## ?1R $\begin{aligned} & \text { Gabriel Roeder Smith \& Company } \\ & \text { Consultants \& Actuaries }\end{aligned}$

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, 2015

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, 2015. This report describes the current actuarial condition of the Fund, determines the calculated employer contribution rate (the actuarially determined contribution 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 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. The funded ratio, based upon the assumption of no further cost-of-living adjustment increases as of January 1, 2015 is $78.96 \%$. In the January 1, 2014 valuation, this funded ratio was $77.62 \%$. On a market value of assets basis, the funded ratio decreased from $81.10 \%$ as of January 1, 2014 to $79.71 \%$ as of January 1, 2015.

## Benefit provisions

The benefit provisions reflected in this valuation are those which were in effect on January 1, 2015, including recent legislation that affects benefits for members who join the State of Wyoming Retirement System later than August 31, 2012. W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above $100 \%$ plus a margin for adverse experience throughout the life of the benefit change. Therefore, this valuation does not include any liability for future cost-of-living increases. Duty death and disability benefits for park rangers were added in this last year. Under Enrolled Act No. 55, Senate File No. 0058, eligible peace officers under W.S. 6-1-104(a)(vi)(P) shall be eligible for disability and death benefits under that section if the disabilities or death are duty connected.

State of Wyoming Retirement System
April 27, 2015
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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 actuarial valuation were adopted by the Board effective February 22, 2013 and were first utilized with the January 1, 2014 valuation report. For a detailed description of the experience related to these assumptions as well as the rationale for any changes please see our latest Wyoming Retirement System Actuarial Experience Study Report. Our experience study report is dated February 21, 2013 and it covers the five-year investigation period ending December 31, 2011.

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 the report are intended to provide information for rational decision making.

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, 2015 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, 2015 was prepared by Wyoming Retirement System and is the responsibility of management. McGee, Hearne \& Paiz, LLP provided us the asset and financial information and will opine on Wyoming Retirement System's statements.

## 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 experience gain of approximately $\$ 77$ million, composed of a $\$ 63$ million investment gain, a $\$ 52$ million contribution loss, and a $\$ 66$ million liability gain. The gain in liability was primarily due to salary increases being less than expected. The aggregate results of these analyses are disclosed in Tables 4 and 5 under Section III of the report.

## Legislated Contribution Rate Increases

Per House Enrolled Act No. 103 from the 2013 Wyoming budget session and House Enrolled Act No. 11 from the 2014 budget session, the following contribution increases are expected:

## Employee Contribution

- Effective July 1, 2014: Increased from $7.50 \%$ of pay to $8.25 \%$ of pay


## State/Employer Contribution

- Effective July 1, 2014: Increased from $7.12 \%$ of pay to $7.62 \%$ of pay
- Effective July 1, 2015: Increases from $7.62 \%$ of pay to $8.37 \%$ of pay


## Actuarial certification

All of the tables contained in this actuarial valuation report 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, 2015.

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 and ERISA. The undersigned are independent actuaries and consultants.

Mark Randall and Leslie Thompson are Enrolled Actuaries and Members of the American Academy of Actuaries, and both meet all of the Qualification Standards of the American Academy of Actuaries.

Finally, both of the undersigned are experienced in performing valuations for large public retirement systems.

Respectfully submitted,

## Gabriel, Roeder, Smith \& Company



Mark R. Randall, FCA, EA, MAAA
Chief Executive Officer


Leslie Thompson, FSA, FCA, EA, MAAA
Senior Consultant

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## SECTION I

EXECUTIVE SUMMARY

## Executive Summary

|  | January 1, 2015 | January 1, 2014 |
| :---: | :---: | :---: |
| Item | No COLA | No COLA |
| 1. Contributions: |  |  |
| a. Total normal cost | 11.96\% | 11.96\% |
| b. Employee contributions | (8.25\%) | (7.50\%) |
| c. Net employer normal cost | 3.71\% | 4.46\% |
| d. Amortization payment | 5.19\% | 5.42\% |
| e. Administrative expenses | 0.36\% | 0.40\% |
| f. Required contribution | 9.26\% | 10.28\% |
| g. Statutory contribution | (7.62\%) | (7.12\%) |
| h. Shortfall/(surplus) | 1.64\% | 3.16\% |
| 2. Funding Elements: |  |  |
| a. Market value of assets (MVA) | \$6,672,165,875 | \$6,524,646,566 |
| b. Actuarial value of assets (AVA) | \$6,609,612,342 | \$6,244,501,550 |
| c. Actuarial accrued liability (AAL) | \$8,370,666,482 | \$8,045,046,972 |
| d. Unfunded/(overfunded) actuarial accrued liability (UAAL) | \$1,761,054,140 | \$1,800,545,422 |
| 3. Contributions and Ratios: |  |  |
| a. Annual required contribution | \$168,411,742 | \$183,086,430 |
| b. Actual contributions | N/A | 129,627,747 |
| i. Employer | $N / A$ | 127,929,930 |
| ii. Other | $N / A$ | 1,697,817 |
| c. Percentage contributed | N/A | 70.80\% |
| d. Funded ratio on an actuarial basis (AVA/AAL) | 78.96\% | 77.62\% |
| e. Funded ratio on a market basis (MVA/AAL) | 79.71\% | 81.10\% |
| f. Projected payroll | \$1,818,197,022 | \$1,782,062,471 |

Effective July 1, 2014, the employee contribution rate increased from $7.50 \%$ to $8.25 \%$. Effective July 1,2014 the employer (statutory) rate increased from $7.12 \%$ to $7.62 \%$ of pay, and will increase again to $8.37 \%$ of pay effective July 1,2015 . Based on the timing of this contribution increase in 2015, the one-y ear shortfall would decrease from $1.64 \%$ to $1.27 \%$ of pay.

## SECTION II

DISCUSSION

## Contribution Requirements

- Exhibits throughout this report are based primarily, unless stated otherwise, on the assumption of no future cost-of-living adjustments (COLAs).
- W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above $100 \%$ plus a margin for adverse experience throughout the life of the benefit change. The actuarial value funded ratio is $78.96 \%$ and the market value funded ratio is $79.71 \%$.
- Recent legislation increasing contribution rates was passed.
- Per 2013 House Enrolled Act No 103:
- Employee rate increased from $7.00 \%$ to $7.50 \%$ of pay, effective September 1, 2013
- Employer rate increased from $7.12 \%$ to $7.62 \%$ of pay, effective September 1, 2014
- Per 2014 House Enrolled Act No 11:
- Changed effective date of 2013 HEA No 103 employer rate increase to July 1, 2014
- Employee rate increased from $7.50 \%$ to $8.25 \%$ of pay, effective July 1, 2014
- Employer rate increases from $7.62 \%$ to $8.37 \%$ of pay, effective July 1, 2015
- The only change in benefit provisions was due to the park ranger duty death and disability benefits, as stated in Enrolled Act No. 55, SF 0058.
- There were no changes in the actuarial assumptions or methods since the prior valuation.
- The amortization payment is based upon the following assumptions:
- 30-year open funding period
- Amortization payment amounts are calculated in such a way that they will increase as a level percentage of payroll
- Total payroll increases are assumed at $4.25 \%$ per year, and
- Future growth in the number of active members is not reflected in the annual valuation
- The analysis of the changes in the contribution rates is shown in Table 5 under Section III of the report.
- The calculated funding period assuming the current statutory contribution of $7.62 \%$ of pay is 77 years, but does not reflect recent legislation to increase statutory contributions after the valuation date nor the expected lower costs for future tier 2 members. Projections that reflect the higher contributions and the lower future tier 2 costs show that it will take about 26 years to amortize the unfunded actuarial accrued liability.


## 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\%)
- The 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, 2015. The Executive Summary shows the UAAL\%, called Amortization Payment, compared to that of last year.

Assumed administrative expenses are the average of the prior two years, with each year projected at $6.5 \%$ to the valuation date.

The calculated rate is used in determining the contributions necessary to meet the Actuarially Determined Contribution for the twelve-month period beginning January 1, 2015. When accounting for the July 1, 2015 employer rate increase of $.75 \%$ of payroll, the employer contribution will be within $1.27 \%$ of payroll of meeting the Actuarially Determined Contribution.

## Financial Data and Experience

As of January 1, 2015, the Fund has a total market value of $\$ 6,672$ 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 2014.

During 2014, the total investment return on the market value of assets (MVA), as reported by NEPC, was $4.90 \%$, 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 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 (or less than) expected investment income. 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.

The development of the AVA is shown in Table 9 under Section III of the report. The AVA is $\$ 6.6$ billion. The AVA is $99.06 \%$ of the MVA as of December 31, 2014, compared to $95.71 \%$ last year. The difference between the AVA and the MVA is the deferred gains and losses. As of January 1, 2014, the total deferred gain was $\$ 280$ million. As of January 1, 2015, the total deferred gain was $\$ 63$ million.

In addition to the market return, Table 10 also shows the return on the actuarial value of assets for the Fund. For 2014, this return was $8.70 \%$. Since this return is greater than the assumed $7.75 \%$ investment return, an actuarial gain occurred decreasing the unfunded actuarial accrued liabilities of the Fund by $\$ 62.5$ million.

## Member Data

Member data as of January 1, 2015 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 $2.03 \%$ last year, compared with essentially no increase from the prior year.

Of the 36,489 active participants, 6,501 are eligible or will become eligible for unreduced retirement and 8,095 are eligible or will become eligible for reduced retirement in 2015.

The average of the final average salaries for participants who retired or became disabled this year is \$51,374.

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 $4.25 \%$ 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 $0.11 \%$ 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.

- 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
- $8.25 \%$ of pay.
- Post-retirement Cost-of-Living Adjustments (COLAs)
- W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above $100 \%$ plus a margin for adverse experience throughout the life of the benefit change.

