

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.

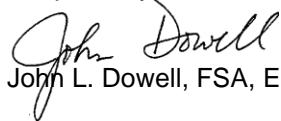
The actuarial valuation is prepared using information which has been reconciled and reviewed for reasonableness. We are not aware of any material inadequacy in employee census or asset values. The census information and the asset information have been provided to us by the Chief Financial Officer and 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.

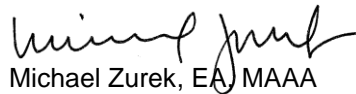
In our opinion, the actuarial assumptions and methods are individually reasonable and in combination represent our best estimate of anticipated experience of the plan.

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

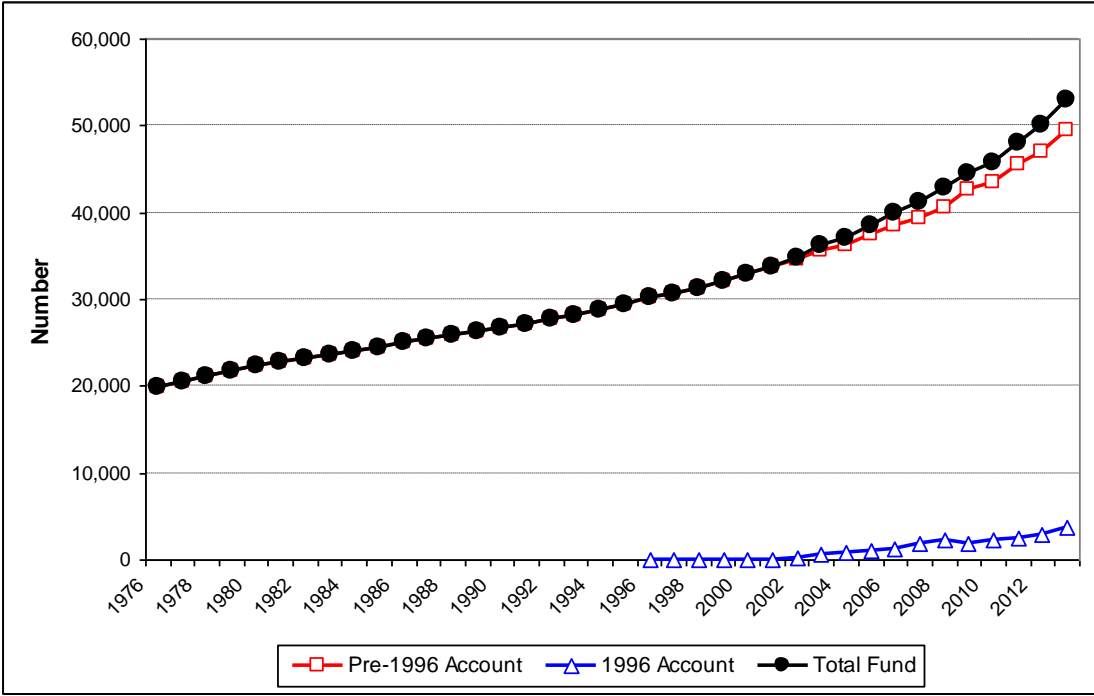
<b>June 30</b>	<b>Accrued Liability</b>	<b>Actuarial Value of Assets</b>	<b>Unfunded Accrued Liability</b>	<b>Funded Percentage</b>
1975	\$ 1,570	\$ 312	\$ 1,258	19.9%
1980	2,843	539	2,304	19.0%
1985	4,023	1,073	2,950	26.7%
1991	7,182	2,161	5,021	30.1%
1992	7,949	2,376	5,573	29.9%
1993	8,508	2,592	5,916	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**

