Gabriel Roeder Smith & Company
Consultants & Actuaries

OHIO STATE HIGHWAY PATROL RETIREMENT SYSTEM

ANNUAL ACTUARIAL VALUATION REPORT

DECEMBER 31, 2014

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August 28, 2015

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, 2014** 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; and
- 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 data.

Your attention is directed particularly to the summary of results, comments and recommendations on pages 3 through 6.

The actuarial calculations were performed in accordance with accepted actuarial procedures. The calculations were based upon provisions of the Retirement System described in Section A.

The financial assumptions used in making the valuations are shown in 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 2014 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 signing actuaries are independent of the plan sponsor.

Mita D. Drazilov and Brian B. Murphy 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,

Mita Drazilov

Mita D. Drazilov, ASA, MAAA

Brian B Murphy

Brian B. Murphy, FSA, EA, FCA, MAAA

MDD/BBM:mrb

Ohio Revised Code Section 5505.15 provides in part as follows:

> (B) The state shall annually pay into the employer accumulation fund, in monthly or less frequent installments as the state highway patrol retirement board requires, the employer contribution. The employer contribution shall be an amount equal to twenty-six and one-half percent of the total salaries paid to contributing members.

With the enactment of Senate Bill 345, the Board has the discretion to set the member contribution rate and the Cost of Living Allowance (COLA) percentage to comply with the amortization requirement of Section 5505.121 of the Revised Code. Based upon preliminary December 31, 2014 actuarial valuation results, the Board voted to maintain the member contribution rate and COLA schedule that was adopted in August 2014. The member contribution rate is 12.5% and the COLA is 1.25%. In addition, at its August 2015 Board meeting, the Board voted to allocate 4.0% of the 26.50% of payroll employer contribution rate to the retiree health program (compared to 4.30% last year), and 22.50% to pension, which decreases the pension amortization period to 29 years. The purpose of this report is to provide information on the results of the December 31, 2014 actuarial valuation based upon these decisions.

The **total employer contribution rate** is 26.50% of payroll, as established by Statute. The breakdown between employer, employee, pension and health used for this valuation is shown below:

	Contribution Rates Expressed as a % of Active Payroll		
	Retirement, Survivor & Disability Allowances	**Post-Retirement Health Care**	**Totals**
Employer	22.50%	4.00%	26.50%
Employee	12.50%	0.00 %	12.50%
Totals	**35.00%**	**4.00%**	**39.00%**

Items of significant importance for the December 31, 2014 actuarial valuation include:

1. The rate of investment return on a market value basis for the calendar year was below the actuarial assumed investment return rate of 8.0%. (The market value rate of return for calendar year 2014 was approximately 6.2%. This figure will generally differ from other reported return figures due to restated audited asset figures, approximate formulas and treatment of System expenses.) The funding value rate of return for calendar year 2014 was approximately 8.0%. The market value of assets currently exceeds the funding value of assets by approximately $32.5 million.

2. Experience during calendar year 2014 in the retiree health plan was favorable. In addition, changes to the member paid portion of the retiree health premiums also improved the solvency period. Based upon the calendar year 2015 retiree health employer contribution rate of 4.0%, the retiree health plan is expected to remain solvent until 2029. The prior valuation indicated that the retiree health care plan was expected to remain solvent until 2026. Note that changes to the Medicare Part B monthly reimbursements (i.e., $60 in calendar year 2015, $30 in calendar year 2016 and $0 thereafter) and monthly member premiums for Medicare eligible beneficiaries adopted at the August 2014 Board meeting are reflected in this report.

This valuation indicates that a total employer contribution rate of 26.50% with changes that the Board adopted at its July 2015 Board meeting produces a 29-year amortization period for the pension program. The calculations reflect a 4.0% employer rate allocation to the retiree health program and are based upon the Funding Value of Assets.

Comment on Post-Retirement Health Care:

If all assumptions are met exactly and contribution rates and benefit provisions continue at their present levels, the retiree health program will run out of money. The retiree health plan is expected to remain solvent until about 2029. Beyond that date, higher contributions are required to extend the solvency of the fund. The benefit payout rate is approximately 12% of payroll, approximately three times the contribution income. This situation cannot continue indefinitely. **Further changes to the retiree health plan (i.e., in addition to those made recently) and/or further increases in contribution rates will need to be a part of the future.**

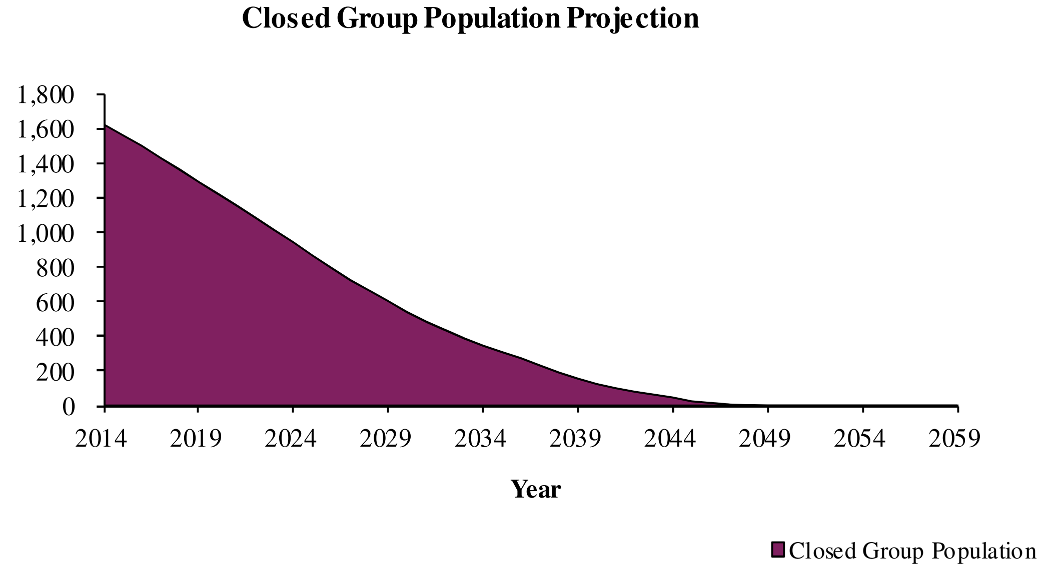
Recommendation: The following reserve transfers are recommended as of December 31, 2014:

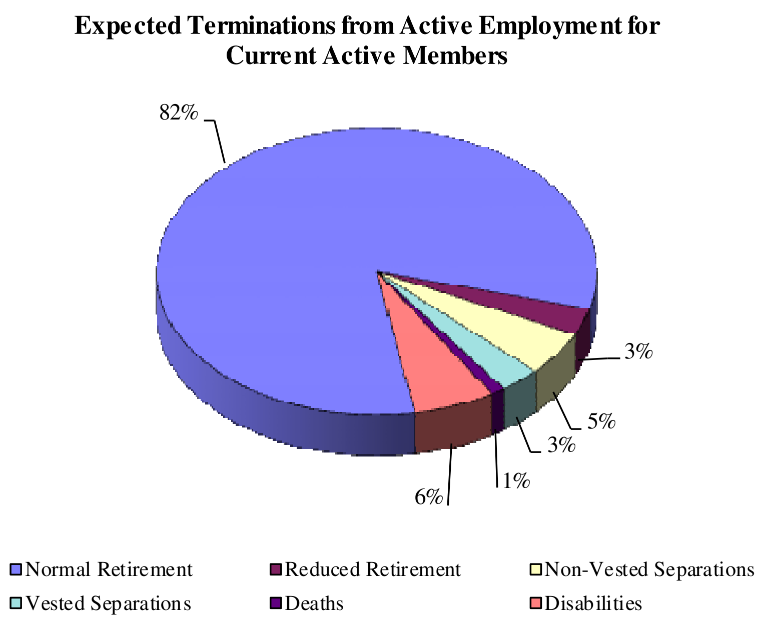
Transfer To (From)	Total Amount
Pension Reserve Fund:	$18,872,541
Survivor Benefit Fund:	(3,826,163)
Total	**$15,046,378**

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, 2015 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 are fully funded by the appropriate reserve funds.

Conclusion: Based upon the results of the December 31, 2014 regular annual actuarial valuation, the unfunded actuarial accrued liabilities of the pension program are expected to be amortized over a 29-year period. With regard to the Retiree Health Plan, solvency to 2029 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 2029. A combination of contribution increases and continued cost containment measures including plan redesign will be important for the Retiree Health Plan.

EXPECTED DEVELOPMENT OF PRESENT POPULATION
DECEMBER 31, 2014





The charts above show the expected future development of the present population in simplified terms. The Retirement System presently covers 1,622 active members. Eventually, 5% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 88% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or by separating from service without withdrawing contributions. 7% of the present population is expected to become eligible for death-in-service or disability benefits. Within 13 years, over half of the covered membership is expected to consist of new hires.

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 8.0% on the actuarial value of assets), it is expected that:

(1) The employer normal cost as a percentage of pay will remain level,
(2) The unfunded actuarial accrued liabilities will be fully amortized after 29 years, and
(3) The funded status of the plan will increase gradually towards a 100% funded ratio.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

(1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations, in other words of transferring the obligation to an unrelated third party in a market value type transaction.
(2) The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. The amounts of future contributions will differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit) and potential future losses could result in future unfunded liability contributions.
(3) The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

SECTION A

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
BENEFITS AND CONDITIONS VALUED
DECEMBER 31, 2014

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 5 years (3 years prior to January 1, 2015)] 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. **In-the-Line-of-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 $150 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 a certain percentage of the member's annual salary. The percentage shall not be less than 10.0% of salary but not more than 14.0%. The State Highway Patrol Retirement System shall establish and may adjust the rate as it considers necessary to meet the amortization period requirement. For the December 31, 2014 valuation, the assumed member contribution rate is 12.5%.

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. The employer contribution shall be an amount equal to 26.50 percent of the total salaries paid to contributing members.

Post-Retirement Increases: As of December 31, 2014, the basic benefit for all retirants is increased by 1.25 percent each year starting at age 60 (age 53 for members retired or entered the DROP prior to 1/7/2013). The retirant must have also been receiving monthly benefits for at least twelve months. Benefit recipients receiving survivor benefits prior to 1/7/2013 are eligible for the increase after receiving benefits for twelve months. Disability members retired prior to 1/7/2013 are eligible for the increase after receiving benefits for sixty months or age 53 whichever occurs first. The Board may adjust the cost of living adjustment annually. The Board's determination shall be based on the annual actuarial valuation. If the Board determines that an increase may be made, the increase shall not exceed 3 percent of the eligible member's basic benefit.

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 member contribution rate. While participating in the DROP, 100% of members' contributions, up to 10% of payroll, 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 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.

Deferred Retirement Option Program (DROP) (Continued):

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

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

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

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

SAMPLE BENEFIT COMPUTATION FOR MEMBERS

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

	Data	Description
A.	$60,000	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 $60,000 =	$30,000
	0.0225 x 5 x $60,000 =	$ 6,750
	0.0200 x 2 x $60,000 =	$ 2,400
		$39,150

Benefit Payable to:

F. Retirant while spouse is alive (E)	$39,150
G. Spouse after retirant's death (D x E)	$19,575
H. Retirant after spouse's death (E)	$39,150

Projected Benefits to Member

Year of Retirement	Amount Payable*	
	COLA Beginning at Age 53	COLA Beginning at Age 60
First	$39,150	$39,150
Second	39,150	39,150
Third	39,150	39,150
Fourth	39,639	39,150
Fifth	40,129	39,150
Sixth	40,618	39,150
Seventh	41,108	39,150
Eighth	41,597	39,150
Ninth	42,086	39,150
Tenth	42,576	39,150
Eleventh	43,065	39,639

** Cost of Living Adjustment (COLA) is subject to change annually. As of December 31, 2014, the basic benefit for all retirants is increased by 1.25% each year starting at age 60 (age 53 for members retired or entered the DROP prior to 1/7/2013).*

RETIREMENT SURVIVOR & DISABILITY ALLOWANCES
COMPUTED EMPLOYER CONTRIBUTIONS TO SUPPORT BENEFITS

Contributions for	Contributions Expressed as Percents of Payroll	
Valuation Date - December 31	**2014**	**2013**
Normal Cost:		
Age & Service Benefits	13.95%	13.95%
Disability Benefits	2.36%	2.36%
Survivor Benefits	0.13%	0.13%
Separation Benefits	0.94%	0.94%
Purchase of Military Service	0.75%	0.75%
Total Normal Cost	18.13%	18.13%
Less Member Contributions#	12.50%	11.50%
Employer Normal Cost	5.63%	6.63%
Unfunded Actuarial Accrued Liabilities	16.87%	15.57%
Amortization Period	29	30
PENSION EMPLOYER CONTRIBUTION RATE	22.50%	22.20%

\# *For the determination of the amortization period in the 2013 column, the member contribution rate is 11.5% for calendar year 2014 and 12.5% for calendar years 2015 and later.*

For the determination of the amortization period in the 2014 column, the member contribution rate is 12.5% for calendar years 2015 and later.

The amortization period is computed and is the period of years over which the Board established pension employer contribution rate and the employee contribution rate will finance the unfunded liabilities. With the amortization periods shown above, the unfunded liability is expected to rise in dollar amount for several years before beginning to decline, although it is expected to decline steadily as a percentage of payroll (See page A-8).

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; and

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

Actuarial Accrued Liabilities, $1,012,752,337, less pension assets of $712,285,604 resulted in unfunded actuarial accrued liabilities of $300,466,733, which were amortized as a level percent of payroll over 29 years. The characteristics of this method are illustrated on the following page. Actuarial accrued liabilities represent the portion of present values not covered by future normal cost contributions.

