.9%
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 *	577,010,085	546,510,779	30,499,306	94.7%	66,017,381	46.2%
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 #	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 *	734,464,371	569,858,387	164,605,984	77.6%	81,757,707	201.3%
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%
2009	940,084,346	620,356,505	319,727,841	66.0%	94,824,789	337.2%
2010	981,351,514	630,971,500	350,380,014	64.3%	94,767,852	369.7%
2010 #	1,017,770,449	630,971,500	386,798,949	62.0%	94,767,852	408.2%

* *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%
2009	20,453,914	102%
2010	21,211,944	93%

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 December 31, 2011 will be 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) plus ½ of the employer contribution for the period from July 1, 2011 to June 30, 2012 (29.50% of payroll, based upon an amortization period of 30 years). The System's Annual Required Contribution for the plan year ending December 31, 2012 will be ½ of the employer contribution for the period from July 1, 2011 to June 30, 2012 (29.50% of payroll, based upon an amortization period of 30 years) plus ½ of the employer contribution for the period from July 1, 2012 to June 30, 2013 (34.00% 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, 2010
Actuarial Cost Method	Entry Age
Amortization Method	Level Percent Open
Remaining Amortization Period	30 years for retirement allowances in determining the Annual Required Contribution
Asset Valuation Method	4 year smoothed market 20 % Corridor
Actuarial Assumptions:	
Investment Rate of Return	8.0%
Projected Salary Increases	4.3% - 14.0%
Includes Wage Inflation at	4.0%

OTHER REQUESTED CAFR INFORMATION

As of December 31, 2010, 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	$ 104,503,065
Employer - financed vested	218,771,180
Employer - financed non-vested	51,945,143

As of December 31, 2010, there were 677 vested active members and 860 non-vested active members.

SECTION B

POST-RETIREMENT HEALTH CARE AND MEDICARE REIMBURSEMENT

POST-RETIREMENT HEALTH CARE AND MEDICARE REIMBURSEMENT PROVISIONS EVALUATED AND/OR CONSIDERED

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. Depending on Medicare coverage, members are enrolled in either the fully-insured Medicare Advantage plan or the self-insured plan. 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 2010 applicable to retirees without Medicare A & B is $39 per month and $10 for retirees with Medicare A & B. The premium for 2010 applicable to spouses without Medicare A & B is $97 per month and $15 for spouses with Medicare A & B. The dependent child premium is $22 for each child ($44 maximum 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. Designated outpatient procedures must be pre-certified. For in-network activity, the annual out-of-pocket maximum is $1,500 per individual or $1,500 per family (out of network amounts are $5,000 and $10,000, respectively). Each covered person not eligible for Medicare must meet a $25 annual deductible. Members in the insured Medicare Advantage plan do not have a deductible requirement. If the covered person is in a network area and uses non-network providers, the annual deductible for the individual is $1,500.

A mail-order prescription drug plan is also available. Each 90-day prescription submitted via mail order has a co-payment of $10.00 for generic, $30.00 for brands, and $90.00 for non-formulary drugs. Each 3-day prescription has a co-payment of $5.00 for generic, $15.00 for brands and $45.00 for non-formulary drugs.

Post-Retirement Health Care and Medicare Reimbursement Provisions Evaluated and/or Considered (Concluded)

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 non-Medicare population 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, up to $96.40 monthly.

Dental/Vision: Premiums for benefit recipients are deducted from benefit payments.

POST-RETIREMENT HEALTH CARE AND MEDICARE REIMBURSEMENT

		Amounts Paid to Vendors (Including Medicare Part B)											
Year	Covered Lives	Medical	Drugs	Medicare Part B	Dental	Vision	Wellness	Total	Retiree/Spouse Premiums and Other Adjustments	Net Paid by OHPRS	Per Covered Life	Valuation Payroll	% of Payroll
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%
2009	2,095	4,983,739	3,430,089	673,450	495,272	133,296	86,007	9,801,853	(902,320)	8,899,533	4,248	94,824,789	9.4%
2010	2,166	6,380,294	3,709,855	713,317	453,276	133,141	57,747	11,447,630	(911,076)	10,536,554	4,865	94,767,852	11.1%

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


Historical Trend of Employer Paid Amounts
12.0%
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
% of Payroll
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
Year

Assumptions for Health Care Coverages
December 31, 2010

Development of Health Care Rates: Based on the 2010 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	$424.12	$39.00	$385.12	$429.96
B. One person with Medicare*	179.68	10.00	169.68	181.21
C. Two persons without Medicare	848.24	136.00	712.24	779.92
D. Two persons with Medicare*	359.36	25.00	334.36	337.42
E. Child	75.00	22.00	53.00	172.02
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-6 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.*

Assumptions for Health Care Coverages
Age Specific HPRS Monthly Gross Rates

Age	Gross Rate Male	Gross Rate Female	Age	Gross Rate Male	Gross Rate Female	Age	Gross Rate Male	Gross Rate Female
16	$ 107.76	$ 168.11	51	$ 295.17	$ 326.34	86	$ 354.41	$ 310.92
17	108.83	169.79	52	314.98	340.80	87	356.02	311.52
18	109.92	171.49	53	335.39	356.16	88	356.02	311.52
19	111.02	173.20	54	356.55	372.19	89	356.02	311.52
20	112.13	174.94	55	378.42	388.88	90	356.02	311.52
21	113.25	176.69	56	400.96	406.20	91	356.02	311.52
22	114.39	178.45	57	424.12	424.12	92	356.02	311.52
23	115.53	180.24	58	446.27	439.94	93	356.02	311.52
24	116.69	182.04	59	468.75	456.09	94	356.02	311.52
25	117.85	183.86	60	491.50	472.53	95	356.02	311.52
26	119.03	185.70	61	514.44	489.20	96	356.02	311.52
27	120.22	187.55	62	537.52	506.06	97	356.02	311.52
28	121.42	189.43	63	560.36	523.35	98	356.02	311.52
29	122.64	191.32	64	583.18	540.75	99	356.02	311.52
30	123.86	193.24	65	247.04	227.49	100	356.02	311.52
31	125.10	195.17	66	255.02	233.46	101	356.02	311.52
32	126.35	197.12	67	262.82	239.34	102	356.02	311.52
33	127.62	199.09	68	270.43	245.11	103	356.02	311.52
34	128.89	201.08	69	277.81	250.75	104	356.02	311.52
35	130.18	203.09	70	284.96	256.24	105	356.02	311.52
36	131.48	205.13	71	291.84	261.55	106	356.02	311.52
37	132.80	207.18	72	298.44	266.68	107	356.02	311.52
38	134.13	209.25	73	304.73	271.60	108	356.02	311.52
39	135.47	211.34	74	310.71	276.30	109	356.02	311.52
40	136.82	213.45	75	316.35	280.76	110	356.02	311.52
41	146.56	220.35	76	321.65	284.96	111	356.02	311.52
42	157.21	227.87	77	326.59	288.90	112	356.02	311.52
43	168.80	236.04	78	331.17	292.55	113	356.02	311.52
44	181.33	244.87	79	335.37	295.92	114	356.02	311.52
45	194.81	254.39	80	339.20	298.99	115	356.02	311.52
46	209.23	264.60	81	342.65	301.76	116	356.02	311.52
47	224.59	275.53	82	345.72	304.21	117	356.02	311.52
48	240.89	287.16	83	348.43	306.35	118	356.02	311.52
49	258.09	299.52	84	350.77	308.19	119	356.02	311.52
50	276.20	312.58	85	352.76	309.70	120	356.02	311.52

Assumptions for Health Care Coverages
December 31, 2010
(Concluded)

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-9.