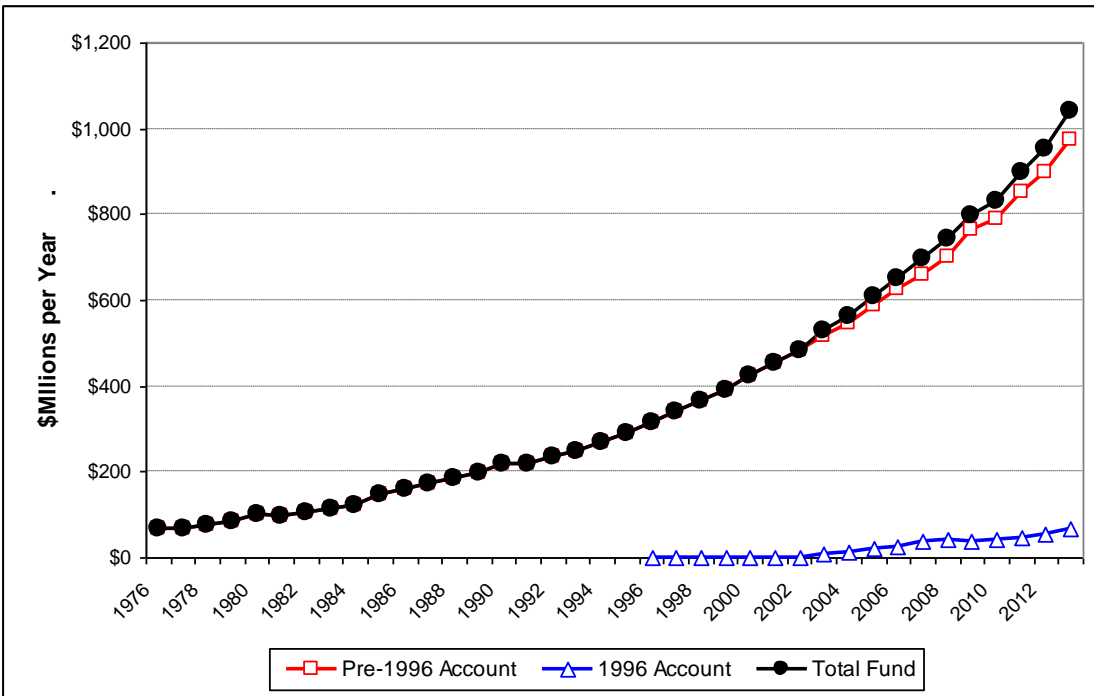
\$Millions

<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

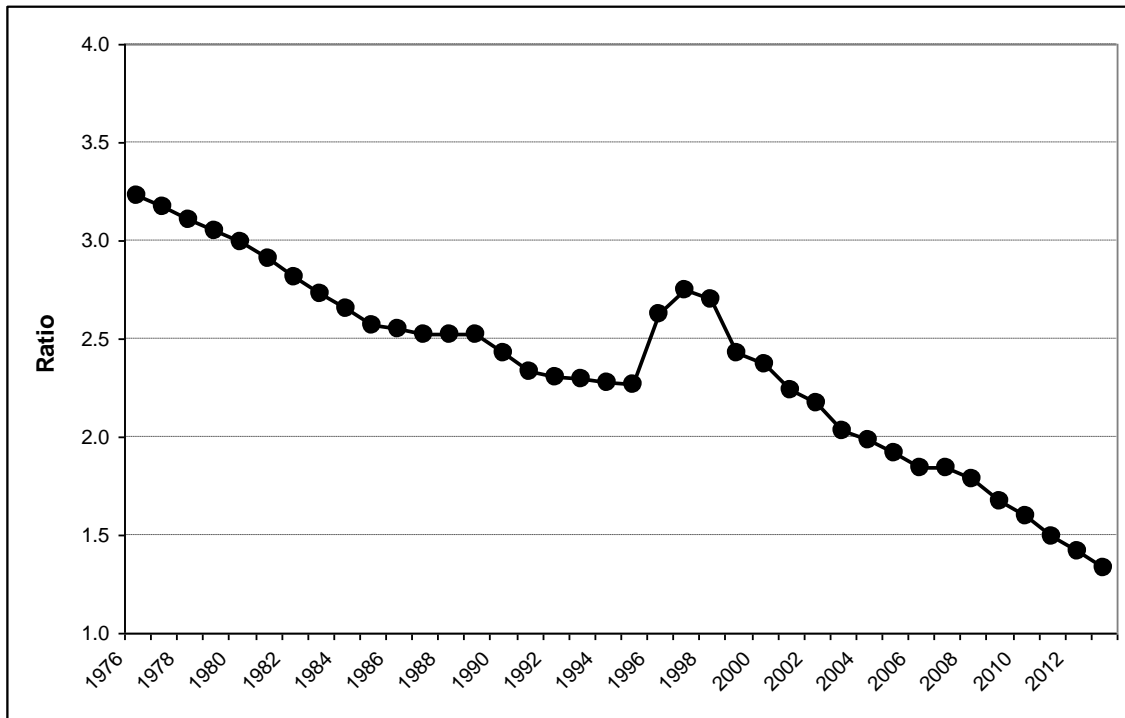
June 30	Number	Valuation Payroll (\$000s)	Average			
			Age	Service	Pay	Pay Increase %
1975	63,932	\$ 749,200	38.7	10.9	\$ 11,719	
1980	66,575	1,107,699	39.7	11.9	16,638	
1985	62,932	1,519,887	41.5	14.2	24,151	
1987	64,157	1,751,709	42.0	14.5	27,303	
1989	65,986	2,044,797	42.6	14.9	30,988	
1991	63,373	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 Payroll (\$000s)	Average			
			Age	Service	Pay	Pay Increase %
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)