Retirement, Survivor, and Disability Allowances Financing Unfunded Actuarial Accrued Liabilities Which Were Calculated Using a Payroll Growth 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 UAL Contributions		UAAL as % of Payroll
			Dollars	% of Payroll	
1	$ 103,180	$ 300,467	$ 17,406	16.87%	291.2%
2	107,307	306,415	18,103	16.87%	285.5%
3	111,599	312,115	18,827	16.87%	279.7%
4	116,063	317,519	19,580	16.87%	273.6%
5	120,706	322,573	20,363	16.87%	267.2%
6	125,534	327,217	21,178	16.87%	260.7%
7	130,555	331,386	22,025	16.87%	253.8%
8	135,777	335,008	22,906	16.87%	246.7%
9	141,208	338,004	23,822	16.87%	239.4%
10	146,856	340,288	24,775	16.87%	231.7%
11	152,730	341,765	25,766	16.87%	223.8%
12	158,839	342,330	26,796	16.87%	215.5%
13	165,193	341,869	27,868	16.87%	207.0%
14	171,801	340,257	28,983	16.87%	198.1%
15	178,673	337,358	30,142	16.87%	188.8%
16	185,820	333,022	31,348	16.87%	179.2%
17	193,253	327,086	32,602	16.87%	169.3%
18	200,983	319,372	33,906	16.87%	158.9%
19	209,022	309,686	35,262	16.87%	148.2%
20	217,383	297,816	36,673	16.87%	137.0%
21	226,078	283,530	38,139	16.87%	125.4%
22	235,121	266,577	39,665	16.87%	113.4%
23	244,526	246,682	41,252	16.87%	100.9%
24	254,307	223,547	42,902	16.87%	87.9%
25	264,479	196,846	44,618	16.87%	74.4%
26	275,058	166,226	46,402	16.87%	60.4%
27	286,060	131,301	48,258	16.87%	45.9%
28	297,502	91,654	50,189	16.87%	30.8%
29	309,402	46,829	52,196	16.87%	15.1%
30	321,778	0	0	0.00%	0.0%

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, 2014

Benefits Payable	Number	Monthly Amount	Actuarial Value
From Pension Reserve Fund:			
Regular Retirements	1,164	4,150,610	534,510,431
Disability Retirements	123	351,145	49,996,724
Total Benefits Payable from Pension Reserve Fund	1,287	4,501,755	584,507,155
From Survivor Benefit Fund:			
Surviving Spouses, Dependent Children & Dependent Parents	271	355,948	34,911,265
Total Benefits Payable from Survivor Benefit Fund	271	355,948	34,911,265
Total Retirement Benefits Payable	1,558	4,857,703	619,418,420
Total Vested Deferred Benefits Payable	10	29,065	3,300,721
Grand Total	**1,568**	**$4,886,768**	**$622,719,141**

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
DEVELOPMENT OF ACTUARIAL ACCRUED LIABILITIES
DECEMBER 31, 2014

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	$ 526,597,740	$ 140,620,032	$ 385,977,708
Disability allowances likely to be paid to present active members who become totally and permanently disabled	27,417,537	22,615,220	4,802,317
Survivor benefits likely to be paid to spouses and children of present active members who die before retiring	2,132,284	1,199,179	933,105
Separation benefits (refunds of contributions and deferred allowances likely to be paid on behalf of present active members)	7,095,828	8,775,762	(1,679,934)
Retirement benefits likely to be paid to current retirants and beneficiaries and to present inactive members	622,719,141	0	622,719,141
Total	$ 1,185,962,530	$ 173,210,193	$ 1,012,752,337
Member portion	239,358,225	119,168,780	120,189,445
Employer portion	$ 946,604,305	$ 54,041,413	$ 892,562,892

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
SUMMARY STATEMENT OF SYSTEM RESOURCES AND OBLIGATIONS
DECEMBER 31, 2014

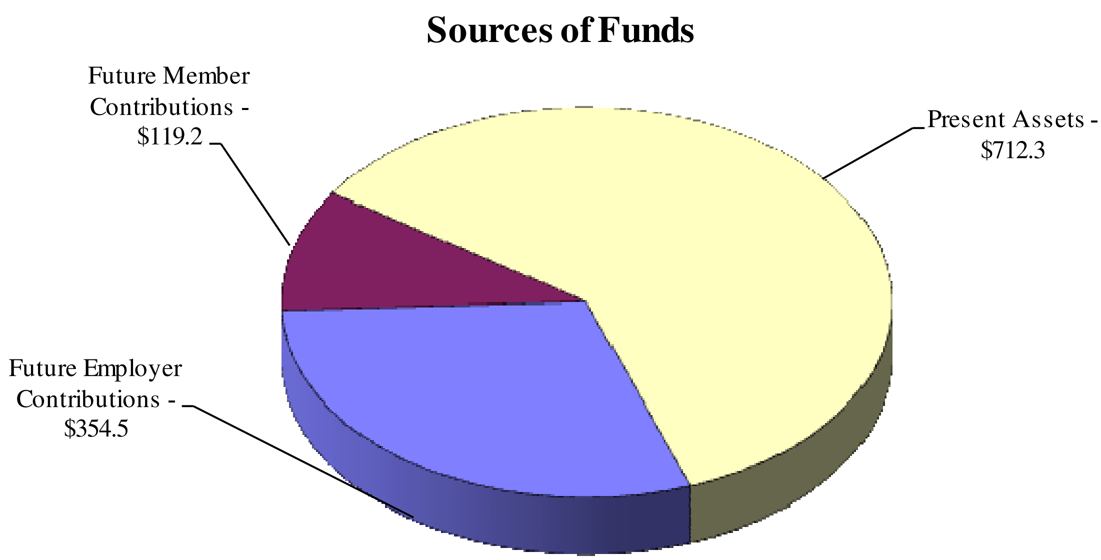
PRESENT RESOURCES AND EXPECTED FUTURE RESOURCES

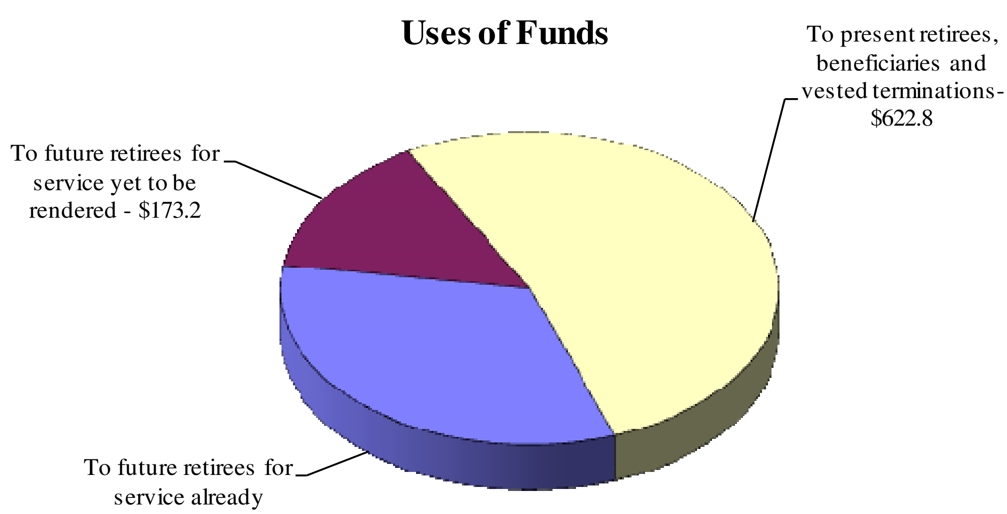
A. Present valuation assets		
1. Net assets from system financial statements	$ 848,610,417	
2. Market value adjustment	(32,512,006)	
3. Health assets	103,812,807	
4. Valuation assets: 1 + 2 - 3		$ 712,285,604
B. Actuarial present value of expected future employer contributions		
1. For normal costs	54,041,413	
2. For unfunded actuarial accrued liability	300,466,733	
3. Total		354,508,146
C. Actuarial present value of expected future member contributions		119,168,780
D. Total Present and Expected Future Resources		$ 1,185,962,530

ACTUARIAL PRESENT VALUE OF EXPECTED FUTURE BENEFIT PAYMENTS

A. To retirants and beneficiaries	$ 619,418,420
B. To terminated members	3,300,721
C. To present active members	
1. Allocated to service rendered prior to valuation date (actuarial accrued liability)	390,033,196
2. Allocated to service likely to be rendered after valuation date	173,210,193
3. Total	563,243,389
D. Total Actuarial Present Value of Expected Future Benefit Payments	$ 1,185,962,530

RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
FINANCING $1,186.0 MILLION OF BENEFIT PROMISES
DECEMBER 31, 2014





RETIREMENT, SURVIVOR, AND DISABILITY ALLOWANCES
COMPARATIVE STATEMENT

Valuation Date December 31	No.	Annual Payroll	Actuarial Accrued Liabilities Total	Funded	Unfunded	Unfunded/ Payroll	% Funded	Funding 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
2011	1,520	93,126,449	1,047,699,686	623,360,121	424,339,565	4.6	59.5%	N/A
2012	1,645	98,117,403	1,083,796,877	658,428,914	425,367,963	4.3	60.8%	N/A
2012 *	1,645	98,117,403	966,310,485	658,428,914	307,881,571	3.1	68.1%	30
2013	1,613	98,519,844	991,042,165	690,605,582	300,436,583	3.0	69.7%	30
2013 #	1,613	98,519,844	989,101,470	690,605,582	298,495,888	3.0	69.8%	30
2014	**1,622**	**99,211,756**	**1,012,752,337**	**712,285,604**	**300,466,733**	**3.0**	**70.3%**	**29**

* *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
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%	2.4%	1.5%
2011	1,520	93,126,449	61,267	(0.6)%	3.1%	3.0%
2012	1,645	98,117,403	59,646	(2.6)%	3.1%	1.7%
2013	1,613	98,519,844	61,079	2.4%	1.3%	1.5%
2014	1,622	99,211,756	61,166	0.1%	N/A	0.8%
		10 Year Average		1.6%	2.6% *	2.1%

\+ *National Average Earnings published by the Social Security Administration.*
* *9 year average.*

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.

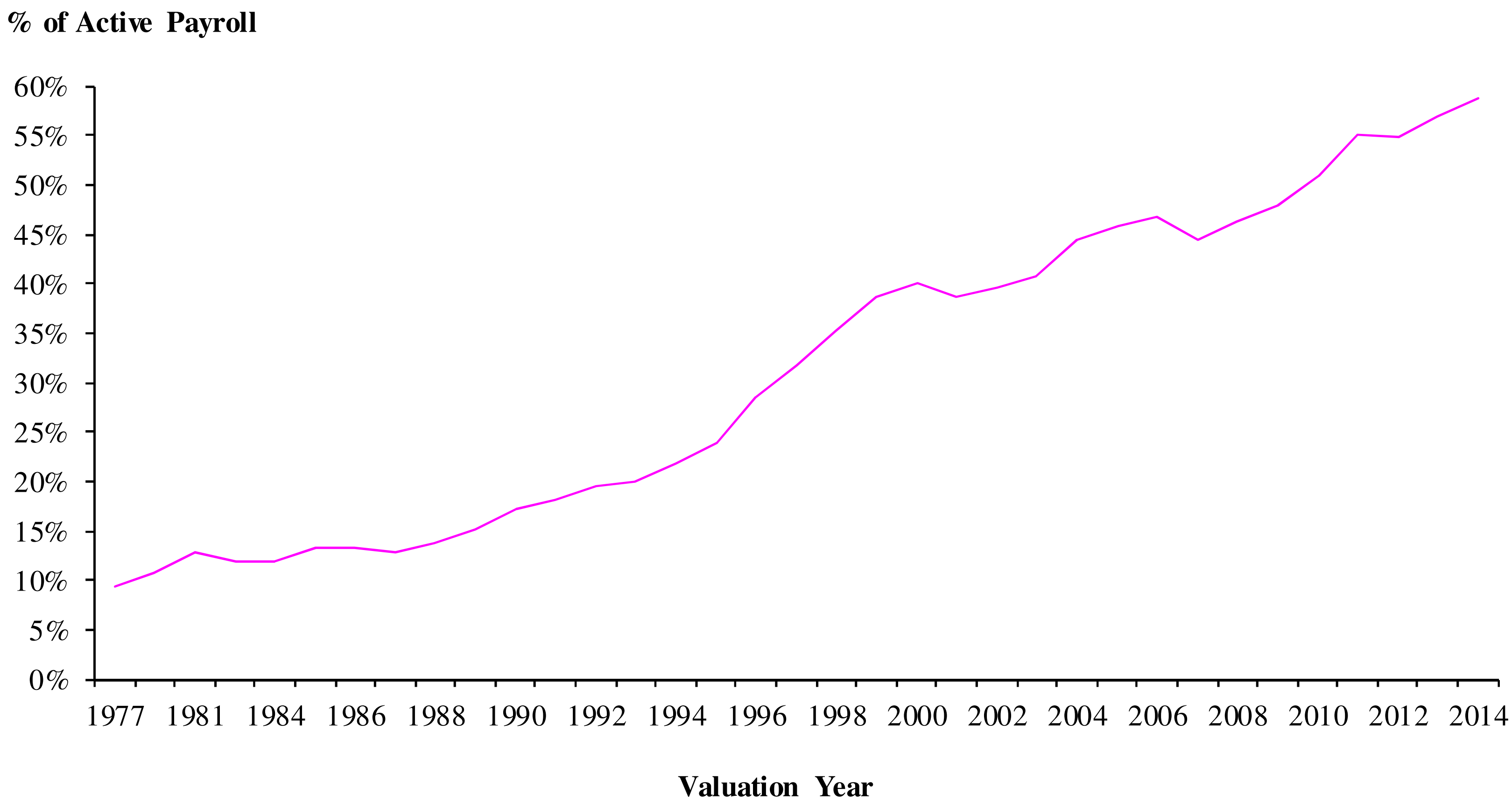
RETIREMENT, SURVIVOR, AND DISABILITY BENEFITS IN PAY STATUS COMPARATIVE STATEMENT

Valuation Date December 31	Number of People	Monthly Pensions	Active Payroll	Average Amount	% of Active Member Pays
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%
2011	1,465	4,270,807	93,126,449	2,915	55.0%
2012 *	1,497	4,470,542	98,117,403	2,986	54.7%
2013 #	1,523	4,667,280	98,519,844	3,065	56.8%
2014	**1,558**	**4,857,703**	**99,211,756**	**3,118**	**58.8%**

* *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, 2014



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	583,714,389	329,552,995	630,971,500	100%	90%	0%
2011	104,701,161	618,984,073	324,014,452	623,360,121	100%	84%	0%
2012 *	108,311,937	586,311,106	271,687,442	658,428,914	100%	94%	0%
2013 #	113,334,067	601,342,081	274,425,322	690,605,582	100%	96%	0%
2014	**117,441,639**	**622,719,141**	**272,591,557**	**712,285,604**	**100%**	**96%**	**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. In addition, 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%
2011	1,047,699,686	623,360,121	424,339,565	59.5%	93,126,449	455.7%
2012 *	966,310,485	658,428,914	307,881,571	68.1%	98,117,403	313.8%
2013 #	989,101,470	690,605,582	298,495,888	69.8%	98,519,844	303.0%
2014	**1,012,752,337**	**712,285,604**	**300,466,733**	**70.3%**	**99,211,756**	**302.9%**

* *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.

