

# Teachers' and State Employees' Retirement System of North Carolina

Report on the Seventy-First Annual Valuation  
Prepared as of December 31, 2013

October 2014



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October 2, 2014

Board of Trustees  
Teachers' and State Employees'  
Retirement System of North Carolina  
325 North Salisbury Street  
Raleigh, NC 27603

Members of the Board:

We submit herewith our report on the seventy-first annual valuation of the Teachers' and State Employees' Retirement System of North Carolina (referred to as "TSERS" or the "State Plan") prepared as of December 31, 2013. The report has been prepared in accordance with North Carolina General Statute 135-6(o).

The primary purpose of the valuation report is to determine the required member and employer contribution rates, to describe the current financial condition of TSERS, and to analyze changes in such condition. In addition, the report provides information that the Office of the State Controller (OSC) requires for its Comprehensive Annual Financial Report (CAFR) and it summarizes census data. Use of this report for any other purposes or by anyone other than OSC and its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without Buck Consultants' written consent.


The valuation is based upon membership data and financial information as furnished by the Retirement Systems Division and the Financial Operations Division and as summarized in this report. Although reviewed for reasonableness and consistency with the prior valuation, these elements have not been audited by Buck and we cannot certify as to the accuracy and completeness of the data supplied. The valuation is also based on benefit and contribution provisions as presented in this report. If you have reason to believe that the plan provisions are incorrectly described, that important plan provisions relevant to this valuation are not described, or that conditions have changed since the calculations were made, you should contact the authors of this actuarial report prior to relying on this information.

The valuation is further based on the actuarial valuation assumptions, approved by the Board of Trustees, as presented in this report. We believe that these assumptions are reasonable and comply with the requirements of GASB Nos. 25, 27, and 67. We prepared this report in accordance with the requirements of these standards.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Because of limited scope, Buck performed no analysis of the potential range of such future differences.

The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Respectfully submitted,

  
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Principal, Consulting Actuary

  
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Principal, Consulting Actuary

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# Executive Summary

## Overview

The North Carolina Retirement Systems Division (RSD) was established in 1941 to provide retirement benefits for public servants in the State of North Carolina. Today, under the management of the Department of State Treasurer, RSD administers eight public pension plans (defined benefit plans), three supplemental retirement plans (voluntary defined contributions plans), a health trust fund, a disability income plan, death benefit funds and a number of other benefit programs. As of December 31, 2013, the Retirement Systems' defined benefit plans cover about 900,000 current and prior public servants in the state of North Carolina. During the fiscal year ending June 30, 2014, the Systems paid \$5.2 billion in pensions to about 250,000 retirees. And as of June 30, 2014, the Systems' assets were valued at \$90 billion.

Under the supplemental retirement plans, the amount of contributions in any given year is defined by law. The amount of benefits derived is dependent on the investment returns the individual achieves. Conversely, under the pension plans, the amount of the benefit paid to a member upon retirement, termination, death or disability is defined by law. The amount of contributions needed to fund these benefits cannot be known with certainty. In North Carolina, like other states, these contributions are paid during a public servant's career so that upon retirement, termination, death, or disability, there are funds available to pay these benefits. These amounts are determined through an actuarial valuation. Actuarial valuations are performed for each of the pension plans administered by RSD and the results are contained in actuarial valuation reports like this.

In 1941, the Teachers' and State Employees' Retirement System (referred to as "TSERS" or the "State Plan") was established. TSERS provides benefits to all full-time teachers and state employees in all public school systems, universities, departments, institutions and agencies of the state. With almost \$63 billion in assets and over 630,000 members as of December 31, 2013, it is the largest pension plan within the System. This actuarial valuation report is our annual analysis of the financial health of TSERS. This report, prepared as of December 31, 2013, presents the results of the seventy-first annual valuation of TSERS.

## Purpose

An actuarial valuation is performed on TSERS annually as of the end of the calendar year. The actuary determines the amount of contributions to be made to TSERS during each member's career that, when combined with investment return, will be sufficient to pay for retirement benefits.

In addition, the annual actuarial valuation is performed to:

- Determine the progress on funding TSERS,
- Explore why the results of the current valuation differ from the results of the valuation of the previous year, and
- Satisfy regulatory and accounting requirements.

A detailed summary of the valuation process and a glossary of actuarial terms are provided in Appendix A.



# Executive Summary

## Key Takeaways

The actuarial valuation is performed each year to replace the estimates the actuary assumed for the prior valuation with the actual events that happened. This past year, as expected, some of the assumptions used in the prior valuation were not realized. Key results of the December 31, 2013 valuation as compared to the December 31, 2012 valuation were:

- Market value returns of 12.21% compared to 7.25% assumed
- Increase in covered payroll of 0.5% compared to 3% assumed increase
- Recent legislation signed into law including:
  - 1% cost-of-living adjustment at July 1, 2014
  - Return to five-year vesting for all active members
  - Return of contributions with interest to all members who terminate employment prior to meeting vesting requirements
- No significant changes in actuarial assumptions or funding methodology from the prior year's valuations

When compared to the December 31, 2013 baseline projections, the above resulted in:

- Slightly higher funded ratio as of December 31, 2013 (94.8% in the valuation compared to 93.9% in the baseline projection)
- Lower employer required contribution rate for fiscal year ending June 30, 2016 (8.69% in the valuation compared to 9.15% in the baseline projection)
- Lower projected benefit amounts being accrued by active members

TSERS is well funded compared to its peers. This is due to:

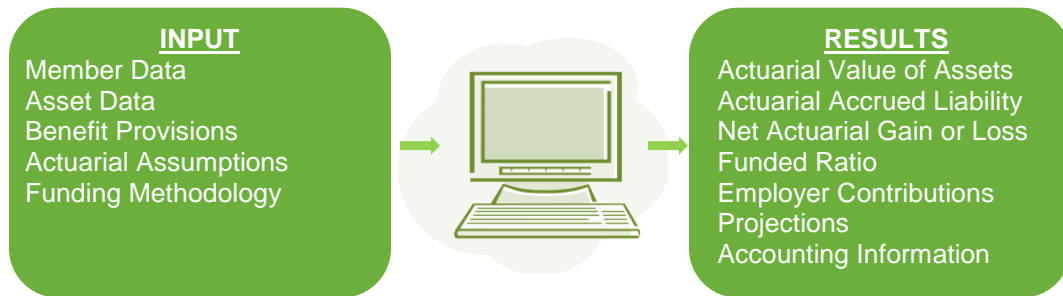
- Stakeholders working together to keep TSERS well-funded since inception
- A history of appropriating and contributing the recommended contribution requirements
- Assumptions that in aggregate are more conservative than peers
- A funding policy that aggressively pays down unfunded liability over a 12-year period
- An ad hoc cost-of-living adjustment, which typically only provides benefit increases when certain financial conditions are met, supports the health of the system
- Modest changes in benefits when compared to peers

As has been done over the past 70 years, continued focus on these measures will be needed to maintain the solid status of TSERS well into the future.

More details can be found later in this report. We encourage readers to start with Section 1 and refer to other sections for additional details as needed.

## Section 1: The Valuation Process

The following diagram summarizes the inputs and results of the actuarial valuation process.



A more detailed description of the valuation process is provided in Appendix A.

### Valuation Input: Membership Data

As with any estimate, the actuary collects information that we know now. Under the actuarial valuation process, current information about TSERS members is collected annually by the Retirement Systems Division staff at the direction of the actuary. Membership data will assist the actuary in estimating benefits that could be paid in the future. Information about benefit provisions and assets held in the trust as of the valuation date is also collected.

The member information the actuary collects includes data elements such as current service, salary and benefit group identifier for members that have not separated service, and actual benefit amounts and form of payment for members that have separated service. Data elements such as gender and date of birth are used to determine when a benefit might be paid and for how long.

# Section 1: The Valuation Process

## Valuation Input: Membership Data (continued)

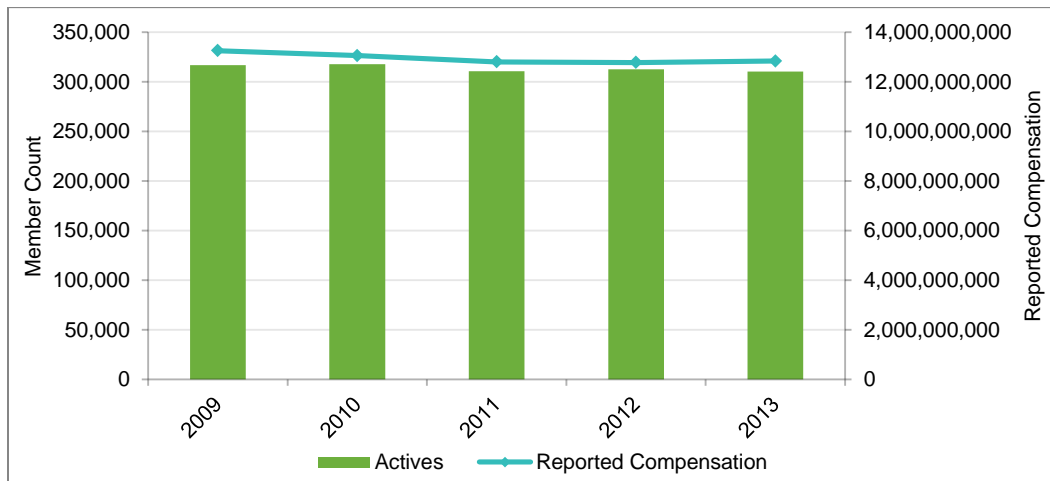
The table below provides a summary of the membership data used in this valuation compared to the prior valuation.

| Number as of   | 12/31/2013     | 12/31/2012     |
|--|----------------|----------------|
| Active members   | 310,370        | 312,512        |
| Members currently receiving Disability Income Plan benefits  | 7,639          | 7,487          |
| Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits | 125,513        | 117,489        |
| Retired members and survivors of deceased members currently receiving benefits                           | <u>187,448</u> | <u>179,908</u> |
| Total  | 630,970        | 617,396        |

**Commentary:** The number of active members decreased by 0.7% from the previous valuation date. The decrease in active members results in less benefits accruing, but also fewer contributions supporting the system. The number of retired members and survivors of deceased members currently receiving benefits increased by 4.2% from the previous valuation. The increase in retiree population is consistent with expectations.

### Graph 1: Active Members

The graph below provides a history of the number of active members and reported compensation over the past five years.



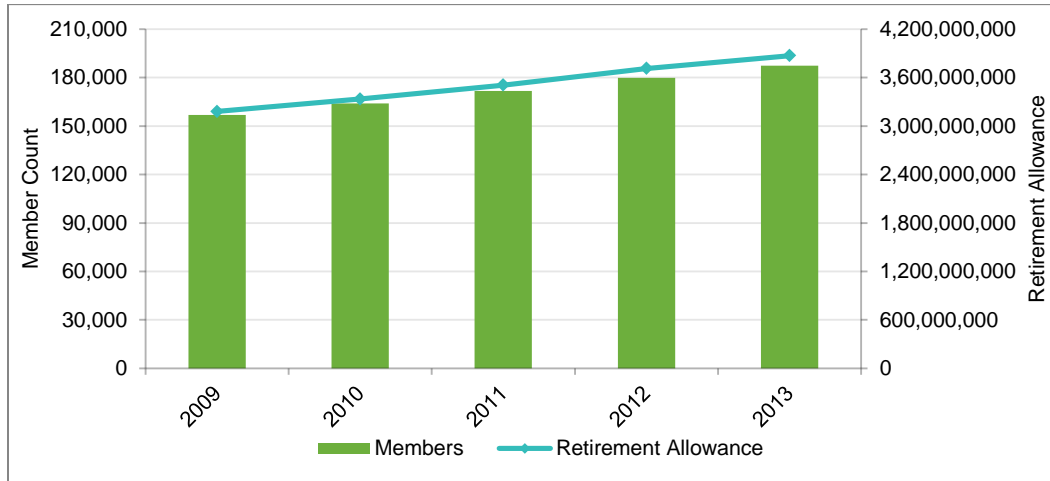
**Commentary:** Reported compensation has increased by 0.5% after decreasing slightly in previous years. The valuation assumes covered payroll will increase by 3% annually in the future. Payroll that is not increasing as fast as we assume results in less benefits accruing than we anticipate, but also fewer contributions supporting the system.

## Section 1: The Valuation Process

### Valuation Input: Membership Data (continued)

#### Graph 2: Retired Members and Survivors of Deceased Members

The graph below provides a history of the number of retired members and survivors of deceased members and benefit amounts payable over the past five years.



**Commentary:** The number of retired members and survivors of deceased members and the benefits paid to these members has been increasing steadily, as expected based on plan assumptions.

A detailed summary of the membership data used in this valuation is provided in Section 3 and Appendix B of this report.

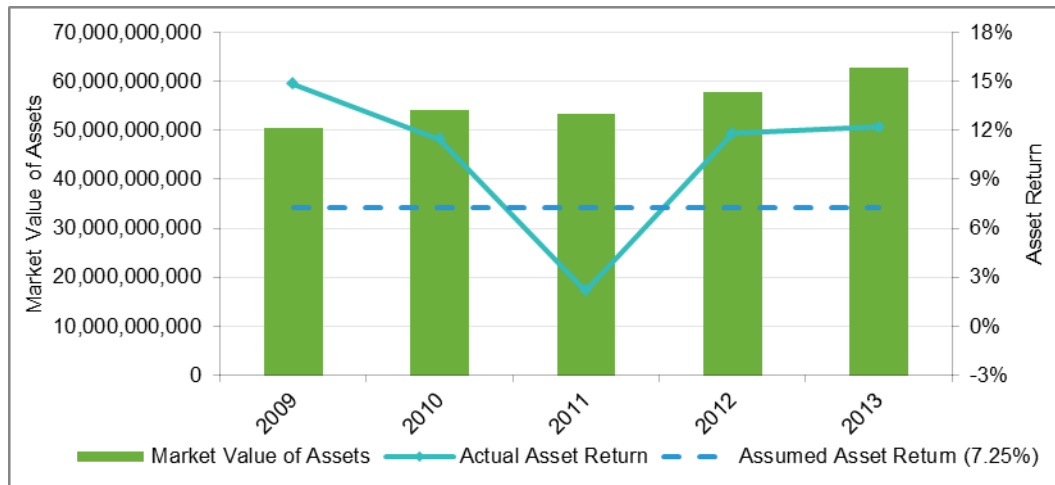
# Section 1: The Valuation Process

## Valuation Input: Asset Data

TSERS assets are held in trust and are invested for the exclusive benefit of plan members. The Market Value of Assets is \$62.8 billion as of December 31, 2013 and \$57.8 billion as of December 31, 2012. The investment return for the market value of assets for calendar year 2013 was 12.21%.

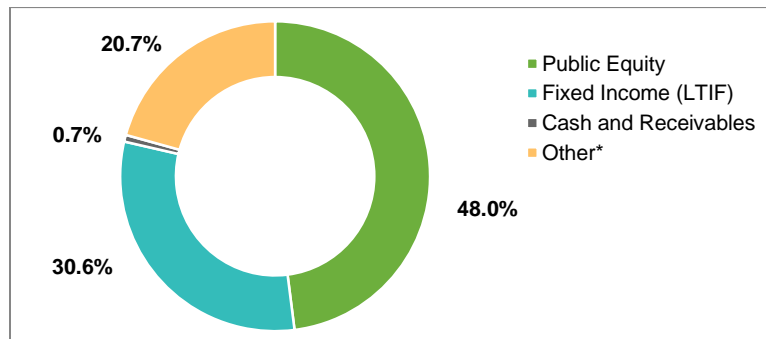
### Graph 3: Market Value of Asset and Asset Returns

The graph below provides a history of the market value of assets and asset returns over the past five years.



### Graph 4: Allocation of Investments by Category

The graph below provides the breakdown of the market value of assets at December 31, 2013 by asset category.



\* Real Estate, Alternatives, Inflation and Credit

**Commentary:** Based on historical market returns, the current asset allocation, the current investment policy, and the expectation of future asset returns, as reviewed in the last experience study, the 7.25% discount rate used in this valuation is reasonable and appropriate. The discount rate will be reviewed at the next experience study to be presented to the Board in October 2015.

A detailed summary of the market value of assets is provided in Section 4 of this report.

# Section 1: The Valuation Process

## Valuation Input: Benefit Provisions

Benefit provisions are described in North Carolina General Statutes, Chapter 135.

There were the following changes in benefit provisions from the prior year's valuation:

- 1% cost-of-living adjustment at July 1, 2014
- Return to five-year vesting for all active members
- Return of contributions with interest to all members prior to meeting vesting requirements

Highlights of the benefit provisions are described below.

- An unreduced retirement allowance is payable to non-law enforcement members who retire from service:
  - after attaining age 65 and five years of creditable service;
  - after attaining age 60 and 25 years of creditable service; or
  - after attaining 30 years of creditable service
- An unreduced retirement allowance is payable to law enforcement members who retire from service:
  - after attaining age 55 and five years of creditable service; or
  - after attaining 30 years of creditable service
- The unreduced retirement allowance is equal to 1.82% of a member's final average compensation multiplied by the number of years of creditable service.
- A reduced retirement allowance is payable to non-law enforcement members who retire from service:
  - after attaining age 60 and five years of membership service; or
  - after attaining age 50 and 20 years of creditable service.
- A reduced retirement allowance is payable to law enforcement members who retire from service after attaining age 50 and 15 years of creditable service.
- Ancillary benefits are also payable upon the death or disability of a member.
- TSERS does not provide for explicit cost of living increases as part of the benefit package. Instead, increases may be provided if certain financial conditions are met and/or the legislature passes a budget that provides for a cost-of-living adjustment. More details on cost-of-living increases are provided in Graph 5.

**Commentary:** Most Public Sector Retirement Systems in the United States have undergone pension reform where the benefits of members (current retirees and active or future members) have been reduced. Because of the well-funded status of TSERS due to the legislature contributing the actuarially required contribution, benefit cuts have not been needed in North Carolina. Instead, we have seen a modest expansion of benefits this past year based on sound plan design.

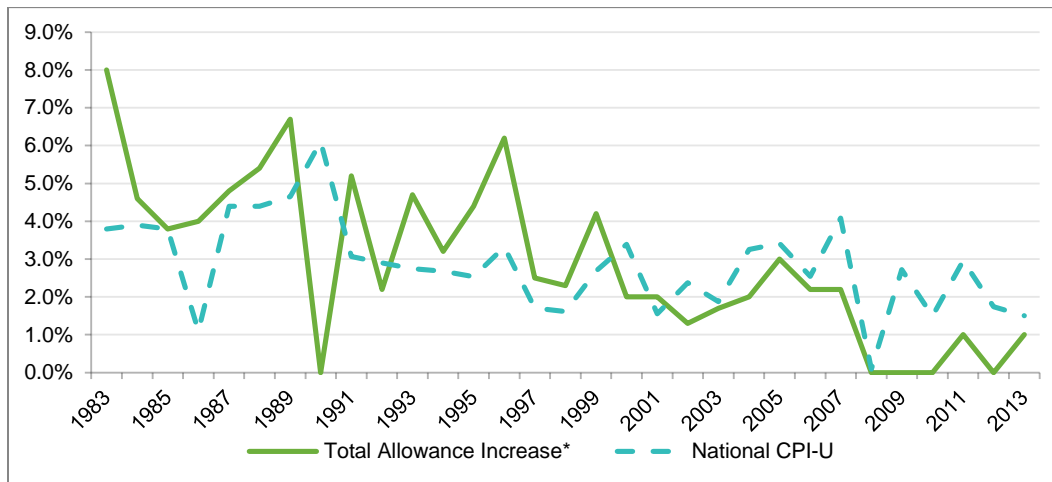
# Section 1: The Valuation Process

## Valuation Input: Benefit Provisions (continued)

As noted previously, cost-of-living increases are periodically considered to the extent that certain financial conditions are met and/or the legislature passes a budget that provides for a cost-of-living adjustment. Specifically, benefit allowance increases are generally considered when the employer contribution rate would not need to increase to pay for a cost-of-living adjustment (generally, limited to the lesser of the CPI increase year-over-year or 4%) Active member pay increases are also considered. In any case, the legislature makes the final decision. In addition to the legislature consistently appropriating the actuary's recommended contribution, this benefit increase policy has helped keep costs manageable when compared to other Public Sector Retirement Systems in the United States. That being said, it is important to provide a benefit in retirement that does not get eroded by inflation.

### Graph 5: Cost-of-Living Increase and CPI-U History

The graph below provides a 30-year history of allowance increases for TSERS and the national CPI-U.



\* Allowance increases are effective at July 1 the following year

**Commentary:** Generally this allowance increase policy has helped retirees maintain purchasing power while helping to moderate contribution increases during times of down markets.

A detailed summary of the benefit provisions is provided in Appendix C of this report.

## Valuation Input: Actuarial Assumptions

Actuarial assumptions bridge the gap between the information that we know with certainty as of the valuation date (age, gender, service, pay, and benefits of the members) and what may happen in the future. The actuarial assumptions of TSERS are reviewed at least every five years. Based on this review, the actuary will make recommendations on the demographic and economic assumptions.

## Section 1: The Valuation Process

Demographic assumptions describe future events that relate to people such as retirement rates, termination rates, disability rates, and mortality rates. Economic assumptions describe future events that relate to the assets of TSERS such as the interest rate, salary increases, the real return, and payroll growth.

The latest assumptions were adopted for use with the December 31, 2009 actuarial valuation, based on the experience study prepared as of December 31, 2009 and adopted by the Board of Trustees on October 21, 2010. The next experience study will be prepared as of December 31, 2014 and presented to the Board in October 2015. Assumptions and methods based on the next experience study, as adopted by the Board, will be used with the December 31, 2015 valuation. This policy of reviewing assumptions every five years is a best practice.

### Valuation Input: Funding Methodology

The Funding Methodology is the payment plan for the TSERS and is composed of the following three components:

- Actuarial Cost Methods allocate costs to the actuarial accrued liability (i.e. the amount of money that should be in the fund) for past service and normal cost (i.e. the cost of benefits accruing during the year) for current service.
  - The Board of Trustees has adopted Entry Age Normal as its actuarial cost method
  - Develops normal costs that stays level as a percent of payroll
- Asset Valuation Methods smooth or average the market value returns over time to alleviate contribution volatility that results from market returns.
  - 20% of market value plus 80% of the expected actuarial value
  - Assets corridor: not greater than 120% of market value and not less than 80% of market value
- Amortization Methods determine the payment schedule for unfunded actuarial accrued liability (i.e. the difference between the actuarial accrued liability and actuarial value of assets)
  - Payment level: the payment is determined as a level dollar amount, similar to a mortgage payment
  - Payment period: a 12-year closed amortization period was adopted for fiscal year ending 2012. A new amortization base is created each year based on the prior years' experience.

When compared to other Public Sector Retirement Systems in the United States, the funding policy for TSERS is quite aggressive in that the policy pays down the pension debt over a much shorter period of time (12 years) compared to the national average of around 24 years. As such it is a best practice in the industry.

There were no significant changes in actuarial assumptions or funding method from the prior year's valuation. A detailed summary of the actuarial assumptions and methods is provided in Appendix D of this report.



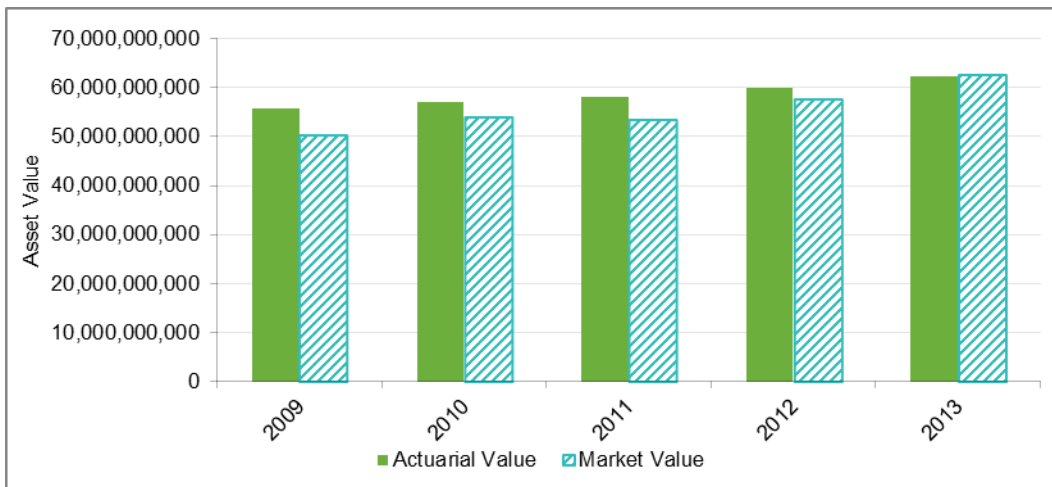
## Section 1: The Valuation Process

### Valuation Results: Actuarial Value of Assets

In order to reduce the volatility that investment gains and losses can have on required contributions and funded status of TSERS, the Board adopted an asset valuation method to determine the Actuarial Value of Assets used for funding purposes. The Actuarial Value of Assets is \$62.4 billion as of December 31, 2013 and \$59.9 billion as of December 31, 2012.

#### Graph 6: Actuarial Value and Market Value of Assets

The graph below provides a history of the market value and actuarial value of assets over the past five years.



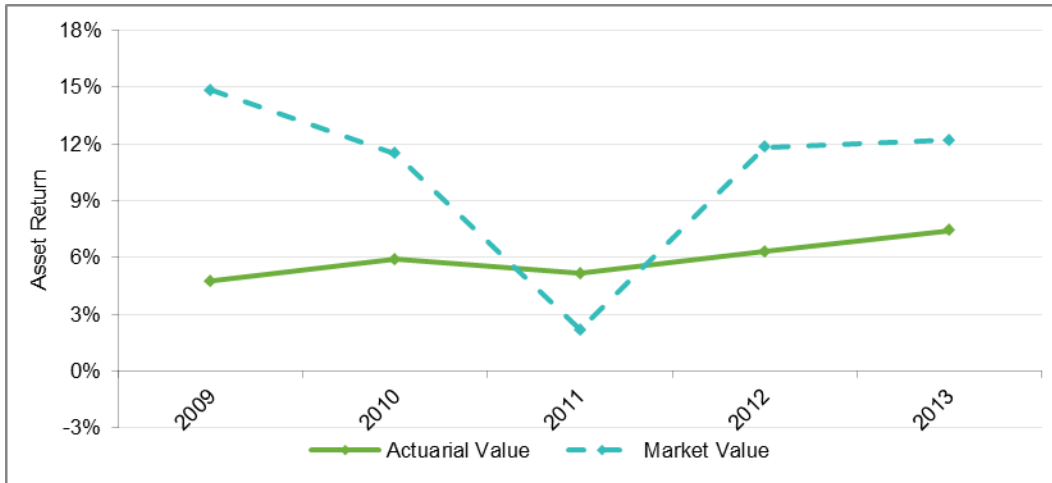
**Commentary:** For the first time in several years, the market value of assets is higher than the actuarial value of assets, which is used to determine employer contributions. This indicates that there are unrecognized asset returns to be recognized in future valuations, which will mitigate the impact of asset returns that are less than the assumed return of 7.25%. As a result, the upward pressure on contributions that we have seen since the Great Recession has been reversed, as seen in the projections of potentially higher funded ratios and lower employer contributions later in this report.

