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Indiana Public Retirement System

1977 Police Officers' and Firefighters' Pension and Disability Fund

Actuarial Valuation as of June 30, 2016

pwc

November 22, 2016

Board of Trustees
Indiana Public Retirement System
1 North Capitol, Suite 001
Indianapolis, IN 46204

Re: Certification of the Actuarial Valuations of the Indiana Public Retirement System as of June 30, 2016

Dear Board of Trustees:

Actuarial valuations are performed annually as required under statute for the Indiana Public Retirement System ("INPRS") defined benefit pension plans. The results of the June 30, 2016 actuarial valuations for all plans other than the Teachers' Retirement Fund are presented in individual valuation reports pursuant to the engagement letter between INPRS and PricewaterhouseCoopers LLP ("PwC"). These plans (the "Plans") include:

- Public Employees' Retirement Fund
- 1977 Police Officers' and Firefighters' Pension and Disability Fund
- Judges' Retirement System
- State Excise Police, Gaming Agent, Gaming Control Officer, and Conservation Enforcement Officers' Retirement Plan
- Prosecuting Attorneys' Retirement Fund
- Legislators' Retirement System Defined Benefit Plan

The reports are intended to provide the Board of Trustees ("Board") and INPRS staff with information on the funded status of the Plans, development of the contribution rates, and certain financial statement disclosure information. The reports are intended for their sole use and benefit, and are not intended for reliance by other persons.

For accounting purposes, the actuarial assumptions and methods used in the June 30, 2016 valuations were selected and approved by the Board, and are in accordance with our understanding of GASB No.67.

For funding purposes, employer contribution rates and amounts, as applicable, are adopted annually for each Plan by the Board, per Indiana statutes. The contributions are actuarially determined based on the funding policy, actuarial assumptions, and actuarial methods selected and approved by the Board. Contributions determined by the actuarial valuation become effective either twelve or eighteen months after the valuation date, depending on the applicable employer. Therefore, contribution rates and amounts determined by the June 30, 2016 actuarial valuation and adopted by the Board will become effective on either July 1, 2017 or January 1, 2018. If new legislation is enacted between the valuation date and the date the contributions become effective, the Board may adjust the recommended contributions before adopting them, in order to reflect this new legislation. Such adjustments are based on information supplied by the actuary.

Financing Objectives and Funding Policy
In setting contribution levels, the Board's principal objectives have been:

- To set contributions such that the unfunded actuarial accrued liability ("UAAL") of plans that are open to new entrants will be amortized over a period not greater than 20 years for any UAAL arising during the year ending June 30, 2016, and 30 years for any UAAL that arose prior to the year ending June 30, 2016. For plans that are closed to new entrants, the UAAL will be amortized over a period not greater than 5 years.
- To set contributions such that they remain relatively level over time.

To accomplish this, the Board's funding policy requires that employer contributions be equal to the sum of the employer normal cost (which pays the current year cost of benefits accruing) and an amortization of the UAAL in equal installments.

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 and/or adverse experience it should increase over time, until it reaches 100% if contributions equal or exceed the actuarially determined amount. The combined funded ratio for all Plans (excluding the Teachers' Retirement Fund) increased by 0.3% from the preceding year to 84.6%, primarily due to contributions exceeding the actuarially determined amounts, offset by investment returns less than the 6.75% assumed, and other adverse member demographic experience.

Benefit Provisions
The benefit provisions reflected in the valuation reports are those which were in effect at June 30, 2016, as set forth in Indiana statutes. There were no material changes in benefit provisions since the 2015 valuations.

Assets and Member Data
The valuations were based on asset values of the trust funds as of June 30, 2016 and member census data as of June 30, 2015, adjusted for certain activity during fiscal year 2016. All asset information and member data were provided by INPRS. While certain checks for reasonableness were performed, the data was used unaudited. The accuracy of the results presented in the reports is dependent upon the accuracy and completeness of the underlying asset and census information.

Actuarial Assumptions and Methods
The actuarial assumptions used in the June 30, 2016 valuations were the same assumptions used in the 2015 valuations. The assumptions were adopted by the Board pursuant to an experience study completed in April 2015, which reflected the experience period from July 1, 2010 through June 30, 2014, as well as data from earlier studies. The June 30, 2016 valuations incorporate member census data as of June 30, 2015, adjusted for certain activity during fiscal year 2016. Standard actuarial techniques were used to roll forward valuation results from June 30, 2015 to June 30, 2016.

The actuarial assumptions and methods are summarized in the Actuarial Assumptions and Methods section of each valuation report. We believe the actuarial assumptions and methods are reasonable for the purposes of the valuation reports and comply with the parameters set forth in Statements No. 67 and No. 68 of the Governmental Accounting Standards Board ("GASB"). Different assumptions and methods may be reasonable for other purposes. As such, the results presented in the valuation reports should only be relied upon for the intended purposes stated therein.

Certification
We certify that the information presented herein is accurate and fairly portrays the actuarial position of each Plan administered by INPRS (other than the Teachers' Retirement Fund) as of June 30, 2016, based on the underlying census data, asset information and selected assumptions and methods. This information is presented in several schedules and exhibits in this report, including the following:

Financial Section:
- Note 1 - Tables of Plan Membership (Included in the Historical Summary)
- Note 8 - Net Pension Liability and Actuarial Information - Defined Benefit Plans (Included in the Accounting Section)
- Schedule of Changes in Net Pension Liability and Plan Fiduciary Net Position
- Schedule of Contributions (Actuarially Determined Contribution)
- Schedule of Notes to Required Supplementary Information

Actuarial Section:
- Summary of INPRS Funded Status (Included in the Historical Summary)
- Historical Summary of Actuarial Valuation Results by Retirement Plan (Schedule of Funding Progress Included in the Historical Summary)
- Summary of Actuarial Assumptions, Methods and Plan Provisions
- Analysis of Financial Experience (Included in the Unfunded Actuarial Accrued Liability Reconciliation)
- Solvency Test (Included in the Historical Summary)
- Schedule of Active Member Valuation Data
- Schedule of Retirants and Beneficiaries

Statistical Section:
- Membership Data Summary (Included in the Historical Summary)
- Ratio of Active Members to Annuitants (Census Counts Included in the Historical Summary)
- Schedule of Benefit Recipients by Type of Benefit Option
- Schedule of Average Benefit Payments

Subject to reliance on the data provided, all estimates are based on information available as of a point in time and are subject to ongoing unforeseen and random events. As such, any reported results must be viewed as having a likely range of variability from the estimate, both up and down. Differences between our estimates and actual results depend on the extent to which future experience conforms to the assumptions made for this analysis. It is certain that actual experience will not conform exactly to the assumptions used in this analysis. Although estimated amounts have not been rounded, no inference should be made regarding the precision of such results.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

To the best of our knowledge our actuarial reports are complete and accurate and have been prepared in accordance with generally accepted actuarial principles and practice and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with our understanding of the requirements of Indiana state law. The undersigned actuaries are members of the Society of Actuaries and other professional organizations, including the American Academy of Actuaries, and meet the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States relating to pension plans. There is no relationship between the PwC practitioners involved in this engagement and INPRS that may impair our objectivity.

Respectfully submitted,

Cindy Fraterrigo

Ms. Cindy Fraterrigo
Member, American Academy of Actuaries
Fellow of the Society of Actuaries
Enrolled Actuary (No. 14-06229)

Brandon A. Robertson

Mr. Brandon Robertson
Member, American Academy of Actuaries
Associate of the Society of Actuaries
Enrolled Actuary (No. 14-07568)

Antonio DeSario

Mr. Antonio DeSario
Member, American Academy of Actuaries
Fellow of the Society of Actuaries
Enrolled Actuary (No. 14-08239)

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HIGHLIGHTS OF THE ACTUARY'S REPORT

This report presents the results of the actuarial valuation of the 1977 Police Officers' and Firefighters' Pension and Disability Fund (the "1977 Fund") and has been prepared to present the current funded status of the Plan, contribution requirements for calendar year 2018 (January 1, 2018 through December 31, 2018), and certain financial statement disclosure information. The valuation was performed using census data for plan members as of June 30, 2015, adjusted for certain activity during fiscal year 2016, as provided by INPRS and summarized in Section IV, asset information as of June 30, 2016 provided by INPRS, the actuarial assumptions and methods approved by the Board and summarized in Section V, and the plan provisions effective June 30, 2016 summarized in Section VI.

Contribution Rate

The Board sets, at its discretion, the applicable employer contribution rate upon considering the results of the actuarial valuation and other analysis as appropriate. The Board has approved an employer contribution rate of 17.5% for calendar year 2018. The contribution rate becomes effective on January 1, 2018. Therefore, the actual dollar amount of employer cost will depend on the actual payroll during calendar year 2018. The approved rate exceeds the actuarially determined contribution rate for calendar year 2018 of 9.15%.

Members of the 1977 Fund contribute 6% of the compensation of a first class officer during their first 32 years of service. However, the employer may elect to "pick-up" all or part of the employee contribution. If a member terminates employment with less than 20 years of service, the accumulated contributions with interest can be withdrawn as a lump sum or the member may direct the 1977 Fund to make a direct rollover of the distribution amount. When a member becomes vested with at least 20 years of service, the member's account balance may not be refunded and is instead combined with the employer contributions in order to fund the member's future retirement annuity benefit.

Funded Status

The funded status of the 1977 Fund is measured by the funded ratio, which is the ratio of the assets available for benefits to a benefit liability measure for the 1977 Fund. While there are several such measures that could be appropriately used, the benefit liability measure that ties most closely to INPRS's funding strategy is the Actuarial Accrued Liability ("AAL").

Using the Actuarial Value of Assets ("AVA"), an asset value that smoothest the market gains and losses over four (5) years, the 1977 Fund AAL funded ratio decreased from 105.5% at June 30, 2015 to 104.3% at June 30, 2016. The decrease is due to investment returns less than the 6.75% assumed and census experience losses, partially offset by contributions exceeding the actuarially determined contribution.

Investment Experience

For the fiscal year ending June 30, 2016, the INPRS actual time-weighted return net of fees was 1.2%. Based on the value of assets allocated to the 1977 Fund as of the prior valuation date and contribution and benefit payment activity during the year, the allocation of returns to the 1977 Fund represent a return of approximately 1.2% on market value and 5.1% on actuarial value. The return on actuarial value is different due to the smoothing of returns greater or less than expected returns over five years.

HIGHLIGHTS OF THE ACTUARY'S REPORT (CONTINUED)

Cost-of-Living Adjustment

Benefits for retired members are increased annually based on increases in the CPI-U index. The increase is subject to a 3% maximum and 0% minimum, and is assumed to be 2.0% annually. There was a 1.1% increase in monthly benefits provided to retired members, disabled members, and beneficiaries effective July 1, 2016. There was no increase in monthly benefits provided to retired members, disabled members, and beneficiaries effective July 1, 2015.

Changes in Actuarial Assumptions

There were no assumption changes for the June 30, 2016 valuation.

Changes in Plan Provisions

It is our understanding that there were no changes to the Plan that impacted the pension benefits during the fiscal year.

Changes in Actuarial Methods

The INPRS Board approved the following changes in methods, effective June 30, 2016:

For funding purposes and when the plan is below 100% funded (based on Actuarial Value of Assets), gains and losses occurring from census experience different than assumed, assumption changes, and benefit changes will be amortized over a 20-year period with level payments each year, rather than a 30-year period. A new gain or loss base will continue to be established each year. This change is made on a prospective basis, beginning with the June 30, 2016 actuarial valuation. Amortization bases established prior to June 30, 2016 will continue to be amortized over their original amortization period, even if the remaining period is greater than 20 years at June 30, 2016. If the plan is at or above 100% funded (based on Actuarial Value of Assets), the methodology of treating past amortization bases as fully amortized and amortizing the entire surplus over an open 30-year period is unchanged. This change had no impact at June 30, 2016 since the plan is above 100% funded on an Actuarial Value of Assets basis.