Duty-death and disability benefits were changed slightly for Park Rangers since the prior valuation.

## 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 $7.75 \%$, with assumed inflation of $3.25 \%$.
- Payroll is assumed to increase at $4.25 \%$ per year.
- Inactive vested participants are assumed to retire at age 60 (65 for Tier 2) or on the valuation date if older.
- The benefit amount is not available for members entitled to deferred benefits. The benefit amount and present value of benefits expected to be paid to vested inactive non-retired members is approximated using the data provided.

The average future lifetime for current pensioners is 15.7 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 67 (GASB 67) contains certain accounting requirements for the Fund. Schedules, notes and required supplementary information are provided under separate cover.

## SECTION III

SUPPORTING EXHIBITS

## Calculation of Actuarially Determined Contribution Rate <br> (Assumes No Future Cost-Of-Living Increases)

| Item | January 1, 2015 | January 1, 2014 |
| :---: | :---: | :---: |
| 1. Projected valuation payroll | \$1,818,197,022 | \$1,782,062,471 |
| 2. Present value of future pay | \$13,963,776,957 | \$13,652,163,243 |
| 3. Employer normal cost rate | 3.71\% | 4.46\% |
| 4. Actuarial accrued liability for active members |  |  |
| a. Present value of future benefits for active members | \$5,383,143,968 | \$5,372,121,119 |
| b. Less: present value of future employer normal costs | $(461,305,175)$ | (554,282,055) |
| c. Less: present value of future employee contributions | (1,152,011,609) | (1,023,912,243) |
| d. Actuarial accrued liability | \$3,769,827,184 | \$3,793,926,821 |
| 5. Total actuarial accrued liability for: |  |  |
| a. Retirees and beneficiaries | \$4,228,660,613 | \$3,893,163,009 |
| b. Disabled members | 33,904,433 | 34,442,257 |
| c. Inactive members | 338,274,252 | 323,514,885 |
| d. Active members (Item 4d) | 3,769,827,184 | 3,793,926,821 |
| e. Total | \$8,370,666,482 | \$8,045,046,972 |
| 6. Actuarial value of assets (Table 9) | \$6,609,612,342 | \$6,244,501,550 |
| 7. Unfunded actuarial accrued liability (UAAL) (Item 5e - Item 6) | \$1,761,054,140 | \$1,800,545,422 |
| 8. Funding period | 30 years | 30 years |
| 9. Assumed payroll growth rate | 4.25\% | 4.25\% |
| 10. Employer contribution requirement |  |  |
| a. UAAL amortization payment as \% of pay | 5.19\% | 5.42\% |
| b. Employer normal cost | 3.71\% | 4.46\% |
| c. Administrative expense | 0.36\% | 0.40\% |
| d. Contribution requirement $(\mathrm{a}+\mathrm{b}+\mathrm{c})$ | 9.26\% | 10.28\% |

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

| Item | Present Value of Future Normal Costs (1) | Actuarial Accrued Liabilities <br> (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 | \$1,275,977,029 | \$3,786,894,843 | \$5,062,871,872 |
| Death-in-service benefits likely to be paid on behalf of present active members (employer financed portion) | 26,736,179 | 59,162,090 | 85,898,269 |
| Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members | 310,603,576 | (76,229,749) | 234,373,827 |
| Benefits likely to be paid to vested inactive members | 0 | 295,459,247 | 295,459,247 |
| Benefits to be paid to members due refunds | 0 | 42,815,005 | 42,815,005 |
| Benefits to be paid to current retirees, disabled members, beneficiaries, and future beneficiaries of current retirees | 0 | 4,262,565,046 | 4,262,565,046 |
| Total | \$1,613,316,784 | \$8,370,666,482 | \$9,983,983,266 |
| Actuarial value of assets | 0 | 6,609,612,342 | 6,609,612,342 |
| Liabilities to be covered by future contributions | \$1,613,316,784 | \$1,761,054,140 | \$3,374,370,924 |

# History of Total Normal Cost (Assumes No Future Cost-Of-Living Increases) 



## Calculation of Total Actuarial Gain/(Loss) <br> (Assumes No Future Cost-Of-Living Increases)

| Item | January 1, 2015 |
| :---: | :---: |
| 1. Derivation of Experience Gain/(Loss) <br> a. Unfunded actuarial accrued liability (UAAL) - previous valuation <br> b. Normal cost (NC) for fiscal year ending December 31, 2014 <br> c. Actual administrative expenses for fiscal year ending December 31, 2014 <br> d. Actuarially determined contribution for fiscal year ending December 31, 2014 <br> e. Interest accrual: <br> (i) For whole year on (a) <br> (ii) For half year on (b) + (c) - (d) <br> (iii) Total interest: (e)(i) + (e)(ii) <br> f. Change in UAAL due to plan changes <br> g. Change in UAAL due to assumption change <br> h. Expected UAAL current year: $(\mathrm{a})+(\mathrm{b})+(\mathrm{c})-(\mathrm{d})+(\mathrm{e})($ (iii $)+(\mathrm{f})+(\mathrm{g})$ <br> i. Actual UAAL current year <br> j. Experience gain/(loss): (h) - (i) <br> k. Experience gain/(loss) as a \% of actuarial accrued liability | $\$ 1,800,545,422$ $213,059,299$ $5,258,065$ $316,741,115$ $139,542,270$ $(3,813,920)$ $135,728,350$ - - $1,837,850,022$ $1,761,054,140$ $76,795,882$ $0.92 \%$ |
| 2. Approximate portion of gain/(loss) due to investments (at actuarial value) <br> 3. Approximate portion of gain/(loss) due to contributions higher or lower than expected | $\begin{aligned} & \$ 62,509,356 \\ & (\$ 51,905,095) \end{aligned}$ |
| 4. Approximate amount of gain/(loss) due to liabilities: (1)(j) - (2) - (3) <br> a. Age \& service retirements <br> b. Disability retirements <br> c. Death-in-service <br> d. Withdrawal from employment <br> e. Rehires <br> f. Pay increases <br> g. Death after retirement <br> h. Other <br> i. Other as a \% of actuarial accrued liability | $\$ 66,191,620$ <br> $(\$ 10,588,672)$ <br> $(263,542)$ <br> $(348,197)$ <br> $(1,117,580)$ <br> $(1,914,744)$ <br> $89,754,371$ <br> $2,829,231$ <br> $(12,159,246)$ <br> $-0.15 \%$ |

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

| Item | January 1, 2015 |
| :--- | :---: |
| 1. Calculated contribution rate as of January 1, 2014 | $10.28 \%$ |
|  |  |
| 2. Change in contribution rate during year | $-0.75 \%$ |
| a. Change in employer normal cost | $0.00 \%$ |
| b. Assumption changes to accrued liability | $-0.21 \%$ |
| c. Recognition of prior asset losses (gains) | $0.10 \%$ |
| d. Actuarial (gain) loss from current year asset performance | $-0.31 \%$ |
| e. Actuarial (gain) loss from liability sources \& administrative expenses | $0.15 \%$ |
| f. Difference between contributions made and required contribution | $0.11 \%$ |
| g. Effect of payroll growing (faster)/slower than assumption | $-0.11 \%$ |
| h. Open amortization period reset to 30 years | $0.00 \%$ |
| i. Other changes | $-1.02 \%$ |
| j. Total change |  |
| 3. Calculated contribution rate as of January 1, 2015 | $9.26 \%$ |

## Statement of Plan Net Assets

| Assets at Market Value |  |  |
| :---: | :---: | :---: |
| Item | FYE 2014 | FYE 2013 |
| 1. Cash and Cash Equivalents (Operating Cash) | \$399,160,716 | \$218,096,275 |
| 2. Receivables |  |  |
| a. Insurance premium tax | \$0 | \$0 |
| b. Buy backs | 0 | 0 |
| c. Employer contributions | 10,858,642 | 9,241,297 |
| d. Employee contributions | 11,657,199 | 9,417,848 |
| e. Securities sold | 3,317,938 | 28,371,782 |
| f. Accrued interest and dividends | 17,352,715 | 20,586,422 |
| g. Currency contract receivable | 982,131,965 | 856,389,104 |
| h. Other | 132,048 | 104,746 |
| i. Rebate and fee income receivable | 0 | 0 |
| j. Total receivables | \$1,025,450,507 | \$924,111,199 |
| 3. Investments, at Fair Value | \$6,843,661,587 | \$7,064,779,400 |
| 4. Liabilities |  |  |
| a. Benefits and refunds payable | $(\$ 785,069)$ | (\$377,413) |
| b. Securities purchased | $(60,696,494)$ | $(86,722,523)$ |
| c. Administrative and consulting fees payable | $(11,173,928)$ | $(9,448,308)$ |
| d. Currency contract payable | $(960,112,844)$ | (860,747,448) |
| e. Securities lending collateral | $(563,338,600)$ | (725,044,616) |
| f. Total liabilities | (\$1,596,106,935) | (\$1,682,340,308) |
| 5. Total Market Value of Assets Available for Benefits | \$6,672,165,875 | \$6,524,646,566 |

## Reconciliation of Plan Net Assets



## Progress of Fund Through December 31, 2014

| $\begin{gathered} \text { Plan Year } \\ \text { Ending } \\ \text { December } 31 \\ \hline \end{gathered}$ | Employer <br> Contributions* |  | Employee Contributions* |  | Administrative Expenses |  |  | t Investment Income** | Benefit Payments |  | Transfers |  | Actuarial Value of Assets |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total | \$ | 2,030,929,027 | \$ | 1,851,369,383 | \$ | $(58,111,647)$ | \$ | 7,284,865,019 | \$ | (5,149,922,901) | \$ | (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 |
| 2012 |  | 124,648,088 |  | 119,052,404 |  | $(6,463,506)$ |  | 126,138,774 |  | $(374,629,714)$ |  | - | 5,749,967,972 |
| 2013 |  | 128,277,269 |  | 122,611,180 |  | $(6,513,680)$ |  | 654,726,838 |  | $(404,568,029)$ |  | - | 6,244,501,550 |
| 2014 |  | 129,627,747 |  | 141,061,289 |  | $(5,258,065)$ |  | 535,776,435 |  | $(436,096,614)$ |  | - | 6,609,612,342 |

