

nyhart

***Indiana State Teachers'
Retirement Fund
1996 Account***

***Annual Actuarial Valuation
June 30, 2017***

Indiana State Teachers' Retirement Fund 1996 Account

Annual Actuarial Valuation as of June 30, 2017

Nyhart

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October 30, 2017

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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 1996 Account. Submitted in this report are the results of the June 30, 2017 actuarial valuation.

Census Data and Asset Information

The member census data and the asset information for this valuation were furnished by the Chief Finance and Administration 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, 2017 valuation were adopted by the Board pursuant to the Experience Study completed in April 2015, which reflects the experience period from July 1, 2011 to June 30, 2014. Assumptions are summarized in the Assumptions and Methods section of this report. These assumptions and methods have been used to develop the Actuarially Determined Contribution and are consistent with the accounting requirements detailed in GASB Statements No. 67 and No. 68.

Benefit obligations in the June 30, 2017 valuation are determined using June 30, 2016 census data and rolled-forward to the June 30, 2017 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.

Plan assets and liabilities on June 31, 2017 and prior years include member ASA account balances. Effective June 30, 2018, those balances will be excluded from the valuation, resulting in a reduction in the reported funded percentage. If ASA balances were removed from the valuation on 6/30/2017, the funded percentage would be reduced to 91.0% from 92.8%.

Funding Objective

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:

The 1996 Account consists of members who were either:

1. First hired after June 30, 1995; or
2. Pre-1996 Account members rehired by another school corporation after June 30, 1995 and before July 1, 2005.

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

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 2018 was set by the Board in fiscal year 2017. The contribution rate of 7.50% for fiscal year 2019 was set by the Board in fiscal year 2018.

Progress Towards 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 funded ratio of the 1996 Account increased to 92.8% from 91.8% for the preceding year. Based on the actuarial assumptions, it is anticipated that the 1996 Account will attain 100% funded status on 6/30/2031.

Certification

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

Financial Section

- Note 1 – Tables of Plan Membership
- Note 7 – Net Pension Liability and Actuarial Information – Defined Benefit Plans
- Schedule of Changes in Net Pension Liability and Net Pension Liability
- Schedule of Contributions (Actuarially Determined Contribution)
- Schedule of Notes to Required Supplementary Information

Actuarial Section

- Summary of INPRS Funded Status
- Historical Summary of Actuarial Valuation Results by Retirement Plan (Schedule of Funding Progress)
- Summary of Actuarial Assumptions, Methods and Plan Provisions
- Analysis of Financial Experience (Unfunded Actuarial Accrued Liability Reconciliation)

- Solvency Test
- Schedule of Active Member Valuation Data
- Schedule of Retirants and Beneficiaries

Statistical Section

- Membership Data Summary
- Ratio of Active Members to Annuitants
- Schedule of Benefit Recipients by Type of Benefit Option
- Schedule of Average Benefit Payments

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,



Michael Zurek, EA, MAAA



Danielle Winegardner, ASA, EA, MAAA



Tayt V. Odom, FSA, EA, MAAA

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Executive Summary

Contribution Rates

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

Plan Provisions

There is no ad-hoc COLA on January 1, 2018. Instead, retirees were paid a service-related lump sum (i.e., referred to as 13th check) in September 2017. These changes are reflected in the June 30, 2017 valuation. Any future COLA is estimated by an ongoing assumption of 1.0% annual increases in all pension payments beginning January 1, 2019.

ASA annuitizations are scheduled to be based on a 4.50% conversion rate for the period from June 30, 2017 through December 31, 2017. After January 1, 2018, annuity conversions will occur outside of the plan. Benefit obligations in the June 30, 2017 valuation have been adjusted for the anticipated gains through December 31, 2017 for conversions at interest rates lower than the valuation interest rate of 6.75%.

SEA 46 provides that beginning July 1, 2017, the minimum pension benefit paid to a regularly retired member receiving an unreduced pension benefit is \$185 per month.

We are not aware of any other material changes in the plan provisions since the June 30, 2016 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, 2017 valuation are based on plan experience from July 1, 2011 to June 30, 2014.

The mortality assumption was modified to assume separate mortality experience for healthy and disabled members in the Plan. The healthy mortality assumption is the same that was used in the June 30, 2016 valuation. The disabled mortality assumption was changed to the RP-2014 Disabled Mortality Table with generational improvements from 2006 based on the 2014 Social Security Administration Trustee's Report.

Certain actuarial assumptions and methods were changed in 2017 for consistency across all INPRS pension plans as a result of an actuarial audit of the plans performed in 2016. The net impact of the changes is quantified in the report.

Benefit obligations in the June 30, 2017 valuation are determined using June 30, 2016 census data and rolled-forward to the June 30, 2017 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.

Plan assets and liabilities on June 31, 2017 and prior years include member ASA account balances. Effective June 30, 2018, those balances will be excluded from the valuation, resulting in a reduction in the reported funded percentage. If ASA balances were removed from the valuation on 6/30/2017, the funded percentage would be reduced to 91.0% from 92.8%.

Executive Summary

Investment Experience

The investment return for the year ended June 30, 2017 was higher than the assumed 6.75% return. The assets of the TRF 1996 Account are commingled with the assets of other funds administered by INPRS. The TRF money-weighted return was 8.14% during fiscal 2017. Under the asset valuation method, market gains and losses are spread over a five-year period. The Market Value of Assets is currently \$162 million lower than the Actuarial Value of Assets, meaning the plan is currently in a position of having net deferred investment losses to be recognized in future years.

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.

Summary of Key Valuation Results

	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
Member Information				
Number				
Active Members	58,097	55,265	52,424	51,204
Inactive Vested Members	4,252	4,335	4,132	3,103
Inactive Nonvested Members	12,494	12,529	12,292	11,147
Retired Members and Beneficiaries	<u>5,796</u>	<u>4,977</u>	<u>4,136</u>	<u>3,665</u>
Total	80,639	77,106	72,984	69,119
Valuation Payroll	\$ 3,032,299,098	\$ 3,004,169,194	\$ 2,827,310,987	\$ 2,740,661,321
Projected Payroll for Fiscal Year	\$ 3,215,600,000	\$ 3,127,400,000	\$ 3,078,600,000	\$ 2,987,300,000
Annual Benefit Payments				
Annuity	\$ 10,959,600	\$ 10,255,680	\$ 8,189,292	\$ 7,111,980
Pension	<u>91,218,672</u>	<u>80,904,120</u>	<u>67,524,240</u>	<u>60,057,396</u>
Total	\$ 102,178,272	\$ 91,159,800	\$ 75,713,532	\$ 67,169,376
Assets and Liabilities				
Accrued Liability				
ASA Account Balance	\$ 1,378,142,685	\$ 1,217,432,610	\$ 1,170,914,523	\$ 1,120,728,729
ASA Annuities	128,977,710	122,416,233	108,501,422	86,516,737
Pension: Retirees	1,084,802,600	956,838,640	788,534,587	672,727,439
Pension: Non-retirees	<u>4,322,314,046</u>	<u>4,095,062,582</u>	<u>3,837,740,501</u>	<u>3,357,020,264</u>
Total	\$ 6,914,237,041	\$ 6,391,750,065	\$ 5,905,691,033	\$ 5,236,993,169
Market Value of Assets				
ASA Account Balance	\$ 1,378,142,685	\$ 1,217,432,610	\$ 1,170,914,523	\$ 1,120,728,729
ASA Annuities	128,977,710	122,416,233	108,501,422	86,516,737
Pension: Retirees	1,084,802,600	956,838,640	788,534,587	672,727,439
Pension: Non-retirees	<u>3,660,117,313</u>	<u>3,314,542,211</u>	<u>3,311,162,510</u>	<u>3,309,469,425</u>
Total	\$ 6,252,040,308	\$ 5,611,229,694	\$ 5,379,113,042	\$ 5,189,442,330
Actuarial Value of Assets				
ASA Account Balance	\$ 1,378,142,685	\$ 1,217,432,610	\$ 1,170,914,523	\$ 1,120,728,729
ASA Annuities	122,416,233	122,416,233	108,501,422	86,516,737
Pension: Retirees	1,084,802,600	956,838,640	788,534,587	672,727,439
Pension: Non-retirees	<u>3,822,210,691</u>	<u>3,569,041,934</u>	<u>3,393,221,851</u>	<u>3,155,258,596</u>
Total	\$ 6,414,133,686	\$ 5,865,729,417	\$ 5,461,172,383	\$ 5,035,231,501
Unfunded Accrued Liability				
ASA Account Balance	\$ 0	\$ 0	\$ 0	\$ 0
ASA Annuities	0	0	0	0
Pension: Retirees	0	0	0	0
Pension: Non-retirees	<u>500,103,355</u>	<u>526,020,648</u>	<u>444,518,650</u>	<u>201,761,668</u>
Total	\$ 500,103,355	\$ 526,020,648	\$ 444,518,660	\$ 201,761,668
Funded Percentage				
ASA Account Balance	100.0%	100.0%	100.0%	100.0%
ASA Annuities	100.0%	100.0%	100.0%	100.0%
Pension: Retirees	100.0%	100.0%	100.0%	100.0%
Pension: Non-retirees	<u>88.4%</u>	<u>87.2%</u>	<u>88.4%</u>	<u>94.0%</u>
Total	92.8%	91.8%	92.5%	96.1%
Pension Normal Cost	\$ 182,558,143	\$ 168,650,636	\$ 167,836,193	\$ 170,892,424
Annual Costs				
	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016
Projected Payroll	\$ 3,385,700,000	\$ 3,244,100,000	\$ 3,294,100,000	\$ 3,226,300,000
Actuarially Determined Contribution (ADC)				
Normal Cost	\$ 192,019,749	\$ 174,856,990	\$ 179,528,450	\$ 184,544,360
Amortization of Unfunded Liability	<u>42,947,831</u>	<u>43,470,940</u>	<u>36,893,920</u>	<u>17,422,020</u>
Total	\$ 234,967,580	\$ 218,327,930	\$ 216,422,370	\$ 201,966,380
Calculated Contribution Rate				
Normal Cost	5.68%	5.39%	5.45%	5.72%
Amortization of Unfunded Liability	<u>1.26%</u>	<u>1.34%</u>	<u>1.12%</u>	<u>0.54%</u>
Total	6.94%	6.73%	6.57%	6.26%
Approved Employer Contribution Rate	7.50%	7.50%	7.50%	7.50%