## Section 1: The Valuation Process

### Valuation Results: Actuarial Value of Assets (continued)

#### Graph 7: Asset Returns

The graph below provides a history of the market value and actuarial value of asset returns over the past five years.



**Commentary:** The investment return for the market value of assets for calendar year 2013 was 12.21%. The actuarial value of assets smooths investment gains and losses. Higher than expected market returns in 2009, 2010, 2012, and 2013 resulted in an actuarial value of asset return for calendar year 2013 of 7.43% which is higher than the assumed rate of 7.25%. Therefore, TSERS experienced an asset gain of \$106 million during 2013.

A detailed summary of the Actuarial Value of Assets is provided in Section 4 of this report.

# Section 1: The Valuation Process

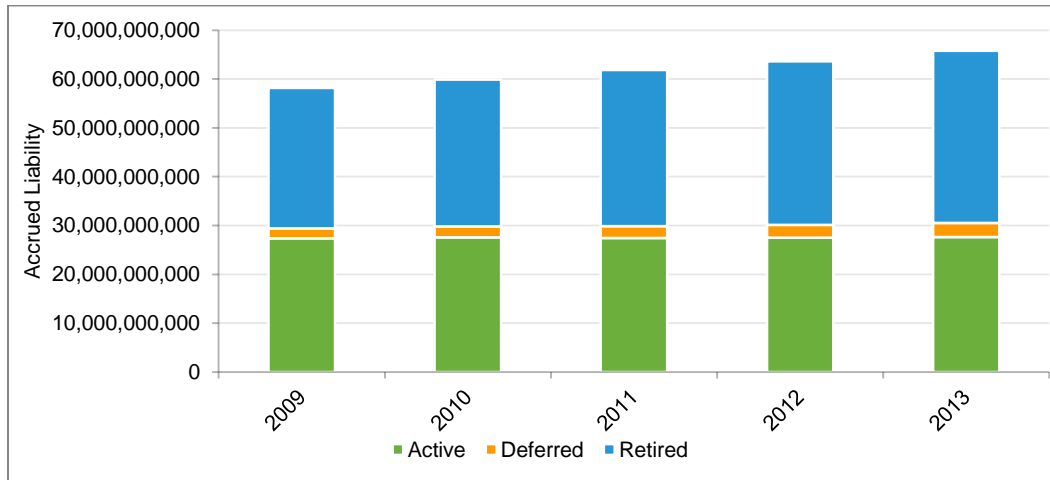
## Valuation Results: Actuarial Accrued Liability

Using the provided membership data, benefit provisions, and actuarial assumptions, the future benefit payments of TSERS are estimated. These projected future benefit payments are discounted into today's dollars using the assumed rate of investment return assumption to determine the Present Value of Future Benefits (PVFB) of TSERS. The PVFB is an estimate of the current value of the benefits promised to all members as of a valuation date.

Once the PVFB is developed, an actuarial cost method is used to allocate the PVFB. Under the actuarial cost method, the PVFB is allocated to past, current and future service, respectively known as the actuarial accrued liability (AAL), normal cost (NC) and present value of future normal costs (PVFNC). The AAL is also referred to as the amount of money TSERS should ideally have in the trust. The NC is also referred to as the cost of benefits accruing during the year.

### Graph 8: Actuarial Accrued Liability

The graph below provides a history of the actuarial accrued liability over the past five years.



**Commentary:** The AAL increased from \$63.6 billion to \$65.8 billion during 2013. The Retirement System is an open plan, which means that new members enter the plan each year. In an open plan, liabilities are expected to grow from one year to next as more benefits accrue and the membership approaches retirement. The AAL prior to legislative changes was \$370 million lower than expected, which resulted in a demographic gain of \$370 million during 2013. Legislation increased the AAL by \$361 million.

A detailed summary of the AAL is provided in Section 5 of this report.

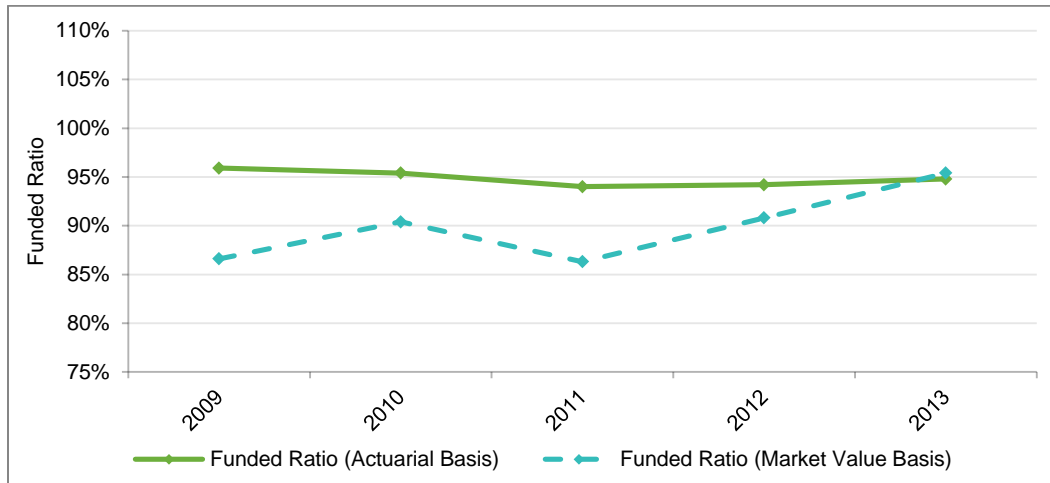
## Section 1: The Valuation Process

### Valuation Results: Funded Ratio

The funded ratio is a measure of the progress that has been made in funding the plan as of the valuation date. It is the ratio of how much money TSERS actually has in the fund to the amount TSERS should have in the fund.

#### Graph 9: Funded Ratios

The graph below provides a history of the funded ratio on a market and actuarial basis over the past five years.



**Commentary:** The actuarial value of assets basis is used for computing contributions to alleviate contribution volatility. The funded ratio on an actuarial basis increased from 94.2% at December 31, 2012 to 94.8% at December 31, 2013.

# Section 1: The Valuation Process

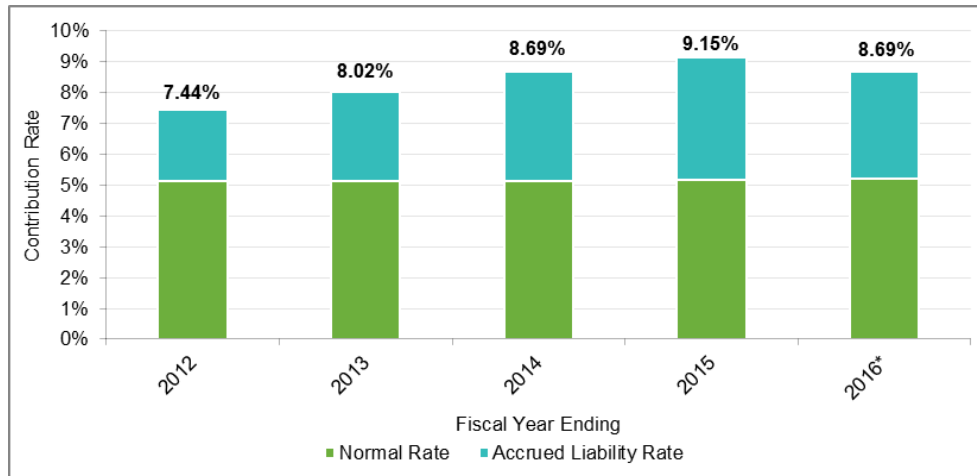
## Valuation Results: Employer Contributions

The retirement act provides that the contributions of employers shall consist of a normal contribution and an accrued liability contribution. G.S. 135-8(g) allows for the Board of Trustees of TSERS to make changes to accounting methods and procedures that, in its opinion, are in the interest of sound and proper administration of TSERS.

The December 31, 2012 valuation suggested that the preliminary total employer contribution rate be set at 8.76% of payroll for the fiscal year ending June 30, 2015. Subsequently, the 2014 Appropriations Act (Session Laws 2014-100) set contributions at 9.15% of payroll effective for the fiscal year ending June 30, 2015 in order to account for recent legislation passed into law. As a result of this December 31, 2013 valuation, the preliminary total employer contribution rate should be set at 8.69% of payroll for the fiscal year ending June 30, 2016, subject to the impact of any future legislative changes effective during that fiscal year. On this basis, these contributions would provide a preliminary reserve from undistributed gains equivalent to 0.46% of payroll that could be used for a cost-of-living adjustment or other benefit improvements.

### Graph 10: Employer Required Contribution Rates

The graph below provides a history of employer required contribution rates over the past five years. The rates are split into the normal rate and the accrued liability rate. The normal rate is the employer's portion of the cost of benefits accruing after reducing for the member contribution. The accrued liability rate is the payment toward the unfunded liability.



\* Subject to the impact of future legislative changes effective during that fiscal year.

**Commentary:** The employer required contribution rate is the amount needed to pay for the cost of the benefits accruing and to pay off the pension debt over 12 years, offset for the 6% of pay contribution the members make. The 12-year period is a short period for Public Sector Retirement Systems in the United States, with most Systems using a period of 30 years or more to pay off the pension debt. The shorter period results in higher contributions and more benefit security.

A detailed summary of the employer required contribution rates is provided in Section 6 of this report.

# Section 1: The Valuation Process

## Valuation Results: Projections

Projections of contribution requirements and funded status into the future can be helpful planning tools for stakeholders. We provide such projections in this valuation report. The projections of the actuarial valuation are known as deterministic projections. Deterministic projections are based on one scenario in the future. The baseline deterministic projection is based on:

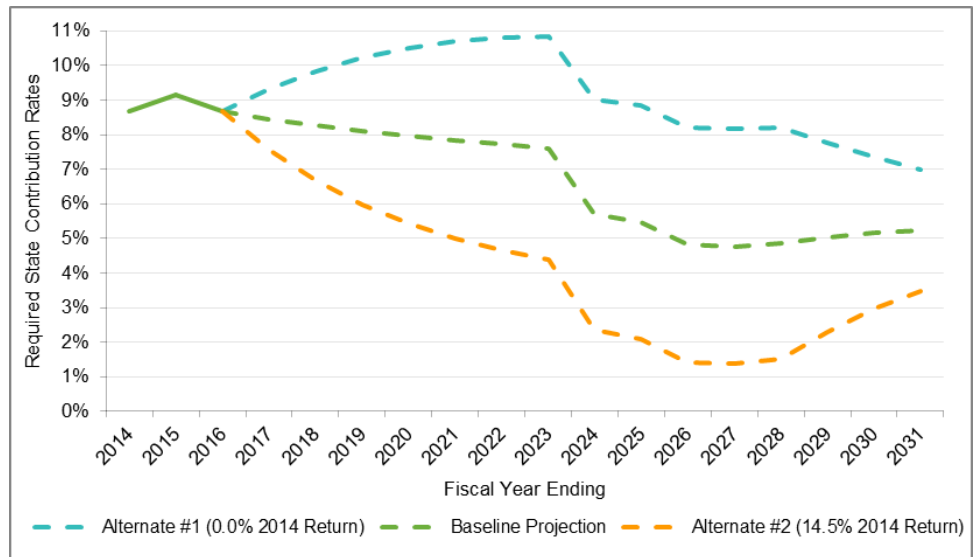
- December 31, 2013 valuation results
- December 31, 2013 valuation assumptions to project future valuation results, including:
  - Valuation interest rate of 7.25% for all years
  - No cost-of-living adjustments granted
  - Assumes future pay increases based on long-term valuation

In addition, we have provided two alternate deterministic projections. The first alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a 0.0% asset return for calendar year 2014. The second alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a 14.5% asset return for calendar year 2014.

Finally, stochastic projections, where hundreds of projections based on varying rates of return are performed and results are ordered, are periodically performed by the investment management division and shared with the Retirement Board and RSD staff.

### Graph 11: Projected Required Employer Contribution Rates

The graph below provides the required employer contributions rates projected for 15 years.



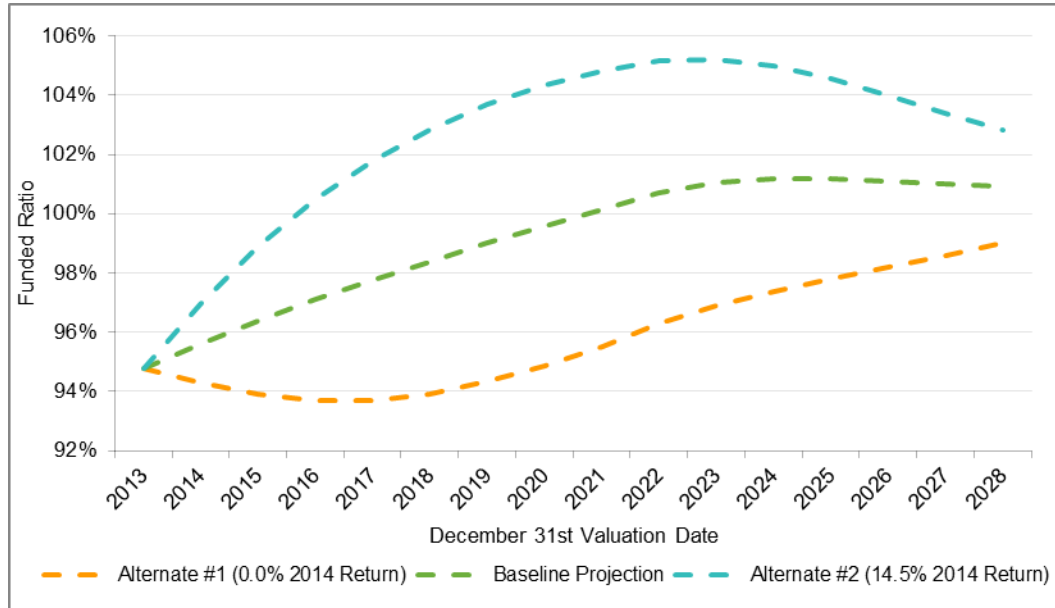
**Commentary:** A detailed summary of the projection is provided in Section 9 of this report.

# Section 1: The Valuation Process

## Valuation Results: Projections (continued)

**Graph 12: Projected Funded Ratio**

The graph below provides the funded ratio projected for 15 years.



**Commentary:** Note that if the 7.25% return under the Baseline Projection is achieved, the funded ratio reaches the long term target of 100% within 15 years. This is a direct result of using a 12 year period to pay off the pension debt. In addition, the State Contribution Rate in Graph 11 trends to around 5%, which is the level of the cost of benefits accrued, or the long term employer cost of TSERS when there is no pension debt.

A detailed summary of the deterministic projections is provided in Section 9 of this report.

## Valuation Results: Accounting Information

The Governmental Account Standards Board (GASB) issues statements which establish financial reporting standards for defined benefit pension plans and accounting for pension expenditures and expenses for governmental employers.

The valuation has been prepared in accordance with the parameters of Statement Nos. 25, 27, and 67 of the GASB and all applicable Actuarial Standards of Practice. The annual required contribution (ARC) under GASB 25/27 for the fiscal year ending June 30, 2016 is 8.69% of payroll. The Net Pension Liability (Asset) under GASB 67 for the fiscal year ending June 30, 2014, is \$1,172,421,000 (compared to \$6,071,019,000 for fiscal year ending June 30, 2013). The required financial reporting information for TSERS under GASB Nos. 25, 27, and 67 can be found in Section 8 of this report.

## Section 2: Principal Results

This report, prepared as of December 31, 2013, presents the results of the seventy-first annual valuation of the system. The principal results of the valuation and a comparison with the preceding year's results are summarized below.

**Table 1: Summary of Principal Results**

| Valuation results as of  | 12/31/2013        | 12/31/2012        |
|--|-------------------|-------------------|
| Active Members   |                   |                   |
| Number   | 310,370           | 312,512           |
| Reported Compensation  | \$ 12,834,121,020 | \$ 12,774,187,282 |
| Valuation Compensation*  | \$ 13,607,743,917 | \$ 13,597,412,201 |
| Retired Members and Survivors of Deceased Members Currently Receiving Benefits |                   |                   |
| Number   | 187,448           | 179,908           |
| Annual Allowances  | \$ 3,870,867,895  | \$ 3,712,698,650  |
| Assets   |                   |                   |
| Actuarial Value (AVA)  | \$62,363,807,168  | \$59,911,833,028  |
| Market Value   | \$62,789,451,194  | \$57,780,471,482  |
| Actuarial Accrued Liability (AAL)  | \$65,805,555,491  | \$63,630,278,472  |
| Unfunded Accrued Liability (AAL-AVA)   | \$ 3,441,748,323  | \$ 3,718,445,444  |
| Funded Ratio (AVA/AAL)   | 94.8%             | 94.2%             |
| <b>GASB 25/27 Results for Fiscal Year Ending</b>                               | <b>6/30/2016</b>  | <b>6/30/2015</b>  |
| Annual Required Contribution (ARC) of employer, as a percentage of payroll     |                   |                   |
| Normal Cost  | 5.19%             | 5.15%             |
| Accrued Liability  | <u>3.50%</u>      | <u>3.61%</u>      |
| Total  | 8.69%             | 8.76%             |
| Impact of Legislative Changes  | <u>N/A</u>        | <u>0.39%</u>      |
| Final Employer ARC   | N/A               | 9.15%             |
| <b>Appropriations Act for Fiscal Year Ending</b>                               | <b>6/30/2015</b>  | <b>6/30/2014</b>  |
| Employer Contribution Rate as a percentage of payroll                          |                   |                   |
| Normal Cost  | 5.19%             | 5.15%             |
| Accrued Liability  | <u>3.96%</u>      | <u>3.54%</u>      |
| Total  | 9.15%             | 8.69%             |
| Preliminary Reserve for Undistributed Gains/(Losses)                           | 0.46%             | (0.07)%           |

\* Reported compensation adjusted to reflect the assume rate of pay increase prior to the valuation date.



## Section 3: Membership Data

The Retirement Systems Division provided membership data as of the valuation date for each member of TSERS. The membership data assists the actuary in estimating benefits that could be paid in the future. The tables below provide a summary of the membership data used in this valuation. Detailed tabulations of data are provided in Appendix B.

**Table 2: Active Member Data**

|                          | Member Count   | Average Age  | Average Service | Reported Compensation    |
|--------------------------|----------------|--------------|-----------------|--------------------------|
| Classroom Teachers       | 152,303        | 43.00        | 10.36           | \$ 6,170,295,647         |
| Other Education          | 46,975         | 49.06        | 11.16           | 1,761,311,224            |
| General Employees        | 107,725        | 46.35        | 10.64           | 4,719,425,114            |
| Law Enforcement Officers | 3,367          | 40.37        | 12.88           | 183,089,035              |
| <b>Total</b>             | <b>310,370</b> | <b>45.05</b> | <b>10.61</b>    | <b>\$ 12,834,121,020</b> |

The table above includes members not in receipt of benefits who had reported compensation in 2013.

**Table 3: Disabled Member Data**

|                          | Member Count | Average Age  | Average Service | Valuation Compensation |
|--------------------------|--------------|--------------|-----------------|------------------------|
| Classroom Teachers       | 1,734        | 54.01        | 12.52           | \$ 60,492,236          |
| Other Education          | 619          | 55.04        | 12.17           | 15,331,980             |
| General Employees        | 5,237        | 55.53        | 11.62           | 168,587,673            |
| Law Enforcement Officers | 49           | 49.78        | 13.59           | 5,510,666              |
| <b>Total</b>             | <b>7,639</b> | <b>55.11</b> | <b>11.88</b>    | <b>\$ 249,922,555</b>  |

The table above includes members not in receipt of benefits who did not have reported compensation in 2013 and who were reported as disabled in the current or prior valuations and not subsequently reported as returned to work.

## Section 3: Membership Data

**Table 4: Terminated Vested Member Data**

|                          | Member Count   | Average Age  | Average Service | Valuation Compensation  |
|--------------------------|----------------|--------------|-----------------|-------------------------|
| Classroom Teachers       | 39,244         | 39.63        | 4.26            | \$ 437,122,685          |
| Other Education          | 8,715          | 45.65        | 4.41            | 94,860,308              |
| General Employees        | 76,634         | 45.18        | 3.93            | 895,426,578             |
| Law Enforcement Officers | 920            | 41.14        | 5.97            | 17,870,327              |
| <b>Total</b>             | <b>125,513</b> | <b>43.45</b> | <b>4.08</b>     | <b>\$ 1,445,279,898</b> |

The table above includes members not in receipt of benefits who did not have reported compensation in 2013 and who were not valued as disabled members.

**Table 5: Data for Members Currently Receiving Benefits**

|  | Member Count   | Average Age  | Annual Retirement Allowances |
|--|----------------|--------------|------------------------------|
| <u>Retired Members (Healthy at Retirement)</u>   |                |              |                              |
| Classroom Teachers and Other Education           | 87,298         | 69.31        | \$ 2,160,048,639             |
| General Employees                                | 72,597         | 71.13        | 1,248,363,116                |
| Law Enforcement Officers                         | 2,548          | 64.74        | 78,626,389                   |
| <b>Total</b>                                     | <b>162,443</b> | <b>70.05</b> | <b>\$ 3,487,038,144</b>      |
| <u>Retired Members (Disabled at Retirement)*</u> |                |              |                              |
| Classroom Teachers and Other Education           | 3,970          | 68.22        | \$ 82,308,390                |
| General Employees                                | 7,365          | 68.59        | 111,220,589                  |
| Law Enforcement Officers                         | 183            | 67.22        | 4,423,427                    |
| <b>Total</b>                                     | <b>11,518</b>  | <b>68.44</b> | <b>\$ 197,952,406</b>        |
| <u>Survivors of Deceased Members</u>             |                |              |                              |
| Classroom Teachers and Other Education           | 4,234          | 72.91        | \$ 73,546,607                |
| General Employees                                | 8,860          | 73.62        | 104,355,471                  |
| Law Enforcement Officers                         | 393            | 71.61        | 7,975,267                    |
| <b>Total</b>                                     | <b>13,487</b>  | <b>73.34</b> | <b>\$ 185,877,345</b>        |
| <b>Grand Total</b>                               | <b>187,448</b> | <b>70.19</b> | <b>\$ 3,870,867,895</b>      |

\* Includes retired members reported as disabled in a prior valuation and not subsequently reported as returned to work.

## Section 4: Asset Data

Assets are held in trust and are invested for the exclusive benefit of TSERS members. The tables below provide the details of the Market Value of Assets for the current and prior year's valuations.

**Table 6: Market Value of Assets**

| Asset Data as of                                | 12/31/2013           | 12/31/2012           |
|---|----------------------|----------------------|
| Beginning of Year Market Value of Assets        | \$ 57,780,471,482    | \$ 53,402,204,951    |
| Contributions                                   | 1,985,865,560        | 1,897,179,772        |
| Benefit Payments                                | (3,914,014,907)      | (3,725,310,777)      |
| Investment Income                               | <u>6,937,129,059</u> | <u>6,206,397,536</u> |
| Net Increase/(Decrease)                         | 5,008,979,712        | 4,378,266,531        |
| End of Year Market Value of Assets              | \$ 62,789,451,194    | \$ 57,780,471,482    |
| Estimated Net Investment Return on Market Value | 12.21%               | 11.82%               |

**Table 7: Allocation of Investments by Category of the Market Value of Assets**

| Asset Data as of                        | 12/31/2013            | 12/31/2012            |
|---|-----------------------|-----------------------|
| Allocation by Dollar Amount             |                       |                       |
| Public Equity                           | \$ 30,167,583,072     | \$ 25,698,604,420     |
| Fixed Income (LTIF)                     | 19,202,205,036        | 20,403,469,407        |
| Cash and Receivables                    | 436,110,529           | 207,416,156           |
| Other*                                  | <u>12,983,552,557</u> | <u>11,470,981,499</u> |
| Total Market Value of Assets            | \$ 62,789,451,194     | \$ 57,780,471,482     |
| Allocation by Percentage of Asset Value |                       |                       |
| Public Equity                           | 48.05%                | 44.48%                |
| Fixed Income (LTIF)                     | 30.58%                | 35.31%                |
| Cash and Receivables                    | 0.69%                 | 0.36%                 |
| Other*                                  | <u>20.68%</u>         | <u>19.85%</u>         |
| Total Market Value of Assets            | 100.00%               | 100.00%               |

\* Real Estate, Alternatives, Inflation and Credit

## Section 4: Asset Data

In order to reduce the volatility that investment gains and losses can have on the required contributions and funded status of TSERS, the Board adopted an asset valuation method to determine the Actuarial Value of Assets used for funding purposes. The table below provides the calculation of the Actuarial Value of Assets at the valuation date.

**Table 8: Actuarial Value of Assets**

| Asset Data as of  | 12/31/2013             |
|---|------------------------|
| (a) Beginning of Year Actuarial Value of Assets   | \$ 59,911,833,028      |
| (b) Contributions   | 1,985,865,560          |
| (c) Benefit Payments  | <u>(3,914,014,907)</u> |
| (d) Net Cash Flow: (b) + (c)  | (1,928,149,347)        |
| (e) Expected Investment Return: [(a) x 7.25%] + [(d) x 3.625%]  | 4,273,712,481          |
| (f) Expected End of Year Actuarial Value of Assets: (a) + (d) + (e)   | 62,257,396,162         |
| (g) End of Year Market Value of Assets  | 62,789,451,194         |
| (h) Excess of Market Value<br>over Expected Actuarial Value of Assets: (g) - (f)                                  | 532,055,032            |
| (i) 20% Adjustment toward Market Value: (h) x 20%   | 106,411,006            |
| (j) Preliminary End of Year Actuarial Value of Assets: (f) + (i)  | 62,363,807,168         |
| (k) Final End of Year Actuarial Value of Assets:<br>(j) not less than 80% of (g) and not greater than 120% of (g) | 62,363,807,168         |
| (l) Estimated Net Investment Return on Actuarial Value  | 7.43%                  |

**Commentary:** The actuarial value of assets smooths investment gains/losses, resulting in less volatility in the employer contribution. Higher than expected returns in 2009, 2010, 2012 and 2013 resulted in a \$106 million asset gain recognition this year (item (i) above).

