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# *Indiana Public Retirement System*

Excise, Gaming and Conservation Officers' Retirement Fund

Actuarial Valuation as of  
June 30, 2017



November 8, 2017

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, 2017**

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, 2017 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' Retirement Fund
- Judges' Retirement System
- Excise, Gaming and Conservation Officers' Retirement Fund
- Prosecuting Attorneys' Retirement Fund
- Legislators' Defined Benefit Fund

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 the sole use and benefit of the Board, and are not intended for reliance by other persons.

For accounting purposes, the actuarial assumptions and methods used in the June 30, 2017 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 participating employer. Therefore, contribution rates and amounts determined by the June 30, 2017 actuarial valuation and adopted by the Board will become effective on either July 1, 2018 or January 1, 2019. 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 since June 30, 2015, and 30 years for any UAAL that arose on or before June 30, 2015. For plans that are closed to new entrants, the UAAL will be amortized over a period not greater than 5 years.
- To set contributions that remain stable over time as determined by the Board.

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) remains at 84.6%, primarily due to contributions exceeding the actuarially determined amounts and cost-of-living adjustments being less than assumed, offset by the delayed recognition (i.e. smoothing) of favorable investment returns, plan changes, assumption changes, and adverse member experience.



### **Benefit Provisions**

The benefit provisions reflected in the valuation reports are those which were in effect at June 30, 2017, as set forth in Indiana statutes. There were no material changes in benefit provisions since the 2016 valuations except for the following:

- PERF: Per INPRS, ASA annuitizations will be accommodated through a third party annuity provider beginning January 1, 2018, compared to the previously effective date of April 1, 2017.
- 1977 Fund: Per 2017 House Enrolled Act No. 1617, a member who experiences a catastrophic physical personal injury in the line of duty will receive an enhanced disability retirement benefit.
- PARF: Per Senate Enrolled Act No. 265, the PERF benefit offset reflected in the PARF benefit formula was changed to be the actual PERF benefit amount the member is receiving for members who commence their PERF benefit before their PARF benefit.

### **Assets and Member Data**

The valuations were based on asset values of the trust funds as of June 30, 2017 and member census data as of June 30, 2016, adjusted for certain activity during fiscal year 2017 where applicable. All asset information and member data were provided by INPRS and INPRS takes responsibility for the accuracy and completeness of the information provided. 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 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 actuarial assumptions used in the June 30, 2017 valuations were the same assumptions used in the 2016 valuations, except for the mortality assumption for disabled members. The RP-2014 (with MP-2014 improvement removed) Disability Mortality Table was assumed instead of the RP-2014 (with MP-2014 improvement removed) Healthy Annuitant Mortality Tables with collar adjustments. Other minor assumption changes and refinements were made pursuant to the actuarial audit completed since the prior year and are summarized in the report.

The June 30, 2017 valuations incorporate member census data as of June 30, 2016, adjusted for certain activity during fiscal year 2017. The valuation results from June 30, 2016 were rolled-forward to June 30, 2017 to reflect benefit accruals during the year less benefits paid.

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 by the intended parties.

### **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, 2017, based on the underlying census data and asset information provided by INPRS and the 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 7 - 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.

A range of results, different from those presented in this report could be considered reasonable. Future actuarial measurements may differ significantly from the current measurement presented in this report due to a number of factors including but not limited to: plan experience differing from that anticipated by the economic and demographic assumptions; increases or decreases expected as part of the natural operation of the methods 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); rounding conventions; and changes in plan provisions or applicable law. Due to the limited scope of this report, an analysis of the potential range of such future measurements has not been performed.

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,

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Enrolled Actuary (No. 17-08239)

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.

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## SECTION I - EXECUTIVE SUMMARY

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

This report presents the results of the actuarial valuation of the Excise, Gaming and Conservation Officers' Retirement Fund ("EG&C Fund") and has been prepared to present the current funded status of the Plan, contribution requirements for calendar year 2019 (January 1, 2019 through December 31, 2019), and certain financial statement disclosure information. The valuation was performed using census data for plan members as of June 30, 2016, adjusted for certain activity during fiscal year 2017 as applicable, as provided by INPRS and summarized in Section IV, asset information as of June 30, 2017 provided by INPRS, the actuarial assumptions and methods approved by the Board and summarized in Section V, and the plan provisions effective June 30, 2017 and summarized in Section VI.

#### **Contribution Rate**

The Board sets, at its discretion, the applicable contribution rate upon considering the results of the actuarial valuation and other analysis as appropriate. The Board has approved an employer contribution rate of 20.75% for calendar year 2019. The contribution rate becomes effective on January 1, 2019. Therefore, the actual dollar amount of employer cost will depend on the actual payroll during calendar year 2019. The approved rate exceeds the actuarially determined contribution rate for calendar year 2019 of 13.33%.

Members of the EG&C Fund contribute 4% of their compensation to the Plan. If a member terminates employment with less than 15 years of service, the accumulated contributions with interest can be withdrawn as a lump sum or the member may direct the EG&C Fund to make a direct rollover of the distribution amount. When a member becomes vested with at least 15 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 EG&C Fund is measured by the funded ratio, which is the ratio of the assets available for benefits to a benefit liability measure for the EG&C 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 smooths the market gains and losses over five (5) years, the EG&C Fund AAL funded ratio increased from 85.3% at June 30, 2016 to 87.3% at June 30, 2017. The increase is primarily due to contributions exceeding the actuarially determined contribution, cost-of-living adjustments being less than assumed, and valuation programming updates made pursuant to the actuarial audit, partially offset by member experience losses and the deferred recognizing (i.e. smoothing) of favorable investment returns.

#### **Investment Experience**

For the fiscal year ending June 30, 2017, the INPRS actual time-weighted return net of fees was 7.9%. Based on the value of assets allocated to the EG&C Fund as of the prior valuation date and contribution and benefit payment activity during the year, the allocation of returns to the EG&C Fund represent a return of approximately 7.9% 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.

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## SECTION I - EXECUTIVE SUMMARY

### **HIGHLIGHTS OF THE ACTUARY'S REPORT (CONTINUED)**

#### **Cost-of-Living Adjustment**

Cost-of-living increases for retired members have historically been granted on an "ad hoc" basis. INPRS has confirmed that no increase in monthly benefits will be provided to retired members, disabled members, or beneficiaries as of January 1, 2018 and January 1, 2019. Instead a "13th check" is required to be paid to each member (or survivor or beneficiary) in pay status by no later than October 2017 and October 2018. The amount of the 13th check varies based on the years of creditable service the member earned prior to retirement.

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

For disabled members, the mortality assumption is updated from the RP-2014 (with MP-2014 improvement removed) Blue Collar Mortality tables to the RP-2014 (with MP-2014 improvement removed) Disability Mortality tables.

#### **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**

There were no method changes for the June 30, 2017 valuation.

#### **Actuarial Audit**

Since the prior actuarial valuation, a comprehensive review of our valuation procedures was performed by a third-party actuarial consulting firm, Nyhart. The results and recommendations from their review, as documented in their report dated March 7, 2017, have been reflected in this valuation and consist of very minor updates to our valuation assumption and methods. The impact on this valuation is shown in Section II.