[^0]
## Development of Actuarial Value of Assets

| Item | FYE 2014 | FYE 2013 |
| :---: | :---: | :---: |
| 1. Actuarial value of assets, beginning of year (without corridor) | \$6,244,501,550 | \$5,749,967,972 |
| 2. Market value, end of year | \$6,672,165,875 | \$6,524,646,566 |
| 3. Market value, beginning of year | \$6,524,646,566 | \$5,904,283,843 |
| 4. Non-investment/administrative net cash flow: |  |  |
| a. Employee contributions | \$137,144,565 | \$122,611,180 |
| b. Employer contributions | 127,929,930 | 122,136,706 |
| c. Other contributions | 5,614,541 | 6,140,563 |
| d. Refund of employee accounts | $(17,821,799)$ | $(17,130,828)$ |
| e. Retirement benefits | (418,274,815) | $(387,437,201)$ |
| f. Administrative expenses | $(5,258,065)$ | (6,513,680) |
| g. Total net cash flow: [sum of (4a) through (4f)] | (\$170,665,643) | (\$160,193,260) |
| 5. Investments and securities lending: |  |  |
| a. Interest and dividends on investments | \$162,674,373 | \$154,643,671 |
| b. Gross income from securities lending | 4,017,871 | 4,322,454 |
| c. Fees and expenses | $(43,148,940)$ | $(38,030,687)$ |
| d. Total net income: [sum of (5a) through (5c)] | \$123,543,304 | \$120,935,438 |
| 6. Investment income: |  |  |
| a. Actual market return: (2)-(3)-(4g)-(5d) | \$194,641,648 | \$659,620,545 |
| b. Assumed rate of return** | 7.75\% | 8.00\% |
| c. Assumed amount of return | 375,626,907 | 345,122,810 |
| d. Amount subject to phase-in: (6a) - (6c) | (\$180,985,259) | \$314,497,735 |
| 7. Phase-in recognition of investment income: |  |  |
| a. Current year: 0.20 * (6d) | (\$36,197,052) | \$62,899,547 |
| b. First prior year | 62,899,547 | 60,680,168 |
| c. Second prior year | 60,680,168 | $(99,713,617)$ |
| d. Third prior year | (99,713,617) | 48,937,178 |
| e. Fourth prior year | 48,937,178 | 115,865,314 |
| f. Total recognition | \$36,606,224 | \$188,668,590 |
| 8. Actuarial value of assets, end of year |  |  |
| a. Preliminary actuarial value of assets, end of year: $(1)+(4 g)+(5 d)+(6 c)+(7 f)$ | \$6,609,612,342 | \$6,244,501,550 |
| b. Upper corridor limit: $120 \%$ * (2) | 8,006,599,050 | 7,829,575,879 |
| c. Lower corridor limit: $80 \%$ * (2) | 5,337,732,700 | 5,219,717,253 |
| d. Actuarial value of assets, end of year | \$6,609,612,342 | \$6,244,501,550 |
| 9. Difference between market and actuarial value of assets | \$62,553,533 | \$280,145,016 |
| 10. Actuarial rate of return | 8.70\% | 11.55\% |
| 11. Market rate of return* | 4.90\% | 13.53\% |
| 12. Ratio of actuarial value to market value of assets | 99.06\% | 95.71\% |

* Current y ear market rate of return is based on unaudited data and is supplied by NEPC, LLC.
** The interest accrual of $8.00 \%$ is used for the period January 1, 2013 through December 31, 2013. Effective January 1, 2014, the assumed interest rate is $7.75 \%$.


## History of Investment Returns

| Plan Year | Market Value | Actuarial Value |
| :---: | :---: | :---: |
| (1) | (2) | (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 | 23.72\% | 17.89\% |
| 2010 | 13.80\% | 3.00\% |
| 2011 | -0.90\% | 1.25\% |
| 2012 | 14.05\% | 2.22\% |
| 2013 | 13.53\% | 11.55\% |
| 2014 | 4.90\% | 8.70\% |
| Average returns: |  |  |
| Last five years: | 8.90\% | 5.27\% |
| Last ten years: | 5.73\% | 5.38\% |

The market rates above were provided by NEPC, LLC. The actuarial rates above are based on the financial information provided by McGee, Hearne \& Paiz, LLP.


## Solvency Test

| Valuation Date January 1 | Total Active Member Contributions <br> (1) | Inactive and Pensioner Liability (2) | Employer Financed Active Accrued Liability <br> (3) | Actuarial Value of Assets | Percentage of Liabilities Covered by Assets |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | (1) | (2) | (3) |
| 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\% |
| 2013 | 1,286,009,555 | 3,724,948,051 | 2,308,247,120 | 5,749,967,972 | 100\% | 100\% | 32.0\% |
| 2014 | 1,333,532,543 | 4,251,120,151 | 2,460,394,278 | 6,244,501,550 | 100\% | 100\% | 26.8\% |
| 2015 | 1,394,083,171 | 4,600,839,298 | 2,375,744,013 | 6,609,612,342 | 100\% | 100\% | 25.9\% |

[^1]
## Schedule of Funding Progress

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Valuation <br> Date <br> January 1 | Actuarial Value of Assets | Actuarial Accrued Liability (AAL) | $\begin{gathered} \text { Unfunded } \\ \text { AAL } \\ (\text { UAAL) } \\ {[(3)-(2)]} \end{gathered}$ | Funded Ratio $[(2) /(3)]$ | Covered <br> 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\% |
| 2013 | 5,749,967,972 | 7,319,204,726 | 1,569,236,754 | 78.56\% | 1,782,069,208 | 88.06\% |
| 2014 | 6,244,501,550 | 8,045,046,972 | 1,800,545,422 | $77.62 \%$ | 1,782,062,471 | 101.04\% |
| 2015 | 6,609,612,342 | 8,370,666,482 | 1,761,054,140 | 78.96\% | 1,818,197,022 | 96.86\% |

[^2]Schedule of Contributions from the Employer(s) and Other Contributing Entities

| (1) | (2) | (3) | (4) | (5) | (6) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Fiscal Year Ending | Actuarially Determined Contribution |  | Employer Contributions* |  | Percentage of <br> Actuarially <br> Determined <br> Contribution <br> Contributed |
| December 31 | \% 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\% | 244,063,923** | 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 | 7.09\% | 124,648,088 | 88.22\% |
| 2013 | 8.86\% | 158,013,754 | 7.20\% | 128,277,269 | 81.18\% |
| 2014 | 10.28\% | 183,086,430 | 7.27\% | 129,627,747 | 70.80\% |
| 2015 | 9.26\% | 168,411,742 | - | - | - |

Excludes Air Guard beginning December 31, 2009, including Employer Contributions of \$149,244 as of December 31, 2009.
Effective January 1, 2010, liabilities are calculated assuming no future cost-of-living increases.

* Includes other funding sources but excludes member redeposits and member service purchase contributions.
** There was a $\$ 150.6$ million legislative appropriation to address the increase in school district employee pay.


## Reconciliation of Participant Data



## Demographic Statistics

|  | January 1 |  | Change |
| :---: | :---: | :---: | :---: |
|  | 2015 | 2014 |  |
| Active Participants |  |  |  |
| Number | 36,489 | 36,354 | 0.4\% |
| Vested | 24,109 | 24,539 |  |
| Not vested | 12,380 | 11,815 |  |
| Average age (years) | 46.36 | 46.53 | -0.4\% |
| Average service (years) | 9.99 | 10.19 | -2.0\% |
| Average entry age (years) | 36.37 | 36.34 | 0.1\% |
| Total payroll* | \$1,818,197,022 | \$1,782,062,471 | 2.0\% |
| Average payroll* | \$49,829 | \$49,020 | 1.7\% |
| Total employee contributions with interest | \$1,394,083,171 | \$1,333,532,543 | 4.5\% |
| Average employee contributions with interest | \$38,206 | \$36,682 | 4.2\% |
| Vested Former Participants |  |  |  |
| Number | 5,905 | 5,624 | 5.0\% |
| Average age (years) | 51.94 | 52.09 | -0.3\% |
| Total employee contributions with interest | \$187,435,793 | \$171,843,883 | 9.1\% |
| Average employee contributions with interest | \$31,742 | \$30,555 | 3.9\% |
| Service Retirees |  |  |  |
| Number | 21,269 | 20,334 | 4.6\% |
| Average age (years) | 71.43 | 71.35 | 0.1\% |
| Total annual benefits | \$398,099,486 | \$366,785,789 | 8.5\% |
| Average annual benefit | \$18,717 | \$18,038 | 3.8\% |
| Disability Retirees |  |  |  |
| Number | 248 | 250 | -0.8\% |
| Average age (years) | 63.62 | 63.03 | 0.9\% |
| Total annual benefits | \$3,854,566 | \$3,868,780 | -0.4\% |
| Average annual benefit | \$15,543 | \$15,475 | 0.4\% |
| Beneficiaries |  |  |  |
| Number | 2,243 | 2,147 | 4.5\% |
| Average age (years) | 75.08 | 75.62 | -0.7\% |
| Total annual benefits | \$29,956,885 | \$28,387,473 | 5.5\% |
| Average annual benefit | \$13,356 | \$13,222 | 1.0\% |
| Participants Due Refunds |  |  |  |
| Number | 20,242 | 19,149 | 5.7\% |
| Total Refunds Due | \$42,815,005 | \$38,119,256 | 12.3\% |

