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# *Indiana Public Retirement System*

Pension Relief Fund

Actuarial Valuation as of  
January 1, 2017





May 19, 2017

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

**Re: Certification of the Actuarial Valuation for the Pension Relief Fund as of January 1, 2017**

Dear Board of Trustees ("Board"):

We are pleased to present the results of our actuarial analysis as of January 1, 2017 of the 1925 Police Pension Fund, the 1937 Firefighters Pension Fund and the 1953 Police Pension Fund (Indianapolis), pursuant to our engagement letter with the Indiana Public Retirement System ("INPRS"), dated June 7, 2010 (as amended). This report is intended to provide the Board of Trustees ("Board") with the anticipated benefit distributions during 2017 for each municipality that is paying benefits to members of these Funds. This information will allow the Board to notify the State of the aggregate funding need for the Pension Relief Fund for 2017, as well as the allocation of funds to each participating municipality. This report is also intended to provide the Board with certain liability information for each municipality with ongoing obligations to members of the Old Police and Fire Funds.

Actuarial valuations are performed annually for the 1925 Police Pension Fund, the 1937 Firefighters Pension Fund, and the 1953 Police Pension Fund (Indianapolis), collectively referred to as the "Old Police and Fire Funds". Benefits to members of the Old Police and Fire Funds are funded on a pay-as-you-go basis by certain revenues and appropriations from the State of Indiana to the Pension Relief Fund. The Pension Relief Fund has been created within the Indiana Public Retirement System ("INPRS") and is administered by INPRS.

**Benefit Provisions**

The benefit provisions reflected in this report are those which were in effect at January 1, 2017, as set forth in IC 36-8-6, 36-8-7, and 36-8-7.5. It is our understanding that the only change to the benefit provisions since the 2016 valuation was an enhancement to the disability benefit provided in certain catastrophic disability circumstances, per 2017 House Enrolled Act No. 1617. This enhanced disability benefit is only available to members who previously elected to convert their participation to provisions equivalent to the 1977 Fund. The accrued liability and normal cost as of January 1, 2017 reflect this plan change.

**Assets**

The Old Police and Fire Funds are funded on a pay-as-you-go basis. The Pension Relief Fund is a temporary holding account for collecting State revenues and appropriations before funds are distributed to the local municipalities to assist them in paying benefits to retired members of the Old Police and Fire Funds.

**Member Data**

The valuations were based on member census data as of January 1, 2017. All member data was provided to us by INPRS. While certain checks for reasonableness were performed, the data was used unaudited. While the scope of our engagement did not call for us to perform an audit or independent verification of this information, we have reviewed this information for reasonableness. The accuracy of the results presented in the report is dependent upon the accuracy and completeness of the underlying census information.

**Actuarial Assumptions and Methods**

The actuarial assumptions used in the January 1, 2017 valuation were adopted by the Board pursuant to the experience study completed in April 2015, which reflect the experience period from July 1, 2010 to June 30, 2014. The interest rate was updated to equal the Barclay's 20-year Municipal Bond Index rate as of the valuation date, the base mortality table assumption for disabled participants was changed to the RP-2014 Disabled mortality tables from the RP-2014 Blue Collar Healthy mortality tables, and an assumption as to the percentage of future disabilities who will qualify for the new enhanced disability benefit was added. All other assumptions are unchanged from the 2016 valuation.

The actuarial assumptions and methods are summarized in the Actuarial Assumptions and Methods section of the valuation report. We believe the actuarial assumptions and methods are reasonable for the purposes of the valuation report.

**Certification**

We certify that the information presented herein is accurate and fairly portrays the anticipated cost of the Old Police and Fire Plans as of January 1, 2017, based on the underlying census data provided, and assumptions and methods selected by the Board.



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 this actuarial statement is complete and accurate and has 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.

To the best of our knowledge, there is no relationship between the PwC practitioners involved in this engagement and INPRS that may impair our objectivity.

This report was prepared for the internal use of the Indiana Public Retirement System in connection with our actuarial determination of the contributions to the Pension Relief Fund by the State and distributions from the Pension Relief Fund to local municipalities during 2017. This report is not for reliance by any other person. This report is not intended to satisfy financial reporting requirements for INPRS, the State, or local municipalities under applicable standards from the Governmental Accounting Standards Board ("GASB"). PwC disclaims any contractual or other responsibility or duty of care to others based upon the services or deliverables provided in connection with this report.

The content of this document is limited to the matters specifically addressed herein and does not address any other potential tax consequences, or the potential application of tax penalties, to any matter other than as set forth herein. Our conclusions are not binding upon any taxing authority or the courts and there is no assurance that any relevant taxing authority will not successfully assert a contrary position. In addition, no exceptions (including the reasonable cause exception) are available for any federal or state penalties imposed if any portion of a transaction is determined to lack economic substance or fails to satisfy any similar rule of law, and our advice will not protect you from any such penalties. This document supersedes all prior written or oral advice with respect to the issues addressed in this document and all such prior communications should not be relied upon by any person for any purpose.

Respectfully submitted,

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Ms. Cindy Fraterrigo  
Member, American Academy of Actuaries  
Fellow of the Society of Actuaries  
Enrolled Actuary (No. 17-06229)

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Mr. Brandon Robertson  
Member, American Academy of Actuaries  
Associate of the Society of Actuaries  
Enrolled Actuary (No. 17-07568)

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Mr. Antonio DeSario  
Member, American Academy of Actuaries  
Fellow of the Society of Actuaries  
Enrolled Actuary (No. 17-08239)

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## SECTION I - EXECUTIVE SUMMARY

### **HIGHLIGHTS OF THE ACTUARY'S REPORT**

This report presents the results of the actuarial valuations of the 1925 Police Pension Fund, the 1937 Firefighters Pension Fund, and the 1953 Police Pension Fund (Indianapolis), collectively referred to as the "Old Police and Fire Funds", and has been prepared to present the anticipated pension distributions for the 2017 Plan Year, as well as certain liability information for the municipalities that have ongoing obligations to members of these Funds, in order to assist the INPRS Board of Trustees ("Board") with the administration of the Pension Relief Fund. The valuation was performed using census data for each Fund as of January 1, 2017 provided to us by INPRS and summarized in Section IV, the actuarial assumptions and methods selected by the Board and summarized in Section V, and the plan provisions effective January 1, 2017 as summarized in Section VI.

#### **Anticipated Distributions**

Anticipated benefit distributions to members of the Funds have decreased from \$213.3 million for calendar 2016 to \$211.4 million for calendar 2017. The decrease is primarily due to a decrease in the number of retired members and beneficiaries receiving benefits, partially offset by automatic cost-of-living increases to the remaining members. After truing up for a shortfall in Pension Relief Fund distributions under payment to the local municipalities through 2016, resulting from actual 2016 benefit payments being more than expected, the anticipated cost to the State of Indiana for calendar 2017 is \$212.3 million. It is anticipated that the State will deposit this amount into the Pension Relief Fund during 2017 in two installments; the first before July 1, 2017, and the second before October 1, 2017, per IC 5-10.3-11-4.7.

#### **Funded Status**

The Old Police and Fire Funds are funded on a pay-as-you-go basis. The Pension Relief Fund is a temporary holding account for collecting State revenues and appropriations before funds are distributed to the local municipalities to assist them in paying benefits to retired members of the Old Police and Fire Funds.

#### **Cost-of-Living Adjustments**

Non-Converted	Benefits for retired members are increased annually based on increases in the first class salary paid by their last employer. There was a 3.1% average increase in monthly benefits provided to retired members, disabled members, and beneficiaries during 2016. This compares to an assumed annual cost-of-living adjustment of 2.5%.
Converted	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. There is a 2.5% increase in monthly benefits scheduled for retired members, disabled members, and beneficiaries effective July 1, 2017. There was a 1.1% increase in monthly benefits provided to retired members, disabled members, and beneficiaries effective July 1, 2016. This compares to an assumed annual cost-of-living adjustment of 2.0%.