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-9.

POST-RETIREMENT HEALTH PREMIUM AND MEDICARE REIMBURSEMENT SELECTION OF ASSUMPTIONS DECEMBER 31, 2010

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, 2010 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 5.0% 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, 2010

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, 5.75% the second year, 5.5% the third year, 5.25% the fourth year, 5% the fifth year, 4.75% the sixth year, 4.5% the seventh year, 4.25% the eighth 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 No. 43 and No. 45 information is based.

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

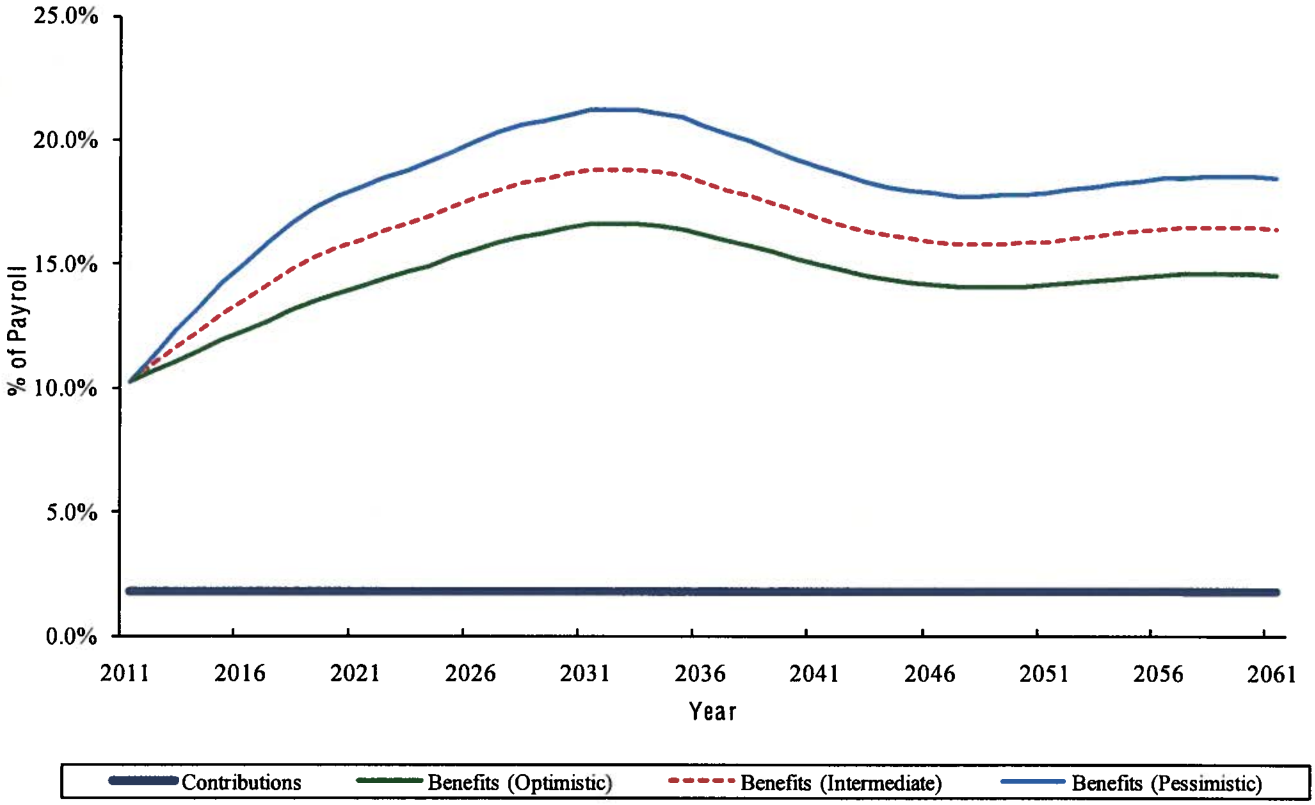
No trend was applied to the monthly spouse premium.

	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
2011					
2012	2.00%	5.00%	8.00%	3.00%	5.00%
2013	1.75%	4.25%	7.00%	2.50%	4.25%
2014	1.50%	3.50%	6.00%	2.00%	3.50%
2015	1.25%	3.00%	5.00%	1.50%	3.00%
2016	1.00%	2.50%	4.00%	1.25%	2.50%
2017	0.75%	2.00%	3.00%	1.00%	2.00%
2018	0.50%	1.50%	2.25%	0.75%	1.50%
2019	0.25%	1.00%	1.50%	0.50%	1.00%
2020	0.00%	0.50%	0.75%	0.25%	0.50%
2021	0.00%	0.00%	0.00%	0.00%	0.00%
2022	0.00%	0.00%	0.00%	0.00%	0.00%
2023	0.00%	0.00%	0.00%	0.00%	0.00%
2024	0.00%	0.00%	0.00%	0.00%	0.00%
2025 & Later	0.00%	0.00%	0.00%	0.00%	0.00%

POST-RETIREMENT HEALTH CARE AND MEDICARE REIMBURSEMENT
PROJECTED BENEFITS
DECEMBER 31, 2010

	Projected Benefits as a % of Payroll		
Year Ended 12/31	Alt. A Optimistic	Alt. B Intermediate	Alt. C Pessimistic
2011	10.2%	10.2%	10.2%
2012	10.7%	11.0%	11.3%
2013	11.1%	11.7%	12.3%
2014	11.5%	12.3%	13.3%
2015	11.9%	13.0%	14.2%
2016	12.3%	13.6%	15.1%
2017	12.7%	14.2%	15.9%
2018	13.1%	14.7%	16.6%
2019	13.5%	15.3%	17.3%
2020	13.8%	15.6%	17.7%
2025	15.3%	17.3%	19.5%
2030	16.5%	18.6%	21.0%
2035	16.4%	18.5%	20.9%
2040	15.2%	17.1%	19.2%
2045	14.3%	16.0%	18.0%
2050	14.1%	15.8%	17.8%
2055	14.5%	16.3%	18.3%
2060	14.6%	16.5%	18.5%

CONTRIBUTIONS VS. BENEFIT PAYOUTS



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, 2011 to June 30, 2012	Contributions Expressed as Percents of Payroll
Normal Cost	11.98%
UAL Payment (30 year amortization)	11.99%
Total (Annual Required Contribution)	23.97%
Current Employer Contribution Rate Allocation	1.75%

Accrued Health and Medicare Reimbursement Liabilities, $406,864,423 were more than applicable assets of $104,738,337.