## Section 4: Asset Data

The valuation assumes that the funds will earn a 7.25% asset return. The table below provides a history of the Actuarial Value and Market Value of Asset returns.

**Table 9: Historical Asset Returns**

| Calendar Year | Actuarial Value of Asset Return | Market Value of Asset Return |
|---------------|---------------------------------|------------------------------|
| 2006          | 8.94%                           | 11.41%                       |
| 2007          | 8.87%                           | 8.38%                        |
| 2008          | 2.89%                           | -19.50%                      |
| 2009          | 4.74%                           | 14.84%                       |
| 2010          | 5.89%                           | 11.47%                       |
| 2011          | 5.15%                           | 2.19%                        |
| 2012          | 6.32%                           | 11.82%                       |
| 2013          | 7.43%                           | 12.21%                       |
| Average       | 6.26%                           | 6.01%                        |
| Range         | 6.05%                           | 34.34%                       |

**Commentary:** The average investment return recognized for purposes of determining the annual change in contribution each year is the actuarial value of assets return. Currently, the average actuarial return of 6.26% tracks average market return of 6.01% rather well. But the range of returns is markedly less – 6.05% versus 34.34%. This results in much lower employer contribution volatility using the actuarial value of assets versus market, while ensuring that the actuarial needs of TSERS are met.

## Section 5: Liability Results

Using the provided membership data, benefit provisions, and actuarial assumptions, the future benefit payments of TSERS are estimated. These projected future benefit payments are discounted into today's dollars using the assumed rate of investment return assumption to determine the Present Value of Future Benefits. The Present Value of Future Benefits is allocated to past, current and future service, respectively known as the actuarial accrued liability, normal cost and present value of future normal costs. The table below provides these liability numbers for the current and prior year's valuations.

**Table 10: Liability Summary**

| Valuation Results as of                      | 12/31/2013               | 12/31/2012               |
|--|--------------------------|--------------------------|
| (a) Present Value of Future Benefits         |                          |                          |
| (1) Active Members                           | \$ 40,204,306,593        | \$ 40,047,408,196        |
| (2) Terminated Members                       | 2,890,559,796            | 2,637,640,588            |
| (3) Members Currently Receiving Benefits     | 35,291,243,666           | 33,504,462,705           |
| (4) Total                                    | <u>\$ 78,386,110,055</u> | <u>\$ 76,189,511,489</u> |
| (b) Present Value of Future Normal Costs     |                          |                          |
| (1) Employee Future Normal Costs             | \$ 6,806,431,685         | \$ 6,819,493,041         |
| (2) Employer Future Normal Costs             | 5,774,122,879            | 5,739,739,976            |
| (3) Total                                    | <u>\$ 12,580,554,564</u> | <u>\$ 12,559,233,017</u> |
| (c) Actuarial Accrued Liability: (a4) - (b3) | \$ 65,805,555,491        | \$ 63,630,278,472        |
| (d) Actuarial Value of Assets                | \$ 62,363,807,168        | \$ 59,911,833,028        |
| (e) Unfunded Accrued Liability: (c) - (d)    | \$ 3,441,748,323         | \$ 3,718,445,444         |

## Section 5: Liability Results

The table below provides a reconciliation of the prior year's unfunded actuarial accrued liability to the current year's actuarial accrued liability.

**Table 11: Reconciliation of Unfunded Actuarial Accrued Liability**

| (in millions)  |            |
|--|------------|
| Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2012 | \$ 3,718   |
| Normal Cost during 2013                                      | 1,517      |
| Reduction due to Actual Contributions during 2013            | (1,986)    |
| Interest on UAAL, Normal Cost, and Contributions             | 308        |
| Asset (Gain)/Loss  | (106)      |
| Actuarial Accrued Liability (Gain)/Loss                      | (370)      |
| Impact of Legislative Changes                                | <u>361</u> |
| Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2013 | \$ 3,442   |

**Commentary:** The unfunded actuarial accrued liability, or pension debt, shrank faster than expected during the past year primarily due to the reasons outlined at the beginning of this report.

## Section 6: Annual Required Contribution

The annual required contribution consists of a normal cost rate and an accrued liability rate. The normal cost rate is the employer's portion of the cost of benefits accruing during the year after reducing for the member contribution. The accrued liability rate is the payment toward the unfunded accrued liability in order to pay off the unfunded accrued liability over 12 years.

The tables below provide the calculation and a reconciliation of the annual required contribution for the current and prior years' valuations.

**Table 12: Calculation of the Annual Required Contribution (ARC)**

| Valuation Date                            | 12/31/2013       | 12/31/2012       |
|---|------------------|------------------|
| ARC for Fiscal Year Ending                | 6/30/2016        | 6/30/2015        |
| <b>Normal Cost Rate Calculation</b>       |                  |                  |
| (a) Employer Future Normal Cost           | \$ 5,774,122,879 | \$ 5,739,739,976 |
| (b) Present Value of Future Salary        | 113,440,528,084  | 113,658,217,354  |
| (c) Normal Cost Rate: (a) / (b)           | 5.09%            | 5.05%            |
| (d) Expenses Rate                         | <u>0.10%</u>     | <u>0.10%</u>     |
| (e) Total Normal Cost Rate: (c) + (d)     | 5.19%            | 5.15%            |
| <b>Accrued Liability Rate Calculation</b> |                  |                  |
| (f) Total Annual Amortization Payments*   | \$ 475,910,160   | \$ 491,512,906   |
| (g) Valuation Compensation                | 13,607,743,917   | 13,597,412,201   |
| (h) Accrued Liability Rate: (f) / (g)     | 3.50%            | 3.61%            |
| Total ARC (e) + (h)                       | 8.69%            | 8.76%            |

\* See Table 14 for more detail.

**Table 13: Reconciliation of the Change in the ARC**

|  |                |
|--|----------------|
| Fiscal year ending June 30, 2015 Preliminary ARC<br>(based on December 31, 2012 valuation) | 8.76%          |
| Impact of Legislative Changes  | <u>0.39%</u>   |
| Fiscal year ending June 30, 2015 Final ARC   | 9.15%          |
| Change Due to Demographic (Gain)/Loss  | (0.32%)        |
| Change Due to Investment (Gain)/Loss   | (0.10%)        |
| Change Due to Contributions Greater than ARC   | <u>(0.04%)</u> |
| Fiscal year ending June 30, 2016 Preliminary ARC<br>(based on December 31, 2013 valuation) | 8.69%          |



## Section 6: Annual Required Contribution

Amortization methods determine the payment schedule for the unfunded actuarial accrued liability. TSERS adopted a 12-year closed amortization period for fiscal year ending 2012. A new amortization base is created each year based on the prior year's experience. The tables below provide the calculation of the new amortization base and the amortization schedule for the current year's valuation.

**Table 14: Calculation of the New Amortization Base**

| Calculation as of                        | 12/31/2013       | 12/31/2012       |
|--|------------------|------------------|
| (a) Unfunded Actuarial Accrued Liability | \$ 3,441,748,323 | \$ 3,718,445,444 |
| (b) Prior Years' Outstanding Balances    | \$ 3,555,776,186 | \$ 3,640,167,685 |
| (c) New Amortization Base: (a) - (b)     | \$ (114,027,863) | \$ 78,277,759    |
| (d) New Amortization Payment             | \$ (15,602,746)  | \$ 10,710,961    |

**Table 15: Amortization Schedule for Unfunded Accrued Liability**

| Date Established  | Original Balance | 12/31/2013 Outstanding Balance | Annual Payment |
|-------------------|------------------|--------------------------------|----------------|
| December 31, 2009 | \$ 2,360,173,025 | \$ 2,240,554,560               | \$ 322,948,963 |
| December 31, 2010 | 242,581,914      | 246,771,757                    | 33,193,150     |
| December 31, 2011 | 911,037,989      | 984,496,972                    | 124,659,832    |
| December 31, 2012 | 78,277,759       | 83,952,897                     | 10,710,961     |
| December 31, 2013 | (114,027,863)    | (114,027,863)                  | (15,602,746)   |
| Total             |                  | \$ 3,441,748,323               | \$ 475,910,160 |

**Commentary:** This is the payment schedule for the pension debt of TSERS.

## Section 6: Annual Required Contribution

The table below provides a history of the annual required contribution and the corresponding appropriated rate.

**Table 16: History of Annual Required Contributions and Appropriated Rates**

| Valuation Date | Fiscal Year Ending | Normal Rate | Accrued Liability Rate | Change due to Legislation | Final ARC | Appropriated Rate |
|----------------|--------------------|-------------|------------------------|---------------------------|-----------|-------------------|
| 12/31/2013     | 6/30/2016          | 5.19%       | 3.50%                  | N/A                       | N/A       | N/A               |
| 12/31/2012     | 6/30/2015          | 5.15%       | 3.61%                  | 0.39%                     | 9.15%     | 9.15%             |
| 12/31/2011     | 6/30/2014          | 5.14%       | 3.55%                  | 0.00%                     | 8.69%     | 8.69%             |
| 12/31/2010     | 6/30/2013          | 5.12%       | 2.57%                  | 0.33%                     | 8.02%     | 8.33%             |
| 12/31/2009     | 6/30/2012          | 5.12%       | 2.82%                  | (0.50%)                   | 7.44%     | 7.44%             |

**Table 17: Cost of Benefit Enhancements**

| Calculation as of   | 12/31/2013 | 12/31/2012 |
|---|------------|------------|
| Increase in ARC for a 1% COLA*  | 0.39%      | 0.37%      |
| Increase in ARC for a 0.01% Increase in the Defined Benefit Formula** | 0.42%      | 0.41%      |

\* The 1% COLA calculated at the December 31, 2013 valuation would be effective July 1, 2015. The COLA would be paid in full to retired members and survivors of deceased members on the retirement roll on July 1, 2014 and would be prorated for retired members and survivors of deceased members who commence benefits after July 1, 2014 but before June 30, 2015.

\*\* A corresponding increase in retirement allowances would be paid in the event of an increase in the defined benefit formula.

## Section 7: Valuation Balance Sheet

The valuation balance sheet shows the assets and liabilities of TSERS. The items shown in the balance sheet are present values actuarially determined as of the relevant valuation date. The table below provides the valuation balance sheet for the current year and prior year.

**Table 18: Valuation Balance Sheet**

| Balance Sheet as of  | 12/31/2013            | 12/31/2012            |
|--|-----------------------|-----------------------|
| <b>Assets</b>  |                       |                       |
| Current Actuarial Value of Assets  |                       |                       |
| Annuity Savings Fund   | \$ 11,476,585,329     | \$ 11,116,379,969     |
| Pension Accumulation Fund  | <u>50,887,221,839</u> | <u>48,795,453,059</u> |
| Total  | \$ 62,363,807,168     | \$ 59,911,833,028     |
| Future Member Contributions to the Annuity Savings Fund  | \$ 6,806,431,685      | \$ 6,819,493,041      |
| Prospective Contributions to the Pension Accumulation Fund   |                       |                       |
| Normal Contributions   | \$ 5,774,122,879      | \$ 5,739,739,976      |
| Unfunded Accrued Liability Contributions   | 3,441,748,323         | 3,718,445,444         |
| Undistributed Gain Contributions   | <u>455,297,096</u>    | <u>(76,897,567)</u>   |
| Total  | \$ 9,671,168,298      | \$ 9,381,287,853      |
| Total Assets   | \$ 78,841,407,151     | \$ 76,112,613,922     |
| <b>Liabilities</b>   |                       |                       |
| Annuity Savings Fund   |                       |                       |
| Past Member Contributions  | \$ 11,476,585,329     | \$ 11,116,379,969     |
| Future Member Contributions  | <u>6,806,431,685</u>  | <u>6,819,493,041</u>  |
| Total Contributions  | \$ 18,283,017,014     | \$ 17,935,873,010     |
| Pension Accumulation Fund  |                       |                       |
| Benefits Currently in Payment  | \$ 34,929,957,617     | \$ 33,504,462,705     |
| Benefits to be Paid to   |                       |                       |
| Current Active Members   | 24,811,849,375        | 24,749,175,774        |
| Reserve for Increases in Retirement Allowances effective July 1, 2014 (July 1, 2013 for December 31, 2012) | 361,286,049           | 0                     |
| Reserve for Undistributed Gains/(Losses)   | <u>455,297,096</u>    | <u>(76,897,567)</u>   |
| Total Benefits Payable   | \$ 60,558,390,137     | \$ 58,176,740,912     |
| Total Liabilities  | \$ 78,841,407,151     | \$ 76,112,613,922     |

## Section 8: Accounting Results

The section contains the accounting information for Governmental Accounting Standards Board (GASB) Statement No. 25, 27 and 67 for fiscal year ending June 30, 2014 based on a valuation date of December 31, 2013.

Please note that GASB Statement No. 25 (*Financial Reporting for Defined Benefit Pension Plans*) is applicable for fiscal years ending prior to 2014 and has been replaced by GASB Statement No. 67 (*Financial Reporting for Pension Plans*) for fiscal years ending 2014 and later. Similarly, GASB Statement No. 27 (*Accounting for Pensions by State and Local Governmental Employers*) is applicable for fiscal years ending prior to 2015 and has been replaced by GASB Statement No. 68 (*Accounting and Financial Reporting for Pensions*) for fiscal years ending 2015 and later.

GASB Statement Nos. 25 and 27 set forth certain items of information to be disclosed in the financial statements of the Plan. The tables below provide a distribution of the number of employees by type of membership, and the schedule of funding progress.

**Table 19: Number of Active and Retired Members as of December 31, 2013**

| Group  | Number         |
|--|----------------|
| Retired members and survivors of deceased members currently receiving benefits                           | 187,448        |
| Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits | 125,513        |
| Active members*  | <u>318,009</u> |
| Total  | 630,970        |

\* Includes current recipients of DIP benefits.

**Table 20: Schedule of Funding Progress**

| Actuarial Valuation Date | (a)<br>Actuarial Value of Assets | (b)<br>Entry Age Actuarial Accrued Liability | (b) - (a)<br>Unfunded Actuarial Accrued Liability (UAAL) | (a)/(b)<br>Funded Ratio | (c)<br>Covered Payroll | [(b) - (a)] / (c)<br>UAAL as a Percentage of Covered Payroll |
|--------------------------|----------------------------------|--|--|-------------------------|------------------------|--|
| 12/31/2007               | \$55,283,120,813                 | \$52,815,089,477                             | \$(2,468,031,336)  | 104.7%                  | \$12,701,016,741       | -19.43%  |
| 12/31/2008               | 55,127,658,183                   | 55,518,744,699                               | 391,086,516  | 99.3%                   | 13,267,554,255         | 2.95%  |
| 12/31/2009               | 55,818,099,117                   | 58,178,272,142                               | 2,360,173,025  | 95.9%                   | 13,253,029,516         | 17.81%   |
| 12/31/2010               | 57,102,198,448                   | 59,876,065,931                               | 2,773,867,483  | 95.4%                   | 13,053,830,873         | 21.25%   |
| 12/31/2011               | 58,125,010,880                   | 61,846,696,903                               | 3,721,686,023  | 94.0%                   | 12,801,045,514         | 29.07%   |
| 12/31/2012               | 59,911,833,028                   | 63,630,278,472                               | 3,718,445,444  | 94.2%                   | 12,774,187,282         | 29.11%   |
| 12/31/2013               | 62,363,807,168                   | 65,805,555,491                               | 3,441,748,323  | 94.8%                   | 12,834,121,020         | 26.82%   |

## Section 8: Accounting Results

The tables below provide a reconciliation of the preliminary employer annual required contribution rate to the final employer annual required contribution, the calculation of the annual pension cost and net pension obligation, and a three-year trend of the net pension obligation.

**Table 21: Reconciliation of the Annual Required Contribution Rate**

| Fiscal Year Ending                            | June 30, 2014     |
|---|-------------------|
| Preliminary Annual Required Contribution Rate |                   |
| Normal Cost                                   | 5.14%             |
| Accrued Liability                             | <u>3.55%</u>      |
| Total   | 8.69%             |
| Impact of Legislative Changes                 | <u>0.00%</u>      |
| Final Annual Required Contribution Rate       | 8.69%             |
| Payroll                                       | \$ 13,409,495,477 |
| Annual Required Contribution                  | \$ 1,165,285,000  |

**Table 22: Annual Pension Cost and Net Pension Obligation**

| Fiscal Year Ending   | June 30, 2014        |
|--|----------------------|
| (a) Employer annual required contribution                        | \$ 1,165,285,000     |
| (b) Interest on net pension obligation                           | 10,166,000           |
| (c) Adjustment to annual required contribution                   | <u>(19,187,000)</u>  |
| (d) Annual pension cost: (a) + (b) + (c)                         | \$ 1,156,264,000     |
| (e) Employer contributions made for fiscal year ending 6/30/2014 | <u>1,165,285,000</u> |
| (f) Increase/(decrease) in net pension obligation: (d) - (e)     | \$ (9,021,000)       |
| (g) Net pension obligation beginning of fiscal year              | <u>140,224,000</u>   |
| (h) Net pension obligation end of fiscal year: (f) + (g)         | \$ 131,203,000       |

**Table 23: Trend Information for the Net Pension Obligation**

| Fiscal Year Ending | Annual Pension Cost (APC) | Percentage of APC Contributed | Net Pension Obligation |
|--------------------|---------------------------|-------------------------------|------------------------|
| 6/30/2012          | \$ 975,124,000            | 101.4%                        | \$ 193,352,000         |
| 6/30/2013          | 1,040,251,000             | 105.1%                        | 140,224,000            |
| 6/30/2014          | 1,156,264,000             | 100.8%                        | 131,203,000            |

## Section 8: Accounting Results

The tables below provide the annual required contribution (ARC) of the employer as a percentage of payroll (determined in accordance with the parameters of GASB 25/27) and additional information as of the valuation date. The accrued liability rate of the ARC is based on the amortization schedule found in Table 15.

**Table 24: Annual Required Contribution Based on the Valuation as of December 31, 2013**

| Fiscal Year Ending | June 30, 2016 |
|--------------------|---------------|
| Normal Cost        | 5.19%         |
| Accrued Liability  | <u>3.50%</u>  |
| Total              | 8.69%         |

**Table 25: Additional Information for GASB Statement Nos. 25 and 27**

|  |  |
|--|--|
| Valuation Date                           | 12/31/2013   |
| Actuarial Cost Method                    | Entry Age  |
| Amortization Method                      | Level dollar closed  |
| Amortization Period                      | 12 years   |
| Asset Valuation Method                   | 20% of market value plus 80% of expected actuarial value (not greater than 120% of market value and not less than 80% of market value) |
| Actuarial Assumptions                    |  |
| Investment Rate of Return*               | 7.25%  |
| Projected Salary Increases**             | 4.25% - 9.10%  |
| *Includes Inflation of                   | 3.00%  |
| **Includes Inflation and Productivity of | 3.50%  |
| Cost-of-living Adjustments               | N/A  |

## Section 8: Accounting Results

GASB Statement No. 67 set forth certain items of information to be disclosed in the financial statements of the Plan. The tables below provide the schedule of changes in Net Pension Liability (Asset).

**Table 26: Schedule of Changes in Net Pension Liability (Asset)**

| Calculation as of  | June 30, 2014          |
|--|------------------------|
| <b>Total Pension Liability</b>                             |                        |
| Service Cost   | \$ 1,556,027,000       |
| Interest   | 4,648,995,000          |
| Changes of Benefit Terms                                   | 355,224,000            |
| Difference between Expected and Actual Experience          | (345,392,000)          |
| Change of Assumptions                                      | 0                      |
| Benefit Payments, including Refund of Member Contributions | <u>(3,989,397,000)</u> |
| Net Change in Total Pension Liability                      | \$ 2,225,457,000       |
| Total Pension Liability - Beginning of Year                | \$ 64,562,739,000      |
| Total Pension Liability - End of Year                      | \$ 66,788,196,000      |
| <b>Plan Fiduciary Net Position</b>                         |                        |
| Employer Contributions                                     | \$ 1,177,341,000       |
| Member Contributions                                       | 825,548,000            |
| Net Investment Income                                      | 9,121,005,000          |
| Benefit Payments, including Refund of Member Contributions | (3,989,397,000)        |
| Administrative Expenses                                    | (10,762,000)           |
| Other  | <u>320,000</u>         |
| Net Change in Fiduciary Net Position                       | \$ 7,124,055,000       |
| Plan Fiduciary Net Position - Beginning of Year            | \$ 58,491,720,000      |
| Plan Fiduciary Net Position - End of Year                  | \$ 65,615,775,000      |

**Table 27: Net Pension Liability (Asset)**

| Calculation as of  | June 30, 2014         | June 30, 2013         |
|--|-----------------------|-----------------------|
| Total Pension Liability  | \$ 66,788,196,000     | \$ 64,562,739,000     |
| Plan Fiduciary Net Position  | <u>65,615,775,000</u> | <u>58,491,720,000</u> |
| Net Pension Liability (Asset)  | \$ 1,172,421,000      | \$ 6,071,019,000      |
| Plan Fiduciary Net Position as a Percentage of the Total Pension Liability | 98.24%                | 90.60%                |

## Section 8: Accounting Results

The table below is the sensitivity of the net pension liability to changes in the discount rate.

**Table 28: Sensitivity of the Net Pension Liability at June 30, 2014 to Changes in the Discount Rate**

|                               | 1% Decrease   | Current       | 1% Increase     |
|-------------------------------|---------------|---------------|-----------------|
| Discount Rate                 | 6.25%         | 7.25%         | 8.25%           |
| Net Pension Liability (Asset) | 8,416,451,000 | 1,172,421,000 | (4,944,107,000) |

The discount rate used to measure the total pension liability was 7.25%. The projection of cash flows used to determine the discount rate assumed that System contributions will continue to follow the current funding policy. Based on those assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Please see Appendix E for additional detail.



## Section 9: Projections

Projections of contribution requirements and funded status into the future can be helpful planning tools for stakeholders. This section provides such projections. The projections of the actuarial valuation are known as deterministic projections. Deterministic projections are based on one scenario in the future. The baseline deterministic projection is based on December 31, 2013 valuation results as assumptions.

### Key Projection Assumptions

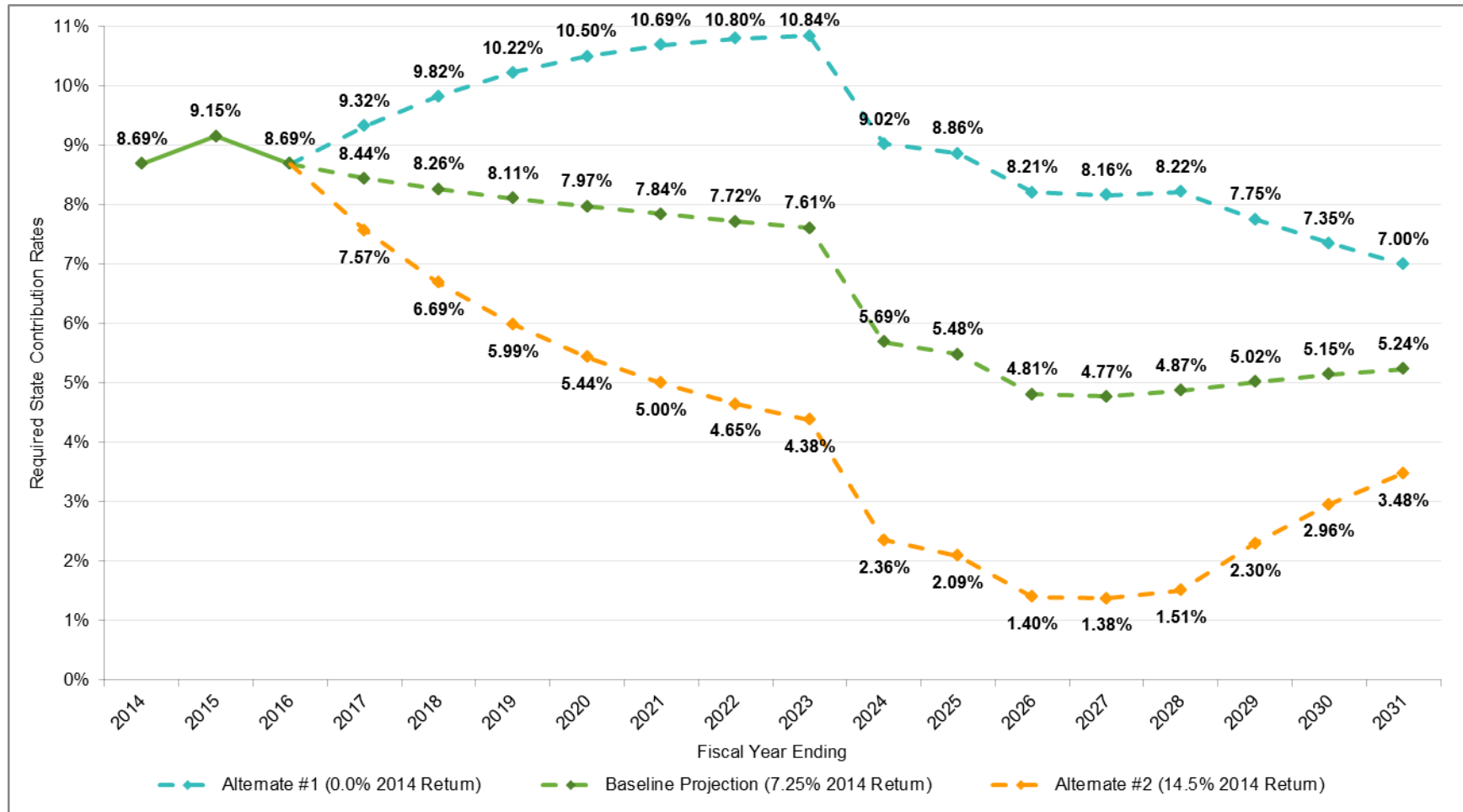
- Valuation interest rate of 7.25% for all years
- 7.25% investment return on market value of assets
- Actuarial assumptions and methods as described in Appendix D. All future demographic experience is assumed to be exactly realized.
- The actuarially calculated contribution rate is contributed each year.
- 0% increase in the total active member population
- No cost-of-living adjustments granted
- Future pay increases based on long-term salary increase assumptions

In addition, we have provided two alternate deterministic projections. The first alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a 0.0% asset return for calendar year 2014. The second alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a 14.5% asset return for calendar year 2014.