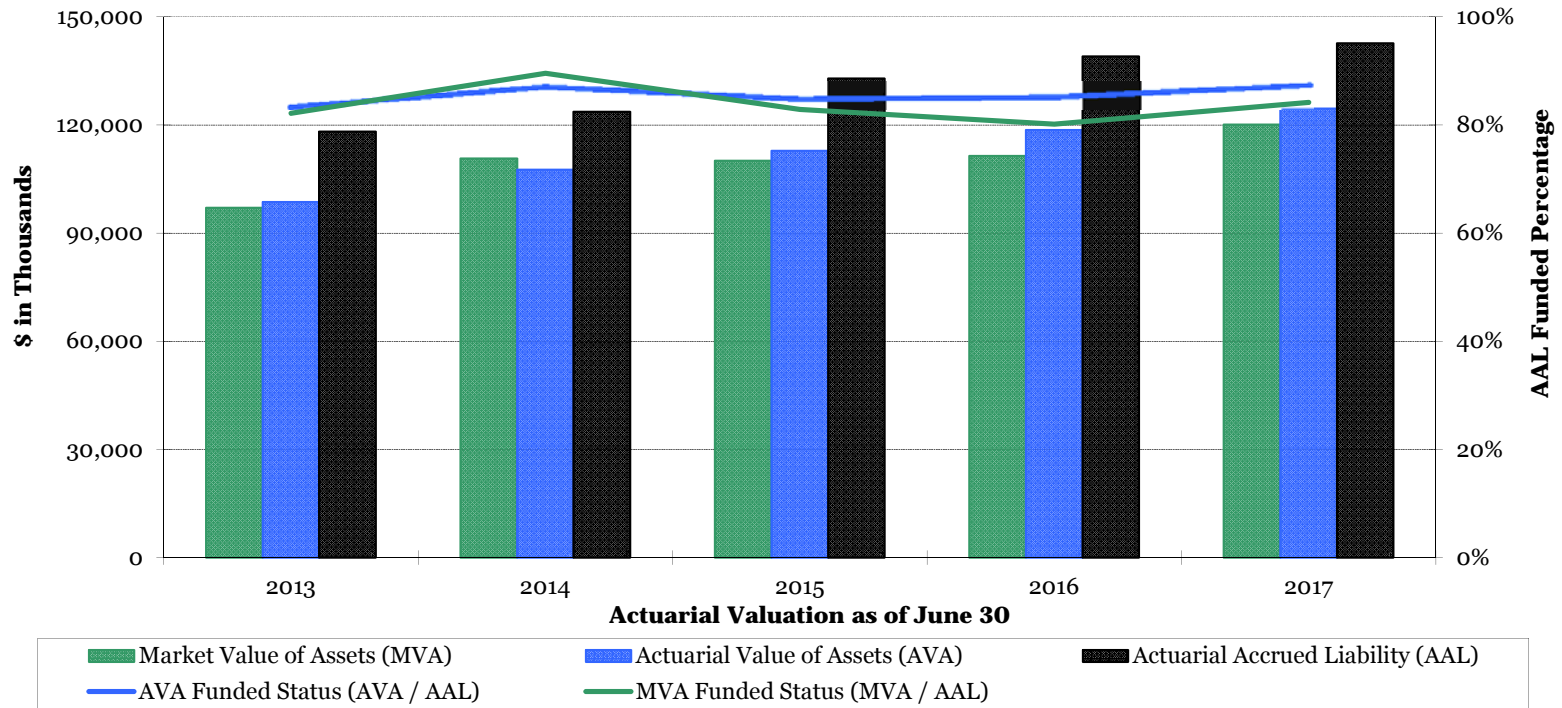
#### **Governmental Accounting Standards**

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.

SECTION I - EXECUTIVE SUMMARY

HISTORICAL SUMMARY

**EG&C Fund – 5 Year History of Funded Status**



<b>Actuarial Valuation as of June 30:</b>	<b>2013<sup>1</sup></b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Actuarial Accrued Liability (AAL)	\$118,097.2	\$123,600.7	\$132,795.5	\$138,965.1	\$142,602.8
Actuarial Value of Assets (AVA)	98,608.5	107,563.3	112,764.9	118,515.7	124,530.4
Market Value of Assets (MVA)	97,018.8	110,656.5	110,037.2	111,329.5	120,016.3
Unfunded Liability (AAL - AVA)	19,488.7	16,037.4	20,030.6	20,449.4	18,072.4
AVA Funded Status (AVA / AAL)	83.5%	87.0%	84.9%	85.3%	87.3%
MVA Funded Status (MVA / AAL)	82.2%	89.5%	82.9%	80.1%	84.2%

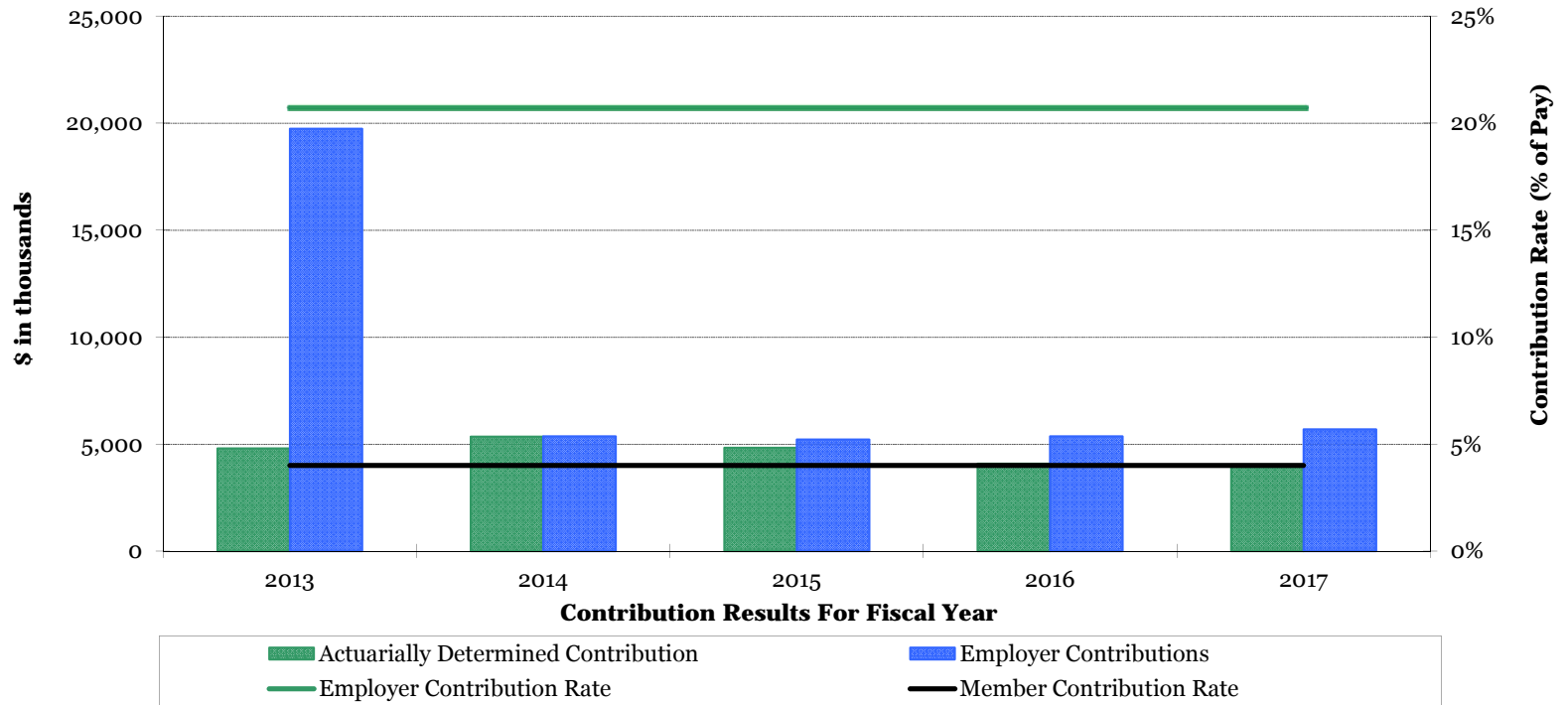
<sup>1</sup> Includes \$14.6 million of additional contributions due to 2012 HB 1376 during fiscal 2013.



SECTION I - EXECUTIVE SUMMARY

HISTORICAL SUMMARY (CONTINUED)

**EG&C Fund – 5 Year History of Contributions**



<b><u>Contribution Results For Fiscal Year:</u></b>	<b><u>2013<sup>1</sup></u></b>	<b><u>2014</u></b>	<b><u>2015</u></b>	<b><u>2016</u></b>	<b><u>2017</u></b>
Actuarially Determined Contribution <sup>2</sup>	\$4,794.4	\$5,340.5	\$4,820.4	\$4,077.7	\$4,033.3
Employer Contributions	\$19,740.0	\$5,358.6	\$5,215.0	\$5,366.6	\$5,691.3
ADC % Contributed	411.7%	100.3%	108.2%	131.6%	141.1%
Employer Contribution Rate <sup>3</sup>	20.75%	20.75%	20.75%	20.75%	20.75%
Member Contribution Rate	4.0%	4.0%	4.0%	4.0%	4.0%

<sup>1</sup> Includes \$14.6 million of additional contributions due to 2012 HB 1376 during fiscal 2013.