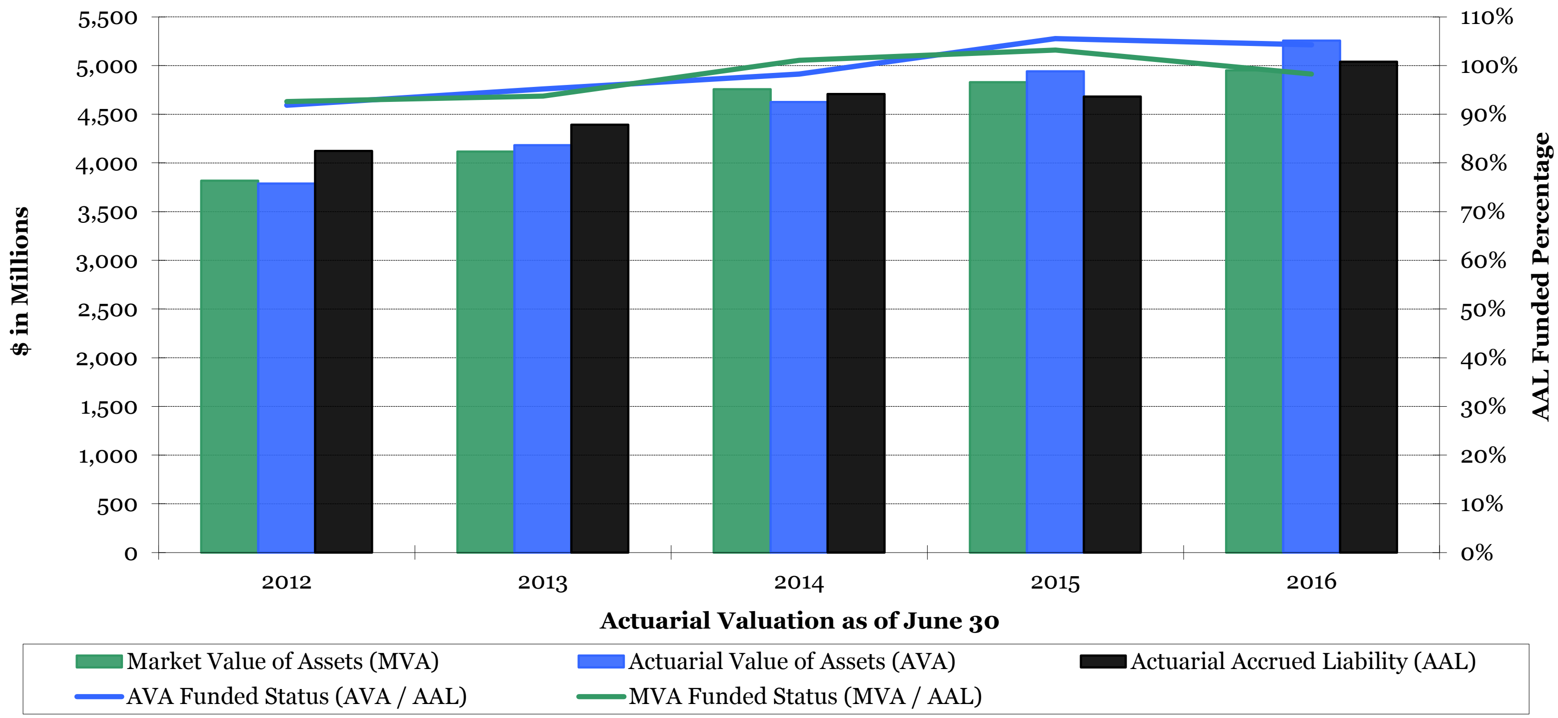
For funding purposes, the smoothing period for investment gains and losses in the development of the Actuarial Value of Assets was increased from four years to five years at June 30, 2016. This change was implemented retroactively in that the Actuarial Value of Assets at June 30, 2016 was computed as if the five-year amortization period for recognizing investment gains and losses had always been in effect. This change increased the Actuarial Value of Assets, and therefore decreased the Unfunded Actuarial Accrued Liability of the plan by $10,702,625 (0.10% on the Actuarially Determined Contribution Rate) at June 30, 2016.

Governmental Accounting Standards

This report contains certain financial statement information, including notes and required supplemental information, prepared in accordance with our understanding of Governmental Accounting Standards No. 67 and No. 68 ("GASB 67" and "GASB 68") in order to assist INPRS with its financial report requirements and to assist INPRS in preparing financial reporting information for participating employers.

HISTORICAL SUMMARY

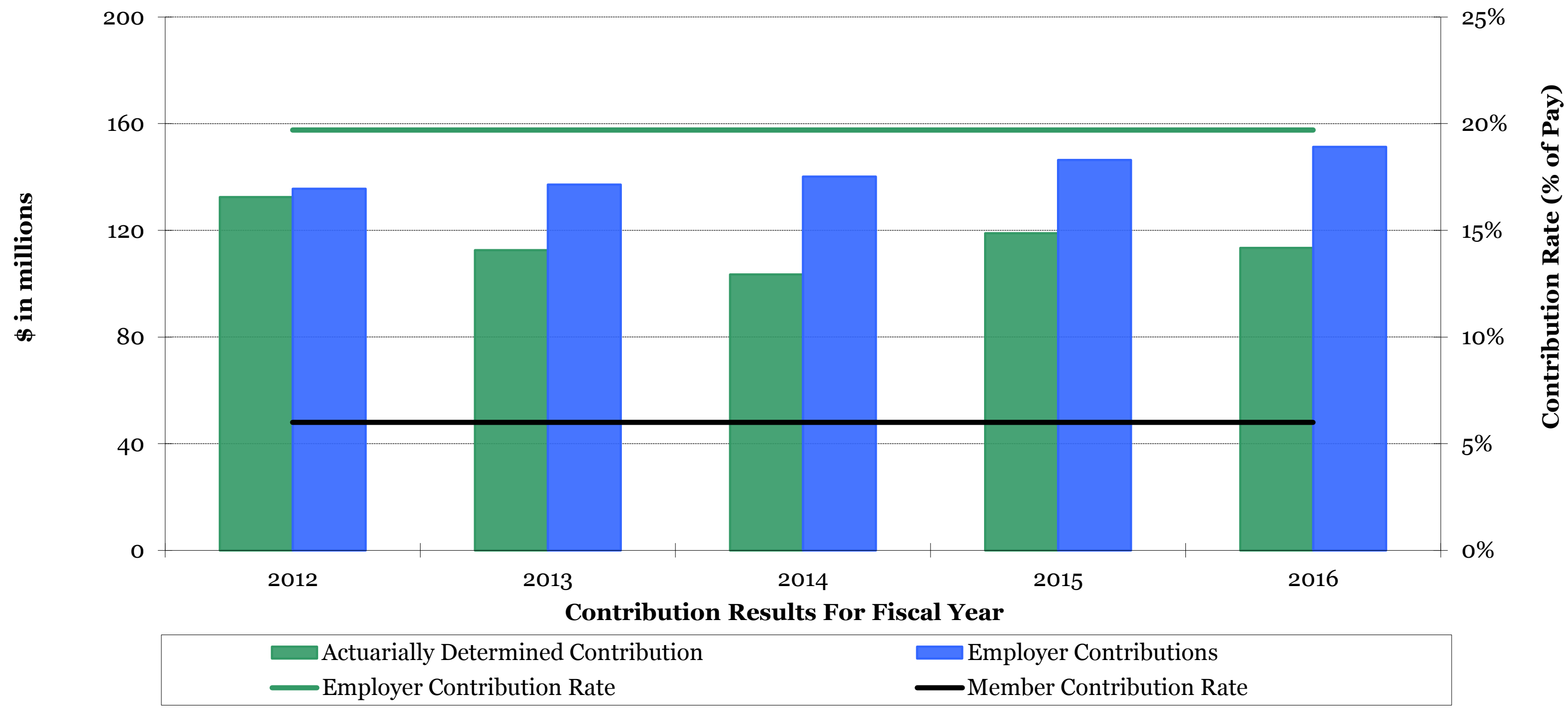
1977 Fund – 5 Year History of Funded Status



Actuarial Valuation as of June 30:	**2012**	**2013**	**2014**	**2015**	**2016**
Actuarial Accrued Liability (AAL)	$4,122.4	$4,392.9	$4,707.0	$4,680.7	$5,039.8
Actuarial Value of Assets (AVA)	3,786.6	4,180.7	4,625.5	4,939.3	5,255.2
Market Value of Assets (MVA)	3,817.0	4,116.9	4,758.0	4,828.4	4,951.0
Unfunded Liability (AAL - AVA)	335.8	212.2	81.5	(258.6)	(215.4)
AVA Funded Status (AVA / AAL)	91.9%	95.2%	98.3%	105.5%	104.3%
MVA Funded Status (MVA / AAL)	92.6%	93.7%	101.1%	103.2%	98.2%

HISTORICAL SUMMARY (CONTINUED)

1977 Fund – 5 Year History of Contributions



Contribution Results For Fiscal Year:	**2012**	**2013**	**2014**	**2015**	**2016**
Actuarially Determined Contribution [1]	$132.5	$112.6	$103.4	$118.9	$113.4
Employer Contributions [2]	$135.6	$137.1	$140.1	$146.4	$151.3
ADC % Contributed	102.3%	121.8%	135.5%	123.1%	133.4%
Employer Contribution Rate [3]	19.7%	19.7%	19.7%	19.7%	19.7%
Member Contribution Rate [4]	6.0%	6.0%	6.0%	6.0%	6.0%

[1] The ADC amount is based on the ADC Rates in effect during the fiscal year, multiplied by actual payroll for the fiscal year.

[2] Excludes employer service purchases.

[3] Rates shown are those in effect on January 1 during the fiscal year.

[4] Members contribute 6% of pay to the Fund during their first 32 years of service.

HISTORICAL SUMMARY (CONTINUED)

Summary of Valuation Results [1]

Valuation Date	June 30, 2012	June 30, 2013	June 30, 2014	June 30, 2015	June 30, 2016
Development of Actuarially Determined Contribution Rate:					
1. Anticipated Payroll [2]	$ 697,111,339	$ 706,603,233	$ 734,023,680	$ 764,214,642	$ 791,508,489
2. Normal Cost (Beginning of Year)					
a. Amount	$ 130,912,451	$ 133,074,656	$ 138,204,281	$ 129,369,091	$ 134,489,476
b. Percentage of Payroll	18.78%	18.83%	18.83%	16.93%	16.99%
3. Unfunded Actuarial Accrued Liability Annual Amortizations					
a. Amount	$ 25,053,170	$ 16,255,805	$ 6,857,014	$ (19,036,586)	$ (15,855,710)
b. Percentage of Payroll	3.59%	2.30%	0.93%	(2.49%)	(2.00%)
4. Expected Employee Contributions [3]					
a. Amount	$ 40,821,968	$ 40,636,183	$ 42,213,980	$ 45,065,879	$ 46,206,515
b. Percentage of Payroll	5.85%	5.75%	5.75%	5.90%	5.84%
5. Actuarially Determined Contribution Rate:					
a. Percentage of Payroll: (2)(b) + (3)(b) - 4(b)	**16.52%**	**15.38%**	**14.01%**	**8.54%**	**9.15%**
b. Effective Date	January 1, 2014	January 1, 2015	January 1, 2016	January 1, 2017	January 1, 2018

Calendar Year	2014	2015	2016	2017	2018
Approved Funding Rate	**19.7%**	**19.7%**	**19.7%**	**17.5%**	**17.5%**

[1] The contribution rates shown were developed on a funding basis only and do not reflect acounting requirements

[2] For the 1977 Fund, payroll is the applicable first class officer pay for each member.

[3] Only members with less than 32 years of service contribute to the plan. Current payroll for active members with less than 32 years of service as of June 30, 2016 is $770,108,586.