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, 2011 will be ½ of 16.12% and ½ of the 23.97% 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, 2010
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	5.0%
Projected Salary Increases	4.3% - 14.0%
Includes Wage Inflation at	4.0%
Health Trend	Intermediate Trend (See Page B-9)

Optimistic, Intermediate and Pessimistic assumption sets were described on page B-9. 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)	1.75%	2024	9.80%	Indefinitely	7.90%
B (Intermediate)	1.75%	2022	11.40%	Indefinitely	9.40%
C (Pessimistic)	1.75%	2021	13.20%	Indefinitely	11.00%

The above results show that:

> Under the optimistic assumptions, the employer rate will need to be raised prior to 2024 in order to maintain the solvency of the fund. The ultimate rate needed to support the plan would be 9.80% of payroll.
>
> Under the intermediate assumptions, the employer rate will need to be raised prior to 2022 in order to maintain the solvency of the fund. The ultimate rate needed to support the plan would be 11.40% 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 13.20% 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
2011	$104,738	$1,720	$ 10,049	$ (8,329)	8.00%	$8,050	$104,459	$104,459	1.75%	10.23%
2012	104,459	1,777	10,835	(9,058)	8.00%	7,999	103,400	99,423	1.75%	10.67%
2013	103,400	1,837	11,623	(9,786)	8.00%	7,886	101,500	93,842	1.75%	11.07%
2014	101,500	1,903	12,496	(10,593)	8.00%	7,702	98,609	87,663	1.75%	11.49%
2015	98,609	1,972	13,439	(11,467)	8.00%	7,436	94,578	80,846	1.75%	11.93%
2016	94,578	2,044	14,380	(12,336)	8.00%	7,079	89,321	73,415	1.75%	12.31%
2017	89,321	2,117	15,377	(13,260)	8.00%	6,622	82,683	65,346	1.75%	12.71%
2018	82,683	2,193	16,440	(14,247)	8.00%	6,052	74,488	56,605	1.75%	13.12%
2019	74,488	2,273	17,539	(15,266)	8.00%	5,356	64,578	47,187	1.75%	13.50%
2020	64,578	2,357	18,567	(16,210)	8.00%	4,526	52,894	37,163	1.75%	13.79%
2021	52,894	2,445	19,664	(17,219)	8.00%	3,552	39,227	26,500	1.75%	14.07%
2022	39,227	2,537	20,844	(18,307)	8.00%	2,415	23,335	15,158	1.75%	14.38%
2023	23,335	2,631	22,036	(19,405)	8.00%	1,101	5,031	3,142	1.75%	14.66%
2024	5,031	2,730	23,308	(20,578)	8.00%	(410)	(15,957)	(9,583)	1.75%	14.94%

Funding Level 1 is the present contribution rate for post-retirement Health Care and Medicare reimbursement. The fund remains solvent until 2024 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
2011	$ 104,738	$ 9,631	$ 10,049	$ (418)	8.00%	$ 8,363	$ 112,683	$112,683	9.80%	10.23%
2012	112,683	9,950	10,835	(885)	8.00%	8,980	120,778	116,133	9.80%	10.67%
2013	120,778	10,287	11,623	(1,336)	8.00%	9,609	129,051	119,315	9.80%	11.07%
2014	129,051	10,658	12,496	(1,838)	8.00%	10,252	137,465	122,206	9.80%	11.49%
2015	137,465	11,044	13,439	(2,395)	8.00%	10,903	145,973	124,778	9.80%	11.93%
2016	145,973	11,447	14,380	(2,933)	8.00%	11,562	154,602	127,072	9.80%	12.31%
2017	154,602	11,855	15,377	(3,522)	8.00%	12,229	163,309	129,065	9.80%	12.71%
2018	163,309	12,279	16,440	(4,161)	8.00%	12,900	172,048	130,742	9.80%	13.12%
2019	172,048	12,729	17,539	(4,810)	8.00%	13,574	180,812	132,118	9.80%	13.50%
2020	180,812	13,197	18,567	(5,370)	8.00%	14,253	189,695	133,277	9.80%	13.79%
2025	225,677	15,866	24,695	(8,829)	8.00%	17,706	234,554	135,449	9.80%	15.25%
2030	267,869	19,360	32,515	(13,155)	8.00%	20,910	275,624	130,823	9.80%	16.46%
2035	305,205	24,010	40,214	(16,204)	8.00%	23,777	312,778	122,021	9.80%	16.41%
2040	348,478	29,667	46,017	(16,350)	8.00%	27,233	359,361	115,230	9.80%	15.20%
2045	412,851	36,247	52,719	(16,472)	8.00%	32,378	428,757	113,000	9.80%	14.25%
2050	501,378	43,933	63,198	(19,265)	8.00%	39,350	521,463	112,960	9.80%	14.10%
2055	606,273	53,240	78,694	(25,454)	8.00%	47,497	628,316	111,869	9.80%	14.49%
2060	720,646	64,695	96,449	(31,754)	8.00%	56,398	745,290	109,067	9.80%	14.61%
2070	1,025,616	96,290	136,238	(39,948)	8.00%	80,472	1,066,140	105,402	9.80%	13.87%
2080	1,529,352	142,344	201,741	(59,397)	8.00%	120,003	1,589,958	106,190	9.80%	13.89%
2090	2,191,452	210,290	307,905	(97,615)	8.00%	171,462	2,265,299	102,210	9.80%	14.35%
2100	3,043,887	311,974	447,534	(135,560)	8.00%	238,158	3,146,485	95,909	9.80%	14.06%
2110	4,208,754	461,504	661,934	(200,430)	8.00%	328,786	4,337,110	89,310	9.80%	14.05%

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 Year	Fund Balance BOY	Contributions	Benefits	Net	Investment Return %	Investment Return $	Fund Balance EOY		% of Payroll	
							Nominal $	Real $	Contrib.	Benefits
2011	$104,738	$1,720	$ 10,049	$ (8,331)	8.00%	$8,050	$104,457	$104,457	1.75%	10.23%
2012	104,457	1,777	11,152	(9,375)	8.00%	7,986	103,068	99,104	1.75%	10.98%
2013	103,068	1,837	12,239	(10,402)	8.00%	7,835	100,501	92,919	1.75%	11.66%
2014	100,501	1,903	13,395	(11,492)	8.00%	7,586	96,595	85,873	1.75%	12.32%
2015	96,595	1,972	14,628	(12,656)	8.00%	7,228	91,167	77,930	1.75%	12.98%
2016	91,167	2,044	15,854	(13,810)	8.00%	6,748	84,105	69,128	1.75%	13.57%
2017	84,105	2,117	17,133	(15,016)	8.00%	6,135	75,224	59,451	1.75%	14.16%
2018	75,224	2,193	18,471	(16,278)	8.00%	5,375	64,321	48,879	1.75%	14.74%
2019	64,321	2,273	19,831	(17,558)	8.00%	4,452	51,215	37,422	1.75%	15.27%
2020	51,215	2,357	21,069	(18,712)	8.00%	3,358	35,861	25,195	1.75%	15.65%
2021	35,861	2,445	22,308	(19,863)	8.00%	2,085	18,083	12,216	1.75%	15.97%
2022	18,083	2,537	23,637	(21,100)	8.00%	613	(2,404)	(1,562)	1.75%	16.30%