Valuations on and after June 30, 2014 are based on census data collected at the prior measurement date.

Unfunded Accrued Liability

\$Millions				
June 30	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Percentage
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%
2015	5,906	5,461	445	92.5%
2016	6,392	5,866	526	91.8%
2017	6,914	6,414	500	92.8%

Reconciliation of Market Value of Assets

	June 30, 2016 thru June 30, 2017	June 30, 2015 thru June 30, 2016
Total Market Value, beginning of year ¹	\$ 5,611,229,694	\$ 5,379,113,042
Member Contributions	\$ 92,780,242	\$ 88,386,508
Employer Contributions	227,206,663	215,625,986
Non-Employer Contributing Entity Contributions	0	0
Benefit Payments	(143,725,207)	(135,289,991)
Net Transfers ²	<u>5,208,145</u>	<u>4,793,681</u>
Total Non-Investment Net Cash Flow	\$ 181,469,843	\$ 173,516,184
Administrative Expenses	\$ (5,552,446)	\$ (5,603,306)
Investment Return	<u>464,893,217</u>	<u>64,203,774</u>
Net Investment Return	\$ 459,340,771	\$ 58,600,468
Total Market Value, end of year	\$ 6,252,040,308	\$ 5,611,229,694
Market Value of Assets Approximate Time-Weighted Annual Rate of Return ³	8.1%	1.1%

¹ The asset values and cash flows on this page include ASA account balances, where asset values and cash flows on other pages may be pension values only.

² Net transfers from June 30, 2016 thru June 30, 2017 include member service credit purchases of \$57,709.

³ Consolidated pension and ASA account return, net of investment and administrative expenses, assumes cash flows occur at mid-year.

Note: Plan assets and liabilities on June 31, 2017 and prior years include member ASA account balances. Effective June 30, 2018, those balances will be excluded from the valuation

Development of the Actuarial Value of Assets

	June 30, 2016 thru June 30, 2017
1. Actuarial Value, beginning of year	\$ 5,865,729,417
2. ASA Account Balance, beginning of year	<u>\$ 1,217,432,610</u>
3. Actuarial Value, Net of ASA Account Balance, beginning of year [(1) – (2)]	\$ 4,648,296,807
4. Market Value, Net of ASA Account Balance, beginning of year	\$ 4,393,797,084
5. Market Value, Net of ASA Account Balance, end of year	\$ 4,873,897,623
6. Non-Investment Net Cash Flow	130,667,954
7. Net Investment Return	
a. Expected [.0675 x ((4)+0.5*(6))]	300,991,347
b. Actual [(5) - (4) - (6)]	<u>349,432,585</u>
8. Current Year Market Value Gain/(Loss) [(7b) - (7a)]	\$ 48,441,238
9. Deferred Recognition of Investment Gain/(Loss)	
a. Current Fiscal Year (80% of (8))	\$ 38,752,990
b. Current Fiscal Year - 1 (60%)	(139,356,343)
c. Current Fiscal Year - 2 (40%)	(115,397,817)
d. Current Fiscal Year - 3 (20%)	<u>53,907,792</u>
e. Total [(a) + (b) + (c) + (d)]	\$ (162,093,378)
10. Preliminary Actuarial Value, end of year [(5) - (9e)]	\$ 5,035,991,001
a. 80% of Market Value, end of year [80% of (5)]	3,899,118,098
b. 120% of Market Value, end of year [120% of (5)]	5,848,677,148
11. Actuarial Value, end of year [(10), but not Greater than (10b), nor Less than (10a)]	\$ 5,035,991,001
12. Actuarial Value as a % of Market Value [(11) / (5)]	103.33%
13. Net Investment Return on Actuarial Value [(11) - (3) - (6)]	\$ 257,026,240
14. Actuarial Value Net Rate of Return [(13) / ((3) + 0.5*(6))]	5.45%
15. Actuarial Value, Net of ASA Account Balance, end of year	\$ 5,035,991,001
16. ASA Account Balance, end of year	\$ 1,378,142,685
17. Actuarial Value, end of year [(15) + (16)]	\$ 6,414,133,686

Accrued Liability Reconciliation

	June 30, 2016 thru June 30, 2017	June 30, 2015 thru June 30, 2016
Total Accrued Liability, beginning of year	\$ 6,391,750,065	\$ 5,905,691,033
ASA Account Balance, beginning of year	\$ 1,217,432,610	\$ 1,170,914,523
Accrued Liability, Net of ASA Account Balance, beginning of year	\$ 5,174,317,455	\$ 4,734,776,510
Normal Cost	168,650,636	167,836,193
Actual Benefit Payments	(109,334,779)	(99,506,626)
Transfers	12,761,870	13,301,977
Expected Interest	<u>357,392,165</u>	<u>328,017,487</u>
Expected Accrued Liability, Net of ASA Account Balance, end of year	\$ 5,603,787,347	\$ 5,144,425,541
Sources of Change:		
Experience (Gain) or Loss	\$ 57,950,142	\$ 40,666,774
Mortality Change ¹	(3,513,002)	0
Other Assumption Changes ²	(111,992,651)	0
Additional Liability due to Cost-of-Living Adjustment ³	(11,490,243)	(10,774,860)
Plan Provision Changes ⁴	<u>1,352,763</u>	<u>0</u>
Accrued Liability, Net of ASA Account Balance, end of year	\$ 5,536,094,356	\$ 5,174,317,455
ASA Account Balance, end of year	\$ 1,378,142,685	\$ 1,217,432,610
Total Accrued Liability, end of year	\$ 6,914,237,041	\$ 6,391,750,065

¹ Change from healthy to disabled mortality assumption for disabled members.

² Changes in actuarial assumptions and methods for consistency across all INPRS pension plans resulting from the 2016 actuarial audit.

³ 13th check to retirees in lieu of the assumed 2018 and 2017 1.0% COLAs.

⁴ \$185 minimum monthly benefit payable beginning July 1, 2017 as specified in SEA 46.