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## SECTION I - EXECUTIVE SUMMARY

### **HIGHLIGHTS OF THE ACTUARY'S REPORT**

#### **Changes in Actuarial Assumptions**

The interest rate assumption, which is set equal to the Barclay's 20-year Municipal Bond Index rate as of the valuation date, increased from 2.59% for the January 1, 2016 valuation to 3.23% for the January 1, 2017 valuation.

For disabled participants, the mortality assumption was updated to the RP-2014 Disabled mortality tables with MP-2014 improvement removed, and with future mortality improvement projected generationally using future mortality improvement inherent in the Social Security Administration's 2014 Trustee report, from the RP-2014 Healthy mortality tables with MP-2014 improvement removed, and with future mortality improvement projected generationally using future mortality improvement inherent in the Social Security Administration's 2014 Trustee report.

To incorporate the plan change in regards to House Enrolled Act Number 1617, 1% of future disabled participants are assumed to receive the enhanced benefit.

All other assumptions are the same as the January 1, 2016 valuation.

#### **Changes in Actuarial Methods**

There have been no changes in the actuarial methods since the January 1, 2016 valuation.

#### **Changes in Plan Provisions**

It is our understanding that the only change to the benefit provisions since the January 1, 2016 valuation was an enhancement to the disability benefit provided in certain catastrophic disability circumstances per 2017 House Enrolled Act No. 1617. This enhanced disability benefit is only available to members who previously elected to convert their participation to provisions equivalent to the 1977 Fund. A summary of the new disability benefit is below.

#### **House Enrolled Act Number 1617 Enhanced Disability Benefit:**

For catastrophic physical personal injuries that result in a degree of impairment of at least 67% and permanently prevents the member from performing any gainful work, the member will receive a disability benefit equal to 100% of base salary. Additionally, the benefit is increased by the increase in the base salary.

SECTION I - EXECUTIVE SUMMARY

**HISTORICAL SUMMARY**

	<u>January 1, 2013</u>	<u>January 1, 2014</u>	<u>January 1, 2015</u>	<u>January 1, 2016</u>	<u>January 1, 2017</u>
<b>Census Information</b>					
Actives					
Number	110	100	80	64	52
Average Age	62.3	63.2	64.0	64.9	65.6
Average Years of Service	38.7	39.7	40.4	41.4	42.0
Anticipated Payroll of Actives	5,014,091	4,585,403	\$ 3,674,892	\$ 2,918,191	\$ 2,116,347
Terminated Vested					
Number	-	-	-	-	-
Average Age	-	-	-	-	-
Retiree/Beneficiary/Disabled					
Number	8,109	7,860	7,638	7,416	7,195
Average Age	73.4	73.9	74.5	75.1	75.6
<b>Projected Benefit Payments</b>					
Total	\$ 220,376,145	\$ 218,085,176	\$ 215,792,549	\$ 213,293,983	\$ 211,416,946
Per Retiree/Beneficiary/Disabled	\$ 27,177	\$ 27,746	\$ 28,252	\$ 28,761	\$ 29,384
<b>Actual Benefit Payments</b>	\$ 220,585,937	\$ 219,319,096	\$ 216,616,686	\$ 214,186,485	TBD

SECTION I - EXECUTIVE SUMMARY

**HISTORICAL SUMMARY**

	<u>January 1, 2013</u>	<u>January 1, 2014</u>	<u>January 1, 2015</u>	<u>January 1, 2016</u>	<u>January 1, 2017</u>
<b>Actuarial Accrued Liability (AAL)</b>					
Active	\$ 65,815,194	\$ 73,619,549	\$ 71,294,423	\$ 60,184,457	\$ 46,503,117
Terminated Vested	-	-	-	-	-
Retiree/Beneficiary/Disabled	<u>2,773,483,327</u>	<u>3,143,420,659</u>	<u>3,473,806,478</u>	<u>3,333,409,948</u>	<u>\$ 3,010,987,463</u>
Total	\$ 2,839,298,521	\$ 3,217,040,208	\$ 3,545,100,901	\$ 3,393,594,405	\$ 3,057,490,580
<b>Normal Cost (beginning of year)</b>	\$ 1,159,550	\$ 1,863,935	\$ 2,249,813	\$ 1,728,956	\$ 989,357
<b>Summary of Assumptions</b>					
Valuation Interest Rate	6.00%	4.31%	2.56%	2.59%	3.23%
Salary Scale	3.25%	3.25%	2.50%	2.50%	2.50%
Cost-of-Living Assumption: Non-Converted	3.25%	3.25%	2.50%	2.50%	2.50%
Converted	2.25%	2.25%	2.00%	2.00%	2.00%



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**SECTION II - PENSION RELIEF DISTRIBUTIONS**

**Pension Relief Distributions**

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SECTION II - PENSION RELIEF DISTRIBUTIONS

A. Summary of 2017 Distributions

	<u>2016</u>	<u>2017</u>
<b>Total</b>		
a. Actual Benefits Paid During Prior Year	\$ 216,616,686	\$ 214,186,485
b. Projected Benefits for Prior Year	215,792,549	213,293,983
c. True-Up [(a) - (b)]	824,137	892,502
d. Projected Benefits for Current Year	213,293,983	211,416,946
e. Preliminary Gross Pension Relief Distribution [(c) + (d)]	214,118,120	212,309,448
f. Adjustments	-	-
g. Gross Pension Relief Distribution [(e) + (f)]	\$ 214,118,120	\$ 212,309,448
<b>Old Police Pension Funds</b>		
a. Actual Benefits Paid During Prior Year	\$ 111,335,982	\$ 109,641,182
b. Projected Benefits for Prior Year	110,520,113	109,582,699
c. True-Up [(a) - (b)]	815,869	58,483
d. Projected Benefits for Current Year	109,582,699	108,932,951
e. Preliminary Gross Pension Relief Distribution [(c) + (d)]	110,398,568	108,991,434
f. Adjustments	-	-
g. Gross Pension Relief Distribution [(e) + (f)]	\$ 110,398,568	\$ 108,991,434
<b>Old Firefighters' Pension Funds</b>		
a. Actual Benefits Paid During Prior Year	\$ 105,280,704	\$ 104,545,303
b. Projected Benefits for Prior Year	105,272,436	103,711,284
c. True-Up [(a) - (b)]	8,268	834,019
d. Projected Benefits for Current Year	103,711,284	102,483,995
e. Preliminary Gross Pension Relief Distribution [(c) + (d)]	103,719,552	103,318,014
f. Adjustments	-	-
g. Gross Pension Relief Distribution [(e) + (f)]	\$ 103,719,552	\$ 103,318,014