* Projected payroll for the upcoming valuation year

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

| Age <br> Last Birthday |  | Whole Years of Service at Valuation Date |  |  |  |  |  |  | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus |  |
| Less than 20 | Count | 17 | - | - | - | - | - | - | 17 |
|  | Avg. Salary | \$17,828 | - | - | - | - | - | - | \$17,828 |
| 20-24 | Count | 343 | 6 | - | - | - | - | - | 349 |
|  | Avg. Salary | 30,473 | \$41,556 | - | - | - | - | - | 30,664 |
| 25-29 | Count | 820 | 135 | 2 | - | - | - | - | 957 |
|  | Avg. Salary | 41,382 | 46,500 | * | - | - | - | - | 42,103 |
| 30-34 | Count | 758 | 478 | 88 | 1 | - | - | - | 1,325 |
|  | Avg. Salary | 45,102 | 55,543 | \$54,722 | * | - | - | - | 49,511 |
| 35-39 | Count | 637 | 480 | 287 | 54 | 1 | - | - | 1,459 |
|  | Avg. Salary | 47,466 | 58,028 | 62,986 | \$61,496 | * | - | - | 54,505 |
| 40-44 | Count | 519 | 377 | 270 | 250 | 48 | - | - | 1,464 |
|  | Avg. Salary | 45,961 | 57,196 | 62,340 | 68,762 | \$67,701 | - | - | 56,481 |
| 45-49 | Count | 468 | 353 | 250 | 232 | 246 | 71 | 3 | 1,623 |
|  | Avg. Salary | 46,060 | 55,856 | 59,930 | 69,034 | 72,441 | \$66,947 | * | 58,539 |
| 50-54 | Count | 459 | 365 | 275 | 210 | 211 | 212 | 119 | 1,851 |
|  | Avg. Salary | 44,462 | 53,693 | 55,675 | 64,100 | 67,657 | 71,764 | \$70,263 | 57,606 |
| 55-59 | Count | 466 | 362 | 280 | 199 | 202 | 216 | 274 | 1,999 |
|  | Avg. Salary | 43,525 | 53,235 | 54,470 | 63,214 | 64,249 | 68,331 | 75,084 | 57,877 |
| 60-64 | Count | 312 | 254 | 205 | 134 | 132 | 142 | 223 | 1,402 |
|  | Avg. Salary | 40,163 | 51,395 | 54,108 | 57,220 | 62,989 | 69,830 | 72,452 | 56,157 |
| 65-69 | Count | 129 | 114 | 85 | 48 | 40 | 29 | 53 | 498 |
|  | Avg. Salary | 30,409 | 48,948 | 52,358 | 61,263 | 64,305 | 60,801 | 72,357 | 50,330 |
| 70 \& Over | Count | 45 | 42 | 31 | 13 | 11 | 9 | 16 | 167 |
|  | Avg. Salary | 28,591 | 33,717 | 43,005 | 40,936 | 42,982 | 67,907 | 77,740 | 41,292 |
| Totals | Count | 4,973 | 2,966 | 1,773 | 1,141 | 891 | 679 | 688 | 13,111 |
|  | Avg. Salary | \$42,822 | \$54,326 | \$57,657 | \$64,643 | \$67,026 | \$69,244 | \$73,160 | \$53,935 |

[^3]Distribution of Female Active Members by Age and by Years of Service

| Age <br> Last Birthday |  | Whole Years of Service at Valuation Date |  |  |  |  |  |  | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus |  |
| Less than 20 | Count | 46 | - | - | - | - | - | - | 46 |
|  | Avg. Salary | \$12,485 | - | - | - | - | - | - | \$12,485 |
| 20-24 | Count | 785 | 2 | - | - | - | - | - | 787 |
|  | Avg. Salary | 28,204 | * | - | - | - | - | - | 28,213 |
| 25-29 | Count | 1,682 | 281 | - | - | - | - | - | 1,963 |
|  | Avg. Salary | 36,370 | \$44,182 | - | - | - | - | - | 37,488 |
| 30-34 | Count | 1,471 | 877 | 139 | 1 | - | - | - | 2,488 |
|  | Avg. Salary | 34,792 | 49,145 | \$51,636 | * | - | - | - | 40,795 |
| 35-39 | Count | 1,308 | 750 | 520 | 86 | 1 | - | - | 2,665 |
|  | Avg. Salary | 33,068 | 46,223 | 55,649 | \$58,104 | * | - | - | 41,985 |
| 40-44 | Count | 1,114 | 726 | 509 | 354 | 72 | - | - | 2,775 |
|  | Avg. Salary | 33,093 | 43,546 | 52,619 | 60,907 | \$58,833 | - | - | 43,625 |
| 45-49 | Count | 850 | 661 | 512 | 324 | 276 | 70 | 5 | 2,698 |
|  | Avg. Salary | 33,198 | 41,630 | 47,429 | 56,415 | 65,764 | \$62,561 | \$67,096 | 44,909 |
| 50-54 | Count | 819 | 665 | 624 | 512 | 336 | 297 | 144 | 3,397 |
|  | Avg. Salary | 32,520 | 39,918 | 42,933 | 48,510 | 57,490 | 63,315 | 62,416 | 44,721 |
| 55-59 | Count | 654 | 605 | 555 | 547 | 479 | 333 | 423 | 3,596 |
|  | Avg. Salary | 32,372 | 38,055 | 42,819 | 46,105 | 50,915 | 58,888 | 65,611 | 45,865 |
| 60-64 | Count | 288 | 363 | 312 | 369 | 312 | 229 | 321 | 2,194 |
|  | Avg. Salary | 28,467 | 40,406 | 41,957 | 42,496 | 50,607 | 53,440 | 63,446 | 45,593 |
| 65-69 | Count | 98 | 122 | 108 | 72 | 79 | 50 | 80 | 609 |
|  | Avg. Salary | 21,324 | 35,156 | 39,990 | 41,880 | 44,240 | 44,761 | 53,680 | 38,983 |
| 70 \& Over | Count | 47 | 26 | 30 | 15 | 12 | 11 | 19 | 160 |
|  | Avg. Salary | 15,508 | 24,661 | 35,212 | 31,966 | 31,395 | 48,344 | 43,322 | 28,985 |
| Totals | Count | 9,162 | 5,078 | 3,309 | 2,280 | 1,567 | 990 | 992 | 23,378 |
|  | Avg. Salary | \$32,987 | \$43,037 | \$47,205 | \$50,048 | \$54,747 | \$58,385 | \$63,065 | \$42,657 |

[^4]Distribution of Total Active Members by Age and by Years of Service

| Age <br> Last Birthday |  | Whole Years of Service at Valuation Date |  |  |  |  |  |  | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus |  |
| Less than 20 | Count | 63 | - | - | - | - | - | - | 63 |
|  | Avg. Salary | \$13,927 | - | - | - | - | - | - | \$13,927 |
| 20-24 | Count | 1,128 | 8 | - | - | - | - | - | 1,136 |
|  | Avg. Salary | 28,894 | \$39,129 | - | - | - | - | - | 28,966 |
| 25-29 | Count | 2,502 | 416 | 2 | - | - | - | - | 2,920 |
|  | Avg. Salary | 38,013 | 44,934 | * | - | - | - | - | 39,001 |
| 30-34 | Count | 2,229 | 1,355 | 227 | 2 | - | - | - | 3,813 |
|  | Avg. Salary | 38,298 | 51,402 | \$52,832 | * | - | - | - | 43,823 |
| 35-39 | Count | 1,945 | 1,230 | 807 | 140 | 2 | - | - | 4,124 |
|  | Avg. Salary | 37,783 | 50,830 | 58,259 | \$59,412 | * | - | - | 46,415 |
| 40-44 | Count | 1,633 | 1,103 | 779 | 604 | 120 | - | - | 4,239 |
|  | Avg. Salary | 37,182 | 48,212 | 55,988 | 64,158 | \$62,380 | - | - | 48,065 |
| 45-49 | Count | 1,318 | 1,014 | 762 | 556 | 522 | 141 | 8 | 4,321 |
|  | Avg. Salary | 37,765 | 46,583 | 51,530 | 61,680 | 68,911 | \$64,770 | \$62,449 | 50,029 |
| 50-54 | Count | 1,278 | 1,030 | 899 | 722 | 547 | 509 | 263 | 5,248 |
|  | Avg. Salary | 36,809 | 44,799 | 46,831 | 53,045 | 61,412 | 66,834 | 65,967 | 49,265 |
| 55-59 | Count | 1,120 | 967 | 835 | 746 | 681 | 549 | 697 | 5,595 |
|  | Avg. Salary | 37,013 | 43,738 | 46,726 | 50,669 | 54,870 | 62,603 | 69,335 | 50,156 |
| 60-64 | Count | 600 | 617 | 517 | 503 | 444 | 371 | 544 | 3,596 |
|  | Avg. Salary | 34,549 | 44,930 | 46,775 | 46,419 | 54,288 | 59,713 | 67,138 | 49,712 |
| 65-69 | Count | 227 | 236 | 193 | 120 | 119 | 79 | 133 | 1,107 |
|  | Avg. Salary | 26,487 | 41,818 | 45,437 | 49,633 | 50,984 | 50,649 | 61,123 | 44,087 |
| 70 \& Over | Count | 92 | 68 | 61 | 28 | 23 | 20 | 35 | 327 |
|  | Avg. Salary | 21,907 | 30,254 | 39,172 | 36,131 | 36,936 | 57,147 | 59,056 | 35,270 |
| Totals | Count | 14,135 | 8,044 | 5,082 | 3,421 | 2,458 | 1,669 | 1,680 | 36,489 |
|  | Avg. Salary | \$36,447 | \$47,200 | \$50,852 | \$54,916 | \$59,198 | \$62,803 | \$67,199 | \$46,709 |