<sup>2</sup> Starting with fiscal year 2013, the ADC amount is based on the ADC Rates in effect during the fiscal year, multiplied by actual (rather than anticipated) payroll for the fiscal year.

<sup>3</sup> Rates shown are those in effect on January 1 during the fiscal year. Contribution dollar amounts are for the fiscal year.

SECTION I - EXECUTIVE SUMMARY

**HISTORICAL SUMMARY (CONTINUED)**

**Summary of Valuation Results<sup>1</sup>**

<b><u>Valuation Date</u></b>	<b><u>June 30, 2013</u></b>	<b><u>June 30, 2014</u></b>	<b><u>June 30, 2015</u></b>	<b><u>June 30, 2016</u></b>	<b><u>June 30, 2017</u></b>
Development of Actuarially Determined Contribution Rate:					
1. Anticipated Payroll	\$ 26,200,542	\$ 26,663,926	\$ 25,760,873	\$ 26,163,688	\$ 28,113,707
2. Normal Cost (Beginning of Year)					
a. Amount	\$ 3,841,382	\$ 3,904,932	\$ 3,011,127	\$ 3,550,386	\$ 3,369,314
b. Percentage of Payroll	14.66%	14.64%	11.69%	13.57%	11.98%
3. Unfunded Actuarial Accrued Liability Annual Amortizations					
a. Amount	\$ 1,522,377	\$ 1,291,138	\$ 1,606,821	\$ 1,674,632	\$ 1,503,838
b. Percentage of Payroll	5.81%	4.84%	6.24%	6.40%	5.35%
4. Expected Employee Contributions					
a. Amount	\$ 1,048,022	\$ 1,066,557	\$ 1,030,435	\$ 1,046,548	\$ 1,124,548
b. Percentage of Payroll	4.00%	4.00%	4.00%	4.00%	4.00%
5. Actuarially Determined Contribution Rate:					
a. Percentage of Payroll: (2)(b) + (3)(b) - 4(b)	<b>16.47%</b>	<b>15.48%</b>	<b>13.93%</b>	<b>15.97%</b>	<b>13.33%</b>
b. Effective Date	January 1, 2015	January 1, 2016	January 1, 2017	January 1, 2018	January 1, 2019
<b><u>Calendar Year</u></b>	<b><u>2015</u></b>	<b><u>2016</u></b>	<b><u>2017</u></b>	<b><u>2018</u></b>	<b><u>2019</u></b>
Approved Funding Rate	<b>20.75%</b>	<b>20.75%</b>	<b>20.75%</b>	<b>20.75%</b>	<b>20.75%</b>

<sup>1</sup> The contribution rates shown were developed on a funding basis only and do not reflect accounting requirements.

SECTION I - EXECUTIVE SUMMARY

**HISTORICAL SUMMARY (CONTINUED)**

**Summary of Valuation Results (Continued)**<sup>1</sup>

	<u>June 30, 2013</u>	<u>June 30, 2014</u>	<u>June 30, 2015</u>	<u>June 30, 2016</u>	<u>June 30, 2017</u>
Census Information					
Active					
Number	473	473	448	421	440
Average Age	41.0	41.0	41.4	42.2	41.9
Average Years of Service	10.4	10.4	10.8	11.0	10.9
Anticipated Payroll of Actives <sup>2</sup>	\$ 26,200,542	\$ 26,663,926	\$ 25,760,873	\$ 26,163,688	\$ 28,113,707
Inactive- Vested					
Number	4	4	3	7	6
Average Age	50.8	50.8	51.0	47.9	48.2
Average Years of Service	19.6	19.6	20.8	20.0	19.9
Inactive - Non-Vested <sup>3</sup>					
Number	87	87	101	121	120
Retiree/Beneficiary/Disabled					
Number	193	193	207	220	223
Average Age	68.3	68.3	68.4	68.5	69.4
Annual Benefits Payable <sup>4</sup>	\$ 4,666,134	\$ 4,666,134	\$ 5,210,101	\$ 5,661,184	\$ 5,912,079

<sup>1</sup> 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.

<sup>2</sup> Figures shown are the anticipated pay for the one-year period following the valuation date.

<sup>3</sup> As of June 30, 2016, inactive non-vested members entitled to a refund of their member contribution had balances totaling \$484,030.

<sup>4</sup> Figures shown reflect cost-of-living increases effective January 1 following the date of the census data, if provided, but do not reflect one-time 13th check amounts provided.

SECTION I - EXECUTIVE SUMMARY

**HISTORICAL SUMMARY (CONTINUED)**

**Summary of Valuation Results (Continued)**

	<u>June 30, 2013</u>	<u>June 30, 2014</u>	<u>June 30, 2015</u>	<u>June 30, 2016</u>	<u>June 30, 2017</u>
<b>Actuarial Accrued Liability (AAL)</b>					
Member Contribution Balance	\$ 7,494,370	\$ 8,041,582	\$ 8,456,123	\$ 9,085,077	\$ 9,737,115
Retiree/Beneficiary/Disabled	56,027,923	54,625,687	61,502,320	67,424,037	69,216,363
Active and Inactive	<u>54,574,934</u>	<u>60,933,435</u>	<u>62,837,061</u>	<u>62,455,936</u>	<u>63,649,326</u>
Total	\$ 118,097,227	\$ 123,600,704	\$ 132,795,504	\$ 138,965,050	\$ 142,602,804
<b>Actuarial Value of Assets (AVA)</b>					
Member Contribution Balance	\$ 7,494,370	\$ 8,041,582	\$ 8,456,123	\$ 9,085,077	\$ 9,737,115
Retiree/Beneficiary/Disabled	56,027,923	54,625,687	61,502,320	67,424,037	69,216,363
Active and Inactive	<u>35,086,227</u>	<u>44,896,045</u>	<u>42,806,499</u>	<u>42,006,578</u>	<u>45,576,942</u>
Total	\$ 98,608,520	\$ 107,563,314	\$ 112,764,942	\$ 118,515,692	\$ 124,530,420
<b>Market Value of Assets (MVA)</b>					
Member Contribution Balance	\$ 7,494,370	\$ 8,041,582	\$ 8,456,123	\$ 9,085,077	\$ 9,737,115
Retiree/Beneficiary/Disabled	56,027,923	54,625,687	61,502,320	67,424,037	69,216,363
Active and Inactive	<u>33,496,499</u>	<u>47,989,233</u>	<u>40,078,772</u>	<u>34,820,362</u>	<u>41,062,823</u>
Total	\$ 97,018,792	\$ 110,656,502	\$ 110,037,215	\$ 111,329,476	\$ 120,016,301
<b>Unfunded Actuarial Accrued Liability: AAL - AVA <sup>1</sup></b>					
Member Contribution Balance	\$ -	\$ -	\$ -	\$ -	\$ -
Retiree/Beneficiary/Disabled	-	-	-	-	-
Active and Inactive	<u>19,488,707</u>	<u>16,037,390</u>	<u>20,030,562</u>	<u>20,449,358</u>	<u>18,072,384</u>
Total	\$ 19,488,707	\$ 16,037,390	\$ 20,030,562	\$ 20,449,358	\$ 18,072,384
<b>Funded Percentage: AVA / AAL <sup>1</sup></b>					
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	<u>64.3%</u>	<u>73.7%</u>	<u>68.1%</u>	<u>67.3%</u>	<u>71.6%</u>
Total	83.5%	87.0%	84.9%	85.3%	87.3%
<b>Summary of Assumptions</b>					
Valuation Interest Rate	6.75%	6.75%	6.75%	6.75%	6.75%
Salary Scale	3.25%	3.25%	2.5%	2.5%	2.5%
Cost-of-Living Assumption	1.0%	1.0%	1.0%	1.0%	1.0%

<sup>1</sup> 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.