SECTION II - PENSION RELIEF DISTRIBUTIONS

C. Old Firefighters' Pension Funds

(a) Employer Code	(b) Employer Name	(c) Actual Benefits Paid During 2016	(d) Projected Benefits During 2016	(e) True-Up for 2016 Paid in 2017 (c) - (d)	(f) Projected Benefits During 2017	(g) Net Pension Relief Distrib During 2017 (e) + (f)	(h) Net Pension Relief Distrib in June 2017 50% of (g)	(i) Net Pension Relief Distrib in October 2017 (g) - (h)	(j) 1/1/2017 Census Counts	
									Actives & Terminated Vested	Retirees/ Beneficiaries/ Disabled
7816-200	CITY OF SHELBYVILLE	388,586.30	364,856.00	23,730.30	359,612.00	383,342.30	191,671.15	191,671.15	0	15
7817-200	CITY OF SOUTH BEND	5,171,111.04	4,980,991.00	190,120.04	4,727,592.00	4,917,712.04	2,458,856.02	2,458,856.02	4	162
7819-200	CITY OF SPEEDWAY	557,987.64	547,548.00	10,439.64	537,971.00	548,410.64	274,205.32	274,205.32	0	17
7820-200	CITY OF SULLIVAN	60,796.11	59,433.00	1,363.11	60,296.00	61,659.11	30,829.56	30,829.55	0	5
7822-200	CITY OF TERRE HAUTE	2,230,066.81	2,162,451.00	67,615.81	2,149,906.00	2,217,521.81	1,108,760.91	1,108,760.90	0	79
7823-200	CITY OF TIPTON	145,577.60	131,480.00	14,097.60	133,766.00	147,863.60	73,931.80	73,931.80	0	7
7824-200	CITY OF UNION CITY	34,867.20	35,065.00	(197.80)	35,455.00	35,257.20	17,628.60	17,628.60	0	2
7825-200	CITY OF VALPARAISO	744,864.22	749,179.00	(4,314.78)	733,272.00	728,957.22	364,478.61	364,478.61	0	25
7826-200	CITY OF VINCENNES	595,428.00	566,774.00	28,654.00	552,890.00	581,544.00	290,772.00	290,772.00	0	24
7827-200	CITY OF WABASH	700,783.06	709,763.00	(8,979.94)	708,558.00	699,578.06	349,789.03	349,789.03	0	26
7828-200	CITY OF WARSAW	258,523.14	257,374.00	1,149.14	262,308.00	263,457.14	131,728.57	131,728.57	0	9
7829-200	CITY OF WASHINGTON	138,735.95	134,075.00	4,660.95	138,357.00	143,017.95	71,508.98	71,508.97	0	8
7830-200	CITY OF WEST LAFAYETTE	619,046.59	605,956.00	13,090.59	588,677.00	601,767.59	300,883.80	300,883.79	0	21
7831-200	CITY OF WHITING	305,315.46	311,257.00	(5,941.54)	299,349.00	293,407.46	146,703.73	146,703.73	0	12
7832-200	CITY OF WINCHESTER	40,707.12	44,520.00	(3,812.88)	48,520.00	44,707.12	22,353.56	22,353.56	1	3
7836-200	PIKE TWP. (MARION COUNTY)	166,531.20	165,886.00	645.20	169,093.00	169,738.20	84,869.10	84,869.10	0	4
<b>Sub-Total</b>		<b>\$ 104,545,303.24</b>	<b>\$ 103,711,284.00</b>	<b>\$ 834,019.24</b>	<b>\$ 102,483,995.00</b>	<b>\$ 103,318,014.24</b>	<b>\$ 51,659,007.25</b>	<b>\$ 51,659,006.99</b>	<b>16</b>	<b>3,464</b>
<b>Refunds to Pension Relief Fund</b>										
None.										
<b>Total</b>		<b>\$ 104,545,303.24</b>	<b>\$ 103,711,284.00</b>	<b>\$ 834,019.24</b>	<b>\$ 102,483,995.00</b>	<b>\$ 103,318,014.24</b>	<b>\$ 51,659,007.25</b>	<b>\$ 51,659,006.99</b>	<b>16</b>	<b>3,464</b>

SECTION II - PENSION RELIEF DISTRIBUTIONS

**D. Projected Aggregate Distributions**

<u>Year</u>	<u>Projected Benefit</u>	<u>Year</u>	<u>Projected Benefit</u>
2017	211,416,946	2057	4,030,432
2018	210,357,099	2058	3,175,143
2019	208,639,616	2059	2,498,307
2020	206,471,662	2060	1,966,188
2021	203,813,598	2061	1,549,816
2022	200,697,886	2062	1,224,942
2023	197,164,768	2063	971,685
2024	193,241,429	2064	774,051
2025	188,864,797	2065	619,421
2026	184,128,822	2066	497,931
2027	178,983,227	2067	401,994
2028	173,425,733	2068	325,922
2029	167,455,865	2069	265,396
2030	161,076,996	2070	217,077
2031	154,298,223	2071	178,436
2032	147,136,003	2072	147,531
2033	139,616,047	2073	122,815
2034	131,773,867	2074	103,001
2035	123,656,148	2075	87,089
2036	115,320,497	2076	74,274
2037	106,834,839	2077	63,898
2038	98,276,759	2078	55,422
2039	89,731,780	2079	48,415
2040	81,290,327	2080	42,527
2041	73,043,173	2081	37,483
2042	65,078,132	2082	33,092
2043	57,476,158	2083	29,216
2044	50,308,009	2084	25,733
2045	43,632,125	2085	22,572
2046	37,492,809	2086	19,692
2047	31,918,401	2087	17,054
2048	26,920,750	2088	14,641
2049	22,496,914	2089	12,453
2050	18,630,798	2090	10,478
2051	15,295,025	2091	8,709
2052	12,452,720	2092	7,147
2053	10,060,335	2093	5,783
2054	8,070,362	2094	4,617
2055	6,433,829	2095	3,633
2056	5,102,493	2096	2,816

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**SECTION III - SUPPLEMENTAL INFORMATION**

**SUPPLEMENTAL INFORMATION**

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SECTION III - SUPPLEMENTAL INFORMATION

**A. Summary of Unfunded Actuarial Accrued Liabilities and Normal Costs**

<b>Unfunded Actuarial Accrued Liability (UAAL) and Normal Cost</b>	<b><u>January 1, 2016</u></b>	<b><u>January 1, 2017</u></b>
Total		
a. Actuarial Accrued Liability	\$ 3,393,594,405	\$ 3,057,490,580
b. Valuation Assets	-	-
c. Unfunded Actuarial Accrued Liability [(a) - (b)]	3,393,594,405	3,057,490,580
d. Normal Cost	1,728,956	989,357
Old Police Pension Funds		
a. Actuarial Accrued Liability	\$ 1,783,142,639	\$ 1,611,716,816
b. Valuation Assets	-	-
c. Unfunded Actuarial Accrued Liability [(a) - (b)]	1,783,142,639	1,611,716,816
d. Normal Cost	1,060,596	673,734
Old Firefighters' Pension Funds		
a. Actuarial Accrued Liability	\$ 1,610,451,766	\$ 1,445,773,764
b. Valuation Assets	-	-
c. Unfunded Actuarial Accrued Liability [(a) - (b)]	1,610,451,766	1,445,773,764
d. Normal Cost	668,360	315,623