SCHEDULE OF EMPLOYER CONTRIBUTIONS FOR COMPLIANCE WITH APPLICABLE GASB STATEMENTS

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%
2011	22,966,338	85%
2012	23,766,361	78%
2013	22,908,182	65%
2014	**22,325,421**	**N/A**

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.

NOTES TO TREND DATA
FOR COMPLIANCE WITH APPLICABLE GASB STATEMENTS

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, 2014
Actuarial Cost Method	Entry Age
Amortization Method	Level Percent Closed
Remaining Amortization Period	29 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, 2014, 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	$ 117,441,639
Employer - financed vested	186,238,142
Employer - financed non-vested	32,157,243

As of December 31, 2014, there were 741 vested active members and 881 non-vested active members.

SECTION B

POST-RETIREMENT HEALTH CARE AND MEDICARE REIMBURSEMENT

Benefits Provided

Since July 1, 1974, the Retirement System has made Health Care available for every benefit recipient and eligible dependent under a hospitalization and health care policy administered by Aetna 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 member premiums for calendar years 2015, 2016 and 2017, member premium amounts are as follows:

Premium Scale for Members Ineligible for Medicare

2015

Age	Monthly Premium Retiree	Spouse	Retiree/Spouse
65+	$83	$132	$215
60-64	$83	$132	$215
56-59	$99	$165	$264
52-55	$132	$198	$330
Under 52	$149	$231	$380

2016

Age	Monthly Premium Retiree	Spouse	Retiree/Spouse
65+	$83	$149	$232
60-64	$116	$149	$265
56-59	$149	$182	$331
52-55	$182	$215	$397
Under 52	$215	$248	$463

2017

Age	Monthly Premium Retiree	Spouse	Retiree/Spouse
65+	$99	$165	$264
60-64	$132	$165	$297
56-59	$182	$215	$397
52-55	$248	$297	$545
Under 52	$281	$330	$611

Premium Scale for Members Eligible for Medicare

Calendar Year	Monthly Premium Retiree	Surviving Spouse	Spouse
2015	$15	$20	$50
2016	$20	$46	$100
2017	$25	$91	$165

Benefits Provided (continued)

The dependent child premium is $50 for each child.

Effective January 1, 2015, a benefit recipient who is employed at least thirty hours each week may secure primary medical and/or prescription coverage through the employer or the state highway patrol retirement system. Alternatively, the benefit recipient may elect to secure primary coverage through a spouse's employment. If the benefit recipient is employed and secures primary coverage through the state highway patrol retirement system, he or she shall pay a premium set by the Board. For 2015, the amount is $330. If the benefit recipient is employed less than thirty hours per week, the benefit recipient may apply to the board for an exemption to the $330 premium. An exemption may also be granted for seasonal employees. If the exemption is granted, the benefit recipient will pay the normal premium amount for his or her age.

After calendar year 2017, premiums are assumed to increase by the health trend assumption shown on page B-10.

Basic Plan coverage provides for a portion of payment 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 $3,000 per family (out of network amounts are $5,000 and $10,000, respectively) for Medical Mutual. Each covered person not eligible for Medicare must meet a $500 annual deductible ($1,000 for out of network). For in-network activity for members in the insured Medicare Advantage, the annual out-of-pocket maximum is $2,000 per individual. Members in the insured Medicare Advantage plan do not have a deductible requirement.

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 and $30.00 for brands. Each 34-day prescription has a co-payment of $5.00 for generic and $15.00 for brands. Members will be responsible for the full cost of non-formulary drugs.

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 Part B Reimbursements: A portion (annually set by the Board) of the Medicare Part B basic premium amount is reimbursed to eligible benefit recipients upon proof of coverage. The reimbursement amount is $60 monthly for 2015, $30 monthly for 2016 and $0 monthly thereafter.

Dental/Vision: Premiums for benefit recipients are deducted from benefit payments. The Dental/Vision member premium amounts are as follows:

Premium Scale for Dental/Vision

	Monthly Premium	
	Retiree	Spouse
Dental	$5	$20
Vision	$5	$5

POST-RETIREMENT HEALTH CARE AND MEDICARE REIMBURSEMENT

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
		Amounts Paid to Vendors (Including Medicare Part B)											
1985	697	$ 427,361	$ 60,015	$ 28,272				$ 515,648		$ 515,648	$ 740	$ 32,500,428	1.6%
1986	715	787,245	80,911	30,457				898,613		898,613	1,257	34,757,277	2.6%
1987	731	559,832	115,544	38,037				713,413		713,413	976	39,938,912	1.8%
1988	761	522,747	145,847	57,461				726,055		726,056	954	40,674,634	1.8%
1989	810	1,043,650	186,795	77,869				1,308,314	$ 97,864	1,406,178	1,736	43,053,057	3.3%
1990	925	1,009,153	213,716	77,363				1,300,232	(94,251)	1,205,981	1,304	45,679,355	2.6%
1991	976	1,267,327	251,004	86,740				1,605,071	180,583	1,785,654	1,830	48,488,406	3.7%
1992	1,045	1,643,276	298,493	97,117				2,038,886	76,046	2,114,932	2,024	50,235,996	4.2%
1993	1,081	1,553,628	299,410	118,109				1,971,147	(90,525)	1,880,622	1,740	55,781,585	3.4%
1994	1,133	1,239,008	320,360	141,384				1,700,752	3,314	1,704,066	1,504	58,116,787	2.9%
1995	1,225	1,512,523	364,096	149,440				2,026,059	(66,834)	1,959,225	1,599	59,825,356	3.3%
1996	1,379	1,353,932	491,525	155,769				2,001,226	21,382	2,022,608	1,467	59,239,349	3.4%
1997	1,499	1,623,640	849,321	166,743				2,639,704	(140,526)	2,499,178	1,667	62,233,299	4.0%
1998	1,602	2,147,334	1,122,248	171,223				3,440,805	(311,917)	3,128,888	1,953	65,153,864	4.8%
1999	1,772	3,315,914	1,364,990	197,606				4,878,510	619,894	5,498,404	3,103	66,017,381	8.3%
2000	1,848	3,190,885	1,684,300	203,157				5,078,342	(358,082)	4,720,260	2,554	69,028,285	6.8%
2001	1,900	3,730,167	1,960,825	231,046				5,922,038	138,317	6,060,355	3,190	76,344,002	7.9%
2002	1,943	4,147,534	2,431,297	260,772	$194,893	$80,909		7,115,405	(200,021)	6,915,384	3,559	78,997,065	8.8%
2003	1,912	4,256,046	2,681,414	290,506	209,429	82,097		7,519,492	(507,642)	7,011,850	3,667	81,737,962	8.6%
2004	1,928	4,074,972	2,710,367	347,585	230,994	84,136		7,448,054	(641,707)	6,806,347	3,530	81,757,707	8.3%
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%
2011	2,269	6,755,757	4,053,343	770,183	528,824	157,600	95,210	12,360,917	(1,268,402)	11,092,515	4,889	93,126,449	11.9%
2012	2,310	6,393,584	4,301,087	839,451	594,292	149,962	24,604	12,302,980	(1,277,430)	11,025,550	4,773	98,117,403	11.2%
2013	2,359	7,872,163	4,110,260	896,970	612,575	158,197	53,440	13,703,605	(1,562,609)	12,140,996	5,147	98,519,844	12.3%
2014	**2,356**	**7,624,000**	**4,722,043**	**874,164**	**619,286**	**167,660**	**48,728**	**14,055,881**	**(1,747,403)**	**12,308,478**	**5,224**	**99,211,756**	**12.4%**

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


Historical Trend of Employer Paid Amounts
14.0%
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
2011
2013
Year

ASSUMPTIONS FOR HEALTH CARE COVERAGES
DECEMBER 31, 2014

Development of Health Care Rates: Based on the 2014 retired life data, the HPRS portion of the total health care rates was developed as follows:

		Age/Gender Weighted HPRS Monthly Rates		
		This Year Gross Rate		**Prior Year Gross Rate**
A.	One-person without Medicare	$678.03		$574.18
B.	One-person with Medicare*	198.02		185.90
C.	Two-persons without Medicare	1,356.06		1,148.36
D.	Two-persons with Medicare*	396.04		371.80
E.	Child	242.72		107.61
F.	Medicare Part B Reimbursement	60.00	**	90.00

** Does not include Medicare Part B monthly premium. Includes a reduction to the premium due to Medicare Part D reimbursements.*

*** The Medicare Part B premium is $60 monthly for 2015, $30 monthly for 2016 and $0 monthly thereafter.*

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-7 for age specific rates used for valuation purposes. Employment related primary coverages for recipients and dependents have been reflected in the age based specific premium rates.

ASSUMPTIONS FOR HEALTH CARE COVERAGES
AGE SPECIFIC HPRS MONTHLY GROSS RATES

Age	Gross Rate		Age	Gross Rate		Age	Gross Rate	
	Male	Female		Male	Female		Male	Female
16	$ 256.64	$ 402.08	51	$ 499.43	$ 552.71	86	$ 390.59	$ 342.65
17	256.64	402.08	52	527.97	571.67	87	392.36	343.31
18	256.64	402.08	53	556.89	591.71	88	392.36	343.31
19	256.64	402.08	54	586.45	612.43	89	392.36	343.31
20	256.64	402.08	55	616.56	633.77	90	392.36	343.31
21	256.64	402.08	56	647.12	655.66	91	392.36	343.31
22	256.64	402.08	57	678.03	678.03	92	392.36	343.31
23	256.64	402.08	58	710.06	699.94	93	392.36	343.31
24	256.64	402.08	59	742.28	722.13	94	392.36	343.31
25	256.64	402.08	60	774.58	744.54	95	392.36	343.31
26	256.64	402.08	61	806.86	806.86	96	392.36	343.31
27	256.64	402.08	62	839.02	839.02	97	392.36	343.31
28	256.64	402.08	63	870.47	870.47	98	392.36	343.31
29	256.64	402.08	64	901.57	901.57	99	392.36	343.31
30	256.64	402.08	65	272.26	272.26	100	392.36	343.31
31	256.64	402.08	66	281.05	281.05	101	392.36	343.31
32	256.64	402.08	67	289.65	289.65	102	392.36	343.31
33	256.64	402.08	68	298.03	298.03	103	392.36	343.31
34	256.64	402.08	69	306.17	306.17	104	392.36	343.31
35	256.64	402.08	70	314.05	314.05	105	392.36	343.31
36	256.64	402.08	71	321.63	321.63	106	392.36	343.31
37	256.64	402.08	72	328.90	328.90	107	392.36	343.31
38	256.64	402.08	73	335.84	335.84	108	392.36	343.31
39	256.64	402.08	74	342.43	342.43	109	392.36	343.31
40	256.64	402.08	75	348.65	348.65	110	392.36	343.31
41	272.33	411.06	76	354.48	354.48	111	392.36	343.31
42	289.40	420.97	77	359.93	359.93	112	392.36	343.31
43	307.84	431.85	78	364.97	364.97	113	392.36	343.31
44	327.61	443.69	79	369.60	369.60	114	392.36	343.31
45	348.69	456.50	80	373.82	373.82	115	392.36	343.31
46	371.02	470.26	81	377.62	377.62	116	392.36	343.31
47	394.55	484.98	82	381.01	381.01	117	392.36	343.31
48	419.23	500.61	83	383.99	383.99	118	392.36	343.31
49	444.99	517.14	84	386.57	386.57	119	392.36	343.31
50	471.75	534.52	85	388.77	388.77	120	392.36	343.31

ASSUMPTIONS FOR HEALTH CARE COVERAGES
DECEMBER 31, 2014

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 to 10-year horizon. Short-term assumptions are described on page B-10.

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 its 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. The trends used in this valuation are found on page B-10.

POST-RETIREMENT HEALTH PREMIUM AND MEDICARE REIMBURSEMENT SELECTION OF ASSUMPTIONS DECEMBER 31, 2014

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, 2014 valuations were used. For current retirees, actual health care coverage elections were used. For future retirees, it was assumed that 90% of males and 50% of females who retire and elect healthcare coverage would also 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, 2014 (CONCLUDED)

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.