[^5]Distribution of Male Deferred Members by Age and by Years of Service

Average Age $=51.5 \quad$ Average Service $=9.2$

| Age <br> Last Birthday | Whole Years of Service at Valuation Date |  |  |  |  |  |  | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus |  |
| Less than 20 | - | - | - | - | - | - | - | - |
| 20-24 | 3 | 1 | - | - | - | - | - | 4 |
| 25-29 | 14 | 19 | - | - | - | - | - | 33 |
| 30-34 | 31 | 63 | 3 | - | - | - | - | 97 |
| 35-39 | 39 | 86 | 19 | 2 | - | - | - | 146 |
| 40-44 | 49 | 118 | 31 | 5 | 2 | - | - | 205 |
| 45-49 | 38 | 128 | 50 | 25 | 6 | 1 | - | 248 |
| 50-54 | 55 | 151 | 69 | 44 | 21 | 10 | - | 350 |
| 55-59 | 58 | 159 | 100 | 56 | 24 | 11 | 1 | 409 |
| 60-64 | 42 | 107 | 45 | 27 | 11 | 2 | - | 234 |
| 65-69 | 20 | 28 | 10 | 8 | 3 | 1 | - | 70 |
| 70 \& Over | 14 | 24 | 5 | 3 | 1 | 1 | - | 48 |
| Totals | 363 | 884 | 332 | 170 | 68 | 26 | 1 | 1,844 |

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

Average Age $=52.1 \quad$ Average Service $=8.9$

| Age <br> Last Birthday | Whole Years of Service at Valuation Date |  |  |  |  |  |  | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus |  |
| Less than 20 | - | - | - | - | - | - | - | - |
| 20-24 | 1 | 2 | - | - | - | - | - | 3 |
| 25-29 | 40 | 31 | - | - | - | - | - | 71 |
| 30-34 | 74 | 139 | 8 | - | - | - | - | 221 |
| 35-39 | 100 | 181 | 31 | - | - | - | - | 312 |
| 40-44 | 81 | 216 | 61 | 15 | 2 | - | - | 375 |
| 45-49 | 77 | 272 | 94 | 34 | 17 | 1 | - | 495 |
| 50-54 | 127 | 359 | 167 | 74 | 19 | 10 | 5 | 761 |
| 55-59 | 125 | 419 | 236 | 113 | 59 | 26 | 2 | 980 |
| 60-64 | 90 | 267 | 110 | 41 | 23 | 12 | 2 | 545 |
| 65-69 | 43 | 95 | 33 | 13 | 10 | - | 4 | 198 |
| 70 \& Over | 30 | 53 | 15 | - | 1 | 1 | - | 100 |
| Totals | 788 | 2,034 | 755 | 290 | 131 | 50 | 13 | 4,061 |

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

$$
\text { Average Age }=51.9 \quad \text { Average Service }=9.0
$$

| Age <br> Last Birthday | Whole Years of Service at Valuation Date |  |  |  |  |  |  | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus |  |
| Less than 20 | - | - | - | - | - | - | - | - |
| 20-24 | 4 | 3 | - | - | - | - | - | 7 |
| 25-29 | 54 | 50 | - | - | - | - | - | 104 |
| 30-34 | 105 | 202 | 11 | - | - | - | - | 318 |
| 35-39 | 139 | 267 | 50 | 2 | - | - | - | 458 |
| 40-44 | 130 | 334 | 92 | 20 | 4 | - | - | 580 |
| 45-49 | 115 | 400 | 144 | 59 | 23 | 2 | - | 743 |
| 50-54 | 182 | 510 | 236 | 118 | 40 | 20 | 5 | 1,111 |
| 55-59 | 183 | 578 | 336 | 169 | 83 | 37 | 3 | 1,389 |
| 60-64 | 132 | 374 | 155 | 68 | 34 | 14 | 2 | 779 |
| 65-69 | 63 | 123 | 43 | 21 | 13 | 1 | 4 | 268 |
| 70 \& Over | 44 | 77 | 20 | 3 | 2 | 2 | - | 148 |
| Totals | 1,151 | 2,918 | 1,087 | 460 | 199 | 76 | 14 | 5,905 |

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

| Fiscal Year Ending December 31 | Added to Rolls* |  | Removed from Rolls |  | Total |  | Percent Increase in | Average |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Count | Annual <br> Pension <br> Benefits | Count | Annual Pension Benefits | Count | Annual <br> Pension <br> Benefits | Annual <br> Pension Benefits | Annual Pension Benefit |
| 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 |
| 2012 | 1,497 | 35,646,627 | 585 | 6,920,227 | 21,600 | 367,636,301 | 8.48\% | 17,020 |
| 2013 | 1,745 | 39,633,549 | 614 | 8,227,809 | 22,731 | 399,042,042 | 8.54\% | 17,555 |
| 2014 | 1,755 | 42,076,101 | 726 | 9,207,206 | 23,760 | 431,910,937 | 8.24\% | 18,178 |

* Includes cost-of-living increases

Retired and Disabled Members by Option Code

| Option Code* | Count |  |  | Monthly Benefit |  |  | Count elected self-funded COLA** |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Total | Male | Female | Total | $1 \%$ | 2\% | 3\% |
| 1 | 1,838 | 5,614 | 7,452 | \$3,016,267 | \$7,081,785 | \$10,098,052 |  |  | 1 |
| 2 | 4,071 | 2,685 | 6,756 | 7,862,689 | 3,842,249 | 11,704,938 |  |  | 2 |
| 2 P | 1,238 | 1,617 | 2,855 | 2,159,997 | 2,634,118 | 4,794,115 | 1 |  |  |
| 3 | 485 | 491 | 976 | 1,086,545 | 756,460 | 1,843,004 |  |  |  |
| 3P | 280 | 505 | 785 | 687,623 | 992,892 | 1,680,515 |  | 1 | 2 |
| 4 | 321 | 557 | 878 | 461,702 | 663,842 | 1,125,544 | 1 |  |  |
| 5 | 455 | 1,360 | 1,815 | 655,208 | 1,594,795 | 2,250,004 | 1 |  |  |
| Total | 8,688 | 12,829 | 21,517 | \$15,930,030 | \$17,566,141 | \$33,496,171 | 3 | 1 | 5 |
| Beneficiaries | 448 | 1,795 | 2,243 | \$442,188 | \$2,054,219 | \$2,496,407 | - | - | - |
| Grand Total | 9,136 | 14,624 | 23,760 | \$16,372,218 | \$19,620,360 | \$35,992,578 | 3 | 1 | 5 |

*See optional forms of payment in Appendix B
Option 4 includes those who elected Option $4 a$ ( 10 year $C \& L$, 871 members) or Option $4 b$ ( 20 year $C \& L, 7$ members).
**Option totals in left portion of the table include these counts of members who elected a self-funded COLA option.

## Pensioners by Monthly Benefit and Option Code

| Males | Option Code* |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Benefit Amount | 1 | 2 | 2P | 3 | 3P | 4 | 5 | Total |
| Under \$ 200 | 106 | 153 | 64 | 4 | 3 | 30 | 116 | 476 |
| \$200-\$399 | 200 | 324 | 133 | 16 | 15 | 34 | 136 | 858 |
| \$400-\$599 | 198 | 327 | 130 | 26 | 13 | 41 | 123 | 858 |
| \$600-\$799 | 163 | 284 | 96 | 27 | 15 | 32 | 84 | 701 |
| \$800-\$999 | 146 | 255 | 82 | 20 | 12 | 19 | 75 | 609 |
| \$1,000-\$1,499 | 233 | 509 | 150 | 79 | 31 | 50 | 110 | 1,162 |
| \$1,500-\$1,999 | 194 | 494 | 108 | 57 | 28 | 35 | 68 | 984 |
| \$2,000-\$2,499 | 158 | 451 | 138 | 68 | 37 | 19 | 61 | 932 |
| \$2,500 \& over | 440 | 1,274 | 337 | 188 | 126 | 61 | 130 | 2,556 |
| Total | 1,838 | 4,071 | 1,238 | 485 | 280 | 321 | 903 | 9,136 |
| Females |  |  |  |  |  |  |  |  |
| Benefit Amount | 1 | 2 | 2P | 3 | 3P | 4 | 5 | Total |
| Under \$ $\mathbf{2 0 0}$ | 487 | 218 | 86 | 16 | 10 | 54 | 312 | 1,183 |
| \$200-\$399 | 813 | 360 | 178 | 48 | 25 | 96 | 475 | 1,995 |
| \$400-\$599 | 712 | 284 | 146 | 46 | 37 | 83 | 426 | 1,734 |
| \$600-\$799 | 598 | 219 | 132 | 50 | 38 | 63 | 328 | 1,428 |
| \$800-\$999 | 434 | 199 | 122 | 31 | 36 | 43 | 266 | 1,131 |
| \$1,000-\$1,499 | 827 | 404 | 231 | 89 | 76 | 69 | 476 | 2,172 |
| \$1,500-\$1,999 | 553 | 261 | 168 | 69 | 61 | 35 | 315 | 1,462 |
| \$2,000-\$2,499 | 389 | 215 | 160 | 54 | 54 | 37 | 204 | 1,113 |
| \$2,500 \& over | 801 | 525 | 394 | 88 | 168 | 77 | 353 | 2,406 |
| Total | 5,614 | 2,685 | 1,617 | 491 | 505 | 557 | 3,155 | 14,624 |
| Males \& Females |  |  |  |  |  |  |  |  |
| Benefit Amount | 1 | 2 | 2P | 3 | 3P | 4 | 5 | Total |
| Under \$ 200 | 593 | 371 | 150 | 20 | 13 | 84 | 428 | 1,659 |
| \$200-\$399 | 1,013 | 684 | 311 | 64 | 40 | 130 | 611 | 2,853 |
| \$400-\$599 | 910 | 611 | 276 | 72 | 50 | 124 | 549 | 2,592 |
| \$600-\$799 | 761 | 503 | 228 | 77 | 53 | 95 | 412 | 2,129 |
| \$800-\$999 | 580 | 454 | 204 | 51 | 48 | 62 | 341 | 1,740 |
| \$1,000-\$1,499 | 1,060 | 913 | 381 | 168 | 107 | 119 | 586 | 3,334 |
| \$1,500-\$1,999 | 747 | 755 | 276 | 126 | 89 | 70 | 383 | 2,446 |
| \$2,000-\$2,499 | 547 | 666 | 298 | 122 | 91 | 56 | 265 | 2,045 |
| \$2,500 \& over | 1,241 | 1,799 | 731 | 276 | 294 | 138 | 483 | 4,962 |
| Total | 7,452 | 6,756 | 2,855 | 976 | 785 | 878 | 4,058 | 23,760 |