SECTION III - SUPPLEMENTAL INFORMATION

**B. Unfunded Actuarial Accrued Liabilities and Normal Costs - Old Police Pension Funds**

Acct #	Employer Name	Normal Cost	Accrued Liability	Valuation Assets	Unfunded Accrued Liability	Funded Ratio	Anticipated Payroll	Unfunded Liab. as % of Payroll
7700-100	CITY OF ALEXANDRIA	-	2,196,274	-	2,196,274	0.0%	-	-
7701-100	CITY OF ANDERSON	-	40,822,763	-	40,822,763	0.0%	-	-
7702-100	CITY OF ANGOLA	-	2,551,670	-	2,551,670	0.0%	-	-
7703-100	CITY OF ATTICA	-	634,655	-	634,655	0.0%	-	-
7704-100	CITY OF AUBURN	-	1,043,642	-	1,043,642	0.0%	-	-
7705-100	CITY OF AURORA	-	982,593	-	982,593	0.0%	-	-
7706-100	CITY OF BATESVILLE	-	853,529	-	853,529	0.0%	-	-
7707-100	CITY OF BEDFORD	-	7,257,551	-	7,257,551	0.0%	-	-
7708-100	CITY OF BEECH GROVE	-	8,621,792	-	8,621,792	0.0%	-	-
7709-100	CITY OF BERNE	-	200,698	-	200,698	0.0%	-	-
7711-100	CITY OF BLOOMINGTON	-	18,595,625	-	18,595,625	0.0%	-	-
7712-100	CITY OF BLUFFTON	-	4,013,590	-	4,013,590	0.0%	-	-
7713-100	CITY OF BOONVILLE	-	1,536,059	-	1,536,059	0.0%	-	-
7714-100	CITY OF BRAZIL	-	1,042,937	-	1,042,937	0.0%	-	-
7715-100	CITY OF BREMEN	-	71,061	-	71,061	0.0%	-	-
7716-100	CITY OF BROWNSBURG	-	4,627,441	-	4,627,441	0.0%	-	-
7717-100	CITY OF BUTLER	-	318,754	-	318,754	0.0%	-	-
7718-100	CITY OF CANNELTON	-	214,528	-	214,528	0.0%	-	-
7719-100	CITY OF CARMEL	-	10,043,655	-	10,043,655	0.0%	-	-
7720-100	CITY OF CEDAR LAKE	-	2,296,590	-	2,296,590	0.0%	-	-
7721-100	CITY OF CHARLESTON	-	1,787,017	-	1,787,017	0.0%	-	-
7722-100	CITY OF CHESTERTON	-	3,201,495	-	3,201,495	0.0%	-	-
7723-100	CITY OF CLARKSVILLE	25,802	6,689,579	-	6,689,579	0.0%	56,787	11780.12%
7724-100	CITY OF CLINTON	-	810,832	-	810,832	0.0%	-	-
7725-100	CITY OF COLUMBIA CITY	-	2,465,157	-	2,465,157	0.0%	-	-
7726-100	CITY OF COLUMBUS	-	13,613,340	-	13,613,340	0.0%	-	-
7727-100	CITY OF CONNERSVILLE	-	7,612,150	-	7,612,150	0.0%	-	-
7728-100	CITY OF COVINGTON	-	1,836,109	-	1,836,109	0.0%	-	-
7729-100	CITY OF CRAWFORDSVILLE	-	6,460,303	-	6,460,303	0.0%	-	-
7730-100	CITY OF CROWN POINT	31,459	9,438,855	-	9,438,855	0.0%	64,247	14691.51%
7731-100	CITY OF DECATUR	-	4,763,634	-	4,763,634	0.0%	-	-
7732-100	CITY OF DELPHI	-	131,257	-	131,257	0.0%	-	-
7733-100	CITY OF DUNKIRK	-	351,753	-	351,753	0.0%	-	-
7734-100	CITY OF DYER	-	3,123,605	-	3,123,605	0.0%	-	-
7735-100	CITY OF EAST CHICAGO	-	43,126,074	-	43,126,074	0.0%	-	-
7736-100	CITY OF LAKE STATION (E. GARY)	-	6,075,904	-	6,075,904	0.0%	-	-
7737-100	CITY OF ELKHART	-	30,002,720	-	30,002,720	0.0%	-	-
7738-100	CITY OF ELWOOD	-	4,822,042	-	4,822,042	0.0%	-	-
7739-100	CITY OF EVANSVILLE	31,810	94,628,798	-	94,628,798	0.0%	60,946	155266.63%
7740-100	CITY OF FORT WAYNE	79,928	114,629,325	-	114,629,325	0.0%	168,278	68119.02%
7741-100	CITY OF FRANKFORT	-	6,066,206	-	6,066,206	0.0%	-	-
7742-100	CITY OF FRANKLIN	-	3,263,815	-	3,263,815	0.0%	-	-
7743-100	CITY OF GARRETT	-	1,234,860	-	1,234,860	0.0%	-	-
7744-100	CITY OF GARY	-	64,302,126	-	64,302,126	0.0%	-	-
7745-100	CITY OF GAS CITY	-	1,615,463	-	1,615,463	0.0%	-	-
7746-100	CITY OF GOSHEN	-	6,318,209	-	6,318,209	0.0%	-	-
7747-100	CITY OF GREENCASTLE	-	1,365,095	-	1,365,095	0.0%	-	-
7749-100	CITY OF GREENFIELD	-	3,931,588	-	3,931,588	0.0%	-	-

SECTION III - SUPPLEMENTAL INFORMATION

**B. Unfunded Actuarial Accrued Liabilities and Normal Costs - Old Police Pension Funds**

Acct #	Employer Name	Normal Cost	Accrued Liability	Valuation Assets	Unfunded Accrued Liability	Funded Ratio	Anticipated Payroll	Unfunded Liab. as % of Payroll
7750-100	CITY OF GREENSBURG	-	2,109,750	-	2,109,750	0.0%	-	-
7751-100	CITY OF GREENWOOD	-	6,285,408	-	6,285,408	0.0%	-	-
7752-100	CITY OF GRIFFITH	-	9,788,994	-	9,788,994	0.0%	-	-
7753-100	CITY OF HAMMOND	-	66,814,699	-	66,814,699	0.0%	-	-
7754-100	CITY OF HARTFORD CITY	-	721,499	-	721,499	0.0%	-	-
7755-100	CITY OF HIGHLAND	-	12,075,774	-	12,075,774	0.0%	-	-
7756-100	CITY OF HOBART	-	8,696,177	-	8,696,177	0.0%	-	-
7757-100	CITY OF HUNTINGBURG	-	1,083,494	-	1,083,494	0.0%	-	-
7758-100	CITY OF HUNTINGTON	-	11,300,777	-	11,300,777	0.0%	-	-
7759-100	CITY OF INDIANAPOLIS	267,856	433,230,172	-	433,230,172	0.0%	582,322	74397.01%
7761-100	CITY OF JASPER	-	2,486,273	-	2,486,273	0.0%	-	-
7762-100	CITY OF JEFFERSONVILLE	-	12,985,828	-	12,985,828	0.0%	-	-
7763-100	CITY OF KENDALLVILLE	-	2,087,524	-	2,087,524	0.0%	-	-
7764-100	CITY OF KNOX	-	901,834	-	901,834	0.0%	-	-
7765-100	CITY OF KOKOMO	-	33,809,127	-	33,809,127	0.0%	-	-
7766-100	CITY OF LAFAYETTE	-	20,006,642	-	20,006,642	0.0%	-	-
7767-100	CITY OF LAPORTE	-	7,162,202	-	7,162,202	0.0%	-	-
7768-100	CITY OF LAWRENCE	-	6,258,744	-	6,258,744	0.0%	-	-
7769-100	CITY OF LAWRENCEBURG	-	4,474,403	-	4,474,403	0.0%	-	-
7770-100	CITY OF LEBANON	-	3,496,249	-	3,496,249	0.0%	-	-
7772-100	CITY OF LINTON	-	1,446,644	-	1,446,644	0.0%	-	-
7773-100	CITY OF LOGANSPOUT	-	5,715,877	-	5,715,877	0.0%	-	-
7774-100	CITY OF LOGOOTEET	-	267,305	-	267,305	0.0%	-	-
7775-100	CITY OF LOWELL	-	1,974,157	-	1,974,157	0.0%	-	-
7776-100	CITY OF MADISON	23,616	6,144,121	-	6,144,121	0.0%	50,693	12120.26%
7777-100	CITY OF MARION	-	14,653,503	-	14,653,503	0.0%	-	-
7781-100	CITY OF MARTINSVILLE	-	2,964,482	-	2,964,482	0.0%	-	-
7782-100	CITY OF MERRILLVILLE	-	9,923,386	-	9,923,386	0.0%	-	-
7783-100	CITY OF MICHIGAN CITY	-	22,245,134	-	22,245,134	0.0%	-	-
7784-100	CITY OF MISHAWAKA	25,219	18,071,583	-	18,071,583	0.0%	56,498	31986.23%
7785-100	CITY OF MITCHELL	-	693,887	-	693,887	0.0%	-	-
7786-100	CITY OF MONTICELLO	-	1,727,380	-	1,727,380	0.0%	-	-
7787-100	CITY OF MONTPELIER	-	41,023	-	41,023	0.0%	-	-
7788-100	CITY OF MOUNT VERNON	-	1,151,905	-	1,151,905	0.0%	-	-
7789-100	CITY OF MUNCIE	-	29,143,095	-	29,143,095	0.0%	-	-
7790-100	CITY OF MUNSTER	-	10,325,630	-	10,325,630	0.0%	-	-
7791-100	CITY OF NAPPANEE	-	935,657	-	935,657	0.0%	-	-
7792-100	CITY OF NEW ALBANY	-	29,310,184	-	29,310,184	0.0%	-	-
7793-100	CITY OF NEW CASTLE	-	8,887,933	-	8,887,933	0.0%	-	-
7794-100	CITY OF NEW HAVEN	-	1,881,311	-	1,881,311	0.0%	-	-
7795-100	CITY OF NOBLESVILLE	-	3,483,183	-	3,483,183	0.0%	-	-
7796-100	CITY OF NORTH VERNON	-	1,367,005	-	1,367,005	0.0%	-	-
7798-100	CITY OF PERU	-	5,734,345	-	5,734,345	0.0%	-	-
7800-100	CITY OF PLAINFIELD	-	3,800,745	-	3,800,745	0.0%	-	-
7801-100	CITY OF PLYMOUTH	-	3,307,437	-	3,307,437	0.0%	-	-
7802-100	CITY OF PORTAGE	-	7,550,169	-	7,550,169	0.0%	-	-
7803-100	CITY OF PORTLAND	-	605,625	-	605,625	0.0%	-	-
7804-100	CITY OF PRINCETON	-	3,543,135	-	3,543,135	0.0%	-	-