Note: Plan assets and liabilities on June 31, 2017 and prior years include member ASA account balances. Effective June 30, 2018, those balances will be excluded from the valuation

Asset and Liability Allocation¹

	June 30, 2017		
	Non-Retired	Retired	Total
Accrued Liability (AL)			
ASA Balance	\$ 1,363,019,673	\$ 15,123,012	\$ 1,378,142,685
ASA Annuities	0	128,977,710	128,977,710
Pension: Retirees	0	1,084,802,600	1,084,802,600
Pension: Non-Retirees	4,322,314,046	0	4,322,314,046
Total	\$ 5,684,532,296	\$ 1,228,903,322	\$ 6,914,237,041
Market Assets			
ASA Balance	\$ 1,363,019,673	\$ 15,123,012	\$ 1,378,142,685
ASA Annuities	0	128,977,710	128,977,710
Pension: Retirees	0	1,084,802,600	1,084,802,600
Pension: Non-Retirees	3,660,117,313	0	3,660,117,313
Total	\$ 5,023,136,986	\$ 1,228,903,322	\$ 6,252,040,308
Actuarial Assets			
ASA Balance	\$ 1,363,019,673	\$ 15,123,012	\$ 1,378,142,685
ASA Annuities	0	128,977,710	128,977,710
Pension: Retirees	0	1,084,802,600	1,084,802,600
Pension: Non-Retirees	3,822,210,691	0	3,822,210,691
Total	\$ 5,185,230,364	\$ 1,228,903,322	\$ 6,414,133,686
Unfunded AL			
ASA Balance	\$ 0	\$ 0	\$ 0
ASA Annuities	0	0	0
Pension: Retirees	0	0	0
Pension: Non-Retirees	500,103,355	0	500,103,355
Total	\$ 500,103,355	\$ 0	\$ 500,103,355
June 30, 2016			
	Non-Retired	Retired	Total
Accrued Liability (AL)			
ASA Balance	\$ 1,204,885,475	\$ 12,547,135	\$ 1,217,432,610
ASA Annuities	0	122,416,233	122,416,233
Pension: Retirees	0	956,838,640	956,838,640
Pension: Non-Retirees	4,095,062,582	0	4,095,062,582
Total	\$ 5,299,948,057	\$ 1,091,802,008	\$ 6,391,750,065
Market Assets			
ASA Balance	\$ 1,204,885,475	\$ 12,547,135	\$ 1,217,432,610
ASA Annuities	0	122,416,233	122,416,233
Pension: Retirees	0	956,838,640	956,838,640
Pension: Non-Retirees	3,314,542,211	0	3,314,542,211
Total	\$ 4,519,427,686	\$ 1,091,802,008	\$ 5,611,229,694
Actuarial Assets			
ASA Balance	\$ 1,204,885,475	\$ 12,547,135	\$ 1,217,432,610
ASA Annuities	0	122,416,233	122,416,233
Pension: Retirees	0	956,838,640	956,838,640
Pension: Non-Retirees	3,569,041,934	0	3,569,041,934
Total	\$ 4,773,927,409	\$ 1,091,802,008	\$ 5,865,729,417
Unfunded AL			
ASA Balance	\$ 0	\$ 0	\$ 0
ASA Annuities	0	0	0
Pension: Retirees	0	0	0
Pension: Non-Retirees	526,020,648	0	526,020,648
Total	\$ 526,020,648	\$ 0	\$ 526,020,648

¹ 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
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%
2015	\$1,159,597	\$908,353	\$3,837,741	\$5,905,691	\$5,461,172	100.0%	100.0%	88.4%	92.5%
2016	\$1,204,885	\$1,091,802	\$4,095,063	\$6,391,750	\$5,865,729	100.0%	100.0%	87.2%	91.8%
2017	\$1,363,020	\$1,228,903	\$4,322,314	\$6,914,237	\$6,414,134	100.0%	100.0%	88.4%	92.8%

Analysis of Financial Experience¹

\$Thousands	June 30, 2016 thru June 30, 2017	June 30, 2015 thru June 30, 2016
Unfunded Accrued Liability, beginning of year	\$ 526,021	\$ 444,519
(Gain) / Loss:		
Actuarial Value of Assets	\$ 63,845	\$ 60,156
Actuarial Accrued Liabilities	57,951	40,667
Amortization of Existing Bases	(22,071)	(15,531)
Mortality Change ²	(3,513)	0
Other Assumption Changes ³	(111,993)	0
Asset Smoothing Method Change ⁴	0	6,985
Additional Liability due to Cost-of-Living Adjustment ⁵	(11,490)	(10,775)
Plan Provision Change ⁶	<u>1,353</u>	<u>0</u>
Net Change	\$ (25,918)	\$ 81,502
Unfunded Accrued Liability, end of year	\$ 500,103	\$ 526,021

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

² Change from healthy to disabled mortality assumption for disabled members.

³ Changes in actuarial assumptions and methods for consistency across all INPRS pension plans resulting from the 2016 actuarial audit.

⁴ Change in the asset smoothing period from 4 years to 5 years on June 30, 2016.

⁵ 13th check to retirees in lieu of the assumed 2018 and 2017 1.0% COLAs.

⁶ \$185 minimum monthly benefit payable beginning July 1, 2017 as specified in SEA 46.

Sensitivity to Changes in Assumed Investment Return / Interest Rate

\$Millions	Assumed Investment Return / Interest Rate				
	5.75%	6.00%	6.25%	6.50%	6.75%
Funded Status					
Actuarial Accrued Liability	\$ 7,907.0	\$ 7,643.1	\$ 7,389.8	\$ 7,146.7	\$ 6,914.2
Actuarial Value of Assets	<u>6,414.1</u>	<u>6,414.1</u>	<u>6,414.1</u>	<u>6,414.1</u>	<u>6,414.1</u>
Unfunded Accrued Liability	\$ 1,492.9	\$ 1,229.0	\$ 975.7	\$ 732.6	\$ 500.1
Funded Ratio	81.1%	83.9%	86.8%	89.7%	92.8%
Actuarially Determined Contribution Rate					
Normal Cost %	7.59%	7.06%	6.57%	6.11%	5.68%
UAL Amortization %	<u>3.63%</u>	<u>3.03%</u>	<u>2.43%</u>	<u>1.83%</u>	<u>1.26%</u>
Actuarially Determined Contribution %	11.22%	10.09%	9.00%	7.94%	6.94%

\$Millions	Assumed Investment Return / Interest Rate				
	7.00%	7.25%	7.50%	7.75%	8.00%
Funded Status					
Actuarial Accrued Liability	\$ 6,701.0	\$ 6,497.2	\$ 6,301.6	\$ 6,113.8	\$ 5,939.0
Actuarial Value of Assets	<u>6,414.1</u>	<u>6,414.1</u>	<u>6,414.1</u>	<u>6,414.1</u>	<u>6,414.1</u>
Unfunded Accrued Liability	\$ 286.9	\$ 83.1	\$ (112.5)	\$ (300.3)	\$ (475.1)
Funded Ratio	95.7%	98.7%	101.8%	104.9%	108.0%
Actuarially Determined Contribution Rate					
Normal Cost %	5.26%	4.90%	4.57%	4.27%	3.98%
UAL Amortization %	<u>0.68%</u>	<u>0.12%</u>	<u>-0.43%</u>	<u>-0.97%</u>	<u>-1.50%</u>
Actuarially Determined Contribution %	5.94%	5.02%	4.14%	3.30%	2.48%

Calculated Employer Contribution Rate

	June 30, 2017	% of Projected Payroll for Fiscal 2018
Normal Cost	\$ 182,558,143	5.68%
Amortization of Unfunded Accrued Liability		
Unfunded Accrued Liability (UAL) ¹	\$ 500,103,355	
Unamortized UAL from Prior Years ²	516,729,934	
Net Unamortized UAL	\$ (16,626,579)	
Amortization Factor (20-years, level dollar) ²	11.5322	
Current Year Amortization Payment	\$ (1,441,753)	
Payments Established in Prior Years ²	41,964,504	
Total Amortization Payments	\$ 40,522,751	1.26%
Calculated Employer Contribution Rate	\$ 223,080,894	6.94%
Projected Fiscal 2019 Payroll	\$ 3,385,700,000	
Projected Fiscal 2019 ADC	\$ 234,967,580	

¹ Pension and ASA annuity only

² The amortization period was changed from 30 years to 20 years on a prospective basis on 6/30/2016.

