

**STATE OF WYOMING RETIREMENT SYSTEM**  
**ACTUARIAL VALUATION REPORT**  
**FOR THE YEAR BEGINNING JANUARY 1, 2012**

April 23, 2012

Board of Trustees  
State of Wyoming Retirement System  
6101 Yellowstone Road  
Suite 500  
Cheyenne, WY 82002

Dear Board of Trustees:

**Subject: Actuarial Valuation as of January 1, 2012**

We are pleased to present the report of the actuarial valuation of the State of Wyoming Retirement System (“the Fund”) for the plan year commencing January 1, 2012. This report describes the current actuarial condition of the Fund, determines the calculated employer contribution rate (the actuarially required rate), and analyzes changes in this contribution rate from the prior year. Valuations are prepared annually, as of January 1, the first day of the Fund’s plan year.

### **Financing objectives and funding policy**

The employer and employee contribution rates are specified in the Fund’s statute. The purpose of this actuarial valuation is to determine whether or not this statutory contribution is sufficient to meet the obligations of the Fund.

### **Progress toward realization of financing objectives**

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan’s funded status. In the absence of benefit improvements, funded ratios should increase over time, until they reach 100%. The funded ratio, based upon the assumption of no further cost-of-living adjustment increases as of January 1, 2012 is 81.9%. In the January 1, 2011 valuation, this funded ratio was 84.6%. On a market value of assets basis, the Fund’s funded ratio decreased from 80.1% as of January 1, 2011 to 75.6% as of January 1, 2012.

Due to the current actuarial value of assets being higher than the market value of assets, continued recovery in the investment markets will be needed over the next few years (annual returns in excess of 8.00%) to keep the Plan’s funded ratio and unfunded actuarial accrued liability relatively stable in the short-term. The calculated funding period, given the statutory contribution rates this year is 52.15 years.

### **Benefit provisions**

The benefit provisions reflected in this valuation are those which were in effect on January 1, 2012. However, new legislation was signed into law on March 23, 2012 that will affect benefits for new hires. Members who join the State of Wyoming Retirement System later than August 31, 2012 will be under a “New Tier” of benefits, as outlined among the benefit provisions. This New Tier has no effect on the January 1, 2012 valuation. In addition, legislation was enacted that prohibits benefit changes, including cost-of-living increases, unless the funded ratio is above 100%.

The benefit provisions are summarized in Appendix B of the report.

### **Assumptions and methods**

Actuarial assumptions and methods are set by the Board, based upon recommendations made by the plan’s actuary. The current assumptions used in the valuation were adopted by the Board based on the recommendations from an experience study performed by the prior actuary as of December 31, 2007.

The results of the actuarial valuation are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. The actuarial calculations presented in our report are intended to provide information for rational decision making.

The actuarial assumptions and methods used in this report comply with the parameters for disclosure that appear in Governmental Accounting Standards Board (GASB) Statement Number 25.

All assumptions and methods are described in Appendix A of our report.

### **Data**

Member data for retired, active and inactive members was supplied as of January 1, 2012 by the Fund’s staff. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data.

Asset and financial information as of January 1, 2012 was supplied to us by McGee, Hearne & Paiz, LLP.

### **Plan Experience**

As part of each valuation, we examine the Fund’s experience relative to the assumptions. As experience in a given year deviates from the assumptions, a gain occurs if the liabilities grow slower than the assumption set anticipates and a loss occurs if the liabilities grow faster. This past fiscal year the Fund had a total liability gain of approximately \$203 million, primarily due to

salary increases less than assumed. The aggregate results of these analyses are disclosed in Tables 4 & 5 under Section III of the report.

### **Actuarial Certification**

All of the tables contained in this actuarial valuation report and in the actuarial section of the Fund's Comprehensive Annual Financial Report (CAFR) were prepared by Gabriel, Roeder, Smith & Company. Historical information for years prior to 2010 was prepared by the prior actuarial firm and was not subjected to our actuarial review.

We certify that the information presented herein is accurate and fairly portrays the actuarial position of the Fund as of January 1, 2012.

All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of state law and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries and consultants. Mark Randall and Leslie Thompson are Enrolled Actuaries and Members of the American Academy of Actuaries, and all meet the Qualification Standards of the American Academy of Actuaries. Finally, all of the undersigned are experienced in performing valuations for large public retirement systems.

Respectfully submitted,  
**Gabriel, Roeder, Smith & Company**



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## **SECTION I**

### **EXECUTIVE SUMMARY**

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Executive Summary

Item	January 1, 2012	January 1, 2011
	No COLA	No COLA
1. Contributions:		
a. Total Normal Cost	10.86%	11.11%
b. Employee Contributions	(7.00%)	(7.00%)
c. Net Employer Normal Cost	3.86%	4.11%
d. Amortization Payment	3.90%	3.28%
e. Administrative Expenses	0.28%	0.21%
f. Required	8.04%	7.60%
g. Statutory	(7.12%)	(7.12%)
h. Shortfall/(Surplus)	0.92%	0.48%
2. Funding Elements:		
a. Market Value of Assets (MVA)	\$5,318,208,995	\$5,491,978,896
b. Actuarial Value of Assets (AVA)	\$5,761,221,926	\$5,799,530,934
c. Actuarial Accrued Liability (AAL)	\$7,037,186,665	\$6,855,642,883
d. Unfunded/(overfunded) actuarial accrued liability (UAAL)	\$1,275,964,739	\$1,056,111,949
3. GASB 25/27 Elements:		
a. Annual required contribution	\$141,299,725	\$131,260,466
b. Actual contributions	N/A	122,557,906
i. Employer	N/A	118,652,496
ii. Other	N/A	3,905,410
c. Percentage contributed	N/A	93%
d. Funded ratio on an actuarial basis (AVA/AAL)	81.9%	84.6%
e. Funded ratio on an market basis (MVA/AAL)	75.6%	80.1%
f. Projected Valuation Payroll	\$1,756,856,648	\$1,728,433,786



## Contribution Requirements and COLA Comparison

Item	January 1, 2012					
	No COLA 0.00%		Break-Even COLA 0.00%		Max COLA 3.00%	
	Dollar	% of Pay	Dollar	% of Pay	Dollar	% of Pay
1. Funding Elements						
a. Actuarial Value of Assets (AVA)	\$5,761,221,926		\$5,761,221,926		\$5,761,221,926	
b. Actuarial Accrued Liability (AAL)	7,037,186,665		7,037,186,665		8,957,127,824	
c. Unfunded/(overfunded) actuarial accrued liability	1,275,964,739		1,275,964,739		3,195,905,898	
2. Contributions:						
a. Total Normal Cost	\$190,853,698	10.86%	\$190,853,698	10.86%	\$236,526,115	13.46%
b. Employee Contributions	(122,979,965)	(7.00%)	(122,979,965)	(7.00%)	(122,979,965)	(7.00%)
c. Net Employer Normal Cost	\$67,873,733	3.86%	\$67,873,733	3.86%	\$113,546,150	6.46%
d. Amortization Payment	68,433,092	3.90%	68,433,092	3.90%	171,404,206	9.76%
e. Administrative Expenses	4,992,900	0.28%	4,992,900	0.28%	4,992,900	0.28%
f. Required	\$141,299,725	8.04%	\$141,299,725	8.04%	\$289,943,256	16.50%
g. Statutory	(125,088,193)	(7.12%)	(125,088,193)	(7.12%)	(125,088,193)	(7.12%)
h. Shortfall/(Surplus)	\$16,211,532	0.92%	\$16,211,532	0.92%	\$164,855,062	9.38%
3. Funded Ratios						
a. Funded ratio on an actuarial basis (AVA/AAL)	81.9%		81.9%		64.3%	
b. Funded ratio on an market basis (MVA/AAL)	75.6%		75.6%		59.4%	

*Recent legislation was passed prohibiting a recommendation for implementation of any benefit change, including cost-of-living increases, unless the funded ratio will remain above 100%. Enrolled Act #66, Senate, Section 9-3-454.*

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**SECTION II**  
DISCUSSION

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## Contribution Requirements

- Exhibits throughout this report are based primarily, unless stated otherwise, on the assumption of no future cost-of-living increases (COLAs).
- Rates shown in the Executive Summary are calculated rates for the twelve-month period beginning January 1, 2012, based on current board policy
- Table 5 under Section III of the report reconciles the calculated contribution rate from the prior valuation date to the current valuation date
- As shown in the Executive Summary, the most significant factor in the increase in the “bottom line” contribution requirements this year was due to the increase in the Amortization Payment brought about by assets being lower than expected.
- There were no changes in the benefit provisions effective as of the valuation date since the prior valuation.
- There were no changes to the actuarial assumptions or methods.
- The amortization payment is based upon the following assumptions:
  - 30-year open funding period
  - Contribution amounts are calculated in such a way that they will increase as a level percentage of payroll
  - Total payroll increases are assumed at 4.50% per year, and
  - Future growth in the number of active members is not reflected in the annual valuation
- The Fund’s funded ratio decreased from the prior year and the actuarially determined contribution rate increased from the prior year primarily due to the loss on the actuarial value of assets (1.25% return versus the assumed rate of return of 8.00% per annum) as the prior significant market loss experienced in calendar year 2008 continues to be fully recognized.

## Calculation of Contribution Rates

The funds available to pay benefits come from two sources, contributions and investment income on those contributions (the majority of the funds available to pay benefits typically come from investment income). The Fund receives contributions from two sources, employer contributions and member contributions, both of which are determined as a percentage of pay. As shown in Table 1 under Section III of the report, the employer contribution rate has three components:

- The normal cost percentage (NC%)
- The amortization percentage (UAAL%)
- Administrative expenses

The NC% is the theoretical amount which would be required to pay the members' benefits if this amount had been contributed from each member's entry date and if the fund's experience exactly followed the actuarial assumptions. The NC% is shown in Table 3 under Section III of the report.

Members are required to make employee contributions and only the excess of the NC% over the member contribution rate is included in the employer contribution rate.

The actuarial accrued liability (AAL) is the difference between (i) the actuarial present value of all future benefits for all current participants of the fund, including active, inactive and retired members, and (ii) the actuarial present value of future normal costs. Thus, the AAL represents the liability associated with past years. The unfunded actuarial accrued liability (UAAL) is the difference between the AAL and the actuarial value of assets (AVA). It is the shortfall/excess between the liability associated with prior years (the AAL) and the assets actually accumulated (the AVA). This shortfall/excess can arise from several sources, including actuarial gains and losses which are caused by differences between actual experience and the plan's assumptions, changes to the plan's actuarial assumptions, and amendments to the benefit provisions.