SECTION III - SUPPLEMENTAL INFORMATION

**B. Unfunded Actuarial Accrued Liabilities and Normal Costs - Old Police Pension Funds**

Acct #	Employer Name	Normal Cost	Accrued Liability	Valuation Assets	Unfunded Accrued Liability	Funded Ratio	Anticipated Payroll	Unfunded Liab. as % of Payroll
7806-100	CITY OF RICHMOND	25,436	18,801,339	-	18,801,339	0.0%	49,271	38159.04%
7808-100	CITY OF ROCHESTER	-	1,666,096	-	1,666,096	0.0%	-	-
7810-100	CITY OF RUSHVILLE	-	2,351,857	-	2,351,857	0.0%	-	-
7811-100	CITY OF SALEM	-	948,480	-	948,480	0.0%	-	-
7812-100	CITY OF SCHERERVILLE	-	2,700,434	-	2,700,434	0.0%	-	-
7813-100	CITY OF SCOTTSBURG	-	2,440,532	-	2,440,532	0.0%	-	-
7814-100	CITY OF SELLERSBURG	-	1,171,333	-	1,171,333	0.0%	-	-
7815-100	CITY OF SEYMOUR	-	7,562,044	-	7,562,044	0.0%	-	-
7816-100	CITY OF SHELBYVILLE	28,946	8,389,039	-	8,389,039	0.0%	58,586	14319.19%
7817-100	CITY OF SOUTH BEND	78,812	85,105,689	-	85,105,689	0.0%	176,121	48322.28%
7819-100	CITY OF SPEEDWAY	-	5,289,900	-	5,289,900	0.0%	-	-
7820-100	CITY OF SULLIVAN	-	1,343,478	-	1,343,478	0.0%	-	-
7821-100	CITY OF TELL CITY	-	1,784,265	-	1,784,265	0.0%	-	-
7822-100	CITY OF TERRE HAUTE	28,387	33,259,815	-	33,259,815	0.0%	56,349	59024.68%
7823-100	CITY OF TIPTON	-	1,168,317	-	1,168,317	0.0%	-	-
7824-100	CITY OF UNION CITY	-	267,487	-	267,487	0.0%	-	-
7825-100	CITY OF VALPARAISO	-	7,359,141	-	7,359,141	0.0%	-	-
7826-100	CITY OF VINCENNES	-	4,144,460	-	4,144,460	0.0%	-	-
7827-100	CITY OF WABASH	26,463	7,019,045	-	7,019,045	0.0%	53,708	13068.90%
7828-100	CITY OF WARSAW	-	4,310,398	-	4,310,398	0.0%	-	-
7829-100	CITY OF WASHINGTON	-	1,698,936	-	1,698,936	0.0%	-	-
7830-100	CITY OF WEST LAFAYETTE	-	9,728,715	-	9,728,715	0.0%	-	-
7831-100	CITY OF WHITING	-	5,671,989	-	5,671,989	0.0%	-	-
7834-100	CITY OF ST. JOHN	-	3,269,898	-	3,269,898	0.0%	-	-
<b>Total</b>		<b>673,734</b>	<b>1,611,716,816</b>	<b>-</b>	<b>1,611,716,816</b>	<b>0.0%</b>	<b>1,433,806</b>	<b>112408.29%</b>

SECTION III - SUPPLEMENTAL INFORMATION

**C. Unfunded Actuarial Accrued Liabilities and Normal Costs - Old Firefighters' Pension Funds**

Acct #	Employer Name	Normal Cost	Accrued Liability	Valuation Assets	Unfunded Accrued Liability	Funded Ratio	Anticipated Payroll	Unfunded Liab. as % of Payroll
7700-200	CITY OF ALEXANDRIA	-	1,557,546	-	1,557,546	0.0%	-	-
7701-200	CITY OF ANDERSON	-	43,539,471	-	43,539,471	0.0%	-	-
7707-200	CITY OF BEDFORD	-	7,958,101	-	7,958,101	0.0%	-	-
7708-200	CITY OF BEECH GROVE	-	5,389,128	-	5,389,128	0.0%	-	-
7711-200	CITY OF BLOOMINGTON	-	25,272,654	-	25,272,654	0.0%	-	-
7713-200	CITY OF BOONVILLE	-	1,892,541	-	1,892,541	0.0%	-	-
7714-200	CITY OF BRAZIL	-	3,368,847	-	3,368,847	0.0%	-	-
7719-200	CITY OF CARMEL	-	10,861,825	-	10,861,825	0.0%	-	-
7722-200	CITY OF CHESTERTON	-	1,313,293	-	1,313,293	0.0%	-	-
7723-200	CITY OF CLARKSVILLE	-	8,914,581	-	8,914,581	0.0%	-	-
7724-200	CITY OF CLINTON	-	338,868	-	338,868	0.0%	-	-
7726-200	CITY OF COLUMBUS	-	26,773,975	-	26,773,975	0.0%	-	-
7727-200	CITY OF CONNERSVILLE	-	13,653,556	-	13,653,556	0.0%	-	-
7729-200	CITY OF CRAWFORDSVILLE	-	5,972,729	-	5,972,729	0.0%	-	-
7730-200	CITY OF CROWN POINT	-	642,103	-	642,103	0.0%	-	-
7731-200	CITY OF DECATUR	-	1,757,528	-	1,757,528	0.0%	-	-
7735-200	CITY OF EAST CHICAGO	-	25,949,122	-	25,949,122	0.0%	-	-
7737-200	CITY OF ELKHART	-	38,255,207	-	38,255,207	0.0%	-	-
7738-200	CITY OF ELWOOD	-	2,313,926	-	2,313,926	0.0%	-	-
7739-200	CITY OF EVANSVILLE	-	69,617,678	-	69,617,678	0.0%	-	-
7740-200	CITY OF FORT WAYNE	-	85,812,216	-	85,812,216	0.0%	-	-
7741-200	CITY OF FRANKFORT	-	12,394,133	-	12,394,133	0.0%	-	-
7742-200	CITY OF FRANKLIN	-	8,005,650	-	8,005,650	0.0%	-	-
7744-200	CITY OF GARY	-	61,561,218	-	61,561,218	0.0%	-	-
7746-200	CITY OF GOSHEN	-	7,113,357	-	7,113,357	0.0%	-	-
7747-200	CITY OF GREENCASTLE	-	1,539,594	-	1,539,594	0.0%	-	-
7749-200	CITY OF GREENFIELD	-	1,656,254	-	1,656,254	0.0%	-	-
7750-200	CITY OF GREENSBURG	-	1,368,351	-	1,368,351	0.0%	-	-
7753-200	CITY OF HAMMOND	-	54,174,187	-	54,174,187	0.0%	-	-
7754-200	CITY OF HARTFORD CITY	-	495,878	-	495,878	0.0%	-	-
7756-200	CITY OF HOBART	-	4,848,859	-	4,848,859	0.0%	-	-
7758-200	CITY OF HUNTINGTON	-	11,811,156	-	11,811,156	0.0%	-	-
7759-200	CITY OF INDIANAPOLIS	167,235	396,213,061	-	396,213,061	0.0%	363,952	108864.10%
7762-200	CITY OF JEFFERSONVILLE	-	17,921,227	-	17,921,227	0.0%	-	-
7763-200	CITY OF KENDALLVILLE	-	567,974	-	567,974	0.0%	-	-
7765-200	CITY OF KOKOMO	-	49,475,254	-	49,475,254	0.0%	-	-
7766-200	CITY OF LAFAYETTE	-	32,723,024	-	32,723,024	0.0%	-	-
7767-200	CITY OF LAPORTE	-	13,920,661	-	13,920,661	0.0%	-	-
7770-200	CITY OF LEBANON	-	4,164,344	-	4,164,344	0.0%	-	-
7772-200	CITY OF LINTON	-	463,381	-	463,381	0.0%	-	-
7773-200	CITY OF LOGANSPOUT	-	11,126,120	-	11,126,120	0.0%	-	-
7777-200	CITY OF MARION	-	20,678,921	-	20,678,921	0.0%	-	-
7781-200	CITY OF MARTINSVILLE	-	2,703,550	-	2,703,550	0.0%	-	-
7783-200	CITY OF MICHIGAN CITY	23,975	16,403,315	-	16,403,315	0.0%	50,959	32189.24%
7784-200	CITY OF MISHAWAKA	-	27,139,565	-	27,139,565	0.0%	-	-
7786-200	CITY OF MONTICELLO	-	2,405,352	-	2,405,352	0.0%	-	-
7788-200	CITY OF MOUNT VERNON	-	1,227,329	-	1,227,329	0.0%	-	-
7789-200	CITY OF MUNCIE	-	32,772,627	-	32,772,627	0.0%	-	-