Amortization Schedule for Calculated Employer Contribution Rate

Date Established	Years Remaining	Unamortized Balance	Annual Payment
6/30/2009	22	\$ 184,241,556	\$ 15,281,273
6/30/2010	23	(12,175,319)	(990,323)
6/30/2011	24	131,557,208	10,510,348
6/30/2012	25	68,883,536	5,413,069
6/30/2013	26	(96,228,774)	(7,447,608)
6/30/2014	27	(86,248,962)	(6,582,002)
6/30/2015	28	240,774,324	18,137,176
6/30/2016	19	85,926,365	7,642,571
6/30/2017	20	<u>(16,626,579)</u>	<u>(1,441,753)</u>
		\$ 500,103,355	\$ 40,522,751

Statement of Fiduciary Net Position

	June 30, 2017	June 30, 2016
Assets		
Cash and Cash Equivalents	\$ 2,050,310	\$ 1,624,223
Receivables		
Contributions	\$ 3,294,939	\$ 1,657,503
Miscellaneous	271,102	208,832
Investments	35,305,017	75,813,928
Foreign Exchange Contracts	1,360,908,653	1,064,393,447
Accrued Interest and Dividends	16,165,078	15,340,071
Due from Other Funds	530,911	706,866
Total Receivables	<u>\$ 1,416,475,700</u>	<u>\$ 1,158,120,647</u>
Investments		
Short Term	\$ 7,059,089	\$ 5,915,199
Pooled Unit Trust Assets		
Repurchase Agreements	347,414	1,142,394
Short Term Investments	290,764,124	322,782,362
Fixed Income	1,707,432,068	2,129,316,197
Equities	1,687,725,236	1,461,265,927
Alternatives	1,950,878,841	1,795,974,206
Derivatives	669,519,392	(158,044)
Securities Lending Collateral	53,214,620	67,393,242
Total Investments	<u>\$ 6,366,940,784</u>	<u>\$ 5,783,631,483</u>
Net Capitalized Assets	<u>\$ 127,956</u>	<u>\$ 416,777</u>
Total Assets	<u>\$ 7,785,594,750</u>	<u>\$ 6,943,793,130</u>
Liabilities		
Accounts Payable	\$ 258,440	\$ 260,629
Retirement Benefits Payable	7,155,236	15,728,116
Salaries and Benefits Payable	0	0
Investments Payable	54,883,537	139,971,744
Foreign Exchange Contracts	1,365,763,778	1,060,638,685
Securities Lending Obligations	53,214,620	67,393,242
Securities Sold Under Agreement to Repurchase	51,130,258	47,651,563
Due to Other Funds	1,148,573	919,457
Total Liabilities	<u>\$ 1,533,554,442</u>	<u>\$ 1,332,563,436</u>
Net Position Restricted for Pensions	\$ 6,252,040,308	\$ 5,611,229,694

Statement of Changes in Fiduciary Net Position

	June 30, 2017	June 30, 2016
Additions		
Contributions		
Member Contributions	\$ 92,837,951	\$ 88,429,683
Employer Contributions	227,206,663	215,625,986
Nonemployer Contributing Entity Contributions	0	0
Other Contributions	<u>0</u>	<u>0</u>
Total Contributions	\$ 320,044,614	\$ 304,055,669
Investment Income/(Loss)		
Net Appreciation/(Depreciation)		
Fair Value of Investments	\$ 420,197,730	\$ 20,334,556
Other Net Investment Income	679,719	549,215
Net Interest and Dividends Income	80,661,666	73,863,716
Miscellaneous Income	0	0
Securities Lending Income	<u>569,059</u>	<u>722,896</u>
Total Investment Income/(Loss)	\$ 502,108,174	\$ 95,470,383
Less Direct Investment Expenses		
Investment Management Fees	\$ (33,475,208)	\$ (28,085,647)
Securities Lending Fees	(111,073)	(134,053)
Other Direct Investment Expenses	<u>(3,628,675)</u>	<u>(3,046,909)</u>
Total Direct Investment Expenses	\$ (37,214,956)	\$ (31,266,609)
Net Investment Income/(Loss)	\$ 464,893,218	\$ 64,203,774
Other Additions		
Miscellaneous	\$ 34,200	\$ 15,894
Interfund Transfers	<u>6,345,626</u>	<u>6,586,994</u>
Total Other Additions	\$ 6,379,826	\$ 6,602,888
Total Additions	\$ 791,317,658	\$ 374,862,331
Deductions		
Pension and Disability Benefits	\$ 132,591,893	\$ 124,302,337
Special Death Benefits	0	0
Distributions of Contributions and Interest	11,133,314	10,987,653
Pension Relief Distributions	0	0
Local Unit Withdrawals	0	0
Administrative Expenses	5,552,446	5,603,306
Project Expenses	0	0
Interfund Transfers	<u>1,229,391</u>	<u>1,852,383</u>
Total Deductions	\$ 150,507,044	\$ 142,745,679
Net Increase/(Decrease) in Net Position	\$ 640,810,614	\$ 232,116,652
Net Position Restricted for Pensions		
Beginning of Year	\$ 5,611,229,694	\$ 5,379,113,042
End of Year	\$ 6,252,040,308	\$ 5,611,229,694

Schedule of Changes in Net Pension Liability and Related Ratios

	June 30, 2017	June 30, 2016	June 30, 2015
Total Pension Liability			
Total Pension Liability, beginning of year	\$ 6,391,750,065	\$ 5,905,691,033	\$ 5,236,993,169
Annuity Savings Account (ASA), beginning of year	1,217,432,610	1,170,914,523	1,120,728,729
Excluding ASA, beginning of year	5,174,317,455	4,734,776,510	4,116,264,440
Service Cost	\$ 168,650,636	\$ 167,836,193	\$ 170,892,424
Interest Cost	357,392,165	328,017,487	287,264,315
Experience (Gains)/Losses	46,459,899	29,876,020	(40,857,253)
Assumption Changes	(115,505,653)	0	263,991,050
Plan Amendments	1,352,763	0	0
Benefit Payments	(109,334,779)	(99,506,626)	(90,266,941)
ASA Annuitizations	8,503,495	8,931,954	22,574,841
Net Member Reassignments	4,258,375	4,370,023	4,889,464
Other	0	15,894	24,170
Net Change in Total Pension Liability, Excluding ASA	\$ 361,776,901	\$ 439,540,945	\$ 618,512,070
Net Change in Total Pension Liability, ASA	160,710,075	46,518,087	50,185,794
Net Change in Total Pension Liability	522,486,976	486,059,032	668,697,864
Total Pension Liability, Excluding ASA, end of year	\$ 5,536,094,356	\$ 5,174,317,455	\$ 4,734,776,510
Total Pension Liability, ASA, end of year	1,378,142,685	1,217,432,610	1,170,914,523
Total Pension Liability, end of year	6,914,237,041	6,391,750,065	5,905,691,033
Fiduciary Net Position			
Fiduciary Net Position, beginning of year	\$ 5,611,229,694	\$ 5,379,113,042	\$ 5,189,442,330
Employer Contributions	227,206,663	215,625,986	205,763,142
Nonemployer contributing entities contributions	0	0	0
Member Contributions	92,837,951	88,386,508	86,515,294
Net investment income	464,927,418	64,203,774	25,587,176
Benefit Payments	(143,725,207)	(135,289,991)	(127,898,876)
Net Member Reassignments	5,116,235	4,777,787	5,865,039
Administrative Expenses	(5,552,446)	(5,603,306)	(6,185,233)
Other	0	15,894	24,170
Net Change in Fiduciary Net Position	\$ 640,810,614	\$ 232,116,652	\$ 189,670,712
Fiduciary Net Position, end of year	\$ 6,252,040,308	\$ 5,611,229,694	\$ 5,379,113,042
Net Pension Liability and Related Ratios			
Net Pension Liability, beginning of year	\$ 780,520,371	\$ 526,577,991	\$ 47,550,839
Net Pension Liability, end of year	\$ 662,196,733	\$ 780,520,371	\$ 526,577,991
Plan's Fiduciary Net Position as a			
Percentage of the Total Pension Liability	90.4%	87.8%	91.1%
Covered Employee Payroll (Actual)	\$ 3,020,463,178	\$ 2,881,397,273	\$ 2,742,186,608
Net Pension Liability as a Percentage of			
Covered Employee Payroll	21.9%	27.1%	19.2%

Note: Plan assets and liabilities on June 31, 2017 and prior years include member ASA account balances. Effective June 30, 2018, those balances will be excluded from the valuation