Funding Level 1 is the present contribution rate for post-retirement Health Care and Medicare reimbursement. The fund remains solvent until 2022 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		% of Payroll	
							Nominal $	Real $	Contrib.	Benefits
2011	$ 104,738	$ 11,204	$ 10,049	$ 1,153	8.00%	$ 8,425	$ 114,316	$114,316	11.40%	10.23%
2012	114,316	11,574	11,152	422	8.00%	9,162	123,900	119,135	11.40%	10.98%
2013	123,900	11,967	12,239	(272)	8.00%	9,901	133,529	123,455	11.40%	11.66%
2014	133,529	12,398	13,395	(997)	8.00%	10,643	143,175	127,282	11.40%	12.32%
2015	143,175	12,847	14,628	(1,781)	8.00%	11,384	152,778	130,595	11.40%	12.98%
2016	152,778	13,316	15,854	(2,538)	8.00%	12,122	162,362	133,450	11.40%	13.57%
2017	162,362	13,790	17,133	(3,343)	8.00%	12,857	171,876	135,836	11.40%	14.16%
2018	171,876	14,283	18,471	(4,188)	8.00%	13,585	181,273	137,753	11.40%	14.74%
2019	181,273	14,807	19,831	(5,024)	8.00%	14,303	190,552	139,234	11.40%	15.27%
2020	190,552	15,351	21,069	(5,718)	8.00%	15,018	199,852	140,413	11.40%	15.65%
2025	237,167	18,457	27,963	(9,506)	8.00%	18,598	246,259	142,208	11.40%	17.27%
2030	279,625	22,521	36,773	(14,252)	8.00%	21,807	287,180	136,308	11.40%	18.61%
2035	315,170	27,930	45,394	(17,464)	8.00%	24,524	322,230	125,709	11.40%	18.53%
2040	356,082	34,511	51,781	(17,270)	8.00%	27,805	366,617	117,556	11.40%	17.10%
2045	419,305	42,165	59,214	(17,049)	8.00%	32,871	435,127	114,679	11.40%	16.01%
2050	507,432	51,106	71,019	(19,913)	8.00%	39,808	527,327	114,230	11.40%	15.84%
2055	610,070	61,933	88,589	(26,656)	8.00%	47,753	631,167	112,377	11.40%	16.31%
2060	717,756	75,257	108,640	(33,383)	8.00%	56,102	740,475	108,362	11.40%	16.46%
2070	995,007	112,011	153,295	(41,284)	8.00%	77,970	1,031,693	101,996	11.40%	15.60%
2080	1,443,234	165,584	226,914	(61,330)	8.00%	113,037	1,494,941	99,844	11.40%	15.62%
2090	1,961,961	244,623	346,567	(101,944)	8.00%	152,931	2,012,948	90,824	11.40%	16.15%
2100	2,477,441	362,908	503,479	(140,571)	8.00%	192,645	2,529,515	77,103	11.40%	15.82%
2110	2,901,953	536,852	744,646	(207,794)	8.00%	223,951	2,918,110	60,090	11.40%	15.81%

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

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

Fiscal Year	Fund Balance BOY	Contributions	Benefits	Net	Investment Return %	Investment Return $	Fund Balance EOY		% of Payroll	
							Nominal $	Real $	Contrib.	Benefits
2011	$104,738	$1,720	$ 10,049	$ (8,333)	8.00%	$8,050	$104,455	$104,455	1.75%	10.23%
2012	104,455	1,777	11,469	(9,692)	8.00%	7,974	102,737	98,786	1.75%	11.30%
2013	102,737	1,837	12,901	(11,064)	8.00%	7,782	99,455	91,952	1.75%	12.29%
2014	99,455	1,903	14,433	(12,530)	8.00%	7,462	94,387	83,910	1.75%	13.27%
2015	94,387	1,972	16,037	(14,065)	8.00%	6,996	87,318	74,640	1.75%	14.23%
2016	87,318	2,044	17,603	(15,559)	8.00%	6,371	78,130	64,217	1.75%	15.07%
2017	78,130	2,117	19,182	(17,065)	8.00%	5,577	66,642	52,668	1.75%	15.86%
2018	66,642	2,193	20,808	(18,615)	8.00%	4,596	52,623	39,989	1.75%	16.61%
2019	52,623	2,273	22,431	(20,158)	8.00%	3,414	35,879	26,216	1.75%	17.27%
2020	35,879	2,357	23,870	(21,513)	8.00%	2,021	16,387	11,513	1.75%	17.73%
2021	16,387	2,445	25,266	(22,821)	8.00%	410	(6,024)	(4,070)	1.75%	18.08%

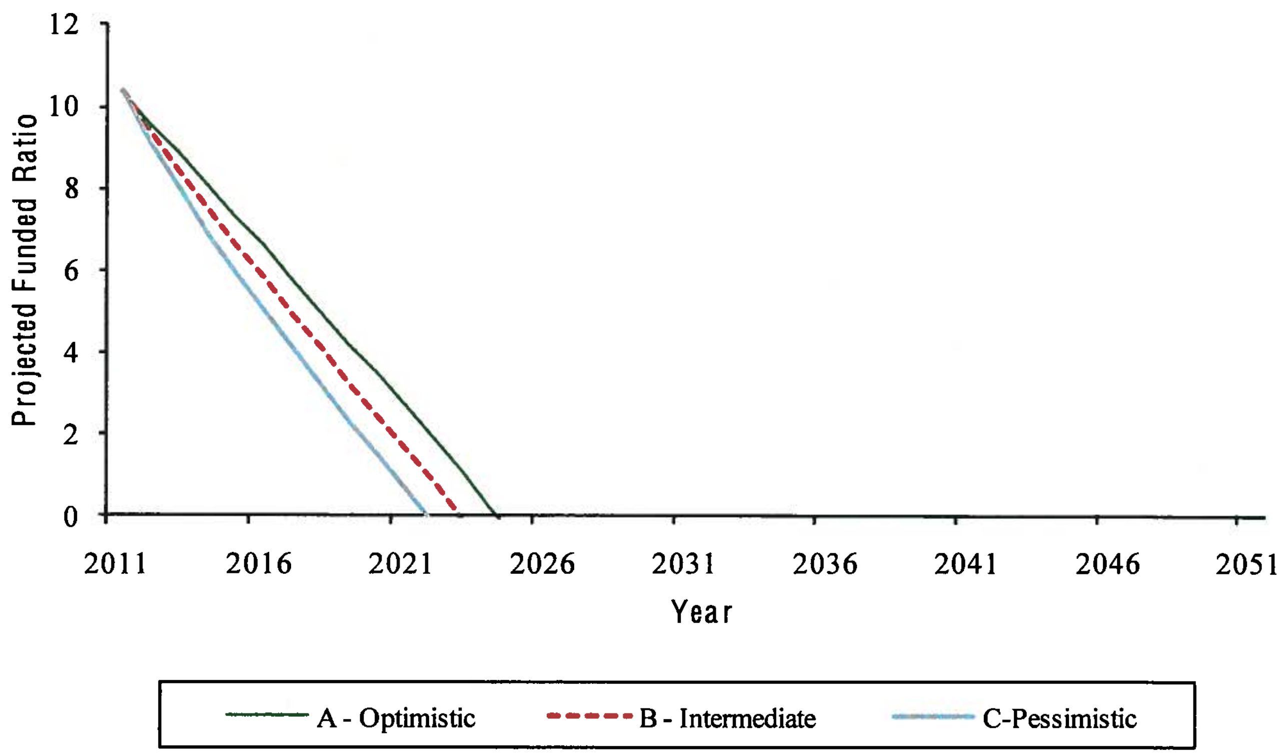
Funding Level 1 is the present contribution rate for post-retirement Health Care and Medicare reimbursement. The fund remains solvent until 2021 in this projection.