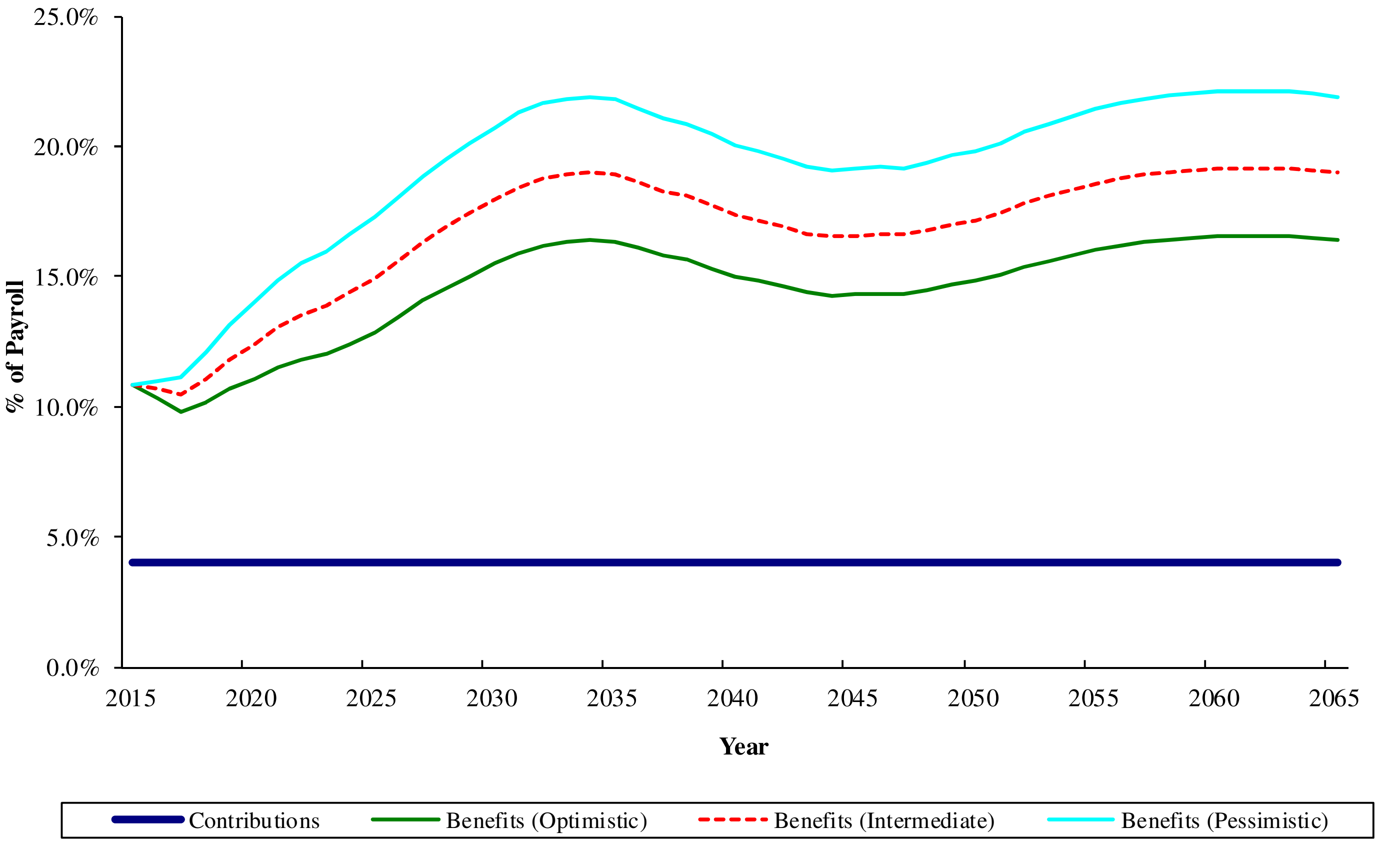
Alternate C (Pessimistic): This scenario envisions poorer experience than the other two.

	Health Trend Assumption		
	Medical and Prescription Drug		
Year	Alt. A Optimistic	Alt. B Intermediate	Alt. C Pessimistic
2015			
2016	6.00%	9.00%	12.00%
2017	5.75%	8.25%	11.00%
2018	5.50%	7.50%	10.00%
2019	5.25%	7.00%	9.00%
2020	5.00%	6.50%	8.00%
2021	4.75%	6.00%	7.00%
2022	4.50%	5.50%	6.25%
2023	4.25%	5.00%	5.50%
2024	4.00%	4.50%	4.75%
2025	4.00%	4.00%	4.00%
2026	4.00%	4.00%	4.00%
2027	4.00%	4.00%	4.00%
2028	4.00%	4.00%	4.00%
2029 & Later	4.00%	4.00%	4.00%

POST-RETIREMENT HEALTH CARE AND MEDICARE REIMBURSEMENT
PROJECTED BENEFITS
DECEMBER 31, 2014

	Projected Benefits as a % of Payroll		
Year Ended 12/31	Alt. A Optimistic	Alt. B Intermediate	Alt. C Pessimistic
2015	10.8%	10.8%	10.8%
2016	10.3%	10.7%	11.0%
2017	9.8%	10.4%	11.2%
2018	10.2%	11.1%	12.1%
2019	10.7%	11.8%	13.2%
2020	11.1%	12.4%	14.0%
2021	11.5%	13.0%	14.9%
2022	11.8%	13.5%	15.5%
2023	12.0%	13.9%	16.0%
2024	12.4%	14.4%	16.6%
2029	15.0%	17.4%	20.1%
2034	16.4%	19.0%	21.9%
2039	15.3%	17.7%	20.4%
2044	14.3%	16.5%	19.1%
2049	14.7%	17.0%	19.7%
2054	15.8%	18.3%	21.2%
2059	16.5%	19.1%	22.0%
2064	16.5%	19.1%	22.0%
2069	15.9%	18.5%	21.3%
2074	15.6%	18.1%	20.8%

CONTRIBUTIONS VS. BENEFIT PAYOUTS



The above chart assumes that there will be assets sufficient to pay the benefits. Under the intermediate assumptions, unless significant investment gains and/or contribution increases arise, the retiree health fund is expected to run out of money in 2029 based upon the Board established retiree health employer contribution rate of 4.0% of payroll. At that point, the retiree health plan would become "pay as you go." Benefits would have to be reduced well below the present levels, because benefits paid out could not exceed contribution income.

POST-RETIREMENT HEALTH CARE AND MEDICARE REIMBURSEMENT
GASB STATEMENT NO. 43/NO. 45 REPORTING
ALTERNATIVE B: INTERMEDIATE HEALTH TREND

Determination of the Annual Required Contribution for the Period July 1, 2015 to June 30, 2016	Contributions Expressed as Percents of Payroll
Normal Cost	14.22%
UAL Payment (30-year amortization)	10.34%
Total (Annual Required Contribution)	**24.56%**
Current Employer Contribution Rate Allocation	4.00%

Accrued Health and Medicare Reimbursement Liabilities, $376,683,113 were more than applicable assets of $103,812,807.

The calculations above show the employer's Annual Required Contribution (ARC) for the year ended June 30, 2016. The System's ARC for the year ended December 31, 2015 will be ½ of 26.32% and ½ of the 24.56% shown above.

GASB STATEMENT NO. 43/NO. 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, 2014
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-10)

POST-RETIREMENT HEALTH AND MEDICARE REIMBURSEMENT
RESULTS WITH ALTERNATE HEALTH INFLATION ASSUMPTIONS
DECEMBER 31, 2014

Optimistic, Intermediate and Pessimistic assumption sets were described on page B-10. For each assumption set, four 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 for 20 years?

Question 3. What is the lowest employer contribution rate, "Funding Level 3", that would maintain the solvency of the fund for 30 years?

Question 4. What is the lowest employer contribution rate, "Funding Level 4", 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			Funding Level 2			Funding Level 3			Funding Level 4		
	Employer Rate Allocation			Lowest Employer Rate to Maintain Solvency of Fund for 20 Years			Lowest Employer Rate to Maintain Solvency of Fund for 30 Years			Lowest Employer Rate to Maintain Solvency of Fund Indefinitely		
Assumption Set	**%**	**Fund Solvent Until**	**Prior Valuation %**	**%**	**Fund Solvent Until**	**Prior Valuation %**	**%**	**Fund Solvent Until**	**Prior Valuation %**	**%**	**Fund Solvent Until**	**Prior Valuation %**
A (Optimistic)	4.00%	2032	4.30%	5.10%	2035	6.70%	7.40%	2045	8.80%	10.00%	Indefinitely	10.90%
B (Intermediate)	4.00%	2029	4.30%	6.70%	2035	8.40%	9.20%	2045	10.70%	12.00%	Indefinitely	12.90%
C (Pessimistic)	4.00%	2027	4.30%	8.50%	2035	10.30%	11.20%	2045	12.80%	14.20%	Indefinitely	15.20%

The above results show that:

- Under the optimistic assumptions, the employer rate will need to be raised prior to 2032 in order to maintain the solvency of the fund. The ultimate rate needed to support the plan would be 10.00% of payroll if the increase were made today.
- Under the intermediate assumptions, the employer rate will need to be raised prior to 2029 in order to maintain the solvency of the fund. The ultimate rate needed to support the plan would be 12.00% of payroll if the increase were made today.
- Under the pessimistic assumptions, the employer rate will need to be raised prior to 2027 in order to maintain the solvency of the fund. The ultimate rate needed to support the plan would be 14.20% 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, 2, 3 and 4.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
OPTIMISTIC ASSUMPTIONS: A
FUNDING LEVEL 1
($ in Thousands)

Fiscal Year	Fund Balance BOY	Contributions	Benefits	Net	Investment Return %	Investment Return $	Fund Balance EOY		% of Payroll	
							Nominal $	Real $	Contrib.	Benefits
2015	$103,813	$4,125	$ 11,185	$ (7,058)	8.00%	$8,026	$104,781	$104,781	4.00%	10.84%
2016	104,781	4,287	11,065	(6,778)	8.00%	8,115	106,118	102,037	4.00%	10.32%
2017	106,118	4,449	10,883	(6,434)	8.00%	8,235	107,919	99,777	4.00%	9.78%
2018	107,919	4,611	11,703	(7,092)	8.00%	8,353	109,180	97,061	4.00%	10.15%
2019	109,180	4,779	12,767	(7,988)	8.00%	8,419	109,611	93,696	4.00%	10.69%
2020	109,611	4,955	13,690	(8,735)	8.00%	8,424	109,300	89,837	4.00%	11.05%
2021	109,300	5,136	14,746	(9,610)	8.00%	8,365	108,055	85,397	4.00%	11.48%
2022	108,055	5,322	15,663	(10,341)	8.00%	8,236	105,950	80,513	4.00%	11.77%
2023	105,950	5,514	16,554	(11,040)	8.00%	8,040	102,950	75,225	4.00%	12.01%
2024	102,950	5,718	17,714	(11,996)	8.00%	7,762	98,716	69,357	4.00%	12.39%
2025	98,716	5,929	19,075	(13,146)	8.00%	7,378	92,948	62,792	4.00%	12.87%
2026	92,948	6,148	20,661	(14,513)	8.00%	6,863	85,298	55,408	4.00%	13.44%
2027	85,298	6,381	22,441	(16,060)	8.00%	6,190	75,428	47,112	4.00%	14.07%
2028	75,428	6,632	24,160	(17,528)	8.00%	5,342	63,242	37,982	4.00%	14.57%
2029	63,242	6,900	25,902	(19,002)	8.00%	4,309	48,549	28,036	4.00%	15.02%
2030	48,549	7,175	27,760	(20,585)	8.00%	3,071	31,035	17,233	4.00%	15.48%
2031	31,035	7,465	29,669	(22,204)	8.00%	1,606	10,437	5,572	4.00%	15.90%
2032	10,437	7,779	31,483	(23,704)	8.00%	(101)	(13,368)	(6,863)	4.00%	16.19%

Funding Level 1 is the present contribution rate for post-retirement Health Care and Medicare reimbursement. The fund remains solvent until 2032 in this projection.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
OPTIMISTIC ASSUMPTIONS: A
FUNDING LEVEL 2
($ in Thousands)

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
2015	$ 103,813	$ 5,260	$ 11,185	$ (5,923)	8.00%	$ 8,071	$ 105,961	$105,961	5.10%	10.84%
2016	105,961	5,466	11,065	(5,599)	8.00%	8,256	108,618	104,440	5.10%	10.32%
2017	108,618	5,672	10,883	(5,211)	8.00%	8,484	111,891	103,450	5.10%	9.78%
2018	111,891	5,879	11,703	(5,824)	8.00%	8,721	114,788	102,046	5.10%	10.15%
2019	114,788	6,093	12,767	(6,674)	8.00%	8,920	117,034	100,041	5.10%	10.69%
2020	117,034	6,317	13,690	(7,373)	8.00%	9,072	118,733	97,590	5.10%	11.05%
2021	118,733	6,549	14,746	(8,197)	8.00%	9,175	119,711	94,609	5.10%	11.48%
2022	119,711	6,785	15,663	(8,878)	8.00%	9,226	120,059	91,235	5.10%	11.77%
2023	120,059	7,031	16,554	(9,523)	8.00%	9,229	119,765	87,511	5.10%	12.01%
2024	119,765	7,290	17,714	(10,424)	8.00%	9,170	118,511	83,264	5.10%	12.39%
2025	118,511	7,559	19,075	(11,516)	8.00%	9,026	116,021	78,380	5.10%	12.87%
2026	116,021	7,838	20,661	(12,823)	8.00%	8,775	111,973	72,736	5.10%	13.44%
2027	111,973	8,136	22,441	(14,305)	8.00%	8,393	106,061	66,245	5.10%	14.07%
2028	106,061	8,456	24,160	(15,704)	8.00%	7,865	98,222	58,990	5.10%	14.57%
2029	98,222	8,798	25,902	(17,104)	8.00%	7,182	88,300	50,991	5.10%	15.02%
2030	88,300	9,149	27,760	(18,611)	8.00%	6,329	76,018	42,210	5.10%	15.48%
2031	76,018	9,518	29,669	(20,151)	8.00%	5,286	61,153	32,650	5.10%	15.90%
2032	61,153	9,919	31,483	(21,564)	8.00%	4,041	43,630	22,398	5.10%	16.19%
2033	43,630	10,340	33,099	(22,759)	8.00%	2,592	23,463	11,582	5.10%	16.32%
2034	23,463	10,782	34,666	(23,884)	8.00%	934	513	243	5.10%	16.40%
2035	513	11,252	36,041	(24,789)	8.00%	(938)	(25,214)	(11,507)	5.10%	16.34%

Funding Level 2 is the lowest funding level that will keep the fund solvent for 20 years.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
OPTIMISTIC ASSUMPTIONS: A
FUNDING LEVEL 3
($ in Thousands)