SECTION III - SUPPLEMENTAL INFORMATION

**C. Unfunded Actuarial Accrued Liabilities and Normal Costs - Old Firefighters' Pension Funds**

Acct #	Employer Name	Normal Cost	Accrued Liability	Valuation Assets	Unfunded Accrued Liability	Funded Ratio	Anticipated Payroll	Unfunded Liab. as % of Payroll
7792-200	CITY OF NEW ALBANY	-	33,203,028	-	33,203,028	0.0%	-	-
7793-200	CITY OF NEW CASTLE	-	5,658,859	-	5,658,859	0.0%	-	-
7795-200	CITY OF NOBLESVILLE	-	7,937,013	-	7,937,013	0.0%	-	-
7798-200	CITY OF PERU	-	8,709,329	-	8,709,329	0.0%	-	-
7800-200	CITY OF PLAINFIELD	24,547	2,515,429	-	2,515,429	0.0%	54,862	4585.01%
7801-200	CITY OF PLYMOUTH	-	738,587	-	738,587	0.0%	-	-
7802-200	CITY OF PORTAGE	-	8,671,926	-	8,671,926	0.0%	-	-
7803-200	CITY OF PORTLAND	-	1,338,366	-	1,338,366	0.0%	-	-
7804-200	CITY OF PRINCETON	-	2,237,390	-	2,237,390	0.0%	-	-
7806-200	CITY OF RICHMOND	-	22,743,861	-	22,743,861	0.0%	-	-
7808-200	CITY OF ROCHESTER	-	542,012	-	542,012	0.0%	-	-
7810-200	CITY OF RUSHVILLE	-	1,281,781	-	1,281,781	0.0%	-	-
7811-200	CITY OF SALEM	-	1,248,770	-	1,248,770	0.0%	-	-
7815-200	CITY OF SEYMOUR	-	6,388,311	-	6,388,311	0.0%	-	-
7816-200	CITY OF SHELBYVILLE	-	4,290,480	-	4,290,480	0.0%	-	-
7817-200	CITY OF SOUTH BEND	81,717	68,042,143	-	68,042,143	0.0%	177,003	38441.24%
7819-200	CITY OF SPEEDWAY	-	8,057,208	-	8,057,208	0.0%	-	-
7820-200	CITY OF SULLIVAN	-	786,186	-	786,186	0.0%	-	-
7822-200	CITY OF TERRE HAUTE	-	30,835,479	-	30,835,479	0.0%	-	-
7823-200	CITY OF TIPTON	-	1,854,423	-	1,854,423	0.0%	-	-
7824-200	CITY OF UNION CITY	-	469,096	-	469,096	0.0%	-	-
7825-200	CITY OF VALPARAISO	-	10,658,942	-	10,658,942	0.0%	-	-
7826-200	CITY OF VINCENNES	-	8,132,955	-	8,132,955	0.0%	-	-
7827-200	CITY OF WABASH	-	10,302,058	-	10,302,058	0.0%	-	-
7828-200	CITY OF WARSAW	-	3,738,745	-	3,738,745	0.0%	-	-
7829-200	CITY OF WASHINGTON	-	1,508,504	-	1,508,504	0.0%	-	-
7830-200	CITY OF WEST LAFAYETTE	-	9,592,169	-	9,592,169	0.0%	-	-
7831-200	CITY OF WHITING	-	3,899,637	-	3,899,637	0.0%	-	-
7832-200	CITY OF WINCHESTER	18,149	943,238	-	943,238	0.0%	35,765	2637.32%
7836-200	PIKE TWP. (MARION COUNTY)	-	3,418,602	-	3,418,602	0.0%	-	-
<b>Total</b>		<b>315,623</b>	<b>1,445,773,764</b>	-	<b>1,445,773,764</b>	<b>0.0%</b>	<b>682,541</b>	<b>211822.26%</b>

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**SECTION IV - CENSUS DATA**

**CENSUS DATA**

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SECTION IV - CENSUS DATA

**A. Reconciliation of Member Data**

	<u>Actives</u>	<u>Inactive Vested</u>	<u>Disabled</u>	<u>Retired</u>	<u>Beneficiary</u>	<u>Total</u>
Total as of January 1, 2016	64	-	149	4,710	2,557	7,480
New Entrants	-	-	-	-	-	-
Rehires	-	-	-	-	-	-
Non-Vested Terminations	-	-	-	-	-	-
Vested Terminations	-	-	-	-	-	-
Retirements	(12)	-	-	12	-	-
Disablements	-	-	-	-	-	-
Death with Beneficiary	-	-	(5)	(151)	156 <sup>1</sup>	-
Death without Beneficiary	-	-	(3)	(71)	(162)	(236)
Data Adjustments	-	-	-	-	3	3
Total as of January 1, 2017	52	-	141	4,500	2,554	7,247

<sup>1</sup> Includes 11 deceased members without a beneficiary whose death benefits of \$12,000 is pending payment and expected to be paid during 2017.



SECTION IV - CENSUS DATA

B. Summary of Census Data

	<u>January 1, 2016</u>	<u>January 1, 2017</u>
<b>Census Information</b>		
Actives		
Number	64	52
Average Age	64.9	65.6
Average Years of Service	41.4	42.0
Anticipated Payroll of Actives	\$ 2,918,191	\$ 2,116,347
Terminated Vested		
Number	-	-
Average Age	-	-
Retiree/Beneficiary/Disabled		
Number	7,416	7,195
Average Age	75.1	75.6
<b>Projected Benefit Payments</b>		
Total	\$ 213,293,983	\$ 211,416,946
Per Retiree/Beneficiary/Disabled	\$ 28,761	\$ 29,384
<b>Actual Benefit Payments</b>	\$ 214,186,485	TBD

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SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**ACTUARIAL ASSUMPTIONS AND METHODS**

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## SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

### **A. Actuarial Assumptions**

The assumptions used in the valuation were selected and approved by the INPRS Board of Trustees. 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 analysis.