HISTORICAL SUMMARY (CONTINUED)

Summary of Valuation Results (Continued) [1]

	June 30, 2012	June 30, 2013	June 30, 2014	June 30, 2015	June 30, 2016
Census Information					
Active					
Number	13,390	13,287	13,295	13,390	13,506
Average Age	41.1	41.9	41.9	42.1	42.2
Average Years of Service	13.6	14.4	14.4	14.7	14.6
Anticipated Payroll of Actives [2]	$ 697,111,339	$ 706,603,233	$ 734,023,680	$ 764,214,642	$ 791,508,489
Inactive - Vested					
Number	122	129	129	155	186
Average Age	50.1	49.9	49.9	50.0	50.3
Average Years of Service	22.4	22.6	22.6	22.7	23.2
Inactive - Non-Vested [3]					
Number	751	796	796	822	933
Retiree/Beneficiary/Disabled					
Number	3,208	3,491	3,491	3,736	4,004
Average Age	61.7	61.7	61.7	62.2	62.3
Annual Benefits Payable [4]	$ 76,916,985	$ 87,301,272	$ 87,301,272	$ 96,335,985	$ 105,218,382

[1] The valuation results beginning as of June 30, 2014 were calculated using census data as of the prior year end, adjusted for certain activity during the current fiscal year.

[2] For the 1977 Fund, payroll is the applicable first class officer pay for each member. Figures shown are the anticipated pay for the one-year period following the valuation date.

[3] As of June 30, 2015, inactive non-vested members entitled to a refund of their member contributions totaling $8,999,626.

[4] Figures shown reflect cost-of-living increases effective July 1 following the date of the census data.

HISTORICAL SUMMARY (CONTINUED)

Summary of Valuation Results (Continued)

	June 30, 2012	June 30, 2013	June 30, 2014	June 30, 2015	June 30, 2016
Actuarial Accrued Liability (AAL)					
Member Contribution Balance	$ 728,891,808	$ 782,124,168	$ 809,877,043	$ 832,760,403	$ 843,627,868
Retiree/Beneficiary/Disabled	1,135,537,898	1,288,456,658	1,280,920,387	1,362,021,464	1,532,935,648
Active and Inactive	2,258,006,406	2,322,366,151	2,616,200,032	2,485,912,578	2,663,272,471
Total	$ 4,122,436,112	$ 4,392,946,977	$ 4,706,997,462	$ 4,680,694,445	$ 5,039,835,987
Actuarial Value of Assets (AVA)					
Member Contribution Balance	$ 728,891,808	$ 782,124,168	$ 809,877,043	$ 832,760,403	$ 843,627,868
Retiree/Beneficiary/Disabled	1,135,537,898	1,288,456,658	1,280,920,387	1,362,021,464	1,532,935,648
Active and Inactive	1,922,164,986	2,110,122,792	2,534,677,540	2,744,548,162	2,878,691,926
Total	$ 3,786,594,692	$ 4,180,703,618	$ 4,625,474,970	$ 4,939,330,029	$ 5,255,255,442
Market Value of Assets (MVA)					
Member Contribution Balance	$ 728,891,808	$ 782,124,168	$ 809,877,043	$ 832,760,403	$ 843,627,868
Retiree/Beneficiary/Disabled	1,135,537,898	1,288,456,658	1,280,920,387	1,362,021,464	1,532,935,648
Active and Inactive	1,952,583,928	2,046,280,295	2,667,180,355	2,633,632,694	2,574,435,549
Total	$ 3,817,013,634	$ 4,116,861,121	$ 4,757,977,785	$ 4,828,414,561	$ 4,950,999,065
Unfunded Actuarial Accrued Liability: AAL - AVA [1]					
Member Contribution Balance	$ -	$ -	$ -	$ -	$ -
Retiree/Beneficiary/Disabled	-	-	-	-	-
Active and Inactive	335,841,420	212,243,359	81,522,492	(258,635,584)	(215,419,455)
Total	$ 335,841,420	$ 212,243,359	$ 81,522,492	$ (258,635,584)	$ (215,419,455)
Funded Percentage: AVA / AAL [1]					
Member Contribution Balance	100.0%	100.0%	100.0%	100.0%	100.0%
Retiree/Beneficiary/Disabled	100.0%	100.0%	100.0%	100.0%	100.0%
Active and Inactive	85.1%	90.9%	96.9%	110.4%	108.1%
Total	91.9%	95.2%	98.3%	105.5%	104.3%
Summary of Assumptions					
Valuation Interest Rate	6.75%	6.75%	6.75%	6.75%	6.75%
Salary Scale	3.25%	3.25%	3.25%	2.50%	2.50%
Cost-of-Living Assumption	2.25%	2.25%	2.25%	2.00%	2.00%

[1] For purposed of this summary, in determining the unfunded actuarial accrued liability and funded percentage, the assets are allocated first to member contribution balances, then to the retiree/beneficiary/disabled liability, and then to the active/inactive liability.

FUNDING

A. Development of Funded Status

			June 30, 2015		June 30, 2016
1.	Actuarial Accrued Liability				
	a.	Member Contribution Account	832,760,403		843,627,868
	b.	Retirees, Beneficiaries, and Disableds	1,362,021,464		1,532,935,648
	c.	Actives and Inactives	2,485,912,578		2,663,272,471
	d.	Total: (1)(a) + (1)(b) + (1)(c)	$ 4,680,694,445		$ 5,039,835,987
2.	Actuarial Value of Assets [1]				
	a.	Member Contribution Account	832,760,403		843,627,868
	b.	Retirees, Beneficiaries, and Disableds	1,362,021,464		1,532,935,648
	c.	Actives and Inactives	2,744,548,162		2,878,691,926
	d.	Total: (2)(a) + (2)(b) + (2)(c)	$ 4,939,330,029		$ 5,255,255,442
3.	Unfunded Actuarial Accrued Liability [1]				
	a.	Member Contribution Account: (1)(a) - (2)(a)	-		-
	b.	Retirees, Beneficiaries, and Disableds: (1)(b) - (2)(b)	-		-
	c.	Actives and Inactives: (1)(c) - (2)(c)	(258,635,584)		(215,419,455)
	d.	Total: (1)(d) - (2)(d)	$ (258,635,584)		$ (215,419,455)
4.	Funded Percentage [1]				
	a.	Member Contribution Account: (2)(a) / (1)(a)	100.0%		100.0%
	b.	Retirees, Beneficiaries, and Disableds: (2)(b) / (1)(b)	100.0%		100.0%
	c.	Actives and Inactives: (2)(c) / (1)(c)	110.4%		108.1%
	d.	Total: (2)(d) / (1)(d)	105.5%		104.3%

[1] For purposes of this summary, in determining the unfunded actuarial accrued liability and funded percentage, the assets are allocated first to member contribution balances, then to the retiree/beneficiary/disabled liability, and then to the active/inactive liability.

B. Unfunded Actuarial Accrued Liability Reconciliation

1.	June 30, 2015 Unfunded Actuarial Accrued Liability	$	(258,635,584)
2.	Normal Cost		129,369,091
3.	Actuarially Determined Contribution (Employer and Member)		110,332,505
4.	Interest of 6.75% on (1) + (2) - (3)		(16,172,932)
5.	Expected June 30, 2016 Unfunded Actuarial Accrued Liability (1) + (2) - (3) + (4)	$	(255,771,930)
6.	Actuarial Value of Assets Experience (Gain)/Loss		
	a. Investment Experience	$	83,550,887
	b. Contribution and Payroll Experience		(74,219,283)
	c. Changes in Actuarial Methods [1]		(10,702,625)
7.	Actuarial Accrued Liability Experience (Gain)/Loss		
	a. Actuarial Accrued Liability Experience	$	56,880,594
	b. Additional Liability Due to Cost-of-living Adjustments [2]		(15,157,098)
	c. Additional Liability Due to Changes in Actuarial Assumptions		-
	d. Additional Liability Due to Changes in Plan Provisions		-
8.	Total Experience (Gain)/Loss (6)(a) + (6)(b) + (7)(a) + (7)(b) + (7)(c) + (7)(d)	$	40,352,475
9.	Actual June 30, 2016 Unfunded Actuarial Accrued Liability (5) + (8)	$	(215,419,455)

[1] The INPRS Board approved a change in the method used to compute the Actuarial Value of Assets beginning June 30, 2016 to retroactively increase the smoothing period for investment gains and losses from four years to five years.

[2] A Cost-of-Living Adjustment (COLA) of 1.1% was effective as of July 1, 2016, rather than the assumed COLA of 2.0%.

C. Actuarial Accrued Liability Reconciliation

			Dollar Change in Liability	Percent Change in Liability
1.	June 30, 2015 Actuarial Accrued Liability	$	4,680,694,445	
2.	Normal Cost		129,369,091	
3.	Actual Benefit Payments [1]		132,821,251	
4.	Service Purchases (Employer and Member) [2]		651,642	
5.	Interest of 6.75% on (1) + (2) - (3)/2 + (4)/2		320,218,564	
6.	Expected June 30, 2016 Actuarial Accrued Liability: (1) + (2) - (3) + (4) + (5)	$	4,998,112,491	
7.	(Gain)/Loss Components			
	a. Census	$	56,880,594	1.1%
	b. Cost-of-Living Adjustment [3]		(15,157,098)	(0.3%)
	c. Assumption Changes		-	0.0%
	d. Plan Changes		-	0.0%
	e. Total: (7)(a) + (7)(b) + (7)(c) + (7)(d)	$	41,723,496	0.8%
8.	Actual June 30, 2016 Actuarial Accrued Liability: (6) + (7)(e)	**$**	**5,039,835,987**	

[1] Includes refunds of accumulated member contributions and net interfund transfers.

[2] Includes $374,748 of employer service purchases and $276,894 of member service purchases.

[3] A Cost-of-Living Adjustment (COLA) of 1.1% was effective as of July 1, 2016, rather than the assumed COLA of 2.0%.

D. Reconciliation of Market Value of Assets

		June 30, 2015	June 30, 2016
1.	Market Value of Assets, Prior June 30	$ 4,757,977,785	$ 4,828,414,561
2.	Receipts		
a.	Employer Contributions [1]	$ 146,696,360	$ 151,674,202
b.	Member Contributions [2]	43,523,241	44,918,203
c.	Investment Income and Dividends Net of Fees	(2,281,689)	59,652,391
d.	Security Lending Income Net of Fees	681,740	669,041
e.	Member Reassignments	-	-
f.	Miscellaneous Income	15,287	143,258
g.	Total Receipts: (2)(a) + (2)(b) + (2)(c) + (2)(d) + (2)(e) + (2)(f)	$ 188,634,939	$ 257,057,095
3.	Disbursements		
a.	Benefits Paid During the Year	$ 112,874,523	$ 128,709,387
b.	Refund of Contributions and Interest	3,615,379	4,037,448
c.	Administrative Expenses	1,708,261	1,651,340
d.	Member Reassignments	-	74,416
e.	Miscellaneous Disbursements	-	-
f.	Total Disbursements: (3)(a) + (3)(b) + (3)(c) + (3)(d) + (3)(e)	$ 118,198,163	$ 134,472,591
4.	Market Value of Assets, Current June 30: (1) + (2)(g) - (3)(f)	**$ 4,828,414,561**	**$ 4,950,999,065**
5.	Market Value of Assets Approximate Annual Rate of Return [3]	(0.1%)	1.2%

[1] Includes $294,643 of employer service purchases during fiscal year 2015 and $374,748 during fiscal year 2016.

[2] Includes $178,893 of member service purchases during fiscal year 2015 and $276,894 during fiscal year 2016.

[3] Based on individual fund experience. Net of expenses and assuming cash flows occur at mid-year.