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

Fiscal 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
2011	$ 104,738	$ 12,973	$ 10,049	$ 2,920	8.00%	$ 8,494	$ 116,152	$ 116,152	13.20%	10.23%
2012	116,152	13,402	11,469	1,933	8.00%	9,368	127,453	122,551	13.20%	11.30%
2013	127,453	13,856	12,901	955	8.00%	10,234	138,642	128,182	13.20%	12.29%
2014	138,642	14,356	14,433	(77)	8.00%	11,088	149,653	133,041	13.20%	13.27%
2015	149,653	14,876	16,037	(1,161)	8.00%	11,926	160,418	137,126	13.20%	14.23%
2016	160,418	15,418	17,603	(2,185)	8.00%	12,747	170,980	140,533	13.20%	15.07%
2017	170,980	15,967	19,182	(3,215)	8.00%	13,551	181,316	143,297	13.20%	15.86%
2018	181,316	16,539	20,808	(4,269)	8.00%	14,337	191,384	145,436	13.20%	16.61%
2019	191,384	17,145	22,431	(5,286)	8.00%	15,102	201,200	147,015	13.20%	17.27%
2020	201,200	17,775	23,870	(6,095)	8.00%	15,855	210,960	148,218	13.20%	17.73%
2025	249,740	21,371	31,618	(10,247)	8.00%	19,575	259,068	149,605	13.20%	19.53%
2030	292,476	26,077	41,536	(15,459)	8.00%	22,788	299,805	142,300	13.20%	21.03%
2035	326,012	32,340	51,189	(18,849)	8.00%	25,337	332,500	129,715	13.20%	20.89%
2040	364,303	39,960	58,230	(18,270)	8.00%	28,423	374,456	120,070	13.20%	19.24%
2045	426,309	48,822	66,480	(17,658)	8.00%	33,407	442,058	116,505	13.20%	17.97%
2050	514,134	59,176	79,767	(20,591)	8.00%	40,318	533,861	115,645	13.20%	17.79%
2055	614,516	71,712	99,658	(27,946)	8.00%	48,058	634,628	112,993	13.20%	18.34%
2060	715,178	87,140	122,277	(35,137)	8.00%	55,827	735,868	107,688	13.20%	18.52%
2070	963,369	129,697	172,376	(42,679)	8.00%	75,384	996,074	98,475	13.20%	17.54%
2080	1,354,290	191,728	255,074	(63,346)	8.00%	105,842	1,396,786	93,289	13.20%	17.56%
2090	1,723,799	283,248	389,817	(106,569)	8.00%	133,696	1,750,926	79,001	13.20%	18.17%
2100	1,887,716	420,210	566,062	(145,852)	8.00%	145,258	1,887,122	57,522	13.20%	17.78%
2110	1,540,657	621,618	837,172	(215,554)	8.00%	114,741	1,439,844	29,649	13.20%	17.78%

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 1.75% Employer Contribution Rate December 31, 2010



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)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Covered	Pension			Health		Sum of	Sum of	IRC Ratio
Year	Pay	EANC %	PUCNC %	PUCNC $	Contribution	(4) + (5)	(5)	(6)	(7) / (8)
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%
2009	93,339	21.21%	22.92%	21,393.3	4,794.7	26,188.0	70,865.1	446,553.5	15.9%
2010	92,226	21.23%	23.25%	21,445.7	3,699.8	25,145.5	74,564.9	471,699.0	15.8%

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, 2010 TO DECEMBER 31, 2010

Unfunded Accrued Liabilities (UAL), January 1	$319,727,841
Normal Cost	20,502,781
Contributions	29,507,826
Interest	25,218,025
Expected UAL Before Any Changes	335,940,821
Effect of Changes in Assumptions	36,418,935
Expected UAL After All Changes	372,359,756
Actual UAL	386,798,949
Gain/(Loss) for Year From Financial Experience	$ (14,439,193)

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, 2010 and 2009

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 2010	Gain or (Loss) for Year Ended 12/31 2009
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.	$ (147,669)	$ 272,398
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	810,248	822,758
Death-in-Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(326,458)	(106,084)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	222,407	(641,440)
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	8,089,777	11,001,072
Investment Income. If there is greater investment return on pension assets than assumed, there is a gain. If less return, a loss.	(18,851,548)	(13,984,563)
Other. Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, valuation methods, etc.	(4,235,950)	(746,402)
Gain (or Loss) During Year From Experience	$ (14,439,193)	$ (3,382,261)
Non-Recurring Items (Effect of Benefit/Assumption Changes)	(36,418,935)	0
Composite Gain (or Loss) During Year	$ (50,858,128)	$ (3,382,261)

INVESTMENT GAIN (LOSS)
DEVELOPMENT OF PORTION ATTRIBUTABLE TO RETIREMENT, SURVIVOR AND DISABILITY ALLOWANCES
JANUARY 1, 2010 TO DECEMBER 31, 2010

Assets, Beginning of Year	$620,356,505
Net Cash Flow	(19,386,517)
Assumed Investment Return	48,853,060
Expected Assets End of Year	$649,823,048
Actual Assets End of Year	630,971,500
Gain/(Loss) for Year	$ (18,851,548)

The total investment gain (loss) was ($15,810,609), including the gain on health assets.

ACTIVE MEMBER POPULATION RECONCILIATION
JANUARY 1, 2010 TO DECEMBER 31, 2010

	Actual	Expected
Active Members Beginning of Year	1,547	
Plus New Hires	47	
Minus Retirements	39	54.5
Minus Deaths	1	0.9
Minus Disabilities	4	7.1
Minus Other Terminations*	17	17.2
Returned to Active Status	4	
Plus or Minus Data Correction	0	
Active Members End of Year	1,537	

** 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, 2010

Balance Sheet

Current Assets (Market Value)		Fund Balance	
Cash & Short-Term Investments	$ 15,744,037	Employees' Savings Fund	$ 107,873,496
Fixed Income	140,084,491	Employer Accumulation Fund	35,600,102
Stocks	442,087,048	Pension Reserve Fund	502,400,797
Real Estate	22,795,069	Survivors Benefit Fund	29,798,808
Alternatives	134,280,168	Health Care Fund	107,375,836
Other Short-Term	31,724	Income Fund	(48,766,332)
Accruals & Receivables	(20,739,830)		
Total Current Assets	$ 734,282,707	Total Fund Balance	$ 734,282,707

Revenues and Expenditures

	Year Ended December 31, 2010	2009
Net Assets Held in Trust for Pension and Postemployment Health Care Benefits	$675,673,202	$571,415,990
DROP Liabilities	$15,911,587	11,126,648
Total	691,584,789	582,542,638
Revenues*		
Employee contributions		
For non-DROP members	8,295,882	8,624,025
For DROP members	926,038	879,501
Employer contributions (net)	24,202,569	25,338,241
Investment income (net)		
Non-DROP investment income	89,895,586	130,523,661
DROP investment income	(3,077)	30,340
Miscellaneous	0	0
Total	123,316,998	165,395,768
Expenditures		
Benefit payments		
Retirees and Beneficiaries	46,628,195	44,400,066
From DROP account	2,422,970	1,533,963
Health insurance	10,064,645	8,385,875
Refund of member contributions	476,936	1,076,685
Administrative expenses	744,393	882,028
Death benefit	55,000	75,000
Total	60,392,139	56,353,617
Net Addition to Assets	62,924,859	109,042,151
Net Assets Held in Trust for Pension and Postemployment Health Care Benefits	$734,282,707	$675,673,202
DROP Liabilities	20,226,941	15,911,587
Total	754,509,648	691,584,789