## Section 9: Projections

The graph below provides the required employer contribution rates projected for 15 years.

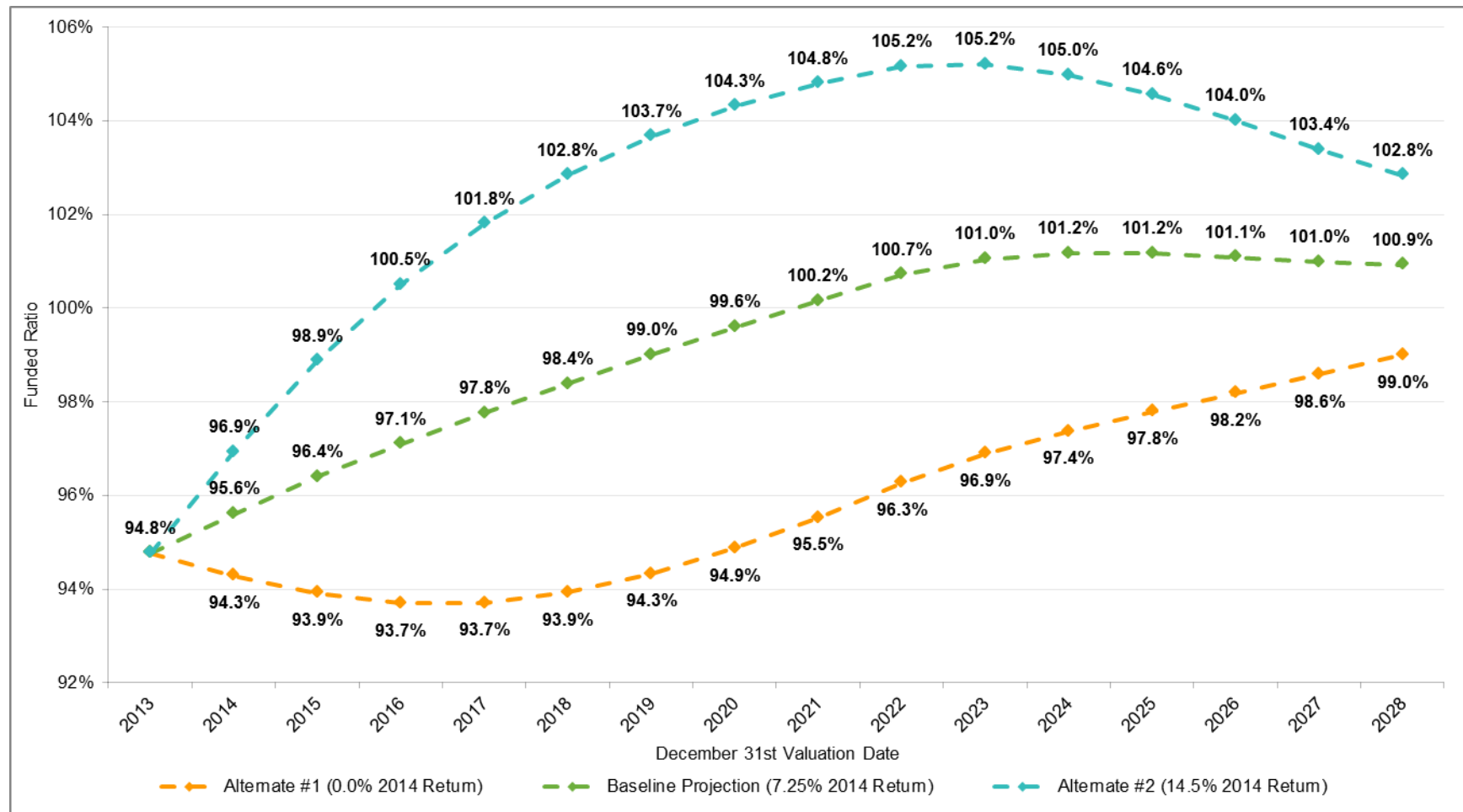
**Projected Required Employer Contribution Rates**



## Section 9: Projections

The graph below provides the funded ratio projected for 15 years.

**Projected Funded Ratio**



# Appendix A: Valuation Process and Glossary of Actuarial Terms

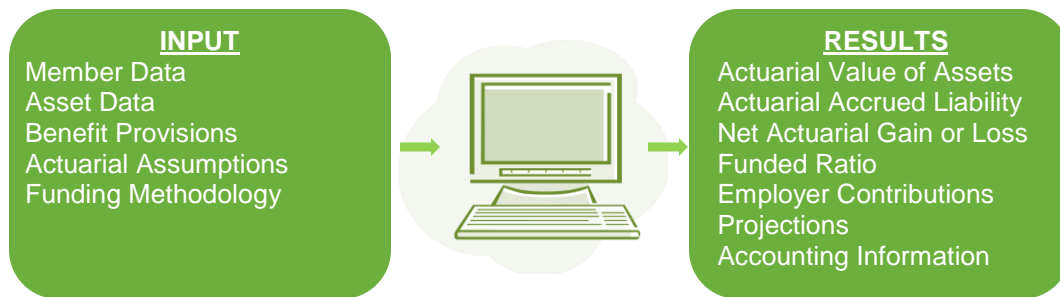
## Purpose of an Actuarial Valuation

The majority of Public Sector Retirement Systems in the State of North Carolina are defined benefit (DB) retirement systems. Under a DB Retirement System, the amount of benefits payable to a member upon retirement, termination, death or disability is defined in various contracts and legal instruments and is based, in part, on the member's years of credited service and final compensation. The amount of contribution needed to fund these benefits cannot be known with certainty. A primary responsibility of the Board of Trustees of a Retirement System is to establish and monitor a funding policy for the contributions made to the Retirement System.

While somewhat uncommon, in some jurisdictions, contributions are made by the plan sponsor as benefits come due. This is known as pay-as-you-go financing. More commonly, contributions for benefits are made in advance during the course of active employment of the members. This is known as actuarial pre-funding. For example, the State of North Carolina mandates for the Teachers' and State Employees' Retirement System (the "State Plan") that "on account of each member there shall be paid into the pension accumulation fund by employers an amount equal to a certain percentage of the actual compensation of each member to be known as the 'normal contribution'..." and further "the normal rate of contribution shall be determined by the actuary after each valuation."

## The Actuarial Valuation Process

The following diagram summarizes the inputs and results of the actuarial valuation process. A narrative of the process follows the diagram. The reader may find it worthwhile to refer to the diagram from time to time.



Under the actuarial valuation process, current information about Retirement System members is collected annually by staff at the direction of the actuary, namely member data, asset data and information on benefit provisions. Member data is collected for each member of the Retirement System. The member data will assist the actuary in estimating benefits that could be paid in the future. The member information the actuary collects to estimate the amount of benefit includes elements such as current service, salary and benefit group identifier for members that have not separated service; for those that have, the actual benefit amounts are collected. The actuary collects information such as gender and date of birth to determine when a benefit might be paid and for how long. The actuary collects summary information about assets as of the valuation date and information on cash flows for the year ending on the valuation date. Information about

# Appendix A: Valuation Process and Glossary of Actuarial Terms

benefit provisions as of the valuation date is also collected. To bridge the gap between the information collected and potential benefits to be paid in the future, the actuary must make assumptions about future activities. These assumptions are recommended by the actuary to the Boards based on the results of an experience review. An experience review is a review of the Retirement System over a period of time, typically five years, where the actuary analyzes the demographic and economic assumptions of the Retirement System. Based on this review, the actuary will make recommendations on the demographic assumptions, such as when members will be projected to retire, terminate, become disabled and/or die in the future, as well as the economic assumptions, such as what rate of return is projected to be earned by the fund based on the Retirement System investment policy and what level of future salary increases is expected for members. To maintain the assumptions, the Board should adopt a prudent policy of having an experience review being performed every five years. The next experience review for the North Carolina Retirement Systems will be based on the five-year period ending on December 31, 2014 and will be presented during 2015. Using these assumptions, the actuary is able to use the member data, asset data and benefit provision information collected to project the benefits that will be paid from the Retirement System to current members. These projected future benefit payments are based not only on service and pay through the valuation date but includes future pay and service, which has not yet been earned by the members but is expected to be earned.

These projected future benefit payments are discounted into today's dollars using the assumed rate of investment return assumption to determine the Present Value of Future Benefits (PVFB) of the Retirement System. The PVFB is an estimate of the value of the benefits promised to all members as of a valuation date. If the Retirement System held assets equal to the PVFB and all the assumptions were realized, there would be sufficient funds to pay off all the benefits to be paid in the future for members in the Retirement System as of the valuation date.

The PVFB is a large sum of money, typically much larger than the amount of Retirement System assets held in the trust. The next step is for the actuary to apply the Funding Policy as adopted by the Board to determine the employer contributions to be made to the Retirement System so that the gap between the PVFB and assets is systematically paid off over time. The Funding Policy is adopted by the Board based on discussions with the actuary. When the Board develops a funding policy, a balance between contributions which are responsive to the needs of the Retirement System yet stable should be struck. There are many different funding policies for the Board to consider, and the actuary is responsible for discussing the various features of the funding policies under consideration. Funding Policies are generally reviewed during an experience review, but it is not uncommon to review a funding policy in between, particularly during period where large increases or decreases in contributions are expected. The Funding Policy is composed of three components: the actuarial cost method, the asset valuation method, and the amortization method.

Once the PVFB is developed, an actuarial cost method is used to allocate the PVFB. Under the actuarial cost method, the PVFB is allocated to past, current and future service, respectively known as the actuarial accrued liability (AAL), normal cost (NC) and present value of future normal costs (PVFNC). The actuary computes the liability components (PVFB, NC, AAL, and PVFNC) for each participant in the Retirement

## Appendix A: Valuation Process and Glossary of Actuarial Terms

System at the valuation date. These liability components are then totaled for the Retirement System. There are many actuarial cost methods. Different actuarial methods will produce different contribution patterns, but do not change the ultimate cost of the benefits. The entry age normal cost method is the most prevalent method used for public sector plans in the United States, because the expected normal cost is calculated in such a way that it will tend to stay level as a percent of pay over a member's career. Most of the North Carolina Retirement Systems use the entry age normal cost method; LGERS uses a method known as frozen initial liability, which is similar to entry age normal but allows for the individualized payments for local employers when they enter LGERS.

The actuarial accrued liability (AAL) is also referred to as the amount of money the Retirement System should ideally have in the trust. The unfunded actuarial accrued liability (UAAL) is the portion of actuarial accrued liability that is not covered by the assets of the Retirement System. The UAAL can be a negative number, which means that the Retirement System has more assets than actuarial accrued liability. We refer to this condition as overfunded liability in this summary. Having UAAL does not indicate that the Retirement System is in failing actuarial health. UAAL is a common occurrence. Currently, many Retirement Systems in the United States have UAAL as a result of the Great Recession of 2008. Another related statistic of the Retirement System is the funded ratio. The funded ratio is the percent of the actuarial accrued liabilities covered by the actuarial value of assets. The assets used for these purposes are an actuarial value of assets (AVA), not market. The actuarial value of assets is based on the asset valuation method as recommended by the actuary and adopted by the Board. An actuarial value of assets is a smoothed, or averaged, value of assets, which is used to limit employer contribution volatility. Typically, assets are smoothed, or averaged, over a period of 3 to 5 years, although longer periods are becoming more common. By averaging returns, the UAAL is not as volatile, which we will see later results in contributions that are not as volatile as well. The North Carolina Retirement Systems use an actuarial value of assets with a smoothing period of 5 years.

While having UAAL is common, it is acceptable only if it is systematically being paid off. The method by which the UAAL is paid off is known as the amortization method. The concept is similar to that of a mortgage payment. The Board adopts the amortization method used to pay off the UAAL over a period of time. The amortization method is composed of the amortization period, the amount of payment increase, whether the period is open or closed and by the amount of amortization schedules. The amortization period is the amount of time over which the UAAL will be paid off. This is generally a period of thirty years or less, but actuaries are beginning to recommend shorter periods. The payments can be developed to stay constant from year to year like a mortgage, but often they are developed to increase each year at the same level payroll increases. Amortization type can be closed or open. Under a closed period, the UAAL is expected to be paid off over the amortization period. This is similar to a typical mortgage. Under an open period, the amortization period remains unchanged year after year. The concept is similar to re-mortgaging annually. In many instances, an amortization schedule is developed, whereby the UAAL is amortized over a closed period from the point the UAAL is incurred. Finally, some amortization methods are defined by a schedule of payments, where a new schedule of payments is added with each valuation. Regardless of the amortization type or period, the funding policy should generate a contribution that pays off the UAAL, which results in the funded ratio trending to 100% over time. Caution

## Appendix A: Valuation Process and Glossary of Actuarial Terms

should be used when an open method is used, because typically an open amortization policy does not result in the UAAL being paid off. North Carolina pays off a much larger amount of UAAL compared to other states. While many states struggle to pay a 30-year level percent of pay UAAL contribution, which doesn't even reduce the amount of UAAL, North Carolina pays down the UAAL with level dollar payments over 12 years. This aggressive payment of UAAL results in North Carolina being home to many of the best funded Public Retirement Systems in the United States.

To satisfy the requirements of the State of North Carolina, the actuary calculates the total annual contribution to the Retirement System as the normal cost plus a contribution towards UAAL. Said another way, this contribution is sufficient to pay for the cost of benefits accruing during the year (normal cost) plus the mortgage payment (UAAL payment). The total contribution is reduced by the amount of member contributions, if any, to arrive at the employer contribution. For the aggressive North Carolina contribution policy to be effective, the amounts that Buck calculates need to be contributed. With very limited exception, North Carolina has contributed the amounts that Buck has calculated, which has resulted in the North Carolina Retirement Systems being among the best funded in the United States.

An actuarial valuation report is produced annually, which contains the contribution for the fiscal year as well as the funded ratio of the Retirement System. The primary purpose of performing an actuarial valuation annually is to replace the estimated activities from the previous valuation, which were based on assumptions, with the actual experience of the Retirement System for the prior year. The experience gain (loss) is the difference between the expected and the actual UAAL of the Retirement System. An experience loss can be thought of as the amount of additional UAAL over and above the amount that was expected from the prior year due to deviation of actual experience from the assumption. Similarly, an experience gain can be thought of as having less UAAL than that which was expected from the prior year assumptions. As an example, if the Retirement System achieves an asset return of 15% when the assumption was a 7.25% return, an actuarial gain is said to have happened, which typically results in lower contributions and higher funded ratio, all else being equal. Alternatively, a return of 2% under the same circumstances would result in an actuarial loss, requiring an increase in contributions and a funded ratio that is lower than anticipated. Experience gains and losses are common within the valuation process. Typically gains and losses offset each other over time. To the extent that does not occur, the reasons for the gains and losses should be understood, and appropriate recommendations should be made by the actuary after an experience review to adjust the assumptions.

The actuarial valuation report will contain histories of key statistics from prior actuarial valuation reports. In particular, a history of the funded ratio of the Retirement System is an important exhibit. Trustees should understand the reason for the trend of the funded ratio of the Retirement System over time. The actuary will discuss the reasons for changes in the funded ratio of the Retirement System with each valuation report. To the extent that there are unexplained changes in funded ratio corrective action should be explored and the actuary will make recommendations as to whether there should be changes in the assumptions, funding policy, or some other portion of the actuarial valuation process.

## Appendix A: Valuation Process and Glossary of Actuarial Terms

In addition to historical information, projections of contributions and funded ratio based on current assumptions can sometimes be found in an actuarial valuation report. Projections of contributions can allow the employer to plan their budget accordingly. Surprises in Retirement System contributions to be paid by the employer serve no one. A one-year projection based on "bad" asset returns can provide ample time for the employer to plan, or allow for a discussion of changing the funding policy to occur. Contribution surprises are a primary contributor to employers considering pension reform. It is important to keep the employer apprised of future contribution requirements. A projection of funded ratio can serve the Trustees by illustrating the trend of the funded ratio over time. The funded ratio, under a prudent funding policy, should trend to 100% over a period of less than 30 years. (It is worthwhile to note that while 30 years has served as an industry standard for the longest period over which 100% funding should be achieved, that period is coming under scrutiny by the actuarial community and will likely be shortened.) If a projection of funded ratio does not trend to 100% over time, consideration should be given to fixing the funding policy to achieve this goal. For the North Carolina Retirement Systems, projections are generally performed for the January Board meetings. While the projection period has tended to be limited to five years, a longer projection would show the funded ratio trend to 100% much faster than other Public Retirement Systems.

The actuarial report will contain schedules of information about the census, plan and asset information submitted by Retirement System staff upon which the actuarial valuation is based. It is important that the Board of Trustees review that information and determine if the information is consistent with their understanding of the Retirement System. If after questioning staff, the Board of Trustees is not comfortable that the information provided is correct, the actuary should be notified to determine if the actuarial valuation report should be corrected.

Finally, the valuation report and/or presentation should contain sufficient information in an understandable fashion to allow the Board to take action and adopt the contribution rate for the upcoming year. It should also allow stakeholders to understand key observations over the past year that resulted in contributions increasing (or decreasing) and where contributions are headed. The actuary is always open to making the results understandable. Buck works with the North Carolina Retirement Division to make your reports and presentations understandable and actionable. If something doesn't make sense – speak up!!



# Appendix A: Valuation Process and Glossary of Actuarial Terms

## Glossary

Note that the first definitions given are the “official” definitions of the term. For some terms there is a second definition, in italics, which is the unofficial definition.

**Actuarial Accrued Liability (AAL).** The portion of the Present Value of Projected Benefits (PVFB) allocated to past service. Also difference between (i) the actuarial present value of future benefits, and (ii) the present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability.” *The amount of money that should be in the Fund. The funding target.*

**Actuarial Assumptions.** Estimates of future plan experience with respect to rates of mortality, disability, retirement, investment income and salary increases. Demographic (“people”) assumptions (rates of mortality, separation, and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic (“money”) assumptions (salary increases and investment income) consist of an underlying rate appropriate in an inflation-free environment plus a provision for a long-term average rate of inflation. *Estimates of future events used to project what we know now- current member data, assets, and benefit provisions – into an estimate of future benefits.*

**Actuarial Cost Method.** A mathematical budgeting procedure for allocating the dollar amount of the Present Value of Projected Benefits (PVFB) between the normal costs to be paid in the future and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

**Actuarial Methods.** The collective term for the Actuarial Cost Method, the Amortization Payment for UAAL Method, and the Asset Valuation Method used to develop the contribution requirements for the Retirement System. *The Funding Policy.*

**Actuarial Equivalent.** Benefits whose actuarial present values are equal.

**Actuarial Present Value.** The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

**Actuarial Value of Assets (AVA).** A smoothed value of assets which is used to limit contribution volatility. Also known as the funding value of assets. *Smoothed value of assets.*

# Appendix A: Valuation Process and Glossary of Actuarial Terms

**Amortization Payment for UAAL.** Payment of the unfunded actuarial accrued liability by means of periodic contributions of interest and principal, as opposed to a lump sum payment. The components of the amortization payment for UAAL includes:

- Amortization Period Length – Generally amortization periods up to 30 years are allowed. Similar to a mortgage, the shorter the amortization period, the higher the payment and the faster the UAAL is paid off.
- Amortization payment increases – Future payments can be level dollar, like a mortgage, or as a level percent of pay. Most Retirement Systems amortize UAAL as a level percent of pay which when combined with the employer normal cost that is developed as a level percent of pay can result in contributions that are easier to budget.
- Amortization type Amortization schedule can be closed or open. A closed amortization schedule is similar to a mortgage – at the end of the amortization period the UAAL is designed to be paid off. An open amortization period is similar to refinancing the UAAL year after year.
- Amortization schedule UAAL can be amortized over a single amortization period, or it can be amortized over a schedule.

*The amortization payment for UAAL can be thought of as the UAAL mortgage payment.*

**Asset Valuation Method.** The components of how the actuarial value of assets is to be developed.

**Experience Gain Loss.** A measure of the difference between actual experience and experience anticipated by a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used. *The experience Gain (Loss) represents how much the actuary missed the mark in a given year.*

**Funded Ratio.** The percent of the actuarial accrued liabilities covered by the actuarial value of assets. Also known as the funded status. *The ratio of how much money you actually have in the fund to the amount you should have in the fund.*

**Normal Cost.** The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as “current service cost.” An amortization payment toward the unfunded actuarial accrued liability is paid in addition to the normal cost to arrive at the total contribution in a given year. *The cost of benefits accruing during the year.*

**Present Value of Future Normal Cost (PVFNC).** The portion of the Present Value of Projected Benefits (PVFB) allocated to future service. *The value in today's dollars of the amount of contribution to be made in the future for benefits accruing for members in the Retirement System as of the valuation date. Note that in practice, this number is rarely discussed.*

## Appendix A: Valuation Process and Glossary of Actuarial Terms

**Present Value of Future Benefits (PVFB).** The projected future benefit payments of the plan are discounted into today's dollars using an assumed rate of investment return assumption to determine the Present Value of Future Benefits (PVFB) of the Retirement System. The PVFB is the discounted value of the projected benefits promised to all members as of a valuation date, including future pay and service for members which has not yet been earned. *If the Retirement System held assets equal to the PVFB and all the assumptions were realized, there would be sufficient funds to pay off all the benefits to be paid in the future for members in the Retirement System as of the valuation date.*

**Reserve Account.** An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

**Unfunded Actuarial Accrued Liability (UAAL).** The difference between the actuarial accrued liability (AAL) and actuarial value of assets (AVA). The UAAL is sometimes referred to as "unfunded accrued liability." *Funding shortfall, or prefunded amount if negative.*

**Valuation Date.** The date that the actuarial valuation calculations are performed as of. *Also known as the "snapshot date".*

## Appendix B: Detailed Tabulations of Member Data

**Table B-1: The Number and Average Reported Compensation of Active Members Distributed by Age and Service as of December 31, 2013**

| Age      | Years of Service |        |        |          |          |          |          |          |          |         | Total   |
|----------|------------------|--------|--------|----------|----------|----------|----------|----------|----------|---------|---------|
|          | Under 1          | 1 to 4 | 5 to 9 | 10 to 14 | 15 to 19 | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 & Up |         |
| Under 25 | 3,351            | 4,687  | 25     | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 8,063   |
|          | 12,922           | 29,653 | 26,558 | 0        | 0        | 0        | 0        | 0        | 0        | 0       | 22,690  |
| 25 to 29 | 3,467            | 18,074 | 5,356  | 30       | 0        | 0        | 0        | 0        | 0        | 0       | 26,927  |
|          | 12,063           | 33,028 | 35,016 | 34,658   | 0        | 0        | 0        | 0        | 0        | 0       | 30,726  |
| 30 to 34 | 1,944            | 10,395 | 14,897 | 5,126    | 71       | 0        | 0        | 0        | 0        | 0       | 32,433  |
|          | 11,504           | 34,792 | 38,201 | 42,365   | 38,476   | 0        | 0        | 0        | 0        | 0       | 36,167  |
| 35 to 39 | 1,617            | 8,212  | 10,386 | 10,992   | 3,916    | 26       | 0        | 0        | 0        | 0       | 35,149  |
|          | 11,474           | 35,796 | 40,353 | 45,962   | 48,455   | 42,175   | 0        | 0        | 0        | 0       | 40,618  |
| 40 to 44 | 1,476            | 8,469  | 10,691 | 9,243    | 10,225   | 3,344    | 66       | 0        | 0        | 0       | 43,514  |
|          | 10,939           | 35,592 | 39,826 | 44,485   | 50,482   | 53,239   | 45,085   | 0        | 0        | 0       | 42,554  |
| 45 to 49 | 1,285            | 7,340  | 10,076 | 8,626    | 7,068    | 7,197    | 2,847    | 44       | 0        | 0       | 44,483  |
|          | 11,201           | 35,664 | 38,746 | 42,389   | 47,166   | 54,776   | 55,553   | 49,644   | 0        | 0       | 43,166  |
| 50 to 54 | 990              | 6,305  | 9,236  | 8,565    | 7,334    | 5,326    | 6,214    | 1,419    | 17       | 0       | 45,406  |
|          | 10,468           | 36,638 | 38,705 | 41,261   | 43,873   | 51,359   | 57,813   | 60,918   | 49,227   | 0       | 43,917  |
| 55 to 59 | 675              | 4,721  | 7,838  | 7,575    | 6,850    | 5,377    | 4,564    | 2,013    | 585      | 11      | 40,209  |
|          | 10,572           | 37,156 | 39,903 | 41,910   | 44,758   | 50,124   | 55,996   | 65,480   | 65,451   | 50,356  | 45,142  |
| 60 to 64 | 297              | 2,701  | 5,248  | 4,931    | 4,182    | 3,564    | 2,571    | 992      | 653      | 164     | 25,303  |
|          | 11,145           | 39,210 | 41,574 | 44,087   | 46,212   | 50,958   | 57,820   | 69,239   | 73,348   | 68,871  | 47,275  |
| 65 to 69 | 63               | 617    | 1,726  | 1,534    | 1,078    | 777      | 533      | 287      | 187      | 137     | 6,939   |
|          | 10,220           | 40,225 | 44,696 | 46,987   | 51,010   | 58,438   | 64,386   | 74,740   | 79,521   | 75,257  | 51,309  |
| 70 & Up  | 31               | 212    | 450    | 419      | 287      | 183      | 126      | 77       | 59       | 100     | 1,944   |
|          | 9,678            | 33,758 | 37,218 | 41,854   | 41,374   | 50,998   | 58,286   | 66,974   | 84,968   | 94,100  | 46,231  |
| Total    | 15,196           | 71,733 | 75,929 | 57,041   | 41,011   | 25,794   | 16,921   | 4,832    | 1,501    | 412     | 310,370 |
|          | 11,736           | 34,838 | 39,180 | 43,444   | 47,073   | 52,445   | 57,105   | 65,342   | 71,223   | 76,624  | 41,351  |

