

nyhart

***Indiana State Teachers'  
Retirement Fund***

***Annual Actuarial Valuation  
June 30, 2014***

## **Indiana State Teachers' Retirement Fund**

Annual Actuarial Valuation

as of June 30, 2014

### **Nyhart**

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November 12, 2014

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***The Board of Trustees  
Indiana Public Retirement System  
Indianapolis, IN***

***Dear Board Members:***

An actuarial valuation is prepared annually for the Indiana State Teachers' Retirement Fund. Submitted in this report are the results of the June 30, 2014 actuarial valuation.

**Census Data and Asset Information**

The member census data and the asset information for this valuation were furnished by the Chief Financial Officer and Staff. Their efforts and cooperation in furnishing these materials are acknowledged with appreciation. We did not audit the information provided, but we did review it thoroughly for reasonableness and compared it with the prior year's submission for consistency.

**Assumptions and Methods**

The majority of the actuarial assumptions used in the June 30, 2014 valuation were adopted by the Board pursuant to the Experience Study completed in June 2012, which reflected the experience period from July 1, 2007 to June 30, 2011. The interest rate and mortality assumptions were approved by the Board on June 29, 2012 for first use in the 2012 valuation. Assumptions are summarized in the Assumptions and Methods section of this report. These assumptions and methods have been used to develop the Annual Required Contribution and are consistent with the accounting requirements detailed in GASB Statements No. 25, No. 27, and No. 50.

Benefit obligations in the June 30, 2014 valuation are determined using June 30, 2013 census data and rolled-forward to the June 30, 2014 measurement date at the valuation interest rate, using actual distributions and ASA account returns during that period. We are not aware of any material events that would require additional adjustments to the benefit obligations for changes to the population not anticipated in the demographic assumptions used in the valuation.

**Funding Objective**

The Indiana State Teachers' Retirement Fund Pre-1996 Account is funded on a pay-as-you-go basis from the State of Indiana.

The funding objective of the Indiana State Teachers' Retirement Fund 1996 Account is to establish and receive contributions that, when invested at the assumed rate of return, will ultimately accumulate assets over each member's working lifetime that will be sufficient to pay expected retirement allowances. As such, an employer contribution rate is calculated each year. That rate is then considered in conjunction with the goal of maintaining a relatively stable contribution over time.

***Fund Structure***

The Indiana State Teachers' Retirement Fund (TRF) is one fund comprised of a two-account structure in compliance with Indiana Code Section 5-10.4-2-2:

1. The Pre-1996 Account consists of members who were hired prior to July 1, 1995, and who have maintained continuous employment with the same school corporation or covered institution since that date.

2. The 1996 Account consists of members who were:
  - a. hired on or after July 1, 1995; or
  - b. hired before July 1, 1995, and prior to June 30, 2005:
    - i. were either hired by another school corporation or institution covered by TRF, or
    - ii. were re-hired by a covered prior employer.

#### ***Characteristics of the Pre-1996 Account***

1. Active membership in the Pre-1996 Account continues to decline as members quit, become disabled, die, or retire.
2. The Defined Benefits from the Pre-1996 Account are funded by State appropriations (including contributions of some revenue from the State Lottery). At the time of retirement, Annuity Savings Account (ASA) benefits payable from the Pre-1996 Account are funded by the annuitization of Pre-1996 Account member contributions.

#### ***Characteristics of the 1996 Account***

1. As members depart from active service in the Pre-1996 Account, their replacements will become members of the 1996 Account. If the 1996 Account were a stand-alone plan, this pattern of departures and hirings would produce a fairly constant population size.
2. Defined Benefits payable from the 1996 Account are funded by contributions from local school corporations or other institutions that employ covered members. At the time of retirement, ASA benefits payable from the 1996 Account are funded by the annuitization of 1996 Account member contributions.

#### ***Funding Arrangements***

Prior to the legislation that established the two-account structure of TRF, the Defined Benefits of the Indiana State Teachers' Retirement Fund were funded with a pay-as-you-go method. Under this arrangement, amounts were appropriated to meet the current year's pension payment requirements. Defined Benefits payable from the Pre-1996 Account continue to be funded on this basis.

In 1995, the Pension Stabilization Fund was set up for the Pre-1996 Account. Since then, some pre-funding progress has been made via State appropriations to this account.

Defined Benefits payable from the 1996 Account are funded through employer percent-of-pay contributions. The Board of the Indiana Public Retirement System sets this contribution rate after reviewing the most recent actuarial valuation report.

The contribution rate of 7.50% for fiscal year 2015 was set by the Board in fiscal year 2014 for the 1996 Account. The contribution rate of 7.50% for fiscal year 2016 was set by the Board in fiscal year 2015.

#### ***Progress Toward Realization of Financing Objectives***

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a Plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches 100%. The total funded ratio for the Plan (Pre-1996 Account and 1996 Account combined) increased by 2.4%, to 48.1% from 45.7% for the preceding year due primarily to investment returns being higher than the actuarial assumed returns and the payment of the 13<sup>th</sup> check to retirees versus the 1% COLA assumed in the valuation.

The funded ratio of the Pre-1996 Account (pay-as-you-go) increased to 32.8% from 31.8% for the preceding year. Based on the actuarial assumptions, it is anticipated that the Pre-1996 Account will attain 100% funded status on 6/30/2035.

The funded ratio of the 1996 Account increased to 96.1% from 93.8% for the preceding year. Based on the actuarial assumptions, it is anticipated that the 1996 Account will attain 100% funded status on 6/30/2017.

**Certification**

We have included several schedules and exhibits in this report, including the following:

- Summary of Actuarial Assumptions and Methods
- Analysis of Financial Experience
- Solvency Test
- Schedule of Active Members' Valuation Data
- Schedule of Retired Members and Beneficiaries
- Schedule of Funding Progress

To the best of our knowledge, this report presents a fair position of the funded status of the plan in accordance with the Actuarial Standards of Practice as described by the American Academy of Actuaries. In addition, information has been prepared in accordance with applicable government standards of financial reporting for defined benefit pension plans.

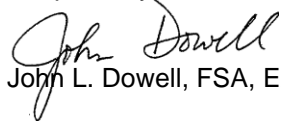
The actuarial valuation is prepared using information which has been reconciled and reviewed for reasonableness. We are not aware of any material inadequacy in employee census or asset values. The census information and the asset information have been provided to us by the Chief Financial Officer and Staff. We have not audited the information at the source, and therefore do not accept responsibility for the accuracy or the completeness of the data on which the information is based.

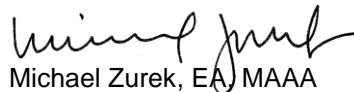
In our opinion, the actuarial assumptions and methods are individually reasonable and in combination represent our best estimate of anticipated experience of the plan.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States.

Respectfully submitted,

  
John L. Dowell, FSA, EA, MAAA

  
Michael Zurek, EA, MAAA

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## ***Comments***

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### **Contribution Rates**

The Calculated Contribution Rate section shows the calculated rate for the 1996 Account. That rate is determined as if the 1996 Account were a stand-alone plan.

This section also shows the calculated contribution rate for the Pre-1996 Account. Since the Pre-1996 Account is funded on a pay-as-you-go basis, the expected benefit payments are also shown in the Calculated Contribution Rate section. The two rates have been combined to determine the Annual Required Contribution shown in the GASB Disclosures section.

### **Plan Provisions**

There is no ad-hoc COLA on January 1, 2015. Instead, retirees were paid a service-related lump sum (i.e., referred to as 13th check) in September 2014. These changes are reflected in the June 30, 2014 valuation. Any future COLA is estimated by an ongoing assumption of 1.0% annual increases in all pension payments beginning January 1, 2016.

ASA annuitizations are scheduled to be based on a 5.75% conversion rate for the period from October 1, 2014 through September 30, 2015, and at a 4.50% conversion rate for the period from October 1, 2015 through December 31, 2016. After January 1, 2017, annuity conversions will occur outside of the plan. Benefit obligations in the June 30, 2014 valuation have been adjusted for the anticipated gains through December 31, 2016 for conversions at interest rates lower than the valuation interest rate of 6.75%.

We are not aware of any other material changes in the plan provisions since the June 30, 2013 actuarial valuation.

### **Census Data**

Census data for the valuation was provided by INPRS. We have thoroughly examined the data for reasonableness and consistency with prior years, but we did not otherwise audit it.

### **Assumptions and Methods**

The actuarial assumptions used in the June 30, 2013 valuation are based on plan experience from July 1, 2007 to June 30, 2011. The 6.75% interest rate assumption was approved by the Board on June 29, 2012 for first use in the June 30, 2012 valuation.

Benefit obligations in the June 30, 2014 valuation are determined using June 30, 2013 census data and rolled-forward to the June 30, 2014 measurement date at the valuation interest rate, using actual distributions and ASA account returns during that period. We are not aware of any material events that would require additional adjustments to the benefit obligations for changes to the population not anticipated in the demographic assumptions used in the valuation.

### **Investment Experience**

The investment return for the year ended June 30, 2014 was higher than the assumed 6.75% return. The assets of TRF are commingled with the assets of other funds administered by INPRS. The overall INPRS return on the commingled funds was 12.69% during fiscal 2014. Under the asset valuation method, market gains and losses are spread over a four-year period. The Market Value of Assets is currently \$298 million higher than the Actuarial Value of Assets, meaning the plan is currently in a position of having net deferred investment gains to be recognized in future years.

## ***Comments***

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### **Challenges**

The 1996 Account has been steadily funded since its inception. As membership in that portion of the plan increases, the amount of required contributions will increase as a dollar amount, but should remain relatively stable as a percentage of covered payroll with plan experience causing gradual changes. A significant funding challenge will be for the State to meet the projected pay-as-you-go obligations as shown in the Payout Projections section for the Pre-1996 Account.



## Summary of Key Valuation Results

| Member Information                 | 6/30/2014            |                      |                      | 6/30/2013            |
|------------------------------------|----------------------|----------------------|----------------------|----------------------|
|                                    | Pre-1996 Account     | 1996 Account         | Total Fund           |                      |
| <b>Number</b>                      |                      |                      |                      |                      |
| Active Members                     | 19,210               | 51,204               | 70,414               | 70,414               |
| Inactive Vested Members            | 3,314                | 3,103                | 6,417                | 6,417                |
| Inactive Nonvested Members         | 546                  | 11,147               | 11,693               | 11,693               |
| Retired Members and Beneficiaries  | <u>49,345</u>        | <u>3,665</u>         | <u>53,010</u>        | <u>53,010</u>        |
| Total                              | 72,415               | 69,119               | 141,534              | 141,534              |
| Valuation Payroll FY2014           | \$ 1,383,241,991     | \$ 2,740,661,321     | \$ 4,123,903,312     | \$ 4,124,367,980     |
| Projected Payroll FY2015           | \$ 1,275,600,000     | \$ 2,987,300,000     | \$ 4,262,900,000     |                      |
| <b>Annual Benefit Payments</b>     |                      |                      |                      |                      |
| Annuity                            | \$ 113,356,896       | \$ 7,111,980         | \$ 120,468,876       | \$ 120,468,876       |
| Pension                            | <u>860,278,572</u>   | <u>60,057,396</u>    | <u>920,335,968</u>   | <u>920,355,968</u>   |
| Total                              | \$ 973,635,468       | \$ 67,169,376        | \$ 1,040,804,844     | \$ 1,040,804,844     |
| <b>Assets and Liabilities</b>      |                      |                      |                      |                      |
| <b>Accrued Liability</b>           |                      |                      |                      |                      |
| ASA Account Balance                | \$ 1,715,340,174     | \$ 1,120,728,729     | \$ 2,836,068,903     | \$ 2,804,754,433     |
| ASA Annuities                      | 1,105,546,776        | 86,516,737           | 1,192,063,513        | 1,161,076,366        |
| Pension: Retirees                  | 8,580,843,864        | 672,727,439          | 9,253,571,303        | 9,699,895,187        |
| Pension: Non-retirees              | <u>4,953,485,217</u> | <u>3,357,020,264</u> | <u>8,310,505,481</u> | <u>7,546,021,426</u> |
| Total                              | \$ 16,355,216,031    | \$ 5,236,993,169     | \$ 21,592,209,200    | \$ 21,211,747,412    |
| <b>Market Value of Assets</b>      |                      |                      |                      |                      |
| ASA Account Balance                | \$ 1,715,340,174     | \$ 1,120,728,729     | \$ 2,836,068,903     | \$ 2,804,754,433     |
| ASA Annuities                      | 1,105,546,776        | 86,516,737           | 1,192,063,513        | 1,161,076,366        |
| Pension: Retirees                  | 2,680,979,925        | 672,727,439          | 3,353,707,364        | 3,023,156,644        |
| Pension: Non-retirees              | <u>0</u>             | <u>3,309,469,425</u> | <u>3,309,469,425</u> | <u>2,659,891,307</u> |
| Total                              | \$ 5,501,866,875     | \$ 5,189,442,330     | \$ 10,691,309,205    | \$ 9,648,878,750     |
| <b>Actuarial Value of Assets</b>   |                      |                      |                      |                      |
| ASA Account Balance                | \$ 1,715,340,174     | \$ 1,120,728,729     | \$ 2,836,068,903     | \$ 2,804,754,433     |
| ASA Annuities                      | 1,105,546,776        | 86,516,737           | 1,192,063,513        | 1,161,076,366        |
| Pension: Retirees                  | 2,537,464,437        | 672,727,439          | 3,210,191,876        | 3,043,067,981        |
| Pension: Non-retirees              | <u>0</u>             | <u>3,155,258,596</u> | <u>3,155,258,596</u> | <u>2,680,033,218</u> |
| Total                              | \$ 5,358,351,387     | \$ 5,035,231,501     | \$ 10,393,582,888    | \$ 9,688,931,998     |
| <b>Unfunded Accrued Liability</b>  |                      |                      |                      |                      |
| ASA Account Balance                | \$ 0                 | \$ 0                 | \$ 0                 | \$ 0                 |
| ASA Annuities                      | 0                    | 0                    | 0                    | 0                    |
| Pension: Retirees                  | 6,043,379,427        | 0                    | 6,043,379,427        | 6,656,827,206        |
| Pension: Non-retirees              | <u>4,953,485,217</u> | <u>201,761,668</u>   | <u>5,155,246,885</u> | <u>4,865,988,208</u> |
| Total                              | \$ 10,996,864,644    | \$ 201,761,668       | \$ 11,198,626,312    | \$ 11,522,815,414    |
| <b>Funded Percentage</b>           |                      |                      |                      |                      |
| ASA Account Balance                | 100.0%               | 100.0%               | 100.0%               | 100.0%               |
| ASA Annuities                      | 100.0%               | 100.0%               | 100.0%               | 100.0%               |
| Pension: Retirees                  | 29.6%                | 100.0%               | 34.7%                | 31.4%                |
| Pension: Non-retirees              | <u>0.0%</u>          | <u>94.0%</u>         | <u>38.0%</u>         | <u>35.5%</u>         |
| Total                              | 32.8%                | 96.1%                | 48.1%                | 45.7%                |
| Pension Normal Cost                | \$ 57,750,841        | \$ 170,892,424       | \$ 228,643,265       | \$ 224,174,399       |
| <b>Annual Costs</b>                |                      | <b>Fiscal 2016</b>   |                      | <b>Fiscal 2015</b>   |
| Annual Required Contribution (ARC) | \$ 845,733,000       | \$ 201,966,380       | \$ 1,047,699,380     | \$ 1,056,687,100     |
| <b>1996 Account Only</b>           |                      |                      |                      |                      |
| Calculated Contribution Rate       |                      |                      |                      |                      |
| Normal Cost                        |                      | 5.72%                |                      | 5.67%                |
| Amortization of Unfunded Liability |                      | <u>0.54%</u>         |                      | <u>0.83%</u>         |
| Total                              |                      | 6.26%                |                      | 6.50%                |
| Actual Employer Contribution Rate  |                      | 7.50%                |                      | 7.50%                |
| <b>Pre-1996 Account Only</b>       |                      |                      |                      |                      |
| Expected Pension Benefit Payments  | 960,100,000          |                      |                      | 956,300,000          |
| Expected Pension Contributions     | 859,900,000          |                      |                      | 835,900,000          |