The UAAL% is the amount required to fund this difference. It is the amount, expressed as a level percentage of payroll, necessary to amortize the UAAL. This amortization is over a period of 30 years beginning January 1, 2012. The Executive Summary shows the UAAL%, called Amortization Payment, compared to that of last year.

Administrative expenses are assumed to increase 6.5% per year. Expenses for the valuation year are projected at this rate based on the average adjusted expenses paid for the prior two years.

The calculated rate is used in determining the contributions necessary to meet the GASB Annual Required Contribution (ARC) for the twelve-month period beginning January 1, 2012. As of January 1, 2012, the employer contribution is within 1% of meeting the ARC.

## Financial Data and Experience

As of January 1, 2012, the Fund has a total market value of \$5,318 million. Financial information was received from McGee, Hearne & Paiz, LLP.

Table 7 under Section III of the report shows a reconciliation of the market values between the beginning and end of 2011. The amount transferred from the State Plan to the Air Guard Firefighter Plan differed slightly from what was estimated in last year's valuation report, so an adjustment was made to the Beginning of Year Market Value of Assets in the amount of \$34,368.

During 2011, the total investment return on the market value of assets (MVA) was 1.92%, as shown in Table 10 under Section III of the report.

In determining the contribution rates and funded status of the Fund, an actuarial value of assets (AVA) is used rather than the market value of assets. The method used to compute the AVA takes the difference between actual earnings and expected earnings (based on the annual assumed 8.00% investment return rate) each year, and recognizes the difference over five years, at 20% per year. This "smoothing method" is intended to help reduce the volatility of the contribution rates from year to year.

The development of the AVA is shown in Table 9 under Section III of the report. The AVA is \$5.8 billion. The AVA is 108.3% of the MVA as of December 31, 2011, compared to 105.6% last year. The difference between the AVA and the MVA is the deferred gains and losses. As of January 1, 2011, the total deferred loss was \$308 million. As of January 1, 2012, the total deferred loss was \$443 million.

In addition to the market return, Table 10 also shows the return on the actuarial value of assets for the Fund. For 2011, this return was 1.25%. Since this return is less than the assumed 8.00% investment return, an actuarial loss occurred increasing the unfunded actuarial accrued liabilities of the Fund by \$387.6 million.

## Member Data

Member data as of January 1, 2012 was supplied electronically by the Fund's staff. While we did not audit this data, we did perform various tests to ensure that it was internally consistent, consistent with the prior year's data, and was reasonable overall.

Table 15 under Section III of the report shows the number of members by category (active, inactive, retired, etc.) along with member statistics. Tables 16 through 28 show summaries of certain historical data and include membership statistics.

Total active member payroll increased 1.64% last year, compared with a 1.83% increase the prior year.

Changes in payroll are significant because the methodology used in the valuation to amortize the unfunded actuarial accrued liability assumes a growing payroll into the future. If the payroll does not grow at the assumed 4.50% per year average, then the current amortization payments may be understated and the funding position of the Fund will not strengthen as assumed over time. Higher than expected payroll growth, however, has the opposite effect of this and the funded position of the Fund should trend to 100%. Table 5 under Section III of the report shows, for the past year, payroll for the plan increased less than expected so the effect is an increase in the calculated contribution rate of 0.10% of payroll.

One reason payroll increased less than expected is that the salary, for continuing active participants, increased less than expected. This represented a gain to the Plan, as shown in Table 4 under Section III of the report.

## Benefit Provisions

Appendix B of the report includes a more detailed summary of the benefit provisions for the Fund. A brief summary is as follows:

A new tier of benefits was signed into law on March 23, 2012 and is effective for new members joining the System on or after September 1, 2012. These benefit changes have no impact on this valuation.

– *Tier*

- Members who join the State of Wyoming Retirement System by August 31, 2012 are in Tier 1, while members who join later are in Tier 2

– *Normal Retirement Eligibility*

- For Tier 1 member - Age 60 with at least four years of service
- For Tier 2 member - Age 65 with at least four years of service

– *Normal Retirement Benefit*

- For Tier 1 member - 2.125% of employee's Highest Average Salary for each year of credited service for the first 15 years of service credit plus 2.25% of Highest Average Salary for any years of service credit exceeding 15 years. This amount is reduced by 5.0% per year that the employee is under age 60.
- For Tier 2 member - 2.00% of employee's Highest Average Salary for each year of credited service. This amount is reduced by 5.0% per year that the employee is under age 65.

However, members retiring with a combined age and service of at least 85 receive an unreduced benefit. Employees hired prior to July 1, 1981 may be entitled to benefits earned under a different formula.

– *Normal Form of Payment*

- Monthly benefit for life with a lump-sum death benefit equal to the excess (if any) of the employee contributions with interest over the total benefits received.

– *Employee Contributions* are required

- 7.00% of pay.

– *Post-retirement Cost of Living Adjustments (COLAs)* may be granted only if the funded ratio is shown to stay at least 100%. This is a new provision enacted in 2012.

This valuation reflects all benefits offered to the Fund's members. There are no ancillary benefits that might be deemed a Fund liability if continued beyond the availability of funding by the current funding source.

### Actuarial Methods and Assumptions

Appendix A of the report includes a summary of the actuarial assumptions and methods used in this valuation. A few highlights are listed as follows:

- Costs are determined using the Entry Age Normal actuarial cost method, calculated as a level percentage of payroll.
- The unfunded actuarial accrued liability is amortized over an open 30 year period as a level percent of payroll.
- The assumed annual investment return rate is 8.00%, with assumed inflation of 3.50%.
- Payroll is assumed to increase at 4.50% per year.
- Inactive vested participants are assumed to retire at age 60 or on the valuation date if over age 60.
- No benefit data is available for members entitled to deferred benefits. The present value of benefits expected to be paid to vested inactive non-retired members is approximated using the data provided.

Based on the current mortality tables, the average future lifetime for current pensioners is 15.6 years.

There have been no changes in actuarial assumptions or methods since the prior valuation.



## GASB and Funding Progress

Governmental Accounting Standards Board Statement Number 25 (GASB 25) contains certain accounting requirements for the Fund. In particular, it requires the inclusion of two special schedules in the Fund's annual report:

1. Schedule of Funding Progress
2. Schedule of Employer Contributions

Information needed to prepare the Schedule of Funding Progress is included in Table 12 under Section III of the report.

Governmental Accounting Standards Board Statement Number 27 (GASB 27) also requires that plans calculate an Annual Required Contribution (ARC), and, if actual contributions received are less than the ARC, this must be disclosed. Table 13 of Section III illustrates the percentage of the GASB ARC that was contributed.

Under GASB 27, the ARC must be calculated in accordance with certain parameters. In particular, it must include a payment to amortize the unfunded actuarial accrued liability (UAAL). This amortization payment must be computed using a funding period no greater than 30 years. Further, the amortization payment included in the ARC may be computed as a level dollar amount, or it may be computed as an amount which increases with payroll (level percentage of payroll). However, if payments are computed on a level percentage of payroll approach, the payroll growth assumption may not anticipate future membership growth.

Since the recommended employer contribution rate of 8.04% is computed as a level percentage of payroll using an amortization period of 30 years from the valuation date, the calculated rate meets the definition of an acceptable ARC.

The calculated funding period, given the statutory contribution rates this year is 52.15 years. Last year, the funding period was 40.28 years.

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## **SECTION III**

### **SUPPORTING EXHIBITS**

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**Calculation of Annual Required Contribution Rate**  
*(Assumes No Future Cost-Of-Living Increases)*

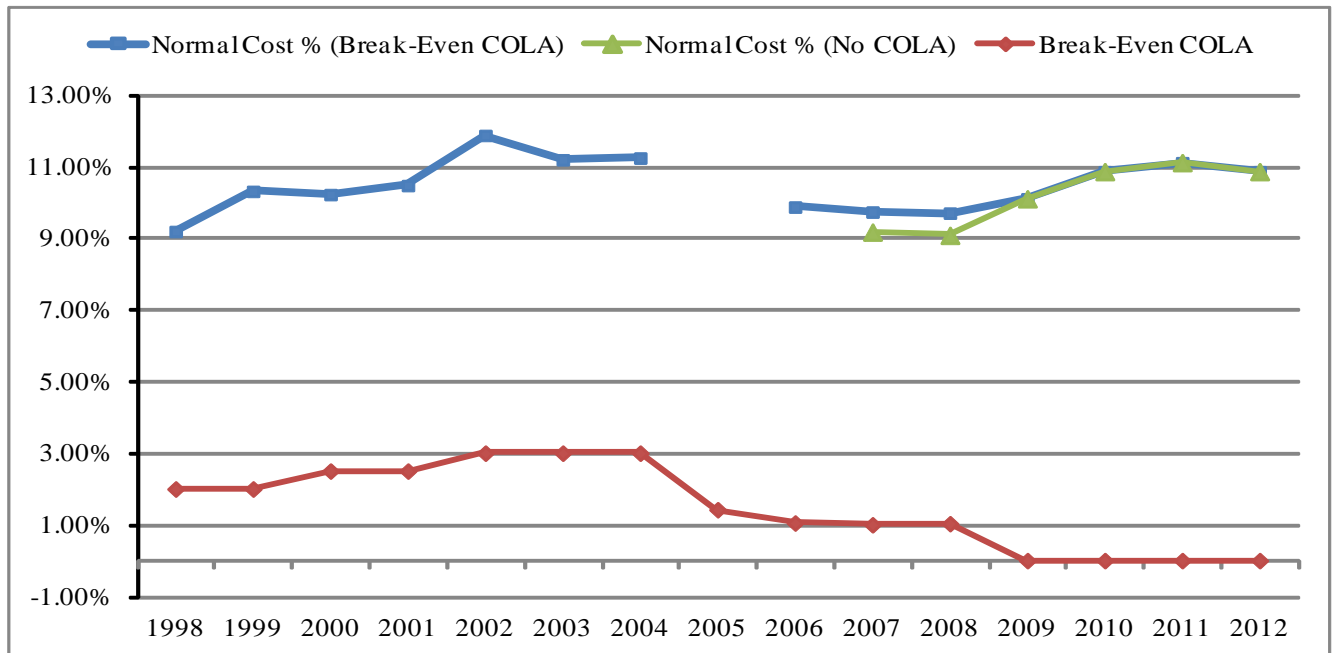
Item	January 1, 2012	January 1, 2011
1. Projected valuation payroll	\$ 1,756,856,648	\$ 1,728,433,786
2. Present value of future pay	\$ 12,856,582,790	\$11,251,888,913
3. Employer normal cost rate	3.86%	4.11%
4. Actuarial accrued liability for active members		
a. Present value of future benefits for active members	\$ 4,919,034,775	\$ 4,865,642,995
b. Less: present value of future employer normal costs	(437,628,197)	(400,612,193)
c. Less: present value of future employee contributions	(899,960,796)	(787,632,236)
d. Actuarial accrued liability	\$ 3,581,445,782	\$ 3,677,398,566
5. Total actuarial accrued liability for:		
a. Retirees and beneficiaries	\$ 3,135,375,356	\$ 2,874,116,295
b. Disabled members	32,096,000	31,283,523
c. Inactive members	288,269,527	272,844,499
d. Active members (Item 4d)	3,581,445,782	3,677,398,566
e. Total	\$ 7,037,186,665	\$ 6,855,642,883
6. Actuarial value of assets (Table 9)	\$ 5,761,221,926	\$ 5,799,530,934
7. Unfunded actuarial accrued liability (UAAL) (Item 5e - Item 6)	\$ 1,275,964,739	\$ 1,056,111,949
8. Funding period	30 years	30 years
9. Assumed payroll growth rate	4.50%	4.50%
10. Employer Contribution requirement		
a. UAAL amortization payment as % of pay	3.90%	3.28%
b. Employer normal cost	3.86%	4.11%
c. Administrative Expense	0.28%	0.21%
d. Contribution requirement (a + b + c)	8.04%	7.60%