#### Rationale for Assumptions

The demographic assumptions for converted members are based on an experience study performed on the 1977 Fund members at least every 5 years. The last study was completed in April 2015 and covered the period from 2011 to 2015. Other than the mortality assumption, the demographic assumptions for non-converted members were developed based on experience studies performed by the prior actuary and are monitored for reasonableness. The mortality table for non-converted members was set equal to the mortality table for converted members. We note that there are very few active members remaining and those who do remain are at or near assumed retirement age. For this reason, the key assumptions for our analysis are the mortality and cost of living increase assumptions. The discount rate is set based on the 20-year Municipal Bond Index rate to be consistent with the guidance under GASB for unfunded plans. The cost of living increase assumption for non-converted members is set equal to the future salary scale increase and the cost of living increase assumption for converted members is based on the expectation of CPI considering the minimum and maximum increase allowed.

#### Summary of Assumptions

Unless noted otherwise, the assumptions are used for both converted and non-converted members.

Interest Rate	3.23% per year, equal to the Barclay's 20-year Municipal Bond Index rate on the valuation date.
Future Salary Increases	2.50% per year
Inflation	2.25% per year
Cost of Living Increases	
Non-Converted	2.50% per year in retirement beginning July 1, 2017.
Converted	2.00% per year in retirement beginning July 1, 2018. The actual cost-of-living increase of 2.5% effective July 1, 2017 is reflected in the liability valuation at January 1, 2017.
Healthy Mortality	RP-2014 Blue Collar mortality tables with MP-2014 improvement removed, and with future mortality improvement projected generationally using future mortality improvement inherent in the Social Security Administration's 2014 Trustee report.

**SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS**

**A. Actuarial Assumptions**

**Disabled Mortality** RP-2014 Disabled mortality table with MP-2014 improvement removed, and with future mortality improvement projected generationally using future mortality improvement inherent in the Social Security Administration's 2014 Trustee report.

**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.

**Disability** Based on 2010-2014 experience of 1977 Fund members. Illustrative rates shown below:

<u>Age</u>	<u>Rate</u>
<= 20	0.00%
25	0.10%
30	0.10%
35	0.16%
40	0.26%
45	0.36%
50	0.46%
55	0.56%
60	0.66%
62+	0.70%

**Disability Retirement (Converted Only)** For members hired after 1989 that become disabled, 1% are assumed to sustain a catastrophic disability and receive the enhanced disability benefit (100% of salary) added by 2017 House Enrolled Act No. 1617, 44% are assumed to sustain a Class 1 disability (at 65% of salary), 10% are assumed to sustain a Class 2 disability (at 50% of salary), and 45% are assumed to sustain a Class 3 disability (at 36% of salary). For members hired before 1989 that become disabled, 1% are assumed to sustain a catastrophic disability and receive the enhanced disability benefit (100% of salary) added by 2017 House Enrolled Act No. 1617 and 99% are assumed to sustain a non-catastrophic disability and receive their accrued retirement benefit.

**Retirement Non-Converted** Based on 1976 experience study. Illustrative rates shown below:

<u>Years of Service</u>	<u>Police Rate</u>	<u>Fire Rate</u>
20	50.0%	20.0%
25	25.0%	30.0%
30	20.0%	20.0%
35	10.0%	10.0%
40	15.0%	10.0%
45	30.0%	50.0%
47+	100.0%	100.0%

**SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS**

**A. Actuarial Assumptions**

Retirement (continued)

Non-Converted (continued)

If the member is at least age 65 with 32 or more years of service, the assumed retirement rate is 100%.

As of January 1, 2017, there are 26 non-converted active members remaining with an average age of 65 years and average service of 42 years. 14 of the 26 non-converted active members are assumed to retire immediately.

Converted

Based on 2010-2014 experience of 1977 Fund members. Illustrative rates shown below:

<u>Ages</u>	<u>Service &lt;32</u>	<u>Service &gt;=32</u>
50-51	10.0%	20.0%
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%

As of January 1, 2017, there are 26 converted active members remaining with an average age of 66 years and average service of 42 years. 4 of the 26 converted active members are assumed to retire immediately.

Termination

Based on 2010-2014 experience of 1977 Fund members. Illustrative rates shown below (note that all active members have greater than 20 years of service):

<u>Service</u>	<u>Rate</u>	<u>Service</u>	<u>Rate</u>
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%		

Decrement Timing

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

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 female beneficiaries and female members are assumed to be the same age as male beneficiaries. Members are assumed to have no dependent children.

The Single Life Annuity and 60% Joint and Survivor payment form options are assumed to be provided to each member based on the assumed marriage assumption listed above.

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SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**A. Actuarial Assumptions**

Data Assumptions	Assumed age difference between members and beneficiaries is as noted above. Members are assumed to be male and survivors/beneficiaries are assumed to be female.
DROP Participation	No data is provided on DROP participation from INPRS, therefore it is assumed that the remaining active members will not participate in the DROP.
Changes in Assumptions	<p>The interest rate assumption, which is set equal to the Barclay's 20-year Municipal Bond Index rate as of the valuation date, increased from 2.59% for the January 1, 2016 valuation to 3.23% for the January 1, 2017 valuation.</p> <p>For disabled participants, the mortality assumption was updated to the RP-2014 Disabled mortality table with MP-2014 improvement removed, and with future mortality improvement projected generationally using future mortality improvement inherent in the Social Security Administration's 2014 Trustee report, from the RP-2014 Healthy mortality table with MP-2014 improvement removed, and with future mortality improvement projected generationally using future mortality improvement inherent in the Social Security Administration's 2014 Trustee report.</p> <p>To incorporate the plan change in regards to House Enrolled Act Number 1617, 1% of future disabled participants are assumed to receive the enhanced benefit.</p>

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## SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

### **B. Actuarial Methods**

The actuarial methods used in this valuation were selected and approved by the Board. In our opinion, the actuarial methods are reasonable for the purposes of this valuation.

1. Actuarial Cost Method

Benefits are funded on a pay-as-you-go basis. However, the actuarial accrued liabilities are computed using the Entry Age Normal - Level Percent of Payroll actuarial cost method.

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. Note, for an active member who is assumed to immediately retire, the normal cost is zero as their benefit is fully accrued.

2. Asset Valuation Method

Not Applicable.

3. Changes in Actuarial Methods

There have been no changes in the actuarial methods since the January 1, 2016 valuation.

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SECTION VI - SUMMARY OF PLAN PROVISIONS

**SUMMARY OF PLAN PROVISIONS**

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SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions**

The benefit provisions for the Old Police and Fire Funds are set forth in IC 36-8-6, 36-8-7, and 36-8-7.5. Unless specifically denoted, provisions for Converted and Non-Converted members are the same. A summary of those benefit provisions is presented below:

Participation                      All full-time, fully-paid police officers and firefighters who were hired before May 1, 1977 (all plans), or rehired between April 30, 1977 and February 1, 1979 (1925 Police Pension Fund and 1937 Firefighter's Pension Fund only).

Eligibility for Annuity Benefits

- a. Normal Retirement
  - Non-Converted      Any age with 20 or more years of creditable service.
  - Converted            Age 52 with 20 or more years of creditable service.
  
- b. Early Retirement
  - Non-Converted      Any age with 20 or more years of creditable service.
  - Converted            Age 50 with 20 years of vested service.
  
- c. Late Retirement        Subject to continued employment after normal retirement.
  