## ***Unfunded Accrued Liability***

### **Pre-1996 Account**

\$Millions

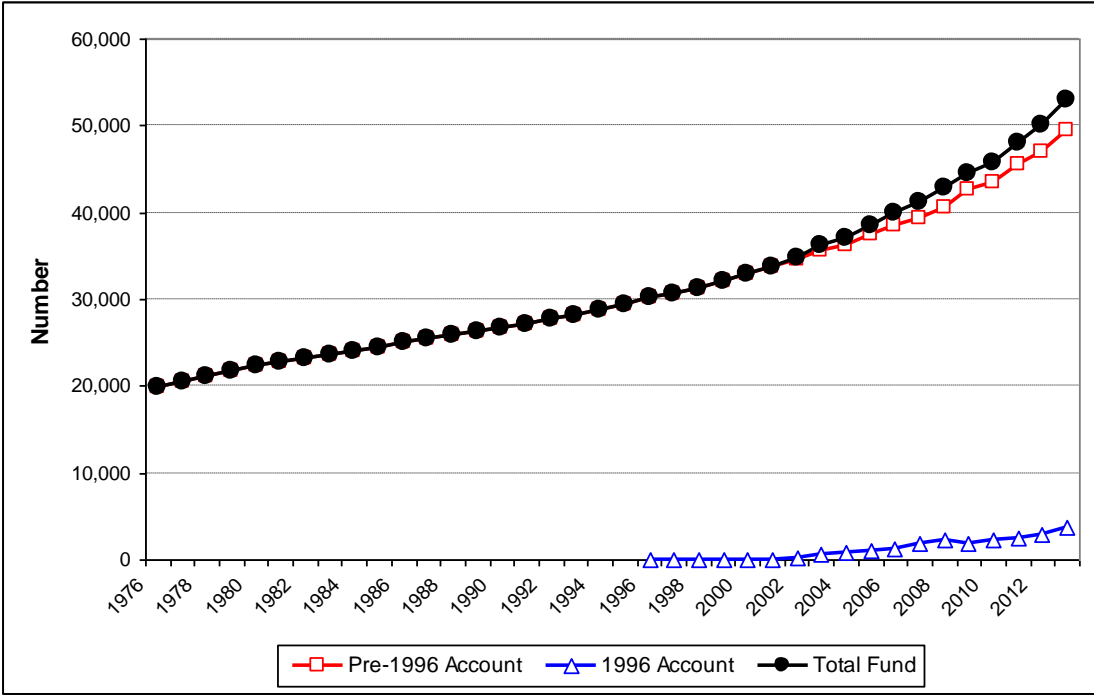
| <b>June 30</b> | <b>Accrued Liability</b> | <b>Actuarial Value of Assets</b> | <b>Unfunded Accrued Liability</b> | <b>Funded Percentage</b> |
|----------------|--------------------------|----------------------------------|-----------------------------------|--------------------------|
| 1975           | \$ 1,570                 | \$ 312                           | \$ 1,258                          | 19.9%                    |
| 1980           | 2,843                    | 539                              | 2,304                             | 19.0%                    |
| 1985           | 4,023                    | 1,073                            | 2,950                             | 26.7%                    |
| 1991           | 7,182                    | 2,161                            | 5,021                             | 30.1%                    |
| 1992           | 7,949                    | 2,376                            | 5,573                             | 29.9%                    |
| 1993           | 8,508                    | 2,592                            | 5,916                             | 30.5%                    |
| 1994           | 9,087                    | 2,809                            | 6,278                             | 30.9%                    |
| 1995           | 9,675                    | 2,984                            | 6,691                             | 30.8%                    |
| 1996           | 10,283                   | 3,242                            | 7,041                             | 31.5%                    |
| 1997           | 10,868                   | 3,678                            | 7,190                             | 33.8%                    |
| 1998           | 11,481                   | 4,130                            | 7,351                             | 36.0%                    |
| 1999           | 12,173                   | 4,731                            | 7,442                             | 38.9%                    |
| 2000           | 12,409                   | 5,210                            | 7,199                             | 42.0%                    |
| 2001           | 12,696                   | 5,363                            | 7,333                             | 42.2%                    |
| 2002           | 13,498                   | 5,555                            | 7,943                             | 41.2%                    |
| 2003           | 13,355                   | 5,728                            | 7,627                             | 42.9%                    |
| 2004           | 13,549                   | 5,765                            | 7,784                             | 42.5%                    |
| 2005           | 14,254                   | 5,797                            | 8,457                             | 40.7%                    |
| 2006           | 15,003                   | 5,478                            | 9,525                             | 36.5%                    |
| 2007           | 15,988                   | 5,764                            | 10,224                            | 36.1%                    |
| 2008           | 15,792                   | 5,954                            | 9,838                             | 37.7%                    |
| 2009           | 16,027                   | 5,109                            | 10,918                            | 31.9%                    |
| 2010           | 16,282                   | 5,382                            | 10,900                            | 33.1%                    |
| 2011           | 16,318                   | 5,227                            | 11,091                            | 32.0%                    |
| 2012           | 16,522                   | 4,978                            | 11,544                            | 30.1%                    |
| 2013           | 16,462                   | 5,235                            | 11,227                            | 31.8%                    |
| 2014           | 16,355                   | 5,358                            | 10,997                            | 32.8%                    |

### **1996 Account**

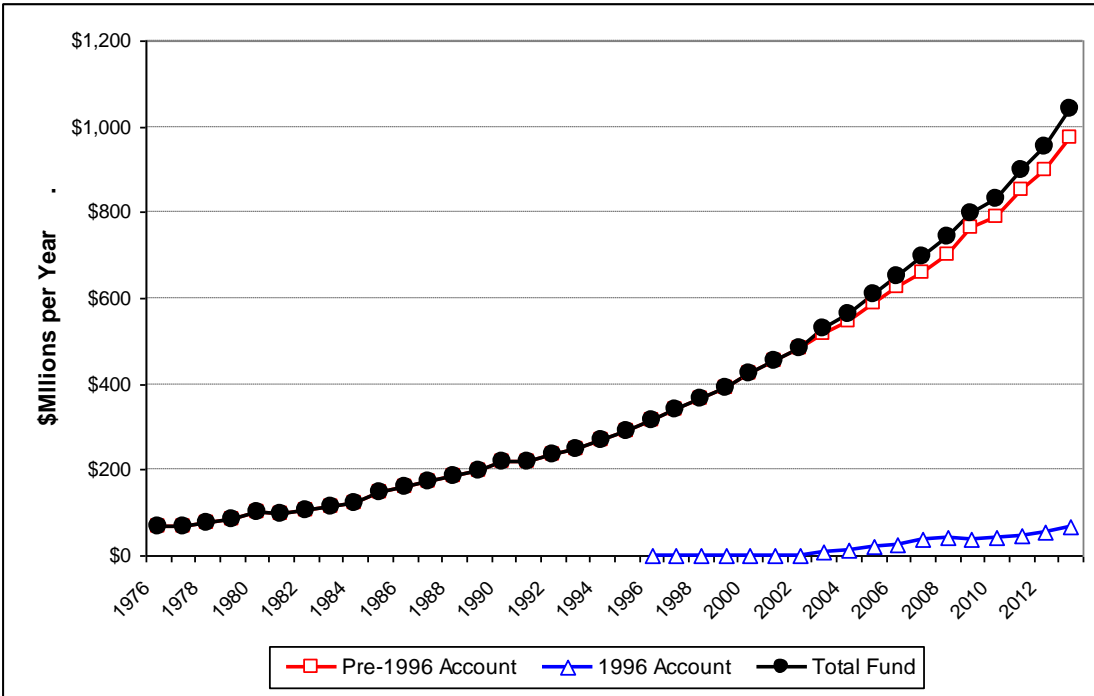
\$Millions

| <b>June 30</b> | <b>Accrued Liability</b> | <b>Actuarial Value of Assets</b> | <b>Unfunded Accrued Liability</b> | <b>Funded Percentage</b> |
|----------------|--------------------------|----------------------------------|-----------------------------------|--------------------------|
| 1996           | \$ 48                    | \$ 21                            | \$ 27                             | 43.8%                    |
| 1997           | 176                      | 72                               | 104                               | 40.9%                    |
| 1998           | 298                      | 136                              | 162                               | 45.6%                    |
| 1999           | 498                      | 240                              | 258                               | 48.2%                    |
| 2000           | 706                      | 368                              | 338                               | 52.1%                    |
| 2001           | 828                      | 447                              | 381                               | 54.0%                    |
| 2002           | 1,167                    | 621                              | 546                               | 53.2%                    |
| 2003           | 1,392                    | 826                              | 566                               | 59.3%                    |
| 2004           | 1,649                    | 1,039                            | 610                               | 63.0%                    |
| 2005           | 2,011                    | 1,268                            | 743                               | 63.1%                    |
| 2006           | 2,363                    | 2,209                            | 154                               | 93.5%                    |
| 2007           | 2,828                    | 2,713                            | 115                               | 95.9%                    |
| 2008           | 2,958                    | 3,080                            | (122)                             | 104.1%                   |
| 2009           | 3,136                    | 2,921                            | 215                               | 93.1%                    |
| 2010           | 3,615                    | 3,423                            | 192                               | 94.7%                    |
| 2011           | 3,997                    | 3,665                            | 332                               | 91.7%                    |
| 2012           | 4,338                    | 3,936                            | 402                               | 90.7%                    |
| 2013           | 4,750                    | 4,454                            | 296                               | 93.8%                    |
| 2014           | 5,237                    | 5,035                            | 202                               | 96.1%                    |

**Retired Members and Beneficiaries Receiving Benefits**



**Total Retirement Allowances Being Paid**



## Active Member Data

### Pre-1996 Account

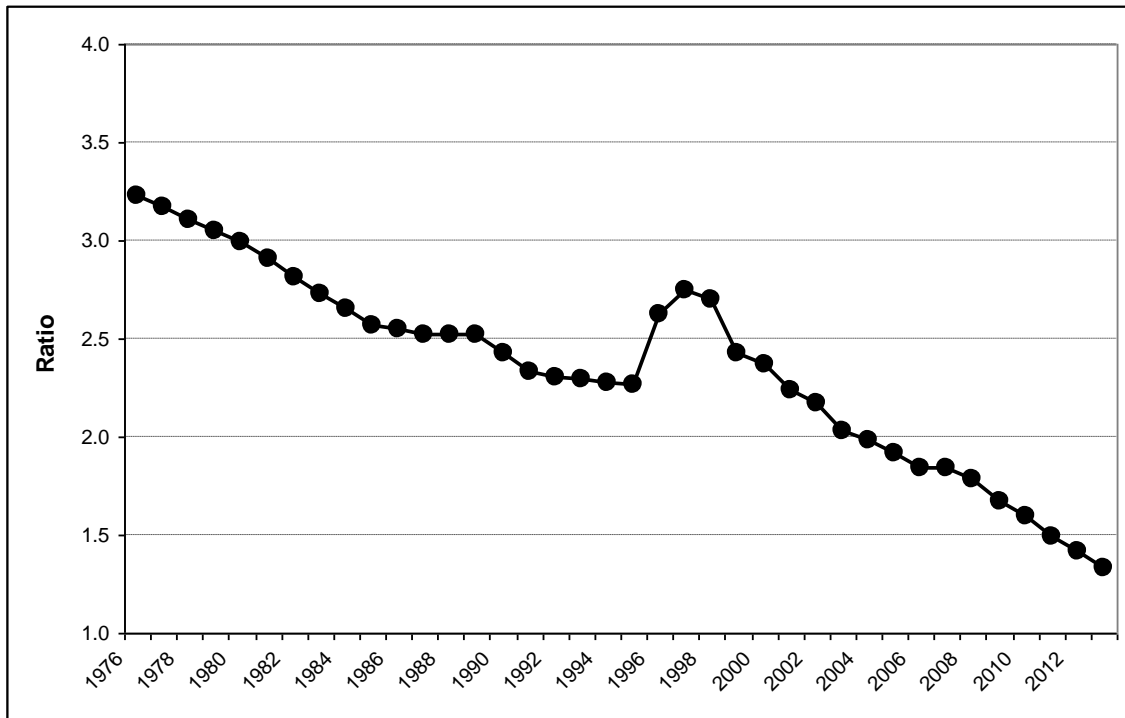
| June 30 | Number | Valuation<br>Payroll<br>(\$000s) | Average |         |           | Pay<br>Increase % |
|---------|--------|----------------------------------|---------|---------|-----------|-------------------|
|         |        |                                  | Age     | Service | Pay       |                   |
| 1975    | 63,932 | \$ 749,200                       | 38.7    | 10.9    | \$ 11,719 |                   |
| 1980    | 66,575 | 1,107,699                        | 39.7    | 11.9    | 16,638    |                   |
| 1985    | 62,932 | 1,519,887                        | 41.5    | 14.2    | 24,151    |                   |
| 1987    | 64,157 | 1,751,709                        | 42.0    | 14.5    | 27,303    |                   |
| 1989    | 65,986 | 2,044,797                        | 42.6    | 14.9    | 30,988    |                   |
| 1991    | 63,373 | 2,278,715                        | 43.0    | 15.4    | 35,957    |                   |
| 1992    | 63,980 | 2,416,263                        | 43.8    | 16.0    | 37,766    | 5.0%              |
| 1993    | 64,594 | 2,536,165                        | 44.0    | 16.1    | 39,263    | 4.0               |
| 1994    | 65,209 | 2,614,915                        | 44.1    | 16.2    | 40,101    | 2.1               |
| 1995    | 66,542 | 2,728,811                        | 44.2    | 16.2    | 41,009    | 2.3               |
| 1996    | 70,183 | 2,805,823                        | 44.2    | 15.7    | 39,979    | (2.5)             |
| 1997    | 63,520 | 2,739,436                        | 45.4    | 16.9    | 43,127    | 7.9               |
| 1998    | 59,030 | 2,699,183                        | 46.4    | 18.0    | 45,726    | 6.0               |
| 1999    | 56,560 | 2,755,489                        | 47.4    | 19.3    | 48,718    | 6.5               |
| 2000    | 52,920 | 2,561,533                        | 48.2    | 20.1    | 48,404    | (0.6)             |
| 2001    | 50,802 | 2,564,451                        | 48.7    | 20.7    | 50,479    | 4.3               |
| 2002    | 47,510 | 2,604,956                        | 49.4    | 21.5    | 54,830    | 8.6               |
| 2003    | 43,705 | 2,448,271                        | 49.6    | 21.7    | 56,018    | 2.2               |
| 2004    | 41,510 | 2,384,480                        | 50.1    | 22.2    | 57,444    | 2.5               |
| 2005    | 39,097 | 2,305,726                        | 50.6    | 22.7    | 58,974    | 2.7               |
| 2006    | 36,994 | 2,237,380                        | 51.1    | 23.2    | 60,480    | 2.6               |
| 2007    | 36,526 | 2,376,390                        | 52.1    | 23.8    | 65,060    | 7.6               |
| 2008    | 34,628 | 2,295,816                        | 52.5    | 24.6    | 66,299    | 1.9               |
| 2009    | 29,297 | 2,030,484                        | 53.7    | 26.0    | 69,307    | 4.5               |
| 2010    | 26,439 | 1,865,102                        | 53.9    | 26.3    | 70,544    | 1.8               |
| 2011    | 24,710 | 1,762,750                        | 54.5    | 26.9    | 71,338    | 1.1               |
| 2012    | 22,688 | 1,637,066                        | 54.9    | 27.4    | 72,156    | 1.1               |
| 2013    | 19,210 | 1,383,428                        | 54.7    | 27.2    | 72,016    | (0.2)             |

### 1996 Account

| June 30 | Number | Valuation<br>Payroll<br>(\$000s) | Average |         |          | Pay<br>Increase % |
|---------|--------|----------------------------------|---------|---------|----------|-------------------|
|         |        |                                  | Age     | Service | Pay      |                   |
| 1996    | 8,683  | \$ 72,506                        | 32.2    | 1.3     | \$ 8,350 |                   |
| 1997    | 20,686 | 245,168                          | 33.0    | 1.8     | 11,852   | 41.9%             |
| 1998    | 25,634 | 395,758                          | 33.6    | 2.2     | 15,439   | 30.3              |
| 1999    | 21,185 | 538,837                          | 35.3    | 4.0     | 25,435   | 64.7              |
| 2000    | 24,950 | 631,072                          | 36.4    | 4.7     | 25,293   | (0.6)             |
| 2001    | 24,846 | 754,426                          | 36.3    | 5.5     | 30,364   | 20.0              |
| 2002    | 27,873 | 1,004,515                        | 36.7    | 6.1     | 36,039   | 18.7              |
| 2003    | 29,936 | 1,136,864                        | 37.0    | 6.5     | 37,976   | 5.4               |
| 2004    | 32,000 | 1,267,173                        | 37.3    | 6.9     | 39,599   | 4.3               |
| 2005    | 34,826 | 1,428,604                        | 37.5    | 7.2     | 41,021   | 3.6               |
| 2006    | 36,356 | 1,565,341                        | 37.7    | 7.5     | 43,056   | 5.0               |
| 2007    | 39,307 | 1,891,605                        | 38.2    | 7.8     | 48,124   | 11.8              |
| 2008    | 41,628 | 2,052,719                        | 38.1    | 8.2     | 49,311   | 2.5               |
| 2009    | 45,046 | 2,308,548                        | 38.3    | 8.4     | 51,249   | 3.9               |
| 2010    | 46,433 | 2,447,509                        | 38.6    | 8.8     | 52,711   | 2.9               |
| 2011    | 46,633 | 2,507,193                        | 39.2    | 9.4     | 53,764   | 2.0               |
| 2012    | 47,885 | 2,594,952                        | 39.4    | 9.8     | 54,191   | 0.8               |
| 2013    | 51,204 | 2,740,940                        | 39.3    | 9.8     | 53,530   | (1.2)             |