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## SECTION II - FUNDING

### **FUNDING**

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## SECTION II - FUNDING

### **A. Development of Funded Status**

	<b>June 30, 2016</b>	<b>June 30, 2017</b>
1. Actuarial Accrued Liability		
a. Member Contribution Account	\$ 9,085,077	\$ 9,737,115
b. Retirees, Beneficiaries, and Disableds	67,424,037	69,216,363
c. Actives and Inactives	62,455,936	63,649,326
d. Total: (1)(a) + (1)(b) + (1)(c)	\$ 138,965,050	\$ 142,602,804
2. Actuarial Value of Assets <sup>1</sup>		
a. Member Contribution Account	\$ 9,085,077	\$ 9,737,115
b. Retirees, Beneficiaries, and Disableds	67,424,037	69,216,363
c. Actives and Inactives	42,006,578	45,576,942
d. Total: (2)(a) + (2)(b) + (2)(c)	\$ 118,515,692	\$ 124,530,420
3. Unfunded Actuarial Accrued Liability <sup>1</sup>		
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)	20,449,358	18,072,384
d. Total: (1)(d) - (2)(d)	\$ 20,449,358	\$ 18,072,384
4. Funded Percentage <sup>1</sup>		
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)	67.3%	71.6%
d. Total: (2)(d) / (1)(d)	85.3%	87.3%

<sup>1</sup> 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.

SECTION II - FUNDING

**B. Unfunded Actuarial Accrued Liability Reconciliation**

1. June 30, 2016 Unfunded Actuarial Accrued Liability	\$	20,449,358
2. Normal Cost		3,550,386
3. Actuarially Determined Contribution (Employer and Member)		5,225,018
4. Interest of 6.75% on (1) + (2) - (3)		1,267,294
5. Expected June 30, 2017 Unfunded Actuarial Accrued Liability (1) + (2) - (3) + (4)	\$	20,042,020
6. Actuarial Value of Assets Experience (Gain)/Loss		
a. Investment Experience	\$	2,163,030
b. Contribution and Payroll Experience		(1,674,110)
7. Actuarial Accrued Liability Experience (Gain)/Loss		
a. Actuarial Accrued Liability Experience	\$	1,469,613
b. Additional Liability Due to Actuarial Audit Changes <sup>1</sup>		(1,928,601)
c. Additional Liability Due to Cost-of-Living Adjustments <sup>2</sup>		(1,349,783)
d. Additional Liability Due to Changes in Actuarial Assumptions <sup>3</sup>		(649,785)
e. Additional Liability Due to Changes in Plan Provisions		-
8. Total Experience (Gain)/Loss - New Amortization Base (6)(a) + (6)(b) + (7)(a) + (7)(b) + (7)(c) + (7)(d) + (7)(e)	\$	(1,969,636)
9. Actual June 30, 2017 Unfunded Actuarial Accrued Liability (5) + (8)	\$	18,072,384

<sup>1</sup> As a result of the actuarial audit that was completed during the plan year, minor updates were made to the valuation of liabilities. The updates include incorporating the new 2.5% salary increase assumption instead of the old 3.0% assumption that was previously used, applying IRC Section 415 limits to all benefits, refining the mortality rates used in the valuation to properly reflect the RP-2014 (with MP-2014 improvement removed) Blue Collar Mortality tables, calculating final average salary based on any five years of salary during the previous ten years rather than five consecutive years, and applying the assumed 90% married percentage to the death benefit.

<sup>2</sup> Retired members will be provided a 13th check by October 1, 2017 and October 1, 2018 rather than a 1.0% COLA on January 1, 2018 and January 1, 2019, respectively.

<sup>3</sup> For disabled members, the RP-2014 (with MP-2014 improvement removed) Disability Mortality tables are assumed instead of the RP-2014 (with MP-2014 improvement removed) Blue Collar Mortality tables.

SECTION II - FUNDING

**C. Actuarial Accrued Liability Reconciliation**

1. June 30, 2016 Actuarial Accrued Liability	\$	138,965,050	
2. Normal Cost		3,550,386	
3. Actual Benefit Payments <sup>1</sup>		6,852,010	
4. Service Purchases (Employer and Member) <sup>2</sup>		9,091	
5. Interest of 6.75% on (1) + (2) - (3)/2 + (4)/2		9,388,843	
6. Expected June 30, 2017 Actuarial Accrued Liability	\$	145,061,360	
(1) + (2) - (3) + (4) + (5)			
		<u>Dollar Change</u>	<u>Percent Change</u>
		<u>in Liability</u>	<u>in Liability</u>
7. (Gain)/Loss Components			
a. Actuarial Accrued Liability Experience	\$	1,469,613	1.0%
b. Actuarial Audit Changes <sup>3</sup>		(1,928,601)	(1.3%)
c. 13th Check vs. COLA <sup>4</sup>		(1,349,783)	(0.9%)
d. Changes in Actuarial Assumptions <sup>5</sup>		(649,785)	(0.5%)
e. Changes in Plan Provisions		-	0.0%
f. Total: (7)(a) + (7)(b) + (7)(c) + (7)(d) + (7)(e)	\$	(2,458,556)	(1.7%)
8. Actual June 30, 2017 Actuarial Accrued Liability: (6) + (7)(f)	<b>\$</b>	<b>142,602,804</b>	

<sup>1</sup> Includes refunds of accumulated member contributions and net interfund transfers.

<sup>2</sup> Includes \$0 of employer service purchases and \$9,091 of member service purchases.

<sup>3</sup> As a result of the actuarial audit that was completed during the plan year, minor updates were made to the valuation of liabilities. The updates include incorporating the new 2.5% salary increase assumption instead of the old 3.0% assumption that was previously used, applying IRC Section 415 limits to all benefits, refining the mortality rates used in the valuation to properly reflect the RP-2014 (with MP-2014 improvement removed) Blue Collar Mortality tables, calculating final average salary based on any five years of salary during the previous ten years rather than five consecutive years, and applying the assumed 90% married percentage to the death benefit.

<sup>4</sup> Retired members will be provided a 13th check by October 1, 2017 and October 1, 2018 rather than a 1.0% COLA on January 1, 2018 and January 1, 2019, respectively.

<sup>5</sup> For disabled members, the RP-2014 (with MP-2014 improvement removed) Disability Mortality tables are assumed instead of the RP-2014 (with MP-2014 improvement removed) Blue Collar Mortality tables.



SECTION II - FUNDING

**D. Reconciliation of Market Value of Assets**

	<u>June 30, 2016</u>	<u>June 30, 2017</u>
1. Market Value of Assets, Prior June 30	\$ 110,037,215	\$ 111,329,476
2. Receipts		
a. Employer Contributions	\$ 5,366,551	\$ 5,691,313
b. Member Contributions <sup>1</sup>	1,015,896	1,101,958
c. Investment Income and Dividends Net of Fees	1,299,366	8,857,863
d. Security Lending Income Net of Fees	15,140	11,366
e. Member Reassignments	-	-
f. Miscellaneous Income	-	-
g. Total Receipts: (2)(a) + (2)(b) + (2)(c) + (2)(d) + (2)(e) + (2)(f)	<u>\$ 7,696,953</u>	<u>\$ 15,662,500</u>
3. Disbursements		
a. Benefits Paid During the Year	\$ 6,131,855	\$ 6,709,530
b. Refund of Contributions and Interest	113,379	116,786
c. Administrative Expenses	138,127	123,665
d. Member Reassignments	21,331	25,694
e. Miscellaneous Disbursements	-	-
f. Total Disbursements: (3)(a) + (3)(b) + (3)(c) + (3)(d) + (3)(e)	<u>\$ 6,404,692</u>	<u>\$ 6,975,675</u>
4. Market Value of Assets, Current June 30: (1) + (2)(g) - (3)(f)	<b>\$ 111,329,476</b>	<b>\$ 120,016,301</b>
5. Market Value of Assets Approximate Annual Rate of Return <sup>2</sup>	1.1%	7.9%

<sup>1</sup> Includes \$0 of member service purchases in fiscal year 2016 and \$9,091 member service purchases in fiscal year 2017.

<sup>2</sup> Based on individual fund experience. Net of expenses and assuming cash flows occur at mid-year.