Schedule of Changes in Net Pension Liability and Related Ratios

	June 30, 2014	June 30, 2013
Total Pension Liability		
Total Pension Liability, beginning of year	\$ 4,748,148,931	\$ 4,338,309,018
Annuity Savings Account (ASA), beginning of year	990,704,762	899,338,904
Excluding ASA, beginning of year	3,757,444,169	3,438,970,114
Service Cost	\$ 155,314,388	\$ 147,336,605
Interest Cost	262,263,149	240,281,897
Experience (Gains)/Losses	504,077	(15,994,636)
Assumption Changes	0	0
Plan Amendments	(4,504,201)	0
Benefit Payments	(77,253,362)	(68,792,905)
ASA Annuitizations	15,151,081	11,621,194
Net Member Reassignments	6,922,378	0
Other	422,761	4,021,900
Net Change in Total Pension Liability, Excluding ASA	\$ 358,820,271	\$ 318,474,055
Net Change in Total Pension Liability, ASA	130,023,967	91,365,858
Net Change in Total Pension Liability	488,844,238	409,839,913
Total Pension Liability, Excluding ASA, end of year	\$ 4,116,264,440	\$ 3,757,444,169
Total Pension Liability, ASA, end of year	1,120,728,729	990,704,762
Total Pension Liability, end of year	5,236,993,169	4,748,148,931
Fiduciary Net Position		
Fiduciary Net Position, beginning of year	\$ 4,433,677,345	\$ 4,018,148,837
Employer Contributions	194,750,861	180,714,567
Nonemployer contributing entities contributions	0	0
Member Contributions	81,801,667	77,532,304
Net investment income	586,783,647	258,111,000
Benefit Payments	(108,719,624)	(97,157,000)
Net Member Reassignments	7,835,271	2,806,000
Administrative Expenses	(6,707,586)	(6,482,000)
Other	20,749	3,637
Net Change in Fiduciary Net Position	\$ 755,764,985	\$ 415,528,508
Fiduciary Net Position, end of year	\$ 5,189,442,330	\$ 4,433,677,345
Net Pension Liability and Related Ratios		
Net Pension Liability, beginning of year	\$ 314,471,586	\$ 320,160,181
Net Pension Liability, end of year	\$ 47,550,839	\$ 314,471,586
Plan's Fiduciary Net Position as a		
Percentage of the Total Pension Liability	99.1%	93.4%
Covered Employee Payroll (Actual)	\$ 2,598,115,000	\$ 2,442,496,000
Net Pension Liability as a Percentage of		
Covered Employee Payroll	1.8%	12.9%

Note: Plan assets and liabilities on June 31, 2017 and prior years include member ASA account balances. Effective June 30, 2018, those balances will be excluded from the valuation

Required Supplementary Information under GASB No. 68

	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
Schedule of Contributions				
Actuarially Determined Contribution	\$ 198,444,431	\$ 180,375,469	\$ 178,260,000	\$ 177,711,000
Contributions in Relation to the Actuarially Determined Contributions	<u>227,206,663</u>	<u>215,625,986</u>	<u>205,525,842*</u>	<u>194,750,861</u>
Contribution Deficiency/(Excess)	\$ (28,762,232)	\$ (35,250,517)	\$ (27,265,842)	\$ (17,039,861)
Covered Employee Payroll	\$ 3,020,463,178	\$ 2,881,397,273	\$ 2,742,186,608	\$ 2,598,115,000
Contributions as a Percentage of Covered Employee Payroll	7.5%	7.5%	7.5%	7.5%

Schedule of Investment Returns

Annual Money-Weighted Rate of Return, Net of Investment Expense	8.14%	1.01%	0.57%	12.71%
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June 30, 2013

Schedule of Contributions

Actuarially Determined Contribution	\$ 164,400,000
Contributions in Relation to the Actuarially Determined Contributions	<u>180,714,567</u>
Contribution Deficiency/(Excess)	\$ (16,314,567)
Covered Employee Payroll	\$ 2,442,496,000
Contributions as a Percentage of Covered Employee Payroll	7.5%

Schedule of Investment Returns

Annual Money-Weighted Rate of Return, Net of Investment Expense	5.11%
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Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of the TRF 1996 Account calculated using the discount rate of 6.75%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1% lower (5.75%) or 1% higher (7.75%) than the current rate:

	1% Decrease 5.75%	Current Rate 6.75%	1% Increase 7.75%
Net Pension Liability	\$ 1,654,941,123	\$ 662,196,733	\$ (138,242,300)

* Excludes \$237,300 attributable to member service credit purchases.

Pension Expense

	June 30, 2017	June 30, 2016
Service Cost	\$ 168,650,636	\$ 167,836,193
Interest on Total Pension Liability	357,392,165	328,017,487
Projected Earnings on Pension Plan Investments	(300,803,952)	(288,232,795)
Changes of Benefit Terms	1,352,763	0
Pension Plan Administrative Expenses*	5,441,592	5,488,857
Other Changes	0	0
Current Period Recognition of Deferred Outflows/(Inflows) of resources:		
Differences between Expected and Actual Experience in Measurement of the Total Pension Liability	2,572,965	(745,599)
Changes of Assumptions	10,606,100	18,856,504
Differences between Projected and Actual Earnings on Pension Plan Investments	<u>38,653,344</u>	<u>49,496,400</u>
Total	\$ 283,865,613	\$ 280,717,047

* Administrative expenses are net of INPRS contributions to the plan of \$110,854 in fiscal 2017 and \$114,449 in fiscal 2016.

**Deferred Outflows of Resources and Deferred Inflows of Resources
Related to Pensions**

	Initial Balance	Initial Amortization Period	Annual Recognition	June 30, 2017 Balance
Difference between Expected and Actual Experience in Measurement of the Total Pension Liability				
Base for Year ending June 30, 2017	\$ 46,459,899	14	\$ 3,318,564	\$ 43,141,335
Base for Year ending June 30, 2016	29,876,020	14	2,134,001	25,608,018
Base for Year ending June 30, 2015	(40,857,253)	14	(2,918,375)	(32,102,128)
Base for Year ending June 30, 2014	504,077	13	38,775	348,977
Change of Assumptions				
Base for Year ending June 30, 2017	\$ (115,505,653)	14	\$ (8,250,404)	\$ (107,255,249)
Base for Year ending June 30, 2016	0		0	0
Base for Year ending June 30, 2015	263,991,050	14	18,856,504	207,421,538
Differences between Projected and Actual Earnings on Pension Plan Investments				
Base for Year ending June 30, 2017	\$ (54,215,279)	5	\$ (10,843,056)	\$ (43,372,223)
Base for Year ending June 30, 2016	226,468,155	5	45,293,631	135,880,893
Base for Year ending June 30, 2015	276,569,674	5	55,313,935	110,627,869
Base for Year ending June 30, 2014	(255,555,829)	5	(51,111,166)	(51,111,165)
Changes in State's Proportion and Differences between Actual State Contributions and State's Proportionate Share of Contributions				
Base for Year ending June 30, 2017	\$ 0		\$ 0	\$ 0
Base for Year ending June 30, 2016	0		0	0
Base for Year ending June 30, 2015	0		0	0
Base for Year ending June 30, 2014	0		0	0
Total			\$ 51,832,409	\$ 289,187,865

The balances as of June 30, 2017 of the deferred outflows/(inflows) of resources will be recognized in pension expense as follows:

Year Ended June 30,	
2018	\$ 51,832,410
2019	\$ 102,943,574
2020	\$ 47,629,640
2021	\$ 2,336,010
2022	\$ 13,179,065
Thereafter	\$ 71,267,166

Member Data

The tables below summarize the member data used in the valuation. The June 30, 2017 valuation is based on June 30, 2016 census data, with liabilities rolled-forward to the June 30, 2017 measurement date. The data summarized in this section is as of the June 30, 2016 census collection date. The pages that follow show various distributions of the member groups.

	Males	Females	Total
Number of Actives	15,215	42,882	58,097
Average Age	40.0	39.7	39.8
Average Service	10.9	10.1	10.3
Average Pay	\$ 57,897	\$ 50,170	\$ 52,194
Number of Inactive Vesteds	1,110	3,142	4,252
Average Age	48.8	50.1	49.7
Average Service	15.1	14.5	14.6
Number of Inactive Nonvesteds	2,922	9,572	12,494
Number of Retirees and Beneficiaries	1,807	3,989	5,796
Average Age	67.9	67.1	67.4
Average Years Retired	7.4	6.0	6.5
Average Monthly Annuity ¹	\$ 201	\$ 138	\$ 158
Average Monthly Pension	\$ 1,623	\$ 1,170	\$ 1,312
Total Number of Members	21,054	59,585	80,639

¹ The average monthly annuity above is the average over all retirees and beneficiaries, including those that did not annuitize their ASA balances. The average monthly annuity for the 2,261 retirees and beneficiaries that did annuitize their ASA balances is \$404.

Active Member Data

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)
2014*	51,204	2,740,940	39.3	9.8	53,530	(1.2)
2015*	52,424	2,827,311	39.4	10.0	53,932	0.8
2016*	55,265	3,004,169	39.5	10.1	54,359	0.8
2017*	58,097	3,032,299	39.8	10.3	52,194	(4.0)

* Valuations on and after June 30, 2014 are based on census data collected at the prior measurement date.