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
2015	$ 103,813	$ 7,632	$ 11,185	$ (3,551)	8.00%	$ 8,165	$ 108,427	$108,427	7.40%	10.84%
2016	108,427	7,931	11,065	(3,134)	8.00%	8,550	113,843	109,464	7.40%	10.32%
2017	113,843	8,231	10,883	(2,652)	8.00%	9,003	120,194	111,126	7.40%	9.78%
2018	120,194	8,530	11,703	(3,173)	8.00%	9,490	126,511	112,468	7.40%	10.15%
2019	126,511	8,840	12,767	(3,927)	8.00%	9,966	132,550	113,304	7.40%	10.69%
2020	132,550	9,166	13,690	(4,524)	8.00%	10,425	138,451	113,797	7.40%	11.05%
2021	138,451	9,502	14,746	(5,244)	8.00%	10,869	144,076	113,865	7.40%	11.48%
2022	144,076	9,845	15,663	(5,818)	8.00%	11,296	149,554	113,649	7.40%	11.77%
2023	149,554	10,202	16,554	(6,352)	8.00%	11,713	154,915	113,195	7.40%	12.01%
2024	154,915	10,578	17,714	(7,136)	8.00%	12,111	159,890	112,337	7.40%	12.39%
2029	171,353	12,766	25,902	(13,136)	8.00%	13,190	171,407	98,983	7.40%	15.02%
2034	157,006	15,645	34,666	(19,021)	8.00%	11,809	149,794	71,099	7.40%	16.40%
2039	109,747	19,354	40,058	(20,704)	8.00%	7,962	97,005	37,844	7.40%	15.32%
2044	32,738	23,894	46,083	(22,189)	8.00%	1,743	12,292	3,941	7.40%	14.27%
2045	12,292	24,873	48,082	(23,209)	8.00%	67	(10,850)	(3,345)	7.40%	14.30%

Funding Level 3 is the lowest funding level that will keep the fund solvent for 30 years.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
OPTIMISTIC ASSUMPTIONS: A
FUNDING LEVEL 4
($ in Thousands)

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
2015	$ 103,813	$ 10,313	$ 11,185	$ (870)	8.00%	$ 8,271	$ 111,214	$111,214	10.00%	10.84%
2016	111,214	10,718	11,065	(347)	8.00%	8,883	119,750	115,144	10.00%	10.32%
2017	119,750	11,122	10,883	239	8.00%	9,589	129,578	119,802	10.00%	9.78%
2018	129,578	11,527	11,703	(176)	8.00%	10,359	139,761	124,247	10.00%	10.15%
2019	139,761	11,946	12,767	(821)	8.00%	11,148	150,088	128,296	10.00%	10.69%
2020	150,088	12,386	13,690	(1,304)	8.00%	11,956	160,740	132,117	10.00%	11.05%
2021	160,740	12,841	14,746	(1,905)	8.00%	12,784	171,619	135,633	10.00%	11.48%
2022	171,619	13,304	15,663	(2,359)	8.00%	13,636	182,896	138,986	10.00%	11.77%
2023	182,896	13,786	16,554	(2,768)	8.00%	14,522	194,650	142,229	10.00%	12.01%
2024	194,650	14,295	17,714	(3,419)	8.00%	15,437	206,668	145,202	10.00%	12.39%
2029	254,025	17,251	25,902	(8,651)	8.00%	19,980	265,354	153,235	10.00%	15.02%
2034	307,965	21,142	34,666	(13,524)	8.00%	24,103	318,544	151,194	10.00%	16.40%
2039	367,890	26,155	40,058	(13,903)	8.00%	28,882	382,869	149,365	10.00%	15.32%
2044	456,985	32,289	46,083	(13,794)	8.00%	36,014	479,205	153,658	10.00%	14.27%
2049	579,226	39,451	57,950	(18,499)	8.00%	45,608	606,335	159,801	10.00%	14.69%
2054	719,549	47,901	75,736	(27,835)	8.00%	56,465	748,179	162,071	10.00%	15.81%
2059	864,363	58,207	95,920	(37,713)	8.00%	67,660	894,310	159,229	10.00%	16.48%
2064	1,020,889	70,921	116,826	(45,905)	8.00%	79,858	1,054,842	154,367	10.00%	16.47%
2074	1,445,531	105,205	163,986	(58,781)	8.00%	113,321	1,500,071	148,301	10.00%	15.59%
2084	2,053,047	155,427	251,215	(95,788)	8.00%	160,461	2,117,720	141,439	10.00%	16.16%
2094	2,704,305	230,171	374,538	(144,367)	8.00%	210,644	2,770,582	125,008	10.00%	16.27%
2104	3,367,260	340,965	542,343	(201,378)	8.00%	261,429	3,427,311	104,469	10.00%	15.91%
2114	3,672,679	504,265	814,362	(310,097)	8.00%	281,570	3,644,152	75,041	10.00%	16.15%

Funding Level 4 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
($ in Thousands)

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
2015	$103,813	$4,125	$ 11,185	$ (7,060)	8.00%	$8,026	$104,779	$104,779	4.00%	10.85%
2016	104,779	4,287	11,432	(7,145)	8.00%	8,100	105,734	101,667	4.00%	10.67%
2017	105,734	4,449	11,618	(7,169)	8.00%	8,176	106,741	98,688	4.00%	10.45%
2018	106,741	4,611	12,739	(8,128)	8.00%	8,218	106,831	94,972	4.00%	11.05%
2019	106,831	4,779	14,125	(9,346)	8.00%	8,177	105,662	90,320	4.00%	11.82%
2020	105,662	4,955	15,361	(10,406)	8.00%	8,042	103,298	84,903	4.00%	12.40%
2021	103,298	5,136	16,741	(11,605)	8.00%	7,806	99,499	78,636	4.00%	13.04%
2022	99,499	5,322	17,948	(12,626)	8.00%	7,461	94,334	71,686	4.00%	13.49%
2023	94,334	5,514	19,102	(13,588)	8.00%	7,010	87,756	64,122	4.00%	13.86%
2024	87,756	5,718	20,530	(14,812)	8.00%	6,436	79,380	55,771	4.00%	14.36%
2025	79,380	5,929	22,117	(16,188)	8.00%	5,711	68,903	46,548	4.00%	14.92%
2026	68,903	6,148	23,954	(17,806)	8.00%	4,809	55,906	36,315	4.00%	15.59%
2027	55,906	6,381	26,013	(19,632)	8.00%	3,697	39,971	24,966	4.00%	16.31%
2028	39,971	6,632	27,999	(21,367)	8.00%	2,354	20,958	12,587	4.00%	16.89%
2029	20,958	6,900	30,011	(23,111)	8.00%	764	(1,389)	(802)	4.00%	17.40%

Funding Level 1 is the present contribution rate for post-retirement Health Care and Medicare reimbursement. The fund remains solvent until 2029 in this projection.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
INTERMEDIATE ASSUMPTIONS: B
FUNDING LEVEL 2
($ in Thousands)

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
2015	$ 103,813	$ 6,910	$ 11,185	$(4,275)	8.00%	$ 8,136	$ 107,674	$107,674	6.70%	10.85%
2016	107,674	7,181	11,432	(4,251)	8.00%	8,446	111,869	107,566	6.70%	10.67%
2017	111,869	7,452	11,618	(4,166)	8.00%	8,785	116,488	107,700	6.70%	10.45%
2018	116,488	7,723	12,739	(5,016)	8.00%	9,121	120,593	107,207	6.70%	11.05%
2019	120,593	8,004	14,125	(6,121)	8.00%	9,406	123,878	105,891	6.70%	11.82%
2020	123,878	8,299	15,361	(7,062)	8.00%	9,631	126,447	103,930	6.70%	12.40%
2021	126,447	8,603	16,741	(8,138)	8.00%	9,794	128,103	101,242	6.70%	13.04%
2022	128,103	8,914	17,948	(9,034)	8.00%	9,892	128,961	98,000	6.70%	13.49%
2023	128,961	9,237	19,102	(9,865)	8.00%	9,927	129,023	94,276	6.70%	13.86%
2024	129,023	9,578	20,530	(10,952)	8.00%	9,889	127,960	89,903	6.70%	14.36%
2025	127,960	9,931	22,117	(12,186)	8.00%	9,756	125,530	84,804	6.70%	14.92%
2026	125,530	10,298	23,954	(13,656)	8.00%	9,503	121,377	78,844	6.70%	15.59%
2027	121,377	10,689	26,013	(15,324)	8.00%	9,105	115,158	71,927	6.70%	16.31%
2028	115,158	11,109	27,999	(16,890)	8.00%	8,546	106,814	64,150	6.70%	16.89%
2029	106,814	11,558	30,011	(18,453)	8.00%	7,816	96,177	55,540	6.70%	17.40%
2030	96,177	12,019	32,154	(20,135)	8.00%	6,899	82,941	46,054	6.70%	17.92%
2031	82,941	12,505	34,357	(21,852)	8.00%	5,772	66,861	35,698	6.70%	18.41%
2032	66,861	13,031	36,448	(23,417)	8.00%	4,424	47,868	24,574	6.70%	18.74%
2033	47,868	13,584	38,311	(24,727)	8.00%	2,853	25,994	12,831	6.70%	18.90%
2034	25,994	14,165	40,113	(25,948)	8.00%	1,055	1,101	523	6.70%	18.97%
2035	1,101	14,782	41,694	(26,912)	8.00%	(975)	(26,786)	(12,225)	6.70%	18.90%

Funding Level 2 is the lowest funding level that will keep the fund solvent for 20 years.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
INTERMEDIATE ASSUMPTIONS: B
FUNDING LEVEL 3
($ in Thousands)

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
2015	$ 103,813	$ 9,488	$ 11,185	$(1,697)	8.00%	$ 8,238	$ 110,354	$110,354	9.20%	10.85%
2016	110,354	9,860	11,432	(1,572)	8.00%	8,766	117,548	113,027	9.20%	10.67%
2017	117,548	10,233	11,618	(1,385)	8.00%	9,349	125,512	116,043	9.20%	10.45%
2018	125,512	10,605	12,739	(2,134)	8.00%	9,957	133,335	118,534	9.20%	11.05%
2019	133,335	10,991	14,125	(3,134)	8.00%	10,543	140,744	120,309	9.20%	11.82%
2020	140,744	11,395	15,361	(3,966)	8.00%	11,103	147,881	121,547	9.20%	12.40%
2021	147,881	11,813	16,741	(4,928)	8.00%	11,636	154,589	122,174	9.20%	13.04%
2022	154,589	12,240	17,948	(5,708)	8.00%	12,142	161,023	122,364	9.20%	13.49%
2023	161,023	12,683	19,102	(6,419)	8.00%	12,628	167,232	122,195	9.20%	13.86%
2024	167,232	13,151	20,530	(7,379)	8.00%	13,087	172,940	121,505	9.20%	14.36%
2029	186,305	15,871	30,011	(14,140)	8.00%	14,346	186,511	107,705	9.20%	17.40%
2034	171,149	19,450	40,113	(20,663)	8.00%	12,876	163,362	77,539	9.20%	18.97%
2039	120,493	24,062	46,346	(22,284)	8.00%	8,760	106,969	41,731	9.20%	17.72%
2044	39,302	29,706	53,364	(23,658)	8.00%	2,210	17,854	5,725	9.20%	16.53%
2045	17,854	30,923	55,688	(24,765)	8.00%	450	(6,461)	(1,992)	9.20%	16.57%

Funding Level 3 is the lowest funding level that will keep the fund solvent for 30 years.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
INTERMEDIATE ASSUMPTIONS: B
FUNDING LEVEL 4
($ in Thousands)

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
2015	$ 103,813	$ 12,376	$ 11,185	$ 1,191	8.00%	$ 8,352	$ 113,356	$113,356	12.00%	10.85%
2016	113,356	12,861	11,432	1,429	8.00%	9,125	123,910	119,144	12.00%	10.67%
2017	123,910	13,347	11,618	1,729	8.00%	9,981	135,620	125,388	12.00%	10.45%
2018	135,620	13,832	12,739	1,093	8.00%	10,893	147,606	131,221	12.00%	11.05%
2019	147,606	14,336	14,125	211	8.00%	11,817	159,634	136,456	12.00%	11.82%
2020	159,634	14,864	15,361	(497)	8.00%	12,751	171,888	141,279	12.00%	12.40%
2021	171,888	15,409	16,741	(1,332)	8.00%	13,698	184,254	145,619	12.00%	13.04%
2022	184,254	15,965	17,948	(1,983)	8.00%	14,662	196,933	149,653	12.00%	13.49%
2023	196,933	16,543	19,102	(2,559)	8.00%	15,654	210,028	153,465	12.00%	13.86%
2024	210,028	17,154	20,530	(3,376)	8.00%	16,669	223,321	156,902	12.00%	14.36%
2029	275,341	20,701	30,011	(9,310)	8.00%	21,660	287,691	166,134	12.00%	17.40%
2034	333,730	25,370	40,113	(14,743)	8.00%	26,116	345,103	163,801	12.00%	18.97%
2039	398,507	31,386	46,346	(14,960)	8.00%	31,290	414,837	161,837	12.00%	17.72%
2044	496,206	38,746	53,364	(14,618)	8.00%	39,119	520,707	166,965	12.00%	16.53%
2049	631,099	47,342	67,145	(19,803)	8.00%	49,706	661,002	174,208	12.00%	17.02%
2054	785,595	57,481	87,741	(30,260)	8.00%	61,653	816,988	176,976	12.00%	18.32%
2059	943,944	69,849	111,092	(41,243)	8.00%	73,887	976,588	173,878	12.00%	19.09%
2064	1,114,497	85,105	135,263	(50,158)	8.00%	87,179	1,151,518	168,514	12.00%	19.07%
2074	1,580,704	126,245	189,921	(63,676)	8.00%	123,942	1,640,970	162,231	12.00%	18.05%
2084	2,253,284	186,513	290,966	(104,453)	8.00%	176,138	2,324,969	155,280	12.00%	18.72%
2094	2,978,241	276,205	433,697	(157,492)	8.00%	232,040	3,052,789	137,741	12.00%	18.84%
2104	3,738,888	409,158	628,095	(218,937)	8.00%	290,466	3,810,417	116,146	12.00%	18.42%
2114	4,157,640	605,118	943,145	(338,027)	8.00%	319,264	4,138,877	85,228	12.00%	18.70%

Funding Level 4 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
($ in Thousands)