SECTION II - FUNDING

**E. Reconciliation of Actuarial Value of Assets**

1.	Market Value of Assets, June 30, 2016	\$	111,329,476
2.	Market Value of Assets, June 30, 2017		120,016,301
3.	Expected Earnings/Expenses		
a.	Expected Investment Earnings at 6.75% on June 30, 2016 Market Value		7,514,740
b.	Receipts with Expected Investment Earnings at 6.75% <sup>1</sup>		7,022,544
c.	Disbursements with Expected Investment Earnings at 6.75% <sup>1</sup>		7,083,265
4.	Expected Assets, June 30, 2017: (1) + (3)(a) + (3)(b) - (3)(c)	\$	118,783,495
5.	2016-2017 Gain/(Loss): (2) - (4)		1,232,806
6.	Smoothing of Gain/(Loss)		
	<u>Year</u>	<u>Gain/(Loss)</u>	<u>% Unrecognized</u>
a.	2016-2017	\$ 1,232,806	80%
b.	2015-2016	\$ (6,255,044)	60%
c.	2014-2015	\$ (7,685,759)	40%
c.	2013-2014	\$ 6,634,832	20%
			1,326,966
7.	Preliminary Actuarial Value of Assets, June 30, 2017: (2) - (6)(a) - (6)(b) - (6)(c) - (6)(d)	\$	124,530,420
8.	Corridor		
a.	120% of Market Value: 1.2 x (2)		144,019,561
b.	80% of Market Value: 0.8 x (2)		96,013,041
9.	Actuarial Value of Assets, June 30, 2017: (7), but not greater than (8)(a) or less than (8)(b)	<b>\$</b>	<b>124,530,420</b>
10.	Actuarial Value of Assets as a Percent of Market Value: (9) / (2)		103.8%
11.	Actuarial Value of Assets Approximate Annual Rate of Investment Return <sup>2</sup>		5.1%

<sup>1</sup> Assumes cash flows occur at mid-year.

<sup>2</sup> Net of expenses and assuming cash flows occur at mid-year.

SECTION II - FUNDING

**F. Contribution Rate**

	<b>June 30, 2016</b>	<b>June 30, 2017</b>
<b>Development of Actuarially Determined Contribution Rate:</b>		
1. Anticipated Payroll	\$ 26,163,688	\$ 28,113,707
2. Normal Cost (Beginning of Year)		
a. Amount	\$ 3,550,386	\$ 3,369,314
b. Percentage of Payroll	13.57%	11.98%
3. Unfunded Actuarial Accrued Liability (UAAL) Annual Amortizations		
a. Amount	\$ 1,674,632	\$ 1,503,838
b. Percentage of Payroll	6.40%	5.35%
4. Expected Employee Contributions		
a. Amount	\$ 1,046,548	\$ 1,124,548
b. Percentage of Payroll	4.00%	4.00%
5. Actuarially Determined Contribution Rate		
a. Percentage of Payroll: (2)(b) + (3)(b) - (4)(b)	<b>15.97%</b>	<b>13.33%</b>
b. Effective Date	January 1, 2018	January 1, 2019
<b>Approved Funding Rate:</b>	<b>20.75%</b>	<b>20.75%</b>
<b>Expected Percentage of Actuarially Determined Contribution Contributed:</b>		
6. Fiscal Year Beginning	July 1, 2017	July 1, 2018
7. Actuarially Determined Contribution Rates for:		
a. July 1 - December 31	13.93%	15.97%
b. January 1 - June 30	15.97%	13.33%
8. Approved Funding Rates for:		
a. July 1 - December 31	20.75%	20.75%
b. January 1 - June 30	20.75%	20.75%
9. Expected Percentage of Actuarially Determined Contribution Contributed: $\{[(8)(a) + (8)(b)] / 2\} / \{[(7)(a) + (7)(b)] / 2\}$	138.80%	141.64%

SECTION II - FUNDING

**G. Unfunded Actuarial Accrued Liability Amortization Schedule<sup>1</sup>**

	<u>Date Base Established</u>	<u>Reason</u>	<u>Remaining Unfunded</u>	<u>Remaining Period</u>	<u>Amortization Amount</u>
1.	6/30/2009	Actuarial Experience	\$ 10,563,362	20	\$ 915,986
2.	6/30/2010	Actuarial Experience and Changes in Actuarial Assumptions	3,474,208	23	282,586
3.	6/30/2011	Actuarial Experience and Changes in Actuarial Assumptions	929,701	24	74,276
4.	6/30/2012	Actuarial Experience and Changes in Actuarial Assumptions	4,717,960	25	370,750
5.	6/30/2013	Actuarial Experience and Changes in Actuarial Assumptions	(1,566,270)	26	(121,221)
6.	6/30/2014	Actuarial Experience	(3,030,109)	27	(231,239)
7.	6/30/2015	Actuarial Experience and Changes in Actuarial Assumptions	4,190,756	28	315,683
8.	6/30/2016	Actuarial Experience and Changes in Actuarial Methods	762,412	19	67,811
9.	6/30/2017	Actuarial Experience and Changes in Actuarial Assumptions	<u>(1,969,636)</u>	<u>20</u>	<u>(170,794)</u>
	Total		\$ 18,072,384	22.1 <sup>2</sup>	\$ 1,503,838

<sup>1</sup> Valuation results prior to June 30, 2010 were calculated by the prior actuary.

<sup>2</sup> 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.

SECTION II - FUNDING

**H. History of Employer Contribution Rates**<sup>1</sup>

<u>Valuation Date</u>	<u>Effective Date</u>	<u>Contribution Rate</u>
June 30, 2001	January 1, 2003	16.00%
June 30, 2002	January 1, 2004	16.00%
June 30, 2003	January 1, 2005	16.00%
June 30, 2004	January 1, 2006	16.00%
June 30, 2005	January 1, 2007	16.00%
June 30, 2006	January 1, 2008	20.50%
June 30, 2007	January 1, 2009	20.75%
June 30, 2008	January 1, 2010	20.75%
June 30, 2009	January 1, 2011	20.75%
June 30, 2010	January 1, 2012	20.75%
June 30, 2011	January 1, 2013	20.75%
June 30, 2012	January 1, 2014	20.75%
June 30, 2013	January 1, 2015	20.75%
June 30, 2014	January 1, 2016	20.75%
June 30, 2015	January 1, 2017	20.75%
June 30, 2016	January 1, 2018	20.75%
June 30, 2017	January 1, 2019	20.75%

<sup>1</sup> 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, 2017 <sup>1</sup>**

	<u>Market Value of Assets</u>	<u>Actuarial Value of Assets</u>
1. Balance, Beginning of Year	\$ 111,329,476	\$ 118,515,692
2. Balance, End of Year	120,016,301	124,530,420
3. Total Increase: (2) - (1)	8,686,825	6,014,728
4. Contributions	6,793,271	6,793,271
5. Benefit Payments <sup>2</sup>	6,852,010	6,852,010
6. Net Additions: (4) - (5)	(58,739)	(58,739)
7. Net Investment Increase: (3) - (6)	8,745,564	6,073,467
8. Average Assets: [(1) + (2) - (7)] / 2	111,300,107	118,486,323
9. Approximate Rate of Return: (7) / (8) <sup>1</sup>	7.9%	5.1%

### **J. Historical Investment Experience**

<u>Year Ending June 30</u>	<u>Actual Rate of Investment Return</u>		<u>Actuarial Assumed</u>
	<u>Market Basis <sup>4</sup></u>	<u>Actuarial Basis <sup>1</sup></u>	<u>Interest Rate</u>
2008	(7.6%)	8.2%	7.25%
2009	(20.6%)	(0.9%)	7.25%
2010	13.9%	(1.3%)	7.25%
2011	20.1%	0.1%	7.0%
2012	0.7%	3.0%	7.0%
2013	6.0%	8.0%	6.75%
2014	13.7%	8.6%	6.75%
2015	0.0%	5.2%	6.75%
2016	1.2%	5.0% <sup>3</sup>	6.75%
2017	7.9%	5.1%	6.75%

<sup>1</sup> Based on individual fund experience. Net of expenses and assuming cash flows occur at mid-year. Approximate Market Value of Assets return is not equal to money-weighted return for GASB purposes shown in Accounting Section.

<sup>2</sup> Includes refunds of accumulated member contributions and net interfund transfers.

<sup>3</sup> Net of the impact of changing from four-year to a five-year smoothing.

<sup>4</sup> INPRS actual time-weighted rate of return net of fees for 2012-2017. PERF Consolidated Defined Benefit time-weighted rate of return reported as gross of fees for 2008-2011.