E. Reconciliation of Actuarial Value of Assets [1]

1.	Market Value of Assets, June 30, 2015	$	4,828,414,561
2.	Market Value of Assets, June 30, 2016		4,950,999,065
3.	Expected Earnings/Expenses		
	a. Expected Investment Earnings at 6.75% on June 30, 2015 Market Value		325,917,983
	b. Receipts with Expected Investment Earnings at 6.75% [2]		203,375,492
	c. Disbursements with Expected Investment Earnings at 6.75% [2]		137,303,968
4.	Expected Assets, June 30, 2016: (1) + (3)(a) + (3)(b) - (3)(c)	$	5,220,404,068
5.	2015-2016 Gain/(Loss): (2) - (4)		(269,405,003)
6.	Smoothing of Gain/(Loss)		

	Year		Gain/(Loss)	% Unrecognized	
a.	2015-2016	$	(269,405,003)	80%	(215,524,002)
b.	2014-2015	$	(326,960,603)	60%	(196,176,362)
c.	2013-2014	$	287,921,206	40%	115,168,482
d.	2012-2013	$	(38,622,475)	20%	(7,724,495)

7.	Preliminary Actuarial Value of Assets, June 30, 2016: (2) - (6)(a) - (6)(b) - (6)(c) - (6)(d)	$	5,255,255,442
8.	Corridor		
	a. 120% of Market Value: 1.2 x (2)		5,941,198,878
	b. 80% of Market Value: 0.8 x (2)		3,960,799,252
9.	Actuarial Value of Assets, June 30, 2016: (7), but not greater than (8)(a) or less than (8)(b)	**$**	**5,255,255,442**
10.	Actuarial Value of Assets as a Percent of Market Value: (9) / (2)		106.1%
11.	Actuarial Value of Assets Approximate Annual Rate of Investment Return [3]		5.1%

[1] The INPRS Board approved a change in the method used to compute the Actuarial Value of Assets beginning June 30, 2016 to retroactively increase the smoothing period for investment gains and losses from four years to five years.

[2] Assumes cash flows occur at mid-year.

[3] Net of expenses, assumes cash flows occur at mid-year, and is net of the impact of changing from four-year to a five-year smoothing.

F. Contribution Rate

		June 30, 2015	June 30, 2016
Development of Actuarially Determined Contribution Rate:			
1.	Anticipated Payroll [1]	$ 764,214,642	$ 791,508,489
2.	Normal Cost (Beginning of Year)		
	a. Amount	$ 129,369,091	$ 134,489,476
	b. Percentage of Payroll	16.93%	16.99%
3.	Unfunded Actuarial Accrued Liability (UAAL) Annual Amortizations		
	a. Amount	$ (19,036,586)	$ (15,855,710)
	b. Percentage of Payroll	(2.49%)	(2.00%)
4.	Expected Employee Contributions [2]		
	a. Amount	$ 45,065,879	$ 46,206,515
	b. Percentage of Payroll	5.90%	5.84%
5.	Actuarially Determined Contribution Rate:		
	a. Percentage of Payroll: (2)(b) + (3)(b) - 4(b)	**8.54%**	**9.15%**
	b. Effective Date	January 1, 2017	January 1, 2018
Approved Funding Rate:		**17.5%**	**17.5%**
Expected Percentage of Actuarially Determined Contribution Contributed:			
6.	Fiscal Year Beginning	July 1, 2016	July 1, 2017
7.	Actuarially Determined Contribution Rates for:		
	a. July 1 - December 31	14.01%	8.54%
	b. January 1 - June 30	8.54%	9.15%
8.	Approved Funding Rates for:		
	a. July 1 - December 31	19.7%	17.5%
	b. January 1 - June 30	17.5%	17.5%
9.	Expected Percentage of Actuarially Determined Contribution Contributed: {[(8)(a) + (8)(b)] / 2} / {[(7)(a) + (7)(b)] / 2}	164.97%	197.85%

[1] For the 1977 Fund, payroll is the applicable first class officer pay for each member.

[2] Only members with less than 32 years of service contribute to the plan. Anticipated payroll for active members with less than 32 years of service as of June 30, 2016 is $770,108,586.

G. Unfunded Actuarial Accrued Liability Amortization Schedule

	Date Base Established	Reason	Remaining Unfunded	Remaining Period		Amortization Amount
1.	6/30/2016	Surplus [1, 2]	(215,419,455)	30.0		(15,855,710)
	Total		$ (215,419,455)	30.0	[3]	$ (15,855,710)

[1] The INPRS Board approved a change in the method used to amortize the Unfunded Actuarial Accrued Liability beginning June 30, 2016 to decrease the amortization period for annual gains and losses from 30 years to 20 years. However, if the plan is in a surplus position, the entire surplus is amortized over 30 years.

[2] Includes the impact of changing from four-year to a five-year smoothing on the Actuarial Value of Assets.

[3] The weighted average remaining UAAL amortization period is calculated by weighting the remaining amortization period of each base by the amortization amount of each base.

H. History of Employer Contribution Rates [1]

Valuation Date	Effective Date	Contribution Rate
December 31, 2000	July 1, 2002	21.0%
December 31, 2001	July 1, 2003	21.0%
December 31, 2002	July 1, 2004	21.0%
December 31, 2003	July 1, 2005	21.0%
December 31, 2004	July 1, 2006	21.0%
December 31, 2005	July 1, 2007	21.0%
December 31, 2006	July 1, 2008	19.5%
December 31, 2007	July 1, 2009	19.5%
December 31, 2008	July 1, 2010	19.5%
June 30, 2009	January 1, 2011	19.5%
June 30, 2010	January 1, 2012	19.7%
June 30, 2011	January 1, 2013	19.7%
June 30, 2012	January 1, 2014	19.7%
June 30, 2013	January 1, 2015	19.7%
June 30, 2014	January 1, 2016	19.7%
June 30, 2015	January 1, 2017	17.5%
June 30, 2016	January 1, 2018	17.5%

[1] Valuation results prior to June 30, 2010 were calculated by the prior actuary.

SECTION II - FUNDING

I. Approximate Annual Rate of Return for Year Ending June 30, 2016 [1]

		Market Value of Assets	Actuarial Value of Assets
1.	Balance, beginning of year	$ 4,828,414,561	$ 4,939,330,029
2.	Balance, end of year	4,950,999,065	5,255,255,442
3.	Total increase: (2) - (1)	122,584,504	315,925,413
4.	Contributions	196,735,663	196,735,663
5.	Benefit payments [2]	132,821,251	132,821,251
6.	Net additions: (4) - (5)	63,914,412	63,914,412
7.	Net investment increase: (3) - (6)	58,670,092	252,011,001
8.	Average assets: [(1) + (2) - (7)] / 2	4,860,371,767	4,971,287,235
9.	Approximate rate of return: (7) / (8)	1.2%	5.1% [3]

J. Historical Investment Experience

	Actual Rate of Investment Return		Actuarial Assumed
Year Ending	Market Basis [4]	Actuarial Basis [1]	Interest Rate
December 31, 2007	6.3%	10.8%	7.25%
December 31, 2008	(30.8%)	(1.2%)	7.25%
June 30, 2009 [5]	(20.6%)	0.2%	7.25%
June 30, 2010	13.9%	0.1%	7.25%
June 30, 2011	20.1%	3.5%	7.0%
June 30, 2012	0.7%	2.9%	7.0%
June 30, 2013	6.0%	8.3%	6.75%
June 30, 2014	13.7%	8.8%	6.75%
June 30, 2015	0.0%	5.1%	6.75%
June 30, 2016	1.2%	5.1% [3]	6.75%

[1] Based on individual fund experience. Net of expenses and assuming cash flows occur at mid-year.
[2] Includes refunds of accumulated member contributions and net interfund transfers.
[3] Net of the impact of changing from four-year to a five-year smoothing.
[4] INPRS actual time-weighted rate of return net of fees for 2012-2016. PERF Consolidated Defined Benefit time-weighted rate of return reported as gross of fees for 2006-2011
[5] Figures shown are for the six-month period from January 1, 2009 to June 30, 2009.

K. Interest Rate Sensitivity

The investment return assumption (discount rate) should be based on an estimated long-term investment yield for the plan, with consideration given to the nature and mix of current and expected plan investments. Management and the Board continually monitor the investment rate of return assumption and the Board formally reviews the assumption and makes changes as appropriate. The Board last changed the assumption for the June 30, 2012 valuation from 7.0% to 6.75%.

To illustrate the importance of the investment rate of return, which is used to discount the actuarial liabilities of the Plan, the Funded Ratio and Actuarially Determined Contribution Rate (for the calendar year beginning January 1, 2018) are shown below and on the following page at interest rates from 5.75% to 8.00%, in 0.25% increments.

	1.00% Decrease: (5.75%)	0.75% Decrease: (6.0%)	0.50% Decrease: (6.25%)	0.25% Decrease: (6.5%)	Current Assumption: (6.75%)
Funded Status					
Actuarial Accrued Liability	$ 5,858,181,301	$ 5,636,401,905	$ 5,426,589,141	$ 5,227,972,133	$ 5,039,835,987
Actuarial Value of Assets	5,255,255,442	5,255,255,442	5,255,255,442	5,255,255,442	5,255,255,442
Unfunded Actuarial Accrued Liability	$ 602,925,859	$ 381,146,463	$ 171,333,699	$ (27,283,309)	$ (215,419,455)
Funded Ratio	89.7%	93.2%	96.8%	100.5%	104.3%
Actuarially Determined Contribution Rate					
Normal Cost Percentage	22.20%	20.74%	19.39%	18.15%	16.99%
UAAL Amortization Percentage	6.57%	4.38%	2.22%	(0.25%)	(2.00%)
Expected Employee Contribution Percentage	5.84%	5.84%	5.84%	5.84%	5.84%
Actuarially Determined Contribution Rate	22.93%	19.28%	15.77%	12.06%	9.15%

K. Interest Rate Sensitivity (Continued)

	0.25% Increase: (7.0%)	0.50% Increase: (7.25%)	0.75% Increase: (7.5%)	1.00% Increase: (7.75%)	1.25% Increase: (8.0%)
Funded Status					
Actuarial Accrued Liability	$ 4,861,517,349	$ 4,692,400,349	$ 4,531,912,865	$ 4,379,523,130	$ 4,234,736,609
Actuarial Value of Assets	5,255,255,442	5,255,255,442	5,255,255,442	5,255,255,442	5,255,255,442
Unfunded Actuarial Accrued Liability	$ (393,738,093)	$ (562,855,093)	$ (723,342,577)	$ (875,732,312)	$ (1,020,518,833)
Funded Ratio	108.1%	112.0%	116.0%	120.0%	124.1%
Actuarially Determined Contribution Rate					
Normal Cost Percentage	15.92%	14.93%	14.01%	13.16%	12.37%
UAAL Amortization Percentage	(3.75%)	(5.48%)	(7.20%)	(8.91%)	(10.60%)
Expected Employee Contribution Percentage	5.84%	5.84%	5.84%	5.84%	5.84%
Actuarially Determined Contribution Rate	6.33%	3.61%	0.97%	0.00%	0.00%

ACCOUNTING

PLAN FINANCIAL STATEMENTS UNDER GASB #67

A. Statement of Fiduciary Net Position under GASB #67 as of June 30, 2016

1.	Assets			
	a.	Cash	$	1,034,510
	b.	Receivables		
		i. Contributions Receivable	$	1,985,485
		ii. Miscellaneous Receivables		734,951
		iii. Investments Receivable		77,014,056
		iv. Foreign Exchange Contract Receivable		1,183,907,376
		v. Interest and Dividends		12,230,609
		vi. Due From Other Funds		-
		vii. Total Receivables	$	1,275,872,477
	c.	Total Investments		
		i. Short-Term Investments	$	-
		ii. Pooled Repurchase Agreements		1,285,248
		iii. Pooled Short-Term Investments		330,506,451
		iv. Pooled Fixed Income		1,586,481,466
		v. Pooled Equity		1,115,020,985
		vi. Pooled Alternative Investments		2,020,557,998
		vii. Pooled Derivatives		(221,621)
		viii. Securities Lending Collateral		75,820,663
		ix. Total Investments	$	5,129,451,190
	d.	Net Capital Assets		108,653
	e.	Prepaid Expenses		-
	f.	Total Assets: (1)(a) + (1)(b)(vii) + (1)(c)(ix) + (1)(d) + (1)(e)	$	6,406,466,830
2.	Liabilities			
	a.	Accounts Payable	$	86,323
	b.	Retirement Benefits Payable		2,592,671
	c.	Salaries and Benefits Payable		-
	d.	Investments Payable		143,497,372
	e.	Foreign Exchange Contracts Payable		1,179,653,063
	f.	Securities Lending Obligations		75,820,663
	g.	Securities Sold Under Agreement to Repurchase		53,610,317
	h.	Due To Other Funds		207,356
	i.	Due To Other Governments		-
	j.	Total Liabilities: (2)(a) + (2)(b) + (2)(c) + (2)(d) + (2)(e) + (2)(f) + (2)(g) + (2)(h) + (2)(i)	$	1,455,467,765
3.	Fiduciary Net Position Restricted for Pensions: (1)(f) - (2)(j)		**$**	**4,950,999,065**