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
2015	$103,813	$4,125	$ 11,185	$ (7,063)	8.00%	$8,026	$104,776	$104,776	4.00%	10.85%
2016	104,776	4,287	11,801	(7,514)	8.00%	8,085	105,347	101,295	4.00%	11.01%
2017	105,347	4,449	12,408	(7,959)	8.00%	8,113	105,501	97,542	4.00%	11.16%
2018	105,501	4,611	13,928	(9,317)	8.00%	8,072	104,256	92,683	4.00%	12.08%
2019	104,256	4,779	15,729	(10,950)	8.00%	7,908	101,214	86,518	4.00%	13.17%
2020	101,214	4,955	17,344	(12,389)	8.00%	7,608	96,433	79,261	4.00%	14.00%
2021	96,433	5,136	19,081	(13,945)	8.00%	7,164	89,652	70,853	4.00%	14.86%
2022	89,652	5,322	20,599	(15,277)	8.00%	6,569	80,944	61,511	4.00%	15.48%
2023	80,944	5,514	22,027	(16,513)	8.00%	5,823	70,254	51,334	4.00%	15.98%
2024	70,254	5,718	23,729	(18,011)	8.00%	4,909	57,152	40,154	4.00%	16.60%
2025	57,152	5,929	25,569	(19,640)	8.00%	3,797	41,309	27,907	4.00%	17.25%
2026	41,309	6,148	27,692	(21,544)	8.00%	2,454	22,219	14,433	4.00%	18.02%
2027	22,219	6,381	30,066	(23,685)	8.00%	842	(624)	(390)	4.00%	18.85%

Funding Level 1 is the present contribution rate for post-retirement Health Care and Medicare reimbursement. The fund remains solvent until 2027 in this projection.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
PESSIMISTIC ASSUMPTIONS: C
FUNDING LEVEL 2
($ in Thousands)

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
2015	$103,813	$8,766	$ 11,185	$ (2,422)	8.00%	$8,209	$109,600	$109,600	8.50%	10.85%
2016	109,600	9,110	11,801	(2,691)	8.00%	8,662	115,571	111,126	8.50%	11.01%
2017	115,571	9,454	12,408	(2,954)	8.00%	9,129	121,746	112,561	8.50%	11.16%
2018	121,746	9,798	13,928	(4,130)	8.00%	9,577	127,193	113,074	8.50%	12.08%
2019	127,193	10,154	15,729	(5,575)	8.00%	9,955	131,573	112,469	8.50%	13.17%
2020	131,573	10,528	17,344	(6,816)	8.00%	10,257	135,014	110,972	8.50%	14.00%
2021	135,014	10,915	19,081	(8,166)	8.00%	10,479	137,327	108,532	8.50%	14.86%
2022	137,327	11,309	20,599	(9,290)	8.00%	10,619	138,656	105,367	8.50%	15.48%
2023	138,656	11,718	22,027	(10,309)	8.00%	10,685	139,032	101,589	8.50%	15.98%
2024	139,032	12,151	23,729	(11,578)	8.00%	10,665	138,119	97,041	8.50%	16.60%
2025	138,119	12,599	25,569	(12,970)	8.00%	10,537	135,686	91,665	8.50%	17.25%
2026	135,686	13,064	27,692	(14,628)	8.00%	10,277	131,335	85,313	8.50%	18.02%
2027	131,335	13,560	30,066	(16,506)	8.00%	9,855	124,684	77,877	8.50%	18.85%
2028	124,684	14,094	32,354	(18,260)	8.00%	9,254	115,678	69,473	8.50%	19.51%
2029	115,678	14,663	34,670	(20,007)	8.00%	8,464	104,135	60,135	8.50%	20.10%
2030	104,135	15,248	37,137	(21,889)	8.00%	7,466	89,712	49,814	8.50%	20.70%
2031	89,712	15,864	39,671	(23,807)	8.00%	6,237	72,142	38,517	8.50%	21.26%
2032	72,142	16,531	42,075	(25,544)	8.00%	4,763	51,361	26,367	8.50%	21.63%
2033	51,361	17,234	44,215	(26,981)	8.00%	3,043	27,423	13,537	8.50%	21.81%
2034	27,423	17,971	46,284	(28,313)	8.00%	1,076	186	88	8.50%	21.89%
2035	186	18,754	48,097	(29,343)	8.00%	(1,144)	(30,301)	(13,829)	8.50%	21.80%

Funding Level 2 is the lowest funding level that will keep the fund solvent for 20 years.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT
CASH FLOW PROJECTION
PESSIMISTIC ASSUMPTIONS: C
FUNDING LEVEL 3
($ in Thousands)

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
2015	$103,813	$11,551	$11,185	$363	8.00%	$ 8,319	$112,495	$112,495	11.20%	10.85%
2016	112,495	12,004	11,801	203	8.00%	9,008	121,706	117,025	11.20%	11.01%
2017	121,706	12,457	12,408	49	8.00%	9,738	131,493	121,573	11.20%	11.16%
2018	131,493	12,910	13,928	(1,018)	8.00%	10,479	140,954	125,308	11.20%	12.08%
2019	140,954	13,380	15,729	(2,349)	8.00%	11,184	149,789	128,040	11.20%	13.17%
2020	149,789	13,873	17,344	(3,471)	8.00%	11,846	158,164	129,999	11.20%	14.00%
2021	158,164	14,382	19,081	(4,699)	8.00%	12,468	165,933	131,139	11.20%	14.86%
2022	165,933	14,901	20,599	(5,698)	8.00%	13,050	173,285	131,682	11.20%	15.48%
2023	173,285	15,440	22,027	(6,587)	8.00%	13,603	180,301	131,744	11.20%	15.98%
2024	180,301	16,010	23,729	(7,719)	8.00%	14,119	186,701	131,174	11.20%	16.60%
2029	201,535	19,321	34,670	(15,349)	8.00%	15,517	201,703	116,478	11.20%	20.10%
2034	184,201	23,679	46,284	(22,605)	8.00%	13,843	175,439	83,271	11.20%	21.89%
2039	127,765	29,293	53,469	(24,176)	8.00%	9,267	112,856	44,028	11.20%	20.44%
2044	38,842	36,163	61,620	(25,457)	8.00%	2,102	15,487	4,966	11.20%	19.08%
2045	15,487	37,646	64,313	(26,667)	8.00%	186	(10,994)	(3,390)	11.20%	19.13%

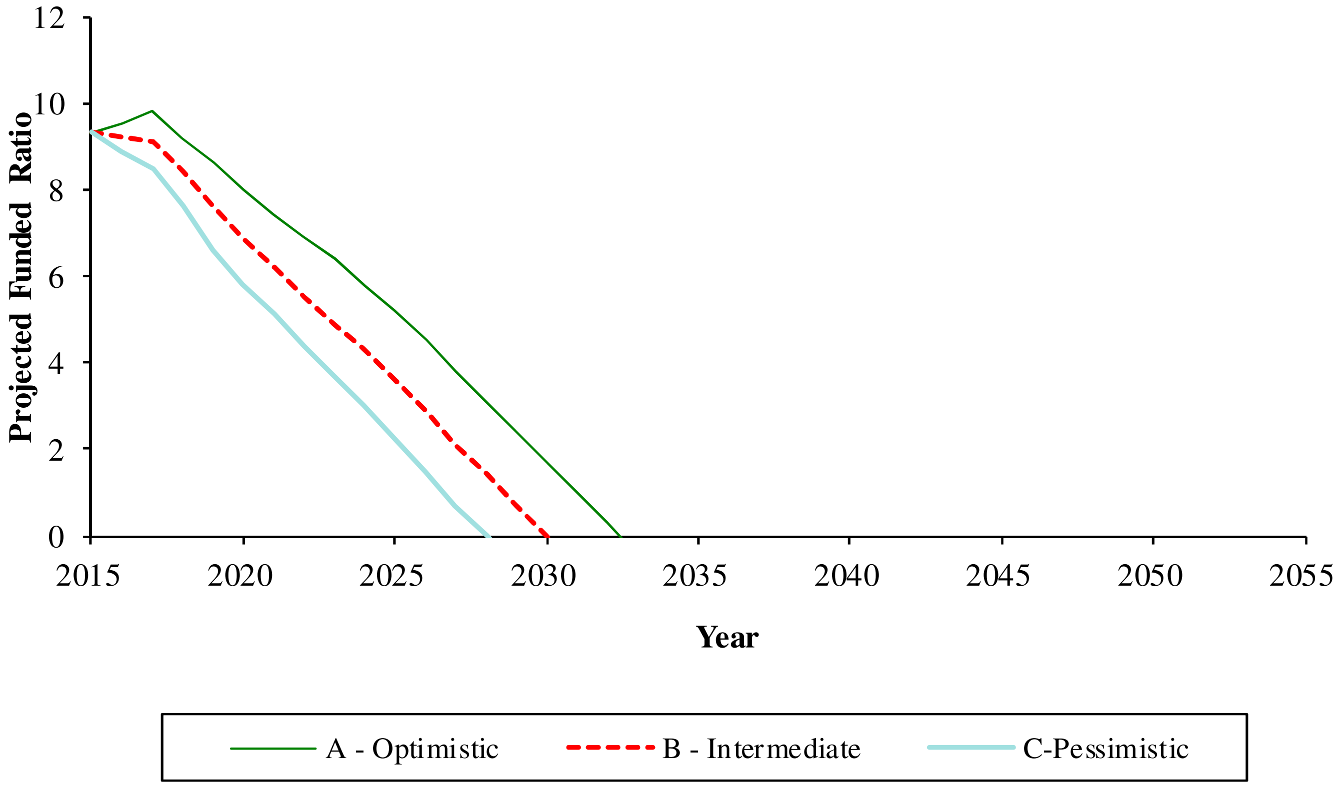
Funding Level 3 is the lowest funding level that will keep the fund solvent for 30 years.

Post-Retirement Health Care & Medicare Reimbursement
Cash Flow Projection
Pessimistic Assumptions: C
Funding Level 4
($ in Thousands)

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
2015	$ 103,813	$ 14,645	$ 11,185	$ 3,457	8.00%	$ 8,442	$ 115,712	$ 115,712	14.20%	10.85%
2016	115,712	15,219	11,801	3,418	8.00%	9,392	128,522	123,579	14.20%	11.01%
2017	128,522	15,794	12,408	3,386	8.00%	10,415	142,323	131,586	14.20%	11.16%
2018	142,323	16,368	13,928	2,440	8.00%	11,482	156,245	138,901	14.20%	12.08%
2019	156,245	16,964	15,729	1,235	8.00%	12,548	170,028	145,341	14.20%	13.17%
2020	170,028	17,589	17,344	245	8.00%	13,612	183,885	151,140	14.20%	14.00%
2021	183,885	18,234	19,081	(847)	8.00%	14,677	197,715	156,257	14.20%	14.86%
2022	197,715	18,892	20,599	(1,707)	8.00%	15,750	211,758	160,919	14.20%	15.48%
2023	211,758	19,576	22,027	(2,451)	8.00%	16,844	226,151	165,246	14.20%	15.98%
2024	226,151	20,299	23,729	(3,430)	8.00%	17,957	240,678	169,097	14.20%	16.60%
2029	296,928	24,496	34,670	(10,174)	8.00%	23,352	310,106	179,078	14.20%	20.10%
2034	358,391	30,021	46,284	(16,263)	8.00%	28,029	370,157	175,692	14.20%	21.89%
2039	425,629	37,140	53,469	(16,329)	8.00%	33,406	442,706	172,709	14.20%	20.44%
2044	528,368	45,850	61,620	(15,770)	8.00%	41,647	554,245	177,719	14.20%	19.08%
2049	670,378	56,021	77,575	(21,554)	8.00%	52,779	701,603	184,909	14.20%	19.66%
2054	829,995	68,019	101,358	(33,339)	8.00%	65,083	861,739	186,670	14.20%	21.16%
2059	987,236	82,655	128,296	(45,641)	8.00%	77,177	1,018,772	181,389	14.20%	22.04%
2064	1,149,075	100,708	156,162	(55,454)	8.00%	89,736	1,183,357	173,174	14.20%	22.02%
2074	1,571,037	149,390	219,330	(69,940)	8.00%	122,921	1,624,018	160,555	14.20%	20.85%
2084	2,115,919	220,707	336,043	(115,336)	8.00%	164,719	2,165,302	144,617	14.20%	21.62%
2094	2,483,549	326,843	500,768	(173,925)	8.00%	191,816	2,501,440	112,864	14.20%	21.76%
2104	2,394,238	484,170	725,331	(241,161)	8.00%	182,016	2,335,093	71,177	14.20%	21.27%
2114	853,955	716,056	1,089,175	(373,119)	8.00%	53,583	534,419	11,005	14.20%	21.60%

Funding Level 4 is the lowest funding level that will keep the fund solvent indefinitely, i.e., throughout the entire 100-year projection period assuming all assumptions are realized.