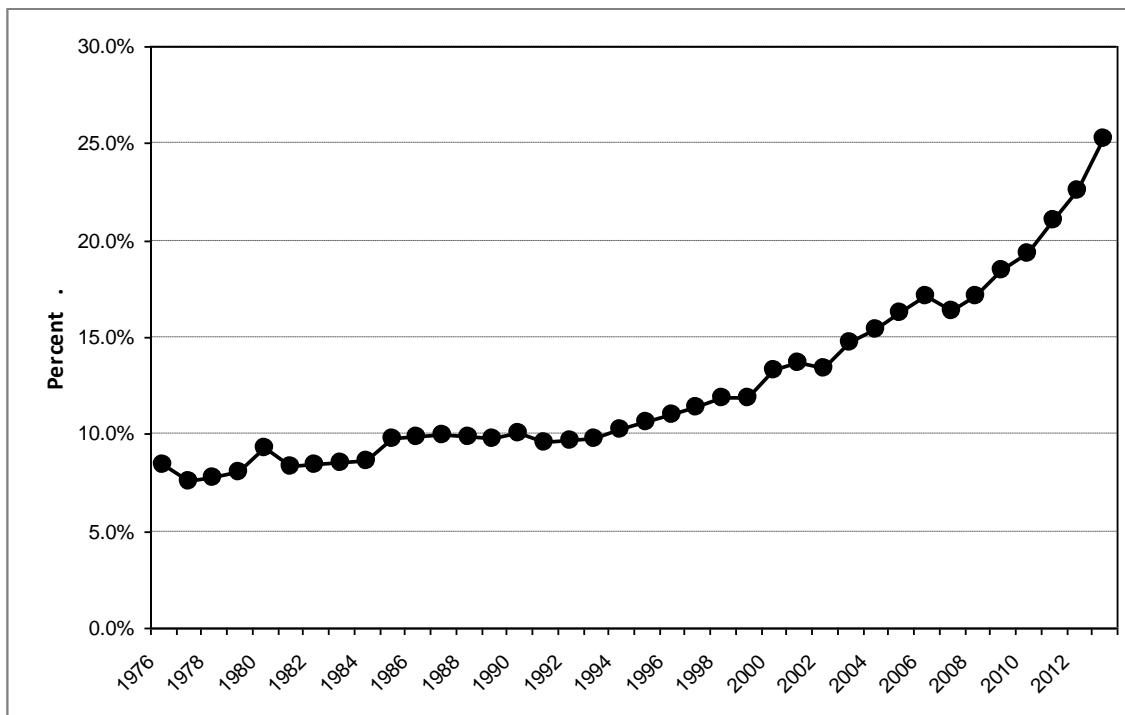
### ***Active Members per Retired Life***

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### ***Total Retirement Allowances as a Percent of Valuation Payroll***

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**Reconciliation of Market Value of Assets**

|   | <u>6/30/2013<br/>thru<br/>6/30/2014</u> | <u>6/30/2012<br/>thru<br/>6/30/2013</u> |
|---|---|---|
| Market Value, beginning of year                                       | \$ 9,648,878,750                        | \$ 9,077,059,225                        |
| Member Contributions  | \$ 128,183,499                          | \$ 122,952,921                          |
| Employer Contributions  | 1,026,692,363                           | 1,193,794,347                           |
| Benefit Payments  | (1,338,020,589)                         | (1,310,102,791)                         |
| Net Transfers   | <u>4,927,877</u>                        | <u>5,865,016</u>                        |
| Non-Investment Net Cash Flow  | \$ (178,216,850)                        | \$ 12,509,493                           |
| Administrative and Project Expenses                                   | \$ (13,718,309)                         | \$ (60,235,980)                         |
| Investment Return   | <u>1,234,365,614</u>                    | <u>619,546,012</u>                      |
| Net Investment Return   | \$ 1,220,647,305                        | \$ 559,310,032                          |
| Market Value, end of year   | \$ 10,691,309,205                       | \$ 9,648,878,750                        |
| Market Value of Assets Approximate Annual Rate of Return <sup>1</sup> | 12.8%                                   | 6.2%                                    |

<sup>1</sup> Net of expenses, assumes cash flows occur at mid-year.

**Development of the Actuarial Value of Assets<sup>1</sup>**

|  | <u>6/30/2013<br/>thru<br/>6/30/2014</u> |
|--|---|
| 1. Actuarial Value, beginning of year  | \$ 6,884,177,565                        |
| 2. Market Value, beginning of year   | 6,844,124,317                           |
| 3. Market Value, end of year   | 7,855,240,302                           |
| 4. Non-Investment Net Cash Flow  | 27,814,880                              |
| 5. Net Investment Return   |   |
| a. Expected $[(.0675 \times ((2)+0.5*(4))]$  | 462,917,144                             |
| b. Actual $[(3) - (2) - (4)]$  | <u>983,301,105</u>                      |
| 6. Current Year Market Value Gain/(Loss) $[(5b) - (5a)]$   | \$ 520,383,961                          |
| 7. Deferred Recognition of Investment Gain/(Loss)  |   |
| a. Fiscal 2014 (75% of (6))  | \$ 390,287,971                          |
| b. Fiscal 2013 (50%)   | (16,953,030)                            |
| c. Fiscal 2012 (25%)   | <u>(75,608,624)</u>                     |
| d. Total $[(a) + (b) + (c)]$   | \$ 297,726,317                          |
| 8. Preliminary Actuarial Value, end of year $[(3) - (7d)]$   | 7,557,513,985                           |
| a. 80% of Market Value, end of year $[80\% \text{ of } (3)]$   | 6,284,192,242                           |
| b. 120% of Market Value, end of year $[120\% \text{ of } (3)]$   | 9,426,288,362                           |
| 9. Actuarial Value, end of year $[(8), \text{ but not Greater than } (8b), \text{ nor Less than } (8a)]$ | \$ 7,557,513,985                        |
| 10. Actuarial Value as a % of Market Value $[(9) / (3)]$   | 96.20984%                               |
| 11. Net Investment Return on Actuarial Value $[(9) - (1) - (4)]$   | \$ 645,521,540                          |
| 12. Actuarial Value Net Rate of Return $[(11) / ((1) + 0.5*(4))]$  | 9.36%                                   |

<sup>1</sup> The Actuarial Value of Assets developed here is net of ASA account balances. For ASA account balances, the Actuarial Value of Assets is set equal to the Market Value of Assets.

***Accrued Liability Reconciliation<sup>1</sup>***

|   | <b>Pre-1996<br/>Account</b> | <b>1996<br/>Account</b> | <b>Total<br/>Fund</b>    |
|---|-----------------------------|-------------------------|--------------------------|
| <b>6/30/2013 Accrued Liability</b>                                    | <b>\$ 14,649,548,810</b>    | <b>\$ 3,757,444,169</b> | <b>\$ 18,406,992,979</b> |
| Normal Cost   | 68,860,011                  | 155,314,388             | 224,174,399              |
| Actual Benefit Payments   | (1,034,563,166)             | (77,253,362)            | (1,111,816,528)          |
| Transfers   | 90,442,825                  | 22,496,220              | 112,939,045              |
| Expected Interest   | <u>961,628,534</u>          | <u>262,263,149</u>      | <u>1,223,891,683</u>     |
| <b>Expected 6/30/2014<br/>Accrued Liability</b>                       | <b>\$ 14,735,917,014</b>    | <b>\$ 4,120,264,564</b> | <b>\$ 18,856,181,578</b> |
| Sources of Change:  |                             |                         |                          |
| Experience (Gain) or Loss   | 4,682,649                   | 7,204,077               | 11,886,726               |
| Additional Liability due to<br>Cost-of-Living Adjustment <sup>2</sup> | (75,200,000)                | (6,700,000)             | (81,900,000)             |
| Plan Provision Change <sup>3</sup>                                    | <u>(25,523,806)</u>         | <u>(4,504,201)</u>      | <u>(30,028,007)</u>      |
| <b>Actual 6/30/2014<br/>Accrued Liability</b>                         | <b>\$ 14,639,875,857</b>    | <b>\$ 4,116,264,440</b> | <b>\$ 18,756,140,297</b> |

<sup>1</sup> Based on pension and ASA annuities only, i.e. net of ASA account balances.

<sup>2</sup> 13<sup>th</sup> check to retirees in lieu of the assumed 2015 1.0% COLA.

<sup>3</sup> Recognition of cost of future ASA account conversions to annuities from October 1, 2014 through December 31, 2016 at conversion interest rates lower than the valuation interest rate of 6.75%.



## Asset and Liability Allocation<sup>1</sup>

|                               | Pre-1996 Account |                  |                   | 1996 Account     |                |                  |
|-------------------------------|------------------|------------------|-------------------|------------------|----------------|------------------|
|                               | Non-Retired      | Retired          | Total             | Non-Retired      | Retired        | Total            |
| <b>Accrued Liability (AL)</b> |                  |                  |                   |                  |                |                  |
| ASA Balance                   | \$ 1,525,191,799 | \$ 190,148,375   | \$ 1,715,340,174  | \$ 1,102,685,520 | \$ 18,043,209  | \$ 1,120,728,729 |
| ASA Annuities                 | 0                | 1,105,546,776    | 1,105,546,776     | 0                | 86,516,737     | 86,516,737       |
| Pension: Retirees             | 0                | 8,580,843,864    | 8,580,843,864     | 0                | 672,727,439    | 672,727,439      |
| Pension: Non-Retirees         | 4,953,485,217    | 0                | 4,953,485,217     | 3,357,020,264    | 0              | 3,357,020,264    |
| Total                         | \$ 6,478,677,016 | \$ 9,876,539,015 | \$ 16,355,216,031 | \$ 4,459,705,784 | \$ 777,287,385 | \$ 5,236,993,169 |
| <b>Market Assets</b>          |                  |                  |                   |                  |                |                  |
| ASA Balance                   | \$ 1,525,191,799 | \$ 190,148,375   | \$ 1,715,340,174  | \$ 1,102,685,520 | \$ 18,043,209  | \$ 1,120,728,729 |
| ASA Annuities                 | 0                | 1,105,546,776    | 1,105,546,776     | 0                | 86,516,737     | 86,516,737       |
| Pension: Retirees             | 0                | 2,680,979,925    | 2,680,979,925     | 0                | 672,727,439    | 672,727,439      |
| Pension: Non-Retirees         | 0                | 0                | 0                 | 3,309,469,425    | 0              | 3,309,469,425    |
| Total                         | \$ 1,525,191,799 | \$ 3,976,675,076 | \$ 5,501,866,875  | \$ 4,412,154,945 | \$ 777,287,385 | \$ 5,189,442,330 |
| <b>Actuarial Assets</b>       |                  |                  |                   |                  |                |                  |
| ASA Balance                   | \$ 1,525,191,799 | \$ 190,148,375   | \$ 1,715,340,174  | \$ 1,102,685,520 | \$ 18,043,209  | \$ 1,120,728,729 |
| ASA Annuities                 | 0                | 1,105,546,776    | 1,105,546,776     | 0                | 86,516,737     | 86,516,737       |
| Pension: Retirees             | 0                | 2,537,464,437    | 2,537,464,437     | 0                | 672,727,439    | 672,727,439      |
| Pension: Non-Retirees         | 0                | 0                | 0                 | 3,155,258,596    | 0              | 3,155,258,596    |
| Total                         | \$ 1,525,191,799 | \$ 3,833,159,588 | \$ 5,358,351,387  | \$ 4,257,944,116 | \$ 777,287,385 | \$ 5,035,231,501 |
| <b>Unfunded AL</b>            |                  |                  |                   |                  |                |                  |
| ASA Balance                   | \$ 0             | \$ 0             | \$ 0              | \$ 0             | \$ 0           | \$ 0             |
| ASA Annuities                 | 0                | 0                | 0                 | 0                | 0              | 0                |
| Pension: Retirees             | 0                | 6,043,379,427    | 6,043,379,427     | 0                | 0              | 0                |
| Pension: Non-Retirees         | 4,953,485,217    | 0                | 4,953,485,217     | 201,761,668      | 0              | 201,761,668      |
| Total                         | \$ 4,953,485,217 | \$ 6,043,379,427 | \$ 10,996,864,644 | \$ 201,761,668   | \$ 0           | \$ 201,761,668   |

|                               | Total Fund        |                   |                   |
|-------------------------------|-------------------|-------------------|-------------------|
|                               | Non-Retired       | Retired           | Total             |
| <b>Accrued Liability (AL)</b> |                   |                   |                   |
| ASA Balance                   | \$ 2,627,877,319  | \$ 208,191,584    | \$ 2,836,068,903  |
| ASA Annuities                 | 0                 | 1,192,063,513     | 1,192,063,513     |
| Pension: Retirees             | 0                 | 9,253,571,303     | 9,253,571,303     |
| Pension: Non-Retirees         | 8,310,505,481     | 0                 | 8,310,505,481     |
| Total                         | \$ 10,938,382,800 | \$ 10,653,826,400 | \$ 21,592,209,200 |
| <b>Market Assets</b>          |                   |                   |                   |
| ASA Balance                   | \$ 2,627,877,319  | \$ 208,191,584    | \$ 2,836,068,903  |
| ASA Annuities                 | 0                 | 1,192,063,513     | 1,192,063,513     |
| Pension: Retirees             | 0                 | 3,353,707,364     | 3,353,707,364     |
| Pension: Non-Retirees         | 3,309,469,425     | 0                 | 3,309,469,425     |
| Total                         | \$ 5,937,346,744  | \$ 4,753,962,461  | \$ 10,691,309,205 |
| <b>Actuarial Assets</b>       |                   |                   |                   |
| ASA Balance                   | \$ 2,627,877,319  | \$ 208,191,584    | \$ 2,836,068,903  |
| ASA Annuities                 | 0                 | 1,192,063,513     | 1,192,063,513     |
| Pension: Retirees             | 0                 | 3,210,191,876     | 3,210,191,876     |
| Pension: Non-Retirees         | 3,155,258,596     | 0                 | 3,155,258,596     |
| Total                         | \$ 5,783,135,915  | \$ 4,610,446,973  | \$ 10,393,582,888 |
| <b>Unfunded AL</b>            |                   |                   |                   |
| ASA Balance                   | \$ 0              | \$ 0              | \$ 0              |
| ASA Annuities                 | 0                 | 0                 | 0                 |
| Pension: Retirees             | 0                 | 6,043,379,427     | 6,043,379,427     |
| Pension: Non-Retirees         | 5,155,246,885     | 0                 | 5,155,246,885     |
| Total                         | \$ 5,155,246,885  | \$ 6,043,379,427  | \$ 11,198,626,312 |

<sup>1</sup> Assets are allocated first to member ASA account liabilities, then to ASA annuity liabilities, then to Pension: Retirees liabilities, and finally to Pension: Non-Retirees liabilities to determine unfunded accrued liabilities.

## Solvency Test

\$ Thousands

| Year Ended June 30      | Accrued Liability           |                            |   |              | Portion of Accrued Liability Covered by Assets |                         |                    |   |        |
|-------------------------|-----------------------------|----------------------------|---|--------------|--|-------------------------|--------------------|---|--------|
|                         | Active Member Contributions | Retirees and Beneficiaries | Active Member (Employer Financed Portion) | Total        | Actuarial Value of Assets                      | Active Member Contribs. | Retirees and Bfcys | Active Member (Employer Financed Portion) | Total  |
| <b>Pre-1996 Account</b> |                             |                            |   |              |  |                         |                    |   |        |
| 2005                    | \$2,925,367                 | \$5,653,502                | \$5,675,278                               | \$14,254,147 | \$5,796,724                                    | 100.0%                  | 50.8%              | 0.0%                                      | 40.7%  |
| 2006                    | \$2,898,891                 | \$6,238,115                | \$5,865,465                               | \$15,002,471 | \$5,477,221                                    | 100.0%                  | 41.3%              | 0.0%                                      | 36.5%  |
| 2007                    | \$3,016,052                 | \$7,063,889                | \$5,908,318                               | \$15,988,259 | \$5,763,508                                    | 100.0%                  | 38.9%              | 0.0%                                      | 36.1%  |
| 2008                    | \$2,613,138                 | \$7,244,422                | \$5,934,745                               | \$15,792,305 | \$5,953,991                                    | 100.0%                  | 46.1%              | 0.0%                                      | 37.7%  |
| 2009                    | \$2,389,886                 | \$7,891,346                | \$5,745,861                               | \$16,027,093 | \$5,109,086                                    | 100.0%                  | 34.5%              | 0.0%                                      | 31.9%  |
| 2010                    | \$2,353,715                 | \$8,153,240                | \$5,775,111                               | \$16,282,066 | \$5,382,410                                    | 100.0%                  | 37.1%              | 0.0%                                      | 33.1%  |
| 2011                    | \$2,015,580                 | \$8,776,916                | \$5,525,908                               | \$16,318,404 | \$5,227,402                                    | 100.0%                  | 36.6%              | 0.0%                                      | 32.0%  |
| 2012                    | \$1,782,353                 | \$9,451,792                | \$5,287,870                               | \$16,522,015 | \$4,978,107                                    | 100.0%                  | 33.8%              | 0.0%                                      | 30.1%  |
| 2013                    | \$1,636,978                 | \$10,254,953               | \$4,570,448                               | \$16,462,379 | \$5,235,104                                    | 100.0%                  | 35.1%              | 0.0%                                      | 31.8%  |
| 2014                    | \$1,525,192                 | \$9,876,539                | \$4,953,485                               | \$16,355,216 | \$5,358,351                                    | 100.0%                  | 38.8%              | 0.0%                                      | 32.8%  |
| <b>1996 Account</b>     |                             |                            |   |              |  |                         |                    |   |        |
| 2005                    | \$535,179                   | \$219,722                  | \$1,255,845                               | \$2,010,746  | \$1,268,575                                    | 100.0%                  | 100.0%             | 40.9%                                     | 63.1%  |
| 2006                    | \$602,051                   | \$282,638                  | \$1,478,412                               | \$2,363,101  | \$2,209,468                                    | 100.0%                  | 100.0%             | 89.6%                                     | 93.5%  |
| 2007                    | \$656,918                   | \$449,452                  | \$1,721,184                               | \$2,827,554  | \$2,713,051                                    | 100.0%                  | 100.0%             | 93.3%                                     | 95.9%  |
| 2008                    | \$649,840                   | \$514,933                  | \$1,792,985                               | \$2,957,758  | \$3,080,057                                    | 100.0%                  | 100.0%             | 100.0%                                    | 104.1% |
| 2009                    | \$655,843                   | \$432,942                  | \$2,046,748                               | \$3,135,533  | \$2,920,735                                    | 100.0%                  | 100.0%             | 89.5%                                     | 93.1%  |
| 2010                    | \$750,575                   | \$483,117                  | \$2,380,867                               | \$3,614,559  | \$3,422,554                                    | 100.0%                  | 100.0%             | 91.9%                                     | 94.7%  |
| 2011                    | \$840,341                   | \$562,445                  | \$2,594,053                               | \$3,996,839  | \$3,664,657                                    | 100.0%                  | 100.0%             | 87.2%                                     | 91.7%  |
| 2012                    | \$882,942                   | \$662,558                  | \$2,792,809                               | \$4,338,309  | \$3,936,455                                    | 100.0%                  | 100.0%             | 85.6%                                     | 90.7%  |
| 2013                    | \$975,309                   | \$798,486                  | \$2,975,573                               | \$4,749,368  | \$4,453,828                                    | 100.0%                  | 100.0%             | 90.1%                                     | 93.8%  |
| 2014                    | \$1,102,686                 | \$777,287                  | \$3,357,020                               | \$5,236,993  | \$5,035,232                                    | 100.0%                  | 100.0%             | 94.0%                                     | 96.1%  |
| <b>Total Fund</b>       |                             |                            |   |              |  |                         |                    |   |        |
| 2005                    | \$3,460,546                 | \$5,873,224                | \$6,931,123                               | \$16,264,893 | \$7,065,299                                    | 100.0%                  | 61.4%              | 0.0%                                      | 43.4%  |
| 2006                    | \$3,500,942                 | \$6,520,753                | \$7,343,877                               | \$17,365,572 | \$7,686,689                                    | 100.0%                  | 64.2%              | 0.0%                                      | 44.3%  |
| 2007                    | \$3,672,970                 | \$7,513,341                | \$7,629,502                               | \$18,815,813 | \$8,476,559                                    | 100.0%                  | 63.9%              | 0.0%                                      | 45.1%  |
| 2008                    | \$3,262,978                 | \$7,759,355                | \$7,727,730                               | \$18,750,063 | \$9,034,048                                    | 100.0%                  | 74.4%              | 0.0%                                      | 48.2%  |
| 2009                    | \$3,045,729                 | \$8,324,288                | \$7,792,609                               | \$19,162,626 | \$8,029,821                                    | 100.0%                  | 59.9%              | 0.0%                                      | 41.9%  |
| 2010                    | \$3,104,290                 | \$8,636,357                | \$8,155,978                               | \$19,896,625 | \$8,804,964                                    | 100.0%                  | 66.0%              | 0.0%                                      | 44.3%  |
| 2011                    | \$2,855,921                 | \$9,339,361                | \$8,119,961                               | \$20,315,243 | \$8,892,059                                    | 100.0%                  | 64.6%              | 0.0%                                      | 43.8%  |
| 2012                    | \$2,665,295                 | \$10,114,350               | \$8,080,679                               | \$20,860,324 | \$8,914,562                                    | 100.0%                  | 61.8%              | 0.0%                                      | 42.7%  |
| 2013                    | \$2,612,287                 | \$11,053,439               | \$7,546,021                               | \$21,211,747 | \$9,688,932                                    | 100.0%                  | 64.0%              | 0.0%                                      | 45.7%  |
| 2014                    | \$2,627,878                 | \$10,653,826               | \$8,310,505                               | \$21,592,209 | \$10,393,583                                   | 100.0%                  | 72.9%              | 0.0%                                      | 48.1%  |