[^6]
## Pensioners by Age and Option Code

Average Age Male $=71.6 \quad$ Average Age Female $=71.8 \quad$ Average Age Total $=71.7$

| Males | Option Code* |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age Last Birthday | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{2 P}$ | $\mathbf{3}$ | $\mathbf{3 P}$ | $\mathbf{4}$ | $\mathbf{5}$ | Total |
| Under 50 | 1 | 3 | - | - | - | - | 23 | 27 |
| $\mathbf{5 0 - 5 4}$ | 14 | 31 | 12 | 1 | - | 1 | 17 | 76 |
| $\mathbf{5 5 - 5 9}$ | 89 | 208 | 71 | 11 | 15 | 14 | 31 | 439 |
| $\mathbf{6 0 - 6 4}$ | 260 | 642 | 284 | 55 | 53 | 49 | 133 | 1,476 |
| $\mathbf{6 5 - 6 9}$ | 444 | 1,035 | 395 | 83 | 87 | 76 | 175 | 2,295 |
| $\mathbf{7 0 - 7 4}$ | 380 | 850 | 274 | 94 | 66 | 72 | 170 | 1,906 |
| $\mathbf{7 5 - 7 9}$ | 277 | 617 | 124 | 93 | 36 | 47 | 135 | 1,329 |
| $\mathbf{8 0 - 8 4}$ | 199 | 397 | 63 | 72 | 17 | 34 | 97 | 879 |
| $\mathbf{8 5}$ \& over | 174 | 288 | 15 | 76 | 6 | 28 | 122 | 709 |
| Total | $\mathbf{1 , 8 3 8}$ | $\mathbf{4 , 0 7 1}$ | $\mathbf{1 , 2 3 8}$ | $\mathbf{4 8 5}$ | $\mathbf{2 8 0}$ | $\mathbf{3 2 1}$ | $\mathbf{9 0 3}$ | $\mathbf{9 , 1 3 6}$ |
| Females |  |  |  |  |  |  |  |  |
| Age Last Birthday | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{2 P}$ | $\mathbf{3}$ | $\mathbf{3 P}$ | $\mathbf{4}$ | $\mathbf{5}$ | Total |
| Under 50 | 3 | 4 | - | - | - | - | 43 | 50 |
| $\mathbf{5 0 - 5 4}$ | 35 | 18 | 16 | 1 | 2 | 3 | 34 | 109 |
| $\mathbf{5 5 - 5 9}$ | 210 | 166 | 140 | 27 | 39 | 23 | 106 | 711 |
| $\mathbf{6 0 - 6 4}$ | 875 | 651 | 487 | 104 | 133 | 93 | 354 | 2,697 |
| $\mathbf{6 5 - 6 9}$ | 1,258 | 740 | 557 | 129 | 152 | 152 | 549 | 3,537 |
| $\mathbf{7 0 - 7 4}$ | 1,082 | 502 | 291 | 89 | 112 | 112 | 555 | 2,743 |
| $\mathbf{7 5 - 7 9}$ | 856 | 267 | 88 | 55 | 48 | 76 | 544 | 1,934 |
| $\mathbf{8 0 - 8 4}$ | 618 | 198 | 32 | 47 | 14 | 62 | 426 | 1,397 |
| $\mathbf{8 5 ~ \& ~ o v e r ~}$ | 677 | 139 | 6 | 39 | 5 | 36 | 544 | 1,446 |
| Total | $\mathbf{5 , 6 1 4}$ | $\mathbf{2 , 6 8 5}$ | $\mathbf{1 , 6 1 7}$ | $\mathbf{4 9 1}$ | $\mathbf{5 0 5}$ | $\mathbf{5 5 7}$ | $\mathbf{3 , 1 5 5}$ | $\mathbf{1 4 , 6 2 4}$ |
| Males \& Females |  |  |  |  |  |  |  |  |
| Age Last Birthday | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{2 P}$ | $\mathbf{3}$ | $\mathbf{3 P}$ | $\mathbf{4}$ | $\mathbf{5}$ | Total |
| Under 50 | 4 | 7 | - | - | - | - | 66 | 77 |
| $\mathbf{5 0 - 5 4}$ | 49 | 49 | 28 | 2 | 2 | 4 | 51 | 185 |
| $\mathbf{5 5 - 5 9}$ | 299 | 374 | 211 | 38 | 54 | 37 | 137 | 1,150 |
| $\mathbf{6 0 - 6 4}$ | 1,135 | 1,293 | 771 | 159 | 186 | 142 | 487 | 4,173 |
| $\mathbf{6 5 - 6 9}$ | 1,702 | 1,775 | 952 | 212 | 239 | 228 | 724 | 5,832 |
| $\mathbf{7 0 - 7 4}$ | 1,462 | 1,352 | 565 | 183 | 178 | 184 | 725 | 4,649 |
| $\mathbf{7 5 - 7 9}$ | 1,133 | 884 | 212 | 148 | 84 | 123 | 679 | 3,263 |
| $\mathbf{8 0 - 8 4}$ | 817 | 595 | 95 | 119 | 31 | 96 | 523 | 2,276 |
| $\mathbf{8 5 ~ \& ~ o v e r ~}$ | 851 | 427 | 21 | 115 | 11 | 64 | 666 | 2,155 |
| Total | $\mathbf{7 , 4 5 2}$ | $\mathbf{6 , 7 5 6}$ | $\mathbf{2 , 8 5 5}$ | $\mathbf{9 7 6}$ | $\mathbf{7 8 5}$ | $\mathbf{8 7 8}$ | $\mathbf{4 , 0 5 8}$ | $\mathbf{2 3 , 7 6 0}$ |

[^7]Pensions Awarded in 2014 by Option Code

Average Age $=63.7$

| Males \& Females | Option Code* |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Benefit Amount | 1 | 2 | 2P | 3 | 3P | 4 | 5 | Total |
| Under \$200 | 23 | 11 | 7 | 1 | 0 | 0 | 25 | 67 |
| \$200-\$399 | 38 | 32 | 31 | 3 | 1 | 2 | 48 | 155 |
| \$400-\$599 | 40 | 41 | 29 | 4 | 4 | 9 | 29 | 156 |
| \$600-\$799 | 33 | 36 | 16 | 4 | 1 | 5 | 31 | 126 |
| \$800-\$999 | 33 | 39 | 22 | 5 | 6 | 2 | 30 | 137 |
| \$1,000-\$1,499 | 54 | 56 | 41 | 8 | 6 | 4 | 41 | 210 |
| \$1,500-\$1,999 | 51 | 56 | 25 | 5 | 6 | 4 | 42 | 189 |
| \$2,000-\$2,499 | 29 | 53 | 20 | 5 | 7 | 3 | 23 | 140 |
| \$2,500 \& over | 141 | 217 | 94 | 15 | 34 | 17 | 56 | 574 |
| Total | 442 | 541 | 285 | 50 | 65 | 46 | 325 | 1,754 |
| Males \& Females |  |  |  |  |  |  |  |  |
| Age Last Birthday | 1 | 2 | 2 P | 3 | 3P | 4 | 5 | Total |
| Under 50 | 2 | 1 | 0 | 0 | 0 | 0 | 27 | 30 |
| 50-54 | 17 | 21 | 12 | 0 | 2 | 1 | 13 | 66 |
| 55-59 | 58 | 88 | 62 | 9 | 20 | 5 | 42 | 284 |
| 60-64 | 209 | 257 | 129 | 25 | 23 | 22 | 58 | 723 |
| 65-69 | 123 | 141 | 71 | 11 | 17 | 15 | 69 | 447 |
| 70-74 | 21 | 22 | 8 | 5 | 1 | 2 | 44 | 103 |
| 75-79 | 8 | 7 | 2 | 0 | 1 | 0 | 33 | 51 |
| 80-84 | 2 | 4 | 1 | 0 | 1 | 1 | 18 | 27 |
| 85 \& over | 2 | 0 | 0 | 0 | 0 | 0 | 21 | 23 |
| Total | 442 | 541 | 285 | 50 | 65 | 46 | 325 | 1,754 |

*Options include those who elected a self-funded COLA option.