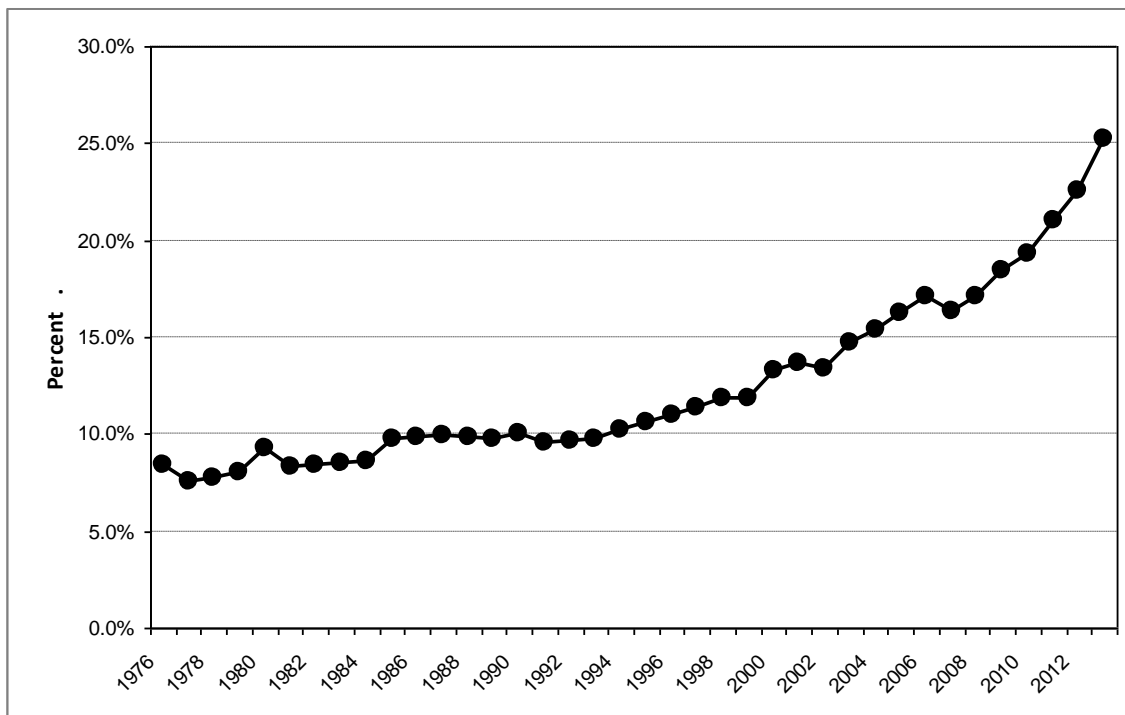
### ***Active Members per Retired Life***

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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 thru 6/30/2014</u>	<u>6/30/2012 thru 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 thru 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 Account</b>	<b>1996 Account</b>	<b>Total 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 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 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 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 Account</b>	<b>1996 Account</b>	<b>Total 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 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**

	<b>6/30/2014</b>	<b>% of Projected Payroll for Fiscal 2015</b>
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**

	<b>Fiscal 2015</b>	<b>Fiscal 2016</b>
<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 June 30	Actuarial Value of Assets (a)	Entry Age Accrued Liability (b)	Unfunded Accrued Liability (UAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAL as a % of Covered Payroll [(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 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***

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**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**

**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 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 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 Members</b>	<b>Sum of 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 Members</b>	<b>Sum of 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