Active Members

By Attained Age and Years of Service

Attained Age	Years of Service to Valuation Date						Total
	<10	10-14	15-19	20-24	25-29	30+	
15-19	2						2
20-24	1,451						1,451
25-29	8,668	2					8,670
30-34	8,515	1,623	1				10,139
35-39	4,029	5,259	1,546	5	2		10,841
40-44	2,519	1,941	4,111	858	6		9,435
45-49	1,942	1,293	1,895	1,721	200	4	7,055
50-54	1,174	851	1,148	661	552	128	4,514
55-59	749	619	941	603	280	339	3,531
60-64	372	324	464	369	139	215	1,883
65-69	153	69	101	79	34	42	478
70-74	43	9	13	5	3		73
75-79	11	1	1	1			14
80 & over	8	1	2				11
Total	29,636	11,992	10,223	4,302	1,216	728	58,097

Average Age: 39.8
 Average Service: 10.3

Inactive Vested Members

By Attained Age and Years of Service

Attained Age	Years of Service at Termination						Total
	<10	10-14	15-19	20-24	25-29	30+	
30-34		69	1				70
35-39		529	36				565
40-44		552	252	15			819
45-49		409	257	70	5		741
50-54		299	183	73	31	10	596
55-59		354	205	108	43	25	735
60-64		317	121	56	20	14	528
65-69		94	37	29	7	7	174
70-74		12	6	1		2	21
75-79		1					1
80 & over		1		1			2
Total		2,637	1,098	353	106	58	4,252

Average Age: 49.7
 Average Service: 14.6

Retired Members

By Attained Age and Completed Years of Retirement

Attained Age	Years of Retirement						Total
	<10	10-14	15-19	20-24	25-29	30+	
Under 40	7						7
40 - 44	12	1					13
45 - 49	19	5	1				25
50 - 54	57	6	1				64
55 - 59	333	7	4				344
60 - 64	1,242	35	6	1	1		1,285
65 - 69	1,903	279	25	2			2,209
70 - 74	693	331	155	5			1,184
75 - 79	109	165	122	35	4	1	436
80 - 84	34	31	43	45	10		163
85 - 89	4	5	3	22	14	1	49
90 & Over	1	1	3		8	4	17
Total	4,414	866	363	110	37	6	5,796

Average Age: 67.4
 Average Years Retired: 6.5

Retired Members

By Year of Retirement

Year of Retirement As of June 30	Number	Monthly Pension	
		Total	Average
1982	1	\$ 936	\$ 936
1986	2	1,562	781
1987	5	2,413	483
1988	3	1,050	350
1989	4	2,689	672
1990	10	9,409	941
1991	12	10,707	892
1992	10	10,862	1,086
1993	8	7,935	992
1994	17	22,090	1,299
1995	26	30,120	1,158
1996	33	41,793	1,266
1997	31	36,660	1,183
1998	43	52,008	1,209
1999	50	65,166	1,303
2000	77	97,575	1,267
2001	105	136,940	1,304
2002	134	187,212	1,397
2003	164	220,809	1,346
2004	192	261,477	1,362
2005	168	244,223	1,454
2006	166	224,573	1,353
2007	217	242,209	1,116
2008	330	360,261	1,092
2009	255	326,194	1,279
2010	283	387,613	1,370
2011	409	573,500	1,402
2012	512	677,641	1,324
2013	627	813,840	1,298
2014	527	688,391	1,306
2015	668	948,587	1,420
2016	707	915,111	1,294
Total	5,796	\$ 7,601,556	\$ 1,312

Retired Members

Reconciliation of Benefit Recipients

	Number of Members	Sum of Annual Allowances*
Benefit Recipient Rolls, July 1, 2007	1,925	\$ 37,012,980
Added to Rolls	255	5,126,028
Removed from Rolls	(21)	(316,275)
Net Transfers to Pre-1996 Account	104	1,762,578
Benefit Changes		(103,335)
End of Year Rolls	2,263	\$ 43,481,976
Percentage Increase in Annual Allowances		17.48%
Average Annual Allowances		\$ 19,214
Benefit Recipient Rolls, July 1, 2008	2,263	\$ 43,481,976
Added to Rolls	270	5,145,053
Removed from Rolls	(10)	(119,161)
Net Transfers to Pre-1996 Account	(579)	(11,768,469)
Benefit Changes		(427,067)
End of Year Rolls	1,944	\$ 36,312,332
Percentage Increase in Annual Allowances		(16.49%)
Average Annual Allowances		\$ 18,679
Benefit Recipient Rolls, July 1, 2009	1,944	\$ 36,312,332
Added to Rolls	249	4,859,402
Removed from Rolls	(12)	(129,306)
Benefit Changes		(341,332)
End of Year Rolls	2,181	\$ 40,701,096
Percentage Increase in Annual Allowances		12.1%
Average Annual Allowances		\$ 18,662
Benefit Recipient Rolls, July 1, 2010	2,181	\$ 40,701,096
Added to Rolls	390	7,665,877
Removed from Rolls	(17)	(253,436)
Benefit Changes		(226,865)
End of Year Rolls	2,554	\$ 47,886,672
Percentage Increase in Annual Allowances		17.65%
Average Annual Allowances		\$ 18,750

* Pension and ASA annuity

Retired Members

Reconciliation of Benefit Recipients

	Number of Members	Sum of Annual Allowances*
Benefit Recipient Rolls, July 1, 2011	2,554	\$ 47,886,672
Added to Rolls	433	8,131,748
Removed from Rolls	(16)	(236,302)
Benefit Changes		(307,450)
End of Year Rolls	2,971	\$ 55,474,668
Percentage Increase in Annual Allowances		15.85%
Average Annual Allowances		\$ 18,672
Benefit Recipient Rolls, July 1, 2012	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
Benefit Recipient Rolls, July 1, 2013	3,665	\$ 67,169,376
Added to Rolls	499	9,100,772
Removed from Rolls	(28)	(353,092)
Benefit Changes		(203,524)
End of Year Rolls	4,136	\$ 75,713,532
Percentage Increase in Annual Allowances		12.72%
Average Annual Allowances		\$ 18,306
Benefit Recipient Rolls, July 1, 2014	4,136	\$ 75,713,532
Added to Rolls	858	16,074,548
Removed from Rolls	(17)	(304,652)
Benefit Changes		(323,628)
End of Year Rolls	4,977	\$ 91,159,800
Percentage Increase in Annual Allowances		20.4%
Average Annual Allowances		\$ 18,316

* Pension and ASA annuity

Retired Members

Reconciliation of Benefit Recipients

	Number of Members	Sum of Annual Allowances*
Benefit Recipient Rolls, July 1, 2015	4,977	\$ 91,159,800
Added to Rolls	855	12,105,860
Removed from Rolls	(36)	(564,203)
Benefit Changes		(523,185)
End of Year Rolls	5,796	\$ 102,178,272
Percentage Increase in Annual Allowances		12.09%
Average Annual Allowances		\$ 17,629

* Pension and ASA annuity

Retired Members

Number of Benefit Recipients by Benefit Option

Amount of Monthly Benefit	Option A-1	Option A-2	Option A-3	Option B-1	Option B-2	Option B-3	Surv.	Dis.	Total
\$1-\$500	283	207	24	187	35	62	50	66	914
\$501-\$1,000	454	369	52	414	88	165	55	66	1,663
\$1,001-\$1,500	304	300	41	312	97	126	10	23	1,213
\$1,501-\$2,000	225	193	24	243	69	110	7	10	881
\$2,001-\$3,000	165	180	18	289	86	124	4	6	872
Over \$3,000	52	58	1	69	37	35	1	0	253
Total	1,483	1,307	160	1,514	412	622	127	171	5,796

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

Schedule of Average Benefit Payments by Service at Retirement

	Years of Service at Retirement						Total
	<10	10-14	15-19	20-24	25-29	30+	
Avg. Monthly Defined Benefit Pension	\$153	\$484	\$775	\$1,131	\$1,512	\$2,266	\$1,312
Avg. Monthly Annuity: All Benefit Recipients	\$18	\$71	\$106	\$134	\$198	\$248	\$158
Avg. Monthly Annuity: Benefit Recipients who Annuitized their ASA Balance (2,261 Recipients)	\$71	\$151	\$248	\$343	\$498	\$745	\$404
Avg. Final Avg. Salary at Retirement	\$35,860	\$44,235	\$54,609	\$61,152	\$65,476	\$74,829	\$61,121
Number of Benefit Recipients	179	748	1,478	898	794	1,699	5,796

Reconciliation of Participant Data

	Active	Inactive Vested	Inactive Nonvested	Survivor	Disabled	Retired	Beneficiary	Total
6/30/2015 Census	55,265	4,335	12,529	73	161	4,630	113	77,106
Disabled	(9)	(6)			15			0
Retired	(327)	(326)				653		0
Terminated with Vested Benefit	(867)	867						0
Terminated, due a Refund	(1,868)		1,868					0
Died with Survivor	(7)	(49)		56	(4)	(27)	31	0
Died, no Survivor*	(9)	(21)	(7)	(2)	(3)	(28)	(3)	(73)
Refunded/Forfeited*	(224)		(1,504)					(1,728)
Dropped from Database								0
Rehired	1,422	(551)	(871)					0
Status Corrections								0
Data Corrections	(4)	3	(5)		2	124**	5	125
New Hires	4,725		484					5,209
6/30/2016 Census	58,097	4,252	12,494	127	171	5,352	146	80,639

* No remaining benefit obligation in the plan.