**Cost Breakdown**  
*(Assumes No Future Cost-Of-Living Increases)*

Item	Present Value of Future Normal Costs (1)	Actuarial Accrued Liabilities (2)	Total Present Value of Benefits (3) = (1) + (2)
Age and service allowances based on total service and disability benefits likely to be rendered by present active members	\$1,036,921,984	\$3,538,636,446	\$4,575,558,430
Death-in-service benefits likely to be paid on behalf of present active members (employer financed portion)	43,341,596	100,757,280	144,098,876
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members	257,325,413	(57,947,944)	199,377,469
Benefits likely to be paid to vested inactive members	0	255,043,035	255,043,035
Benefits to be paid to members due refunds	0	33,226,492	33,226,492
Benefits to be paid to current retirees, disabled members, beneficiaries, and future beneficiaries of current retirees	0	3,167,471,356	3,167,471,356
<b>Total</b>	<b>\$1,337,588,993</b>	<b>\$7,037,186,665</b>	<b>\$8,374,775,658</b>
Actuarial Value of Assets	0	5,761,221,926	5,761,221,926
Liabilities to be covered by Future Contributions	\$1,337,588,993	\$1,275,964,739	\$2,613,553,732

History of Plan Normal Cost

Fiscal Year Ending December 31 (1)	Normal Cost as Percent of Payroll		Break-Even COLA*** (3)
	No COLA (2a)	Break-Even COLA (2b)	
1998		9.19%	2.00%
1999		10.31%	2.00%
2000		10.22%	2.50%
2001		10.47%	2.50%
2002		11.87%	3.00%
2003		11.19%	3.00%
2004		11.24%	3.00%
2005		N/A *	1.42%
2006		9.87%	1.05%
2007	9.17%	9.73%	1.00%
2008	9.08%	9.70%	1.03%
2009	10.10%	10.10%	0.00%
2010	10.86%	10.86%	0.00%
2011**	11.11%	11.11%	0.00%
2012	10.86%	10.86%	0.00%



\* The FYE December 31, 2005 normal cost as a percent of payroll was not calculated with the assumption of a break-even 1.42% COLA.

\*\* Beginning 9/1/2010, the Employee Contribution rate was increased by 1.43% of pay to 7.00%.

\*\*\* Before 2005, the AAL was based on Maximum COLA liabilities. Between 2005 and 2009, the AAL was based on Break-Even COLA liabilities. Starting in 2010, the AAL is based on No COLA liabilities.

**Calculation of Total Actuarial Gain/(Loss)**  
*(Assumes No Future Cost-Of-Living Increases)*

Item	January 1, 2012
1. Derivation of Experience Gain/(Loss)	
a. Unfunded Actuarial Accrued Liability (UAAL) - Previous Valuation	\$1,056,111,949
b. Normal Cost (NC) - Previous Valuation	191,944,279
c. Actuarially Determined Contribution - Previous Year	252,250,831
d. Interest Accrual:	
(i) For whole year on (a)	84,488,956
(ii) For half year on (b) - (c)	(2,412,262)
(iii) Total Interest: (d)(i) + (d)(ii)	82,076,694
e. Change in UAAL due to Plan Changes	-
f. Change in UAAL due to Assumption change	-
g. Expected UAAL Current Year: (a) + (b) - (c) + (d)(iii) + (e) + (f)	1,077,882,090
h. Actual UAAL Current Year	1,275,964,739
i. Experience Gain/(Loss): (g) - (h)	(\$198,082,648)
j. Experience Gain/(Loss) as a % of Actuarial Accrued Liability	-2.81%
2. Approximate Portion of Gain/(Loss) Due to Investments (at Actuarial Value)	(\$387,589,383)
3. Approximate Portion of Gain/(Loss) Due to Contributions Higher or Lower than Expected	(\$13,521,441)
4. Approximate Amount of Gain/(Loss) Due to Liabilities: (1)(i) - (2) - (3)	\$203,028,175
a. Age & Service Retirements	(\$2,255,144)
b. Disability Retirements	(361,399)
c. Death-In-Service Retirements	(118,264)
d. Withdrawal From Employment	(10,591,932)
e. Rehires	(2,080,601)
f. Pay Increases	208,456,330
g. Death After Retirement	8,924,437
h. Other	1,054,749
i. Other as a % of Actuarial Accrued Liability	0.01%

**Change in Calculated Contribution Rate Since the Prior Valuation**  
*(Assumes No Future Cost-Of-Living Increases)*

Item	January 1, 2012
1. Calculated contribution rate as of January 1, 2011	7.60%
2. Change in contribution rate during year	
a. Change in employer normal cost	-0.25%
b. Assumption changes	0.00%
c. Recognition of prior asset losses (gains)	0.87%
d. Actuarial (gain) loss from current year asset performance	0.30%
e. Actuarial (gain) loss from liability sources (excluding expenses)	-0.55%
f. Shortfall between contribution made and required contribution	0.04%
g. Effect of payroll growing (faster)/slower than assumption	0.10%
h. Open amortization period reset to 30	-0.07%
i. Other changes	0.00%
j. Total change	0.44%
3. Calculated contribution rate as of January 1, 2012	8.04%

Statement of Plan Net Assets

Assets at Market Value		
Item	FYE 2011	FYE 2010
1. Cash and Cash Equivalents (Operating Cash)	\$310,936,186	\$455,967,414
2. Receivables		
a. Insurance premium tax	\$0	\$0
b. Buy backs	\$0	\$40,965
c. Employee contributions	\$8,363,618	\$8,742,385
d. Employer contributions	\$8,557,368	\$8,564,782
e. Securities sold	\$37,399,459	\$142,190,500
f. Accrued interest and dividends	\$14,218,920	\$13,476,573
g. Currency contract receivable	\$262,730,290	\$459,819,922
h. Other	\$154,200	\$160,974
i. Rebate and Fee Income Receivable	\$0	\$0
j. Total Receivables	\$331,423,855	\$632,996,100
3. Investments, at fair value	\$5,403,578,247	\$5,526,779,815
4. Liabilities		
a. Benefits and refunds payable	(\$609,404)	(\$399,685)
b. Securities purchased	(\$172,995,548)	(\$215,971,071)
c. Administrative and consulting fees payable	(\$7,356,021)	(\$5,697,323)
d. Currency contract payable	(\$264,630,028)	(\$453,057,637)
e. Securities lending collateral	(\$282,138,292)	(\$448,638,717)
f. Total Liabilities	(\$727,729,293)	(\$1,123,764,433)
5. Total Market Value of Assets Available for Benefits	\$5,318,208,995	\$5,491,978,896

0.0611% of State assets, including cash flows, were allocated toward the creation of the Air Guard Firefighters Plan in FYE 2010 based on the representative proportion of the January 1, 2010 actuarial accrued liability.



Reconciliation of Plan Net Assets

Assets at Market Value		
Item	FYE 2011	FYE 2010
A. Market Value of Assets at Beginning of Year		
1. Beginning of Year	\$5,491,978,896	\$4,968,116,928
2. Adjustment*	34,368	-
3. Adjusted Beginning of Year	\$5,492,013,264	\$4,968,116,928
B. Contribution Income:		
1. Contributions		
a. Employee	\$ 116,691,540	\$ 99,291,423
b. Employer	118,652,496	101,233,610
c. Other	3,905,410	3,524,056
d. Total	\$239,249,446	\$204,049,089
2. Investment Income		
a. Interest, Dividends, and Other Income	109,511,488	126,750,407
b. Net Appreciation	(149,192,855)	521,938,524
c. Investment Expenses	(25,736,868)	(13,558,116)
d. Net Investment Income	(\$65,418,235)	\$635,130,815
3. Securities Lending		
a. Gross Income	2,229,467	3,417,114
b. Deductions	(344,251)	(877,447)
c. Net Investment Income	\$1,885,216	\$2,539,667
4. Benefits and Refunds		
a. Refunds	(15,241,933)	(13,576,788)
b. Regular Monthly Benefits	(328,737,275)	(300,680,068)
c. Total	(\$343,979,208)	(\$314,256,856)
5. Administrative and Miscellaneous Expenses	(5,541,488)	(3,600,747)
C. Market Value of Assets at End of Year	\$5,318,208,995	\$5,491,978,896

0.0611% of State assets, including cash flows, were allocated toward the creation of the Air Guard Firefighters Plan in FYE 2010 based on the representative proportion of the January 1, 2010 actuarial accrued liability.

\* The Adjustment reflects the difference between the approximate amount transferred from the State Plan to the Air Guard Plan in the FYE 2010 valuation and the actual amount transferred.