** Revenues include transfers to and from systems.*

CAFR Asset Information Furnished for the Valuation December 31, 2010

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
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)
2009	9,503,526	20,453,914	109,523,583	1,009,422	140,490,445	4,794,710	21,030,418	25,825,128
2010	9,221,920	21,211,944	72,158,093	329,335	102,921,292	3,699,814	17,734,416	21,434,230

** 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
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
2009	46,009,029	1,076,685	406,147	758,818	48,250,679	8,899,533	123,210	9,022,743
2010	49,106,165	476,936	566,615	637,943	50,787,659	10,536,554	106,450	10,643,004

 # Includes death benefits.

Development of Funding Value of Retirement System Assets
December 31, 2010

		2008	2009	2010	2011	2012	2013
A.	Funding Value From Prior Year	$ 812,041,063	$ 699,051,166	$ 721,104,290			
B.	Market Value End of Year	582,542,638	691,584,789	754,509,648			
C.	Market Value Beginning of Year	833,704,076	582,542,638	691,584,789			
D.	Non-Investment Net Cash Flow	(17,903,377)	(20,629,822)	(26,223,257)			
E.	Investment Return:						
	E1. Market Total: B - C - D	(233,258,061)	129,671,973	89,148,116			
	E2. For Immediate Recognition (8.0%)	64,247,150	55,098,900	56,639,413			
	E3. Amount for Phased-In Recognition E1-E2	(297,505,211)	74,573,073	32,508,703			
F.	Phased-In Recognition of Investment Return:						
	F1. Current Year: 25% x E3	(74,376,303)	18,643,268	8,127,176			
	F2. First Prior Year	287,199	(42,868,253)	18,643,268	$ 8,127,176		
	F3. Second Prior Year	11,521,831	287,199	(42,868,253)	18,643,268	$ 8,127,176	
	F4. Third Prior Year	(2,242,248)	11,521,832	287,200	(42,868,253)	18,643,269	$ 8,127,175
	F5. Total Recognized Phase-ins	$ (64,809,521)	$ (12,415,954)	$ (15,810,609)	$ (16,097,809)	$ 26,770,445	$ 8,127,175
G.	Funding Value End of Year:						
	G1. Preliminary Funding Value End of Year: A + D + E2 + F5	$ 793,575,315	$ 721,104,290	$ 735,709,837			
	G2. Corridor Percent	20%	20%	20%			
	G3. Upper Corridor Limit: (100% + G2) x B	699,051,166	829,901,747	905,411,578			
	G4. Lower Corridor Limit: (100% - G2) x B	466,034,110	553,267,831	603,607,718			
	G5. Funding Value End of Year	$ 699,051,166	$ 721,104,290	$ 735,709,837			
H.	Difference between Market Value and Funding Value	$ (116,508,528)	$ (29,519,501)	$ 18,799,811	$ 34,897,620	$ 8,127,175	$ -
I.	Funding Value Rate of Return	(11.8)%	6.2 %	5.8 %			
J.	Market Value Rate of Return	(28.3)%	22.7 %	13.1 %			
K.	Ratio of Funding Value to Market Value	120%	104%	98%			

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, 2010

	Pension	Health	Total
A. Market Value Beginning of Year	$594,961,268	$96,623,521	$691,584,789
B. Member Contributions			
B1. Pension Contributions	8,295,882		8,295,882
B2. DROP Contributions	926,038		926,038
B3. Retiree Health Contributions		911,076	911,076
C. Employer Contributions			
C1. System Contributions	21,211,944	3,227,905	24,439,849
C2. Transfers	(237,280)		(237,280)
C3. Medicare Part D Reimbursement		471,909	471,909
D. Benefits Paid			
D1. Pension Benefits	46,628,195		46,628,195
D2. Benefit Payments from DROP Account	2,422,970		2,422,970
D3. HPRS Paid Retiree Health Benefits		9,823,237	9,823,237
D4. HPRS Paid Medicare Part B Benefits		713,317	713,317
D5. Member Paid Retiree Health Benefits		911,076	911,076
E. Refunds of Member Contributions	476,936	0	476,936
F. Death Benefits	55,000	0	55,000
G. Net External Cash Flow (B + C - D - E - F)	(19,386,517)	(6,836,740)	(26,223,257)
H. Other Changes in Market Value	71,520,150	17,627,966	89,148,116
I. Market Value End of Year (A + G + H)	647,094,901	107,414,747	754,509,648
J. Funding Value Adjustment	(16,123,401)	(2,676,410)	(18,799,811)
K. Funding Value End of Year (I + J)	$ 630,971,500	$ 104,738,337	$ 735,709,837

Line J is allocated in proportion to Line I.

SECTION E

SUMMARY OF MEMBER DATA

Active Members as of December 31, 2010
By Attained Age and Years of Service*

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Up	No.	Payroll
20-24	15							15	$ 562,358
25-29	99	58						157	7,702,922
30-34	51	133	92					276	15,351,290
35-39	25	81	170	83	2			361	21,796,256
40		15	31	37	2			85	5,261,293
41		17	15	50	4			86	5,486,547
42	1	8	12	38	12			71	4,604,261
43		6	7	30	19			62	4,233,043
44	1	4	6	23	18	3		55	3,688,358
45		1	2	16	16	7		42	2,959,474
46			7	14	33	2		56	3,915,116
47		1	1	9	23	12		46	3,187,301
48			1	5	21	12	1	40	2,688,090
49				7	19	11	2	39	2,828,974
50				2	5	16	2	25	1,775,069
51				4	5	21	3	33	2,339,670
52				2	7	8	10	27	1,992,951
53					2	9	9	20	1,379,315
54					4	1	11	16	1,171,204
55						2	5	7	505,754
56					1		6	7	530,883
57					1		3	4	318,042
58						2	3	5	330,414
59							1	1	87,289
60							1	1	71,978
Totals	192	324	344	320	194	106	57	1,537	$ 94,767,852

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

Age: 39.1 years.

Service: 14.3 years.