# Appendix B: Detailed Tabulations of Member Data

**Table B-2: The Number and Reported Compensation of Active Members Distributed by Age as of December 31, 2013**

| Age | Men    |              | Women  |              |
|-----|--------|--------------|--------|--------------|
|     | Number | Compensation | Number | Compensation |
| 19  | 8      | \$ 111,531   | 6      | \$ 73,733    |
| 20  | 27     | 340,156      | 18     | 282,883      |
| 21  | 112    | 1,992,755    | 79     | 1,167,131    |
| 22  | 308    | 5,939,516    | 620    | 9,917,632    |
| 23  | 689    | 14,215,027   | 1,992  | 39,727,460   |
| 24  | 1,082  | 27,096,617   | 3,118  | 82,036,304   |
| 25  | 1,302  | 35,594,961   | 3,492  | 98,316,200   |
| 26  | 1,359  | 38,632,035   | 3,748  | 112,274,241  |
| 27  | 1,561  | 47,507,556   | 3,743  | 116,096,320  |
| 28  | 1,729  | 55,314,405   | 4,058  | 127,956,324  |
| 29  | 1,812  | 60,374,130   | 4,123  | 135,292,096  |
| 30  | 1,811  | 61,419,622   | 4,250  | 143,644,461  |
| 31  | 1,945  | 69,502,957   | 4,435  | 153,010,481  |
| 32  | 2,005  | 74,029,713   | 4,520  | 161,094,077  |
| 33  | 2,072  | 80,656,667   | 4,571  | 169,757,553  |
| 34  | 2,168  | 85,761,318   | 4,656  | 174,121,926  |
| 35  | 2,126  | 87,635,660   | 4,660  | 179,696,286  |
| 36  | 2,175  | 90,995,069   | 4,781  | 187,196,972  |
| 37  | 2,182  | 95,055,492   | 4,844  | 190,569,794  |
| 38  | 2,157  | 95,654,792   | 4,754  | 189,379,275  |
| 39  | 2,285  | 103,605,189  | 5,185  | 207,883,264  |
| 40  | 2,385  | 106,938,685  | 5,147  | 208,544,744  |
| 41  | 2,445  | 111,489,795  | 5,487  | 222,090,315  |
| 42  | 2,749  | 126,952,936  | 6,044  | 247,600,311  |
| 43  | 3,038  | 141,031,211  | 6,737  | 274,412,694  |
| 44  | 2,845  | 139,004,953  | 6,637  | 273,653,045  |
| 45  | 2,832  | 137,780,968  | 6,389  | 263,425,164  |
| 46  | 2,759  | 134,086,903  | 6,003  | 241,912,574  |
| 47  | 2,675  | 130,669,625  | 6,044  | 246,174,552  |
| 48  | 2,749  | 134,964,648  | 5,970  | 241,125,663  |
| 49  | 2,799  | 133,804,014  | 6,267  | 256,253,061  |
| 50  | 2,820  | 138,445,763  | 6,308  | 258,929,017  |
| 51  | 2,809  | 138,394,351  | 6,372  | 264,276,658  |
| 52  | 2,781  | 136,430,749  | 6,501  | 270,617,245  |
| 53  | 2,759  | 135,619,523  | 6,331  | 264,679,532  |
| 54  | 2,546  | 123,719,525  | 6,179  | 262,962,336  |
| 55  | 2,556  | 124,050,449  | 5,916  | 248,944,860  |
| 56  | 2,517  | 123,223,089  | 5,850  | 252,954,702  |
| 57  | 2,490  | 123,502,265  | 5,686  | 248,233,931  |
| 58  | 2,427  | 120,539,565  | 5,309  | 232,054,695  |

# Appendix B: Detailed Tabulations of Member Data

**Table B-2: The Number and Reported Compensation of Active Members Distributed by Age as of December 31, 2013 (continued)**

| Age   | Men    |                  | Women   |                  |
|-------|--------|------------------|---------|------------------|
|       | Number | Compensation     | Number  | Compensation     |
| 59    | 2,344  | \$ 119,284,197   | 5,114   | \$ 222,311,837   |
| 60    | 2,269  | 115,332,075      | 4,891   | 216,926,244      |
| 61    | 1,959  | 98,613,007       | 4,104   | 182,152,588      |
| 62    | 1,778  | 92,094,081       | 3,384   | 154,500,463      |
| 63    | 1,420  | 75,540,383       | 2,486   | 115,409,915      |
| 64    | 1,066  | 57,672,897       | 1,946   | 87,957,384       |
| 65    | 912    | 53,930,947       | 1,474   | 68,303,575       |
| 66    | 680    | 42,712,187       | 1,044   | 48,647,555       |
| 67    | 593    | 34,571,407       | 796     | 36,893,853       |
| 68    | 350    | 20,374,958       | 438     | 19,234,499       |
| 69    | 307    | 16,891,078       | 345     | 14,469,316       |
| 70    | 227    | 12,263,676       | 237     | 9,513,742        |
| 71    | 196    | 10,748,229       | 201     | 7,745,797        |
| 72    | 134    | 7,135,628        | 128     | 4,820,375        |
| 73    | 111    | 5,736,927        | 107     | 4,063,242        |
| 74    | 100    | 5,462,255        | 70      | 2,862,242        |
| 75    | 68     | 3,157,079        | 52      | 1,791,417        |
| 76    | 46     | 2,007,047        | 40      | 1,431,560        |
| 77    | 37     | 2,362,151        | 27      | 1,262,563        |
| 78    | 22     | 1,018,945        | 21      | 834,264          |
| 79    | 18     | 1,156,222        | 18      | 581,059          |
| 80    | 16     | 689,591          | 7       | 246,252          |
| 81    | 8      | 443,577          | 9       | 260,273          |
| 82    | 12     | 734,116          | 3       | 116,340          |
| 83    | 5      | 424,239          | 4       | 91,962           |
| 84    | 6      | 290,124          | 1       | 44,839           |
| 85    | 2      | 54,168           |         |                  |
| 86    | 3      | 279,793          | 1       | 68,074           |
| 87    |        |                  | 2       | 80,528           |
| 88    |        |                  | 2       | 40,663           |
| 89    | 2      | 43,443           | 1       | 10,475           |
| Total | 96,587 | \$ 4,373,108,612 | 213,783 | \$ 8,461,012,408 |

# Appendix B: Detailed Tabulations of Member Data

**Table B-3: The Number and Reported Compensation of Active Members Distributed by Service as of December 31, 2013**

| Service | Men    |               | Women  |                |
|---------|--------|---------------|--------|----------------|
|         | Number | Compensation  | Number | Compensation   |
| 0       | 4,480  | \$ 50,076,970 | 10,716 | \$ 128,254,373 |
| 1       | 7,945  | 252,688,589   | 16,317 | 487,034,931    |
| 2       | 6,442  | 244,943,768   | 12,779 | 446,621,079    |
| 3       | 5,221  | 211,231,519   | 10,199 | 366,836,300    |
| 4       | 4,488  | 181,594,189   | 8,342  | 308,095,108    |
| 5       | 3,591  | 157,369,106   | 7,238  | 264,468,469    |
| 6       | 5,618  | 231,701,092   | 12,111 | 442,076,575    |
| 7       | 4,970  | 216,588,697   | 11,345 | 420,855,432    |
| 8       | 4,853  | 212,535,345   | 11,636 | 439,431,606    |
| 9       | 4,353  | 193,651,561   | 10,214 | 396,212,792    |
| 10      | 3,984  | 181,176,863   | 9,316  | 370,186,015    |
| 11      | 3,554  | 168,566,710   | 8,132  | 338,896,676    |
| 12      | 3,005  | 147,249,103   | 7,292  | 307,758,119    |
| 13      | 3,104  | 154,580,030   | 7,991  | 336,651,375    |
| 14      | 3,021  | 149,354,243   | 7,642  | 323,702,017    |
| 15      | 2,813  | 143,459,962   | 7,147  | 305,284,503    |
| 16      | 2,536  | 131,914,758   | 6,401  | 282,482,685    |
| 17      | 2,355  | 124,060,519   | 5,619  | 252,371,494    |
| 18      | 2,231  | 121,769,110   | 5,162  | 238,205,076    |
| 19      | 2,029  | 108,923,406   | 4,718  | 222,036,985    |
| 20      | 2,132  | 117,598,215   | 4,385  | 211,073,679    |
| 21      | 1,674  | 97,001,024    | 3,861  | 192,693,320    |
| 22      | 1,679  | 95,841,801    | 3,466  | 174,112,030    |
| 23      | 1,256  | 74,948,333    | 2,758  | 143,658,831    |
| 24      | 1,515  | 87,084,519    | 3,068  | 158,743,737    |
| 25      | 1,348  | 78,354,646    | 3,015  | 156,432,033    |
| 26      | 1,280  | 78,426,893    | 2,710  | 144,176,967    |
| 27      | 1,103  | 70,876,571    | 2,176  | 120,607,027    |
| 28      | 846    | 55,957,220    | 1,864  | 106,912,306    |
| 29      | 805    | 54,133,727    | 1,774  | 100,386,326    |
| 30      | 658    | 44,724,140    | 1,290  | 76,784,229     |
| 31      | 346    | 25,482,602    | 665    | 41,616,864     |
| 32      | 242    | 18,668,500    | 482    | 31,086,369     |
| 33      | 228    | 17,217,782    | 369    | 23,182,880     |
| 34      | 170    | 13,836,398    | 382    | 23,130,925     |
| 35      | 173    | 14,036,758    | 316    | 20,009,375     |
| 36      | 138    | 11,937,829    | 260    | 16,193,598     |
| 37      | 103    | 7,705,330     | 173    | 11,580,407     |
| 38      | 69     | 5,991,907     | 123    | 8,276,769      |
| 39      | 58     | 4,618,205     | 88     | 6,554,899      |

## Appendix B: Detailed Tabulations of Member Data

**Table B-3: The Number and Reported Compensation of Active Members Distributed by Service as of December 31, 2013 (continued)**

| Service      | Men           |                         | Women          |                         |
|--------------|---------------|-------------------------|----------------|-------------------------|
|              | Number        | Compensation            | Number         | Compensation            |
| 40           | 48            | \$ 3,700,073            | 91             | \$ 5,694,334            |
| 41           | 25            | 1,947,918               | 51             | 3,554,404               |
| 42           | 28            | 2,262,082               | 30             | 2,129,029               |
| 43           | 17            | 1,516,615               | 19             | 1,452,808               |
| 44           | 14            | 1,413,404               | 19             | 1,240,400               |
| 45           | 8             | 817,070                 | 11             | 935,479                 |
| 46           | 14            | 1,394,091               | 6              | 375,726                 |
| 47           | 4             | 402,137                 | 2              | 141,875                 |
| 48           | 3             | 609,595                 |                |                         |
| 49           | 2             | 283,551                 | 2              | 132,650                 |
| 50           | 3             | 238,457                 |                |                         |
| 51           | 2             | 269,034                 | 6              | 458,716                 |
| 52           |               |                         | 1              | 37,896                  |
| 53           | 2             | 320,399                 | 1              | 48,365                  |
| 54           | 1             | 56,246                  | 1              | 65,783                  |
| 58           |               |                         | 1              | 70,762                  |
| <b>Total</b> | <b>96,587</b> | <b>\$ 4,373,108,612</b> | <b>213,783</b> | <b>\$ 8,461,012,408</b> |



# Appendix B: Detailed Tabulations of Member Data

**Table B-4: The Number and Valuation Compensation of Disabled Members Distributed by Age as of December 31, 2013**

| Age | Men    |              | Women  |              |
|-----|--------|--------------|--------|--------------|
|     | Number | Compensation | Number | Compensation |
| 26  | 1      | \$ 26,230    |        |              |
| 28  | 2      | 36,912       |        |              |
| 29  | 1      | 26,669       | 3      | \$ 59,430    |
| 30  | 3      | 60,352       | 7      | 174,722      |
| 31  | 2      | 71,397       | 7      | 182,734      |
| 32  | 2      | 37,697       | 11     | 449,282      |
| 33  | 4      | 145,184      | 8      | 236,985      |
| 34  | 3      | 96,821       | 12     | 337,966      |
| 35  | 7      | 204,430      | 18     | 531,754      |
| 36  | 8      | 264,001      | 25     | 727,303      |
| 37  | 15     | 311,754      | 30     | 904,570      |
| 38  | 13     | 455,452      | 45     | 1,539,461    |
| 39  | 18     | 638,162      | 38     | 1,097,354    |
| 40  | 22     | 737,180      | 25     | 794,196      |
| 41  | 21     | 728,029      | 47     | 1,499,831    |
| 42  | 25     | 744,379      | 66     | 1,964,286    |
| 43  | 19     | 550,798      | 79     | 2,420,524    |
| 44  | 29     | 837,235      | 101    | 3,209,966    |
| 45  | 41     | 1,395,781    | 95     | 3,041,720    |
| 46  | 57     | 1,993,151    | 106    | 3,414,011    |
| 47  | 52     | 4,846,173    | 118    | 3,591,132    |
| 48  | 66     | 2,247,960    | 136    | 4,178,085    |
| 49  | 74     | 2,560,042    | 160    | 4,918,651    |
| 50  | 69     | 2,394,103    | 171    | 5,316,145    |
| 51  | 98     | 3,000,228    | 188    | 6,355,568    |
| 52  | 95     | 3,072,807    | 210    | 6,610,888    |
| 53  | 85     | 2,801,542    | 251    | 7,454,678    |
| 54  | 112    | 3,930,268    | 230    | 7,551,279    |
| 55  | 125    | 3,980,866    | 262    | 7,909,105    |
| 56  | 128    | 4,348,504    | 265    | 8,531,348    |
| 57  | 158    | 5,527,716    | 283    | 8,828,190    |
| 58  | 140    | 4,807,185    | 300    | 9,734,449    |
| 59  | 135    | 4,674,383    | 311    | 10,034,446   |
| 60  | 150    | 5,226,159    | 316    | 10,466,194   |
| 61  | 119    | 4,066,463    | 240    | 7,661,532    |
| 62  | 128    | 4,293,273    | 278    | 8,988,203    |
| 63  | 146    | 4,833,065    | 254    | 8,598,206    |
| 64  | 136    | 4,597,516    | 233    | 6,881,102    |
| 65  | 95     | 3,301,977    | 128    | 4,256,743    |
| 66  | 7      | 178,723      | 16     | 505,147      |

## Appendix B: Detailed Tabulations of Member Data

**Table B-4: The Number and Valuation Compensation of Disabled Members Distributed by Age as of December 31, 2013 (continued)**

| Age   | Men    |               | Women  |                |
|-------|--------|---------------|--------|----------------|
|       | Number | Compensation  | Number | Compensation   |
| 67    | 8      | \$ 329,965    | 21     | \$ 575,164     |
| 68    | 11     | 362,659       | 15     | 442,773        |
| 69    | 6      | 179,141       | 16     | 625,577        |
| 70    | 5      | 152,625       | 14     | 407,043        |
| 71    | 8      | 232,592       | 10     | 290,754        |
| 72    | 1      | 30,525        | 5      | 264,260        |
| 73    | 2      | 61,050        | 4      | 122,100        |
| 74    | 4      | 112,386       | 4      | 101,037        |
| 75    | 1      | 24,665        | 1      | 47,342         |
| 76    | 2      | 52,034        | 3      | 91,575         |
| 77    |        |               | 1      | 30,525         |
| 78    | 1      | 30,525        | 1      | 30,525         |
| 79    | 3      | 86,460        |        |                |
| 80    | 2      | 61,050        | 1      | 30,525         |
| 82    | 1      | 30,525        | 2      | 61,050         |
| 88    |        |               | 1      | 17,825         |
| 93    | 1      | 30,525        |        |                |
| Total | 2,467  | \$ 85,827,294 | 5,172  | \$ 164,095,261 |

# Appendix B: Detailed Tabulations of Member Data

**Table B-5: The Number and Accumulated Contributions of Terminated Vested Members Distributed by Age as of December 31, 2013**

| Age | Men    |               | Women  |               |
|-----|--------|---------------|--------|---------------|
|     | Number | Contributions | Number | Contributions |
| 20  | 12     | \$ 11,891     | 3      | \$ 3,035      |
| 21  | 25     | 18,954        | 18     | 10,382        |
| 22  | 48     | 45,852        | 37     | 34,964        |
| 23  | 116    | 135,439       | 165    | 171,929       |
| 24  | 224    | 379,433       | 451    | 820,409       |
| 25  | 369    | 680,563       | 747    | 1,726,499     |
| 26  | 468    | 1,101,526     | 1,100  | 3,285,614     |
| 27  | 654    | 1,919,335     | 1,400  | 5,091,479     |
| 28  | 760    | 2,555,503     | 1,798  | 7,889,321     |
| 29  | 900    | 3,595,229     | 2,326  | 11,610,100    |
| 30  | 894    | 4,074,615     | 2,660  | 14,893,513    |
| 31  | 1,104  | 5,605,693     | 2,867  | 18,024,884    |
| 32  | 1,124  | 6,619,114     | 3,158  | 21,683,541    |
| 33  | 1,095  | 6,900,253     | 3,102  | 23,904,517    |
| 34  | 1,134  | 7,363,881     | 3,188  | 25,511,623    |
| 35  | 1,087  | 8,203,623     | 3,074  | 25,817,350    |
| 36  | 1,127  | 8,920,034     | 3,011  | 26,953,124    |
| 37  | 1,123  | 9,784,713     | 2,934  | 28,072,140    |
| 38  | 986    | 9,548,862     | 2,726  | 27,217,423    |
| 39  | 1,109  | 11,327,801    | 2,778  | 29,131,634    |
| 40  | 1,071  | 12,185,396    | 2,592  | 27,817,728    |
| 41  | 1,133  | 13,653,698    | 2,596  | 29,236,459    |
| 42  | 1,128  | 13,995,269    | 2,590  | 28,995,989    |
| 43  | 1,262  | 15,849,418    | 2,834  | 33,978,404    |
| 44  | 1,156  | 15,842,684    | 2,762  | 33,056,767    |
| 45  | 1,048  | 14,572,436    | 2,501  | 32,580,074    |
| 46  | 969    | 14,638,191    | 2,317  | 30,769,905    |
| 47  | 971    | 16,091,453    | 2,140  | 28,699,308    |
| 48  | 978    | 15,234,876    | 2,065  | 28,819,886    |
| 49  | 915    | 15,793,984    | 2,123  | 28,114,101    |
| 50  | 904    | 16,294,908    | 2,078  | 30,794,949    |
| 51  | 908    | 15,088,919    | 2,030  | 28,757,591    |
| 52  | 814    | 15,015,190    | 2,003  | 29,054,186    |
| 53  | 840    | 14,579,528    | 2,024  | 30,237,718    |
| 54  | 808    | 15,551,600    | 1,841  | 30,774,556    |
| 55  | 770    | 15,773,734    | 1,866  | 30,455,047    |
| 56  | 779    | 14,562,849    | 1,841  | 31,793,232    |
| 57  | 748    | 14,684,583    | 1,779  | 30,239,845    |
| 58  | 732    | 13,974,741    | 1,704  | 31,429,590    |
| 59  | 732    | 14,510,874    | 1,675  | 32,443,984    |

## Appendix B: Detailed Tabulations of Member Data

**Table B-5: The Number and Accumulated Contributions of Terminated Vested Members Distributed by Age as of December 31, 2013 (continued)**

| Age          | Men           |                       | Women         |                       |
|--------------|---------------|-----------------------|---------------|-----------------------|
|              | Number        | Contributions         | Number        | Contributions         |
| 60           | 621           | \$ 13,426,738         | 1,521         | \$ 30,175,460         |
| 61           | 574           | 10,832,843            | 1,201         | 21,654,700            |
| 62           | 472           | 8,803,893             | 936           | 15,531,488            |
| 63           | 442           | 7,387,038             | 808           | 13,012,962            |
| 64           | 338           | 5,622,925             | 692           | 10,009,084            |
| 65           | 614           | 4,233,701             | 701           | 7,610,002             |
| 66           | 245           | 2,851,954             | 395           | 4,641,317             |
| 67           | 203           | 3,441,772             | 332           | 3,949,720             |
| 68           | 131           | 1,346,254             | 214           | 2,251,985             |
| 69           | 127           | 1,011,137             | 168           | 1,425,113             |
| 70           | 82            | 653,107               | 115           | 1,252,609             |
| 71           | 73            | 754,477               | 80            | 986,815               |
| 72           | 51            | 471,736               | 66            | 570,927               |
| 73           | 41            | 697,315               | 42            | 571,574               |
| 74           | 35            | 296,448               | 32            | 504,152               |
| 75           | 27            | 251,728               | 28            | 199,687               |
| 76           | 24            | 153,300               | 15            | 120,667               |
| 77           | 13            | 99,521                | 20            | 158,509               |
| 78           | 18            | 173,377               | 18            | 187,946               |
| 79           | 10            | 747,778               | 14            | 141,063               |
| 80           | 6             | 217,226               | 7             | 95,791                |
| 81           | 5             | 49,888                | 4             | 6,711                 |
| 82           | 6             | 11,149                | 3             | 15,471                |
| 83           | 1             | 4,846                 | 2             | 25,360                |
| 84           | 3             | 15,048                | 1             | 24                    |
| 85           | 3             | 15,713                | 1             | 2                     |
| 87           | 1             | 15,786                | 1             | 2,694                 |
| 90           | 1             | 1,922                 |               |                       |
| <b>Total</b> | <b>37,192</b> | <b>\$ 450,275,265</b> | <b>88,321</b> | <b>\$ 995,004,633</b> |

## Appendix B: Detailed Tabulations of Member Data

**Table B-6: The Number and Annual Retirement Allowances of Retired Members (Healthy at Retirement) and Survivors of Deceased Members Distributed by Age as of December 31, 2013**

| Age | Men    |            | Women  |            |
|-----|--------|------------|--------|------------|
|     | Number | Allowances | Number | Allowances |
| 18  |        |            | 1      | \$ 31,764  |
| 19  | 3      | \$ 32,436  |        |            |
| 20  | 4      | 38,712     |        |            |
| 21  |        |            | 3      | 54,756     |
| 22  | 1      | 34,476     | 2      | 17,124     |
| 23  | 2      | 7,176      | 4      | 41,640     |
| 24  | 4      | 56,340     | 2      | 27,804     |
| 25  | 6      | 51,732     |        |            |
| 26  | 5      | 66,840     | 5      | 85,008     |
| 27  | 2      | 26,244     | 5      | 69,612     |
| 28  | 3      | 23,796     | 6      | 54,300     |
| 29  | 8      | 119,400    | 7      | 121,056    |
| 30  | 5      | 47,016     | 8      | 82,620     |
| 31  | 5      | 116,688    | 11     | 136,980    |
| 32  | 10     | 55,644     | 10     | 157,476    |
| 33  | 10     | 155,688    | 12     | 63,168     |
| 34  | 3      | 57,216     | 7      | 97,800     |
| 35  | 5      | 46,464     | 9      | 118,692    |
| 36  | 7      | 86,496     | 16     | 152,736    |
| 37  | 18     | 279,300    | 15     | 151,224    |
| 38  | 10     | 157,128    | 15     | 235,908    |
| 39  | 13     | 117,912    | 15     | 188,856    |
| 40  | 9      | 118,560    | 14     | 110,976    |
| 41  | 11     | 132,096    | 15     | 160,068    |
| 42  | 18     | 195,732    | 21     | 201,276    |
| 43  | 17     | 193,044    | 22     | 251,508    |
| 44  | 15     | 89,772     | 29     | 337,188    |
| 45  | 23     | 259,944    | 38     | 421,296    |
| 46  | 21     | 157,236    | 33     | 351,108    |
| 47  | 34     | 509,328    | 33     | 317,616    |
| 48  | 37     | 734,244    | 45     | 563,388    |
| 49  | 72     | 1,964,916  | 57     | 796,956    |
| 50  | 121    | 3,146,280  | 113    | 2,112,756  |
| 51  | 227    | 5,855,796  | 223    | 4,561,644  |
| 52  | 284    | 7,828,236  | 340    | 8,139,372  |

## Appendix B: Detailed Tabulations of Member Data

**Table B-6: The Number and Annual Retirement Allowances of Retired Members (Healthy at Retirement) and Survivors of Deceased Members Distributed by Age as of December 31, 2013 (continued)**

| Age | Men    |               | Women  |               |
|-----|--------|---------------|--------|---------------|
|     | Number | Allowances    | Number | Allowances    |
| 53  | 383    | \$ 10,984,536 | 575    | \$ 15,190,452 |
| 54  | 449    | 13,471,452    | 771    | 20,559,288    |
| 55  | 539    | 16,174,740    | 1,002  | 27,965,136    |
| 56  | 634    | 19,820,016    | 1,360  | 39,930,960    |
| 57  | 764    | 23,673,384    | 1,759  | 53,376,312    |
| 58  | 822    | 26,228,880    | 2,075  | 63,850,848    |
| 59  | 986    | 32,051,064    | 2,380  | 73,972,488    |
| 60  | 1,169  | 36,002,820    | 3,074  | 90,030,576    |
| 61  | 1,582  | 47,173,308    | 4,122  | 113,273,868   |
| 62  | 1,914  | 51,417,372    | 4,699  | 114,031,584   |
| 63  | 2,238  | 52,869,972    | 5,399  | 116,254,908   |
| 64  | 2,483  | 58,804,872    | 5,655  | 116,765,784   |
| 65  | 2,722  | 62,890,296    | 6,022  | 119,576,484   |
| 66  | 2,975  | 67,199,040    | 6,401  | 122,045,100   |
| 67  | 3,414  | 78,686,640    | 7,067  | 134,606,712   |
| 68  | 2,403  | 54,206,916    | 4,949  | 90,638,820    |
| 69  | 2,415  | 54,634,980    | 4,693  | 85,225,752    |
| 70  | 2,293  | 51,411,754    | 4,948  | 89,462,363    |
| 71  | 2,371  | 55,624,824    | 4,834  | 86,776,404    |
| 72  | 1,977  | 45,174,216    | 4,025  | 70,862,028    |
| 73  | 1,832  | 41,983,764    | 3,748  | 64,638,864    |
| 74  | 1,694  | 38,530,716    | 3,427  | 57,956,700    |
| 75  | 1,648  | 37,964,616    | 3,172  | 53,383,188    |
| 76  | 1,498  | 33,840,852    | 3,123  | 51,285,060    |
| 77  | 1,371  | 32,264,832    | 2,863  | 46,793,904    |
| 78  | 1,363  | 31,640,652    | 2,785  | 44,863,332    |
| 79  | 1,236  | 28,057,872    | 2,773  | 44,441,016    |
| 80  | 1,190  | 27,813,564    | 2,296  | 35,342,832    |
| 81  | 1,051  | 24,178,092    | 2,278  | 35,435,220    |
| 82  | 989    | 22,754,772    | 2,183  | 32,549,424    |
| 83  | 911    | 21,656,292    | 2,044  | 31,538,808    |
| 84  | 873    | 20,849,076    | 1,861  | 27,869,580    |
| 85  | 674    | 15,657,324    | 1,759  | 25,834,140    |
| 86  | 611    | 14,265,816    | 1,577  | 22,694,748    |
| 87  | 523    | 11,752,656    | 1,380  | 19,836,840    |