## ***Analysis of Financial Experience<sup>1</sup>***

| <b>\$Thousands</b>  | <b>Pre-1996<br/>Account</b> | <b>1996<br/>Account</b> | <b>Total<br/>Fund</b> |
|---|-----------------------------|-------------------------|-----------------------|
| <b>6/30/2013 Unfunded Accrued Liability</b>                           | <b>\$ 11,227,275</b>        | <b>\$ 295,540</b>       | <b>\$ 11,522,815</b>  |
| <b>(Gain) / Loss:</b>   |                             |                         |                       |
| Actuarial Value of Assets   | \$ (105,699)                | \$ (74,202)             | \$ (179,901)          |
| Actuarial Accrued Liabilities   | 4,682                       | 7,204                   | 11,886                |
| Amortization of Existing Bases  | (28,669)                    | (15,576)                | (44,245)              |
| Additional Liability due to<br>Cost-of-Living Adjustment <sup>2</sup> | (75,200)                    | (6,700)                 | (81,900)              |
| Plan Provision Change <sup>3</sup>                                    | <u>(25,524)</u>             | <u>(4,504)</u>          | <u>(30,028)</u>       |
| Net Change  | \$ (230,410)                | \$ (93,778)             | \$ (324,188)          |
| <b>6/30/2014 Unfunded Accrued Liability</b>                           | <b>\$ 10,996,865</b>        | <b>\$ 201,762</b>       | <b>\$ 11,198,627</b>  |

<sup>1</sup> Based on pension and ASA annuities only, i.e. net of ASA account balances.

<sup>2</sup> 13<sup>th</sup> check to retirees in lieu of the assumed 2015 1.0% COLA.

<sup>3</sup> Recognition of cost of future ASA account conversions to annuities from October 1, 2014 through December 31, 2016 at conversion interest rates lower than the valuation interest rate of 6.75%.

**Sensitivity to Changes in Assumed Investment Return / Interest Rate**

**Pre-1996 Account**

| <b>\$Millions</b>                        | <b>Assumed Investment Return / Interest Rate</b> |                |                |                |                |
|--|--|----------------|----------------|----------------|----------------|
|  | <b>6.00%</b>                                     | <b>6.50%</b>   | <b>6.75%</b>   | <b>7.50%</b>   | <b>8.00%</b>   |
| <b>Funded Status</b>                     |  |                |                |                |                |
| Actuarial Accrued Liability              | \$ 17,453.0                                      | \$ 16,712.4    | \$ 16,355.2    | \$ 15,393.7    | \$ 14,788.0    |
| Actuarial Value of Assets                | <u>5,358.4</u>                                   | <u>5,358.4</u> | <u>5,358.4</u> | <u>5,358.4</u> | <u>5,358.4</u> |
| Unfunded Accrued Liability               | \$ 12,094.6                                      | \$ 11,354.0    | \$ 10,996.9    | \$ 10,035.3    | \$ 9,429.6     |
| Funded Ratio                             | 30.7%  | 32.1%          | 32.8%          | 34.8%          | 36.2%          |
| <b>Annual Required Contribution Rate</b> |  |                |                |                |                |
| Normal Cost %                            | 5.60%  | 4.86%          | 4.53%          | 3.66%          | 3.18%          |
| UAL Amortization %                       | <u>69.43%</u>                                    | <u>68.23%</u>  | <u>67.57%</u>  | <u>65.35%</u>  | <u>63.68%</u>  |
| Annual Required Contribution %           | 75.03%   | 73.09%         | 72.10%         | 69.01%         | 66.86%         |

**1996 Account**

| <b>\$Millions</b>                        | <b>Assumed Investment Return / Interest Rate</b> |                |                |                |                |
|--|--|----------------|----------------|----------------|----------------|
|  | <b>6.00%</b>                                     | <b>6.50%</b>   | <b>6.75%</b>   | <b>7.50%</b>   | <b>8.00%</b>   |
| <b>Funded Status</b>                     |  |                |                |                |                |
| Actuarial Accrued Liability              | \$ 5,783.4                                       | \$ 5,411.6     | \$ 5,237.0     | \$ 4,777.0     | \$ 4,499.3     |
| Actuarial Value of Assets                | <u>5,035.2</u>                                   | <u>5,035.2</u> | <u>5,035.2</u> | <u>5,035.2</u> | <u>5,035.2</u> |
| Unfunded Accrued Liability               | \$ 748.2   | \$ 376.4       | \$ 201.8       | \$ (258.2)     | \$ (535.9)     |
| Funded Ratio                             | 87.1%  | 93.0%          | 96.1%          | 105.4%         | 111.9%         |
| <b>Annual Required Contribution Rate</b> |  |                |                |                |                |
| Normal Cost %                            | 7.01%  | 6.12%          | 5.72%          | 4.67%          | 4.07%          |
| UAL Amortization %                       | <u>1.79%</u>                                     | <u>0.96%</u>   | <u>0.54%</u>   | <u>-0.73%</u>  | <u>-1.59%</u>  |
| Annual Required Contribution %           | 8.80%  | 7.08%          | 6.26%          | 3.94%          | 2.48%          |

## **Calculated Employer Contribution Rate**

### **1996 Account**

|  | <u>6/30/2014</u>      | <u>% of<br/>Projected Payroll<br/>for Fiscal 2015</u> |
|--|-----------------------|---|
| Normal Cost                                  | \$ 170,892,424        | 5.72%   |
| Amortization of Unfunded Accrued Liability   |                       |   |
| Unfunded Accrued Liability (UAL)*            | \$ 201,761,668        |   |
| Unamortized UAL from Prior Years             | <u>291,186,066</u>    |   |
| Net Unamortized UAL                          | \$ (89,424,398)       |   |
| Amortization Factor (30-years, level dollar) | 13.5862               |   |
| Current Year Amortization Payment            | \$ (6,582,002)        |   |
| Payments Established in Prior Years          | <u>22,766,759</u>     |   |
| Total Amortization Payments                  | \$ 16,184,757         | 0.54%   |
| <b>Calculated Employer Contribution Rate</b> | <b>\$ 187,077,181</b> | <b>6.26%</b>  |
| Projected Fiscal 2016 Payroll                | \$ 3,226,300,000      |   |
| Projected Fiscal 2016 ARC                    | \$ 201,966,380        |   |

### **Pre-1996 Account**

|  | <u>Fiscal 2015</u>    | <u>Fiscal 2016</u>    |
|--|-----------------------|-----------------------|
| <b>Expected Pension Benefit Payments</b> | <b>\$ 956,300,000</b> | <b>\$ 960,100,000</b> |
| <b>Expected Pension Contributions</b>    | <b>\$ 835,900,000</b> | <b>\$ 859,900,000</b> |

The Pre-1996 Account is funded on a pay-as-you-go basis. The figures shown above reflect the expected defined benefit pension payments (excluding ASA annuities) and contributions to be made during fiscal year 2015 and fiscal year 2016.

The calculation of the Annual Required Contribution (ARC) included in the GASB section is shown below.

### **Fiscal 2016 Annual Required Contribution (ARC)**

|  |                       |
|--|-----------------------|
| Normal Cost                                  | \$ 57,750,841         |
| Amortization of Unfunded Accrued Liability   |                       |
| Unfunded Accrued Liability (UAL)*            | \$ 10,996,864,644     |
| Unamortized UAL from Prior Years             | <u>11,060,060,431</u> |
| Net Unamortized UAL                          | \$ (63,195,787)       |
| Amortization Factor (30-years, level dollar) | 13.5862               |
| Current Year Amortization Payment            | \$ (4,651,469)        |
| Payments Established in Prior Years          | <u>866,562,475</u>    |
| Total Amortization Payments                  | \$ 861,911,006        |
| 6/30/2014 Annual Required Contribution (ARC) | \$ 919,661,847        |
| ARC as Percent of Payroll                    | 72.10%                |
| Projected Fiscal 2016 Payroll                | \$ 1,173,000,000      |
| Projected Fiscal 2016 ARC                    | \$ 845,733,000        |

\* Pension and ASA annuity only

**GASB Statements No. 25 and No. 27**

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**Required Supplementary Information**

Under the Governmental Accounting Standards Board (GASB) Statements No. 25 and No. 27, certain information about the plan is required to be disclosed. The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

|                            |  |
|----------------------------|--|
| Valuation Date             | June 30, 2014                                  |
| Actuarial Cost Method      | Entry Age Normal (Level Percent of Pay)        |
| Amortization Method        | Level Dollar                                   |
| Amortization Period        | 30 Years, Closed                               |
| Asset Valuation Method     | 4-Year Smoothed Market Value with 20% Corridor |
| Actuarial Assumptions:     |  |
| Investment Rate of Return  | 6.75%  |
| Projected Pay Increases    | 3.00 – 12.50% (includes 3.00% wage inflation)  |
| Cost-of-Living Adjustments | 1.0% Compounded Annually on Pension Portion    |

Membership in the plan consisted of the following at June 30, 2013, the date of the latest census collection date:

|   |                    |
|---|--------------------|
|   | <b><u>2013</u></b> |
| Retired Members and Beneficiaries Receiving Benefits        | 53,010             |
| Inactive Members Entitled to but Not Yet Receiving Benefits |                    |
| Vested  | 6,417              |
| Nonvested   | 11,693             |
| Active Members  | <u>70,414</u>      |
| Total   | 141,534            |

**GASB Statements No. 25 and No. 27**

**Required Supplementary Information**

**Schedule of Funding Progress**

| Valuation Date<br>June 30 | Actuarial Value of Assets<br>(a) | Entry Age Accrued Liability<br>(b) | Unfunded Accrued Liability (UAL)<br>(b) - (a) | Funded Ratio<br>(a) / (b) | Covered Payroll<br>(c) | UAL as a % of Covered Payroll<br>[(b) - (a)] / (c) |
|---------------------------|----------------------------------|------------------------------------|---|---------------------------|------------------------|--|
| 1996                      | \$ 3,262,619,379                 | \$ 10,330,788,316                  | \$ 7,068,168,937                              | 31.6%                     | \$ 2,878,329,486       | 245.6%   |
| 1997                      | 3,750,138,439                    | 11,044,660,156                     | 7,294,521,717                                 | 34.0                      | 2,984,603,913          | 244.4  |
| 1998                      | 4,266,312,063                    | 11,780,174,095                     | 7,513,862,032                                 | 36.2                      | 3,094,940,606          | 242.8  |
| 1999                      | 4,970,720,334                    | 12,670,924,443                     | 7,700,204,109                                 | 39.2                      | 3,294,326,130          | 233.7  |
| 2000                      | 5,578,046,785                    | 13,115,065,443                     | 7,537,018,658                                 | 42.5                      | 3,192,604,492          | 236.1  |
| 2001                      | 5,810,759,564                    | 13,523,825,973                     | 7,713,066,409                                 | 43.0                      | 3,318,877,027          | 232.4  |
| 2002                      | 6,176,574,529                    | 14,664,661,236                     | 8,488,086,707                                 | 42.1                      | 3,609,470,436          | 235.2  |
| 2003                      | 6,554,364,927                    | 14,747,339,056                     | 8,192,974,129                                 | 44.4                      | 3,585,134,913          | 228.5  |
| 2004                      | 6,804,394,627                    | 15,197,925,988                     | 8,393,531,361                                 | 44.8                      | 3,651,653,125          | 229.9  |
| 2005                      | 7,065,299,476                    | 16,264,893,444                     | 9,199,593,968                                 | 43.4                      | 3,734,329,113          | 246.4  |
| 2006                      | 7,686,688,965                    | 17,365,572,132                     | 9,678,883,167                                 | 44.3                      | 3,802,721,221          | 254.5  |
| 2007                      | 8,476,559,086                    | 18,815,812,935                     | 10,339,253,849                                | 45.1                      | 4,267,995,166          | 242.3  |
| 2008                      | 9,034,047,394                    | 18,750,062,742                     | 9,716,015,348                                 | 48.2                      | 4,348,535,867          | 223.4  |
| 2009                      | 8,029,820,891                    | 19,162,625,560                     | 11,132,804,669                                | 41.9                      | 4,339,032,221          | 256.6  |
| 2010                      | 8,804,963,622                    | 19,896,625,065                     | 11,091,661,443                                | 44.3                      | 4,312,610,704          | 257.2  |
| 2011                      | 8,892,059,345                    | 20,315,242,855                     | 11,423,183,510                                | 43.8                      | 4,269,943,587          | 267.5  |
| 2012                      | 8,914,561,574                    | 20,860,323,537                     | 11,945,761,963                                | 42.7                      | 4,232,018,389          | 282.3  |
| 2013                      | 9,688,931,998                    | 21,211,747,412                     | 11,522,815,414                                | 45.7                      | 4,124,367,980          | 279.4  |
| 2014                      | 10,393,582,888                   | 21,592,209,200                     | 11,198,626,312                                | 48.1                      | 4,262,900,000          | 262.7  |

**Schedule of Employer Contributions**

| Fiscal Year Ending | Valuation Date<br>June 30 | Annual Required Contribution | Actual Employer Contribution | Percentage Contributed |
|--------------------|---------------------------|------------------------------|------------------------------|------------------------|
| 1998               | 1996                      | \$ 508,940,065               | \$ 465,350,488               | 91.4%                  |
| 1999               | 1997                      | 508,259,679                  | 612,349,218                  | 120.5                  |
| 2000               | 1998                      | 524,815,537                  | 647,441,260                  | 123.4                  |
| 2001               | 1999                      | 547,532,673                  | 689,219,756                  | 125.9                  |
| 2002               | 2000                      | 537,789,669                  | 566,226,658                  | 105.3                  |
| 2003               | 2001                      | 572,226,197                  | 602,231,775                  | 105.2                  |
| 2004               | 2002                      | 638,541,074                  | 438,180,343                  | 68.6                   |
| 2005               | 2003                      | 619,186,005                  | 484,778,888                  | 78.3                   |
| 2006               | 2004                      | 672,555,533                  | 701,340,085                  | 104.3                  |
| 2007               | 2005                      | 742,882,002                  | 753,039,657                  | 101.4                  |
| 2008               | 2006                      | 800,059,308                  | 808,128,686                  | 101.0                  |
| 2009               | 2007                      | 819,638,258                  | 853,790,969                  | 104.2                  |
| 2010               | 2008                      | 952,120,349                  | 885,639,968                  | 93.0                   |
| 2011               | 2009                      | 1,048,649,181                | 915,611,470                  | 87.3                   |
| 2012               | 2010                      | 1,039,857,902                | 945,489,915                  | 90.9                   |
| 2013               | 2011                      | 1,041,062,060                | 1,193,794,347                | 114.7                  |
| 2014               | 2012                      | 1,056,783,240                | 1,026,692,363                | 97.2                   |
| 2015               | 2013                      | 1,056,687,100                |                              |                        |
| 2016               | 2014                      | 1,047,699,380                |                              |                        |