Annual Pay: $61,658

** Includes 129 DROP members.*

ACTIVE MEMBERS
BY AGES OF ENTRY INTO SERVICE
DECEMBER 31, 2010

Entry Age Nearest Birthday	Number	Cumulative Number	Percent	Cumulative Percent
Less than 18	0	0	0.00%	0.00%
18	6	6	0.39%	0.39%
19	44	50	2.86%	3.25%
20	56	106	3.65%	6.90%
21	147	253	9.56%	16.46%
22	204	457	13.27%	29.73%
23	183	640	11.91%	41.64%
24	210	850	13.66%	55.30%
25	151	1,001	9.83%	65.13%
26	116	1,117	7.54%	72.67%
27	94	1,211	6.12%	78.79%
28	85	1,296	5.53%	84.32%
29	44	1,340	2.86%	87.18%
30	55	1,395	3.58%	90.76%
31	33	1,428	2.15%	92.91%
32	35	1,463	2.28%	95.19%
33	35	1,498	2.27%	97.46%
34	21	1,519	1.37%	98.83%
35	13	1,532	0.84%	99.67%
36	0	1,532	0.00%	99.67%
37	1	1,533	0.07%	99.74%
38	3	1,536	0.19%	99.93%
39	0	1,536	0.00%	99.93%
40 & Up	1	1,537	0.07%	100.00%
Total	1,537			

ACTIVE DROP MEMBERS AS OF DECEMBER 31, 2010
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	DROP			
	No.	Annual Benefit	Annual Pay	DROP Account Balance
48	9	$ 419,005	$ 617,068	$ 159,285
49	20	913,218	1,407,245	1,495,264
50	17	742,439	1,163,967	1,632,270
51	17	746,721	1,205,961	2,151,821
52	18	740,259	1,205,760	2,757,784
53	13	561,490	882,139	1,968,534
54	14	645,054	1,025,142	2,530,532
55	9	409,041	610,810	1,705,387
56	5	258,744	392,422	1,164,865
57	4	179,680	258,958	776,052
58	2	105,378	142,679	446,805
59	1	53,192	69,210	265,216
Totals	129	$ 5,774,219	$ 8,981,361	$ 17,053,814

Average Age: 52.4 yrs.
Average Age at DROP: 49.9 yrs.

Average Service: 29.3 yrs.
Average Service at DROP: 25.9 yrs.

Average Annual Pay: $69,623

Age and Service Pensions Being Paid December 31, 2010
By Attained Ages

Attained Ages	Number	Monthly Pensions	Number Married	Average Age of Spouse
46	1	$ 1,050		N/A
48	7	24,576	2	N/A
49	8	29,699	5	47
50	16	55,964	15	50
51	25	88,254	20	48
52	27	88,084	21	50
53	25	83,228	20	49
54	21	73,261	19	53
55	43	149,134	38	53
56	27	98,974	25	56
57	22	85,626	20	55
58	37	135,070	31	54
59	48	159,159	38	57
60	47	167,341	43	57
61	41	152,641	37	58
62	55	184,912	48	60
63	72	248,193	62	61
64	46	166,220	43	63
65	40	143,898	36	63
66	53	182,133	53	63
67	38	121,964	33	65
68	50	162,712	47	64
69	38	122,016	35	65
70	28	94,400	25	67
71	25	86,549	24	68
72	26	71,525	25	69
73	26	78,811	25	69
74	17	45,309	16	71
75	13	37,336	12	73
76	13	32,683	12	71
77	9	21,356	9	73
78	13	32,871	11	73
79	11	25,834	11	77
80	16	42,463	15	76
81	14	29,205	10	78
82	11	21,707	10	78
83	13	25,202	11	80
84	4	7,020	3	79
85 & Over	25	46,538	13	84
Totals	1,051	$ 3,422,918	923	

DISABILITY PENSIONS BEING PAID DECEMBER 31, 2010
BY ATTAINED AGE

Attained Ages	Number	Monthly Pensions	Number Married	Average Age of Spouse
32	2	$ 2,988		
35	1	2,345		N/A
36	2	3,502	1	36
38	2	5,348	1	38
39	3	7,138	3	29
40	2	4,746	2	37
41	2	5,521	2	37
42	4	9,240	2	37
43	4	9,738	2	33
44	5	10,492	2	44
45	3	6,174	2	49
46	5	15,073	3	46
47	6	14,069	5	44
48	5	16,494	3	42
49	3	11,239	3	50
50	6	16,407	6	49
51	5	13,969	4	46
52	7	16,734	4	51
53	7	19,137	5	54
54	4	11,619	3	53
55	2	6,396	2	57
57	3	8,394	3	55
58	3	7,627	2	57
59	3	8,927	3	57
60	1	1,768	1	55
61	4	9,040	2	59
62	6	12,864	5	59
63	1	2,465	1	63
64	2	5,268	1	53
66	2	5,413	1	68
67	2	4,004	2	66
69	1	1,577	1	63
73	1	3,085	1	70
75	1	1,577	1	71
80	1	1,677	1	75
81	1	1,696	1	77
83	1	1,701	1	81
84	1	1,713		N/A
Totals	114	$287,165	82	

DEPENDENTS BEING PAID AS OF DECEMBER 31, 2010
TABULATED BY ATTAINED AGE

Attained Ages	Number	Monthly Pensions
12 & Under	5	$ 881
13	2	359
14	1	191
15	1	194
16	1	194
17	1	164
18	3	549
19	4	752
20	4	775
21	3	549
22	1	218
24	2	1,171
31	1	1,008
33	1	1,143
37	1	1,159
38	1	1,228
40	1	1,159
42	1	1,304
44	1	1,228
45	1	1,203
46	3	2,361
48	3	3,529
51	2	435
53	2	2,624
55	2	2,644
56	3	3,511
57	1	981
58	1	1,347
59	5	6,556
60	3	4,235
61	3	4,269
62	4	5,528
63	8	11,202
64	5	7,547
65	5	7,269
66	4	6,399
67	5	7,197
68	8	11,057
69	1	1,275
70-79	59	77,575
80-89	79	95,929
90 & Over	17	22,572
Totals	259	$301,471

ACTIVE MEMBER VALUATION DATA, 2001 TO 2010

Actuarial Valuation as of December 31	Number of Active Members	Annual Payroll	Average Annual Salary	% Increase in Average Pay
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
2009	1,547	94,824,789	61,296	0.4
2010	1,537	94,767,852	61,658	0.6

RETIRANTS AND BENEFICIARIES VALUATION DATA, 2001 TO 2010

Actuarial Valuation as of December 31	Added to Rolls		Removed from Rolls		Number of People	Total Monthly Benefits	Average Benefit
	No.	Monthly Benefits	No.	Monthly Benefits			
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
2009	45	207,598	31	42,636	1,385	3,793,054	2,739
2010	64	259,964	25	41,464	1,424	4,011,554	2,817

Of the 1,424 retirants and beneficiaries as of December 31, 2010, 1,051 are service retirees, 114 are disability retirees and 259 are survivor beneficiaries. The average monthly benefits are $3,257 for service retirees, $2,519 for disability retirees and $1,164 for survivor beneficiaries.

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

	Census Date										
	12/10	12/09	12/08	12/07	12/06	12/05	12/04	12/03	12/02	12/01	12/00
Recipients:											
w/o Medicare A	732	692	762	751	779	806	808	791	773	771	761
Medicare A	596	580	398	503	522	437	411	394	386	368	346
Spouses:											
w/o Medicare A	365	368	518	372	420	375	373	403	483	471	447
w Medicare A	257	267	232	242	156	187	176	165	158	155	151
Dependent Children	216	165	167	154	168	127	130	129	111	105	110
Orphans	0	23	26	63	33	26	30	30	32	30	33
Totals	2,166	2,095	2,103	2,085	2,078	1,958	1,928	1,912	1,943	1,900	1,848

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

	AETNA		Medicare Advantage		Medical Mutual		
	Network	Non-Network	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
2009	1,260	0			835	0	2,095
2010	190	0	819	0	1,157	0	2,166

DEFERRED PENSIONS AS OF DECEMBER 31, 2010
TABULATED BY ATTAINED AGE

Attained Ages	Number	Monthly Pensions
44	2	$ 6,365
47	1	3,565
52	1	1,092
Totals	4	$11,022

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, 2010

The actuarial assumptions used in the valuation are shown in this Appendix of the report. The assumptions were established for the December 31, 2010 actuarial valuation, following a 5-year experience study covering the period January 1, 2005 through December 31, 2009. 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, 2005 through December 31, 2009. It is scheduled to be reviewed again following the December 31, 2014 actuarial valuation.