Progress of Fund Through December 31, 2011

Plan Year Ending December 31	Employer Contributions*	Employee Contributions	Administrative Expenses	Net Investment Income**	Benefit Payments	Transfers	Actuarial Value of Assets
Total	\$ 1,648,375,923	\$ 1,468,644,510	\$ (39,876,396)	\$ 5,968,222,972	\$ (3,934,628,544)	\$ (115,633,895)	
1986	\$ 41,364,465	\$ 36,365,804	\$ (782,000)	\$ 98,998,090	\$ (42,082,765)	\$ -	\$ 900,097,591
1987	39,901,834	36,039,418	(808,023)	91,374,783	(50,604,364)	-	1,016,001,239
1988	38,414,939	33,222,264	(444,343)	103,025,282	(48,627,479)	-	1,141,591,902
1989	36,139,394	36,231,108	(424,136)	128,370,680	(55,459,353)	-	1,286,449,595
1990	38,668,634	38,960,372	(850,148)	114,218,588	(61,154,261)	-	1,416,292,780
1991	38,903,350	39,288,267	(863,301)	148,164,188	(69,348,501)	-	1,572,336,783
1992	42,354,843	42,883,874	(909,653)	175,246,400	(75,211,430)	-	1,756,700,817
1993	41,596,571	42,266,219	(801,026)	189,281,426	(82,480,713)	-	1,946,563,294
1994	42,791,243	43,415,880	(888,518)	136,210,578	(89,707,717)	-	2,078,384,760
1995	43,714,263	44,435,762	(937,480)	230,731,781	(99,689,985)	-	2,296,639,101
1996	43,495,146	44,761,611	(1,028,163)	233,212,720	(108,536,621)	-	2,508,543,794
1997	44,958,544	46,152,691	(1,147,818)	314,340,179	(117,126,096)	-	2,795,721,294
1998	46,183,091	47,366,181	(1,074,562)	436,098,461	(123,858,991)	-	3,200,435,474
1999	48,681,209	50,106,535	(1,182,899)	475,758,627	(132,428,572)	-	3,641,370,374
2000	50,539,675	51,868,059	(1,096,747)	592,379,739	(144,620,949)	-	4,190,440,151
2001	56,517,377	53,792,429	(1,387,930)	439,286,379	(156,189,100)	-	4,582,462,306
2002	57,377,428	58,234,324	(1,281,554)	(66,209,697)	(171,160,286)	(106,978,719)	4,352,423,802
2003	55,363,788	60,848,296	(1,435,922)	376,524,142	(185,826,481)	-	4,657,897,625
2004	60,573,670	61,412,824	(1,644,382)	127,831,761	(201,772,174)	-	4,704,299,324
2005	65,191,670	63,381,309	(1,930,627)	238,882,774	(217,308,520)	(8,655,176)	4,843,861,114
2006	72,664,403	69,020,297	(1,949,051)	409,948,934	(232,944,164)	-	5,160,601,533
2007	83,149,236	78,495,298	(2,005,783)	583,547,681	(249,765,088)	-	5,654,022,877
2008	88,451,655	84,814,014	(2,778,990)	(720,402,274)	(268,232,301)	-	4,835,874,981
2009***	244,063,923	89,298,711	(3,081,105)	868,641,735	(292,256,569)	-	5,742,541,676
2010****	104,757,666	99,291,423	(3,600,747)	170,797,772	(314,256,856)	-	5,799,530,934
2011	122,557,906	116,691,540	(5,541,488)	71,962,242	(343,979,208)	-	5,761,221,926

\* Includes other State funding sources

\*\* Net of investment expenses

\*\*\* December 31, 2009 market values exclude Air Guard Firefighters

\*\*\*\* Beginning with the Plan Year Ending 12/31/2010, Employer Contributions are 7.12% of pay and Employee Contributions are 7.00% of pay.

**Development of Actuarial Value of Assets**

Item	FYE 2011	FYE 2010
1. Actuarial value of assets, beginning of year (without corridor)	\$5,799,530,934	\$5,742,541,676
2. Market value, end of year	5,318,208,995	5,491,978,896
3. Market value, beginning of year (adjusted)*	5,492,013,264	4,968,116,928
4. Non-investment/administrative net cash flow:		
a. Employee contributions	\$116,691,540	\$99,291,423
b. Employer contributions	118,652,496	101,233,610
c. Other contributions	3,905,410	3,524,056
d. Refund of employee accounts	(15,241,933)	(13,576,788)
e. Retirement benefits	(328,737,275)	(300,680,068)
f. Administrative Expenses	(5,541,488)	(3,600,747)
g. Total net cash flow: [sum of (4a) through (4f)]	<u>(\$110,271,250)</u>	<u>(\$113,808,515)</u>
5. Investments and securities lending:		
a. Interest and dividends on investments	\$109,511,488	\$126,750,407
b. Gross income from securities lending	2,229,467	3,417,114
c. Fees and expenses	(26,081,119)	(14,435,564)
d. Total net income: [sum of (5a) through (5c)]	<u>\$85,659,836</u>	<u>\$115,731,957</u>
6. Investment income:		
a. Actual market return: (2) - (3) - (4g) - (5d)	(\$149,192,855)	\$521,938,524
b. Assumed rate of return	8.0%	8.0%
c. Assumed amount of return	349,375,231	277,252,634
d. Amount subject to phase-in: (6a) - (6c)	<u>(\$498,568,086)</u>	<u>\$244,685,890</u>
7. Phase-in recognition of investment income:		
a. Current year: 0.20 * (6d)	(\$99,713,617)	\$48,937,178
b. First prior year	48,937,178	115,865,314
c. Second prior year	115,865,314	(419,697,005)
d. Third prior year	(419,697,005)	(8,464,695)
e. Fourth prior year	(8,464,695)	41,172,389
f. Total recognition	<u>(\$363,072,825)</u>	<u>(\$222,186,819)</u>
<b>8. Actuarial value of assets, end of year</b>		
a. Preliminary actuarial value of assets, end of year: (1) + (4g) + (5d) + (6c) + (7f)	\$5,761,221,926	\$5,799,530,934
b. Upper corridor limit: 120% * (2)	6,381,850,794	6,590,374,675
c. Lower corridor limit: 80% * (2)	4,254,567,196	4,393,583,117
d. Actuarial value of assets, end of year	\$5,761,221,926	\$5,799,530,934
9. Difference between market and actuarial value of assets	(443,012,932)	(307,552,038)
<b>10. Actuarial rate of return</b>	1.25%	3.00%
<b>11. Market rate of return**</b>	1.92%	13.48%
<b>12. Ratio of actuarial value to market value of assets</b>	108.3%	105.6%

0.0611% of State assets for FYE 2010, including cash flows, were allocated toward the creation of the Air Guard Firefighters Plan based on the representative proportion of the January 1, 2010 actuarial accrued liability.

\* The Beginning of Year Market Value for FYE 2011 reflects the Adjustment to the amount transferred from the State Plan to the Air Guard Firefighter Plan.

\*\* Current year Market rate of return is based on unaudited data and is supplied by NEPC, LLC.

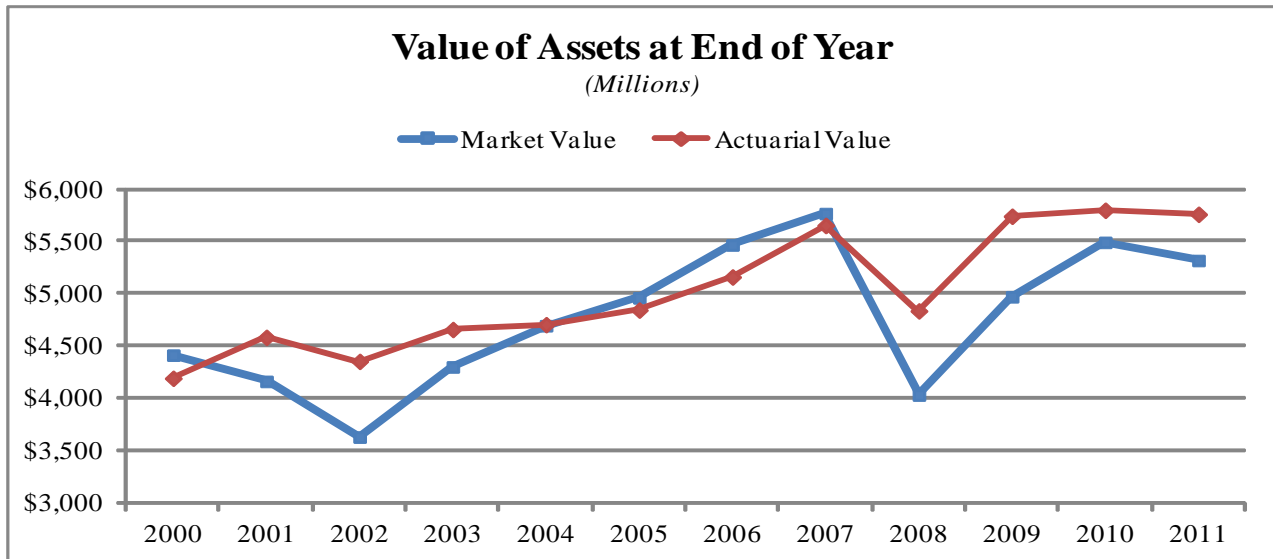
### History of Investment Returns

Plan Year (1)	Market Value (2)	Actuarial Value (3)
2000	-0.99%	16.37%
2001	-4.47%	10.54%
2002	-9.29%	-1.47%
2003	21.00%	8.72%
2004	11.54%	2.77%
2005	8.22%	5.13%
2006	12.63%	8.55%
2007	7.44%	11.41%
2008	-29.63%	-12.85%
2009	23.71%	17.89%
2010	13.48%	3.00%
2011	1.92%	1.25%

**Average returns:**

Last five years:	1.58%	3.61%
Last ten years:	4.90%	4.14%

The Market rates above were provided by the system's investment consultants. These rates are based on unaudited data. The Actuarial rates above are based on the financial information provided to the actuary by NEPC, LLC.