Retirees and Disabled Members by Service at Retirement and Years Since Retirement
(Average Monthly Benefit)
Average Service at Retirement $=19.6$
Average Years Since Retirement $=11.4$

| Service at Retirement |  | Years Elapsed Since Retirement |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus | Totals |
| Less than 5 | Count | 231 | 212 | 159 | 106 | 112 | 96 | 67 | 983 |
|  | Avg. Benefit | \$302 | \$281 | \$299 | \$1,323 | \$472 | \$136 | \$131 | \$215 |
| 5-9 | Count | 1,027 | 727 | 546 | 368 | 367 | 293 | 191 | 3,519 |
|  | Avg. Benefit | \$498 | \$411 | \$366 | \$339 | \$317 | \$307 | \$265 | \$396 |
| 10-14 | Count | 914 | 616 | 540 | 469 | 403 | 254 | 166 | 3,362 |
|  | Avg. Benefit | \$894 | \$751 | \$627 | \$634 | \$586 | \$559 | \$447 | \$704 |
| 15-19 | Count | 817 | 655 | 578 | 548 | 330 | 220 | 111 | 3,259 |
|  | Avg. Benefit | \$1,382 | \$1,139 | \$983 | \$954 | \$920 | \$863 | \$676 | \$1,085 |
| 20-24 | Count | 960 | 642 | 557 | 441 | 258 | 160 | 72 | 3,090 |
|  | Avg. Benefit | \$1,996 | \$1,652 | \$1,406 | \$1,358 | \$1,278 | \$1,239 | \$912 | \$1,603 |
| 25-29 | Count | 1,117 | 864 | 609 | 434 | 186 | 141 | 33 | 3,384 |
|  | Avg. Benefit | \$2,796 | \$2,403 | \$2,087 | \$1,949 | \$1,940 | \$1,594 | \$1,239 | \$2,347 |
| 30-34 | Count | 1,094 | 662 | 492 | 331 | 200 | 109 | 16 | 2,904 |
|  | Avg. Benefit | \$3,575 | \$3,186 | \$2,733 | \$2,672 | \$2,726 | \$2,208 | \$1,588 | \$3,120 |
| 35 \& Over | Count | 514 | 213 | 108 | 80 | 76 | 21 | 4 | 1,016 |
|  | Avg. Benefit | \$4,437 | \$3,893 | \$3,338 | \$3,226 | \$3,209 | \$2,577 | \$1,733 | \$3,970 |
| Totals | Count | 6,674 | 4,591 | 3,589 | 2,777 | 1,932 | 1,294 | 660 | 21,517 |
|  | Avg. Benefit | \$2,061 | \$1,663 | \$1,364 | \$1,280 | \$1,114 | \$891 | \$527 | \$1,557 |

## Retirees and Disabled Members by Year of Retirement

January 1, 2015 Total $=21,517$

| Year of Retirement | Count |
| :---: | :---: |
| Under 1960 | - |
| $\mathbf{1 9 6 0}$ | - |
| $\mathbf{1 9 6 1}$ | - |
| $\mathbf{1 9 6 2}$ | - |
| $\mathbf{1 9 6 3}$ | - |
| $\mathbf{1 9 6 4}$ | - |
| $\mathbf{1 9 6 5}$ | - |
| $\mathbf{1 9 6 6}$ | - |
| $\mathbf{1 9 6 7}$ | - |
| $\mathbf{1 9 6 8}$ | - |
| $\mathbf{1 9 6 9}$ | - |
| $\mathbf{1 9 7 0}$ | - |
| $\mathbf{1 9 7 1}$ | 7 |
| $\mathbf{1 9 7 2}$ | 6 |
| $\mathbf{1 9 7 3}$ | 7 |
| $\mathbf{1 9 7 4}$ | 15 |
| $\mathbf{1 9 7 5}$ | 15 |
| $\mathbf{1 9 7 6}$ | 22 |
| $\mathbf{1 9 7 7}$ | 39 |
| $\mathbf{1 9 7 8}$ | 49 |
| $\mathbf{1 9 7 9}$ | 64 |
| $\mathbf{1 9 8 0}$ | 59 |
| $\mathbf{1 9 8 1}$ | 79 |
| $\mathbf{1 9 8 2}$ | 73 |
| $\mathbf{1 9 8 3}$ | 90 |
| $\mathbf{1 9 8 4}$ | 124 |
| $\mathbf{1 9 8 5}$ | 171 |
| $\mathbf{1 9 8 6}$ | 206 |


| Year of Retirement | Count |
| :---: | ---: |
| $\mathbf{1 9 8 7}$ | 341 |
| $\mathbf{1 9 8 8}$ | 301 |
| $\mathbf{1 9 8 9}$ | 273 |
| $\mathbf{1 9 9 0}$ | 315 |
| $\mathbf{1 9 9 1}$ | 327 |
| $\mathbf{1 9 9 2}$ | 433 |
| $\mathbf{1 9 9 3}$ | 403 |
| $\mathbf{1 9 9 4}$ | 443 |
| $\mathbf{1 9 9 5}$ | 749 |
| $\mathbf{1 9 9 6}$ | 480 |
| $\mathbf{1 9 9 7}$ | 499 |
| $\mathbf{1 9 9 8}$ | 510 |
| $\mathbf{1 9 9 9}$ | 538 |
| $\mathbf{2 0 0 0}$ | 612 |
| $\mathbf{2 0 0 1}$ | 674 |
| $\mathbf{2 0 0 2}$ | 669 |
| $\mathbf{2 0 0 3}$ | 747 |
| $\mathbf{2 0 0 4}$ | 862 |
| $\mathbf{2 0 0 5}$ | 811 |
| $\mathbf{2 0 0 6}$ | 818 |
| $\mathbf{2 0 0 7}$ | 927 |
| $\mathbf{2 0 0 8}$ | 1,082 |
| $\mathbf{2 0 0 9}$ | 960 |
| $\mathbf{2 0 1 0}$ | 1,150 |
| $\mathbf{2 0 1 1}$ | 1,341 |
| $\mathbf{2 0 1 2}$ | 1,358 |
| $\mathbf{2 0 1 3}$ | 1,416 |
| $\mathbf{2 0 1 4} *$ | 1,452 |

*May include retirements as of January 1, 2015

## Thirty Year Projected Benefit Payments

| Year Ending December 31 | Actives |  | Retirees* |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2015 | \$ | 34,533,423 | \$ | 436,974,052 | \$ | 471,507,475 |
| 2016 |  | 70,243,715 |  | 433,728,078 |  | 503,971,793 |
| 2017 |  | 103,638,872 |  | 429,913,547 |  | 533,552,419 |
| 2018 |  | 137,640,591 |  | 425,630,637 |  | 563,271,228 |
| 2019 |  | 175,086,582 |  | 420,984,414 |  | 596,070,995 |
| 2020 |  | 212,934,297 |  | 415,732,811 |  | 628,667,107 |
| 2021 |  | 251,078,464 |  | 410,005,682 |  | 661,084,146 |
| 2022 |  | 289,155,549 |  | 403,611,761 |  | 692,767,310 |
| 2023 |  | 326,827,506 |  | 396,562,392 |  | 723,389,898 |
| 2024 |  | 363,339,632 |  | 389,026,138 |  | 752,365,770 |
| 2025 |  | 398,873,688 |  | 380,998,334 |  | 779,872,021 |
| 2026 |  | 433,885,376 |  | 372,438,018 |  | 806,323,394 |
| 2027 |  | 468,162,897 |  | 363,207,626 |  | 831,370,523 |
| 2028 |  | 501,681,923 |  | 353,475,168 |  | 855,157,092 |
| 2029 |  | 534,595,292 |  | 343,437,459 |  | 878,032,751 |
| 2030 |  | 566,866,619 |  | 333,115,728 |  | 899,982,347 |
| 2031 |  | 598,632,410 |  | 322,099,753 |  | 920,732,163 |
| 2032 |  | 629,805,492 |  | 310,435,961 |  | 940,241,453 |
| 2033 |  | 660,373,038 |  | 298,247,353 |  | 958,620,391 |
| 2034 |  | 690,730,038 |  | 285,659,626 |  | 976,389,664 |
| 2035 |  | 720,873,645 |  | 272,700,142 |  | 993,573,787 |
| 2036 |  | 750,324,317 |  | 259,416,159 |  | 1,009,740,476 |
| 2037 |  | 779,276,702 |  | 245,868,037 |  | 1,025,144,739 |
| 2038 |  | 807,380,404 |  | 232,069,837 |  | 1,039,450,241 |
| 2039 |  | 834,851,862 |  | 218,108,361 |  | 1,052,960,223 |
| 2040 |  | 861,977,732 |  | 204,044,916 |  | 1,066,022,648 |
| 2041 |  | 887,183,599 |  | 189,849,857 |  | 1,077,033,456 |
| 2042 |  | 910,001,117 |  | 175,692,687 |  | 1,085,693,803 |
| 2043 |  | 929,826,654 |  | 161,665,677 |  | 1,091,492,331 |
| 2044 |  | 946,561,443 |  | 147,859,280 |  | 1,094,420,723 |

* Includes Disabled Members, Beneficiaries, and Deferred Vested Members. Retirement benefit payments for deferred vested members are assumed to commence at age 60 (age 65 for Tier 2).