PLAN FINANCIAL STATEMENTS UNDER GASB #67

B. Statement of Changes in Fiduciary Net Position under GASB #67 for the Year Ended June 30, 2016

1.	Fiduciary Net Position as of June 30, 2015			$	4,828,414,561
2.	Additions				
	a.	Contributions			
		i.	Member Contributions	$	44,641,309
		ii.	Employer Contributions		151,299,454
		iii.	Service Purchases (Employer and Member) [1]		651,642
		iv.	Non-Employer Contributing Entity Contributions		-
		v.	Total Contributions	$	196,592,405
	b.	Investment Income/(Loss)			
		i.	Net Appreciation/(Depreciation) [2, 3]	$	23,882,409
		ii.	Net Interest and Dividend Income		67,502,146
		iii.	Securities Lending Income		821,217
		iv.	Other Net Investment Income		611,760
		v.	Investment Management Expenses		(30,788,733)
		vi.	Direct Investment Expenses		(1,555,191)
		vii.	Securities Lending Expenses		(152,176)
		viii.	Total Investment Income/(Loss)	$	60,321,432
	c.	Other Additions			
		i.	Member Reassignments	$	-
		ii.	Miscellaneous Receipts		143,258
		iii.	Total Other Additions	$	143,258
	d.	Total Revenue (Additions): (2)(a)(v) + (2)(b)(viii) + (2)(c)(iii)		$	257,057,095
3.	Deductions				
	a.	Pension and Disability Benefits		$	127,935,387
	b.	Death, Survivor, and Funeral Benefits			774,000
	c.	Distributions of Contributions and Interest			4,037,448
	d.	Member Reassignments			74,416
	e.	Administrative Expenses			1,651,340
	f.	Total Expenses (Deductions): (3)(a) + (3)(b) + (3)(c) + (3)(d) + (3)(e)		$	134,472,591
4.	Net Increase (Decrease) in Fiduciary Net Position: (2)(d) - (3)(h)			$	122,584,504
5.	Fiduciary Net Position as of June 30, 2016: (1) + (4)			**$**	**4,950,999,065**

[1] Includes $374,748 of employer service purchases and $276,894 of member service purchases.

[2] The calculation of realized gains and losses is independent of the calculation of the net change in the fair value of pension plan investments.

[3] Realized gains and losses on investments that had been held in more than one reporting period and sold in the current period were included as a change in the fair value reported in the prior period(s) and the current period.

EMPLOYER FINANCIAL STATEMENTS UNDER GASB #68

C. Collective Net Pension Liability under GASB #68 for the Year Ended June 30, 2016

1.	Total Pension Liability			
	a. Total Pension Liability - Beginning of Year		$	4,680,694,445
	b. Service Cost [1]			129,369,091
	c. Interest Cost [2]			320,218,564
	d. Experience (Gains)/Losses			41,723,496
	e. Assumption Changes			-
	f. Plan Amendments			-
	g. Benefit Payments [3]			(132,746,835)
	h. Member Reassignments [4]			(74,416)
	i. Service Purchases (Employer and Member) [5]			651,642
	j. Total Pension Liability - End of Year		$	5,039,835,987
2.	Plan Fiduciary Net Position			
	a. Plan Fiduciary Net Position - Beginning of Year		$	4,828,414,561
	b. Employer Contributions [5]			151,674,202
	c. Member Contributions [5]			44,918,203
	d. Non-Employer Contributing Entity Contributions			-
	e. Investment Return			
	i. Expected Investment Return [6]	$ 328,070,259		
	ii. Investment Gain/(Loss)	(267,605,569)		
	iii. Net Investment Return			60,464,690
	f. Benefit Payments [3]			(132,746,835)
	g. Member Reassignments [4]			(74,416)
	h. Administrative Expenses			(1,651,340)
	i. Plan Fiduciary Net Position - End of Year		$	4,950,999,065
3.	Collective Net Pension Liability			
	a. Collective Net Pension Liability: (1)(j) - (2)(i)		**$**	**88,836,922**
	b. Plan Fiduciary Net Position as a Percentage of the Collective Pension Liability : (2)(i) / (1)(j)			98.2%

[1] As of the beginning of the year.
[2] Includes interest of 6.75% on the beginning-of-year service cost.
[3] Includes refunds of accumulated member contributions.
[4] Includes net interfund transfers.
[5] Includes $374,748 of employer service purchases and $276,894 of member service purchases.
[6] 6.75%, net of investment expenses and assuming cash flows occur at mid-year.

EMPLOYER FINANCIAL STATEMENTS UNDER GASB #68

D. Collective Deferred Inflows and Outflows of Resources under GASB #68 for the Year Ended June 30, 2016 [1]

Fiscal Year Established	Reason	Remaining Balance At Beginning of Year	Remaining Period [2]	Annual Recognition	Remaining Balance At End of Year
1. Liability Experience					
a. Inflows					
2014	Experience Gain	$ 9,223,745	7.29	$ 1,265,261	$ 7,958,484
2015	Experience Gain	$ 55,019,555	8.31	6,620,886	$ 48,398,669
b. Outflows					
2016	Experience Loss	$ (41,723,496)	9.04	$ (4,615,431)	$ (37,108,065)
2. Assumption Changes					
a. Inflows					
2015	Assumption Change Gain	$ 276,524,957	8.31	$ 33,276,169	$ 243,248,788
b. Outflows					
None					
3. Investment experience [3]					
a. Inflows					
2014	Investment Gain	$ 153,714,194	3.00	$ 51,238,066	$ 102,476,128
b. Outflows					
2015	Investment Loss	$ (288,313,788)	4.00	$ (72,078,447)	$ (216,235,341)
2016	Investment Loss	(267,605,569)	5.00	$ (53,521,114)	$ (214,084,455)
4. Total Collective Deferred Inflows / Outflows: (1) + (2) + (3)					
a. Inflows					
	Total	**$ 494,482,451**		**$ 92,400,382**	**$ 402,082,069**
b. Outflows					
	Total	**$ (597,642,853)**		**$ (130,214,992)**	**$ (467,427,861)**

[1] The effort and cost to re-create financial statement information for 10 years was not practical. Information was prepared prospectively from June 30, 2013 for GASB #68 purposes.

[2] The initial amortization period for liability experience gains / losses and assumption change gains / losses is equal to the expected future working lifetime of all members, active and inactive. The initial amortization period for investment gains / losses is five years.

[3] Net of investment expenses.

EMPLOYER FINANCIAL STATEMENTS UNDER GASB #68

D. Collective Deferred Inflows and Outflows of Resources under GASB #68 for the Year Ended June 30, 2016 (Continued)

Amounts reported as deferred inflows / (outflows) of resources to be recognized in pension expense:

Year Ending June 30:		
2016	$	(37,814,610)
2017	$	(37,814,610)
2018	$	(37,814,614)
2019	$	(89,052,676)
2020	$	(16,974,228)
2021	$	36,546,885
Thereafter	$	79,763,451

EMPLOYER FINANCIAL STATEMENTS UNDER GASB #68

E. Collective Pension Expense under GASB #68 for the Year Ended June 30, 2016

1.	Service Cost		
a.	Total Service Cost [1]	$	129,369,091
b.	Member Contribution [2]		(44,641,309)
c.	Administrative Expenses		1,651,340
d.	Net Employer Service Cost: (1)(a) + (1)(b) + (1)(c)		86,379,122
2.	Interest Cost [3]		320,218,564
3.	Expected Return on Assets [4]		(328,070,259)
4.	Plan Amendments		-
5.	Recognition of Deferred (Inflows) / Outflows of Resources Related to:		
a.	Liability Experience (Gains) / Losses		(3,270,716)
b.	Assumption Change (Gains) / Losses		(33,276,169)
c.	Investment (Gains) / Losses		74,361,495
d.	Total: (5)(a) + (5)(b) + (5)(c)		37,814,610
6.	Total Collective Pension Expense: (1)(d) + (2) + (3) +(4) + (5)(d)	**$**	**116,342,037**
7.	Employer Service Purchases [5]		374,748
8.	Total Pension Expense: (6) + (7)	**$**	**116,716,785**

[1] As of the beginning of the year.
[2] Does not include $276,894 of member service purchases.
[3] Includes interest of 6.75% on the beginning-of-year service cost.
[4] 6.75% net of investment expenses and assuming cash flows occur at mid-year. Includes a half year of interest on member contributions.
[5] To be expensed by the employers who purchased service for members during the year.

NOTES TO THE FINANCIAL STATEMENTS UNDER GASB #67 AND #68

F. Selected Notes to the Financial Statements under GASB #67 and #68

1. The 1977 Fund is a cost-sharing multiple-employer plan for GASB accounting purposes.

2. Significant actuarial assumptions and other inputs used to measure the total pension liability:

- Measurement Date	June 30, 2016
- Valuation Date	
Assets:	June 30, 2016
Liabilities:	June 30, 2015 - Member census data as of June 30, 2015 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2015 and June 30, 2016. Standard actuarial roll forward techniques were then used to project the total pension liability computed as of June 30, 2015 to the June 30, 2016 measurement date.
- Inflation	2.25%
- Future Salary Increases	2.5%
- Cost-of-Living Increases	2.0% compounded annually, beginning July 1, 2017. Actual COLA increases at July 1, 2015 (0%) and July 1, 2016 (1.1%) are reflected in the valuation.
- Mortality Assumption	RP-2014 (with MP-2014 improvement removed) Blue Collar mortality tables, with future mortality improvement projected generationally using future mortality improvement inherent in the Social Security Administration's 2014
- Experience Study	The most recent comprehensive experience study was completed in April 2015 and was based on member experience between June 30, 2010 and June 30, 2014. The demographic assumptions were updated as needed for the June 30, 2015 actuarial valuation based on the results of the study.
- Discount Rate	The discount rate used to measure the total pension liability as of June 30, 2016, is 6.75% and is equal to the long-term expected return on plan investments, net of administrative expenses. The INPRS Board of Trustees has established a funding policy of setting the employer contribution rate equal to the greater of: 1) the current contribution rate of 17.5%, or 2) the actuarially determined contribution rate computed by the actuary using the assumptions and methods selected by the Board for the annual actuarial valuations. The assumptions and methods selected by the Board for the June 30, 2016 actuarial valuation include a 6.75% expected return on assets assumption, a 30-year level dollar open method for amortizing the surplus of assets over the actuarially accrued liability (since the plan is over 100% funded as of June 30, 2016), and a 5-year smoothing method for recognizing investment gains and losses in the actuarial value of assets. Therefore, if the Board continues to follow its current funding policy, which it has done for the past several years, the employer contribution rates established will be sufficient to maintain the fully funded status of the plan.

NOTES TO THE FINANCIAL STATEMENTS UNDER GASB #67 AND #68

F. Selected Notes to the Financial Statements under GASB #67 and #68 (Continued)

- Discount Rate (Continued)

  Furthermore, we note that a deterministic projection assuming no future gains or loss shows that the actuarially determined contribution rate is expected to reach a peak of 10.06% for fiscal 2021, as investment losses not yet recognized in the actuarial value of assets are recognized. Therefore, no increase to the current contribution rate would be required in order to maintain the fully funded status of the benefits. As a result, a detailed projection of plan assets and cash flows was not prepared to prove that plan assets will be sufficient to pay all future benefit payments for current members.

- Discount Rate Sensitivity	1% Decrease (5.75%)	Current Rate (6.75%)	1% Increase (7.75%)
Net Pension Liability	$ 907,182,236	$ 88,836,922	$ (571,475,935)

3. Classes of Plan Members Covered: [1]

- Retired Members, Beneficiaries and Disabled Members Receiving Benefits:	$ 4,004
- Terminated Vested Plan Members Entitled to but Not Yet Receiving Benefits:	186
- Terminated Non-Vested Plan Members Entitled to a Distribution of Contributions:	933
- Active Plan Members:	13,506
- Total Membership:	$ 18,629

4. Money-Weighted Rate of Return:
   The money-weighted rate of return equals investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. For the fiscal year ending June 30, 2016, the money-weighted return on the plan assets is 1.2%.