SECTION II - FUNDING

**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, 2019) 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%)
<b><u>Funded Status</u></b>					
Actuarial Accrued Liability	\$ 161,937,441	\$ 156,728,795	\$ 151,780,669	\$ 147,076,983	\$ 142,602,804
Actuarial Value of Assets	<u>124,530,420</u>	<u>124,530,420</u>	<u>124,530,420</u>	<u>124,530,420</u>	<u>124,530,420</u>
Unfunded Actuarial Accrued Liability	\$ 37,407,021	\$ 32,198,375	\$ 27,250,249	\$ 22,546,563	\$ 18,072,384
Funded Ratio	76.9%	79.5%	82.0%	84.7%	87.3%
<b><u>Actuarially Determined Contribution Rate</u></b>					
Normal Cost Rate	15.15%	14.27%	13.45%	12.69%	11.98%
UAAL Amortization Rate	10.51%	9.19%	7.88%	6.61%	5.35%
Expected Employee Contribution Rate	<u>4.00%</u>	<u>4.00%</u>	<u>4.00%</u>	<u>4.00%</u>	<u>4.00%</u>
Actuarially Determined Contribution Rate	21.66%	19.46%	17.33%	15.30%	13.33%

SECTION II - FUNDING

**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%)
<b><u>Funded Status</u></b>					
Actuarial Accrued Liability	\$ 138,344,247	\$ 134,288,395	\$ 130,423,225	\$ 126,737,540	\$ 123,220,906
Actuarial Value of Assets	<u>124,530,420</u>	<u>124,530,420</u>	<u>124,530,420</u>	<u>124,530,420</u>	<u>124,530,420</u>
Unfunded Actuarial Accrued Liability	\$ 13,813,827	\$ 9,757,975	\$ 5,892,805	\$ 2,207,120	\$ (1,309,514)
Funded Ratio	90.0%	92.7%	95.5%	98.3%	101.1%
<b><u>Actuarially Determined Contribution Rate</u></b>					
Normal Cost Rate	11.33%	10.71%	10.14%	9.60%	9.10%
UAAL Amortization Rate	4.11%	2.90%	1.70%	0.52%	(0.38%)
Expected Employee Contribution Rate	<u>4.00%</u>	<u>4.00%</u>	<u>4.00%</u>	<u>4.00%</u>	<u>4.00%</u>
Actuarially Determined Contribution Rate	11.44%	9.61%	7.84%	6.12%	4.72%



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## SECTION III - ACCOUNTING

### **ACCOUNTING**

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SECTION III - ACCOUNTING

**PLAN FINANCIAL STATEMENTS UNDER GASB #67**

**A. Statement of Fiduciary Net Position under GASB #67 as of June 30, 2017**

1.	Assets		
	a. Cash	\$	40,006
	b. Receivables		
	i. Contributions and Miscellaneous Receivables	\$	-
	ii. Investments Receivable		772,894
	iii. Foreign Exchange Contract Receivable		33,441,465
	iv. Interest and Dividends		314,578
	v. Due From Other Funds		709
	vi. Total Receivables	\$	34,529,646
	c. Total Investments		
	i. Short-Term Investments	\$	-
	ii. Pooled Repurchase Agreements		8,560
	iii. Pooled Short-Term Investments		5,648,532
	iv. Pooled Fixed Income		39,216,499
	v. Pooled Equity		28,578,913
	vi. Pooled Alternative Investments		48,061,441
	vii. Pooled Derivatives		(14,708)
	viii. Pooled Investments		-
	ix. Securities Lending Collateral		1,311,104
	x. Total Investments	\$	122,810,341
	d. Net Capital Assets		1,460
	e. Other Assets		-
	f. Total Assets: (1)(a) + (1)(b)(vi) + (1)(c)(x) + (1)(d) + (1)(e)	\$	157,381,453
2.	Liabilities		
	a. Administrative Payable	\$	6,775
	b. Retirement Benefits Payable		-
	c. Investments Payable		1,217,820
	d. Foreign Exchange Contracts Payable		33,561,131
	e. Securities Lending Obligations		1,311,104
	f. Securities Sold Under Agreement to Repurchase		1,259,789
	g. Due To Other Funds		8,533
	h. Due to Other Governments		-
	i. Total Liabilities: (2)(a) + (2)(b) + (2)(c) + (2)(d) + (2)(e) + (2)(f) + (2)(g) + (2)(h)	\$	37,365,152
3.	Fiduciary Net Position Restricted for Pensions: (1)(f) - (2)(i)	<b>\$</b>	<b>120,016,301</b>

SECTION III - ACCOUNTING

**PLAN FINANCIAL STATEMENTS UNDER GASB #67**

**B. Statement of Changes in Fiduciary Net Position under GASB #67 for the Year Ended June 30, 2017**

1.	Fiduciary Net Position as of June 30, 2016	\$	111,329,476
2.	Additions		
a.	Contributions		
i.	Member Contributions	\$	1,092,867
ii.	Employer Contributions		5,691,313
iii.	Service Purchases (Employer and Member) <sup>1</sup>		9,091
iv.	Non-Employer Contributing Entity Contributions		-
v.	Total Contributions	\$	6,793,271
b.	Investment Income/(Loss)		
i.	Net Appreciation/(Depreciation) <sup>2,3</sup>	\$	8,067,575
ii.	Net Interest and Dividend Income		1,622,931
iii.	Securities Lending Income		14,122
iv.	Other Net Investment Income		16,438
v.	Investment Management Expenses		(804,802)
vi.	Direct Investment Expenses		(44,279)
vii.	Securities Lending Expenses		(2,756)
viii.	Total Investment Income/(Loss)	\$	8,869,229
c.	Other Additions		
i.	Member Reassignments	\$	-
ii.	Miscellaneous Receipts		-
iii.	Total Other Additions	\$	-
d.	Total Revenue (Additions): (2)(a)(v) + (2)(b)(viii) + (2)(c)(iii)	\$	15,662,500
3.	Deductions		
a.	Pension and Disability Benefits	\$	6,709,530
b.	Death, Survivor, and Funeral Benefits		-
c.	Distributions of Contributions and Interest		116,786
d.	Member Reassignments		25,694
e.	Administrative Expenses		123,665
f.	Total Expenses (Deductions): (3)(a) + (3)(b) + (3)(c) + (3)(d) + (3)(e)	\$	6,975,675
4.	Net Increase (Decrease) in Fiduciary Net Position: (2)(d) - (3)(f)	\$	8,686,825
5.	Fiduciary Net Position as of June 30, 2017: (1) + (4)	<b>\$</b>	<b>120,016,301</b>

<sup>1</sup> Includes \$0 of employer service purchases and \$9,091 of member service purchases.

<sup>2</sup> The calculation of realized gains and losses is independent of the calculation of the net change in the fair value of pension plan investments.

<sup>3</sup> 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.

SECTION III - ACCOUNTING

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB #68**

**C. Net Pension Liability under GASB #68 for the Year Ended June 30, 2017**

1.	Total Pension Liability		
	a. Total Pension Liability - Beginning of Year	\$	138,965,050
	b. Service Cost <sup>1</sup>		3,550,386
	c. Interest Cost <sup>2</sup>		9,388,843
	d. Experience (Gains)/Losses		119,830
	e. Assumption Changes		(2,578,386)
	f. Plan Amendments		-
	g. Benefit Payments <sup>3</sup>		(6,826,316)
	h. Member Reassignments <sup>4</sup>		(25,694)
	i. Service Purchases (Employer and Member) <sup>5</sup>		9,091
	j. Total Pension Liability - End of Year	\$	<u>142,602,804</u>
2.	Plan Fiduciary Net Position		
	a. Plan Fiduciary Net Position - Beginning of Year	\$	111,329,476
	b. Employer Contributions <sup>5</sup>		5,691,313
	c. Member Contributions <sup>5</sup>		1,101,958
	d. Non-Employer Contributing Entity Contributions		-
	e. Investment Return		
	i. Expected Investment Return <sup>6</sup>	\$	7,512,757
	ii. Investment Gain/(Loss)		<u>1,356,472</u>
	iii. Net Investment Return		8,869,229
	f. Benefit Payments <sup>3</sup>		(6,826,316)
	g. Member Reassignments <sup>4</sup>		(25,694)
	h. Administrative Expenses		(123,665)
	i. Plan Fiduciary Net Position - End of Year	\$	<u>120,016,301</u>
3.	Net Pension Liability		
	a. Net Pension Liability: (1)(j) - (2)(i)	\$	<b>22,586,503</b>
	b. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability : (2)(i) / (1)(j)		84.2%

<sup>1</sup> As of the beginning of the year.