## Appendix B: Detailed Tabulations of Member Data

**Table B-6: The Number and Annual Retirement Allowances of Retired Members (Healthy at Retirement) and Survivors of Deceased Members Distributed by Age as of December 31, 2013 (continued)**

| Age   | Men    |                  | Women   |                  |
|-------|--------|------------------|---------|------------------|
|       | Number | Allowances       | Number  | Allowances       |
| 88    | 428    | \$ 9,809,268     | 1,276   | \$ 17,609,700    |
| 89    | 374    | 7,845,132        | 1,111   | 14,797,296       |
| 90    | 259    | 5,513,112        | 905     | 11,686,308       |
| 91    | 255    | 5,155,980        | 742     | 9,958,944        |
| 92    | 154    | 4,226,868        | 695     | 8,723,664        |
| 93    | 181    | 3,501,804        | 593     | 7,262,088        |
| 94    | 79     | 1,561,308        | 448     | 5,753,556        |
| 95    | 80     | 1,636,980        | 313     | 3,639,588        |
| 96    | 54     | 803,964          | 234     | 2,818,224        |
| 97    | 24     | 414,156          | 172     | 2,257,080        |
| 98    | 22     | 460,200          | 131     | 1,642,452        |
| 99    | 12     | 201,960          | 97      | 1,269,120        |
| 100   | 8      | 126,948          | 58      | 692,724          |
| Total | 54,940 | \$ 1,325,731,546 | 120,990 | \$ 2,347,183,943 |

## Appendix B: Detailed Tabulations of Member Data

**Table B-7: The Number and Annual Retirement Allowances of Retired Members (Healthy at Retirement) and Survivors of Deceased Members Distributed by Annuity Type as of December 31, 2013**

| Annuity Type                  | Men           |                         | Women          |                         |
|-------------------------------|---------------|-------------------------|----------------|-------------------------|
|                               | Number        | Allowances              | Number         | Allowances              |
| Maximum                       | 18,489        | \$ 427,017,352          | 64,622         | \$ 1,219,556,746        |
| Option 1                      | 1,261         | 31,743,177              | 5,154          | 77,801,975              |
| Option 2                      | 8,745         | 206,821,652             | 4,127          | 63,832,712              |
| Option 3                      | 3,283         | 95,133,193              | 2,607          | 50,863,886              |
| Option 4                      | 8,825         | 226,763,562             | 21,768         | 514,918,532             |
| Option 5-2                    | 209           | 5,904,232               | 79             | 783,438                 |
| Option 5-3                    | 139           | 4,581,412               | 132            | 2,082,318               |
| Option 6-2                    | 7,157         | 175,650,934             | 6,015          | 121,397,376             |
| Option 6-3                    | 3,916         | 117,953,842             | 5,895          | 143,586,894             |
| Other                         | 13            | 484,062                 | 7              | 160,849                 |
| Survivors of Deceased Members | 2,903         | 33,678,128              | 10,584         | 152,199,217             |
| <b>Total</b>                  | <b>54,940</b> | <b>\$ 1,325,731,546</b> | <b>120,990</b> | <b>\$ 2,347,183,943</b> |



# Appendix B: Detailed Tabulations of Member Data

**Table B-8: The Number and Annual Retirement Allowances of Retired Members (Disabled at Retirement) Distributed by Age of December 31, 2013**

| Age | Men    |            | Women  |            |
|-----|--------|------------|--------|------------|
|     | Number | Allowances | Number | Allowances |
| 49  | 4      | \$ 64,387  |        |            |
| 50  | 4      | 84,475     | 3      | \$ 52,914  |
| 51  | 5      | 90,856     | 5      | 69,334     |
| 52  | 13     | 235,968    | 13     | 246,752    |
| 53  | 9      | 187,956    | 19     | 336,452    |
| 54  | 13     | 293,608    | 21     | 404,191    |
| 55  | 28     | 621,389    | 43     | 771,748    |
| 56  | 47     | 1,117,024  | 50     | 1,114,123  |
| 57  | 48     | 1,058,739  | 71     | 1,517,660  |
| 58  | 57     | 1,240,904  | 114    | 2,512,582  |
| 59  | 78     | 1,689,698  | 145    | 3,322,091  |
| 60  | 88     | 2,069,333  | 218    | 4,926,563  |
| 61  | 136    | 3,037,128  | 341    | 7,674,183  |
| 62  | 162    | 3,487,050  | 393    | 8,411,969  |
| 63  | 153    | 3,340,738  | 438    | 8,778,513  |
| 64  | 180    | 3,576,594  | 383    | 7,698,939  |
| 65  | 242    | 4,382,893  | 498    | 9,455,274  |
| 66  | 355    | 6,180,163  | 585    | 9,916,394  |
| 67  | 324    | 5,921,893  | 594    | 10,059,320 |
| 68  | 238    | 3,926,458  | 445    | 7,093,954  |
| 69  | 195    | 3,173,660  | 435    | 6,824,820  |
| 70  | 206    | 3,189,979  | 401    | 5,721,207  |
| 71  | 197    | 3,320,637  | 401    | 6,250,806  |
| 72  | 132    | 2,250,895  | 328    | 4,736,063  |
| 73  | 144    | 2,049,117  | 263    | 3,457,574  |
| 74  | 150    | 2,244,449  | 207    | 2,756,759  |
| 75  | 81     | 1,018,646  | 219    | 2,746,214  |
| 76  | 100    | 1,420,400  | 200    | 2,633,032  |
| 77  | 56     | 797,469    | 110    | 1,480,603  |
| 78  | 50     | 889,871    | 94     | 1,157,692  |
| 79  | 52     | 818,934    | 68     | 1,031,242  |
| 80  | 32     | 525,988    | 66     | 892,486    |
| 81  | 27     | 528,772    | 56     | 686,852    |
| 82  | 26     | 358,070    | 47     | 640,610    |
| 83  | 30     | 455,696    | 48     | 581,146    |
| 84  | 22     | 333,636    | 48     | 615,380    |
| 85  | 13     | 213,430    | 49     | 503,801    |
| 86  | 11     | 172,179    | 36     | 387,817    |
| 87  | 10     | 132,006    | 53     | 538,010    |
| 88  | 17     | 282,122    | 44     | 506,367    |

## Appendix B: Detailed Tabulations of Member Data

**Table B-8: The Number and Annual Retirement Allowances of Retired Members (Disabled at Retirement) Distributed by Age of December 31, 2013 (continued)**

| Age   | Men    |               | Women  |                |
|-------|--------|---------------|--------|----------------|
|       | Number | Allowances    | Number | Allowances     |
| 89    | 18     | \$ 279,773    | 34     | \$ 195,204     |
| 90    | 9      | 189,235       | 34     | 302,126        |
| 91    | 16     | 276,665       | 28     | 283,323        |
| 92    | 3      | 49,326        | 20     | 185,863        |
| 93    | 6      | 111,530       | 13     | 162,660        |
| 94    | 1      | 14,314        | 17     | 132,132        |
| 95    | 3      | 99,292        | 5      | 82,309         |
| 96    | 2      | 45,442        | 5      | 73,955         |
| 97    |        |               | 5      | 7,345          |
| 98    |        |               | 5      | 114,150        |
| 99    |        |               | 2      | 26,747         |
| 100   | 1      | 1,499         | 4      | 24,869         |
| Total | 3,794  | \$ 67,850,286 | 7,724  | \$ 130,102,120 |

## Appendix B: Detailed Tabulations of Member Data

**Table B-9: The Number and Annual Retirement Allowances of Retired Members (Disabled at Retirement) Distributed by Annuity Type of December 31, 2013**

| Annuity Type | Men          |                      | Women        |                       |
|--------------|--------------|----------------------|--------------|-----------------------|
|              | Number       | Allowances           | Number       | Allowances            |
| Maximum      | 2,053        | \$ 38,977,147        | 5,659        | \$ 97,667,287         |
| Option 1     | 132          | 2,446,736            | 421          | 5,868,306             |
| Option 2     | 557          | 7,129,483            | 365          | 4,312,425             |
| Option 3     | 245          | 4,473,441            | 198          | 3,048,615             |
| Option 4     | 156          | 3,741,437            | 404          | 8,413,421             |
| Option 5-2   | 3            | 43,872               | 5            | 31,440                |
| Option 5-3   | 3            | 47,344               | 2            | 18,424                |
| Option 6-2   | 401          | 6,077,764            | 335          | 4,741,382             |
| Option 6-3   | 244          | 4,913,062            | 333          | 5,968,042             |
| Other        |              |                      | 2            | 32,778                |
| <b>Total</b> | <b>3,794</b> | <b>\$ 67,850,286</b> | <b>7,724</b> | <b>\$ 130,102,120</b> |

## Appendix C: Summary of Main Benefit and Contribution Provisions

A summary of the main benefit provisions of the Retirement System and of the sources of revenue from which benefits are paid is presented in the following digest. Items in parentheses in the text are the provisions applicable to law enforcement officers.

"Average final compensation" as used in the summary means the average annual compensation during the four consecutive years of membership service which afford the highest such average. "Membership service" means service represented by regular contributions. "Creditable service" means membership service and may also include certain special purchased service.

### BENEFITS

#### Unreduced Retirement Allowance

##### Condition for Allowance

An unreduced retirement allowance is payable to any member who retires from service:

- (a) after age 65 (55) and completion of five years of creditable service;
- (b) after age 60 and completion of 25 years of creditable service (not applicable to law enforcement officers); or
- (c) after completion of 30 years of creditable service.

##### Amount of Allowance

1.82% of average final compensation multiplied by the number of years of creditable service.

In no event will a member whose creditable service commenced on or before June 30, 1963 receive a smaller retirement allowance than he would have received under the benefit provisions of the system in effect on that date.

## Appendix C: Summary of Main Benefit and Contribution Provisions

### Reduced Retirement Allowance

**Condition for Allowance** A reduced retirement allowance is payable to any member who retires from service prior to becoming eligible for an unreduced retirement allowance but after age 60 and completion of five years of membership service (age 55 and five years of creditable service).

**Amount of Allowance** The member's reduced retirement allowance is equal to 1.82% of average final compensation multiplied by the number of years of creditable service at date of retirement reduced by 1/4 of 1% for each month by which the member's age at retirement is less than age 65.

In no event will a member whose creditable service commenced on or before June 30, 1963 receive a smaller retirement allowance than he would have received under the benefit provisions of the system in effect on that date.

OR

**Condition for Allowance** A reduced retirement allowance is payable to any member who retires from service after age 50 and completion of 20 (15) years of creditable service but prior to becoming eligible for a reduced or unreduced retirement allowance.

**Amount of Allowance** The member's reduced retirement allowance is equal to 1.82% of average final compensation multiplied by the number of years of creditable service at date of retirement reduced by the lesser of:

- (i) 5/12 (1/3) of 1% for each month by which his age is less than 60 (55), plus, if the member is not a law enforcement officer, 1/4 of 1% for each month by which his age is less than 65.
- (ii) 5% times the difference between 30 years and his creditable service at retirement.

## Appendix C: Summary of Main Benefit and Contribution Provisions

|                               |   |
|-------------------------------|---|
| Deferred Retirement Allowance | Any member who separates from service after completing five or more years of membership service prior to becoming eligible for an unreduced or reduced retirement allowance and who leaves his total accumulated contributions in the system may receive a deferred retirement allowance, beginning at age 60 (55), computed in the same way as a reduced retirement allowance, or, if the member has 20 or more years of service, at age 50 computed in the same way as a reduced service retirement allowance, on the basis of his creditable service and compensation to the date of separation. |
| Return of Contributions       | <p>Upon the withdrawal of a member without a retirement allowance and upon his request, the member's contributions are returned, together with accumulated regular interest.</p> <p>Upon the death of a member before retirement, his contributions, together with the full accumulated regular interest thereon, are paid to his estate or to person(s) designated by the member unless the designated beneficiary, if eligible, elects the survivor's alternate benefit described below.</p> <p>The current interest rate on member contributions is 4%.</p>                                      |
| Survivor's Alternate Benefit  | Upon the death of a member in service who has met conditions (a) or (b) below, his designated beneficiary may elect to receive a benefit equal to that which would have been payable under the provisions of Option 2 had the member retired on the first day of the month following his death and elected such option, in lieu of the member's accumulated contributions, provided the member had not instructed the Board of Trustees in writing that he did not wish the alternate benefit to apply.   |

## Appendix C: Summary of Main Benefit and Contribution Provisions

- (a) age 60 (55) and completion five years of membership (creditable) service; or
- (b) completion of 20 years of creditable service.

Members receiving a benefit from the Disability Income Plan are eligible for this benefit.

### Death After Retirement

Upon the death of a beneficiary who did not retire under an effective election of Option 2 or Option 3, an amount equal to the excess if any, of his accumulated contributions at retirement over the retirement allowance payments received is paid to a designated person or to the beneficiary's estate.

Upon the death of the survivor of a beneficiary who retired under an effective election of Option 2 or Option 3, an amount equal to the excess, if any, of the beneficiary's accumulated contributions at retirement over the total retirement allowance payments received is paid to such other person designated by the beneficiary or to the beneficiary's estate.

Upon the death of a beneficiary, a benefit may be provided by the Retirees' Contributory Death Benefit Plan.

### Other Death Benefits

Upon the death of a member in service, other benefits may be provided by the Death Benefit Plan or Separate Insurance Benefit Plan for Law Enforcement Officers.

### Optional Arrangements at Retirement

In lieu of the full retirement allowance, any member may elect to receive a reduced retirement allowance equal in value to the full allowance, with the provision that:

Option 1 - A member retiring prior to July 1, 1993, may elect that at his death within 10 years from his retirement date, an amount equal to his accumulated contributions at retirement, less 1/120 for each month he has received a retirement allowance, is paid to his estate, or to a person(s) designated by the member, or

Option 2 - At the death of the member his allowance shall be continued throughout the life of

## Appendix C: Summary of Main Benefit and Contribution Provisions

such other person as the member shall have designated at the time of his retirement, or

Option 3 - At the death of the member one-half of his allowance shall be continued throughout the life of such other person as the member shall have designated at the time of his retirement.

Option 4 - A member may elect to receive a retirement allowance in such amount that, together with his Social Security benefit, he will receive approximately the same income per annum before and after the earliest age at which he becomes eligible to receive the Social Security benefit.

Option 5 - A member retiring prior to July 1, 1993 may elect to receive a reduced retirement allowance under the provisions of Option 2 or Option 3 in conjunction with the provisions of Option 1.

Option 6 - A member may elect either Option 2 or Option 3 with the added provision that in the event the designated beneficiary predeceases the member, the retirement allowance payable to the member after the designated beneficiary's death shall be equal to the retirement allowance which would have been payable had the member not elected the option.

### Post-Retirement Increases in Allowances

Future increases in allowances may be granted at the discretion of the State.

### Service Reciprocity

For the purpose of determining eligibility for a deferred, reduced or unreduced service retirement allowance, the membership and creditable service of a member shall include such prior service earned as a member of the Local Governmental Employees' Retirement System (LGERS), the Consolidated Judicial Retirement System (CJRS), or the Legislative Retirement System (LRS). In addition, if the member's accumulated contributions and reserves are transferred from the prior System to this System, the creditable service earned as a member of the prior System may be included for purposes of determining the amount of benefits payable under this System.



## Appendix C: Summary of Main Benefit and Contribution Provisions

|   |  |
|---|--|
| Military Service  | For periods of active duty in the United States military may be counted as creditable service if the member was an employee upon entering the military and returned to employment within two years of discharge or for a period of 10 additional years.  |
| Service Purchases   | Additional creditable service may include service that the member purchased to restore a period of service for which the member (1) received a refund of contributions, (2) had a leave of absence for educational purposes, extended illness or parental or maternity reasons, (3) had full-time temporary or part-time local or State government employment, (4) was in a probationary or waiting period with a unit of the LGERS, (5) had a leave of absence under Workers' Compensation, (6) performed service with a unit of local government not covered by LGERS, (7) performed service with the federal government not covered by any other retirement system, (8) performed service with a public community service entity funded entirely with federal funds, (9) performed service as a member of the General Assembly, (10) performed service as a member of a charter school not participating in the system, (11) was employed by The University of North Carolina and participated in the Optional Retirement Program but not eligible to receive any benefits from that program, or (12) performed service which was omitted by reason of error. |
| Unused Sick Leave   | Unused sick leave counts as creditable service at retirement. Sick leave which was converted from unused vacation leave is also creditable. One month of credit is allowed for each 20 days of unused sick leave, plus an additional month for any part of 20 days left over.  |
| Transfer of Defined Contribution Balances (Special Retirement Allowances) | A member may make a one-time election to transfer any portion of their eligible accumulated contributions to this plan on or after retirement. Eligible accumulated contributions are those from the Supplemental Retirement Income Plan or Public Employee Deferred Compensation Plan, not including Roth after-tax contributions. A member who became a member of the Supplemental Retirement Income Plan prior to   |

## Appendix C: Summary of Main Benefit and Contribution Provisions

retirement and who remains a member of the Supplemental Retirement Income Plan may also make a one-time election to transfer eligible balances, not including any Roth after-tax contributions, from any of the following plans to the Supplemental Retirement Income Plan, subject to the applicable requirements of the Supplemental Retirement Income Plan, and then through the Supplemental Retirement Income Plan to this Retirement System:

- (1) A plan participating in the North Carolina Public School Teachers' and Professional Educators' Investment Plan.
- (2) A plan described in section 403(b) of the Internal Revenue Code.
- (3) A plan described in section 457(b) of the Internal Revenue Code that is maintained by a state, political subdivision of a state, or any agency or instrumentality of a state or political subdivision of a state.
- (4) An individual retirement account or annuity described in Section 408(a) or 408(b) of the Internal Revenue Code that is eligible to be rolled over and would otherwise be includible in gross income.
- (5) A tax-qualified plan described in section 401(a) or 403(a) of the Internal Revenue Code.

The member may elect to convert the accumulated contributions to a life annuity with or without annual increases equal to the annual increase in the U.S. Consumer Price Index. Any ad-hoc COLA increases granted will not apply to benefits under this section. A member may elect Options 2, 3, or 6 under the Plan and may also elect either a guaranteed number of months of payments or a guarantee of total payments at least equal to the amount of contributions transferred to the Plan.

## Appendix C: Summary of Main Benefit and Contribution Provisions

### Contributions

**Member Contributions** Each member contributes 6% of his compensation.

**Employer Contributions** Employers make annual contributions consisting of a normal contribution and an accrued liability contribution. The normal contribution covers the liability on account of current service and is determined by the actuary after each valuation.

The accrued liability contribution covers the liability on account of service rendered before the establishment of the retirement system and the liability on account of increases in benefits for service rendered prior to the effective date of any amendment.

**Changes Since Prior Valuation** A 1% cost-of-living adjustment was granted at July 1, 2014. Vesting requirements were restored to five years, instead of 10 years, for all active members hired after August 1, 2011. The return of contributions with accumulated interest is allowed for members terminating with less than five years of membership service.

## Appendix D: Actuarial Assumptions and Methods

Assumptions are based on the experience investigation prepared as of December 31, 2009 and adopted by the Board of Trustees on October 21, 2010. The next experience investigation will be based on the five-year period ending December 31, 2014. The actuary will present this investigation during the fall of 2015 for adoption by the Board of Trustees with the intent of using the assumptions recommended in the December 31, 2014 experience review beginning with the December 31, 2015 annual actuarial valuation.

**Interest Rate:** 7.25% per annum, compounded annually.

**Inflation:** Both general and wage inflation are assumed to be 3.00% per annum.

**Real Wage Growth:** 0.50% per annum.

**Separations From Active Service:** Representative values of the assumed rates of separation from active service are as follows:

| Service | Annual Rates of Withdrawal            |        |                    |        |                          |        |
|---------|---------------------------------------|--------|--------------------|--------|--------------------------|--------|
|         | General Employees and Other Education |        | Classroom Teachers |        | Law Enforcement Officers |        |
|         | Male                                  | Female | Male               | Female | Male                     | Female |
| 0       | .270                                  | .270   | .260               | .220   | .180                     | .180   |
| 1       | .180                                  | .185   | .180               | .170   | .090                     | .090   |
| 2       | .120                                  | .120   | .130               | .130   | .070                     | .070   |
| 3       | .080                                  | .100   | .100               | .100   | .070                     | .070   |
| 4       | .070                                  | .090   | .080               | .080   | .060                     | .060   |

| Age | General Employees and Other Education Annual Rates of |        |                  |        |            |        |
|-----|---|--------|------------------|--------|------------|--------|
|     | Withdrawal and Vesting*                               |        | Base Mortality** |        | Disability |        |
|     | Male  | Female | Male             | Female | Male       | Female |
| 25  | .0650   | .0900  | .0004            | .0002  | .0002      | .0002  |
| 30  | .0650   | .0800  | .0005            | .0003  | .0004      | .0004  |
| 35  | .0500   | .0600  | .0008            | .0005  | .0010      | .0010  |
| 40  | .0400   | .0400  | .0011            | .0008  | .0030      | .0018  |
| 45  | .0350   | .0400  | .0016            | .0012  | .0050      | .0032  |
| 50  | .0350   | .0400  | .0023            | .0018  | .0084      | .0050  |
| 55  | .0350   | .0400  | .0033            | .0028  | .0144      | .0088  |
| 60  | .0350   | .0400  | .0054            | .0043  | .0240      | .0138  |
| 65  |   |        | .0081            | .0062  |            |        |
| 69  |   |        | .0099            | .0076  |            |        |

\* These rates apply only after five years of membership in the system.

\*\* Base mortality rates as of December 31, 2003.

## Appendix D: Actuarial Assumptions and Methods

### Classroom Teachers

Annual Rates of

| Age | Withdrawal and Vesting* |        | Base Mortality** |        | Disability |        |
|-----|-------------------------|--------|------------------|--------|------------|--------|
|     | Male                    | Female | Male             | Female | Male       | Female |
| 25  | .0600                   | .0700  | .0004            | .0002  | .0001      | .0002  |
| 30  | .0550                   | .0600  | .0004            | .0003  | .0001      | .0003  |
| 35  | .0400                   | .0450  | .0007            | .0005  | .0003      | .0006  |
| 40  | .0350                   | .0300  | .0010            | .0007  | .0007      | .0010  |
| 45  | .0350                   | .0300  | .0014            | .0011  | .0014      | .0018  |
| 50  | .0350                   | .0300  | .0020            | .0017  | .0023      | .0032  |
| 55  | .0350                   | .0300  | .0028            | .0025  | .0047      | .0055  |
| 60  | .0350                   | .0300  | .0044            | .0039  | .0077      | .0102  |
| 65  |                         |        | .0070            | .0058  |            |        |
| 69  |                         |        | .0091            | .0073  |            |        |

\* These rates apply only after five years of membership in the system.

\*\* Base mortality rates as of December 31, 2003.

### Law Enforcement Officers

Annual Rates of

| Age | Withdrawal and Vesting* |        | Base Mortality** |        | Disability |        |
|-----|-------------------------|--------|------------------|--------|------------|--------|
|     | Male                    | Female | Male             | Female | Male       | Female |
| 25  | .0400                   | .0400  | .0004            | .0002  | .0033      | .0033  |
| 30  | .0350                   | .0350  | .0004            | .0003  | .0043      | .0043  |
| 35  | .0300                   | .0300  | .0008            | .0005  | .0060      | .0060  |
| 40  | .0300                   | .0300  | .0011            | .0007  | .0079      | .0079  |
| 45  | .0300                   | .0300  | .0015            | .0011  | .0110      | .0110  |
| 50  | .0300                   | .0300  | .0021            | .0017  | .0176      | .0176  |
| 55  | .0300                   | .0300  | .0030            | .0025  |            |        |
| 60  | .0300                   | .0300  | .0049            | .0039  |            |        |
| 65  |                         |        | .0076            | .0058  |            |        |
| 69  |                         |        | .0095            | .0073  |            |        |

\* These rates apply only after five years of membership in the system.

\*\* Base mortality rates as of December 31, 2003.