***GASB Statements No. 25 and No. 27***

**Development of the Net Pension Obligation (NPO)**

**Pre-1996 Account**

| \$000's     | (1)        | (2)             | (3)                      | (4)                 | (5)                      | (6)                          | (7)                     | (8)        | (9)                  |
|-------------|------------|-----------------|--------------------------|---------------------|--------------------------|------------------------------|-------------------------|------------|----------------------|
| Fiscal Year | ARC        | Interest on NPO | ARC Adjustment (8) / (4) | Amortization Factor | Net Cost (1) + (2) - (3) | Actual Employer Contribution | Change in NPO (5) - (6) | NPO at BOY | NPO at EOY (7) + (8) |
| 1988        | \$ 214,776 | \$ 0            | \$ 0                     | 12.5944             | \$ 214,776               | \$ 149,987                   | \$ 64,789               | \$ 0       | \$ 64,789            |
| 1989        | 236,695    | 4,859           | 5,144                    | 12.5944             | 236,410                  | 162,431                      | 73,979                  | 64,789     | 138,768              |
| 1990        | 236,695    | 10,408          | 11,018                   | 12.5944             | 236,084                  | 201,260                      | 34,824                  | 138,768    | 173,592              |
| 1991        | 319,429    | 13,019          | 13,783                   | 12.5944             | 318,665                  | 241,400                      | 77,265                  | 173,592    | 250,857              |
| 1992        | 357,575    | 18,814          | 19,918                   | 12.5944             | 356,471                  | 206,626                      | 149,845                 | 250,857    | 400,703              |
| 1993        | 394,291    | 30,053          | 31,816                   | 12.5944             | 392,528                  | 204,081                      | 188,447                 | 400,703    | 589,149              |
| 1994        | 416,022    | 44,186          | 46,779                   | 12.5944             | 413,430                  | 230,795                      | 182,635                 | 589,149    | 771,784              |
| 1995        | 436,399    | 57,884          | 61,280                   | 12.5944             | 433,003                  | 239,177                      | 193,826                 | 771,784    | 965,610              |
| 1996        | 456,847    | 72,421          | 76,670                   | 12.5944             | 452,598                  | 307,337                      | 145,261                 | 965,610    | 1,110,871            |
| 1997        | 481,927    | 83,315          | 88,204                   | 12.5944             | 477,039                  | 519,844                      | (42,805)                | 1,110,871  | 1,068,065            |
| 1998        | 502,040    | 80,105          | 84,805                   | 12.5944             | 497,340                  | 436,138                      | 61,202                  | 1,068,065  | 1,129,268            |
| 1999        | 484,671    | 84,695          | 89,664                   | 12.5944             | 479,702                  | 571,157                      | (91,455)                | 1,129,268  | 1,037,812            |
| 2000        | 486,946    | 77,836          | 82,403                   | 12.5944             | 482,379                  | 593,045                      | (110,666)               | 1,037,812  | 927,147              |
| 2001        | 494,779    | 69,536          | 73,616                   | 12.5944             | 490,699                  | 623,982                      | (133,283)               | 927,147    | 793,864              |
| 2002        | 474,274    | 59,540          | 63,312                   | 12.5390             | 470,502                  | 482,681                      | (12,179)                | 793,864    | 781,685              |
| 2003        | 496,034    | 58,626          | 62,638                   | 12.4794             | 492,022                  | 508,148                      | (16,126)                | 781,685    | 765,559              |
| 2004        | 532,326    | 57,417          | 61,662                   | 12.4154             | 528,081                  | 357,799                      | 170,282                 | 765,559    | 935,841              |
| 2005        | 516,267    | 70,188          | 75,798                   | 12.3465             | 510,657                  | 394,387                      | 116,270                 | 935,841    | 1,052,111            |
| 2006        | 556,460    | 78,908          | 89,083                   | 11.8104             | 546,285                  | 601,259                      | (54,974)                | 1,052,111  | 997,137              |
| 2007        | 602,904    | 74,785          | 85,253                   | 11.6962             | 592,436                  | 636,039                      | (43,603)                | 997,137    | 953,534              |
| 2008        | 678,050    | 71,515          | 82,390                   | 11.5734             | 667,175                  | 675,682                      | (8,507)                 | 953,534    | 945,027              |
| 2009        | 700,307    | 70,877          | 80,017                   | 11.8104             | 691,168                  | 706,366                      | (15,198)                | 945,027    | 929,829              |
| 2010        | 850,493    | 69,737          | 78,730                   | 11.8104             | 841,500                  | 727,766                      | 113,734                 | 929,829    | 1,043,563            |
| 2011        | 894,507    | 73,049          | 84,097                   | 12.4090             | 883,459                  | 748,978                      | 134,481                 | 1,043,563  | 1,178,044            |
| 2012        | 866,207    | 82,463          | 94,935                   | 12.4090             | 853,735                  | 764,423                      | 89,312                  | 1,178,044  | 1,267,356            |
| 2013        | 873,751    | 85,547          | 99,579                   | 12.7272             | 859,719                  | 1,013,080                    | (153,361)               | 1,267,356  | 1,113,995            |
| 2014        | 879,072    | 75,195          | 87,529                   | 12.7272             | 866,738                  | 831,941                      | 34,797                  | 1,113,995  | 1,148,792            |

**1996 Account**

| \$000's     | (1)      | (2)             | (3)                      | (4)                 | (5)                      | (6)                          | (7)                     | (8)        | (9)                  |
|-------------|----------|-----------------|--------------------------|---------------------|--------------------------|------------------------------|-------------------------|------------|----------------------|
| Fiscal Year | ARC      | Interest on NPO | ARC Adjustment (8) / (4) | Amortization Factor | Net Cost (1) + (2) - (3) | Actual Employer Contribution | Change in NPO (5) - (6) | NPO at BOY | NPO at EOY (7) + (8) |
| 1998        | \$ 6,900 | \$ 0            | \$ 0                     | 12.5944             | \$ 6,900                 | \$ 29,212                    | \$ (22,312)             | \$ 0       | \$ (22,312)          |
| 1999        | 23,589   | (1,673)         | (1,772)                  | 12.5944             | 23,688                   | 41,192                       | (17,504)                | (22,312)   | (39,816)             |
| 2000        | 37,870   | (2,986)         | (3,161)                  | 12.5944             | 38,045                   | 54,396                       | (16,351)                | (39,816)   | (56,167)             |
| 2001        | 52,754   | (4,213)         | (4,460)                  | 12.5944             | 53,001                   | 65,238                       | (12,237)                | (56,167)   | (68,404)             |
| 2002        | 63,516   | (5,130)         | (5,455)                  | 12.5390             | 63,841                   | 83,546                       | (19,705)                | (68,404)   | (88,109)             |
| 2003        | 76,192   | (6,608)         | (7,060)                  | 12.4794             | 76,644                   | 94,083                       | (17,439)                | (88,109)   | (105,548)            |
| 2004        | 106,215  | (7,916)         | (8,501)                  | 12.4154             | 106,800                  | 80,381                       | 26,419                  | (105,548)  | (79,129)             |
| 2005        | 102,919  | (5,935)         | (6,409)                  | 12.3465             | 103,393                  | 90,392                       | 13,001                  | (79,129)   | (66,128)             |
| 2006        | 116,096  | (4,960)         | (5,599)                  | 11.8104             | 116,735                  | 100,081                      | 16,654                  | (66,128)   | (49,474)             |
| 2007        | 139,978  | (3,711)         | (4,230)                  | 11.6962             | 140,497                  | 117,001                      | 23,496                  | (49,474)   | (25,978)             |
| 2008        | 122,009  | (1,948)         | (2,245)                  | 11.5734             | 122,306                  | 132,447                      | (10,141)                | (25,978)   | (36,119)             |
| 2009        | 119,331  | (2,709)         | (3,058)                  | 11.8104             | 119,680                  | 147,425                      | (27,745)                | (36,119)   | (63,864)             |
| 2010        | 101,627  | (4,790)         | (5,407)                  | 11.8104             | 102,244                  | 157,874                      | (55,630)                | (63,864)   | (119,494)            |
| 2011        | 154,142  | (8,365)         | (9,630)                  | 12.4090             | 155,407                  | 166,633                      | (11,226)                | (119,494)  | (130,720)            |
| 2012        | 173,651  | (9,150)         | (10,534)                 | 12.4090             | 175,035                  | 181,067                      | (6,032)                 | (130,720)  | (136,752)            |
| 2013        | 167,311  | (9,231)         | (10,745)                 | 12.7272             | 168,825                  | 180,714                      | (11,889)                | (136,752)  | (148,641)            |
| 2014        | 177,711  | (10,033)        | (11,679)                 | 12.7272             | 179,357                  | 194,751                      | (15,394)                | (148,641)  | (164,035)            |

ARC = Annual Required Contribution  
 BOY = Beginning of Year  
 EOY = End of Year

Additional Information:

Annual actuarial valuation reports not issued for FY1988 & FY1990 – valuations conducted bi-annually prior to FY1991.  
 Assumed 40-year amortization period for FY1988 – FY1997 since annual actuarial valuation reports were not retained prior to FY1998.



***GASB Statements No. 25 and No. 27***

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**Statement of Net Position**

**Assets**

|   |                          |
|---|--------------------------|
| Cash  | \$ 2,407,632             |
| Receivables:                                    |                          |
| Contributions Receivable                        | \$ 2,050,717             |
| Miscellaneous Receivables                       | 374,470                  |
| Investments Receivable                          | 165,222,392              |
| Foreign Exchange Contracts Receivable           | 1,320,529,749            |
| Accrued Interest and Dividends                  | 31,018,257               |
| Due From Other Funds                            | <u>2,141,004</u>         |
| Total Receivables                               | \$ 1,521,336,589         |
| Investments:                                    |                          |
| Short Term Investments                          | \$ 26,497,456            |
| Pooled Unit Trust Assets                        |                          |
| Repurchase Agreements                           | 0                        |
| Short Term Investments                          | 430,492,358              |
| Fixed Income                                    | 4,514,274,983            |
| Equities  | 2,939,149,116            |
| Alternative Investments                         | 2,953,276,451            |
| Derivatives                                     | 8,997,917                |
| Securities Lending Collateral                   | <u>699,934,518</u>       |
| Total Investments                               | \$ 11,572,622,799        |
| Other Assets                                    | \$ 0                     |
| Gross Capitalized Assets                        | \$ 4,965,210             |
| Less: Accumulated Depreciation and Amortization | <u>(2,700,966)</u>       |
| Net Capitalized Assets                          | \$ 2,264,244             |
| <b>Total Assets</b>                             | <b>\$ 13,098,631,264</b> |

**Liabilities**

|   |                         |
|---|-------------------------|
| Accounts Payable                              | \$ 1,174,284            |
| Retirement Benefits Payable                   | 91,127,386              |
| Salaries and Benefits Payable                 | 0                       |
| Investments Payable                           | 210,704,834             |
| Foreign Exchange Contracts Payable            | 1,327,029,575           |
| Securities Lending Obligations                | 699,934,518             |
| Securities Sold Under Agreement to Repurchase | 72,940,508              |
| Due to Other Funds                            | <u>4,410,954</u>        |
| <b>Total Liabilities</b>                      | <b>\$ 2,407,322,059</b> |

**Net Position Restricted for Pension Benefits** **\$ 10,691,309,205**

**GASB Statements No. 25 and No. 27**

**Statement of Changes in Net Position**

**Additions**

Contributions:

|                                  |                    |
|----------------------------------|--------------------|
| Member Contributions             | \$ 128,829,524     |
| Employer Contributions           | 201,076,363        |
| Non Employer Contributing Entity | <u>825,616,000</u> |
| Total Contributions              | \$ 1,155,521,887   |

Investment Income:

|   |                  |
|---|------------------|
| Net Appreciation / (Depreciation) Fair Value of Investments | \$ 1,142,782,516 |
| Other Net Investment Income                                 | 1,582,071        |
| Net Interest and Dividends Income                           | 150,964,147      |
| Securities Lending Income                                   | <u>1,324,461</u> |
| Total Investment Income                                     | \$ 1,296,653,195 |

Less Direct Investment Expenses:

|                                  |                    |
|----------------------------------|--------------------|
| Investment Management Fees       | \$ (57,391,478)    |
| Securities Lending Fees          | (183,282)          |
| Direct Investment Expenses       | <u>(4,712,821)</u> |
| Total Direct Investment Expenses | \$ (62,287,581)    |

Net Investment Income / (Loss) \$ 1,234,365,614

Other Additions:

|                       |                   |
|-----------------------|-------------------|
| Miscellaneous         | \$ 39,647         |
| Interfund Transfers   | <u>12,133,984</u> |
| Total Other Additions | \$ 12,173,631     |

**Total Additions \$ 2,402,061,132**

**Deductions**

|   |                                |
|---|--------------------------------|
| Pension and Disability Benefits             | \$ 1,318,851,689               |
| Special Death Benefits                      | 0                              |
| Distributions of Contributions and Interest | 19,168,900                     |
| Pension Relief Distributions                | 0                              |
| Local Unit Withdrawals                      | 0                              |
| Administrative Expenses                     | 10,932,570                     |
| Project Expenses                            | 2,785,739                      |
| Interfund Transfers                         | <u>7,891,779</u>               |
| <b>Total Deductions</b>                     | <b><u>\$ 1,359,630,677</u></b> |

**Net Increase / (Decrease) \$ 1,042,430,455**

Beginning Net Position Restricted for Pension Benefits \$ 9,648,878,750

**Ending Net Position Restricted for Pension Benefits \$ 10,691,309,205**

## ***Member Data***

The tables below summarize the member data used in the valuation. The June 30, 2014 valuation is based on June 30, 2013 census data, with liabilities rolled-forward to the June 30, 2014 measurement date. The data summarized in this section is as of the June 30, 2013 census collection date. The pages that follow show various distributions of the member groups.

### **Pre-1996 Account**

|   | <b>Males</b>  | <b>Females</b> | <b>Total</b>  |
|---|---------------|----------------|---------------|
| <b>Number of Actives</b>                    | <b>4,963</b>  | <b>14,247</b>  | <b>19,210</b> |
| - Average Age                               | 54.9          | 54.6           | 54.7          |
| - Average Service                           | 28.6          | 26.8           | 27.3          |
| - Average Pay                               | \$ 77,347     | \$ 70,146      | \$ 72,006     |
| <b>Number of Inactive Vesteds</b>           | <b>757</b>    | <b>2,557</b>   | <b>3,314</b>  |
| - Average Age                               | 57.0          | 57.1           | 57.1          |
| - Average Service                           | 22.6          | 20.5           | 21.0          |
| <b>Number of Inactive Nonvesteds</b>        | <b>109</b>    | <b>437</b>     | <b>546</b>    |
| <b>Number of Retirees and Beneficiaries</b> | <b>16,597</b> | <b>32,748</b>  | <b>49,345</b> |
| - Average Age                               | 72.3          | 72.3           | 72.3          |
| - Average Years Retired                     | 12.8          | 12.6           | 12.6          |
| - Average Monthly Annuity                   | \$ 222        | \$ 176         | \$ 191        |
| - Average Monthly Pension                   | \$ 1,610      | \$ 1,373       | \$ 1,453      |
| <b>Total Number of Members</b>              | <b>22,426</b> | <b>49,989</b>  | <b>72,415</b> |

### **1996 Account**

|   | <b>Males</b>  | <b>Females</b> | <b>Total</b>  |
|---|---------------|----------------|---------------|
| <b>Number of Actives</b>                    | <b>13,572</b> | <b>37,632</b>  | <b>51,204</b> |
| - Average Age                               | 39.3          | 39.3           | 39.3          |
| - Average Service                           | 10.3          | 9.6            | 9.8           |
| - Average Pay                               | \$ 58,798     | \$ 51,622      | \$ 53,524     |
| <b>Number of Inactive Vesteds</b>           | <b>795</b>    | <b>2,308</b>   | <b>3,103</b>  |
| - Average Age                               | 49.4          | 51.2           | 50.8          |
| - Average Service                           | 15.8          | 14.8           | 15.1          |
| <b>Number of Inactive Nonvesteds</b>        | <b>2,530</b>  | <b>8,617</b>   | <b>11,147</b> |
| <b>Number of Retirees and Beneficiaries</b> | <b>1,298</b>  | <b>2,367</b>   | <b>3,665</b>  |
| - Average Age                               | 66.6          | 66.2           | 66.3          |
| - Average Years Retired                     | 6.7           | 5.8            | 6.1           |
| - Average Monthly Annuity                   | \$ 200        | \$ 141         | \$ 162        |
| - Average Monthly Pension                   | \$ 1,678      | \$ 1,194       | \$ 1,366      |
| <b>Total Number of Members</b>              | <b>18,195</b> | <b>50,924</b>  | <b>69,119</b> |