<sup>2</sup> Includes interest of 6.75% on the beginning-of-year service cost.

<sup>3</sup> Includes refunds of accumulated member contributions.

<sup>4</sup> Includes net interfund transfers

<sup>5</sup> Includes \$0 of employer service purchases and \$9,091 of member service purchases.

<sup>6</sup> 6.75%, net of investment expenses and assuming cash flows occur at mid-year.

SECTION III - ACCOUNTING

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB #68**

**D. Deferred Inflows and Outflows of Resources under GASB #68 for the Year Ended June 30, 2017 <sup>1</sup>**

Fiscal Year Established	Reason	Remaining Balance At Beginning of Year	Remaining Period <sup>2</sup>	Annual Recognition	Remaining Balance At End of Year
1. Liability Experience					
a. Inflows					
2014	Experience Gain	\$ 281,135	5.68	\$ 49,497	\$ 231,638
b. Outflows					
2015	Experience Loss	\$ (597,186)	4.81	\$ (124,156)	\$ (473,030)
2016	Experience Loss	\$ (394,287)	5.24	\$ (75,246)	\$ (319,041)
2017	Experience Loss	\$ (119,830)	6.26	\$ (19,143)	\$ (100,687)
2. Assumption Changes					
a. Inflows					
2017	Assumption Change Gain	\$ 2,578,386	6.26	\$ 411,883	\$ 2,166,503
b. Outflows					
2015	Assumption Change Loss	\$ (1,885,245)	4.81	\$ (391,944)	\$ (1,493,301)
3. Investment Experience <sup>3</sup>					
a. Inflows					
2014	Investment Gain	\$ 2,394,361	2.00	\$ 1,197,183	\$ 1,197,178
2017	Investment Gain	\$ 1,356,472	5.00	\$ 271,295	\$ 1,085,177
b. Outflows					
2015	Investment Loss	\$ (5,003,988)	3.00	\$ (1,667,997)	\$ (3,335,991)
2016	Investment Loss	\$ (4,893,533)	4.00	\$ (1,223,384)	\$ (3,670,149)
4. Total Deferred Inflows / Outflows: (1) + (2) + (3)					
a. Inflows					
	Total	<b>\$ 6,610,354</b>		<b>\$ 1,929,858</b>	<b>\$ 4,680,496</b>
b. Outflows					
	Total	<b>\$ (12,894,069)</b>		<b>\$ (3,501,870)</b>	<b>\$ (9,392,199)</b>

<sup>1</sup> INPRS determined that 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.

<sup>2</sup> 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.

<sup>3</sup> Net of investment expenses.

SECTION III - ACCOUNTING

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB #68**

**D. Deferred Inflows and Outflows of Resources under GASB #68 for the Year Ended June 30, 2017 (Continued) <sup>1</sup>**

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

Year Ending June 30:

2017	\$	(1,572,012)
2018	\$	(1,572,017)
2019	\$	(2,769,192)
2020	\$	(1,101,195)
2021	\$	220,252
2022	\$	408,333
Thereafter	\$	102,116

SECTION III - ACCOUNTING

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB #68**

**E. Pension Expense under GASB #68 for the Year Ended June 30, 2017**

1. Service Cost		
a. Total Service Cost <sup>1</sup>		3,550,386
b. Member Contributions <sup>2</sup>		(1,092,867)
c. Administrative Expenses		<u>123,665</u>
d. Net Employer Service Cost: (1)(a) + (1)(b) + (1)(c)		2,581,184
2. Interest Cost <sup>3</sup>		9,388,843
3. Expected Return on Assets <sup>4</sup>		(7,512,757)
4. Plan Amendments		-
5. Recognition of Deferred (Inflows) / Outflows of Resources Related to:		
a. Liability Experience (Gains) / Losses		169,048
b. Assumption Change (Gains) / Losses		(19,939)
c. Investment (Gains) / Losses		<u>1,422,903</u>
d. Total: (5)(a) + (5)(b) + (5)(c)		1,572,012
6. Preliminary Pension Expense: (1)(d) + (2) + (3) + (4) + (5)(d)	\$	6,029,282
7. Employer Service Purchases		-
8. Total Pension Expense: (6) + (7)	<b>\$</b>	<b>6,029,282</b>

<sup>1</sup> As of the beginning of the year.

<sup>2</sup> Does not include \$9,091 of member service purchases.

<sup>3</sup> Includes interest of 6.75% on the beginning-of-year service cost.

<sup>4</sup> 6.75% net of investment expenses and assuming cash flows occur at mid-year. Includes a half year of interest on member contributions.

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SECTION III - ACCOUNTING

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

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

1. EG&C Fund is a single-employer plan for GASB accounting purposes.
2. Significant actuarial assumptions and other inputs used to measure the total pension liability:
  - Measurement Date                      June 30, 2017
  - Valuation Date  
Assets:                                      June 30, 2017  
Liabilities:                                June 30, 2016 - Member census data as of June 30, 2016 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2016 and June 30, 2017. The valuation results from June 30, 2016 were rolled-forward to June 30, 2017 to reflect benefit accruals during the year less benefits paid.
  - Inflation                                      2.25%
  - Future Salary Increases                2.5%
  - Cost-of-Living Increases                1.0% compounded annually, beginning January 1, 2020. Retired members were provided a 13th check by October 1, 2016, and will be provided a 13th check by October 1, 2017 and October 1, 2018, which is reflected in the valuation.
  - Mortality Assumption (Healthy)      RP-2014 (with MP-2014 improvement removed) Blue Collar Mortality tables with future mortality improvement inherent in the Social Security Administration's 2014 Trustee report.
  - Mortality Assumption (Disabled)      RP-2014 (with MP-2014 improvement removed) Disability Mortality Table with future mortality improvement inherent in the Social Security Administration's 2014 Trustee report.
  - 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, 2017, 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 20.75%, 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.



SECTION III - ACCOUNTING

**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)      The assumptions and methods selected by the Board for the June 30, 2017 actuarial valuation include a 6.75% expected return on assets assumption, a 20-year level dollar closed method for amortizing future layers of unfunded actuarial accrued liability (30 years for amortization layers established prior to 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 fully fund the plan within 20 to 30 years. Furthermore, we note that a deterministic projection assuming no future gains or losses shows that the actuarially determined contribution rate is expected to reach a peak of 14.95%. As a result, a detailed projection of plan assets and cash flows was not separately prepared to demonstrate that plan assets will be sufficient to pay all future benefit payments for current members.

	1% Decrease (5.75%)	Current Rate (6.75%)	1% Increase (7.75%)
- Discount Rate Sensitivity Net Pension Liability	\$ 41,921,140	\$ 22,586,503	\$ 6,721,239

3. Classes of Plan Members Covered: <sup>1</sup>

- Retired Members, Beneficiaries and Disabled Members Receiving Benefits:	223
- Terminated Vested Plan Members Entitled to but Not Yet Receiving Benefits:	6
- Terminated Non-Vested Plan Members Entitled to a Distribution of Contributions:	120
- Active Plan Members:	440
- Total Membership:	789

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, 2017, the money-weighted return on the plan assets is 8.0%.

5. The components of the Net Pension Liability for the EG&C Fund plan as of June 30, 2017, are as follows:

- Total Pension Liability	\$ 142,602,804
- Plan Fiduciary Net Position	120,016,301
- Net Pension Liability	\$ 22,586,503
- Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	84.2%

<sup>1</sup> The valuation results as of June 30, 2017 were calculated using June 30, 2016 census data, adjusted for certain activity during fiscal year 2017.