**Solvency Test**

<b>Valuation Date January 1</b>	<b>Total Active Member Contributions (1)</b>	<b>Inactive and Pensioner Liability (2)</b>	<b>Employer Financed Active Accrued Liability (3)</b>	<b>Actuarial Value of Assets</b>	<b>Percentage of Liabilities Covered by Assets</b>		
					<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
2005	\$840,104,000	\$2,592,159,000	\$2,103,929,000	\$4,704,299,324	100%	100%	60.5%
2006	888,544,000	2,354,500,000	1,848,710,000	4,843,861,114	100%	100%	86.6%
2007	941,572,000	2,488,504,000	2,038,153,000	5,160,601,533	100%	100%	84.9%
2008	991,444,000	2,699,505,000	2,325,036,000	5,654,022,877	100%	100%	84.4%
2009	1,036,443,231	2,796,308,000	2,319,370,769	4,835,874,981	100%	100%	43.2%
2010*	1,109,001,753	2,933,630,669	2,519,698,185	5,742,541,676	100%	100%	67.3%
2011	1,161,508,226	3,178,244,317	2,515,890,340	5,799,530,934	100%	100%	58.0%
2012	1,226,273,201	3,455,740,883	2,355,172,581	5,761,221,926	100%	100%	45.8%

\* Excludes Air Guard beginning in 2010

Schedule of Funding Progress

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Valuation Date January 1	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)*	Unfunded AAL (UAAL) [(3) - (2)]	Funded Ratio [(2)/(3)]	Covered Payroll	UAAL as a Percentage of Covered Payroll [(4)/(6)]
2001	\$4,190,440,151	\$3,683,174,000	-\$507,266,151	113.77%	\$897,641,000	-56.51%
2002	4,582,462,306	4,442,033,000	(140,429,306)	103.16%	964,121,000	-14.57%
2003	4,352,423,802	4,718,618,000	366,194,198	92.24%	988,135,000	37.06%
2004	4,657,897,625	5,077,443,000	419,545,375	91.74%	1,032,259,000	40.64%
2005	4,704,299,324	4,902,322,000	198,022,676	95.96%	1,086,736,000	18.22%
2006	4,843,861,114	5,091,763,000	247,901,886	95.13%	1,156,400,000	21.44%
2007	5,160,601,533	5,468,229,000	307,627,467	94.37%	1,285,096,000	23.94%
2008	5,654,022,877	6,015,985,000	361,962,123	93.98%	1,462,474,000	24.75%
2009	4,835,874,981	6,152,122,000	1,316,247,019	78.60%	1,585,728,000	83.01%
2010**	5,742,541,676	6,562,330,607	819,788,931	87.51%	1,697,341,384	48.30%
2011	5,799,530,934	6,855,642,883	1,056,111,949	84.59%	1,728,433,786	61.10%
2012	5,761,221,926	7,037,186,665	1,275,964,739	81.87%	1,756,856,648	72.63%

\* Before 2005, the AAL was based on Maximum COLA liabilities. Between 2005 and 2009, the AAL was based on Break-Even COLA liabilities. Starting in 2010, the AAL is based on No COLA liabilities.

\*\* Excludes Air Guard beginning in 2010

**Schedule of Contributions from the Employer(s) and Other Contributing Entities**

(1)	(2)	(3)	(4)	(5)	(6)
Fiscal Year Ending December 31	GASB NO. 25 Annual Required Contribution (ARC)		Employer Contributions*		Percentage of GASB ARC Contributed
	% of Payroll	Amount**	% of Payroll	Amount	[(5)/(3)]
2004	8.76%	\$90,477,000	5.87%	\$60,573,670	66.95%
2005	10.00%	108,707,000	6.00%	65,191,670	59.97%
2006	5.68%	65,714,000	6.28%	72,664,403	110.58%
2007	5.68%	73,035,000	6.47%	83,149,236	113.85%
2008	5.68%	83,036,000	6.05%	88,451,655	106.52%
2009***	9.15%	145,015,000	15.39%	244,088,705	168.32%
2010****	8.06%	136,689,664	6.17%	104,757,666	76.64%
2011	7.60%	131,260,466	7.09%	122,557,906	93.37%
2012	8.04%	141,299,725	-	-	-

\* Includes other State funding sources

\*\* Before 2005, the AAL was based on Maximum COLA liabilities. Between 2005 and 2009, the AAL was based on Break-Even COLA liabilities.

\*\*\* There was a \$150.6 million legislative appropriation to address the increase in school district employee pay.

\*\*\*\* Excludes Air Guard beginning in 2010

Reconciliation of Participant Data

	Active Participants	Vested Former Participants	Retired Participants	Disabled	Beneficiaries	Participants Due Refunds	Total
<b>Number as of January 1, 2011</b>	<b>35,828</b>	<b>5,269</b>	<b>17,557</b>	<b>247</b>	<b>1,938</b>	<b>18,547</b>	<b>79,386</b>
New participants	3,773	3	5	-	-	338	4,119
Vested Terminations	(755)	757	-	-	-	(2)	-
Retirements	(1,055)	(283)	1,346	-	-	(8)	-
Disability	(12)	-	-	12	-	-	-
Deceased with Beneficiary	-	-	(172)	(3)	175	-	-
Deceased without Beneficiary	(30)	(24)	(314)	(7)	(79)	(14)	(468)
Due refunds	(1,231)	(6)	-	-	-	1,237	-
Lump sum payoffs	(857)	(172)	(1)	-	-	(1,135)	(2,165)
Rehires/Return to Active	410	(154)	-	-	-	(256)	-
Certain Period Expired	-	-	-	-	(9)	-	(9)
Reclassifications	-	-	-	-	-	-	-
Data Corrections	(1)	-	3	-	(10)	-	(8)
<b>Number as of January 1, 2012</b>	<b>36,070</b>	<b>5,390</b>	<b>18,424</b>	<b>249</b>	<b>2,015</b>	<b>18,707</b>	<b>80,855</b>



**Demographic Statistics**

	<u>January 1</u>		<b>Change</b>
	<b>2012</b>	<b>2011</b>	
<u>Active Participants</u>			
Number	36,070	35,828	0.7%
<i>Vested</i>	24,631	24,253	
<i>Not Vested</i>	11,439	11,575	
Average age (years)	46.77	46.77	0.0%
Average service (years)	10.35	10.42	-0.7%
Average Entry Age (years)	36.42	36.35	0.2%
Total payroll*	\$1,756,856,648	\$1,728,433,786	1.6%
Average projected salary*	\$48,707	\$48,243	1.0%
Total employee contributions with interest	\$1,226,273,201	\$1,161,508,226	5.6%
Average employee contributions with interest	\$33,997	\$32,419	4.9%
<u>Vested Former Participants</u>			
Number	5,390	5,269	2.3%
Average age (years)	52.26	52.25	0.0%
Total employee contributions with interest	\$155,633,071	\$149,018,581	4.4%
Average employee contributions with interest	\$28,874	\$28,282	2.1%
<u>Service Retirees</u>			
Number	18,424	17,557	4.9%
Average age (years)	71.23	71.18	0.1%
Total annual benefits	\$310,190,970	\$284,215,872	9.1%
Average annual benefit	\$16,836	\$16,188	4.0%
<u>Disability Retirees</u>			
Number	249	247	0.8%
Average age (years)	62.16	61.74	0.7%
Total annual benefits	\$3,683,646	\$3,580,970	2.9%
Average annual benefit	\$14,794	\$14,498	2.0%
<u>Beneficiaries</u>			
Number	2,015	1,938	4.0%
Average age (years)	75.05	74.55	0.7%
Total annual benefits	\$25,035,285	\$23,615,737	6.0%
Average annual benefit	\$12,424	\$12,186	2.0%
Participants Due Refunds	18,707	18,547	0.9%

\* Payroll shown is projected for the upcoming valuation year

**Distribution of Male Active Members by Age and by Years of Service**

Average Age = 47.4      Average Service = 10.8

Age Last Birthday		Whole Years of Service at Valuation Date							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
<b>Less than 20</b>	Count	16	-	-	-	-	-	-	16
	Avg. Salary	14,268	-	-	-	-	-	-	14,268
<b>20-24</b>	Count	285	5	-	-	-	-	-	290
	Avg. Salary	29,796	\$44,313	-	-	-	-	-	30,046
<b>25-29</b>	Count	772	141	4	-	-	-	-	917
	Avg. Salary	40,326	46,848	\$39,071	-	-	-	-	41,324
<b>30-34</b>	Count	744	426	79	-	-	-	-	1,249
	Avg. Salary	45,243	54,517	57,423	-	-	-	-	49,177
<b>35-39</b>	Count	549	395	264	48	-	-	-	1,256
	Avg. Salary	47,614	54,439	60,748	57,973	-	-	-	52,917
<b>40-44</b>	Count	551	352	312	248	64	2	-	1,529
	Avg. Salary	45,754	54,828	61,249	67,433	\$65,872	*	-	55,379
<b>45-49</b>	Count	499	347	235	230	234	96	15	1,656
	Avg. Salary	46,871	53,307	57,359	65,282	68,363	62,683	\$67,383	56,404
<b>50-54</b>	Count	509	357	266	236	258	280	135	2,041
	Avg. Salary	43,610	50,017	54,285	62,115	64,063	71,574	69,450	56,393
<b>55-59</b>	Count	450	358	230	191	235	276	301	2,041
	Avg. Salary	44,083	49,743	52,435	57,910	65,383	69,310	72,760	57,404
<b>60-64</b>	Count	276	250	175	134	161	146	224	1,366
	Avg. Salary	40,163	49,302	51,488	58,745	65,484	66,090	70,736	55,878
<b>65-69</b>	Count	102	94	52	44	32	33	52	409
	Avg. Salary	31,108	46,595	47,734	55,087	61,336	73,430	73,918	50,584
<b>70 &amp; Over</b>	Count	46	50	27	18	5	10	11	167
	Avg. Salary	22,634	31,715	33,615	33,422	59,776	56,278	75,174	34,878
<b>Totals</b>	Count	<b>4,799</b>	<b>2,775</b>	<b>1,644</b>	<b>1,149</b>	<b>989</b>	<b>843</b>	<b>738</b>	<b>12,937</b>
	Avg. Salary	<b>\$42,839</b>	<b>\$51,642</b>	<b>\$56,094</b>	<b>\$61,913</b>	<b>\$65,633</b>	<b>\$68,728</b>	<b>\$71,549</b>	<b>53,173</b>

\* Average Salary represents unprojected salary earned in 2011 and is not shown for cells representing less than or equal to three participants