- d. Disability Retirement    As determined by a disability medical panel.
  
- e. Vested Termination     20 or more years of creditable service and no longer active.
  
- f. Pre-Retirement Death   Immediate.

Amount of Benefits

- a. Normal Retirement      50% of the base 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
  - Non-Converted      Not Applicable. Non-Converted members may retire without a benefit reduction at any age after attaining 20 years of creditable service.
  - Converted            Early retirement benefits are reduced by 7% per year for commencement between ages 50 and 52.

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SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions**

Amount of Benefits (continued)

- 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 are included in the computation.
  
- d. Disability Retirement  
    Non-Converted            The disability benefit is equal to a sum determined by the local board, but not exceeding 55% of the monthly salary (with longevity pay) of a First Class Police Officer or Firefighter. If a member has more than 20 years of service, the disability benefit, if greater, will be equal to the pension the member would have received if the member had retired on the date of disability. Time spent receiving disability benefits is considered active service for the purpose of determining retirement benefits until the fund member has a total of 20 years of service. If the disability is considered to have occurred while on duty or due to a duty related disease then the member is entitled to have the amount of the disability benefit to be computed as a retirement benefit when the fund member becomes age 55.  
  
    Converted  
    Hired                      This disability benefit is only available to members hired prior to January 1, 1990 and who do not choose to be  
    Before                     covered by the disability benefit for members hired after 1989. The disability benefit is equal to the benefit the  
    1990                        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.  
  
                                     House Enrolled Act Number 1617 Enhanced Disability Benefit:  
                                     For catastrophic physical personal injuries that result in a degree of impairment of at least 67% and permanently  
                                     prevents the member from performing any gainful work, the member will receive a disability benefit equal to 100%  
                                     of base salary. Additionally, the benefit is increased by the increase in the base salary.  
  
    Hired                      This disability benefit is for members hired after 1989, or hired prior to January 1, 1990, who have chosen to be  
    After                        covered by this disability benefit. The following describes the three different classes of impairments and the  
    1990                        amount of base benefit for each class:

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SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions**

Amount of Benefits (continued)

- d. Disability Retirement    Class 1 Impairment:  
    Converted            A personal injury that occurs while on duty, while responding to an emergency, or due to an occupational disease.  
    Hired                 The disability benefit is equal to a base benefit of 45% of base salary, plus an additional amount between 10% and  
    After                 45% of this salary based on degree of impairment. The benefit is payable for life, at which time the member is  
    1990                 entitled to a retirement benefit based on the salary and service the member would have earned had the member  
    (continued)         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.

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.

House Enrolled Act Number 1617 Enhanced Disability Benefit:

For catastrophic physical personal injuries that result in a degree of impairment of at least 67% and permanently prevents the member from performing any gainful work, the member will receive a disability benefit equal to 100% of base salary. Additionally, the benefit is increased by the increase in the base salary.

- e. Termination  
    Non-Converted        If termination occurs after earning 20 years of service, the member is entitled to the "Normal Retirement" benefit described above.

If termination occurs before completing 20 years of service, no benefits are payable.

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SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions**

Amount of Benefits (continued)

e. Termination (continued)

Converted

If termination occurs after earning 20 years of service, the termination benefit is the accrued retirement benefit determined as of the termination date and payable commencing on the normal retirement date.

If termination occurs before completing 20 years of active service, the member shall be entitled to the member's contributions plus accumulated interest.

f. Pre-Retirement Death

Surviving Spouse

Non-Converted

If a member dies other than in the line of duty, the spouse's benefit is equal to the greater of 30% of the monthly salary (with longevity pay) of a First Class Police Officer or Firefighter or 55% 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 greater of 50% of the monthly salary (with longevity pay) of a First Class Police Officer or Firefighter or 100% of the monthly benefit the member was receiving or was entitled to receive on the date of death.

Converted

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.

Children

Non-Converted

Not a Line of Duty Death

A payment shall be made to each child of a deceased member equal to an amount set by ordinance but at least 20% of the monthly salary (with longevity pay) of a First Class Police Officer or Firefighter until the later of (a) the date the child becomes age 18, (b) the date the child becomes age 23 if enrolled in a qualified school, or (c) during the entire period of the child's disability. Total benefits payable to a surviving spouse and surviving children may not exceed the retirement benefit of the member.

SECTION VI - SUMMARY OF PLAN PROVISIONS

A. Summary of Plan Provisions

Amount of Benefits (continued)

f. Pre-Retirement Death (Continued)

Non-Converted

(continued)

Line of Duty Death

A payment shall be made to each child of a deceased member less than age 18 equal to an amount set by ordinance but at least 20% of the monthly salary (with longevity pay) of a First Class Police Officer or Firefighter until the later of (a) when the child becomes age 18, (b) when the child becomes age 23 if enrolled in a qualified school, or (c) during the entire period of the child's disability. An additional amount shall be payable under the same conditions as the preceding sentence in an amount set by ordinance, but the total additional benefit to all the member's children may not exceed a total of 30% of the monthly salary (with longevity pay) of a First Class Police Officer or Firefighter. The limitation of the additional amount shall not apply to any disabled children.

Converted

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

Non-Converted

If a deceased member leaves no surviving spouse and no qualified child but does leave a dependent parent or parents, an amount equal to 20% of the monthly salary (with longevity pay) of a First Class Police Officer or Firefighter shall be paid to the parent or parents jointly during their dependency. If the salary (with longevity pay) of a First Class Police Officer or Firefighter is increased or decreased, the pension payable shall be proportionately increased or decreased.

Converted

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.

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SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions**

Amount of Benefits (continued)

- 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.
  
- h. Member Contributions
  - Non-Converted     Not applicable.
  
  - Converted     After conversion, members are assumed to contribute to the 1977 Fund at the rate of 6% of salary until they have completed 32 years of service.

Withdrawal from Fund

- Non-Converted     Not applicable.
  
- Converted     If a member's employment is terminated prior to eligibility for a retirement annuity, the member may withdraw their contributions from the 1977 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

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SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions**

Deferred Retirement Option Plan ("DROP") (Continued)	<p>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.</p> <p>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.</p>
Forms of Payment	
Single Life Annuity	Single members will receive a monthly benefit for life, but there are no monthly payments to anyone after death.
Joint with 60% Survivor Benefits	Married members will be paid a monthly benefit for life. After death, 60% of the benefit will be paid to the beneficiary for their lifetime.
Cost-of-Living Adjustments	
Non-Converted	Benefits for retired members are increased annually based on increases in the first class salary per employer.
Converted	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 the only change to the benefit provisions was in regards to the enhanced disability benefit per House Enrolled Act Number 1617 that occurred since the January 1, 2016 valuation.

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**SECTION VII - DEFINITIONS OF TECHNICAL TERMS**

**DEFINITIONS OF TECHNICAL TERMS**

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A. Definitions of Technical Terms	31



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## SECTION VII - DEFINITIONS OF TECHNICAL TERMS

### **A. 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 this means 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 interest rates.
Actuarial Cost Method	A procedure for determining an actuarially equivalent allocation of the Present Value of Future Benefits to time periods, usually in the form of a Normal Cost and an Actuarial Accrued Liability.
Actuarially Equivalent	A method of making the actuarial present value of two series of payments equal as of a given date using the same assumptions.
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.
Actuarial Valuation	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.
Actuarial Valuation Date	The date as of which an actuarial valuation is performed.
Creditable Service	Service credited under the system that was rendered before the date of the actuarial valuation.
Funding Policy	The program for the amounts and timing of contributions to be made by plan members, employer, and other contributing entities (for example, state government contributions to a local government plan) to provide the benefits specified by a pension plan.

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## SECTION VII - DEFINITIONS OF TECHNICAL TERMS

### A. Definitions of Technical Terms

Normal Cost (NC)	That portion of the present value of future benefits which is allocated to a valuation year 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.
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.