** Retirees with two benefits now counted as two separate records. In past years, benefits were combined into one record.

Summary of Actuarial Assumptions and Methods

The assumptions used in this valuation reflect the study of experience covering the period July 1, 2011 through June 30, 2014.

Measurement Date	June 30, 2017
Valuation Date	
Assets	June 30, 2017
Liabilities	June 30, 2016. Member census data as of June 30, 2016 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2016 and June 30, 2017. Standard actuarial roll-forward techniques were then used to project the total pension liability computed as of June 30, 2016 to the June 30, 2017 measurement date.
Interest Rate / Investment Return	6.75% per year, compounded annually (net of administrative and investment expenses).
Pay Increase Assumption	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 2.25% for price inflation.
Total Active Member Payroll	Assumed to increase 6.0% from Fiscal 2017 to Fiscal 2018, and 5.3% from Fiscal 2018 to Fiscal 2019 for purposes of calculating the projected contribution for the 2018 and 2019 fiscal years. The increases are based on an open-group actuarial projection of the Plan.
Price Inflation	2.25% 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.
Mortality	
Healthy	RP-2014 White Collar Mortality with generational improvements from 2006 based on the 2014 Social Security Administration Trustee's Report.
Disabled	RP-2014 Disabled Mortality with generational improvements from 2006 based on the 2014 Social Security Administration Trustee's Report.
Active Retirement	Rates are shown in tables on the following pages.
Deferred Vested Retirement	Age 65 (age 60 with 15 or more years of service)
Withdrawal	Sample rates are shown in tables on the following pages.
Disability	Sample rates are shown in a table on the following pages.
Form of Payment	100% of members are assumed to elect the normal form of benefit payment (Option A-1), a single life annuity with a five-year certain period.

Summary of Actuarial Assumptions and Methods

Actuarial Cost Method	Entry Age Normal (level percent of pay) method, with a 20-year, closed, level dollar amortization of the Unfunded Accrued Liability arising from all sources including actuarial gains and losses. The weighted average amortization period on 6/30/2017 is 24 years.
Asset Valuation Method	The Actuarial Value of Assets recognizes investment gains and losses in equal installments over five 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.
Marriage Assumption	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.
Pay Increase Timing	Beginning of (fiscal) year. Payroll amounts stated in the valuation data are amounts projected to be paid during the current year.
Decrement Timing	Decrements are assumed to occur at the beginning of the year.
Other	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.
Miscellaneous Adjustments	The Average Annual Compensation was increased by \$400 to account for the inclusion of unused sick leave in the calculation of Average Annual Compensation.
Actuarial Equivalence Basis for Optional Forms of Payment	6.75% interest with a 50% unisex blend of the 2018 IRS combined mortality basis.
Explicit Expense Load	None.
COLA Assumption	1.0% compounded annually on pension portion, with the first COLA credited on January 1, 2019. The January 1, 2018 assumed 1.0% COLA was replaced by a service-related lump sum (a "13 th check") ranging from \$150 to \$450 in September, 2017.
Cost for ASA Conversions	ASA conversions between 6/30/2017 and 12/31/2017 will be based on a 4.50% conversion rate. After 1/1/2018, ASA annuity conversions will occur outside of the plan.
ASA Annuitization	50% of ASA balances are assumed to be converted to annuities at retirement prior to 1/1/2018, 0% thereafter.

Summary of Actuarial Assumptions and Methods

Employee Census and Asset Data 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.

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

Rates 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	0.150	55	0.050
		56	0.150	56	0.050
		57	0.150	57	0.065
		58	0.150	58	0.080
		59	0.200	59	0.120
60	0.200	60	0.200		
61	0.250	61	0.250		
62	0.300	62	0.300		
63	0.350	63	0.350		
64	0.400	64	0.400		
65	0.450	65	0.450		
66	0.450	66	0.450		
67	0.450	67	0.450		
68	0.450	68	0.450		
69	0.450	69	0.450		
70	1.000	70	1.000		

Rates 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

Rates of Withdrawal

Years of Service	Service-Based	
	Male	Female
0	0.3500	0.3500
1	0.1400	0.1400
2	0.1100	0.1100
3	0.0900	0.0900
4	0.0800	0.0800
5	0.0700	0.0700
6	0.0600	0.0600
7	0.0500	0.0550
8	0.0450	0.0500
9	0.0450	0.0450

Attained Age	Age-Based*	
	Male	Female
30	0.0225	0.0300
35	0.0225	0.0300
40	0.0225	0.0200
45	0.0225	0.0200
50	0.0225	0.0200
55	0.0225	0.0200
60	0.0225	0.0200

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

Summary of Actuarial Assumptions and Methods

Pay Increase Assumption

Years of Service	Merit & Seniority	Inflation	Total
1	10.25%	2.25%	12.50%
5	2.75%	2.25%	5.00%
10	2.75%	2.25%	5.00%
15	1.50%	2.25%	3.75%
20	0.25%	2.25%	2.50%
25	0.25%	2.25%	2.50%
30	0.25%	2.25%	2.50%
35	0.25%	2.25%	2.50%
40	0.25%	2.25%	2.50%

Definitions of Technical Terms

Accrued Service	Service credited under the system that was rendered before the date of the actuarial valuation.
Accrued Liability	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”.
Actuarial Assumptions	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.
Actuarial Cost Method	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”.
Actuarial Equivalent	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.
Actuarial Gain / (Loss)	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.
Actuarial Present Value	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.
Amortization	Paying off a present value with periodic payments.
Normal Cost	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”.
Unfunded Accrued Liability	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

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

Summary of Benefit Provisions

Changes in Plan Provisions since June 30, 2016

The minimum pension benefit paid to a regularly retired member receiving an unreduced pension benefit is \$185 per month effective July 1, 2017 per SEA 46.

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. Beginning July 1, 2017, the minimum pension benefit is \$185 per month.

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

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 2017, 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 6.75% interest with a 50% unisex blend of the IRS 2018 combined mortality basis.

Member Data: Total Fund

The tables below summarize the member data used in the valuation. The June 30, 2017 valuation is based on June 30, 2016 census data, with liabilities rolled-forward to the June 30, 2017 measurement date. The data summarized in this section is as of the June 30, 2016 census collection date. The pages that follow show various distributions of the member groups.

	Males	Females	Total
Number of Actives	18,553	52,672	71,225
Average Age	42.7	42.5	42.6
Average Service	14.1	13.3	13.5
Average Pay	\$ 61,278	\$ 53,704	\$ 55,677
Number of Inactive Vesteds	1,667	5,089	6,756
Average Age	51.6	53.2	52.8
Average Service	17.0	16.3	16.5
Number of Inactive Nonvesteds	3,019	9,875	12,894
Number of Retirees and Beneficiaries	19,044	39,992	59,036
Average Age	72.7	72.1	72.4
Average Years Retired	12.9	12.2	12.5
Average Monthly Annuity ¹	\$ 229	\$ 181	\$ 197
Average Monthly Pension	\$ 1,664	\$ 1,437	\$ 1,510
Total Number of Members	42,283	107,628	149,911

¹ The average monthly annuity above is the average over all retirees and beneficiaries, including those that did not annuitize their ASA balances. The average monthly annuity for the 25,100 retirees and beneficiaries that did annuitize their ASA balances is \$463.