**Distribution of Female Active Members by Age and by Years of Service**

Average Age = 46.4      Average Service = 10.1

Age Last Birthday		Whole Years of Service at Valuation Date							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
<b>Less than 20</b>	Count	53	-	-	-	-	-	-	53
	Avg. Salary	13,821	-	-	-	-	-	-	13,821
<b>20-24</b>	Count	671	6	-	-	-	-	-	677
	Avg. Salary	27,021	\$34,095	-	-	-	-	-	27,083
<b>25-29</b>	Count	1,619	277	2	-	-	-	-	1,898
	Avg. Salary	35,278	42,748	*	-	-	-	-	36,384
<b>30-34</b>	Count	1,392	728	111	1	-	-	-	2,232
	Avg. Salary	34,487	46,337	47,004	*	-	-	-	38,978
<b>35-39</b>	Count	1,125	665	443	75	3	-	-	2,311
	Avg. Salary	30,843	45,463	54,137	54,058	*	-	-	40,286
<b>40-44</b>	Count	1,123	722	508	311	69	3	-	2,736
	Avg. Salary	31,699	41,185	50,164	60,339	59,323	*	-	41,602
<b>45-49</b>	Count	882	735	583	355	248	108	13	2,924
	Avg. Salary	30,345	39,651	43,651	52,573	61,952	57,873	\$53,184	41,835
<b>50-54</b>	Count	845	725	723	526	372	396	211	3,798
	Avg. Salary	31,554	36,789	41,119	47,697	56,514	61,811	61,055	43,848
<b>55-59</b>	Count	695	610	576	557	498	401	425	3,762
	Avg. Salary	31,410	39,009	41,236	45,984	50,634	58,671	65,672	45,626
<b>60-64</b>	Count	313	354	291	289	307	246	292	2,092
	Avg. Salary	29,446	36,271	38,373	42,816	48,375	53,298	59,330	43,443
<b>65-69</b>	Count	101	100	92	57	54	57	61	522
	Avg. Salary	21,957	33,115	38,489	34,317	45,768	48,258	53,951	37,432
<b>70 &amp; Over</b>	Count	43	33	15	11	11	5	10	128
	Avg. Salary	12,380	20,403	26,842	44,390	33,251	30,823	38,521	23,450
<b>Totals</b>	Count	<b>8,862</b>	<b>4,955</b>	<b>3,344</b>	<b>2,182</b>	<b>1,562</b>	<b>1,216</b>	<b>1,012</b>	<b>23,133</b>
	Avg. Salary	<b>\$31,765</b>	<b>\$40,804</b>	<b>\$44,505</b>	<b>\$49,058</b>	<b>\$53,469</b>	<b>\$57,909</b>	<b>\$61,744</b>	<b>41,325</b>

\* Average Salary represents unprojected salary earned in 2011 and is not shown for cells representing less than or equal to three participants

**Distribution of Total Active Members by Age and by Years of Service**

Average Age = 46.8      Average Service = 10.4

Age Last Birthday		Whole Years of Service at Valuation Date							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
<b>Less than 20</b>	Count	69	-	-	-	-	-	-	69
	Avg. Salary	\$13,924	-	-	-	-	-	-	\$13,924
<b>20-24</b>	Count	956	11	-	-	-	-	-	967
	Avg. Salary	27,848	\$38,740	-	-	-	-	-	27,972
<b>25-29</b>	Count	2,391	418	6	-	-	-	-	2,815
	Avg. Salary	36,908	44,131	\$42,949	-	-	-	-	37,993
<b>30-34</b>	Count	2,136	1,154	190	1	-	-	-	3,481
	Avg. Salary	38,233	49,357	51,336	*	-	-	-	42,637
<b>35-39</b>	Count	1,674	1,060	707	123	3	-	-	3,567
	Avg. Salary	36,343	48,808	56,606	55,586	*	-	-	44,734
<b>40-44</b>	Count	1,674	1,074	820	559	133	5	-	4,265
	Avg. Salary	36,325	45,657	54,382	63,487	62,475	\$52,268	-	46,541
<b>45-49</b>	Count	1,381	1,082	818	585	482	204	28	4,580
	Avg. Salary	36,316	44,030	47,589	57,569	65,065	60,137	\$60,791	47,103
<b>50-54</b>	Count	1,354	1,082	989	762	630	676	346	5,839
	Avg. Salary	36,086	41,153	44,660	52,162	59,606	65,855	64,330	48,233
<b>55-59</b>	Count	1,145	968	806	748	733	677	726	5,803
	Avg. Salary	36,391	42,979	44,432	49,029	55,363	63,008	68,611	49,768
<b>60-64</b>	Count	589	604	466	423	468	392	516	3,458
	Avg. Salary	34,468	41,664	43,298	47,862	54,261	58,062	64,281	48,355
<b>65-69</b>	Count	203	194	144	101	86	90	113	931
	Avg. Salary	26,555	39,646	41,827	43,365	51,561	57,488	63,139	43,209
<b>70 &amp; Over</b>	Count	89	83	42	29	16	15	21	295
	Avg. Salary	17,679	27,218	31,196	37,582	41,540	47,793	57,720	29,920
<b>Totals</b>	Count	<b>13,661</b>	<b>7,730</b>	<b>4,988</b>	<b>3,331</b>	<b>2,551</b>	<b>2,059</b>	<b>1,750</b>	<b>36,070</b>
	Avg. Salary	<b>\$35,655</b>	<b>\$44,695</b>	<b>\$48,325</b>	<b>\$53,493</b>	<b>\$58,185</b>	<b>\$62,339</b>	<b>\$65,879</b>	<b>\$45,575</b>

\* Average Salary represents unprojected salary earned in 2011 and is not shown for cells representing less than or equal to three participants

**Distribution of Male Deferred Members by Age and by Years of Service**

Average Age = 52.2      Average Service = 9.7

Age Last Birthday	Whole Years of Service at Valuation Date							Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
<b>Less than 20</b>	-	-	-	-	-	-	-	-
<b>20-24</b>	-	-	-	-	-	-	-	-
<b>25-29</b>	13	6	-	-	-	-	-	19
<b>30-34</b>	23	31	4	-	-	-	-	58
<b>35-39</b>	33	70	9	-	-	-	-	112
<b>40-44</b>	42	106	21	6	-	-	-	175
<b>45-49</b>	39	118	50	23	7	2	-	239
<b>50-54</b>	47	155	80	45	29	8	-	364
<b>55-59</b>	57	156	115	80	31	12	1	452
<b>60-64</b>	43	85	21	21	13	2	1	186
<b>65-69</b>	12	25	10	3	2	2	1	55
<b>70 &amp; Over</b>	10	15	8	1	-	-	-	34
<b>Totals</b>	<b>319</b>	<b>767</b>	<b>318</b>	<b>179</b>	<b>82</b>	<b>26</b>	<b>3</b>	<b>1,694</b>

**Distribution of Female Deferred Members by Age and by Years of Service**

Average Age = 52.3      Average Service = 9.1

Age Last Birthday	Whole Years of Service at Valuation Date							Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
<b>Less than 20</b>	-	-	-	-	-	-	-	-
<b>20-24</b>	4	-	-	-	-	-	-	4
<b>25-29</b>	25	15	-	-	-	-	-	40
<b>30-34</b>	64	102	6	-	-	-	-	172
<b>35-39</b>	72	143	19	-	-	-	-	234
<b>40-44</b>	75	187	51	11	-	-	-	324
<b>45-49</b>	99	267	108	30	6	3	-	513
<b>50-54</b>	121	363	173	70	40	12	2	781
<b>55-59</b>	123	428	230	112	65	19	3	980
<b>60-64</b>	75	199	86	43	25	5	1	434
<b>65-69</b>	38	71	19	5	1	1	1	136
<b>70 &amp; Over</b>	17	48	10	1	1	1	-	78
<b>Totals</b>	<b>713</b>	<b>1,823</b>	<b>702</b>	<b>272</b>	<b>138</b>	<b>41</b>	<b>7</b>	<b>3,696</b>

**Distribution of Total Deferred Members by Age and by Years of Service**

Average Age = 52.3      Average Service = 9.3

Age Last Birthday	Whole Years of Service at Valuation Date							Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
<b>Less than 20</b>	-	-	-	-	-	-	-	-
<b>20-24</b>	4	-	-	-	-	-	-	4
<b>25-29</b>	38	21	-	-	-	-	-	59
<b>30-34</b>	87	133	10	-	-	-	-	230
<b>35-39</b>	105	213	28	-	-	-	-	346
<b>40-44</b>	117	293	72	17	-	-	-	499
<b>45-49</b>	138	385	158	53	13	5	-	752
<b>50-54</b>	168	518	253	115	69	20	2	1,145
<b>55-59</b>	180	584	345	192	96	31	4	1,432
<b>60-64</b>	118	284	107	64	38	7	2	620
<b>65-69</b>	50	96	29	8	3	3	2	191
<b>70 &amp; Over</b>	27	63	18	2	1	1	-	112
<b>Totals</b>	<b>1,032</b>	<b>2,590</b>	<b>1,020</b>	<b>451</b>	<b>220</b>	<b>67</b>	<b>10</b>	<b>5,390</b>

**Schedule of Pension Recipients Added to and Removed from Rolls**

<b>Fiscal Year Ending December 31</b>	<b>Added to Rolls*</b>		<b>Removed from Rolls</b>		<b>Total</b>		<b>Percent Increase in Annual Pension Benefits</b>	<b>Average Annual Pension Benefit</b>
	<b>Count</b>	<b>Annual Pension Benefits</b>	<b>Count</b>	<b>Annual Pension Benefits</b>	<b>Count</b>	<b>Annual Pension Benefits</b>		
2008	1,290	\$26,985,322	552	\$3,650,746	18,333	\$268,901,376	9.50%	\$14,668
2009	1,160	\$24,062,484	577	\$6,292,131	18,916	\$286,671,729	6.61%	\$15,155
2010	1,388	\$31,055,004	562	\$6,314,155	19,742	\$311,412,579	8.63%	\$15,774
2011	1,538	\$34,517,321	592	\$7,019,999	20,688	\$338,909,901	8.83%	\$16,382

\* Includes cost of living increases



**Retired and Disabled Members by Option Code**

Option Code*	Count			Monthly Benefit		
	Male	Female	Total	Male	Female	Total
<b>1</b>	1,727	5,108	6,835	2,608,172	5,700,811	8,308,983
<b>2</b>	3,601	2,143	5,744	6,272,506	2,663,310	8,935,816
<b>2P</b>	963	1,199	2,162	1,567,074	1,777,310	3,344,385
<b>3</b>	491	402	893	1,026,727	566,505	1,593,232
<b>3P</b>	232	380	612	528,653	695,674	1,224,326
<b>4</b>	304	517	821	391,699	553,187	944,885
<b>5</b>	391	1,215	1,606	560,166	1,244,424	1,804,590
<b>Total</b>	<b>7,709</b>	<b>10,964</b>	<b>18,673</b>	<b>12,954,997</b>	<b>13,201,221</b>	<b>26,156,218</b>
<b>Beneficiaries</b>	<b>384</b>	<b>1,631</b>	<b>2,015</b>	<b>339,813</b>	<b>1,746,461</b>	<b>2,086,274</b>
<b>Grand Total</b>	<b>8,093</b>	<b>12,595</b>	<b>20,688</b>	<b>13,294,810</b>	<b>14,947,682</b>	<b>28,242,492</b>