### **Total Fund**

|   | <b>Males</b>  | <b>Females</b> | <b>Total</b>   |
|---|---------------|----------------|----------------|
| <b>Number of Actives</b>                    | <b>18,535</b> | <b>51,879</b>  | <b>70,414</b>  |
| - Average Age                               | 43.5          | 43.5           | 43.5           |
| - Average Service                           | 15.2          | 14.3           | 14.6           |
| - Average Pay                               | \$ 63,765     | \$ 56,709      | \$ 58,566      |
| <b>Number of Inactive Vesteds</b>           | <b>1,552</b>  | <b>4,865</b>   | <b>6,417</b>   |
| - Average Age                               | 53.1          | 54.3           | 54.0           |
| - Average Service                           | 19.1          | 17.8           | 18.1           |
| <b>Number of Inactive Nonvesteds</b>        | <b>2,639</b>  | <b>9,054</b>   | <b>11,693</b>  |
| <b>Number of Retirees and Beneficiaries</b> | <b>17,895</b> | <b>35,115</b>  | <b>53,010</b>  |
| - Average Age                               | 71.9          | 71.9           | 71.9           |
| - Average Years Retired                     | 12.3          | 12.1           | 12.2           |
| - Average Monthly Annuity                   | \$ 220        | \$ 174         | \$ 189         |
| - Average Monthly Pension                   | \$ 1,615      | \$ 1,361       | \$ 1,447       |
| <b>Total Number of Members</b>              | <b>40,621</b> | <b>100,913</b> | <b>141,534</b> |

**Active Members: Pre-1996 Account**

**By Attained Age and Years of Service**

| Attained Age | Years of Service to Valuation Date |     |       |       |       |       |       | Total  |
|--------------|------------------------------------|-----|-------|-------|-------|-------|-------|--------|
|              | 0-4                                | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+   |        |
| 15-19        | -                                  | -   | -     | -     | -     | -     | -     | -      |
| 20-24        | -                                  | -   | -     | -     | -     | -     | -     | -      |
| 25-29        | 2                                  | -   | -     | -     | -     | -     | -     | 2      |
| 30-34        | -                                  | -   | -     | -     | -     | -     | -     | -      |
| 35-39        | 3                                  | 4   | 1     | 11    | 1     | -     | -     | 20     |
| 40-44        | 71                                 | 85  | 81    | 829   | 579   | 3     | -     | 1,648  |
| 45-49        | 31                                 | 84  | 106   | 407   | 1,698 | 682   | 1     | 3,009  |
| 50-54        | 14                                 | 41  | 60    | 263   | 827   | 2,318 | 677   | 4,200  |
| 55-59        | 13                                 | 38  | 38    | 252   | 774   | 1,142 | 2,877 | 5,134  |
| 60-64        | 18                                 | 26  | 27    | 167   | 523   | 685   | 2,788 | 4,234  |
| 65-69        | 10                                 | 16  | 17    | 36    | 92    | 109   | 584   | 864    |
| 70-74        | 1                                  | 2   | 3     | 4     | 7     | 8     | 58    | 83     |
| 75-79        | 3                                  | 5   | 1     | 2     | -     | -     | 3     | 14     |
| 80 & Over    | -                                  | -   | -     | -     | -     | -     | 2     | 2      |
| <b>Total</b> | 166                                | 301 | 334   | 1,971 | 4,501 | 4,947 | 6,990 | 19,210 |

Average Age: 54.7  
Average Service: 27.3

**Active Members: 1996 Account**

**By Attained Age and Years of Service**

| Attained Age | Years of Service to Valuation Date |               |               |              |              |            |            | Total         |
|--------------|------------------------------------|---------------|---------------|--------------|--------------|------------|------------|---------------|
|              | 0-4                                | 5-9           | 10-14         | 15-19        | 20-24        | 25-29      | 30+        |               |
| 15-19        | -                                  | -             | -             | -            | -            | -          | -          | -             |
| 20-24        | 1,341                              | -             | -             | -            | -            | -          | -          | 1,341         |
| 25-29        | 6,041                              | 2,020         | -             | -            | -            | -          | -          | 8,061         |
| 30-34        | 2,168                              | 6,393         | 1,693         | -            | -            | -          | -          | 10,254        |
| 35-39        | 1,138                              | 2,316         | 4,904         | 1,197        | 1            | -          | -          | 9,556         |
| 40-44        | 931                                | 1,439         | 1,940         | 3,142        | 309          | 2          | -          | 7,763         |
| 45-49        | 609                                | 1,010         | 1,184         | 1,221        | 743          | 148        | 4          | 4,919         |
| 50-54        | 428                                | 726           | 981           | 908          | 403          | 406        | 107        | 3,959         |
| 55-59        | 264                                | 417           | 698           | 819          | 334          | 226        | 294        | 3,052         |
| 60-64        | 166                                | 206           | 388           | 471          | 246          | 133        | 215        | 1,825         |
| 65-69        | 47                                 | 68            | 80            | 83           | 48           | 29         | 35         | 390           |
| 70-74        | 21                                 | 12            | 13            | 8            | 2            | -          | -          | 56            |
| 75-79        | 11                                 | 4             | 3             | 1            | -            | -          | -          | 19            |
| 80 & Over    | 4                                  | 2             | 3             | -            | -            | -          | -          | 9             |
| <b>Total</b> | <b>13,169</b>                      | <b>14,613</b> | <b>11,887</b> | <b>7,850</b> | <b>2,086</b> | <b>944</b> | <b>655</b> | <b>51,204</b> |

Average Age: 39.3  
Average Service: 9.8

**Inactive Vested Members: Pre-1996 Account**

**By Attained Age and Years of Service**

| Attained Age | Years of Service at Termination |     |       |       |       |       |     | Total |
|--------------|---------------------------------|-----|-------|-------|-------|-------|-----|-------|
|              | 0-4                             | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ |       |
| 35-39        | -                               | -   | 1     | -     | -     | -     | -   | 1     |
| 40-44        | -                               | -   | 75    | 63    | 10    | -     | 1   | 149   |
| 45-49        | -                               | -   | 171   | 96    | 78    | 12    | -   | 357   |
| 50-54        | -                               | -   | 184   | 141   | 98    | 100   | 22  | 545   |
| 55-59        | -                               | -   | 242   | 203   | 150   | 129   | 185 | 909   |
| 60-64        | -                               | -   | 330   | 121   | 123   | 90    | 319 | 983   |
| 65-69        | -                               | -   | 105   | 37    | 31    | 32    | 121 | 326   |
| 70-74        | -                               | -   | 11    | 7     | 4     | 1     | 7   | 30    |
| 75-79        | -                               | -   | 3     | -     | -     | -     | 1   | 4     |
| 80 & Over    | -                               | -   | 4     | 4     | 1     | 1     | -   | 10    |
| <b>Total</b> | -                               | -   | 1,126 | 672   | 495   | 365   | 656 | 3,314 |

Average Age: 57.1  
Average Service: 21.0

**Inactive Vested Members: 1996 Account**

**By Attained Age and Years of Service**

| Attained Age | Years of Service at Termination |     |       |       |       |       |     | Total |
|--------------|---------------------------------|-----|-------|-------|-------|-------|-----|-------|
|              | 0-4                             | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ |       |
| 20-24        | -                               | -   | -     | -     | -     | -     | -   | -     |
| 25-29        | -                               | -   | -     | -     | -     | -     | -   | -     |
| 30-34        | -                               | -   | 33    | -     | -     | -     | -   | 33    |
| 35-39        | -                               | -   | 337   | 34    | 1     | -     | -   | 372   |
| 40-44        | -                               | -   | 373   | 165   | 10    | -     | -   | 548   |
| 45-49        | -                               | -   | 233   | 122   | 57    | 4     | 1   | 417   |
| 50-54        | -                               | -   | 267   | 129   | 68    | 26    | 8   | 498   |
| 55-59        | -                               | -   | 284   | 182   | 83    | 39    | 25  | 613   |
| 60-64        | -                               | -   | 254   | 114   | 52    | 26    | 30  | 476   |
| 65-69        | -                               | -   | 76    | 29    | 15    | 3     | 11  | 134   |
| 70-74        | -                               | -   | 5     | 3     | 1     | 1     | 2   | 12    |
| 75-79        | -                               | -   | -     | -     | -     | -     | -   | -     |
| 80 & Over    | -                               | -   | -     | -     | -     | -     | -   | -     |
| <b>Total</b> | -                               | -   | 1,862 | 778   | 287   | 99    | 77  | 3,103 |

Average Age: 50.8  
Average Service: 15.1

***Retired Members: Pre-1996 Account***

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**By Attained Age and Completed Years of Retirement**

| Attained Age | Years of Retirement |        |       |       |       |       |       | Total  |
|--------------|---------------------|--------|-------|-------|-------|-------|-------|--------|
|              | 0-4                 | 5-9    | 10-14 | 15-19 | 20-24 | 25-29 | 30+   |        |
| Under 40     | 12                  | 32     | 22    | 10    | 2     | 5     | 1     | 84     |
| 40-44        | 5                   | 16     | 13    | 10    | 2     | -     | -     | 46     |
| 45-49        | 4                   | 12     | 13    | 9     | 7     | 2     | -     | 47     |
| 50-54        | 71                  | 19     | 20    | 19    | 11    | 2     | 3     | 145    |
| 55-59        | 1,358               | 129    | 47    | 38    | 20    | 6     | 5     | 1,603  |
| 60-64        | 5,026               | 2,888  | 225   | 70    | 42    | 37    | 11    | 8,299  |
| 65-69        | 3,719               | 5,052  | 3,044 | 266   | 90    | 41    | 14    | 12,226 |
| 70-74        | 623                 | 2,378  | 3,661 | 2,124 | 276   | 57    | 26    | 9,145  |
| 75-79        | 38                  | 389    | 1,680 | 2,950 | 1,135 | 269   | 63    | 6,524  |
| 80-84        | 12                  | 25     | 289   | 1,614 | 2,267 | 703   | 264   | 5,174  |
| 85-89        | 2                   | 10     | 56    | 220   | 1,270 | 1,495 | 554   | 3,607  |
| 90-94        | 4                   | 4      | 5     | 27    | 146   | 694   | 791   | 1,671  |
| 95-99        | 1                   | 2      | 1     | 4     | 6     | 67    | 580   | 661    |
| 100 & Over   | -                   | 1      | -     | -     | -     | 2     | 110   | 113    |
| <b>Total</b> | 10,875              | 10,957 | 9,076 | 7,361 | 5,274 | 3,380 | 2,422 | 49,345 |

Average Age: 72.3  
Average Years Retired: 12.6



***Retired Members: 1996 Account***

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**By Attained Age and Completed Years of Retirement**

| Attained Age | Years of Retirement |       |       |       |       |       |     | Total |
|--------------|---------------------|-------|-------|-------|-------|-------|-----|-------|
|              | 0-4                 | 5-9   | 10-14 | 15-19 | 20-24 | 25-29 | 30+ |       |
| Under 40     | 5                   | 6     | 3     | -     | -     | -     | -   | 14    |
| 40-44        | 2                   | 3     | 2     | -     | -     | -     | -   | 7     |
| 45-49        | 7                   | 3     | 3     | -     | -     | -     | -   | 13    |
| 50-54        | 34                  | 9     | 7     | -     | -     | -     | -   | 50    |
| 55-59        | 222                 | 35    | 5     | -     | 1     | -     | -   | 263   |
| 60-64        | 769                 | 261   | 32    | 2     | 1     | -     | -   | 1,065 |
| 65-69        | 618                 | 404   | 231   | 15    | -     | -     | -   | 1,268 |
| 70-74        | 100                 | 245   | 236   | 65    | 2     | -     | -   | 648   |
| 75-79        | 16                  | 44    | 77    | 66    | 16    | 5     | -   | 224   |
| 80-84        | 6                   | 4     | 15    | 29    | 23    | 2     | 1   | 80    |
| 85-89        | -                   | 2     | 6     | 2     | 14    | 4     | -   | 28    |
| 90 & Over    | -                   | -     | -     | -     | 1     | 3     | 1   | 5     |
| <b>Total</b> | 1,779               | 1,016 | 617   | 179   | 58    | 14    | 2   | 3,665 |

Average Age: 66.3  
Average Years Retired: 6.1

***Retired Members: Pre-1996 Account***

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**By Year of Retirement**

| Year of Retirement<br>As of June 30 | Number        | Monthly Pension      |                 |
|-------------------------------------|---------------|----------------------|-----------------|
|                                     |               | Total                | Average         |
| Before 1978                         | 611           | \$ 269,230           | \$ 441          |
| 1978                                | 169           | 88,235               | 522             |
| 1979                                | 212           | 117,330              | 553             |
| 1980                                | 263           | 162,268              | 617             |
| 1981                                | 275           | 158,872              | 578             |
| 1982                                | 276           | 163,988              | 594             |
| 1983                                | 369           | 230,055              | 623             |
| 1984                                | 444           | 287,492              | 648             |
| 1985                                | 648           | 462,045              | 713             |
| 1986                                | 568           | 413,573              | 728             |
| 1987                                | 687           | 539,928              | 786             |
| 1988                                | 812           | 684,094              | 842             |
| 1989                                | 674           | 599,425              | 889             |
| 1990                                | 1,045         | 1,066,523            | 1,021           |
| 1991                                | 1,048         | 1,151,500            | 1,099           |
| 1992                                | 973           | 1,098,223            | 1,129           |
| 1993                                | 1,030         | 1,244,163            | 1,208           |
| 1994                                | 1,161         | 1,432,393            | 1,234           |
| 1995                                | 1,516         | 1,945,311            | 1,283           |
| 1996                                | 1,512         | 1,974,152            | 1,306           |
| 1997                                | 1,307         | 1,701,700            | 1,302           |
| 1998                                | 1,665         | 2,153,311            | 1,293           |
| 1999                                | 1,542         | 2,114,927            | 1,372           |
| 2000                                | 1,798         | 2,551,048            | 1,419           |
| 2001                                | 1,772         | 2,586,067            | 1,459           |
| 2002                                | 2,085         | 3,032,408            | 1,454           |
| 2003                                | 1,844         | 2,745,761            | 1,489           |
| 2004                                | 2,156         | 3,248,627            | 1,507           |
| 2005                                | 2,060         | 3,255,787            | 1,580           |
| 2006                                | 2,237         | 3,595,322            | 1,607           |
| 2007                                | 2,135         | 3,464,131            | 1,623           |
| 2008                                | 2,548         | 4,334,973            | 1,701           |
| 2009                                | 1,870         | 3,335,787            | 1,784           |
| 2010                                | 2,086         | 3,866,425            | 1,854           |
| 2011                                | 2,828         | 5,371,180            | 1,899           |
| 2012                                | 3,093         | 6,042,826            | 1,954           |
| 2013                                | 2,026         | 4,200,804            | 2,073           |
| <b>Total</b>                        | <b>49,345</b> | <b>\$ 71,689,881</b> | <b>\$ 1,453</b> |

***Retired Members: 1996 Account***

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**By Year of Retirement**

| Year of Retirement<br>As of June 30 | Number       | Monthly Pension     |                 |
|-------------------------------------|--------------|---------------------|-----------------|
|                                     |              | Total               | Average         |
| 1981                                | 1            | \$259               | \$259           |
| 1982                                | 1            | 936                 | 936             |
| 1986                                | 2            | 1,562               | 781             |
| 1987                                | 5            | 3,335               | 667             |
| 1988                                | 4            | 2,621               | 655             |
| 1989                                | 5            | 3,767               | 753             |
| 1990                                | 11           | 10,280              | 935             |
| 1991                                | 12           | 10,707              | 892             |
| 1992                                | 11           | 12,590              | 1,145           |
| 1993                                | 8            | 7,935               | 992             |
| 1994                                | 17           | 21,906              | 1,289           |
| 1995                                | 27           | 30,812              | 1,141           |
| 1996                                | 33           | 41,793              | 1,266           |
| 1997                                | 31           | 37,859              | 1,221           |
| 1998                                | 45           | 53,433              | 1,187           |
| 1999                                | 51           | 66,913              | 1,312           |
| 2000                                | 80           | 101,039             | 1,263           |
| 2001                                | 107          | 139,273             | 1,302           |
| 2002                                | 140          | 199,499             | 1,425           |
| 2003                                | 167          | 229,729             | 1,376           |
| 2004                                | 192          | 261,534             | 1,362           |
| 2005                                | 170          | 245,825             | 1,446           |
| 2006                                | 170          | 229,780             | 1,352           |
| 2007                                | 197          | 250,322             | 1,271           |
| 2008                                | 255          | 362,125             | 1,420           |
| 2009                                | 235          | 332,786             | 1,416           |
| 2010                                | 285          | 400,631             | 1,406           |
| 2011                                | 408          | 598,904             | 1,468           |
| 2012                                | 505          | 682,692             | 1,352           |
| 2013                                | 490          | 663,936             | 1,355           |
| <b>Total</b>                        | <b>3,665</b> | <b>\$ 5,004,783</b> | <b>\$ 1,366</b> |

***Retired Members***

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**Reconciliation of Benefit Recipients, July 1, 2012 to July 1, 2013**