POST-RETIREMENT HEALTH CARE & MEDICARE REIMBURSEMENT PROJECTED FUNDING RATIOS BASED ON 4.00% EMPLOYER CONTRIBUTION RATE DECEMBER 31, 2014



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%
2011	92,790	21.72%	24.03%	22,297.8	2,418.4	24,716.2	76,983.3	496,415.2	15.5%
2012	96,022	21.80%	24.19%	23,227.8	2,553.0	25,780.8	79,536.3	522,196.0	15.2%
2013	100,250	18.23%	20.37%	20,418.9	4,718.7	25,137.6	84,255.0	547,333.6	15.4%
2014	**100,569**	**18.13%**	**21.00%**	**21,117.3**	**5,859.3**	**26,976.6**	**90,114.3**	**574,310.2**	**15.7%**

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

SECTION C

GAIN/LOSS ANALYSIS

GAIN (LOSS) ANALYSIS

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

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

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

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

DEVELOPMENT OF TOTAL GAIN (LOSS)
JANUARY 1, 2014 TO DECEMBER 31, 2014

Unfunded Accrued Liabilities (UAL), January 1	$298,495,888
Normal Cost	18,407,156
Contributions	34,323,673
Interest	23,243,010
Expected UAL Before Any Changes	305,822,381
Effect of Changes in Assumptions and Benefits	0
Expected UAL After All Changes	305,822,381
Actual UAL	300,466,733
Gain (Loss) for Year from Financial Experience	**$ 5,355,648**

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, 2014 AND 2013

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 2014	2013
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.	**$ (139,594)**	$ (103,886)
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	**1,290,916**	410,735
Death-in-Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	**(81,706)**	(139,409)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	**558,083**	254,877
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	**8,493,589**	7,802,910
Investment Income. If there is greater investment return on pension assets than assumed, there is a gain. If less return, a loss.	**106,548**	9,288,759
Other. Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, valuation methods, etc.	**(4,872,188)**	(1,441,900)
Gain (or Loss) During Year from Experience	**$ 5,355,648**	$ 16,072,086
Non-Recurring Items (Effect of Benefit/Assumption Changes)	**0**	1,940,695
Composite Gain (or Loss) During Year	**$ 5,355,648**	$ 18,012,781

INVESTMENT GAIN (LOSS)
DEVELOPMENT OF PORTION ATTRIBUTABLE TO RETIREMENT, SURVIVOR AND DISABILITY ALLOWANCES
JANUARY 1, 2014 TO DECEMBER 31, 2014

Assets, Beginning of Year	$690,605,582
Net Cash Flow	(32,379,781)
Assumed Investment Return	53,953,255
Expected Assets End of Year	$712,179,056
Actual Assets End of Year	712,285,604
Gain (Loss) for Year	**$ 106,548**

The total investment gain (loss) was $375,842, including the gain (loss) on health assets.

ACTIVE MEMBER POPULATION RECONCILIATION
JANUARY 1, 2014 TO DECEMBER 31, 2014

	Actual	Expected
Active Members Beginning of Year	1,613	
Plus New Hires	80	
Minus Retirements	40	36.2
Minus Deaths	1	0.8
Minus Disabilities	3	7.4
Minus Other Terminations	31	17.9
Returned to Active Status	4	
Plus or Minus Data Correction	0	
Active Members End of Year	**1,622**	

SECTION D

FINANCIAL INFORMATION

CURRENT ASSET INFORMATION FURNISHED FOR THE VALUATION DECEMBER 31, 2014

Balance Sheet

Current Assets (Market Value)		Fund Balance	
Cash & Short-Term Investments	$ 12,107,228	Employees' Savings Fund	$ 120,189,445
Fixed Income	169,274,872	Employer Accumulation Fund	101,564,224
Stocks	470,544,058	Pension Reserve Fund	565,634,614
Real Estate	34,232,108	Survivors Benefit Fund	38,737,428
Alternatives	161,611,776	Health Care Fund	107,948,537
Other Short-Term	69,070	Income Fund	(108,079,660)
Accruals & Receivables	(21,844,524)		
Total Current Assets	**$ 825,994,588**	**Total Fund Balance**	**$ 825,994,588**

Revenues and Expenditures

	Year Ended December 31, 2014	2013
Net Assets Held in Trust for Pension and Postemployment Health Care Benefits	$813,952,605	$717,867,678
DROP Liabilities	22,770,174	22,200,917
Total	836,722,779	740,068,595
Revenues*		
Employee contributions		
For non-DROP members	10,637,385	9,082,857
For DROP members	939,883	954,389
Employer contributions (net)	27,071,839	27,452,429
Investment income (net)		
Non-DROP investment income	51,639,210	133,572,045
DROP investment income	265,016	195,862
Miscellaneous	0	0
Total	90,553,333	171,257,582
Expenditures		
Benefit payments		
Retirees and Beneficiaries	57,218,360	54,816,860
From DROP account	7,237,618	6,591,966
Health insurance	10,774,592	11,080,534
Refund of member contributions	2,177,476	943,433
Administrative expenses	1,187,649	1,050,605
Death benefit	70,000	120,000
Total	78,665,695	74,603,398
Net Addition to Assets	11,887,638	96,654,184
Net Assets Held in Trust for Pension and Postemployment Health Care Benefits	$825,994,588	$813,952,605
DROP Liabilities	22,615,829	22,770,174
Total	**848,610,417**	**836,722,779**

** Revenues include transfers to and from systems.*

CAFR ASSET INFORMATION FURNISHED FOR THE VALUATION
DECEMBER 31, 2014

ADDITIONS BY SOURCE

	Pension Benefits					Other Postemployment Benefits		
	Contributions		Net Investment	Transfers from		Employer	Net Investment	
Year	Member*	Employer	Income	Other Systems	Total	Contributions	Income	Total
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
2011	9,278,533	22,966,338	(16,039,272)	608,366	16,813,965	2,418,411	(2,746,073)	(327,662)
2012	9,641,772	23,766,361	63,783,964	557,316	97,749,413	2,553,023	10,199,419	12,752,442
2013	10,037,246	22,908,182	115,874,530	1,353,520	150,173,478	4,718,651	17,893,377	22,612,028
2014	**11,577,268**	**22,325,421**	**45,104,959**	**586,929**	**79,594,577**	**5,859,320**	**6,799,267**	**12,658,587**

** 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
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
2011	57,288,210	451,682	1,797,986	948,319	60,486,197	11,092,515	159,271	11,251,786
2012	57,110,650	179,614	377,994	859,477	58,527,735	11,025,550	137,943	11,163,493
2013	61,528,826	943,433	467,462	909,929	63,849,650	12,140,996	140,676	12,281,672
2014	**64,525,978**	**2,177,476**	**165,945**	**1,031,473**	**67,900,872**	**12,308,478**	**156,176**	**12,464,654**

 # Includes death benefits.

DEVELOPMENT OF FUNDING VALUE OF RETIREMENT SYSTEM ASSETS
DECEMBER 31, 2014

		2012	2013	2014	2015	2016	2017
A.	Funding Value From Prior Year	$ 722,361,877	$ 758,246,087	$ 792,689,505			
B.	Market Value End of Year	740,068,595	836,722,779	848,610,417			
C.	Market Value Beginning of Year	699,257,968	740,068,595	836,722,779			
D.	Non-Investment Net Cash Flow	(32,175,336)	(36,063,118)	(38,828,939)			
E.	Investment Return:						
	E1. Market Total: B - C - D	72,985,963	132,717,302	50,716,577			
	E2. For Immediate Recognition (8.0%)	56,501,937	59,217,162	61,862,003			
	E3. Amount for Phased-In Recognition E1-E2	16,484,026	73,500,140	(11,145,426)			
F.	Phased-In Recognition of Investment Return:						
	F1. Current Year: 25% x E3	4,121,007	18,375,035	(2,786,357)			
	F2. First Prior Year	(19,333,843)	4,121,007	18,375,035	$ (2,786,357)		
	F3. Second Prior Year	8,127,176	(19,333,843)	4,121,007	18,375,035	$ (2,786,357)	
	F4. Third Prior Year	18,643,269	8,127,175	(19,333,843)	4,121,005	18,375,035	$ (2,786,355)
	F5. Total Recognized Phased-In	$ 11,557,609	$ 11,289,374	$ 375,842	$ 19,709,683	$ 15,588,678	$ (2,786,355)
G.	Funding Value End of Year:						
	G1. Preliminary Funding Value End of Year: A + D + E2 + F5	$ 758,246,087	$ 792,689,505	$ 816,098,411			
	G2. Corridor Percent	20%	20%	20%			
	G3. Upper Corridor Limit: (100% + G2) x B	888,082,314	1,004,067,335	1,018,332,500			
	G4. Lower Corridor Limit: (100% - G2) x B	592,054,876	669,378,223	678,888,334			
	G5. Funding Value End of Year	$ 758,246,087	$ 792,689,505	$ 816,098,411			
H.	Difference between Market Value and Funding Value	$ (18,177,492)	$ 44,033,274	$ 32,512,006	$ 12,802,323	$ (2,786,355)	$ -
I.	Funding Value Rate of Return	9.6 %	9.5 %	8.0 %			
J.	Market Value Rate of Return	10.7 %	18.4 %	6.2 %			
K.	Ratio of Funding Value to Market Value	102%	95%	96%			

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 PENSION AND HEALTH
DECEMBER 31, 2014

	Pension	Health	Total
A. Market Value Beginning of Year	$728,968,175	$ 107,754,604	$836,722,779
B. Member Contributions			
B1. Pension Contributions	10,637,385		10,637,385
B2. DROP Contributions	939,883		939,883
B3. Retiree Health Contributions		1,747,403	1,747,403
C. Employer Contributions			
C1. System Contributions	22,325,421	4,325,434	26,650,855
C2. Transfers	420,984		420,984
C3. Medicare Part D Reimbursement		1,533,886	1,533,886
D. Benefits Paid			
D1. Pension Benefits	57,218,360		57,218,360
D2. Benefit Payments from DROP Account	7,237,618		7,237,618
D3. HPRS Paid Retiree Health Benefits		11,434,314	11,434,314
D4. HPRS Paid Medicare Part B Benefits		874,164	874,164
D5. Member Paid Retiree Health Benefits		1,747,403	1,747,403
E. Refunds of Member Contributions	2,177,476	0	2,177,476
F. Death Benefits	70,000	0	70,000
G. Net External Cash Flow (B + C - D - E - F)	(32,379,781)	(6,449,158)	(38,828,939)
H. Other Changes in Market Value	44,073,486	6,643,091	50,716,577
I. Market Value End of Year (A + G + H)	740,661,880	107,948,537	848,610,417
J. Funding Value Adjustment	(28,376,276)	(4,135,730)	(32,512,006)
K. Funding Value End of Year (I + J)	$712,285,604	$103,812,807	$816,098,411

Line J is allocated in proportion to Line I.

SECTION E

SUMMARY OF MEMBER DATA

ACTIVE MEMBERS AS OF DECEMBER 31, 2014
BY ATTAINED AGE AND YEARS OF SERVICE*

Attained	Years of Service to Valuation Date							Totals	
Age	0-4	5-9	10-14	15-19	20-24	25-29	30 Up	No.	Payroll
20-24	82							82	$ 3,273,569
25-29	202	6						208	9,819,635
30-34	72	100	54	1				227	12,465,621
35-39	22	51	149	77				299	18,529,514
40	1	7	22	41	7			78	5,114,176
41	1	8	16	32	12			69	4,507,455
42	1	5	11	32	15			64	4,188,265
43		2	10	29	28			69	4,707,832
44		1	17	28	30			76	5,069,976
45			18	17	43	3		81	5,471,854
46			10	16	35	5		66	4,448,677
47			5	6	37	9		57	4,096,210
48		1	4	4	27	14		50	3,549,566
49				3	20	9	3	35	2,651,527
50			1	8	12	21		42	2,952,068
51			1	1	11	14	3	30	2,158,806
52			1		6	12	2	21	1,470,905
53				2	8	15	4	29	2,172,715
54					2	4	5	11	667,364
55					5	2	4	11	745,403
56					2	1	2	5	352,189
57						1	5	6	379,567
58						1	3	4	296,369
59							2	2	122,493
60									
Totals	**381**	**181**	**319**	**297**	**300**	**111**	**33**	**1,622**	**$ 99,211,756**

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

Age: 38.7 years.

Service: 13.8 years.

Annual Pay: $61,166

** Includes 127 DROP members.*

ACTIVE MEMBERS
BY AGES OF ENTRY INTO SERVICE
DECEMBER 31, 2014

Entry Age Nearest Birthday	Number	Cumulative Number	Percent	Cumulative Percent
Less than 18	0	0	0.00%	0.00%
18	20	20	1.23%	1.23%
19	49	69	3.02%	4.25%
20	87	156	5.37%	9.62%
21	173	329	10.66%	20.28%
22	232	561	14.31%	34.59%
23	213	774	13.13%	47.72%
24	189	963	11.65%	59.37%
25	155	1,118	9.56%	68.93%
26	113	1,231	6.96%	75.89%
27	95	1,326	5.86%	81.75%
28	66	1,392	4.07%	85.82%
29	56	1,448	3.45%	89.27%
30	41	1,489	2.53%	91.80%
31	36	1,525	2.22%	94.02%
32	41	1,566	2.53%	96.55%
33	29	1,595	1.79%	98.34%
34	21	1,616	1.29%	99.63%
35	0	1,616	0.00%	99.63%
36	0	1,616	0.00%	99.63%
37	4	1,620	0.25%	99.88%
38	1	1,621	0.06%	99.94%
39	0	1,621	0.00%	99.94%
40 & Up	1	1,622	0.06%	100.00%
Total	**1,622**			

ACTIVE DROP MEMBERS AS OF DECEMBER 31, 2014
BY ATTAINED AGE AND YEARS OF SERVICE

Attained Ages	DROP No.	Annual Benefit	Annual Pay	DROP Account Balance
48	8	$ 437,690	$ 698,105	$ 165,539
49	15	801,499	1,266,839	1,415,723
50	18	807,333	1,330,472	1,743,128
51	17	745,576	1,207,329	1,900,465
52	20	844,414	1,407,037	2,111,561
53	17	754,193	1,283,866	2,964,106
54	10	419,444	640,888	1,526,331
55	8	379,084	577,813	1,979,447
56	7	285,843	430,061	1,492,525
57	3	166,849	234,827	1,118,664
58	2	91,049	133,921	600,532
59	2	87,272	122,493	635,384
Totals	**127**	**$ 5,820,246**	**$ 9,333,651**	**$ 17,653,404**

Average Age: 52.4 yrs.
Average Age at DROP: 49.8 yrs.

Average Service: 28.4 yrs.
Average Service at DROP: 24.6 yrs.