\* See Optional Forms of Payment in Appendix B

**Retirees, Disabled Members, and Beneficiaries by Amount and Option Code**

<b>Males</b>	<b>Option Code</b>							
<b>Benefit Amount</b>	<b>1</b>	<b>2</b>	<b>2P</b>	<b>3</b>	<b>3P</b>	<b>4</b>	<b>5</b>	<b>Total</b>
<b>Under \$200</b>	112	155	59	3	3	34	92	458
<b>\$200-\$399</b>	198	313	96	18	18	36	132	811
<b>\$400-\$599</b>	194	322	105	31	11	37	108	808
<b>\$600-\$799</b>	154	279	75	29	14	29	82	662
<b>\$800-\$999</b>	139	231	69	23	10	21	59	552
<b>\$1,000-\$1,499</b>	236	497	124	87	27	50	93	1,114
<b>\$1,500-\$1,999</b>	189	445	91	59	20	32	48	884
<b>\$2,000-\$2,499</b>	153	411	116	69	35	19	58	861
<b>\$2,500 &amp; over</b>	352	948	228	172	94	46	103	1,943
<b>Total</b>	<b>1,727</b>	<b>3,601</b>	<b>963</b>	<b>491</b>	<b>232</b>	<b>304</b>	<b>775</b>	<b>8,093</b>
<b>Females</b>								
<b>Benefit Amount</b>	<b>1</b>	<b>2</b>	<b>2P</b>	<b>3</b>	<b>3P</b>	<b>4</b>	<b>5</b>	<b>Total</b>
<b>Under \$200</b>	502	203	79	12	8	54	302	1,160
<b>\$200-\$399</b>	796	321	144	47	18	97	465	1,888
<b>\$400-\$599</b>	701	252	110	39	32	82	402	1,618
<b>\$600-\$799</b>	593	188	112	45	32	65	325	1,360
<b>\$800-\$999</b>	419	176	90	25	30	42	251	1,033
<b>\$1,000-\$1,499</b>	757	332	172	75	60	59	417	1,872
<b>\$1,500-\$1,999</b>	469	208	130	59	46	28	265	1,205
<b>\$2,000-\$2,499</b>	333	153	124	46	45	34	165	900
<b>\$2,500 &amp; over</b>	538	310	238	54	109	56	254	1,559
<b>Total</b>	<b>5,108</b>	<b>2,143</b>	<b>1,199</b>	<b>402</b>	<b>380</b>	<b>517</b>	<b>2,846</b>	<b>12,595</b>
<b>Males &amp; Females</b>								
<b>Benefit Amount</b>	<b>1</b>	<b>2</b>	<b>2P</b>	<b>3</b>	<b>3P</b>	<b>4</b>	<b>5</b>	<b>Total</b>
<b>Under \$200</b>	614	358	138	15	11	88	394	1,618
<b>\$200-\$399</b>	994	634	240	65	36	133	597	2,699
<b>\$400-\$599</b>	895	574	215	70	43	119	510	2,426
<b>\$600-\$799</b>	747	467	187	74	46	94	407	2,022
<b>\$800-\$999</b>	558	407	159	48	40	63	310	1,585
<b>\$1,000-\$1,499</b>	993	829	296	162	87	109	510	2,986
<b>\$1,500-\$1,999</b>	658	653	221	118	66	60	313	2,089
<b>\$2,000-\$2,499</b>	486	564	240	115	80	53	223	1,761
<b>\$2,500 &amp; over</b>	890	1,258	466	226	203	102	357	3,502
<b>Total</b>	<b>6,835</b>	<b>5,744</b>	<b>2,162</b>	<b>893</b>	<b>612</b>	<b>821</b>	<b>3,621</b>	<b>20,688</b>

**Retirees, Disabled Members, and Beneficiaries by Age and Option Code**

Average Age Male = 71.2

Average Age Female = 71.7

Average Age Total = 71.5

<b>Males</b>	<b>Option Code</b>							
<b>Age Last Birthday</b>	<b>1</b>	<b>2</b>	<b>2P</b>	<b>3</b>	<b>3P</b>	<b>4</b>	<b>5</b>	<b>Total</b>
<b>Under 50</b>	1	2	-	-	-	-	17	20
<b>50-54</b>	20	35	7	-	1	6	11	80
<b>55-59</b>	112	196	63	18	11	15	38	453
<b>60-64</b>	281	654	284	64	57	60	116	1,516
<b>65-69</b>	366	866	302	90	74	68	154	1,920
<b>70-74</b>	340	718	180	89	50	54	149	1,580
<b>75-79</b>	246	534	93	95	26	48	95	1,137
<b>80-84</b>	199	360	26	76	13	30	109	813
<b>85 &amp; over</b>	162	236	8	59	-	23	86	574
<b>Total</b>	<b>1,727</b>	<b>3,601</b>	<b>963</b>	<b>491</b>	<b>232</b>	<b>304</b>	<b>775</b>	<b>8,093</b>
<b>Females</b>								
<b>Age Last Birthday</b>	<b>1</b>	<b>2</b>	<b>2P</b>	<b>3</b>	<b>3P</b>	<b>4</b>	<b>5</b>	<b>Total</b>
<b>Under 50</b>	2	3	-	-	-	-	24	29
<b>50-54</b>	36	28	13	2	3	7	26	115
<b>55-59</b>	236	182	143	29	34	33	123	780
<b>60-64</b>	842	525	435	82	108	112	332	2,436
<b>65-69</b>	1,064	550	386	95	133	121	459	2,808
<b>70-74</b>	942	355	146	80	62	93	512	2,190
<b>75-79</b>	765	235	59	41	32	76	480	1,688
<b>80-84</b>	620	155	17	40	7	47	436	1,322
<b>85 &amp; over</b>	601	110	-	33	1	28	454	1,227
<b>Total</b>	<b>5,108</b>	<b>2,143</b>	<b>1,199</b>	<b>402</b>	<b>380</b>	<b>517</b>	<b>2,846</b>	<b>12,595</b>
<b>Males &amp; Females</b>								
<b>Age Last Birthday</b>	<b>1</b>	<b>2</b>	<b>2P</b>	<b>3</b>	<b>3P</b>	<b>4</b>	<b>5</b>	<b>Total</b>
<b>Under 50</b>	3	5	-	-	-	-	41	49
<b>50-54</b>	56	63	20	2	4	13	37	195
<b>55-59</b>	348	378	206	47	45	48	161	1,233
<b>60-64</b>	1,123	1,179	719	146	165	172	448	3,952
<b>65-69</b>	1,430	1,416	688	185	207	189	613	4,728
<b>70-74</b>	1,282	1,073	326	169	112	147	661	3,770
<b>75-79</b>	1,011	769	152	136	58	124	575	2,825
<b>80-84</b>	819	515	43	116	20	77	545	2,135
<b>85 &amp; over</b>	763	346	8	92	1	51	540	1,801
<b>Total</b>	<b>6,835</b>	<b>5,744</b>	<b>2,162</b>	<b>893</b>	<b>612</b>	<b>821</b>	<b>3,621</b>	<b>20,688</b>

**Pensions Awarded in 2011 by Option Code**

Average Age = 71.5

<b>Males &amp; Females</b>	<b>Option Code</b>							
<b>Benefit Amount</b>	<b>1</b>	<b>2</b>	<b>2P</b>	<b>3</b>	<b>3P</b>	<b>4</b>	<b>5</b>	<b>Total</b>
<b>Under \$200</b>	34	18	14	1	0	4	23	94
<b>\$200-\$399</b>	54	30	22	2	3	10	38	159
<b>\$400-\$599</b>	44	24	23	3	3	5	41	143
<b>\$600-\$799</b>	29	42	17	2	2	6	23	121
<b>\$800-\$999</b>	27	10	10	3	1	5	18	74
<b>\$1,000-\$1,499</b>	47	48	36	11	2	7	36	187
<b>\$1,500-\$1,999</b>	46	46	31	7	5	4	20	159
<b>\$2,000-\$2,499</b>	31	32	19	8	2	5	21	118
<b>\$2,500 &amp; over</b>	119	177	77	19	32	14	45	483
<b>Total</b>	<b>431</b>	<b>427</b>	<b>249</b>	<b>56</b>	<b>50</b>	<b>60</b>	<b>265</b>	<b>1,538</b>
<b>Males &amp; Females</b>								
<b>Age Last Birthday</b>	<b>1</b>	<b>2</b>	<b>2P</b>	<b>3</b>	<b>3P</b>	<b>4</b>	<b>5</b>	<b>Total</b>
<b>Under 50</b>	3	0	0	0	0	0	4	7
<b>50-54</b>	16	25	10	0	1	6	5	63
<b>55-59</b>	83	102	52	17	19	8	15	296
<b>60-64</b>	202	193	138	26	21	29	76	685
<b>65-69</b>	96	89	41	11	9	11	56	313
<b>70-74</b>	20	13	7	1	0	4	39	84
<b>75-79</b>	9	4	1	0	0	2	29	45
<b>80-84</b>	2	0	0	0	0	0	27	29
<b>85 &amp; over</b>	0	1	0	1	0	0	14	16
<b>Total</b>	<b>431</b>	<b>427</b>	<b>249</b>	<b>56</b>	<b>50</b>	<b>60</b>	<b>265</b>	<b>1,538</b>

**Retirees and Disabled Members by Service at Retirement and Years Since Retirement**  
(Average Monthly Benefit)

Average Service at Retirement = 19.2      Average Years Since Retirement = 11.5

Service at Retirement		Years Elapsed Since Retirement							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
<b>Less than 5</b>	Count	225	192	134	115	141	86	52	945
	Avg. Benefit	\$245	\$271	\$1,353	\$601	\$159	\$130	\$144	\$191
<b>5-9</b>	Count	775	649	411	420	395	212	180	3,042
	Avg. Benefit	\$437	\$374	\$357	\$314	\$334	\$284	\$268	\$362
<b>10-14</b>	Count	699	582	525	501	423	175	137	3,042
	Avg. Benefit	\$787	\$655	\$636	\$600	\$577	\$510	\$418	\$643
<b>15-19</b>	Count	721	605	572	553	305	162	86	3,004
	Avg. Benefit	\$1,276	\$1,005	\$967	\$918	\$935	\$763	\$647	\$1,016
<b>20-24</b>	Count	767	643	451	413	254	104	58	2,690
	Avg. Benefit	\$1,819	\$1,449	\$1,374	\$1,293	\$1,283	\$1,126	\$836	\$1,477
<b>25-29</b>	Count	1,087	698	477	331	180	111	33	2,917
	Avg. Benefit	\$2,598	\$2,166	\$2,028	\$1,940	\$1,707	\$1,548	\$1,008	\$2,214
<b>30-34</b>	Count	866	553	352	359	144	63	4	2,341
	Avg. Benefit	\$3,412	\$2,812	\$2,651	\$2,716	\$2,345	\$1,995	\$1,104	\$2,942
<b>35 &amp; Over</b>	Count	302	143	69	118	45	12	3	692
	Avg. Benefit	\$4,207	\$3,467	\$3,218	\$3,213	\$3,062	\$2,335	\$1,123	\$3,666
<b>Totals</b>	Count	<b>5,442</b>	<b>4,065</b>	<b>2,991</b>	<b>2,810</b>	<b>1,887</b>	<b>925</b>	<b>553</b>	<b>18,673</b>
	Avg. Benefit	<b>\$1,894</b>	<b>\$1,418</b>	<b>\$1,273</b>	<b>\$1,242</b>	<b>\$950</b>	<b>\$786</b>	<b>\$467</b>	<b>\$1,400</b>