**Pre-1996 Account**

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|  | <b>Number of<br/>Members</b> | <b>Sum of<br/>Annual Allowances*</b> |
|--|------------------------------|--------------------------------------|
| Beginning of Year Rolls                  | 47,000                       | \$ 898,005,660                       |
| Added to Rolls                           | 3,422                        | 93,604,576                           |
| Removed from Rolls                       | (1,077)                      | (14,523,735)                         |
| Benefit Changes                          |                              | (3,451,033)                          |
| End of Year Rolls                        | 49,345                       | \$ 973,635,468                       |
| Percentage Increase in Annual Allowances |                              | 8.42%                                |
| Average Annual Allowances                |                              | \$ 19,731                            |

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**1996 Account**

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|  | <b>Number of<br/>Members</b> | <b>Sum of<br/>Annual Allowances*</b> |
|--|------------------------------|--------------------------------------|
| Beginning of Year Rolls                  | 2,971                        | \$ 55,474,668                        |
| Added to Rolls                           | 712                          | 12,216,094                           |
| Removed from Rolls                       | (18)                         | (250,893)                            |
| Benefit Changes                          |                              | (270,493)                            |
| End of Year Rolls                        | 3,665                        | \$ 67,169,376                        |
| Percentage Increase in Annual Allowances |                              | 21.08%                               |
| Average Annual Allowances                |                              | \$ 18,327                            |

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\* Pension and ASA annuity

## Retired Members

### Number of Benefit Recipients by Benefit Option

#### Pre-1996 Account

| Amount of Monthly Benefit <sup>1</sup> | Option A-1    | Option A-2    | Option A-3   | Option B-1    | Option B-2   | Option B-3   | Survivors    | Disability | Total         |
|--|---------------|---------------|--------------|---------------|--------------|--------------|--------------|------------|---------------|
| \$1-\$500                              | 1,725         | 839           | 214          | 1,089         | 236          | 419          | 473          | 77         | 5,072         |
| \$501-\$1,000                          | 2,085         | 1,423         | 311          | 1,911         | 685          | 930          | 340          | 179        | 7,864         |
| \$1,001-\$1,500                        | 3,111         | 2,437         | 433          | 3,877         | 1,180        | 1,319        | 150          | 223        | 12,730        |
| \$1,501-\$2,000                        | 2,987         | 2,816         | 356          | 4,184         | 1,395        | 1,623        | 131          | 110        | 13,602        |
| \$2,001-\$3,000                        | 2,047         | 2,384         | 273          | 2,338         | 914          | 1,109        | 52           | 26         | 9,143         |
| Over \$3,000                           | 211           | 252           | 23           | 228           | 102          | 118          | 0            | 0          | 934           |
| <b>Total</b>                           | <b>12,166</b> | <b>10,151</b> | <b>1,610</b> | <b>13,627</b> | <b>4,512</b> | <b>5,518</b> | <b>1,146</b> | <b>615</b> | <b>49,345</b> |

#### 1996 Account

| Amount of Monthly Benefit <sup>1</sup> | Option A-1 | Option A-2 | Option A-3 | Option B-1 | Option B-2 | Option B-3 | Survivors | Disability | Total        |
|--|------------|------------|------------|------------|------------|------------|-----------|------------|--------------|
| \$1-\$500                              | 168        | 114        | 19         | 120        | 17         | 31         | 23        | 55         | 547          |
| \$501-\$1,000                          | 258        | 206        | 52         | 237        | 56         | 80         | 24        | 49         | 962          |
| \$1,001-\$1,500                        | 204        | 171        | 40         | 202        | 62         | 65         | 3         | 13         | 760          |
| \$1,505-\$2,000                        | 144        | 131        | 24         | 173        | 54         | 80         | 5         | 4          | 615          |
| \$2,001-\$3,000                        | 113        | 118        | 22         | 210        | 54         | 89         | 4         | 5          | 615          |
| Over \$3,000                           | 35         | 41         | 1          | 52         | 20         | 17         | 0         | 0          | 166          |
| <b>Total</b>                           | <b>922</b> | <b>781</b> | <b>158</b> | <b>994</b> | <b>263</b> | <b>362</b> | <b>59</b> | <b>126</b> | <b>3,665</b> |

<sup>1</sup>Pension only

#### Summary of Benefit Options

- A-1 - Provides a monthly benefit for retiree's life. In the event the retiree dies before receiving five years of payments, the beneficiary receives the remainder of the five years (60 months) of guaranteed Defined Benefit pension payments in a lump sum.
- A-2 - Provides a monthly benefit for retiree's life. The benefit ceases upon the death of the retiree.
- A-3 - Provides a monthly benefit for retiree's life, including monthly annuitization of member's Annuity Savings Account (ASA). In the event the retiree dies before receiving five years of payments, the beneficiary will receive the remainder of the five years of guaranteed pension payments. The ASA is reduced with each monthly benefit paid; if the retiree dies before reducing the balance to \$0.00, the beneficiary will receive a single payment of the amount remaining.
- B-1 - Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 100% of the member's Defined Benefit for the remainder of the survivor's life.
- B-2 - Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 66-2/3% of the member's Defined Benefit for the remainder of the survivor's life.
- B-3 - Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 50% of the member's Defined Benefit for the remainder of the survivor's life.
- Survivors\* - Provides a monthly benefit for the surviving spouse's or dependent's life. The benefit ceases upon death of the survivor.
- Disability\*\* - Available to members with five (5) or more years of creditable service who become disabled as determined by the Social Security Administration while teaching in Indiana.

\* (of members who die while in service)

\*\* Includes Classroom Disability – Provides a benefit of \$125 per month plus \$5 for each additional year of TRF-covered service over five years

## ***Retired Members***

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### **Schedule of Average Benefit Payments by Service at Retirement**

#### **Pre-1996 Account**

|                                      | Years of Service at Retirement |          |          |          |          |          | Total    |
|--------------------------------------|--------------------------------|----------|----------|----------|----------|----------|----------|
|                                      | <10                            | 10-14    | 15-19    | 20-24    | 25-29    | 30+      |          |
| Avg. Monthly Defined Benefit Pension | \$405                          | \$258    | \$517    | \$834    | \$1,187  | \$1,793  | \$1,453  |
| Avg. Monthly Annuity                 | \$57                           | \$108    | \$104    | \$128    | \$159    | \$225    | \$191    |
| Avg. Final Avg. Salary at Retirement | \$24,193                       | \$22,426 | \$35,702 | \$43,604 | \$48,801 | \$55,636 | \$50,855 |
| Number of Benefit Recipients         | 36                             | 1,185    | 3,720    | 5,541    | 7,987    | 30,876   | 49,345   |

#### **1996 Account**

|                                      | Years of Service at Retirement |          |          |          |          |          | Total    |
|--------------------------------------|--------------------------------|----------|----------|----------|----------|----------|----------|
|                                      | <10                            | 10-14    | 15-19    | 20-24    | 25-29    | 30+      |          |
| Avg. Monthly Defined Benefit Pension | \$263                          | \$450    | \$730    | \$1,041  | \$1,426  | \$2,158  | \$1,366  |
| Avg. Monthly Annuity                 | \$23                           | \$71     | \$102    | \$124    | \$200    | \$230    | \$162    |
| Avg. Final Avg. Salary at Retirement | \$39,665                       | \$44,142 | \$51,558 | \$57,665 | \$61,752 | \$70,633 | \$59,995 |
| Number of Benefit Recipients         | 36                             | 406      | 822      | 537      | 504      | 1,360    | 3,665    |

**Reconciliation of Participant Data: Total Fund**

|                                | Active        | Inactive Vested | Inactive Nonvested | Survivor     | Disabled   | Retired       | Beneficiary  | Total          |
|--------------------------------|---------------|-----------------|--------------------|--------------|------------|---------------|--------------|----------------|
| <b>6/30/2012 Census</b>        | <b>70,573</b> | <b>6,367</b>    | <b>13,322</b>      | <b>1,215</b> | <b>725</b> | <b>44,501</b> | <b>3,530</b> | <b>140,233</b> |
| Disabled                       | (13)          | (31)            |                    |              | 44         |               |              | 0              |
| Retired                        | (3,278)       | (749)           |                    |              |            | 4,027         |              | 0              |
| Terminated with Vested Benefit | (1,401)       | 1,401           |                    |              |            |               |              | 0              |
| Terminated, due a Refund       | (1,335)       |                 | 1,335              |              |            |               |              | 0              |
| Died with Survivor             | (16)          | (11)            |                    | 16           | (12)       | (304)         | 327          | 0              |
| Died, no Survivor*             | (6)           | (86)            |                    | (26)         | (23)       | (866)         | (180)        | (1,187)        |
| Refunded*                      | (247)         | (176)           | (1,298)            |              |            |               |              | (1,721)        |
| Forfeited*                     |               | (4)             | (743)              |              |            |               |              | (747)          |
| Dropped from Database          | (25)          | (60)            | (18)               |              |            |               |              | (103)          |
| Rehired                        | 1,288         | (264)           | (1,024)            |              |            |               |              | 0              |
| Status Corrections             |               | 30              | (37)               |              | 5          | 2             |              | 0              |
| Data Corrections               |               |                 | 156                |              | 2          | 13            | 14           | 185            |
| New Hires                      | 4,874         |                 |                    |              |            |               |              | 4,874          |
| <b>6/30/2013 Census</b>        | <b>70,414</b> | <b>6,417</b>    | <b>11,693</b>      | <b>1,205</b> | <b>741</b> | <b>47,373</b> | <b>3,691</b> | <b>141,534</b> |

\* No remaining benefit obligation in the plan.

**Reconciliation of Participant Data: Pre-1996 Account**

|                                | Active        | Inactive Vested | Inactive Nonvested | Survivor     | Disabled   | Retired       | Beneficiary  | Total         |
|--------------------------------|---------------|-----------------|--------------------|--------------|------------|---------------|--------------|---------------|
| <b>6/30/2012 Census</b>        | <b>22,688</b> | <b>3,382</b>    | <b>794</b>         | <b>1,161</b> | <b>613</b> | <b>41,749</b> | <b>3,477</b> | <b>73,864</b> |
| Disabled                       | (10)          | (21)            |                    |              | 31         |               |              | 0             |
| Retired                        | (2,780)       | (572)           |                    |              |            | 3,352         |              | 0             |
| Terminated with Vested Benefit | (818)         | 818             |                    |              |            |               |              | 0             |
| Terminated, due a Refund       | (37)          |                 | 37                 |              |            |               |              | 0             |
| Died with Survivor             | (12)          | (8)             |                    | 11           | (10)       | (299)         | 318          | 0             |
| Died, no Survivor*             | (4)           | (85)            |                    | (26)         | (19)       | (853)         | (179)        | (1,166)       |
| Refunded*                      | (29)          | (73)            | (139)              |              |            |               |              | (241)         |
| Forfeited*                     |               | (4)             | (100)              |              |            |               |              | (104)         |
| Dropped from Database          | (12)          | (32)            | (12)               |              |            |               |              | (56)          |
| Rehired                        | 125           | (70)            | (55)               |              |            |               |              | 0             |
| Status Corrections             |               | (22)            | 20                 |              |            | 2             |              | 0             |
| Data Corrections               |               |                 | 5                  |              |            | 5             | 12           | 22            |
| Moved to Pre-1996 Account      | 5             | 1               |                    |              |            |               |              | 6             |
| Moved from Pre-1996 Account    | (1)           |                 | (4)                |              |            |               |              | (5)           |
| New Hires                      | 95            |                 |                    |              |            |               |              | 95            |
| <b>6/30/2013 Census</b>        | <b>19,210</b> | <b>3,314</b>    | <b>546</b>         | <b>1,146</b> | <b>615</b> | <b>43,956</b> | <b>3,628</b> | <b>72,415</b> |

\* No remaining benefit obligation in the plan.



**Reconciliation of Participant Data: 1996 Account**

|                                | Active        | Inactive Vested | Inactive Nonvested | Survivor  | Disabled   | Retired      | Beneficiary | Total         |
|--------------------------------|---------------|-----------------|--------------------|-----------|------------|--------------|-------------|---------------|
| <b>6/30/2012 Census</b>        | <b>47,885</b> | <b>2,985</b>    | <b>12,528</b>      | <b>54</b> | <b>112</b> | <b>2,752</b> | <b>53</b>   | <b>66,369</b> |
| Disabled                       | (3)           | (10)            |                    |           | 13         |              |             | 0             |
| Retired                        | (498)         | (177)           |                    |           |            | 675          |             | 0             |
| Terminated with Vested Benefit | (582)         | 582             |                    |           |            |              |             | 0             |
| Terminated, due a Refund       | (1,298)       |                 | 1,298              |           |            |              |             | 0             |
| Died with Survivor             | (4)           | (3)             |                    | 5         | (2)        | (5)          | 9           | 0             |
| Died, no Survivor*             | (2)           | (1)             |                    |           | (4)        | (13)         | (1)         | (21)          |
| Refunded*                      | (218)         | (103)           | (1,159)            |           |            |              |             | (1,480)       |
| Forfeited*                     |               |                 | (643)              |           |            |              |             | (643)         |
| Dropped from Database          | (13)          | (28)            | (6)                |           |            |              |             | (47)          |
| Rehired                        | 1,157         | (194)           | (963)              |           |            |              |             | 0             |
| Status Corrections             |               | 52              | (56)               |           | 5          | (1)          |             | 0             |
| Data Corrections               |               |                 | 151                |           | 2          | 8            | 2           | 163           |
| Moved to 1996 Account          | 3             |                 | 1                  |           |            | 1            |             | 5             |
| Moved from 1996 Account        | (2)           |                 | (4)                |           |            |              |             | (6)           |
| New Hires                      | 4,779         |                 |                    |           |            |              |             | 4,779         |
| <b>6/30/2013 Census</b>        | <b>51,204</b> | <b>3,103</b>    | <b>11,147</b>      | <b>59</b> | <b>126</b> | <b>3,417</b> | <b>63</b>   | <b>69,119</b> |

\* No remaining benefit obligation in the plan.

## **Closed Group Projection: Pre-1996 Account**

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The schedules on the following pages for the Pre-1996 Account were produced by means of an actuarial projection.

Whereas actuarial valuations provide a snapshot of the Retirement Fund as of a given date, actuarial projections provide a moving picture of Retirement Fund activities. The projected active and retired groups are developed from year to year by applying assumptions regarding pre-retirement withdrawal from service, retirements, deaths, and disabilities. Projected information regarding plan activity produces an expected future benefit payment stream.

Projection results are useful in demonstrating changing relationships among key elements affecting system financial activity. For example, the relationship between annual benefits paid and assets will change over time. Projections are not predictions of specific future events and do not provide numeric precision in absolute terms. The future pension benefits shown in the table are estimates. Actual payments will likely differ from the amounts shown; however, understanding the relative growth is critical.

**Closed Group Projection: Pre-1996 Account**

\$Millions

| Fiscal Year | Active Members |            | Retired and Inactive Vested Members |                        |
|-------------|----------------|------------|-------------------------------------|------------------------|
|             | Number*        | Payroll*   | Number*                             | Pension Benefits Paid* |
| 2014        | 19,210         | \$ 1,383.2 | 52,659                              | \$ 925.5               |
| 2015        | 17,218         | 1,275.6    | 53,493                              | 956.3                  |
| 2016        | 15,398         | 1,173.0    | 54,108                              | 960.1                  |
| 2017        | 13,722         | 1,074.6    | 54,526                              | 993.2                  |
| 2018        | 12,175         | 979.9      | 54,763                              | 1,023.4                |
|             |                |            |                                     |                        |
| 2019        | 10,761         | 889.9      | 54,777                              | 1,047.9                |
| 2020        | 9,471          | 804.6      | 54,622                              | 1,068.8                |
| 2021        | 8,296          | 724.1      | 54,301                              | 1,086.4                |
| 2022        | 7,234          | 648.5      | 53,818                              | 1,100.6                |
| 2023        | 6,272          | 577.4      | 53,190                              | 1,111.1                |
|             |                |            |                                     |                        |
| 2024        | 5,402          | 510.9      | 52,421                              | 1,118.0                |
| 2025        | 4,620          | 448.8      | 51,517                              | 1,121.8                |
| 2026        | 3,913          | 390.3      | 50,491                              | 1,122.0                |
| 2027        | 3,278          | 335.6      | 49,345                              | 1,118.7                |
| 2028        | 2,706          | 284.4      | 48,089                              | 1,111.8                |
|             |                |            |                                     |                        |
| 2029        | 2,204          | 237.8      | 46,717                              | 1,100.9                |
| 2030        | 1,770          | 196.1      | 45,230                              | 1,086.5                |
| 2031        | 1,393          | 158.5      | 43,643                              | 1,067.7                |
| 2032        | 1,075          | 125.6      | 41,956                              | 1,044.9                |
| 2033        | 809            | 97.1       | 40,181                              | 1,017.6                |
|             |                |            |                                     |                        |
| 2034        | 595            | 73.4       | 38,322                              | 986.2                  |
| 2035        | 427            | 54.1       | 36,391                              | 951.1                  |
| 2036        | 299            | 38.9       | 34,404                              | 912.8                  |
| 2037        | 205            | 27.4       | 32,377                              | 871.7                  |
| 2038        | 136            | 18.7       | 30,330                              | 828.5                  |
|             |                |            |                                     |                        |
| 2039        | 88             | 12.4       | 28,281                              | 783.6                  |
| 2040        | 54             | 7.8        | 26,250                              | 737.7                  |
| 2041        | 30             | 4.5        | 24,255                              | 691.2                  |
| 2042        | 15             | 2.3        | 22,312                              | 644.7                  |
| 2043        | 6              | 0.9        | 20,437                              | 598.6                  |

*\*All number counts are as of the beginning of the fiscal year. Payroll and benefits paid are expected amounts during the fiscal year. Pension benefits paid reflects the expected defined benefit pension payments (excluding ASA annuities).*

*Projections are intended to demonstrate the pattern of future activities and should not be viewed as a prediction of specific dollar amounts in any year.*

**Closed Group Projection: Pre-1996 Account (Continued)**

\$Millions

| Fiscal Year | Active Members |          | Retired and Inactive Vested Members |                        |
|-------------|----------------|----------|-------------------------------------|------------------------|
|             | Number*        | Payroll* | Number*                             | Pension Benefits Paid* |
| 2044        | 2              | \$ 0.3   | 18,642                              | \$ 553.3               |
| 2045        | 1              | 0.1      | 16,939                              | 509.5                  |
| 2046        | -              | 0.1      | 15,336                              | 467.4                  |
| 2047        | -              | 0.1      | 13,839                              | 427.2                  |
| 2048        | -              | 0.1      | 12,450                              | 389.1                  |
|             |                |          |                                     |                        |
| 2049        | -              | -        | 11,168                              | 353.1                  |
| 2050        | -              | -        | 9,990                               | 319.4                  |
| 2051        | -              | -        | 8,912                               | 287.8                  |
| 2052        | -              | -        | 7,929                               | 258.4                  |
| 2053        | -              | -        | 7,034                               | 231.1                  |
|             |                |          |                                     |                        |
| 2054        | -              | -        | 6,221                               | 205.8                  |
| 2055        | -              | -        | 5,485                               | 182.5                  |
| 2056        | -              | -        | 4,819                               | 161.0                  |
| 2057        | -              | -        | 4,217                               | 141.2                  |
| 2058        | -              | -        | 3,676                               | 123.2                  |
|             |                |          |                                     |                        |
| 2059        | -              | -        | 3,190                               | 106.8                  |
| 2060        | -              | -        | 2,756                               | 92.0                   |
| 2061        | -              | -        | 2,370                               | 78.7                   |
| 2062        | -              | -        | 2,028                               | 66.9                   |
| 2063        | -              | -        | 1,728                               | 56.5                   |

*\*All number counts are as of the beginning of the fiscal year. Payroll and benefits paid are expected amounts during the fiscal year. Pension benefits paid reflects the expected defined benefit pension payments (excluding ASA annuities).*

*Projections are intended to demonstrate the pattern of future activities and should not be viewed as a prediction of specific dollar amounts in any year.*

## ***Summary of Benefit Provisions***

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### **Changes in Plan Provisions since June 30, 2013**

In September 2014, retirees were paid a service-related lump sum (a "13<sup>th</sup> check") ranging from \$150 to \$450.