Average Annual Pay: $73,493

AGE AND SERVICE PENSIONS BEING PAID DECEMBER 31, 2014
BY ATTAINED AGES

Attained Ages	Number	Monthly Pensions	Number Married	Average Age of Spouse
48 & Under	4	$ 12,357	2	45
49	7	25,536	4	50
50	14	49,472	8	46
51	20	74,940	12	49
52	17	56,816	9	51
53	23	88,917	18	52
54	32	122,991	27	53
55	45	174,271	38	52
56	42	156,442	31	54
57	33	126,435	28	54
58	34	133,764	31	57
59	47	184,295	41	56
60	34	138,732	29	59
61	23	101,892	22	59
62	36	153,217	33	58
63	44	169,642	38	60
64	46	178,044	40	61
65	38	154,503	33	63
66	50	184,802	44	64
67	68	255,179	58	64
68	46	179,400	43	67
69	38	148,837	34	67
70	52	194,517	51	67
71	36	126,191	33	69
72	47	160,292	43	68
73	35	122,893	31	69
74	26	92,272	22	71
75	25	92,908	21	73
76	23	68,080	23	73
77	24	78,203	23	73
78	16	47,109	14	74
79	12	38,127	12	77
80	9	26,116	8	76
81	8	20,505	7	77
82	10	27,436	10	77
83	8	18,932	7	80
84	13	36,216	10	80
85 & Over	38	81,877	27	81
Totals	**1,123**	**$ 4,102,158**	**965**	

DISABILITY PENSIONS BEING PAID DECEMBER 31, 2014
BY ATTAINED AGE

Attained Ages	Number	Monthly Pensions	Number Married	Average Age of Spouse
28	1	$ 2,298		
35	1	3,444		N/A
36	3	8,365	2	36
37	1	1,928		N/A
39	1	2,345		N/A
40	1	2,711	1	40
41	1	2,342	1	40
42	5	14,212	3	44
43	6	15,343	5	33
44	3	8,102	2	40
45	3	9,427	3	40
46	6	15,623	4	45
47	5	13,618	4	39
48	5	12,980	3	48
49	4	11,661	3	54
50	6	18,763	3	50
51	5	13,993	5	48
52	5	17,026	3	46
53	3	12,309	3	54
54	6	17,700	5	53
55	5	15,241	4	50
56	6	17,136	4	55
57	7	20,914	4	57
58	4	12,656	3	57
59	2	6,938	2	61
61	3	9,131	3	59
62	3	8,289	2	61
63	3	9,661	3	61
64	1	1,891	1	59
65	2	5,880	2	63
66	6	13,901	5	63
67	1	2,650	1	67
68	2	5,691	1	57
70	2	5,837	1	72
71	2	4,302	2	70
73	1	1,703	1	67
77	1	3,301		N/A
85	1	1,833	1	81
Totals	**123**	**$351,145**	**90**	

DEPENDENTS BEING PAID AS OF DECEMBER 31, 2014
TABULATED BY ATTAINED AGE

Attained Ages	Number	Monthly Pensions
14 & Under	3	$ 450
13	1	184
14	1	206
15	3	520
16	3	520
17	2	391
18	1	206
19	1	210
20	1	161
21	1	157
22	2	401
23	1	161
27	1	1,828
28	1	1,076
35	1	1,103
37	2	2,138
41	1	1,249
42	1	1,317
44	2	2,539
46	1	1,410
48	2	3,087
49	1	1,293
50	3	2,561
52	4	6,659
55	2	467
57	2	2,822
58	1	1,057
59	3	5,282
60	3	3,784
61	1	1,076
62	3	5,603
63	7	10,111
64	4	6,174
65	5	8,637
66	5	7,605
67	10	15,364
68	7	13,745
69	5	7,943
70	5	8,481
71	8	11,538
72	9	15,143
73	5	5,728
70-79	66	92,007
80-89	72	92,555
90 & Over	8	11,000
Totals	**271**	**$355,948**

ALTERNATE PAYEES BEING PAID AS OF DECEMBER 31, 2014
TABULATED BY ATTAINED AGE

Attained Ages	Number	Monthly Pensions
40	1	$ 656
45	1	340
46	1	789
48	2	1,553
49	4	2,835
50	3	4,643
51	1	765
53	1	1,737
54	3	3,222
56	5	7,042
57	4	4,208
61	2	1,930
62	4	6,143
63	4	4,977
66	1	1,153
67	1	829
69	1	1,835
71	1	1,714
73	1	2,081
Totals	**41**	**$48,452**

ACTIVE MEMBER VALUATION DATA, 2005 TO 2014

Actuarial Valuation as of December 31	Number of Active Members	Annual Payroll	Average Annual Salary	% Increase in Average Pay
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
2011	1,520	93,126,449	61,267	(0.6)
2012	1,645	98,117,403	59,646	(2.6)
2013	1,613	98,519,844	61,079	2.4
2014	**1,622**	**99,211,756**	**61,166**	**0.1**

RETIRANTS AND BENEFICIARIES VALUATION DATA, 2005 TO 2014

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			
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
2011	73	327,709	32	68,456	1,465	4,270,807	2,915
2012	79	281,692	47	81,957	1,497	4,470,542	2,986
2013	61	267,055	35	70,317	1,523	4,667,280	3,065
2014	**66**	**250,714**	**31**	**60,291**	**1,558**	**4,857,703**	**3,118**

Of the 1,558 retirants and beneficiaries as of December 31, 2014, 1,123 are service retirees, 123 are disability retirees, 271 are survivor beneficiaries and 41 are Alternate Payees. The average monthly benefits are $3,653 for service retirees, $2,855 for disability retirees and $1,313 for survivor beneficiaries and $1,182 for Alternate Payees.

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

	Census Date										
	14/15	**12/13**	**12/12**	**12/11**	**12/10**	**12/09**	**12/08**	**12/07**	**12/06**	**12/05**	**12/04**
Recipients:											
w/o Medicare A	**645**	672	702	NA	732	692	762	751	779	806	808
Medicare A	**753**	717	669	NA	596	580	398	503	522	437	411
Spouses:											
w/o Medicare A	**325**	330	355	NA	365	368	518	372	420	375	373
Medicare A	**360**	338	305	NA	257	267	232	242	156	187	176
Dependent Children	**273**	302	279	NA	216	165	167	154	168	127	130
Orphans	**0**	0	0	NA	0	23	26	63	33	26	30
Totals	**2,356**	2,359	2,310	2,269	2,166	2,095	2,103	2,085	2,078	1,958	1,928

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**
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
2011	197	0	891	0	1,181	0	2,269
2012	183	0	975	0	1,152	0	2,310
2013	162	0	1,056	0	1,141	0	2,359
2014	**0**	**0**	**1,114**	**0**	**1,242**	**0**	**2,356**

DEFERRED PENSIONS AS OF DECEMBER 31, 2014
TABULATED BY ATTAINED AGE

Attained Ages	Number	Annual Pensions
44	2	$50,678
45	1	30,592
46	2	79,225
47	3	103,039
48	1	46,075
51	1	39,174
Totals	**10**	**$348,782**

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

SUMMARY OF VALUATION METHOD AND ASSUMPTIONS
DECEMBER 31, 2014

The actuarial assumptions used in the valuation are shown in this section 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. The actuarial assumptions represent estimates of future experience.

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, but many systems have recently lowered their assumption. 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, 6% 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	Number Added During Year		Retirement		Disability Retirement		Death-in-Service		Other Terminations		Active
December 31	A	E	A	E	A	E	A	E	A	E	Members
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
2011	74	61.4	50	36.8	5	7.2	1	1.0	35	16.4	1,520
2012	204	63.9	37	38.8	10	7.2	1	1.0	31	16.9	1,645
2013	54	67.1	34	36.5	7	7.2	0	0.9	45	22.5	1,613
2014	**84**	**62.3**	**40**	**36.2**	**3**	**7.4**	**1**	**0.8**	**31**	**17.9**	**1,622**
Total	**734**	**677.7**	**314**	**409.4**	**64**	**70.1**	**9**	**8.9**	**287**	**189.3**	

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 2014

Age Group	15-19	20-24	25-29	30 Plus	Total
Under 20					
20-24					
25-29					
30-34					
35-39					
40-44					
45					
46					
47					
48			2		2
49			6		6
50			3		3
51			4		4
52			2		2
53			2		2
54			6		6
55			2		2
56		1	4		5
57		1	1		2
58			2		2
59		1	2	1	4
60 & Over					
Totals		**3**	**36**	**1**	**40**

DISABILITY RETIREMENTS DURING CALENDAR YEAR 2014

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

DEATH-IN-SERVICE TERMINATIONS DURING CALENDAR YEAR 2014

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

WITHDREW AND ELIGIBLE FOR DEFERRED BENEFIT TERMINATIONS DURING CALENDAR YEAR 2014

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

Withdrew and Pending Contributions Termination During Calendar Year 2014

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	11	1	3					15
25-29	4	1						5
30-34								
35-39								
40-44								
45-49								
50 & Over								
Totals	**15**	**2**	**3**					**20**

Withdrew and Refunded Terminations During Calendar Year 2014

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	5							5
25-29	8	2						10
30-34	3	2	1					6
35-39			2					2
40-44		1		1	1			3
45-49								
50 & Over								
Totals	**16**	**5**	**3**	**1**	**1**			**26**

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Administrative Expenses:	Assumed investment return is net of administrative and investment expenses.
Marriage Assumption:	85% of active participants are assumed to be married for purposes of death-in-service benefits and for purposes of retiring with the automatic joint and survivor benefit.
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.

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:

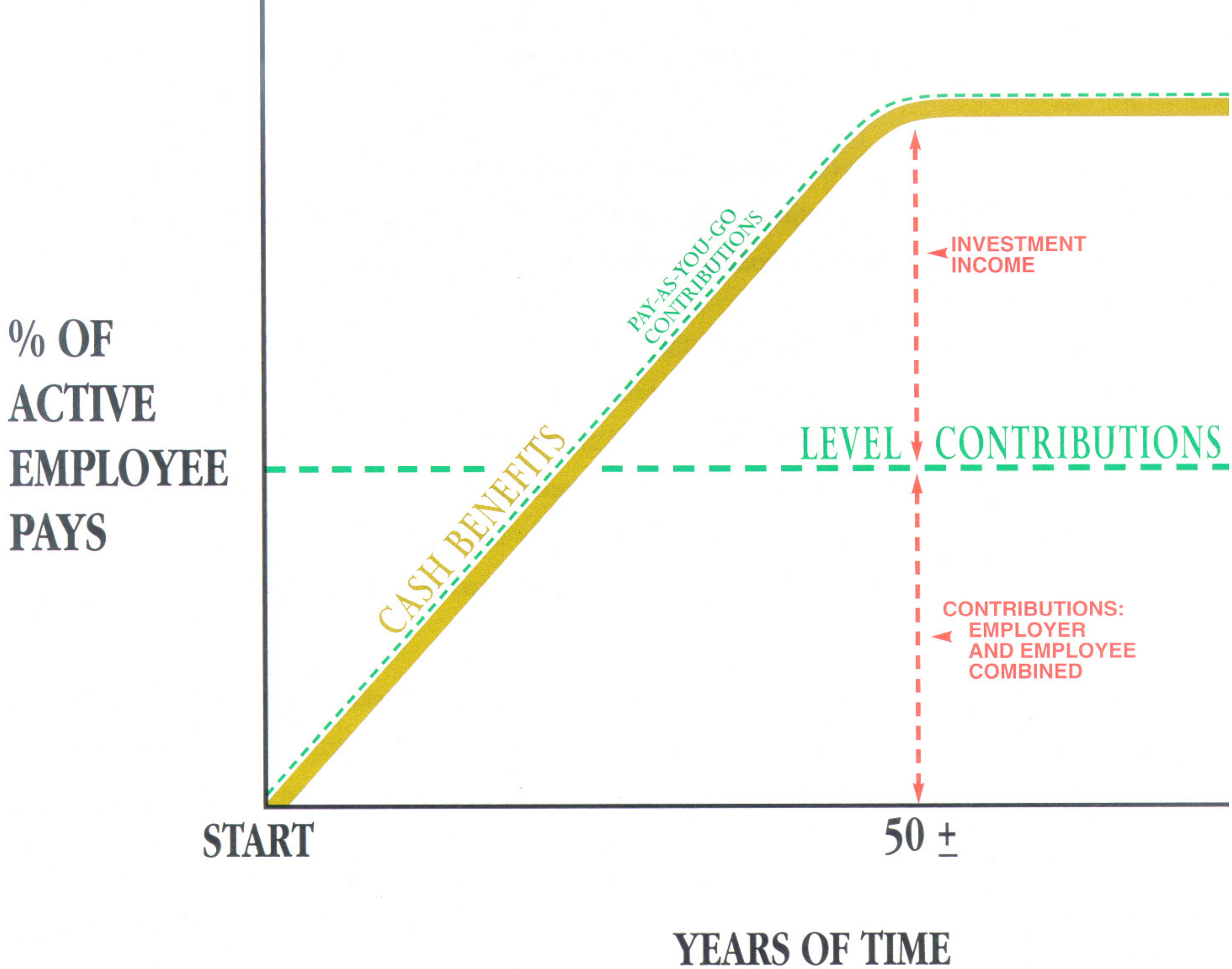
> ***Normal Cost*** (the value assigned to service being rendered this year)
> . . . plus . . .
> ***Interest on Unfunded Actuarial Accrued Liabilities*** (the difference between liabilities for service already rendered and the accrued assets of the Retirement System).

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 PROCESS

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

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

Retired lives now receiving benefits

Former employees with vested benefits not yet payable

Active employees

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

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

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

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

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

G. = Determination of:

Plan Financial Position and/or

New Employer Contribution Rate

MEANING OF "UNFUNDED ACTUARIAL ACCRUED LIABILITIES"

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

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

Each time a plan adds a new benefit, which applies to service already rendered, an "actuarial accrued liability" is created, which is also an "unfunded actuarial accrued liability" because the plan can't print instant cash to cover the value of the new benefit promises. Payment for such unfunded actuarial accrued liabilities is spread over a period of years, commonly in the 15-30 year range.

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

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

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

GRS
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August 28, 2015

Mr. Mark Atkeson, Executive Director
Ohio State Highway Patrol Retirement System
1900 Polaris Parkway, Suite 201
Columbus, OH 43240-4037

Dear Mark:

Enclosed are 4 bound copies of the December 31, 2014 actuarial valuation of the Ohio State Highway Patrol Retirement System.

Sincerely,

Mita Drazilov

Mita D. Drazilov, ASA, MAAA

MDD:dks:mrb
Enclosures

cc: Schneider Downs
Attn: Mr. Roy M. Lydic, Jr., CPA (+1 report copy)