# Appendix D: Actuarial Assumptions and Methods

RETIREMENTS: Representative values of the assumed rates of retirement from active service are as follows:

### General Employees and Other Education - Males

| Age | Service |        |        |        |        |        |        |
|-----|---------|--------|--------|--------|--------|--------|--------|
|     | 5       | 10     | 15     | 20     | 25     | 30     | 35     |
| 50  |         |        |        | 0.0370 | 0.1000 | 0.3500 | 0.3500 |
| 55  |         |        |        | 0.0550 | 0.1000 | 0.3000 | 0.2000 |
| 60  | 0.1000  | 0.1000 | 0.1000 | 0.1000 | 0.3500 | 0.3000 | 0.2250 |
| 65  | 0.3500  | 0.3500 | 0.3500 | 0.3500 | 0.3500 | 0.3500 | 0.3500 |
| 70  | 0.2250  | 0.2250 | 0.2250 | 0.2250 | 0.2250 | 0.2250 | 0.2250 |
| 75  | 1.0000  | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

### General Employees and Other Education - Females

| Age | Service |        |        |        |        |        |        |
|-----|---------|--------|--------|--------|--------|--------|--------|
|     | 5       | 10     | 15     | 20     | 25     | 30     | 35     |
| 50  |         |        |        | 0.0400 | 0.0350 | 0.3500 | 0.3500 |
| 55  |         |        |        | 0.0550 | 0.0900 | 0.3500 | 0.2250 |
| 60  | 0.1400  | 0.1400 | 0.1400 | 0.1400 | 0.4500 | 0.3500 | 0.2500 |
| 65  | 0.3500  | 0.3500 | 0.3500 | 0.3500 | 0.3500 | 0.3500 | 0.3500 |
| 70  | 0.2500  | 0.2500 | 0.2500 | 0.2500 | 0.2500 | 0.2500 | 0.2500 |
| 75  | 1.0000  | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

### Classroom Teachers - Males

| Age | Service |        |        |        |        |        |        |
|-----|---------|--------|--------|--------|--------|--------|--------|
|     | 5       | 10     | 15     | 20     | 25     | 30     | 35     |
| 50  |         |        |        | 0.0300 | 0.0900 | 0.3000 | 0.3000 |
| 55  |         |        |        | 0.0450 | 0.0900 | 0.3750 | 0.3000 |
| 60  | 0.1200  | 0.1200 | 0.1200 | 0.1200 | 0.4000 | 0.3750 | 0.3000 |
| 65  | 0.3500  | 0.3500 | 0.3500 | 0.3500 | 0.3500 | 0.3500 | 0.3500 |
| 70  | 0.2500  | 0.2500 | 0.2500 | 0.2500 | 0.2500 | 0.2500 | 0.2500 |
| 75  | 1.0000  | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

### Classroom Teachers - Females

| Age | Service |        |        |        |        |        |        |
|-----|---------|--------|--------|--------|--------|--------|--------|
|     | 5       | 10     | 15     | 20     | 25     | 30     | 35     |
| 50  |         |        |        | 0.0350 | 0.0900 | 0.3000 | 0.3000 |
| 55  |         |        |        | 0.0550 | 0.1000 | 0.4500 | 0.2750 |
| 60  | 0.1500  | 0.1500 | 0.1500 | 0.1500 | 0.5000 | 0.4500 | 0.2750 |
| 65  | 0.5000  | 0.5000 | 0.5000 | 0.5000 | 0.5000 | 0.5000 | 0.5000 |
| 70  | 0.2750  | 0.2750 | 0.2750 | 0.2750 | 0.2750 | 0.2750 | 0.2750 |
| 75  | 1.0000  | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

# Appendix D: Actuarial Assumptions and Methods

## Law Enforcement Officers

| Age | Service |        |        |        |        |        |        |
|-----|---------|--------|--------|--------|--------|--------|--------|
|     | 5       | 10     | 15     | 20     | 25     | 30     | 35     |
| 50  |         |        | 0.0600 | 0.0600 | 0.0600 | 0.5000 | 0.5000 |
| 55  | 0.3000  | 0.3000 | 0.3000 | 0.3000 | 0.3000 | 0.5000 | 0.5000 |
| 60  | 0.2500  | 0.2500 | 0.2500 | 0.2500 | 0.2500 | 0.5000 | 0.5000 |
| 65  | 0.4000  | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 |
| 70  | 0.3000  | 0.3000 | 0.3000 | 0.3000 | 0.3000 | 0.3000 | 0.3000 |
| 75  | 1.0000  | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

**Salary Increases:** Representative values of the assumed annual rates of salary increases are as follows:

| Annual Rate of Salary Increase |                    |                                       |                          |
|--------------------------------|--------------------|---------------------------------------|--------------------------|
| Service                        | Classroom Teachers | General Employees and Other Education | Law Enforcement Officers |
| 0                              | 7.55%              | 5.50%                                 | 9.10%                    |
| 5                              | 6.55               | 5.50                                  | 7.10                     |
| 10                             | 5.70               | 5.45                                  | 5.40                     |
| 15                             | 5.45               | 5.25                                  | 4.95                     |
| 20                             | 5.25               | 5.25                                  | 4.65                     |
| 25                             | 5.25               | 5.25                                  | 4.25                     |
| 30                             | 5.25               | 5.25                                  | 4.25                     |
| 35                             | 5.25               | 5.25                                  | 4.25                     |
| 40                             | 4.75               | 4.75                                  | 4.25                     |
| 45                             | 4.25               | 4.25                                  | 4.25                     |
| 50                             | 4.25               | 4.25                                  | 4.25                     |

# Appendix D: Actuarial Assumptions and Methods

Representative values of the assumed post-retirement mortality rates as of December 31, 2003 prior to any mortality improvements are as follows:

### Annual Rate of Death after Retirement (Members Healthy at Retirement)

| Age | Classroom Teachers |        | General Employees and<br>Other Education |        | Law Enforcement Officers |        |
|-----|--------------------|--------|--|--------|--------------------------|--------|
|     | Male               | Female | Male                                     | Female | Male                     | Female |
|     | 55                 | .0058  | .0035                                    | .0061  | .0039                    | .0059  |
| 60  | .0075              | .0062  | .0090                                    | .0069  | .0082                    | .0062  |
| 65  | .0121              | .0104  | .0149                                    | .0114  | .0134                    | .0104  |
| 70  | .0201              | .0167  | .0246                                    | .0186  | .0222                    | .0167  |
| 75  | .0339              | .0281  | .0422                                    | .0310  | .0378                    | .0281  |
| 80  | .0579              | .0459  | .0720                                    | .0508  | .0644                    | .0459  |

### Annual Rate of Death after Retirement

(Survivors of Deceased Members and Members Disabled at Retirement)

| Age | Male Survivors<br>of Deceased<br>Members | Female Survivors<br>of Deceased<br>Members | Male Retired<br>Members Disabled<br>at Retirement | Female Retired<br>Members Disabled<br>at Retirement |
|-----|--|--|---|---|
|     | 55                                       | .0061                                      | .0044   | .0277   |
| 60  | .0090                                    | .0077                                      | .0342   | .0229   |
| 65  | .0149                                    | .0125                                      | .0407   | .0296   |
| 70  | .0246                                    | .0207                                      | .0483   | .0401   |
| 75  | .0422                                    | .0341                                      | .0596   | .0558   |
| 80  | .0720                                    | .0563                                      | .0775   | .0771   |

**Mortality Improvements:** Representative values of the assumed mortality improvement rates (applied to pre-retirement mortality rates for active members and post-retirement mortality rates for retirees (healthy at retirement) and survivors of deceased members after such tables have been set back or set forward) are as follows:

| Age | Male Projection Scale | Female Projection Scale |
|-----|-----------------------|-------------------------|
| 25  | 0.010                 | 0.014                   |
| 30  | 0.005                 | 0.010                   |
| 35  | 0.005                 | 0.011                   |
| 40  | 0.008                 | 0.015                   |
| 45  | 0.013                 | 0.016                   |
| 50  | 0.018                 | 0.017                   |
| 55  | 0.019                 | 0.008                   |
| 60  | 0.016                 | 0.005                   |
| 65  | 0.014                 | 0.005                   |
| 70  | 0.015                 | 0.005                   |
| 75  | 0.014                 | 0.008                   |
| 80  | 0.010                 | 0.007                   |



## Appendix D: Actuarial Assumptions and Methods

**Deaths After Retirement (Non-Disabled):** According to the RP-2000 Mortality tables for retirees. These tables are set back one year for male teachers, set forward one year for all general employees and unadjusted for female teachers and all law enforcement officers. These tables are also set forward one year for male survivors of deceased members and set forward two years for female survivors of deceased members. The base retiree RP-2000 tables have no rates prior to age 50. The active employee rates of RP-2000 are used for ages less than 50 prior to any adjustments for set back or set forward.

**Death After Retirement (Disabled):** According to the RP-2000 Mortality tables for retirees disabled at retirement set back six years for males and set forward one year for females.

**Deaths Prior to Retirement:** According to the RP-2000 Mortality tables for active employees. These tables are set back one year for male teachers, set forward one year for all general employees and unadjusted for female teachers and all law enforcement officers. The base RP-2000 tables for active employees have no rates after age 70. The rates from ages 71 to 79 are smoothed based on the active rate at age 70 and the retiree rate at age 80. Retiree rates are used for age 80 and beyond.

**Mortality Projection (Non-Disabled):** All mortality rates are projected from December 31, 2003 using generational improvement with Scale AA.

**Timing of Assumptions:** All withdrawals, deaths, disabilities, retirements and salary increases are assumed to occur on July 1 of each year.

**Leave Conversions:** Sick leave can be converted to increase creditable service and used to meet the eligibility requirements for retirement. Unused vacation leave can be converted to increase creditable service or compensation, but does not add to the eligibility service. The assumed impact of these conversions is shown in the table below.

|  | Classroom Teachers |         | General |         | Law Enforcement |         | Other Education |         |
|--|--------------------|---------|---------|---------|-----------------|---------|-----------------|---------|
|  | Males              | Females | Males   | Females | Males           | Females | Males           | Females |
| Increase in AFC                        | 2.25%              | 2.25%   | 2.25%   | 2.25%   | 1.50%           | 1.50%   | 3.50%           | 3.50%   |
| Increase in Creditable Service (years) |                    |         |         |         |                 |         |                 |         |
| Credited                               | 1.25               | 1.00    | 0.90    | 0.65    | 1.50            | 1.50    | 1.25            | 1.00    |
| Eligibility                            | 1.00               | 1.00    | 1.00    | 1.00    | 1.00            | 1.00    | 1.00            | 1.00    |

**Liability for Inactive Members:** The data provided for inactive members does not contain all the elements to calculate the member's deferred benefit. The liability for these members is estimated to be 200% of the member's accumulated contributions. The actuary is collecting data so that future members' deferred benefits can be estimated.

**Administrative Expenses:** 0.10% of payroll.

## Appendix D: Actuarial Assumptions and Methods

**Marriage Assumption:** 100% married with male spouses four years older than female spouses.

**Reported Compensation:** Calendar year compensation as furnished by the system's office.

**Valuation Compensation:** Reported compensation adjusted to reflect the assumed rate of pay as of the valuation date.

**Actuarial Cost Method:** Entry age normal cost method. Entry age is established on an individual basis.

**Asset Valuation Method:** Actuarial value, as developed in Table 8. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected actuarial value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between market value and expected actuarial value. The actuarial value of assets is not allowed to be greater than 120% of the market value of assets or less than 80% of the market value of assets.

**Changes Since Prior Valuation:** None.

# Appendix E: GASB 67 Fiduciary Net Position Projection

**Table E-1: Projection of Fiduciary Net Positions**  
(in thousands)

| Year       | Beginning Fiduciary Position | Member Contributions | Employer Contributions | Benefit Payments | Administrative Expenses | Investment Earnings | Ending Fiduciary Position |
|------------|------------------------------|----------------------|------------------------|------------------|-------------------------|---------------------|---------------------------|
| 12/31/2013 | \$ 62,789,451                | \$ 816,465           | \$ 1,104,033           | \$ 4,210,669     | \$ 13,608               | \$ 4,470,090        | \$ 64,955,762             |
| 12/31/2014 | 64,955,762                   | 775,748              | 1,075,886              | 4,340,071        | 12,929                  | 4,620,342           | 67,074,738                |
| 12/31/2015 | 67,074,738                   | 745,220              | 1,030,111              | 4,460,178        | 12,420                  | 4,767,137           | 69,144,608                |
| 12/31/2016 | 69,144,608                   | 718,948              | 993,885                | 4,578,961        | 11,982                  | 4,910,468           | 71,176,966                |
| 12/31/2017 | 71,176,966                   | 694,652              | 974,974                | 4,699,401        | 11,578                  | 5,051,991           | 73,187,604                |
| 12/31/2018 | 73,187,604                   | 671,479              | 957,306                | 4,830,007        | 11,191                  | 5,191,662           | 75,166,853                |
| 12/31/2019 | 75,166,853                   | 648,589              | 940,594                | 4,969,799        | 10,810                  | 5,328,775           | 77,104,202                |
| 12/31/2020 | 77,104,202                   | 625,984              | 924,165                | 5,112,152        | 10,433                  | 5,462,779           | 78,994,545                |
| 12/31/2021 | 78,994,545                   | 602,839              | 907,425                | 5,262,798        | 10,047                  | 5,593,052           | 80,825,016                |
| 12/31/2022 | 80,825,016                   | 578,780              | 736,243                | 5,418,094        | 9,646                   | 5,716,137           | 82,428,436                |
| 12/31/2023 | 82,428,436                   | 553,823              | 549,471                | 5,577,934        | 9,230                   | 5,816,606           | 83,761,172                |
| 12/31/2024 | 83,761,172                   | 528,507              | 456,835                | 5,742,162        | 8,808                   | 5,904,007           | 84,899,551                |
| 12/31/2025 | 84,899,551                   | 502,502              | 373,634                | 5,911,666        | 8,375                   | 5,975,631           | 85,831,277                |
| 12/31/2026 | 85,831,277                   | 475,699              | 356,730                | 6,084,659        | 7,928                   | 6,035,250           | 86,606,369                |
| 12/31/2027 | 86,606,369                   | 448,347              | 359,621                | 6,260,938        | 7,472                   | 6,084,168           | 87,230,095                |
| 12/31/2028 | 87,230,095                   | 420,363              | 353,915                | 6,441,615        | 7,006                   | 6,122,064           | 87,677,816                |
| 12/31/2029 | 87,677,816                   | 391,631              | 331,384                | 6,625,211        | 6,527                   | 6,146,184           | 87,915,277                |
| 12/31/2030 | 87,915,277                   | 362,111              | 307,995                | 6,807,813        | 6,035                   | 6,155,038           | 87,926,573                |
| 12/31/2031 | 87,926,573                   | 332,460              | 283,565                | 6,983,532        | 5,541                   | 6,147,699           | 87,701,224                |
| 12/31/2032 | 87,701,224                   | 302,524              | 258,740                | 7,149,667        | 5,042                   | 6,123,519           | 87,231,298                |
| 12/31/2033 | 87,231,298                   | 272,859              | 234,104                | 7,290,694        | 4,548                   | 6,082,517           | 86,525,536                |
| 12/31/2034 | 86,525,536                   | 244,055              | 209,433                | 7,408,035        | 4,068                   | 6,025,289           | 85,592,210                |
| 12/31/2035 | 85,592,210                   | 215,819              | 184,983                | 7,511,096        | 3,597                   | 5,952,098           | 84,430,417                |
| 12/31/2036 | 84,430,417                   | 188,398              | 160,988                | 7,601,092        | 3,140                   | 5,862,844           | 83,038,415                |
| 12/31/2037 | 83,038,415                   | 161,475              | 140,231                | 7,667,945        | 2,691                   | 5,757,855           | 81,427,340                |
| 12/31/2038 | 81,427,340                   | 137,661              | 121,486                | 7,705,873        | 2,294                   | 5,638,198           | 79,616,518                |
| 12/31/2039 | 79,616,518                   | 116,008              | 103,398                | 7,726,944        | 1,933                   | 5,504,759           | 77,611,806                |
| 12/31/2040 | 77,611,806                   | 95,022               | 85,911                 | 7,737,740        | 1,584                   | 5,357,678           | 75,411,093                |
| 12/31/2041 | 75,411,093                   | 74,678               | 68,823                 | 7,736,143        | 1,245                   | 5,196,864           | 73,014,070                |
| 12/31/2042 | 73,014,070                   | 55,086               | 54,291                 | 7,709,391        | 918                     | 5,022,831           | 70,435,969                |
| 12/31/2043 | 70,435,969                   | 38,905               | 43,991                 | 7,635,974        | 648                     | 4,837,601           | 67,719,844                |
| 12/31/2044 | 67,719,844                   | 28,238               | 36,216                 | 7,516,428        | 471                     | 4,644,289           | 64,911,688                |
| 12/31/2045 | 64,911,688                   | 21,026               | 29,660                 | 7,368,153        | 350                     | 4,445,492           | 62,039,363                |
| 12/31/2046 | 62,039,363                   | 15,533               | 24,236                 | 7,198,356        | 259                     | 4,242,909           | 59,123,426                |
| 12/31/2047 | 59,123,426                   | 11,388               | 19,719                 | 7,013,343        | 190                     | 4,037,785           | 56,178,785                |
| 12/31/2048 | 56,178,785                   | 8,288                | 15,943                 | 6,815,099        | 138                     | 3,831,115           | 53,218,894                |
| 12/31/2049 | 53,218,894                   | 5,987                | 12,770                 | 6,603,965        | 100                     | 3,623,847           | 50,257,433                |
| 12/31/2050 | 50,257,433                   | 4,275                | 10,136                 | 6,374,969        | 71                      | 3,417,141           | 47,313,945                |
| 12/31/2051 | 47,313,945                   | 3,016                | 7,949                  | 6,129,039        | 50                      | 3,212,373           | 44,408,194                |
| 12/31/2052 | 44,408,194                   | 2,103                | 6,169                  | 5,874,714        | 35                      | 3,010,666           | 41,552,383                |
| 12/31/2053 | 41,552,383                   | 1,468                | 4,713                  | 5,471,134        | 24                      | 2,817,918           | 38,905,324                |
| 12/31/2054 | 38,905,324                   | 1,031                | 3,532                  | 5,219,316        | 17                      | 2,634,916           | 36,325,470                |
| 12/31/2055 | 36,325,470                   | 724                  | 2,605                  | 4,967,578        | 12                      | 2,456,797           | 33,818,006                |
| 12/31/2056 | 33,818,006                   | 508                  | 1,906                  | 4,716,683        | 8                       | 2,283,907           | 31,387,636                |
| 12/31/2057 | 31,387,636                   | 356                  | 1,391                  | 4,467,196        | 6                       | 2,116,566           | 29,038,747                |
| 12/31/2058 | 29,038,747                   | 247                  | 1,012                  | 4,219,715        | 4                       | 1,955,068           | 26,775,355                |
| 12/31/2059 | 26,775,355                   | 170                  | 720                    | 3,974,870        | 3                       | 1,799,679           | 24,601,051                |
| 12/31/2060 | 24,601,051                   | 113                  | 501                    | 3,733,268        | 2                       | 1,650,636           | 22,519,031                |
| 12/31/2061 | 22,519,031                   | 72                   | 338                    | 3,495,498        | 1                       | 1,508,150           | 20,532,092                |
| 12/31/2062 | 20,532,092                   | 44                   | 217                    | 3,262,166        | 1                       | 1,372,402           | 18,642,588                |

# Appendix E: GASB 67 Fiduciary Net Position Projection

**Table E-1: Projection of Fiduciary Net Positions (continued)**  
(in thousands)

| Year       | Beginning<br>Fiduciary<br>Position | Member<br>Contributions | Employer<br>Contributions | Benefit<br>Payments | Administrative<br>Expenses | Investment<br>Earnings | Ending<br>Fiduciary<br>Position |
|------------|------------------------------------|-------------------------|---------------------------|---------------------|----------------------------|------------------------|---------------------------------|
| 12/31/2063 | \$ 18,642,588                      | \$ 26                   | \$ 127                    | \$ 3,033,844        | \$ 0                       | \$ 1,243,541           | \$ 16,852,438                   |
| 12/31/2064 | 16,852,438                         | 13                      | 63                        | 2,811,097           | 0                          | 1,121,685              | 15,163,102                      |
| 12/31/2065 | 15,163,102                         | 5                       | 20                        | 2,594,485           | 0                          | 1,006,921              | 13,575,563                      |
| 12/31/2066 | 13,575,563                         | 2                       | 0                         | 2,384,506           | 0                          | 899,302                | 12,090,361                      |
| 12/31/2067 | 12,090,361                         | 0                       | 0                         | 2,181,662           | 0                          | 798,849                | 10,707,548                      |
| 12/31/2068 | 10,707,548                         | 0                       | 0                         | 1,986,489           | 0                          | 705,547                | 9,426,606                       |
| 12/31/2069 | 9,426,606                          | 0                       | 0                         | 1,799,475           | 0                          | 619,339                | 8,246,470                       |
| 12/31/2070 | 8,246,470                          | 0                       | 0                         | 1,621,034           | 0                          | 540,134                | 7,165,570                       |
| 12/31/2071 | 7,165,570                          | 0                       | 0                         | 1,451,547           | 0                          | 467,805                | 6,181,828                       |
| 12/31/2072 | 6,181,828                          | 0                       | 0                         | 1,291,363           | 0                          | 402,189                | 5,292,654                       |
| 12/31/2073 | 5,292,654                          | 0                       | 0                         | 1,140,810           | 0                          | 343,086                | 4,494,930                       |
| 12/31/2074 | 4,494,930                          | 0                       | 0                         | 1,000,147           | 0                          | 290,261                | 3,785,044                       |
| 12/31/2075 | 3,785,044                          | 0                       | 0                         | 869,607             | 0                          | 243,444                | 3,158,881                       |
| 12/31/2076 | 3,158,881                          | 0                       | 0                         | 749,421             | 0                          | 202,327                | 2,611,787                       |
| 12/31/2077 | 2,611,787                          | 0                       | 0                         | 639,782             | 0                          | 166,568                | 2,138,573                       |
| 12/31/2078 | 2,138,573                          | 0                       | 0                         | 540,791             | 0                          | 135,785                | 1,733,567                       |
| 12/31/2079 | 1,733,567                          | 0                       | 0                         | 452,402             | 0                          | 109,571                | 1,390,736                       |
| 12/31/2080 | 1,390,736                          | 0                       | 0                         | 374,399             | 0                          | 87,493                 | 1,103,830                       |
| 12/31/2081 | 1,103,830                          | 0                       | 0                         | 306,395             | 0                          | 69,115                 | 866,550                         |
| 12/31/2082 | 866,550                            | 0                       | 0                         | 247,836             | 0                          | 53,998                 | 672,712                         |
| 12/31/2083 | 672,712                            | 0                       | 0                         | 198,069             | 0                          | 41,717                 | 516,360                         |
| 12/31/2084 | 516,360                            | 0                       | 0                         | 156,378             | 0                          | 31,866                 | 391,848                         |
| 12/31/2085 | 391,848                            | 0                       | 0                         | 121,954             | 0                          | 24,065                 | 293,959                         |
| 12/31/2086 | 293,959                            | 0                       | 0                         | 93,914              | 0                          | 17,967                 | 218,012                         |
| 12/31/2087 | 218,012                            | 0                       | 0                         | 71,388              | 0                          | 13,263                 | 159,887                         |
| 12/31/2088 | 159,887                            | 0                       | 0                         | 53,572              | 0                          | 9,683                  | 115,998                         |
| 12/31/2089 | 115,998                            | 0                       | 0                         | 39,695              | 0                          | 6,996                  | 83,299                          |
| 12/31/2090 | 83,299                             | 0                       | 0                         | 29,021              | 0                          | 5,005                  | 59,283                          |
| 12/31/2091 | 59,283                             | 0                       | 0                         | 20,911              | 0                          | 3,553                  | 41,925                          |
| 12/31/2092 | 41,925                             | 0                       | 0                         | 14,851              | 0                          | 2,510                  | 29,584                          |
| 12/31/2093 | 29,584                             | 0                       | 0                         | 10,402              | 0                          | 1,774                  | 20,956                          |
| 12/31/2094 | 20,956                             | 0                       | 0                         | 7,185               | 0                          | 1,263                  | 15,034                          |
| 12/31/2095 | 15,034                             | 0                       | 0                         | 4,891               | 0                          | 915                    | 11,058                          |
| 12/31/2096 | 11,058                             | 0                       | 0                         | 3,278               | 0                          | 685                    | 8,465                           |
| 12/31/2097 | 8,465                              | 0                       | 0                         | 2,164               | 0                          | 536                    | 6,837                           |
| 12/31/2098 | 6,837                              | 0                       | 0                         | 1,408               | 0                          | 445                    | 5,874                           |
| 12/31/2099 | 5,874                              | 0                       | 0                         | 903                 | 0                          | 393                    | 5,364                           |
| 12/31/2100 | 5,364                              | 0                       | 0                         | 570                 | 0                          | 368                    | 5,162                           |
| 12/31/2101 | 5,162                              | 0                       | 0                         | 355                 | 0                          | 361                    | 5,168                           |
| 12/31/2102 | 5,168                              | 0                       | 0                         | 219                 | 0                          | 367                    | 5,316                           |
| 12/31/2103 | 5,316                              | 0                       | 0                         | 133                 | 0                          | 381                    | 5,564                           |
| 12/31/2104 | 5,564                              | 0                       | 0                         | 80                  | 0                          | 400                    | 5,884                           |
| 12/31/2105 | 5,884                              | 0                       | 0                         | 48                  | 0                          | 425                    | 6,261                           |
| 12/31/2106 | 6,261                              | 0                       | 0                         | 28                  | 0                          | 453                    | 6,686                           |
| 12/31/2107 | 6,686                              | 0                       | 0                         | 16                  | 0                          | 484                    | 7,154                           |
| 12/31/2108 | 7,154                              | 0                       | 0                         | 8                   | 0                          | 518                    | 7,664                           |
| 12/31/2109 | 7,664                              | 0                       | 0                         | 4                   | 0                          | 556                    | 8,216                           |
| 12/31/2110 | 8,216                              | 0                       | 0                         | 2                   | 0                          | 596                    | 8,810                           |
| 12/31/2111 | 8,810                              | 0                       | 0                         | 1                   | 0                          | 639                    | 9,448                           |
| 12/31/2112 | 9,448                              | 0                       | 0                         | 0                   | 0                          | 685                    | 10,133                          |