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

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

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

Non-Economic Assumptions

The mortality tables, for post-retirement mortality, used in evaluating allowances to be paid were the RP-2000 Combined Healthy Male and Female Tables projected to 2020 using Projection Scale AA. This assumption was last reviewed and updated as part of the 5-year experience study for the period January 1, 2005 through December 31, 2009. As shown in that study, the current assumption allows for an approximate 2% margin for future mortality improvement. It is scheduled to be reviewed again following the December 31, 2014 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 projected to 2020 using Projection Scale AA set-forward 5 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 (MAAA) 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	$138.57	$140.09	32.77	34.63
55	131.86	133.89	28.04	29.88
60	123.09	125.97	23.47	25.31
65	112.30	116.30	19.17	21.02
70	99.65	105.04	15.22	17.06
75	84.62	92.13	11.58	13.47
80	68.15	77.48	8.42	10.23

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	35%	3.5%
49	15%	3.5%
50	10%	3.5%
51	10%	3.5%
52	15%	
53	10%	
54	10%	
55	20%	
56	30%	
57	25%	
58	20%	
59	20%	
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. 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	
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
2009	49	74.5	21	50.0	10	7.0	0	0.9	15	16.6	1,547
2010	51	79.7	39	54.5	4	7.1	1	0.9	17	17.2	1,537
Total	677	652.8	287	382.6	62	66.1	8	9.0	272	195.1	

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 2010

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			5		5
49			3	2	5
50			3		3
51			4	1	5
52			2	3	5
53			1		1
54			3	1	4
55			3	1	4
56				1	1
57			1	1	2
58				1	1
59					
60 & Over			2	1	3
Totals			27	12	39

DISABILITY RETIREMENTS
DURING CALENDAR YEAR 2010

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			1					1
35-39			2					2
40-44								
45-49				1				1
50 & Over								
Totals			3	1				4

Death-in-Service Terminations During Calendar Year 2010

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	1							1
30-34								
35-39								
40-44								
45-49								
50 & Over								
Totals	1							1

Withdrew and Eligible for Deferred Benefit Terminations* During Calendar Year 2010

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					2			2
45-49						3		3
50 & Over								
Totals					2	3		5

** Includes 2 members who went on deferred status and then retired in the same year.*

WITHDREW AND PENDING CONTRIBUTIONS TERMINATION DURING CALENDAR YEAR 2010

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 2010

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	3	1						4
30-34	1	1						2
35-39		1						1
40-44				3				3
45-49								
50 & Over								
Totals	5	3		3				11

** In addition to the 11 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 to measure the effect of military service purchases. Reported pays were increased by 4% due to furlough days in calendar year 2010 that are not expected to recur in future years.

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 third 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:

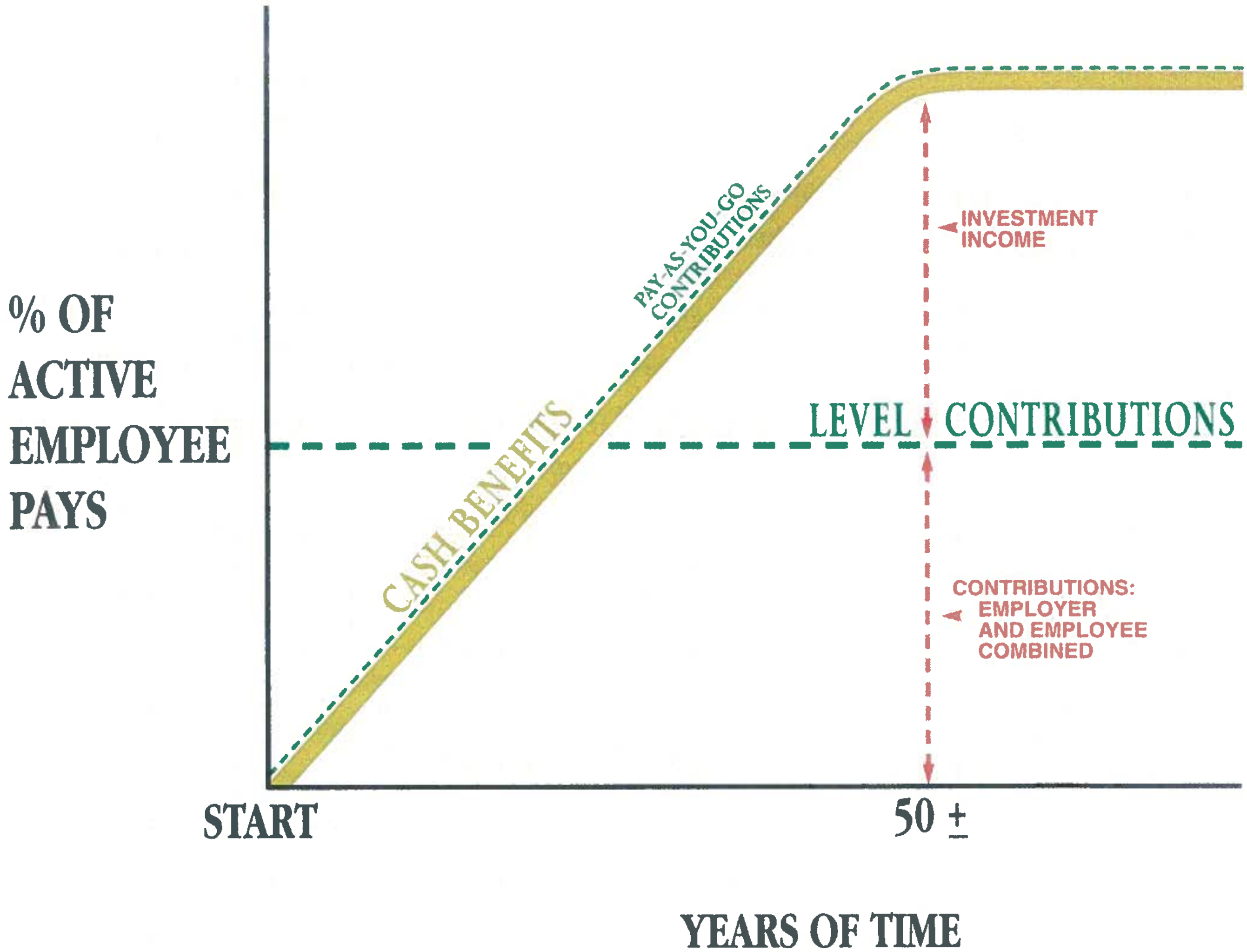
> *Normal Cost* (the value assigned to service being rendered this year)
>
> . . . plus . . .
>
> *Interest on Unfunded Actuarial Accrued Liabilities* (the difference between liabilities for service already rendered and the accrued assets of the Retirement System).

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.