**Retirees and Disabled Members by Year of Retirement**

Total = 18,673

<b>Year of Retirement</b>	<b>Count</b>	<b>Year of Retirement</b>	<b>Count</b>
<b>Under 1960</b>	-	<b>1986</b>	262
<b>1960</b>	-	<b>1987</b>	443
<b>1961</b>	-	<b>1988</b>	373
<b>1962</b>	-	<b>1989</b>	336
<b>1963</b>	-	<b>1990</b>	372
<b>1964</b>	-	<b>1991</b>	368
<b>1965</b>	-	<b>1992</b>	500
<b>1966</b>	-	<b>1993</b>	454
<b>1967</b>	1	<b>1994</b>	493
<b>1968</b>	-	<b>1995</b>	825
<b>1969</b>	-	<b>1996</b>	522
<b>1970</b>	-	<b>1997</b>	532
<b>1971</b>	19	<b>1998</b>	547
<b>1972</b>	11	<b>1999</b>	580
<b>1973</b>	16	<b>2000</b>	632
<b>1974</b>	25	<b>2001</b>	705
<b>1975</b>	28	<b>2002</b>	703
<b>1976</b>	38	<b>2003</b>	787
<b>1977</b>	57	<b>2004</b>	882
<b>1978</b>	69	<b>2005</b>	826
<b>1979</b>	83	<b>2006</b>	848
<b>1980</b>	91	<b>2007</b>	944
<b>1981</b>	115	<b>2008</b>	1,105
<b>1982</b>	105	<b>2009</b>	956
<b>1983</b>	128	<b>2010</b>	1,165
<b>1984</b>	177	<b>2011 &amp; Over</b>	1,322
<b>1985</b>	228		

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## **APPENDIX A**

### **SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS**

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## Summary of Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2012 actuarial valuation report.

### 1. Valuation Date

The valuation date for any given year is January 1<sup>st</sup>, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

### 2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level percentage of payroll. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) the rate that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 8.00%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and an accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.



- d. The unfunded actuarial accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 30 years from the valuation date.

3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

4. Economic Assumptions

a. Investment return

8.00% per year, compounded annually, composed of an assumed 3.50% inflation rate and a 4.50% net real rate of return. This rate represents the assumed return, net of investment expenses.

b. Salary increase rate

Age	Rate
20	9.50%
25	8.30%
30	6.90%
35	6.05%
40	5.60%
45	5.35%
50	5.00%
55	5.00%
60	5.00%

- c. Payroll growth rate: In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 4.50% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

5. Demographic Assumptions

a. Rates Before Retirement

Healthy Mortality: 1994 Group Annuity Mortality with margins projected (scale AA) to 2008

Disabled Mortality: 1979 PBGC Disabled Lives Receiving Social Security

Age	Death		Disability	Withdrawal		Withdrawal		
	Male	Female		Ultimate		Service	First five years	
				Male	Female		Male	Female
20	0.04%	0.02%	0.01%	10.00%	11.00%	1	25%	28%
25	0.06%	0.02%	0.01%	10.00%	11.00%	2	18%	22%
30	0.07%	0.03%	0.01%	10.00%	11.00%	3	12%	15%
35	0.08%	0.04%	0.01%	4.83%	5.83%	4	10%	13%
40	0.10%	0.06%	0.01%	4.43%	5.43%	5	10%	12%
45	0.13%	0.08%	0.03%	4.21%	5.21%			
50	0.20%	0.11%	0.08%	4.10%	5.09%			
55	0.34%	0.21%	0.20%	4.02%	5.03%			
60	0.64%	0.41%	0.20%	4.00%	5.00%			

Retirement Rates

Age	Service										
	<=25	26	27	28	29	30	31	32	33	34	>=35
<=50	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	10%
51	3%	3%	3%	3%	3%	3%	3%	3%	3%	10%	10%
52	3%	3%	3%	3%	3%	3%	3%	3%	10%	10%	10%
53	3%	3%	3%	3%	3%	3%	3%	10%	10%	10%	10%
54	4%	4%	4%	4%	4%	4%	10%	10%	10%	10%	10%
55	6%	6%	6%	6%	6%	10%	10%	10%	10%	10%	10%
56	6%	6%	6%	6%	10%	10%	10%	10%	10%	10%	10%
57	7%	7%	7%	10%	10%	10%	10%	10%	10%	10%	10%
58	7%	7%	10%	10%	10%	10%	10%	10%	10%	10%	10%
59	10%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
60	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
61	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
62	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
63	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
64	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
65	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%
66	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
67	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
68	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
69	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
70	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

6. Other Assumptions

- a. Percent married: 85.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- d. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit. It is assumed that 25% of active members who terminate with a deferred vested benefit will elect to have their contributions refunded.
- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is age 60.
- f. No benefit data is available for members entitled to deferred benefits. The present value of benefits expected to be paid to vested inactive non-retired members is approximated using the data provided.
- g. There will be no recoveries once disabled.
- h. No surviving spouse will remarry.
- i. Administrative expenses: Assumed to increase 6.5% per year. Expenses for the valuation year are projected at this rate based on the average adjusted expenses paid for the prior two years.
- j. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- k. Decrement timing: Decrements of all types are assumed to occur mid-year.
- l. 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.

- m. Decrement relativity: Decrement rates are converted to probabilities in order to account for multiple decrements.
- n. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.
- o. Benefit Service: All members are assumed to accrue one year of service each year. Exact fractional service is used to determine the amount of benefit payable.
- p. Actuarially Sound is defined, with regard to Cost-of-Living Improvements, as the “Break-Even” COLA which produces an ARC equal to the statutory contribution.

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## **APPENDIX B**

### SUMMARY OF PLAN PROVISIONS

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## Summary of Plan Provisions

<b>Covered Members</b>	Any full-time or regular part-time employee of an employer as defined under W.S. 9-3-402(a)(vii)
<b>Tier</b>	Members who join the State of Wyoming Retirement System by August 31, 2012 are in Tier 1, while members who join on or after September 1, 2012 are in Tier 2.
<b>Final Average Salary</b>	For Tier 1 member: employee's average annual salary for the highest paid three continuous years of service. For Tier 2 member: employee's average annual salary for the highest paid five continuous years of service.
<b>Service Retirement</b>	
Eligibility	Tier 1 members may retire upon normal retirement on the date he/she attains age 60 with four or more years of service while Tier 2 members may retire upon normal retirement on the date he/she attains age 65 with four or more years of service. All employees may also retire upon normal retirement on the date that the sum of the member's age and service is at least 85. Tier 1 members are eligible for a reduced benefit at age 50 with four or more years of service and Tier 2 members are eligible for a reduced benefit at age 55 with four or more years of service. All members are eligible for a reduced benefit at any age with 25 or more years of service.
Monthly Benefit	For Tier 1 member: 2.125% of employee's Final Average Salary for each year of credited service for the first 15 years of service credit plus 2.25% of Final Average Salary for any years of service credit exceeding 15 years. For Tier 2 member: 2.000% of employee's Final (5-year) Average Salary for each year of credited service. This amount is reduced by 5.0% per year that the employee is under age 60 for Tier 1 and under age 65 for Tier 2. However, members retiring with a combined age and service of at least 85 receive an unreduced benefit. Employees hired prior to July 1, 1981 may be entitled to benefits earned under a different formula.
Vesting	Any employee who has left employment with four or more years of service, and who has not withdrawn accumulated contributions, is eligible to receive the above benefit or can elect to receive a lump-sum refund of employee contributions with interest. An employee who terminates with less than four years of service is only eligible for the lump-sum benefit.
<b>Disability Benefit</b>	
Eligibility	Ten or more years of service.
Benefit	Service retirement benefit earned as of the date of disability, payable immediately.

### Pre-retirement Death Benefit

Eligibility	No age or service requirements.
Benefit	A lump sum equal to two times the employee contributions with interest. If the employee is vested, the beneficiary can elect, in lieu of this lump sum, to receive a monthly annuity equal to the actuarial equivalent of the retirement benefit that would be due the employee.

### Contributions

Employee	7.00% of salary.
Employer	7.12% of salary.
Interest	5.50% annually.

### Cost-of-Living Improvements

Maximum	3.00% per year, applied annually on July 1 following the two-year anniversary of retirement.
Actuarially Sound	The cost-of-living improvement for a given year is determined to be the highest allowable, up to the maximum, in which the Wyoming Retirement System can project to pay indefinitely while maintaining actuarial soundness of the plan. Starting 2012, the cost-of-living improvement may be granted only if the funded ratio is shown to stay at least 100%.

### Optional Forms of Payment

Option 1 (normal form)	Monthly benefit for life with a lump-sum death benefit equal to the excess (if any) of the employee contributions with interest over the total benefits received.
Option 2	Monthly benefit for life. Upon death, 100% of the benefit continues to be paid to the beneficiary.
Option 2P	Monthly benefit for life. Upon death, 100% of the benefit continues to be paid to the beneficiary. Benefit reverts to Option 1 amount but without the cash refund feature upon beneficiary death.
Option 3	Monthly benefit for life. Upon death, 50% of the benefit continues to be paid to the beneficiary.
Option 3P	Monthly benefit for life. Upon death, 50% of the benefit continues to be paid to the beneficiary. Benefit reverts to Option 1 amount but without the cash refund feature upon beneficiary death.
Option 4	Monthly benefit for life with a guarantee of 120 monthly payments
Option 5	The largest possible monthly benefit payable for life with no lump-sum death benefit.