5. The components of the Net Pension Liability for the total 1977 Fund plan as of June 30, 2016, are as follows:

- Total Pension Liability	$ 5,039,835,987
- Plan Fiduciary Net Position	4,950,999,065
- Net Pension Liability	$ 88,836,922
- Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	98.2%

[1] The valuation results as of June 30, 2016 were calculated using June 30, 2015 census data, adjusted for certain activity during fiscal year 2016.

REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB #67 AND #68

G. Schedule of Changes in the Total Pension Liability and Plan Fiduciary Net Position under GASB #67 and #68 [1]

Year Ending June 30:	2013	2014	2015	2016
1. Total Pension Liability				
a. Total Pension Liability - Beginning of Year	$ 4,122,436,112	$ 4,392,946,977	$ 4,706,997,462	$ 4,680,694,445
b. Service Cost [2]	130,912,451	133,074,656	138,204,281	129,369,091
c. Interest Cost [3]	283,732,680	301,824,523	323,129,528	320,218,564
d. Experience (Gains)/Losses	(39,592,111)	(11,754,267)	(61,640,441)	41,723,496
e. Assumption Changes	(4,810,241)	-	(309,801,126)	-
f. Plan Amendments	-	-	-	-
g. Benefit Payments [4]	(99,802,915)	(109,094,427)	(116,489,902)	(132,746,835)
h. Member Reassignments [5]	71,001	-	-	(74,416)
i. Service Purchases (Employer and Member)	-	-	294,643	651,642
j. Total Pension Liability - End of Year	$ 4,392,946,977	$ 4,706,997,462	$ 4,680,694,445	$ 5,039,835,987
2. Plan Fiduciary Net Position				
a. Plan Fiduciary Net Position - Beginning of Year	$ 3,817,013,634	$ 4,116,861,121	$ 4,757,977,785	$ 4,828,414,561
b. Employer Contributions	137,110,691	140,119,065	146,696,360	151,674,202
c. Member Contributions	40,786,098	41,791,345	43,523,241	44,918,203
d. Non-Employer Contributing Entity Contributions	-	-	-	-
e. Net Investment Return	223,527,670	570,088,526	(1,584,662)	60,464,690
f. Benefit Payments [4]	(99,802,915)	(109,094,427)	(116,489,902)	(132,746,835)
g. Member Reassignments [5]	71,001	-	-	(74,416)
h. Administrative Expenses	(1,845,058)	(1,787,845)	(1,708,261)	(1,651,340)
i. Plan Fiduciary Net Position - End of Year	$ 4,116,861,121	$ 4,757,977,785	$ 4,828,414,561	$ 4,950,999,065

[1] The effort and cost to re-create financial statement information for 10 years was not practical. Information was prepared prospectively from June 30, 2012 for GASB #67 puposes and prospectively from June 30, 2013 for GASB #68 purposes.

[2] As of the beginning of the year.

[3] Includes interest of 6.75% on the beginning-of-year service cost.

[4] Includes refunds of accumulated member contributions.

[5] Includes net interfund transfers.

REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB #67 AND #68

H. Schedule of Net Pension Liability and Related Ratios under GASB #67 and #68 [1]

1. Year Ending	2. Total Pension Liability	3. Plan Fiduciary Net Position	4. Net Pension Liability	5. Fiduciary Net Position as a Percentage of Total Pension Liability	6. Actual Covered Employee Payroll [2]	7. Net Pension Liability as a Percentage of Covered Payroll
			(2) - (3)	(3) / (2)		(4) / (6)
6/30/2013	$ 4,392,946,977	$ 4,116,861,121	$ 276,085,856	93.7%	$ 695,000,000	39.7%
6/30/2014	$ 4,706,997,462	$ 4,757,977,785	$ (50,980,323)	101.1%	$ 710,580,690	-7.2%
6/30/2015	$ 4,680,694,445	$ 4,828,414,561	$ (147,720,116)	103.2%	$ 745,336,167	-19.8%
6/30/2016	$ 5,039,835,987	$ 4,950,999,065	$ 88,836,922	98.2%	$ 771,948,731	11.5%

[1] The effort and cost to re-create financial statement information for 10 years was not practical. Information was prepared prospectively from June 30, 2012 for GASB #67 puposes and prospectively from June 30, 2013 for GASB #68 purposes.
[2] Pensionable pay as provided by INPRS.

REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB #67 AND #68

I. Schedule of Contributions under GASB #67 and #68 [1, 2]

1. Year Ending	2. Actuarially Determined Contribution [3]	3. Actual Employer Contributions [4]	4. Contribution Excess / (Deficiency) (Deficiency) (3) - (2)	5. Actual Covered Employee Payroll [5]	6. Contributions as a Percentage of Covered Payroll (3) / (5)
6/30/2013	$ 112,590,000	$ 137,110,691	$ 24,520,691	$ 695,000,000	19.7%
6/30/2014	$ 103,425,019	$ 140,119,065	$ 36,694,046	$ 710,580,690	19.7%
6/30/2015	$ 118,881,119	$ 146,401,717	$ 27,520,598	$ 745,336,167	19.6%
6/30/2016	$ 113,437,866	$ 151,299,454	$ 37,861,588	$ 771,948,731	19.6%

[1] The effort and cost to re-create financial statement information for 10 years was not practical. Information was prepared prospectively from June 30, 2012 for GASB #67 puposes and prospectively from June 30, 2013 for GASB #68 purposes.

[2] The information shown relates to the employers participating in the Fund. There are no non-employer contributing entities.

[3] The actuarially determined contribution amounts are based on the average of the actuarially determined contribution rates developed in the actuarial valuations completed one year and two years prior to the beginning of the fiscal year, multiplied by actual payroll during the fiscal year.

[4] Excludes employer service purchases.

[5] Pensionable pay as provided by INPRS.

REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB #67 AND #68

J. Schedule of Money-Weighted Returns under GASB #67 and #68 [1]

1.	2.
Year Ending	Money-Weighted Rate of Return
6/30/2013	5.9%
6/30/2014	13.7%
6/30/2015	(0.1%)
6/30/2016	1.2%

[1] The effort and cost to re-create financial statement information for 10 years was not practical. Information was prepared prospectively from June 30, 2012 for GASB #67 puposes and prospectively from June 30, 2013 for GASB #68 purposes.

CENSUS DATA

SECTION IV - CENSUS DATA

A. Reconciliation of Participant Data [1]

	Actives	Inactive Non-Vested With Member Contribution Balance	Inactive Vested	Disabled	Retired	Beneficiary	Total
Total as of June 30, 2014	13,383	822	155	743	2,367	626	18,096
Data Adjustments for Activity During Fiscal Year 2015							
PERF to 1977 Fund Transfer [2]	7	-	-	-	-	-	7
Adjusted Total as of June 30, 2014	13,390	822	155	743	2,367	626	18,103
New Entrants	716	-	-	-	-	-	716
Rehires	10	(8)	(2)	-	-	-	-
Non-Vested Terminations	(170)	170	-	-	-	-	-
Vested Terminations	(72)	(1)	73	-	-	-	-
Retirements	(232)	-	(37)	(7)	276	-	-
Disablements	(27)	(1)	-	29	(1)	-	-
Death with Beneficiary	(10)	(1)	(2)	(12)	(51)	76	-
Death without Beneficiary	(3)	-	(1)	(6)	(13)	(20)	(43)
Refunds	(101)	(46)	-	-	-	-	(147)
Data Adjustments	(1)	(2)	-	(2)	(2)	1	(6)
Total as of June 30, 2015	13,500	933	186	745	2,576	683	18,623
Data Adjustments for Activity During Fiscal Year 2016							
New Units [3]	6	-	-	-	-	-	6
Adjusted Total as of June 30, 2015	13,506	933	186	745	2,576	683	18,629

[1] The valuation results as of June 30, 2016 were calculated using June 30, 2015 census data, adjusted for certain activity during fiscal year 2016.

[2] Employers that transferred coverage from PERF to 1977 Fund during fiscal year 2015 include the Pittsboro Police Department and the Walkerton Police Department.

[3] The employer that joined the 1977 Fund as a new unit during fiscal year 2016 is Brownstown Police Department.

B. Census Information as of June 30, 2015 [1]

		Male	Female	Total
1.	Active			
	a. Number	12,749	757	13,506
	b. Average Age	42.3	41.3	42.2
	c. Average Years of Service	14.7	13.8	14.6
	d. Anticipated Payroll of Actives [2]	$ 745,056,778	$ 46,451,711	$ 791,508,489
2.	Inactive - Vested			
	a. Number	174	12	186
	b Average Age	50.3	49.4	50.3
	c. Average Years of Service	23.2	22.8	23.2
3.	Inactive - Non-Vested [3]			
	a. Number	822	111	933
4.	Retiree/Beneficiary/Disabled			
	a. Number	3,132	872	4,004
	b. Average Age	62.1	62.9	62.3
	c. Annual Benefits Payable [4]	$ 88,361,525	$ 16,856,857	$ 105,218,382

[1] The valuation results as of June 30, 2016 were calculated using June 30, 2015 census data, adjusted for certain activity during fiscal year 2016.
[2] For the 1977 Fund, payroll is the applicable first class officer pay for each member. Figures shown are the anticipated pay for the one-year period following June 30, 2016.
[3] As of June 30, 2015, inactive non-vested members entitled to a refund of their member contributions totaling $8,999,626.
[4] Figures shown reflect the 0% cost-of-living increase effective July 1, 2015.

C. Schedule of Active Member Valuation Data [1, 2]

1. Valuation Date	2. Active Members	3. Anticipated Payroll ($ in Thousands) [3]	4. Average Pay (3) / (2)	5. Annual Percent Change
12/31/2007	12,611	603,963	47,892	3.5%
12/31/2008	13,095	644,936	49,251	2.8%
6/30/2009	13,184	649,018	49,228	(0.0%)
6/30/2010	13,362	675,797	50,576	2.7%
6/30/2011	13,376	687,342	51,386	1.6%
6/30/2012	13,390	697,111	52,062	1.3%
6/30/2013	13,287	706,603	53,180	2.1%
6/30/2014	13,295	734,024	55,211	3.8%
6/30/2015	13,390	764,215	57,074	3.4%
6/30/2016	13,506	791,508	58,604	2.7%

[1] Valuation results prior to June 30, 2010 were calculated by the prior actuary.

[2] The valuation results beginning as of June 30, 2014 were calculated using census data as of the prior year end, adjusted for certain activity during the current fiscal year.

[3] For the 1977 Fund, payroll is the applicable first class officer pay for each member. Figures shown are the anticipated pay for the one-year period following the valuation date.

D. Schedule of Retirees, Beneficiaries, and Disabled Members [1, 2]

1.	2.	3.	4.	5.	6.	7.	8.	9.
	Added		Removed		End of Year [3]			
Valuation Date	Number	Annual Allowances ($ in Thousands) [4]	Number	Annual Allowances ($ in Thousands) [4]	Number	Annual Allowances ($ in Thousands) [4]	% Change in Annual Allowances [4]	Average Annual Allowances [4]
12/31/2007	333	8,101	50	886	2,548	49,537	18.0%	19,442
12/31/2008	255	5,861	273	4,565	2,530	53,588	8.2%	21,181
6/30/2009	102	2,571	24	479	2,608	55,564	3.7%	21,305
6/30/2010	208	4,918	34	641	2,782	60,220	8.4%	21,646
6/30/2011	218	6,179	34	609	2,966	68,179	13.2%	22,987
6/30/2012	281	7,900	39	814	3,208	76,917	12.8%	23,977
6/30/2013	326	10,098	43	845	3,491	87,301	13.5%	25,008
6/30/2014	-	-	-	-	3,491	87,301	0.0%	25,008
6/30/2015	283	8,858	38	727	3,736	96,336	10.3%	25,786
6/30/2016	312	10,074	44	834	4,004	105,218	9.2%	26,278

[1] Valuation results prior to June 30, 2010 were calculated by the prior actuary.