APPENDIX A<br>SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

## Summary of Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2015 actuarial valuation report.

## 1. Valuation Date

The valuation date for any given year is January $1^{\text {st }}$, 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 $7.75 \%$ ), 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 a unfunded 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 phasein 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
$7.75 \%$ per year, compounded annually, composed of an assumed $3.25 \%$ 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 | $6.00 \%$ |
| 25 | $6.00 \%$ |
| 30 | $5.75 \%$ |
| 35 | $5.75 \%$ |
| 40 | $5.50 \%$ |
| 45 | $5.50 \%$ |
| 50 | $5.50 \%$ |
| 55 | $5.25 \%$ |
| 60 | $4.25 \%$ |

c. Payroll growth rate: In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase $4.25 \%$ 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. Mortality

Healthy Pre-Retirement Mortality:
RP-2000 Combined Mortality Table, fully generational, projected with Scale BB

Males: Set back 5 years with a multiplier of $104 \%$
Females: Set back 4 years with a multiplier of $90 \%$
Healthy Post-Retirement Mortality:
RP-2000 Combined Mortality Table, fully generational, projected with Scale BB

Males: Set back 1 year with a multiplier of $104 \%$
Females: Set back 0 years with a multiplier of $90 \%$
Disabled Mortality:
RP-2000 Disabled Mortality Table, fully generational, projected with Scale BB

Males: Set forward 5 years with a multiplier of $120 \%$
Females: Set forward 5 years with a multiplier of $120 \%$

|  | Pre-Retirement |  | Post-Retirement |  | Dis abled |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | Projected to 2015 using Scale BB |  |  |  |  |  |
|  | Male | Female | Male | Female | Male | Female |
| 20 | $0.03 \%$ | $0.02 \%$ | $0.03 \%$ | $0.02 \%$ | $2.59 \%$ | $0.85 \%$ |
| 25 | $0.03 \%$ | $0.02 \%$ | $0.04 \%$ | $0.02 \%$ | $2.59 \%$ | $0.85 \%$ |
| 30 | $0.04 \%$ | $0.02 \%$ | $0.04 \%$ | $0.02 \%$ | $2.59 \%$ | $0.85 \%$ |
| 35 | $0.04 \%$ | $0.03 \%$ | $0.07 \%$ | $0.04 \%$ | $2.59 \%$ | $0.85 \%$ |
| 40 | $0.08 \%$ | $0.04 \%$ | $0.10 \%$ | $0.06 \%$ | $2.59 \%$ | $0.85 \%$ |
| 45 | $0.11 \%$ | $0.07 \%$ | $0.14 \%$ | $0.10 \%$ | $3.32 \%$ | $1.32 \%$ |
| 50 | $0.15 \%$ | $0.11 \%$ | $0.20 \%$ | $0.14 \%$ | $4.07 \%$ | $1.84 \%$ |
| 55 | $0.21 \%$ | $0.16 \%$ | $0.32 \%$ | $0.23 \%$ | $4.54 \%$ | $2.25 \%$ |
| 60 | $0.36 \%$ | $0.25 \%$ | $0.56 \%$ | $0.39 \%$ | $5.02 \%$ | $2.81 \%$ |
| 65 | $0.63 \%$ | $0.44 \%$ | $0.99 \%$ | $0.73 \%$ | $5.99 \%$ | $3.77 \%$ |
| 70 | $1.11 \%$ | $0.82 \%$ | $1.64 \%$ | $1.26 \%$ | $7.85 \%$ | $5.23 \%$ |
| 75 |  |  | $2.81 \%$ | $2.11 \%$ | $10.46 \%$ | $7.24 \%$ |
| 80 |  |  | $4.80 \%$ | $3.45 \%$ | $13.55 \%$ | $10.03 \%$ |
| 85 |  |  | $8.27 \%$ | $5.82 \%$ | $18.64 \%$ | $14.24 \%$ |
| 90 |  |  | $14.44 \%$ | $10.04 \%$ | $29.33 \%$ | $21.33 \%$ |
| 95 |  |  | $23.46 \%$ | $15.99 \%$ | $39.52 \%$ | $27.24 \%$ |
| 100 |  |  | $32.83 \%$ | $20.43 \%$ | $47.75 \%$ | $35.17 \%$ |

## b. Disability and Withdrawal

|  | Disability |  | Withdrawal |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | Male | Fltimate |
|  | Memale |  |  |
| 20 | $0.01 \%$ | $0.01 \%$ | $10.00 \%$ | $11.00 \%$ |
| 30 | $0.01 \%$ | $0.01 \%$ | $10.00 \%$ | $11.00 \%$ |
| 35 | $0.01 \%$ | $0.01 \%$ | $4.50 \%$ | $7.50 \%$ |
| 40 | $0.01 \%$ | $0.01 \%$ | $4.00 \%$ | $5.00 \%$ |
| 45 | $0.01 \%$ | $0.01 \%$ | $4.00 \%$ | $5.00 \%$ |
| 50 | $0.03 \%$ | $0.03 \%$ | $3.50 \%$ | $5.00 \%$ |
| 55 | $0.30 \%$ | $0.06 \%$ | $3.00 \%$ | $4.00 \%$ |
| 60 | $0.30 \%$ | $0.15 \%$ | $3.00 \%$ | $4.00 \%$ |


| Withdrawal |  |  |
| :---: | :---: | :---: |
| Service | First five years |  |
|  | Male | Female |
|  | $22 \%$ | $26 \%$ |
| 2 | $18 \%$ | $21 \%$ |
| 3 | $13 \%$ | $15 \%$ |
| 4 | $11 \%$ | $15 \%$ |
| 5 | $11 \%$ | $14 \%$ |

c. Retirement Rates

|  | Retirement |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Tier 1 |  | Tier 2 |  |
|  | Unreduced | Reduced | Unreduced | Reduced |
| $<50$ | $10.0 \%$ | $1.0 \%$ | $10.0 \%$ | $1.0 \%$ |
| 50 | $10.0 \%$ | $4.5 \%$ | $10.0 \%$ | $4.5 \%$ |
| 51 | $10.0 \%$ | $4.5 \%$ | $10.0 \%$ | $4.5 \%$ |
| 52 | $10.0 \%$ | $4.5 \%$ | $10.0 \%$ | $4.5 \%$ |
| 53 | $10.0 \%$ | $5.0 \%$ | $10.0 \%$ | $5.0 \%$ |
| 54 | $10.0 \%$ | $5.0 \%$ | $10.0 \%$ | $5.0 \%$ |
| 55 | $17.0 \%$ | $5.0 \%$ | $17.0 \%$ | $5.0 \%$ |
| 56 | $17.0 \%$ | $5.0 \%$ | $17.0 \%$ | $5.0 \%$ |
| 57 | $15.0 \%$ | $5.0 \%$ | $15.0 \%$ | $5.0 \%$ |
| 58 | $15.0 \%$ | $5.5 \%$ | $15.0 \%$ | $5.5 \%$ |
| 59 | $15.0 \%$ | $6.0 \%$ | $15.0 \%$ | $6.0 \%$ |
| 60 | $13.0 \%$ |  | $13.0 \%$ | $13.0 \%$ |
| 61 | $13.0 \%$ |  | $13.0 \%$ | $13.0 \%$ |
| 62 | $17.5 \%$ |  | $17.5 \%$ | $17.5 \%$ |
| 63 | $17.5 \%$ |  | $17.5 \%$ | $17.5 \%$ |
| 64 | $17.0 \%$ |  | $17.0 \%$ | $17.0 \%$ |
| 65 | $25.0 \%$ |  | $25.0 \%$ |  |
| 66 | $32.0 \%$ |  | $32.0 \%$ |  |
| 67 | $20.0 \%$ |  | $20.0 \%$ |  |
| 68 | $20.0 \%$ |  | $20.0 \%$ |  |
| 69 | $20.0 \%$ |  | $20.0 \%$ |  |
| $70+$ | $100.0 \%$ |  | $100.0 \%$ |  |

## 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 ( 65 for Tier 2).
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. We assume all members are totally disabled.
h. No surviving spouse will remarry.
i. Administrative expenses: Assumed to be the average of the prior two years, with each year projected at $6.5 \%$ to the valuation date.
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.

1. 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.

# APPENDIX B <br> SUMMARY OF PLAN PROVISIONS 

## Summary of Plan Provisions

Tier Members who join the State of Wyoming Retirement System by August 31, 2012

Covered Members

Final Average Salary

Any full-time or regular part-time employee of an employer as defined under W.S. 9-3-402(a)(vii) are in Tier 1, while members who join on or after September 1, 2012 are in Tier 2.

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.

## Service Retirement

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.

## Disability Benefit

Eligibility $\quad$ Ten or more years of service.
Benefit Service retirement benefit earned as of the date of disability, payable immediately.

Park Rangers Effective March 5, 2015, for eligible peace officers as defined under W.S. 6-1104(a)(vi)(P) whose disability is duty-related, the member shall be eligible immediately for a benefit of $62.5 \%$ of the member's final salary.

## 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.

Park Rangers Effective March 5, 2015, for eligible peace officers as defined under W.S. 6-1104(a)(vi)(P) whose death is duty-related, the member shall be eligible immediately for a benefit of $62.5 \%$ of member's final actual salary, payable to the surviving spouse plus $6 \%$ of the member's final actual salary for each unmarried child under age 18. Payment shall not exceed the member's final actual salary.

## Contributions

Employee $8.25 \%$ of salary.
Employer $\quad 7.62 \%$ before July 1, 2015 and $8.37 \%$ after, plus, effective March 5, 2015, an additional $1.0 \%$ for park rangers.

Interest $\quad 5.50 \%$ annually.

## Cost-of-Living Improvements

W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above $100 \%$ plus a margin for adverse experience throughout the life of the benefit change.

## Optional Forms of Payment

All options include the choice to elect a reduced benefit with a self-funded annual COLA of $1 \%, 2 \%$, or $3 \%$ per year. COLAs commence on the one-year anniversary of retirement.
Option $1 \quad$ 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 4a Monthly benefit for life with a guarantee of 120 monthly payments
Option 4b Monthly benefit for life with a guarantee of 240 monthly payments
Option $5 \quad$ The largest possible monthly benefit payable for life with no lump-sum death benefit.


[^0]:    * Employ er contributions include other funding sources and employ ee contributions may include member redeposits and member service purchase contributions
    ** Net of investment expenses
    *** December 31,2009 market values exclude Air Guard Firefighters

[^1]:    Excludes Air Guard beginning in 2010
    Effective January 1, 2010, liabilities are calculated assuming no future cost-of-living increases.

[^2]:    Excludes Air Guard beginning in 2010
    Effective January 1, 2010, liabilities are calculated assuming no future cost-of-living increases.

[^3]:    Average salary represents annualized salary earned in 2014 and is not shown for cells with counts less than or equal to three participants

[^4]:    Average salary represents annualized salary earned in 2014 and is not shown for cells with counts less than or equal to three participants

[^5]:    Average salary represents annualized salary earned in 2014 and is not shown for cells with counts less than or equal to three participants

[^6]:    *Options include those who elected a self-funded COLA option.

[^7]:    *Options include those who elected a self-funded COLA option.