# Appendix E: GASB 67 Fiduciary Net Position Projection

**Table E-2: Actuarial Present Value of Projected Benefit Payments**  
(in thousands)

| Year       | Beginning Fiduciary Position | Benefit Payments | Funded Benefit Payments | Unfunded Benefit Payments | Present Value of Benefit Payments |                            |                                     |
|------------|------------------------------|------------------|-------------------------|---------------------------|-----------------------------------|----------------------------|-------------------------------------|
|            |                              |                  |                         |                           | Funded Payments at 7.25%          | Unfunded Payments at 3.66% | Using Single Discount Rate of 7.25% |
| 12/31/2013 | \$ 62,789,451                | \$ 4,210,669     | \$ 4,210,669            | \$ 0                      | \$ 4,065,860                      | \$ 0                       | \$ 4,065,860                        |
| 12/31/2014 | 64,955,762                   | 4,340,071        | 4,340,071               | 0                         | 3,907,517                         | 0                          | 3,907,517                           |
| 12/31/2015 | 67,074,738                   | 4,460,178        | 4,460,178               | 0                         | 3,744,199                         | 0                          | 3,744,199                           |
| 12/31/2016 | 69,144,608                   | 4,578,961        | 4,578,961               | 0                         | 3,584,069                         | 0                          | 3,584,069                           |
| 12/31/2017 | 71,176,966                   | 4,699,401        | 4,699,401               | 0                         | 3,429,688                         | 0                          | 3,429,688                           |
| 12/31/2018 | 73,187,604                   | 4,830,007        | 4,830,007               | 0                         | 3,286,719                         | 0                          | 3,286,719                           |
| 12/31/2019 | 75,166,853                   | 4,969,799        | 4,969,799               | 0                         | 3,153,235                         | 0                          | 3,153,235                           |
| 12/31/2020 | 77,104,202                   | 5,112,152        | 5,112,152               | 0                         | 3,024,294                         | 0                          | 3,024,294                           |
| 12/31/2021 | 78,994,545                   | 5,262,798        | 5,262,798               | 0                         | 2,902,951                         | 0                          | 2,902,951                           |
| 12/31/2022 | 80,825,016                   | 5,418,094        | 5,418,094               | 0                         | 2,786,584                         | 0                          | 2,786,584                           |
| 12/31/2023 | 82,428,436                   | 5,577,934        | 5,577,934               | 0                         | 2,674,864                         | 0                          | 2,674,864                           |
| 12/31/2024 | 83,761,172                   | 5,742,162        | 5,742,162               | 0                         | 2,567,477                         | 0                          | 2,567,477                           |
| 12/31/2025 | 84,899,551                   | 5,911,666        | 5,911,666               | 0                         | 2,464,584                         | 0                          | 2,464,584                           |
| 12/31/2026 | 85,831,277                   | 6,084,659        | 6,084,659               | 0                         | 2,365,226                         | 0                          | 2,365,226                           |
| 12/31/2027 | 86,606,369                   | 6,260,938        | 6,260,938               | 0                         | 2,269,230                         | 0                          | 2,269,230                           |
| 12/31/2028 | 87,230,095                   | 6,441,615        | 6,441,615               | 0                         | 2,176,891                         | 0                          | 2,176,891                           |
| 12/31/2029 | 87,677,816                   | 6,625,211        | 6,625,211               | 0                         | 2,087,585                         | 0                          | 2,087,585                           |
| 12/31/2030 | 87,915,277                   | 6,807,813        | 6,807,813               | 0                         | 2,000,114                         | 0                          | 2,000,114                           |
| 12/31/2031 | 87,926,573                   | 6,983,532        | 6,983,532               | 0                         | 1,913,044                         | 0                          | 1,913,044                           |
| 12/31/2032 | 87,701,224                   | 7,149,667        | 7,149,667               | 0                         | 1,826,158                         | 0                          | 1,826,158                           |
| 12/31/2033 | 87,231,298                   | 7,290,694        | 7,290,694               | 0                         | 1,736,298                         | 0                          | 1,736,298                           |
| 12/31/2034 | 86,525,536                   | 7,408,035        | 7,408,035               | 0                         | 1,644,982                         | 0                          | 1,644,982                           |
| 12/31/2035 | 85,592,210                   | 7,511,096        | 7,511,096               | 0                         | 1,555,120                         | 0                          | 1,555,120                           |
| 12/31/2036 | 84,430,417                   | 7,601,092        | 7,601,092               | 0                         | 1,467,369                         | 0                          | 1,467,369                           |
| 12/31/2037 | 83,038,415                   | 7,667,945        | 7,667,945               | 0                         | 1,380,210                         | 0                          | 1,380,210                           |
| 12/31/2038 | 81,427,340                   | 7,705,873        | 7,705,873               | 0                         | 1,293,274                         | 0                          | 1,293,274                           |
| 12/31/2039 | 79,616,518                   | 7,726,944        | 7,726,944               | 0                         | 1,209,148                         | 0                          | 1,209,148                           |
| 12/31/2040 | 77,611,806                   | 7,737,740        | 7,737,740               | 0                         | 1,128,985                         | 0                          | 1,128,985                           |
| 12/31/2041 | 75,411,093                   | 7,736,143        | 7,736,143               | 0                         | 1,052,450                         | 0                          | 1,052,450                           |
| 12/31/2042 | 73,014,070                   | 7,709,391        | 7,709,391               | 0                         | 977,912                           | 0                          | 977,912                             |
| 12/31/2043 | 70,435,969                   | 7,635,974        | 7,635,974               | 0                         | 903,123                           | 0                          | 903,123                             |
| 12/31/2044 | 67,719,844                   | 7,516,428        | 7,516,428               | 0                         | 828,889                           | 0                          | 828,889                             |
| 12/31/2045 | 64,911,688                   | 7,368,153        | 7,368,153               | 0                         | 757,611                           | 0                          | 757,611                             |
| 12/31/2046 | 62,039,363                   | 7,198,356        | 7,198,356               | 0                         | 690,119                           | 0                          | 690,119                             |
| 12/31/2047 | 59,123,426                   | 7,013,343        | 7,013,343               | 0                         | 626,929                           | 0                          | 626,929                             |
| 12/31/2048 | 56,178,785                   | 6,815,099        | 6,815,099               | 0                         | 568,026                           | 0                          | 568,026                             |
| 12/31/2049 | 53,218,894                   | 6,603,965        | 6,603,965               | 0                         | 513,220                           | 0                          | 513,220                             |
| 12/31/2050 | 50,257,433                   | 6,374,969        | 6,374,969               | 0                         | 461,933                           | 0                          | 461,933                             |
| 12/31/2051 | 47,313,945                   | 6,129,039        | 6,129,039               | 0                         | 414,091                           | 0                          | 414,091                             |
| 12/31/2052 | 44,408,194                   | 5,874,714        | 5,874,714               | 0                         | 370,078                           | 0                          | 370,078                             |
| 12/31/2053 | 41,552,383                   | 5,471,134        | 5,471,134               | 0                         | 321,356                           | 0                          | 321,356                             |
| 12/31/2054 | 38,905,324                   | 5,219,316        | 5,219,316               | 0                         | 285,842                           | 0                          | 285,842                             |
| 12/31/2055 | 36,325,470                   | 4,967,578        | 4,967,578               | 0                         | 253,664                           | 0                          | 253,664                             |
| 12/31/2056 | 33,818,006                   | 4,716,683        | 4,716,683               | 0                         | 224,571                           | 0                          | 224,571                             |
| 12/31/2057 | 31,387,636                   | 4,467,196        | 4,467,196               | 0                         | 198,315                           | 0                          | 198,315                             |
| 12/31/2058 | 29,038,747                   | 4,219,715        | 4,219,715               | 0                         | 174,665                           | 0                          | 174,665                             |
| 12/31/2059 | 26,775,355                   | 3,974,870        | 3,974,870               | 0                         | 153,408                           | 0                          | 153,408                             |
| 12/31/2060 | 24,601,051                   | 3,733,268        | 3,733,268               | 0                         | 134,344                           | 0                          | 134,344                             |
| 12/31/2061 | 22,519,031                   | 3,495,498        | 3,495,498               | 0                         | 117,284                           | 0                          | 117,284                             |
| 12/31/2062 | 20,532,092                   | 3,262,166        | 3,262,166               | 0                         | 102,056                           | 0                          | 102,056                             |

# Appendix E: GASB 67 Fiduciary Net Position Projection

**Table E-2: Actuarial Present Value of Projected Benefit Payments**  
(continued)  
(in thousands)

| Year       | Beginning<br>Fiduciary<br>Position | Benefit<br>Payments | Funded<br>Benefit<br>Payments | Unfunded<br>Benefit<br>Payments | Present Value of Benefit Payments |                                  |   |
|------------|------------------------------------|---------------------|-------------------------------|---------------------------------|-----------------------------------|----------------------------------|---|
|            |                                    |                     |                               |                                 | Funded<br>Payments at<br>7.25%    | Unfunded<br>Payments at<br>3.66% | Using Single<br>Discount Rate of<br>7.25% |
| 12/31/2063 | \$ 18,642,588                      | \$ 3,033,844        | \$ 3,033,844                  | \$ 0                            | \$ 88,497                         | \$ 0                             | \$ 88,497                                 |
| 12/31/2064 | 16,852,438                         | 2,811,097           | 2,811,097                     | 0                               | 76,457                            | 0                                | 76,457                                    |
| 12/31/2065 | 15,163,102                         | 2,594,485           | 2,594,485                     | 0                               | 65,795                            | 0                                | 65,795                                    |
| 12/31/2066 | 13,575,563                         | 2,384,506           | 2,384,506                     | 0                               | 56,382                            | 0                                | 56,382                                    |
| 12/31/2067 | 12,090,361                         | 2,181,662           | 2,181,662                     | 0                               | 48,099                            | 0                                | 48,099                                    |
| 12/31/2068 | 10,707,548                         | 1,986,489           | 1,986,489                     | 0                               | 40,835                            | 0                                | 40,835                                    |
| 12/31/2069 | 9,426,606                          | 1,799,475           | 1,799,475                     | 0                               | 34,490                            | 0                                | 34,490                                    |
| 12/31/2070 | 8,246,470                          | 1,621,034           | 1,621,034                     | 0                               | 28,970                            | 0                                | 28,970                                    |
| 12/31/2071 | 7,165,570                          | 1,451,547           | 1,451,547                     | 0                               | 24,187                            | 0                                | 24,187                                    |
| 12/31/2072 | 6,181,828                          | 1,291,363           | 1,291,363                     | 0                               | 20,064                            | 0                                | 20,064                                    |
| 12/31/2073 | 5,292,654                          | 1,140,810           | 1,140,810                     | 0                               | 16,526                            | 0                                | 16,526                                    |
| 12/31/2074 | 4,494,930                          | 1,000,147           | 1,000,147                     | 0                               | 13,509                            | 0                                | 13,509                                    |
| 12/31/2075 | 3,785,044                          | 869,607             | 869,607                       | 0                               | 10,952                            | 0                                | 10,952                                    |
| 12/31/2076 | 3,158,881                          | 749,421             | 749,421                       | 0                               | 8,800                             | 0                                | 8,800                                     |
| 12/31/2077 | 2,611,787                          | 639,782             | 639,782                       | 0                               | 7,005                             | 0                                | 7,005                                     |
| 12/31/2078 | 2,138,573                          | 540,791             | 540,791                       | 0                               | 5,521                             | 0                                | 5,521                                     |
| 12/31/2079 | 1,733,567                          | 452,402             | 452,402                       | 0                               | 4,306                             | 0                                | 4,306                                     |
| 12/31/2080 | 1,390,736                          | 374,399             | 374,399                       | 0                               | 3,323                             | 0                                | 3,323                                     |
| 12/31/2081 | 1,103,830                          | 306,395             | 306,395                       | 0                               | 2,536                             | 0                                | 2,536                                     |
| 12/31/2082 | 866,550                            | 247,836             | 247,836                       | 0                               | 1,912                             | 0                                | 1,912                                     |
| 12/31/2083 | 672,712                            | 198,069             | 198,069                       | 0                               | 1,425                             | 0                                | 1,425                                     |
| 12/31/2084 | 516,360                            | 156,378             | 156,378                       | 0                               | 1,049                             | 0                                | 1,049                                     |
| 12/31/2085 | 391,848                            | 121,954             | 121,954                       | 0                               | 763                               | 0                                | 763                                       |
| 12/31/2086 | 293,959                            | 93,914              | 93,914                        | 0                               | 548                               | 0                                | 548                                       |
| 12/31/2087 | 218,012                            | 71,388              | 71,388                        | 0                               | 388                               | 0                                | 388                                       |
| 12/31/2088 | 159,887                            | 53,572              | 53,572                        | 0                               | 272                               | 0                                | 272                                       |
| 12/31/2089 | 115,998                            | 39,695              | 39,695                        | 0                               | 188                               | 0                                | 188                                       |
| 12/31/2090 | 83,299                             | 29,021              | 29,021                        | 0                               | 128                               | 0                                | 128                                       |
| 12/31/2091 | 59,283                             | 20,911              | 20,911                        | 0                               | 86                                | 0                                | 86  |
| 12/31/2092 | 41,925                             | 14,851              | 14,851                        | 0                               | 57                                | 0                                | 57  |
| 12/31/2093 | 29,584                             | 10,402              | 10,402                        | 0                               | 37                                | 0                                | 37  |
| 12/31/2094 | 20,956                             | 7,185               | 7,185                         | 0                               | 24                                | 0                                | 24  |
| 12/31/2095 | 15,034                             | 4,891               | 4,891                         | 0                               | 15                                | 0                                | 15  |
| 12/31/2096 | 11,058                             | 3,278               | 3,278                         | 0                               | 9                                 | 0                                | 9   |
| 12/31/2097 | 8,465                              | 2,164               | 2,164                         | 0                               | 6                                 | 0                                | 6   |
| 12/31/2098 | 6,837                              | 1,408               | 1,408                         | 0                               | 4                                 | 0                                | 4   |
| 12/31/2099 | 5,874                              | 903                 | 903                           | 0                               | 2                                 | 0                                | 2   |
| 12/31/2100 | 5,364                              | 570                 | 570                           | 0                               | 1                                 | 0                                | 1   |
| 12/31/2101 | 5,162                              | 355                 | 355                           | 0                               | 1                                 | 0                                | 1   |
| 12/31/2102 | 5,168                              | 219                 | 219                           | 0                               | 0                                 | 0                                | 0   |
| 12/31/2103 | 5,316                              | 133                 | 133                           | 0                               | 0                                 | 0                                | 0   |
| 12/31/2104 | 5,564                              | 80                  | 80                            | 0                               | 0                                 | 0                                | 0   |
| 12/31/2105 | 5,884                              | 48                  | 48                            | 0                               | 0                                 | 0                                | 0   |
| 12/31/2106 | 6,261                              | 28                  | 28                            | 0                               | 0                                 | 0                                | 0   |
| 12/31/2107 | 6,686                              | 16                  | 16                            | 0                               | 0                                 | 0                                | 0   |
| 12/31/2108 | 7,154                              | 8                   | 8                             | 0                               | 0                                 | 0                                | 0   |
| 12/31/2109 | 7,664                              | 4                   | 4                             | 0                               | 0                                 | 0                                | 0   |
| 12/31/2110 | 8,216                              | 2                   | 2                             | 0                               | 0                                 | 0                                | 0   |
| 12/31/2111 | 8,810                              | 1                   | 1                             | 0                               | 0                                 | 0                                | 0   |
| 12/31/2112 | 9,448                              | 0                   | 0                             | 0                               | 0                                 | 0                                | 0   |

## Appendix F: Participating Employers

| Employer  | Employer Code | Employer                             | Employer Code |
|---|---------------|--------------------------------------|---------------|
| A Childs Garden Charter (Aka Cross Creek Charter) | 33501         | Carteret Community College           | 31605         |
| Academy Of Moore County                           | 36301         | Carteret County Schools              | 31600         |
| Administrative Office Of The Courts               | 10800         | Casa Esperanza Montessori            | 39209         |
| Alamance Community College                        | 30105         | Caswell County Schools               | 31700         |
| Alamance County Schools                           | 30100         | Catawba County Schools               | 31800         |
| Alexander County Schools                          | 30200         | Catawba Valley Community College     | 31805         |
| Alleghany County Schools                          | 30300         | Central Carolina Community College   | 35305         |
| American Renaissance Middle Sch                   | 34901         | Central Park Sch For Children        | 33202         |
| Anson County Schools                              | 30400         | Central Piedmont Community College   | 36005         |
| Appalachian State University                      | 20100         | Chapel Hill - Carboro City Schools   | 36810         |
| Arapahoe Charter School                           | 36901         | Charlotte Secondary Charter          | 36009         |
| Arts Based Elementary Charter                     | 33402         | Charlotte-Mecklenburg County Schools | 36000         |
| Ashe County Schools                               | 30500         | Chatham County Schools               | 31900         |
| Asheboro City Schools                             | 37610         | Cherokee County Schools              | 32000         |
| Asheville City Schools                            | 31110         | Childrens Village Academy            | 35401         |
| Asheville-Buncombe Technical College              | 31105         | Clay County Schools                  | 32200         |
| Avery County Schools                              | 30600         | Cleveland County Schools             | 32300         |
| Barber Examiners, State Board Of                  | 18600         | Cleveland Technical College          | 32305         |
| Bear Grass Charter School                         | 33206         | Clinton City Schools                 | 38210         |
| Beaufort County Community College                 | 30705         | Clover Garden Charter School         | 30102         |
| Beaufort County Schools                           | 30700         | Coastal Carolina Community College   | 36705         |
| Bertie County Schools                             | 30800         | College Of The Albemarle             | 37005         |
| Bethany Community Middle School                   | 37901         | Columbus County Schools              | 32400         |
| Bladen Community College                          | 30905         | Community Charter School             | 36001         |
| Bladen County Schools                             | 30900         | Community Colleges Administration    | 19005         |
| Blue Ridge Community College                      | 34505         | Community School Of Davidson         | 36003         |
| Brevard Academy Charter School                    | 38801         | Cornerstone Academy                  | 33027         |
| Bridges Charter Schools                           | 38601         | Corvian Community School             | 36004         |
| Brunswick Community College                       | 31005         | Craven Community College             | 32505         |
| Brunswick County Schools                          | 31000         | Cumberland County Schools            | 32600         |
| Buncombe County Schools                           | 31100         | Currituck County Schools             | 32700         |
| Burke County Schools                              | 31200         | Dare County Schools                  | 32800         |
| Cabarrus County Schools                           | 31300         | Davidson County Community College    | 32905         |
| Caldwell Community College                        | 31405         | Davidson County Schools              | 32900         |
| Caldwell County Schools                           | 31400         | Davie County Schools                 | 33000         |
| Camden County Schools                             | 31500         | Department Of Administration         | 10900         |
| Cape Fear Community College                       | 36505         | Department Of Agriculture            | 18400         |
| Cape Fear Ctr For Inquiry                         | 36501         | Department Of Commerce               | 12510         |
| Cape Lookout Marine Science H.S.                  | 31601         | Department Of Cultural Resources     | 10700         |
| Carolina International School                     | 31301         | Department Of Justice                | 10400         |

## Appendix F: Participating Employers

| Employer                                      | Employer Code | Employer                            | Employer Code |
|---|---------------|-------------------------------------|---------------|
| Department Of Public Instruction              | 22000         | Health & Human Svcs                 | 12220         |
| Department Of Public Safety                   | 19100         | Healthy Start Academy               | 33203         |
| Duplin County Schools                         | 33100         | Henderson Collegiate Charter School | 39401         |
| Durham Public Schools                         | 33200         | Henderson County Schools            | 34500         |
| Durham Technical Institute                    | 33205         | Hertford County Schools             | 34600         |
| East Carolina University                      | 20300         | Hickory City Schools                | 31810         |
| East Wake Academy                             | 39208         | Highway - Administrative            | 51000         |
| Edenton-Chowan County Schools                 | 32100         | Hoke County Schools                 | 34700         |
| Edgecombe County Schools                      | 33300         | Hyde County Schools                 | 34800         |
| Edgecombe Technical College                   | 33305         | Information Technology Services     | 10930         |
| Elizabeth City And Pasquotank County Schools  | 37000         | Insurance Department                | 12600         |
| Elizabeth City State University               | 20400         | Invest Collegiate Charter School    | 32901         |
| Elkin City Schools                            | 38620         | Iredell County Schools              | 34900         |
| Endeavor Charter School                       | 39201         | Isothermal Community College        | 38105         |
| Environment And Natural Resources             | 11300         | Jackson County Schools              | 35000         |
| Evergreen Community Charter School            | 31102         | James Sprunt Technical College      | 33105         |
| F Delany New School For Children              | 31101         | Johnston County Schools             | 35100         |
| Fayetteville State University                 | 20600         | Johnston Technical College          | 35105         |
| Fayetteville Technical Community College      | 32605         | Jones County Schools                | 35200         |
| Forsyth Technical Institute                   | 33405         | Kannapolis City Schools             | 31320         |
| Franklin County Schools                       | 33500         | Kennedy Charter                     | 36002         |
| Gaston College                                | 33605         | Kipp Charlotte Charter              | 36102         |
| Gaston College Preparatory Charter            | 36601         | Labor Department                    | 12700         |
| Gaston County Schools                         | 33600         | Lake Norman Charter School          | 36006         |
| Gates County Schools                          | 33700         | Lenoir County Community College     | 35405         |
| General Assembly                              | 12160         | Lenoir County Schools               | 35400         |
| Governor'S Office                             | 12100         | Lexington City Schools              | 32910         |
| Graham County Schools                         | 33800         | Lincoln County Schools              | 35500         |
| Grandfather Academy                           | 30601         | Lt Governor'S Office                | 12150         |
| Granville County Schools And Oxford Orphanage | 33900         | Macon County Schools                | 35600         |
| Gray Stone Day School                         | 38402         | Madison County Schools              | 35700         |
| Greene County Schools                         | 34000         | Martin Community College            | 35805         |
| Guilford County Schools                       | 34100         | Martin County Schools               | 35800         |
| Guilford Technical Community College          | 34105         | Mayland Technical College           | 36105         |
| Halifax Community College                     | 34205         | Mcdowell County Schools             | 35900         |
| Halifax County Schools                        | 34200         | Mcdowell Technical College          | 35905         |
| Haliwa-Saponi Tribal Charter                  | 39301         | Millennium Charter Academy          | 38602         |
| Harnett County Schools                        | 34300         | Mitchell Community College          | 34905         |
| Haywood County Schools                        | 34400         | Mitchell County Schools             | 36100         |
| Haywood Technical College                     | 34405         | Montgomery Community College        | 36205         |



## Appendix F: Participating Employers

| Employer   | Employer Code | Employer   | Employer Code |
|--|---------------|--|---------------|
| Montgomery County Schools                          | 36200         | Pinnacle Classical Academy                         | 39703         |
| Moore County Schools                               | 36300         | Pitt Community College                             | 37405         |
| Mooresville City Schools                           | 34910         | Pitt County Schools                                | 37400         |
| Mount Airy City Schools                            | 38610         | Polk County Schools                                | 37500         |
| Mountain Community School                          | 34501         | Randolph Community College                         | 37605         |
| Mtn Discovery Charter                              | 38701         | Randolph County Schools                            | 37600         |
| N C Auctioneers Licensing Board                    | 18740         | Revenue Department                                 | 13500         |
| N C Central University                             | 20800         | Richmond County Schools                            | 37700         |
| N C Department Of Correction                       | 18300         | Richmond Technical College                         | 37705         |
| N C Real Estate Commission                         | 18690         | River Mill Academy Charter                         | 30103         |
| N C School Of Science & Mathematics                | 10950         | Roanoke Rapids City Schools                        | 34220         |
| N C School Of The Arts                             | 20200         | Roanoke-Chowan Community College                   | 34605         |
| N C State Board Of Examiners Of Practicing Psychol | 18780         | Robeson Community College                          | 37805         |
| N C State University                               | 21300         | Robeson County Schools                             | 37800         |
| N.E. Regional School For Biotechnology             | 33001         | Rockingham Community College                       | 37905         |
| Nash Technical College                             | 36405         | Rockingham County Schools                          | 37900         |
| Nash-Rocky Mount Schools                           | 36400         | Rowan-Cabarrus Community College                   | 38005         |
| Nc A&T University                                  | 20700         | Rowan-Salisbury School System                      | 38000         |
| Nc Housing Finance Agency                          | 11310         | Roxboro Community School                           | 37301         |
| Neuse Charter School                               | 35106         | Rutherford County Schools                          | 38100         |
| New Bern/Craven County Board Of Education          | 32500         | Sampson Community College                          | 38205         |
| New Hanover County Schools                         | 36500         | Sampson County Schools                             | 38200         |
| Newton-Conover City Schools                        | 31820         | Sandhills Community College                        | 36305         |
| North Carolina Board Of Opticians                  | 18640         | Sanford-Lee County Board Of Education              | 35300         |
| North Carolina Education Lottery                   | 10200         | Scotland County Schools                            | 38300         |
| Northampton County Schools                         | 36600         | Secretary Of State                                 | 13700         |
| Office Of Administrative Hearing                   | 10850         | Segs Academy                                       | 32420         |
| Office Of State Budget & Management                | 10910         | Socrates Academy                                   | 36007         |
| Office Of State Controller                         | 10940         | South Piedmont Community College                   | 30405         |
| Onslow County Schools                              | 36700         | Southeastern Academy Charter School                | 37801         |
| Orange Charter School                              | 36802         | Southeastern Community College                     | 32405         |
| Orange County Schools                              | 36800         | Southern Wake Academy                              | 39204         |
| Pace Academy                                       | 36801         | Southwestern Community College                     | 35005         |
| Pamlico Community College                          | 36905         | Stanly Community College                           | 38405         |
| Pamlico County Schools                             | 36900         | Stanly County Schools                              | 38400         |
| Pender County Schools                              | 37100         | Stars Charter School                               | 36302         |
| Perquimans County Schools                          | 37200         | State Auditor                                      | 10500         |
| Person County Schools                              | 37300         | State Board Of Elections                           | 11900         |
| Piedmont Community College                         | 37305         | State Board Of Examiners For Electrical Contractor | 18670         |
| Pine Lake Prep Charter                             | 36008         | State Treasurer                                    | 14300         |

## Appendix F: Participating Employers

| Employer                                   | Employer Code | Employer                               | Employer Code |
|--|---------------|--|---------------|
| Stokes County Schools                      | 38500         | Vance-Granville Community College      | 39105         |
| Success Institute                          | 34903         | Voyager Academy                        | 33204         |
| Surry Community College                    | 38605         | Wake County Schools                    | 39200         |
| Surry County Schools                       | 38600         | Wake Technical College                 | 39205         |
| Swain County Schools                       | 38700         | Warren County Schools                  | 39300         |
| Teachers & State Empl Medical Plan         | 12000         | Washington County Schools              | 39400         |
| The Hawbridge School                       | 30104         | Watauga County Schools                 | 39500         |
| Thomasville City Schools                   | 32920         | Wayne Community College                | 39605         |
| Transylvania County Schools                | 38800         | Wayne County Schools                   | 39600         |
| Tri-County Community College               | 32005         | Weldon City Schools                    | 34230         |
| Two Rivers Comm School                     | 39501         | Western Carolina University            | 21800         |
| Tyrrell County Schools                     | 38900         | Western Piedmont Comm College          | 31205         |
| UNC - Pembroke                             | 21200         | Whiteville City Schools                | 32410         |
| UNC Health Care System                     | 21550         | Wildlife Resources Commission          | 11600         |
| UNC-Ch Cb 1260                             | 21520         | Wilkes Community College               | 39705         |
| UNC-General Administration                 | 21525         | Wilkes County Schools                  | 39700         |
| Union County Schools                       | 39000         | Wilmington Prep Academy                | 36502         |
| University Of North Carolina At Asheville  | 23000         | Wilson Community College               | 39805         |
| University Of North Carolina At Charlotte  | 23100         | Wilson County Schools                  | 39800         |
| University Of North Carolina At Greensboro | 20900         | Winston-Salem State University         | 21900         |
| University Of North Carolina At Wilmington | 23200         | Winston-Salem-Forsyth County Schools   | 33400         |
| University Of North Carolina Press         | 21570         | Yadkin County Schools                  | 39900         |
| Uwharrie Charter Academy                   | 37601         | Yancey County Schools                  | 30000         |
| Vance Charter School                       | 39101         | Zeca School Of The Arts And Technology | 36701         |
| Vance County Schools                       | 39100         |  |               |