Active Member Data: Total Fund

June 30	Number	Valuation Payroll (\$000s)	Average			
			Age	Service	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	78,866	2,878,329	42.9	14.1	36,497	(11.0)
1997	84,206	2,984,604	42.4	13.2	35,444	(2.9)
1998	84,664	3,094,941	42.5	13.2	36,556	3.1
1999	77,745	3,294,326	44.1	15.1	42,374	15.9
2000	77,870	3,192,605	44.4	15.2	40,999	(3.2)
2001	75,648	3,318,877	44.6	15.7	43,872	7.0
2002	75,383	3,609,471	44.7	15.8	47,884	9.1
2003	73,641	3,585,135	44.5	15.5	48,684	1.7
2004	73,510	3,651,653	44.5	15.5	49,676	2.0
2005	73,923	3,734,330	44.4	15.4	50,516	1.7
2006	73,350	3,802,721	44.5	15.4	51,844	2.6
2007	75,833	4,267,995	44.9	15.5	56,281	8.6
2008	76,256	4,348,535	44.6	15.6	57,025	1.3
2009	74,343	4,339,032	44.4	15.3	58,365	2.3
2010	72,872	4,312,611	44.2	15.2	59,181	1.4
2011	71,343	4,269,944	44.5	15.5	59,851	1.1
2012	70,573	4,232,018	44.4	15.4	59,967	0.2
2013	70,414	4,124,368	43.5	14.6	58,573	(2.3)
2014*	70,414	4,124,368	43.5	14.6	58,573	(2.3)
2015*	68,734	4,006,157	43.0	14.1	58,285	(0.5)
2016*	69,592	4,048,266	42.6	13.6	58,171	(0.2)
2017*	71,225	3,965,577	42.6	13.5	55,677	(4.3)

* Valuations on and after June 30, 2014 are based on census data collected at the prior measurement date.

Active Members: Total Fund

By Attained Age and Years of Service

Attained Age	Years of Service to Valuation Date						Total
	<10	10-14	15-19	20-24	25-29	30+	
15-19	2						2
20-24	1,451						1,451
25-29	8,668	2					8,670
30-34	8,515	1,623	1				10,139
35-39	4,029	5,259	1,546	5	2		10,841
40-44	2,558	1,964	4,142	1,025	7		9,696
45-49	2,087	1,421	2,038	3,363	704	8	9,621
50-54	1,251	945	1,219	1,274	2,356	870	7,915
55-59	791	663	979	1,072	1,116	2,513	7,134
60-64	408	364	501	666	581	2,002	4,522
65-69	182	78	113	127	115	445	1,060
70-74	48	17	18	6	7	44	140
75-79	12	1	1	1		4	19
80 & over	10	2	2			1	15
Total	30,012	12,339	10,560	7,539	4,888	5,887	71,225

Average Age: 42.6
Average Service: 13.5

Inactive Vested Members: Total Fund

By Attained Age and Years of Service

Attained Age	Years of Service to Valuation Date						Total
	<10	10-14	15-19	20-24	25-29	30+	
30-34		69	1				70
35-39		529	36				565
40-44		570	258	20			848
45-49		531	332	129	9	1	1,002
50-54		506	299	174	92	27	1,098
55-59		535	344	248	150	121	1,398
60-64		597	222	134	81	157	1,191
65-69		248	76	48	35	95	502
70-74		22	10	6	2	9	49
75-79		2	3				5
80 & over		12	7	4	4	1	28
Total		3,621	1,588	763	373	411	6,756

Average Age: 52.8
Average Service: 16.5

Retired Members: Total Fund

By Attained Age and Completed Years of Retirement

Attained Age	Years of Retirement						Total
	<10	10-14	15-19	20-24	25-29	30+	
Under 40	20	10	5	6	3	3	47
40 - 44	20	5	6	5		1	37
45 - 49	37	10	5	9			61
50 - 54	125	19	21	9	2	2	178
55 - 59	1,612	39	32	24	19	3	1,729
60 - 64	7,596	214	77	44	22	12	7,965
65 - 69	12,090	3,703	279	92	50	30	16,244
70 - 74	4,619	4,598	2,813	312	74	41	12,457
75 - 79	705	1,986	3,226	1,739	287	74	8,017
80 - 84	72	350	1,583	2,364	913	291	5,573
85 - 89	18	62	226	1,326	1,646	733	4,011
90 & Over	13	11	30	176	865	1,622	2,717
Total	26,927	11,007	8,303	6,106	3,881	2,812	59,036

Average Age: 72.4
Average Years Retired: 12.5

Retired Members: Total Fund

By Year of Retirement

Year of Retirement As of June 30	Number	Monthly Pension	
		Total	Average
Before 1978	323	\$ 123,845	\$ 383
1978	94	42,658	454
1979	120	61,291	511
1980	163	92,029	565
1981	173	92,769	536
1982	179	100,377	561
1983	241	143,410	595
1984	308	189,321	615
1985	450	299,683	666
1986	437	301,855	691
1987	527	396,015	751
1988	658	525,998	799
1989	571	485,091	850
1990	905	904,863	1,000
1991	909	985,568	1,084
1992	885	979,546	1,107
1993	944	1,127,175	1,194
1994	1,086	1,324,203	1,219
1995	1,416	1,800,817	1,272
1996	1,454	1,889,824	1,300
1997	1,275	1,636,244	1,283
1998	1,616	2,083,913	1,290
1999	1,524	2,082,247	1,366
2000	1,812	2,547,462	1,406
2001	1,816	2,631,649	1,449
2002	2,159	3,121,754	1,446
2003	1,959	2,872,777	1,466
2004	2,288	3,411,382	1,491
2005	2,193	3,439,525	1,568
2006	2,366	3,751,812	1,586
2007	2,344	3,585,116	1,529
2008	2,914	4,549,753	1,561
2009	2,134	3,511,474	1,645
2010	2,358	4,103,487	1,740
2011	3,224	5,785,768	1,795
2012	3,611	6,598,894	1,827
2013	3,244	6,012,601	1,853
2014	2,676	4,955,961	1,852
2015	3,168	6,025,410	1,902
2016	2,512	4,574,949	1,821
Total	59,036	\$ 89,148,516	\$ 1,510

Retired Members: Total Fund

Number of Benefit Recipients by Benefit Option

Amount of Monthly Benefit	Option A-1	Option A-2	Option A-3	Option B-1	Option B-2	Option B-3	Surv.	Dis.	Total
\$1-\$500	1,777	967	207	1,306	272	507	509	139	5,684
\$501-\$1,000	2,244	1,547	318	2,314	782	1,173	392	233	9,003
\$1,001-\$1,500	3,378	2,594	440	4,409	1,367	1,567	163	250	14,168
\$1,501-\$2,000	3,430	3,272	358	5,033	1,613	1,950	169	117	15,942
\$2,001-\$3,000	2,744	3,342	259	3,422	1,288	1,670	70	29	12,824
Over \$3,000	319	398	18	337	153	183	7	0	1,415
Total	13,892	12,120	1,600	16,821	5,475	7,050	1,310	768	59,036

¹Pension 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: Total Fund

Schedule of Average Benefit Payments by Service at Retirement

	Years of Service at Retirement						Total
	<10	10-14	15-19	20-24	25-29	30+	
Avg. Monthly Defined Benefit Pension	\$138	\$349	\$609	\$929	\$1,291	\$1,888	\$1,510
Avg. Monthly Annuity: All Benefit Recipients	\$13	\$100	\$110	\$138	\$169	\$235	\$197
Avg. Monthly Annuity: Benefit Recipients who Annuitized their ASA Balance (25,100 Recipients)	\$52	\$183	\$208	\$278	\$376	\$610	\$463
Avg. Final Avg. Salary at Retirement	\$32,482	\$31,228	\$42,963	\$49,461	\$54,098	\$59,829	\$55,134
Number of Benefit Recipients	339	2,039	5,126	6,667	9,424	35,441	59,036

Reconciliation of Participant Data: Total Fund

	Active	Inactive Vested	Inactive Nonvested	Survivor	Disabled	Retired	Beneficiary	Total
6/30/2015 Census	69,592	7,454	12,923	1,183	767	51,509	4,093	147,521
Disabled	(17)	(13)			30			0
Retired	(1,272)	(1,106)				2,378		0
Terminated with Vested Benefit	(1,349)	1,349						0
Terminated, due a Refund	(1,902)		1,902					0
Died with Survivor	(22)	(121)		143	(16)	(488)	504	0
Died, no Survivor*	(10)	(29)	(10)	(11)	(20)	(925)	(363)	(1,368)
Refunded/Forfeited*	(235)		(1,558)					(1,793)
Dropped from Database		(28)	(1)	(5)				(34)
Rehired	1,655	(770)	(885)					0
Status Corrections								0
Data Corrections	(1)	20	(4)		6	240**	11	272
New Hires	4,786		527					5,313
6/30/2016 Census	71,225	6,756	12,894	1,310	767	52,714	4,245	149,911

* No remaining benefit obligation in the plan.

** Retirees with two benefits now counted as two separate records. In past years, benefits were combined into one record.