[2] The valuation results beginning as of June 30, 2014 were calculated using census data as of the prior year end, adjusted for certain activity during the current fiscal year.

[3] End of year annual allowances are not equal to the prior end of year annual allowances plus additions and less removals because of reductions for beneficiary benefits, data changes, and cost-of-living increases.

[4] Annual allowances reflect cost-of-living increases effective July 1 following the date of the census data.

E. Distribution of Active Members by Age and Service [1]

Attained Age	Distribution of Active Members by Age and Service as of June 30, 2015 [1]								
	Under 10	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	30 to 34 years	35 to 39 years	Over 40 years	Total
<25	197								197
25-29	1,085								1,085
30-34	1,681	157							1,838
35-39	1,076	921	220						2,217
40-44	491	864	1,106	134					2,595
45-49	55	447	947	804	166	1			2,420
50-54	10	36	398	511	764	104			1,823
55-59	9	3	52	190	378	345	15		992
60-64	1	1	19	12	97	145	36		311
65-69		1	2	3	3	17		1	27
70&Above				1					1
Total	4,605	2,430	2,744	1,655	1,408	612	51	1	13,506

[1] The valuation results as of June 30, 2016 were calculated using June 30, 2015 census data, adjusted for certain activity during fiscal year 2016.

F. Distribution of Inactive Vested Members by Age and Service [1]

Attained Age	Distribution of Inactive Vested Members by Age and Service as of June 30, 2015 [1]				
	Under 20 years	20 to 24 years	25 to 29 years	Over 30 years	Total
<25					
25-29					
30-34					
35-39					
40-44		9			9
45-49		100	5		105
50-54		38	11	1	50
55-59		1		10	11
60-64				6	6
65-69		2		2	4
70&Above			1		1
Total		150	17	19	186

[1] The valuation results as of June 30, 2016 were calculated using June 30, 2015 census data, adjusted for certain activity during fiscal year 2016.

G. Distribution of Retired Members, Beneficiaries, and Disabled Members by Age and Number of Years Retired [1]

Attained Age	Distribution of Retired Members, Beneficiaries, and Disabled Members by Age and Number of Years Retired as of June 30, 2015 [1]						
	Under 10	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	Over 30 years	Total
<40	63	9	5	2	3		82
40-44	69	16	8	3			96
45-49	72	33	13	6			124
50-54	307	38	30	17	5	1	398
55-59	860	51	38	27	12	8	996
60-64	695	172	53	46	20	13	999
65-69	164	121	137	54	37	22	535
70-74	16	15	195	38	29	20	313
75-79	1	1	70	124	23	21	240
80-84			17	40	40	7	104
85-89			5	22	32	23	82
90&Above				8	10	17	35
Total	2,247	456	571	387	211	132	4,004

[1] The valuation results as of June 30, 2016 were calculated using June 30, 2015 census data, adjusted for certain activity during fiscal year 2016.

SECTION IV - CENSUS DATA

H. Schedule of Benefit Recipients by Type of Benefit Option [1]

Number of Benefit Recipients by Benefit Option as of June 30, 2015

Amount of Monthly Benefit	Retiree Single Life Annuity	Retiree 60% Joint and Survivor Annuity	Survivors	Disability	Total
$ 1 - 500	-	-	15	-	15
501 - 1,000	-	10	132	26	168
1,001 - 1,500	2	132	336	98	568
1,501 - 2,000	6	470	133	213	822
2,001 - 3,000	58	1,450	54	363	1,925
over 3,000	30	418	13	45	506
Total	96	2,480	683	745	4,004

I. Schedule of Average Benefit Payments as of June 30, 2015 [1,2]

	Years of Credited Service						
	0-10	10-14	15-19	20-24	25-29	30+	Total
Average Monthly Defined Benefit	$ 1,624	$ 1,901	$ 1,839	$ 1,969	$ 2,498	$ 2,799	$ 2,190
Average Final Average Salary	$ 41,299	$ 47,438	$ 45,587	$ 44,846	$ 47,841	$ 51,017	$ 46,803
Number of Benefit Recipients	380	226	262	1,463	1,071	602	4,004

[1] The valuation results as of June 30, 2016 were calculated using June 30, 2015 census data, adjusted for certain activity during fiscal year 2016. Monthly benefits reflect the 0% cost-of-living increase effective July 1, 2015.

[2] For some members average salary at retirement and years of credited service were not available. The average salary for each group excludes these members. Additionally, members without years of credited service are included in the 0-10 group.

ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

The assumptions used in the valuation were selected and approved by the INPRS Board of Trustees. The demographic assumptions are reviewed at least every five years through a study of actual experience. The last study was completed in April 2015. In this way, the actuary provides guidance to the Board in selecting the assumptions. The actuary and other economic and investment professionals also provide advice to the Board for selecting the economic assumptions. In our opinion, the assumptions are reasonable for purposes of this valuation.

Interest Rate / Investment Return

Funding	6.75% (net of administrative and investment expenses)
Accounting	6.75% (net of investment expenses)

Interest on Member Balances — 3.5% per year

Future Salary Increases — 2.5% per year

Inflation — 2.25% per year

Cost of Living Increases — 2.0% per year in retirement beginning July 1, 2017. Actual cost-of-living increases of 0% at July 1, 2015 and 1.1% at July 1, 2016 are reflected in the liability valuation at June 30, 2016.

Mortality (Healthy and Disabled) — RP-2014 (with MP-2014 improvement removed) Blue Collar mortality tables, with future mortality improvement projected generationally using future mortality improvement inherent in the Social Security Administration's 2014 Trustee report.

Disability — Based on 2010-2014 experience. Illustrative rates shown below:

Age	Rate
<= 30	0.10%
35	0.16%
40	0.26%
45	0.36%
50	0.46%
55	0.56%
60	0.66%
62+	0.70%

A. Actuarial Assumptions (Continued)

Termination

Based on 2010-2014 experience. Rates shown below:

Service	Rate	Service	Rate
0	10.0%	12-19	1.0%
1	5.0%	20+	2.0%
2	4.0%		
3-4	3.5%		
5	2.5%		
6-8	2.0%		
9-11	1.5%		

Retirement

Based on 2010-2014 experience. Rates shown below:

Ages	Service <32	Service >=32
45-51	10.0%	100.0%
52-57	10.0%	20.0%
58-61	15.0%	20.0%
62-64	20.0%	20.0%
65-69	50.0%	50.0%
70+	100.0%	100.0%

Decrement Timing

Decrements are assumed to occur at the beginning of the year.

Active Members in DROP

Members who are participating in the DROP are assumed to receive an annuity benefit commencing at the end of their DROP period as well as a lump sum payment equal to the number of years they were in the DROP times their annual annuity benefit. The annuity benefit is estimated based on salary and service at the time the member entered the DROP.

Spouse/Beneficiary

80% of male members and 50% of female members are assumed to be married or to have a dependent beneficiary. Male members are assumed to be three (3) years older than females and female members are assumed to be the same age as males.

Disability Retirement

For members hired after 1989 that become disabled, impairments are assumed to be 45% Class 1 (at 65% of salary), 10% Class 2 (at 50% of salary), and 45% Class 3 (at 36% of salary).

A. Actuarial Assumptions (Continued)

Pre-Retirement Death	Of active member deaths, 10% are assumed to be in the line of duty and 90% are other than in the line of duty.
Data Assumptions	Actives and inactives with either no date of birth and/or no gender are assumed to be age 42 and/or male. Spouse gender is assumed to be the opposite gender of the member.
Changes in Assumptions	There were no assumption changes for the June 30, 2016 valuation.

B. Assumptions Rationale

Investment Return	The investment return assumption is based on analysis completed by the INPRS investment advisor and an independent, high-level analysis completed by PwC using a "building block" approach that considered the target asset allocation from the Board's investment policy and capital market forecasts from various investment professionals.
Other Assumptions	The Board of Trustees adopts actuarial assumptions, each of which individually represents a reasonable long-term estimate of anticipated experience under the System, derived from experience studies conducted at least every five years. The most recent comprehensive experience study was completed in April 2015. The economic and demographic assumptions listed previously in the report were reviewed and updated, where appropriate, based on the historical experience observed during the study and expectations for the future.

C. Actuarial Methods

The actuarial methods used in this valuation were selected and approved by the Board. In general, the methods provide orderly funding of all benefits being accrued, as well as unfunded past-service benefit liabilities, over a period of twenty years. However, the smoothing methods employed in determining the Actuarial Value of Assets may accelerate or lengthen the effective funding period, depending on whether gains or losses are experienced. In our opinion, the actuarial methods are reasonable for the purposes of this valuation.

1. Actuarial Cost Method

The actuarial cost method is Entry Age Normal - Level Percent of Payroll.

The normal cost is calculated separately for each active member and is equal to the level percentage of payroll needed as an annual contribution from entry age to retirement age to fund projected benefits. The actuarial accrued liability on any valuation date is the accumulated value of such normal costs from entry age to the valuation date.

For funding, gains and losses occurring from census experience different than assumed, assumption changes, and benefit changes are amortized over a 20-year period with level payments each year. A new gain or loss base is established each year based on the additional gain or loss during that year and that base is amortized over a new 20-year period. However, when the plan is at or above 100% funded (based on Actuarial Value of Assets), the past amortization bases are considered fully amortized and a single amortization base equal to the surplus is amortized over a 30-year period with level payments each year. The purpose of the method is to give a smooth progression of the costs from year to year and, at the same time, provide for an orderly funding of the unfunded liabilities.

For accounting, gains and losses occurring from census experience different than assumed and assumption changes are amortized into expense over the average expected future service of all plan participants (active and inactive). Gains and losses occurring from investment experience different from assumed are amortized into expense over a 5-year period. The effect of plan changes on the plan liability are fully recognized in expense in the year in which they occur.

Member census data as of June 30, 2015 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2015 and June 30, 2016. Standard actuarial roll forward techniques were then used to project the liabilities computed as of June 30, 2015 to the June 30, 2016 measurement date.

2. Asset Valuation Method

The Actuarial Value of Assets smoothes the recognition of gains and losses on the Market Value of Assets over five years, subject to a 20% corridor.

3. Employer Contribution Rate

Based on the assumptions and methods previously described, an actuarially determined contribution rate is computed. The Board considers this information, but has ultimate authority in setting the employer contribution rate.

4. Anticipated Payroll

The Anticipated Payroll of $791,508,489 for the fiscal year beginning July 1, 2016 is equal to the actual 1st class officer salary paid during the year ending June 30, 2016 increased with one year of salary scale, plus the 1st class officer salary in effect at June 30, 2016 for two new units.

C. Actuarial Methods (Continued)

5. Changes in Actuarial Methods

The INPRS Board approved the following changes in methods, effective June 30, 2016:

For funding purposes and when the plan is below 100% funded (based on Actuarial Value of Assets), gains and losses occurring from census experience different than assumed, assumption changes, and benefit changes will be amortized over a 20-year period with level payments each year, rather than a 30-year period. A new gain or loss base will continue to be established each year. This change is made on a prospective basis, beginning with the June 30, 2016 actuarial valuation. Amortization bases established prior to June 30, 2016 will continue to be amortized over their original amortization period, even if the remaining period is greater than 20 years at June 30, 2016. If the plan is at or above 100% funded (based on Actuarial Value of Assets), the methodology of treating past amortization bases as fully amortized and amortizing the entire surplus over an open 30-year period is unchanged. This change had no impact at June 30, 2016 since the plan is above 100% funded on an Actuarial Value of Assets basis.

For funding purposes, the smoothing period for investment gains and losses in the development of the Actuarial Value of Assets was increased from four years to five years at June 30, 2016. This change was implemented retroactively in that the Actuarial Value of Assets at June 30, 2016 was computed as if the five-year amortization period for recognizing investment gains and losses had always been in effect. This change increased the Actuarial Value of Assets, and therefore decreased the Unfunded Actuarial Accrued Liability of the plan by $10,702,625 (0.10% on the Actuarially Determined Contribution Rate) at June 30, 2016.