ASA conversions between 10/1/2014 and 9/30/2015 will be based on a 5.75% conversion rate. Conversions between 1/1/2015 and 12/31/2016 will be based on a 4.50% conversion rate. After 1/1/2017, ASA annuity conversions will occur outside of the plan.

### **Regular Retirement**

#### **Eligibility**

Age 65 with ten years of service, or age 60 with 15 years of service, or if age is at least 55 and the sum of age plus credited service is at least 85.

#### **Annual Amount**

State pension equal to total service times 1.1% of Average Annual Compensation.

### **Early Retirement**

#### **Eligibility**

Age 50 with 15 years of service.

#### **Annual Amount**

State pension is computed as regular retirement benefit, but reduced for each month between age at early retirement and attainment of age 65. The age reduction factor is calculated as the sum of the following:

- 1/10 of 1% for each month from age 60 to 65.
- 5/12 of 1% for each month from age at early retirement to 60.

### **Deferred Retirement**

#### **Eligibility**

Ten years of service. Benefit commences at regular or early retirement eligibility.

#### **Annual Amount**

Computed as a regular retirement benefit with state pension based on service and Average Annual Compensation at termination.

### **Disability Retirement**

#### **Regular Disability Benefit:**

##### **Eligibility**

Five years of service.

##### **Annual Amount**

\$125 per month plus \$5 per month for each year of service credit over five years.

#### **Disability Retirement Benefit:**

##### **Eligibility**

Five years of service and determined to be disabled by the Social Security Administration. Annual verification of Social Security disability is required.

##### **Annual Amount**

Computed as a regular retirement benefit using creditable service to the date of disability and without reduction for early retirement. The minimum benefit is \$180 per month

## ***Summary of Benefit Provisions***

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### **Death Before Retirement**

#### **Eligibility**

15 years of service. Spouse to whom member had been married for two or more years is automatically eligible, or a dependent may be designated as beneficiary.

#### **Annual Amount**

Computed as regular retirement benefit but reduced in accordance with a 100% joint and survivor election.

### **Benefit Increases After Retirement**

No automatic increases after retirement are provided. Periodically, unscheduled increases have been made. In September 2014, retirees were paid a service-related lump sum ranging from \$150 to \$450.

### **Average Annual Compensation**

Average of highest five years of compensation. Years do not need to be consecutive.

### **Member Contributions**

All Fund members are required by state law to contribute 3% of salary contributions to their Annuity Savings Account. These 3% contributions are generally “picked up” by the employer and contributed on a pre-tax basis on behalf of the employee. Extra voluntary contributions by the member are also possible, but on a post-tax basis. At retirement, there are six alternatives for receiving the proceeds of this account, including lump sums, full and partial rollovers, full and partial annuitization of the balance, and deferred distribution.

### **Forms of Benefit Payment (Pension)**

The normal form of benefit payment (Option A-1) is a single life annuity with a five-year certain period. There are five optional forms of payment available, as listed below. Additionally, members retiring between ages 50 and 62 may integrate their pension benefit with their Social Security benefit by choosing Social Security Integration (Option A-4) in conjunction with the normal form or any other optional form selected. Optional forms of payment are calculated on an actuarially equivalent basis.

Option A-2: Straight Life benefit with no certain period

Option A-3: Modified Cash Refund Annuity (operates in conjunction with the Annuity Savings Account)

Option B-1: 100% Survivorship

Option B-2: 66 2/3% Survivorship

Option B-3: 50% Survivorship

State law provides for actuarially-adjusted and re-calculated benefits based on a new optional form election in the event of the death of the member’s spouse after retirement.

Optional forms of benefit are calculated based on 7.5% interest with a 40%/60% unisex blend of the 1983 Group Annuity Male Mortality table set back three years and the 1983 Group Annuity Male Mortality table set back seven years.

## **Summary of Actuarial Assumptions and Methods**

The assumptions used in this valuation reflect the study of experience covering the period July 1, 2007 through June 30, 2011.

|  |   |
|--|---|
| <b>Measurement Date</b>                  | June 30, 2014   |
| <b>Valuation Date</b>                    |   |
| <b>Assets</b>                            | June 30, 2014   |
| <b>Liabilities</b>                       | June 30, 2013. Member census data as of June 30, 2013 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2013 and June 30, 2014. Standard actuarial roll-forward techniques were then used to project the total pension liability computed as of June 30, 2013 to the June 30, 2014 measurement date. |
| <b>Interest Rate / Investment Return</b> | 6.75% per year, compounded annually (net of administrative and investment expenses).  |
| <b>Pay Increase Assumption</b>           | Sample increases are shown in a table on the following pages. The assumption for each year of service consists of a merit and/or seniority increase and 3.0% for price inflation.   |
| <b>Total Active Member Payroll</b>       | Assumed to increase 9% from Fiscal 2014 to Fiscal 2015, and 8% from Fiscal 2015 to Fiscal 2016 for the 1996 Account and decrease according to the projection in the Payout Projections section for the Pre-1996 Account for purposes of calculating the projected contribution for the 2015 and 2016 fiscal years.                                |
| <b>Price Inflation</b>                   | 3.0% per year. Price inflation is not directly tied to benefits; however, it is a component of the economic model used to determine total wage inflation.   |
| <b>Mortality</b>                         |   |
| <b>Healthy</b>                           | 2013 IRS Static Mortality Table projected an additional 5 years (gender specific).  |
| <b>Disabled</b>                          | 2013 IRS Static Mortality Table projected an additional 5 years (gender specific).  |
| <b>Retirement</b>                        | Probabilities are shown in tables on the following pages.   |
| <b>Withdrawal</b>                        | Sample probabilities are shown in tables on the following pages.  |
| <b>Disability</b>                        | Sample probabilities are shown in a table on the following pages.   |
| <b>Actuarial Cost Method</b>             | Entry Age Normal (level percent of pay) method, with a 30-year, closed, level dollar amortization of the Unfunded Accrued Liability arising from all sources including actuarial gains and losses.  |
| <b>Asset Valuation Method</b>            | The Actuarial Value of Assets recognizes investment gains and losses in equal installments over four years. However, the Actuarial Value is limited to no more than 20% greater than or 20% less than the Market Value of Assets. Investment experience on ASA account balances is not smoothed.  |

## **Summary of Actuarial Assumptions and Methods**

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|  |  |
|--|--|
| <b>Marriage Assumption</b>                                       | 100% of members are assumed to be married for purposes of valuing death-in-service benefits. Male spouses are assumed to be three years older than female spouses.   |
| <b>Pay Increase Timing</b>                                       | Beginning of (fiscal) year. Payroll amounts stated in the valuation data are amounts projected to be paid during the current year.   |
| <b>Decrement Timing</b>  | Decrements are assumed to occur at the beginning of the year.  |
| <b>Other</b>   | Disability and withdrawal decrements do not operate after member reaches retirement eligibility. Only the withdrawal and death decrements operate during the first ten years of service.   |
| <b>Miscellaneous Adjustments</b>                                 | The calculated liabilities and normal costs were increased by 1% to account for the inclusion of unused sick leave in the calculation of Average Annual Compensation.  |
| <b>Actuarial Equivalence Basis for Optional Forms of Payment</b> | 7.5% interest with a 40%/60% unisex blend of the 1983 Group Annuity Male Mortality table set back three years and the 1983 Group Annuity Male Mortality Table set back seven years.  |
| <b>Explicit Expense Load</b>                                     | None.  |
| <b>COLA Assumption</b>   | 1.0% compounded annually on pension portion, with the first COLA credited on January 1, 2016.  |
| <b>Cost for ASA Conversions</b>                                  | ASA conversions between 10/1/2014 and 9/30/2015 will be based on a 5.75% conversion rate. Conversions between 1/1/2015 and 12/31/2016 will be based on a 4.50% conversion rate. After 1/1/2017, ASA annuity conversions will occur outside of the plan. The 6/30/2014 valuation recognizes the expected gain for conversions through 12/31/2016 at rates lower than the 6.75% valuation interest rate. |
| <b>Employee Census and Asset Data</b>                            | The member census data and the asset information for this valuation were furnished by the Chief Financial Officer and Staff. We did not audit the information provided, but we did review it thoroughly for reasonableness and compared it with the prior year's submission for consistency.   |

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The actuarial valuation computations were made under the supervision of a Member of the American Academy of Actuaries (MAAA).



**Summary of Actuarial Assumptions and Methods**

**Probabilities of Age and Service Retirement**

| Regular Retirement |             | Rule of 85 Retirement |             | Early Retirement |             |
|--------------------|-------------|-----------------------|-------------|------------------|-------------|
| Age                | Probability | Age                   | Probability | Age              | Probability |
|                    |             |                       |             | 50-53            | 0.020       |
|                    |             |                       |             | 54               | 0.050       |
|                    |             | 55                    | 0.100       | 55               | 0.050       |
|                    |             | 56                    | 0.100       | 56               | 0.050       |
|                    |             | 57                    | 0.100       | 57               | 0.050       |
|                    |             | 58                    | 0.125       | 58               | 0.050       |
|                    |             | 59                    | 0.150       | 59               | 0.100       |
| 60                 | 0.175       | 60                    | 0.175       |                  |             |
| 61                 | 0.200       | 61                    | 0.200       |                  |             |
| 62                 | 0.250       | 62                    | 0.250       |                  |             |
| 63                 | 0.250       | 63                    | 0.250       |                  |             |
| 64                 | 0.250       | 64                    | 0.250       |                  |             |
| 65                 | 0.300       | 65                    | 0.300       |                  |             |
| 66                 | 0.300       | 66                    | 0.300       |                  |             |
| 67                 | 0.300       | 67                    | 0.300       |                  |             |
| 68                 | 0.300       | 68                    | 0.300       |                  |             |
| 69                 | 0.300       | 69                    | 0.300       |                  |             |
| 70                 | 1.0000      | 70                    | 1.0000      |                  |             |

**Probabilities of Disability**

| Attained Age | Age-Based |        |
|--------------|-----------|--------|
|              | Male      | Female |
| 25           | 0.0001    | 0.0001 |
| 30           | 0.0001    | 0.0001 |
| 35           | 0.0001    | 0.0001 |
| 40           | 0.0001    | 0.0001 |
| 45           | 0.0002    | 0.0002 |
| 50           | 0.0005    | 0.0005 |
| 55           | 0.0009    | 0.0009 |
| 60           | 0.0010    | 0.0010 |

## **Summary of Actuarial Assumptions and Methods**

### **Probabilities of Withdrawal**

| <b>Years of Service</b> | <b>Service-Based</b> |               |
|-------------------------|----------------------|---------------|
|                         | <b>Male</b>          | <b>Female</b> |
| 0                       | 0.3500               | 0.3500        |
| 1                       | 0.1400               | 0.1400        |
| 2                       | 0.1100               | 0.1100        |
| 3                       | 0.0800               | 0.0900        |
| 4                       | 0.0600               | 0.0800        |
| 5                       | 0.0450               | 0.0700        |
| 6                       | 0.0400               | 0.0600        |
| 7                       | 0.0400               | 0.0500        |
| 8                       | 0.0350               | 0.0450        |
| 9                       | 0.0350               | 0.0400        |

| <b>Attained Age</b> | <b>Age-Based*</b> |               |
|---------------------|-------------------|---------------|
|                     | <b>Male</b>       | <b>Female</b> |
| 30                  | 0.0200            | 0.0350        |
| 35                  | 0.0200            | 0.0300        |
| 40                  | 0.0200            | 0.0200        |
| 45                  | 0.0200            | 0.0200        |
| 50                  | 0.0200            | 0.0200        |
| 55                  | 0.0200            | 0.0200        |
| 60                  | 0.0200            | 0.0200        |

*\*Age-Based rates apply only if 10 or more years of service.*

## **Summary of Actuarial Assumptions and Methods**

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### **Pay Increase Assumption**

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| <b>Years of Service</b> | <b>Merit &amp; Seniority</b> | <b>Inflation</b> | <b>Total</b> |
|-------------------------|------------------------------|------------------|--------------|
| 1                       | 9.50%                        | 3.00%            | 12.50%       |
| 5                       | 4.00%                        | 3.00%            | 7.00%        |
| 10                      | 2.75%                        | 3.00%            | 5.75%        |
| 15                      | 1.50%                        | 3.00%            | 4.50%        |
| 20                      | 0.25%                        | 3.00%            | 3.25%        |
| 25                      | 0.00%                        | 3.00%            | 3.00%        |
| 30                      | 0.00%                        | 3.00%            | 3.00%        |
| 35                      | 0.00%                        | 3.00%            | 3.00%        |
| 40                      | 0.00%                        | 3.00%            | 3.00%        |

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## **Definitions of Technical Terms**

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|                                   |  |
|-----------------------------------|--|
| <b>Accrued Service</b>            | Service credited under the system that was rendered before the date of the actuarial valuation.  |
| <b>Accrued Liability</b>          | The difference between the actuarial present value of future benefit payments and the actuarial present value of future normal costs. Also referred to as “actuarial accrued liability” or “past service liability”.   |
| <b>Actuarial Assumptions</b>      | Estimates of expected future experience with respect to rates of mortality, disability, turnover, retirement, rate of investment return, and pay increases. Decrement assumptions (rates of mortality, disability, turnover, and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (pay increases and investment return) consist of the underlying rates in an inflation-free environment plus a provision for a long-term average rate of inflation. |
| <b>Actuarial Cost Method</b>      | A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future benefit payments” between future normal costs and actuarial accrued liabilities. Sometimes referred to as the “actuarial funding method”.  |
| <b>Actuarial Equivalent</b>       | One series of payments is said to be actuarially equivalent to another series of payments if the two series have the same actuarial present value.   |
| <b>Actuarial Gain / (Loss)</b>    | The difference between actual unfunded actuarial accrued liability and anticipated unfunded actuarial accrued liability — during the period between two valuation dates. It is a measurement of the difference between actual and expected experience.   |
| <b>Actuarial Present Value</b>    | The single amount now that is equal to a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.  |
| <b>Amortization</b>               | Paying off a present value with periodic payments.   |
| <b>Normal Cost</b>                | The portion of the actuarial present value of future benefits that is assigned to the current year by the actuarial cost method. Sometimes referred to as “current cost”.  |
| <b>Unfunded Accrued Liability</b> | The difference between the accrued liability and the actuarial value of assets. Sometimes referred to as “unfunded past service liability” or “unfunded actuarial accrued liability” or simply as “unfunded liability”.  |

## ***The Actuarial Valuation Process***

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

**Covered Person Data:** Furnished by the Plan Administrator

Retired Members and Beneficiaries Now Receiving Benefits  
Former Employees with Vested Benefits Not Yet Payable  
Active Members

+ **Asset Data (Cash and Investments):** Furnished by the Plan Administrator

+ **Estimates of Future Experience (Actuarial Assumptions):** Established by the Board of Trustees after Consulting with the Actuary

+ **Funding Method:** The Allocation of Employer Costs to Past Service, Current Service, and Future Service

+ **Mathematically Combining the Assumptions, the Funding Method, and the Data**

= **Determination of:**

Plan Funded Status and Employer Contribution Rate