SUMMARY OF PLAN PROVISIONS

Summary of Plan Provisions

The benefit provisions for the 1977 Fund are set forth in IC 36-8-8. Below is a summary of the plan provisions that are pertinent to the valuation herein and may exclude certain provision that are not deemed relevant to our calculations. This summary is based on our understanding of the plan provisions set forth in the applicable statutes of the State of Indiana. If there is a discrepancy between the summary below and the applicable statutes, the applicable statutes shall govern.

Participation — All full-time, fully-paid police officers and firefighters who work for employers participating in the 1977 Fund and who are hired or rehired after April 30, 1977.

Eligibility for Defined Pension Benefits

a. Normal Retirement — Age 52 with 20 or more years of creditable service

b. Early Retirement — Age 50 with 20 or more years of creditable service

c. Late Retirement — Subject to continued employment after normal retirement

d. Disability Retirement — As determined by a disability medical panel.

e. Termination — 20 or more years of creditable service and no longer active (i.e. vested inactive)

f. Pre-Retirement Death — Immediate

Amount of Benefits

a. Normal Retirement — The retirement benefit valued was 50% of the base salary (first-class salary) of a First Class Police Officer and Firefighter with 20 years of service, plus an additional 1% for each completed 6 months of service over 20 years up to a maximum of 74% with 32 years of service.

b. Early Retirement — Early retirement benefits are reduced by 7% per year for commencement between ages 50 and 52.

c. Late Retirement — The late retirement benefit is calculated in the same manner as the normal retirement benefit. Creditable service and earnings earned after normal retirement is included in the computation.

Summary of Plan Provisions (Continued)

Amount of Benefits (continued)

d. Disability Retirement

Hired Before 1990 This disability benefit is only available to members hired prior to January 1, 1990 and who do not choose to be covered by the disability benefit for members hired after 1989. The disability benefit is equal to the benefit the member would have received if the member had retired. If the member does not have 20 years of service or is not at least age 52 on the date of disability, the benefit is computed as if the member does have 20 years of service and is age 52 on the date of disability.

Hired after 1989 This disability benefit is for members hired after 1989, or hired prior to January 1, 1990, who have chosen to be covered by this disability benefit. The following describes the three different classes of impairments and the amount of base benefit for each class:

Class 1 Impairment:
A personal injury that occurs while on duty, while responding to an emergency, or due to an occupational disease. The disability benefit is equal to a base benefit of 45% of base salary, plus an additional amount between 10% and 45% of this salary based on degree of impairment. The benefit is payable for life, at which time the member is entitled to a retirement benefit based on the salary and service the member would have earned had the member remained in active service.

Class 2 Impairment:
A proven duty-related disease. The disability benefit is equal to a base benefit of 22% of base salary, plus an additional 0.5% of this salary for each year of service up to a maximum of 30 years of service, plus an additional amount between 10% and 45% of this salary based on degree of impairment. If the member's total benefit is less than 30% of this salary and the member has fewer than 4 years of service, then the benefit is payable for a period equal to the years of service of the member. Otherwise, the benefit is payable for life.

Summary of Plan Provisions (Continued)

Amount of Benefits (continued)

d. Disability Retirement (continued)

Hired after 1989 (continued)

Class 3 Impairment:
All other impairments that are not Class 1 or Class 2. The disability benefit is equal to a base benefit of 1% of base salary for each year of service up to a maximum of 30 years of service, plus an additional amount between 10% and 45% of this salary based on degree of impairment. If the member's total benefit is less than 30% of this salary and the member has fewer than 4 years of service, then the benefit is payable for a period equal to the years of service of the member. Otherwise, the benefit is payable until age 52, at which time the member is entitled to a retirement benefit based on 20 years of service.

e. Termination

If a member ends employment other than by death or disability before completing 20 years of active service, the member shall be entitled to the member's contributions plus accumulated interest. This benefit is not available to converted members.

If termination is after earning 20 years of service, the termination benefit is the accrued retirement benefit determined as of the termination date and payable commencing of the normal retirement date. The member may elect to receive a reduced early retirement benefit.

f. Pre-Retirement Death

Surviving Spouse

If a member dies other than in the line of duty, the spouse's benefit is equal to 60% of the monthly benefit the member was receiving or was entitled to receive on the date of death.

If a member dies in the line of duty, the spouse's benefit is equal to the monthly benefit the member was receiving or was entitled to receive on the date of death.

In either case, if the member does not have 20 years of service or is not at least age 52 on the date of death, the benefit is computed as if the member does have 20 years of service and is age 52 on the date of death.

Summary of Plan Provisions (Continued)

Amount of Benefits (continued)

f. Pre-Retirement Death (continued)

Children	A payment shall be made to each child of a deceased member equal to 20% of the member's benefit until the later of (a) the date the child becomes age 18, or (b) the date the child becomes age 23 if enrolled in a qualified school. If a child is at least 18 and is mentally or physically incapacitated, the child is entitled to an amount equal to the greater of 30% of the base salary, or 55% of the member's benefit payable for the duration of the incapacity. If the member does not have 20 years of service or is not at least age 52 on the date of death, the benefit is computed as if the member does have 20 years of service and is age 52 on the date of death.
Dependent Parents	If a deceased member leaves no surviving spouse and no qualified child but does leave a dependent parent or parents, an amount equal to 50% of the member's benefit shall be paid to the parent or parents jointly during their lifetime. If the member does not have 20 years of service or is not at least age 52 on the date of death, the benefit is computed as if the member does have 20 years of service and is age 52 on the date of death.
No Spouse or Dependent	If a deceased member leaves no surviving spouse, no qualified dependent child, nor a dependent parent, a refund of the member's contributions plus accumulated interest will be made to the member's estate.

g. Additional Death Benefits: A funeral death benefit is paid to the heirs or estate upon the member's death from any cause and is equal to at least $12,000. An additional death benefit of $150,000 is paid from the Pension Relief Fund to a surviving spouse, children, or parent(s) if death occurs in the line of duty.

Member Contributions: Members are assumed to contribute at the rate of 6% of salary until they have completed 32 years of service.

Summary of Plan Provisions (Continued)

Withdrawal from Fund	If a member's employment is terminated prior to eligibility for a retirement annuity, the member may withdraw their contributions from the Fund.
Deferred Retirement Option Plan ("DROP")	The DROP is an optional form of benefit, which allows members who are eligible for an unreduced retirement benefit to continue to work and earn a salary while accumulating a DROP benefit payable in a lump sum or three annual installments. A member who elects to enter the DROP shall execute an irrevocable election to retire on the DROP retirement date. The member shall select a DROP retirement date not less than 12 months and not more than 36 months after the member's DROP entry date. While in the DROP, the member shall continue to make applicable fund contributions. When a member enters the DROP, a "DROP frozen benefit" will be calculated. This is equal to the member's monthly retirement benefit based on accrued service and base salary as of the date member enters the DROP. Upon DROP retirement, the member is eligible to receive a lump sum equal to the amount of the DROP frozen benefit multiplied by the number of months in the DROP. You may elect to receive this amount in three annual installments instead of in a single lump sum. In addition, the member will receive a monthly retirement benefit equal to the DROP frozen benefit. The member will not continue to accrue service credit for the years in the DROP. Cost of living adjustments will not apply to the frozen monthly benefit while in the DROP. The cost of living adjustments will begin to be applied to the frozen monthly benefit, however, in the year after the year in which the member retires. If the member elected to participate in the DROP, the member may, upon retirement, elect to forego DROP benefits, and instead receive monthly retirement benefits calculated as if the member never elected to participate in the DROP. These benefits would be based on accrued service and base salary as of the date the member retires.

Summary of Plan Provisions (Continued)

Forms of Payment	
a. Single Life Annuity	Member will receive a monthly benefit for life, but there are no monthly payments to anyone after death.
b. Joint with 60% Survivor Benefits	Member will be paid a monthly benefit for life. After death, 60% of the benefit will be paid to the spouse or parent for their lifetime or the dependent until age 18.
Cost-of-Living Adjustments	Benefits for retired members are increased annually based on increases in the CPI-U index. The increase is subject to a 3% maximum and 0% minimum.
Changes in Provisions	It is our understanding that there were no changes to the Plan that impacted the pension benefits during the fiscal year.

DEFINITIONS OF TECHNICAL TERMS

Definitions of Technical Terms

Actuarial Accrued Liability (AAL)	That portion, as determined by a particular Actuarial Cost Method, of the Present Value of Future Benefits (PVFB) and expenses which is not provided for by future Normal Costs. Generally, the portion of the PVFB attributable to past service.
Actuarial Assumptions	Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; changes in compensation and Government provided pension benefits; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; characteristics of future entrants for Open Group Actuarial Cost Methods; and other relevant items.
Actuarial Cost Method	A mathematical procedure for allocating the Present Value of Future Benefits to service periods, usually in the form of a Normal Cost and an Actuarial Accrued Liability.
Actuarial Gain/(Loss)	The difference between actual Unfunded Actuarial Accrued Liability and anticipated Unfunded Actuarial Accrued Liability resulting from differences between actual and expected plan experience between two valuation dates.
Actuarial Present Value	The single amount that is equal to a payment or series of payments in the future. It is determined by discounting future payments using predetermined Actuarial Assumptions for interest and by probabilities of payment.
Actuarial Valuation	The determination, as of an Actuarial Valuation Date, of the Present Value of Future Benefits, Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values.
Actuarial Valuation Date	The date as of which an Actuarial Valuation is performed.
Actuarially Determined Contribution	The precise actuarial contribution rate (expressed as a percentage of covered payroll) or amount determined in accordance with a Funding Policy, which generally reflects the Normal Cost and amortization of any Unfunded Actuarial Accrued Liability.
Actuarially Equivalent	Having the same Actuarial Present Value, based on a set of Actuarial Assumptions.

Definitions of Technical Terms (Continued)

Amortization	The payment of a present value financial obligation on an installment basis over a future period.
Creditable Service	Service credited under the system that was rendered before the date of the actuarial valuation.
Funding Policy	A set of principles, often including a prescribed Actuarial Cost Method, Actuarial Assumptions, and/or Unfunded Actuarial Accrued Liability Amortization Method, that guide the calculation of the Actuarially Determined Contribution and management decisions regarding funding.
Level Dollar Amortization	Amortization where the installments are equal dollar amounts during each period.
Level Percent Amortization	Amortization where the installments are an equal percent of employee payroll during each period.
Normal Cost (NC)	That portion of the Present Value of Future Benefits which is allocated to the year following the Actuarial Valuation Date by the Actuarial Cost Method. The normal cost is specific to the cost method used.
Plan Assets	Resources, usually in the form of stocks, bonds, and other classes of investments, that have been segregated and restricted in a trust, or equivalent arrangement, in which (a) employer contributions to the plan are irrevocable, (b) assets are dedicated to providing benefits to retirees and their beneficiaries, and (c) assets are legally protected from creditors of the employer(s) or plan administrator, for the payment of benefits in accordance with the terms of the plan.
Plan Members	The individuals covered by the terms of a pension plan. The plan membership generally includes employees in active service, terminated employees who have accumulated benefits but are not yet receiving them, and retired employees and beneficiaries currently receiving benefits.

Definitions of Technical Terms (Continued)

Present Value of Future Benefits (PVFB)	Projected benefits estimated to be payable to plan members (retirees and beneficiaries, terminated employees entitled to benefits but not yet receiving them, and current active members upon retirement) as a result of their service through the valuation date and their expected future service. The actuarial present value of projected future benefits as of the valuation date is the present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment (taking into account mortality, turnover, probability of participating in plan retirement, etc.). Alternatively, it is the amount that would have to be invested on the valuation date so that the amount invested plus investment earnings will provide sufficient assets to pay the projected benefits when due.
Unfunded Actuarial Accrued Liability (UAAL)	The difference between the Actuarial Accrued Liability and Plan Assets as of a particular date. Plan assets may be market value or a smoothed value.
Unfunded Actuarial Accrued Liability Amortization Method	A predetermined process by which any Unfunded Actuarial Accrued Liability will be amortized for calculating the Actuarially Determined Contribution.