SECTION III - ACCOUNTING

**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 <sup>1</sup>**

Year Ending June 30:	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
1. Total Pension Liability					
a. Total Pension Liability - Beginning of Year	\$ 113,282,644	\$ 118,097,227	\$ 123,600,704	\$ 132,795,504	\$ 138,965,050
b. Service Cost <sup>2</sup>	3,810,650	3,841,382	3,904,932	3,011,127	3,550,386
c. Interest Cost <sup>3</sup>	7,740,113	8,030,425	8,383,598	8,955,451	9,388,843
d. Experience (Gains)/Losses	(1,845,309)	(429,626)	845,498	469,533	119,830
e. Assumption Changes	(40,954)	-	2,669,133	-	(2,578,386)
f. Plan Amendments	-	-	-	-	-
g. Benefit Payments <sup>4</sup>	(4,835,348)	(5,938,704)	(6,608,361)	(6,266,565)	(6,826,316)
h. Member Reassignments <sup>5</sup>	(14,569)	-	-	-	(25,694)
i. Service Purchases (Employer and Member)	-	-	-	-	9,091
j. Total Pension Liability - End of Year	<u>\$ 118,097,227</u>	<u>\$ 123,600,704</u>	<u>\$ 132,795,504</u>	<u>\$ 138,965,050</u>	<u>\$ 142,602,804</u>
2. Plan Fiduciary Net Position					
a. Plan Fiduciary Net Position - Beginning of Year	\$ 76,543,260	\$ 97,018,792	\$ 110,656,502	\$ 110,037,215	\$ 111,329,476
b. Employer Contributions <sup>6</sup>	19,740,031	5,358,617	5,215,010	5,366,551	5,691,313
c. Member Contributions	1,005,564	1,019,371	1,003,661	1,015,896	1,101,958
d. Non-Employer Contributing Entity Contributions	-	-	-	-	-
e. Net Investment Return	4,700,988	13,338,780	(71,559)	1,314,506	8,869,229
f. Benefit Payments <sup>4</sup>	(4,835,348)	(5,938,704)	(6,608,361)	(6,245,234)	(6,826,316)
g. Member Reassignments <sup>5</sup>	(14,569)	-	-	(21,331)	(25,694)
h. Administrative Expenses	(121,134)	(140,354)	(158,038)	(138,127)	(123,665)
i. Plan Fiduciary Net Position - End of Year	<u>\$ 97,018,792</u>	<u>\$ 110,656,502</u>	<u>\$ 110,037,215</u>	<u>\$ 111,329,476</u>	<u>\$ 120,016,301</u>

<sup>1</sup> INPRS determined that 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 purposes and prospectively from June 30, 2013 for GASB #68 purposes.

<sup>2</sup> As of the beginning of the year.

<sup>3</sup> Includes interest of 6.75% on the beginning-of-year service cost.

<sup>4</sup> Includes refunds of accumulated member contributions and other interfund transfers.

<sup>5</sup> Includes net interfund transfers.

<sup>6</sup> For 2016, includes \$70,000 of appropriations from the State general fund to fund 13th check payments to retired members.

SECTION III - ACCOUNTING

**REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB #67 AND #68**

**H. Schedule of Net Pension Liability and Related Ratios under GASB #67 and #68 <sup>1</sup>**

1. Year Ending	2. Total Pension Liability	3. Plan Fiduciary Net Position	4. Net Pension Liability (2) - (3)	5. Fiduciary Net Position as a Percentage of Total Pension Liability (3) / (2)	6. Actual Covered Employee Payroll <sup>2</sup>	7. Net Pension Liability as a Percentage of Covered Payroll (4) / (6)
6/30/2013	\$ 118,097,227	\$ 97,018,792	\$ 21,078,435	82.2%	\$ 24,675,000	85.4%
6/30/2014	\$ 123,600,704	\$ 110,656,502	\$ 12,944,202	89.5%	\$ 25,824,626	50.1%
6/30/2015	\$ 132,795,504	\$ 110,037,215	\$ 22,758,289	82.9%	\$ 25,132,559	90.6%
6/30/2016	\$ 138,965,050	\$ 111,329,476	\$ 27,635,574	80.1%	\$ 25,525,549	108.3%
6/30/2017	\$ 142,602,804	\$ 120,016,301	\$ 22,586,503	84.2%	\$ 27,428,006	82.3%

<sup>1</sup> INPRS determined that 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 purposes and prospectively from June 30, 2013 for GASB #68 purposes.

<sup>2</sup> Pensionable pay as provided by INPRS.

SECTION III - ACCOUNTING

**REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB #67 AND #68**

**I. Schedule of Contributions under GASB #67 and #68<sup>1</sup>**

1.  Year Ending	2.  Actuarially Determined Contribution <sup>2</sup>	3.  Actual Employer Contributions	4.  Contribution Excess / (Deficiency) (Deficiency)  (3) - (2)	5.  Actual Covered Employee Payroll <sup>3</sup>	6.  Contributions as a Percentage of Covered Payroll  (3) / (5)
6/30/2013	\$ 4,794,353	\$ 19,740,031 <sup>4</sup>	\$ 14,945,679	\$ 24,675,000	80.0%
6/30/2014	\$ 5,340,533	\$ 5,358,617	\$ 18,084	\$ 25,824,626	20.8%
6/30/2015	\$ 4,820,425	\$ 5,215,010	\$ 394,585	\$ 25,132,559	20.8%
6/30/2016	\$ 4,077,706	\$ 5,366,551 <sup>5</sup>	\$ 1,288,845	\$ 25,525,549	21.1%
6/30/2017	\$ 4,033,288	\$ 5,691,313	\$ 1,658,025	\$ 27,428,006	20.8%

<sup>1</sup> INPRS determined that 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 purposes and prospectively from June 30, 2013 for GASB #68 purposes.

<sup>2</sup> 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.

<sup>3</sup> Pensionable pay as provided by INPRS.

<sup>4</sup> Includes a contribution of \$14,619,112 made to the Plan pursuant to 2012 HB 1376.

<sup>5</sup> Excludes \$70,000 of appropriations from the State general fund to fund 13th check payments to retired members.

SECTION III - ACCOUNTING

**REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB #67 AND #68**

**J. Schedule of Money-Weighted Returns under GASB #67 and #68<sup>1</sup>**

1. Year Ending	2. Money-Weighted Rate of Return
6/30/2013	5.5%
6/30/2014	13.7%
6/30/2015	(0.1%)
6/30/2016	1.2%
6/30/2017	8.0%

<sup>1</sup> INPRS determined that 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 purposes and prospectively from June 30, 2013 for GASB #68 purposes.

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SECTION IV - CENSUS DATA

**CENSUS DATA**

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SECTION IV - CENSUS DATA

**A. Reconciliation of Participant Data**<sup>1</sup>

	<u>Actives</u>	<u>Inactive Non-Vested With Member Contribution Balance</u>	<u>Inactive Vested</u>	<u>Disabled</u>	<u>Retired</u>	<u>Beneficiary</u>	<u>Total</u>
Total as of June 30, 2015	421	121	7	4	171	45	769
Data Adjustments for Activity During Fiscal Year 2016	-	-	-	-	-	-	-
Adjusted Total as of June 30, 2015	421	121	7	4	171	45	769
New Entrants	38	-	-	-	-	-	38
Rehires	2	(1)	(1)	-	-	-	-
Non-Vested Terminations	(8)	8	-	-	-	-	-
Vested Terminations	(2)	-	2	-	-	-	-
Retirements	(6)	-	(2)	-	8	-	-
Disablements	-	-	-	-	-	-	-
Death with Beneficiary	-	-	-	-	-	-	-
Death without Beneficiary	(1)	(1)	-	(1)	(2)	(2)	(7)
Refunds	(3)	(5)	-	-	-	-	(8)
Data Adjustments	(1)	(2)	-	-	-	-	(3)
Total as of June 30, 2016	440	120	6	3	177	43	789
Data Adjustments for Activity During Fiscal Year 2017	-	-	-	-	-	-	-
Adjusted Total as of June 30, 2016	440	120	6	3	177	43	789

<sup>1</sup> The valuation results as of June 30, 2017 were calculated using June 30, 2016 census data, adjusted for certain activity during fiscal year 2017.

SECTION IV - CENSUS DATA

**B. Census Information as of June 30, 2016**<sup>1</sup>

	<u>Male</u>	<u>Female</u>	<u>Total</u>
1. Active			
a. Number	396	44	440
b. Average Age	42.1	39.9	41.9
c. Average Years of Service	11.0	10.0	10.9
d. Anticipated Payroll of Actives <sup>2</sup>	\$ 25,476,867	\$ 2,636,840	\$ 28,113,707
2. Inactive - Vested			
a. Number	6	-	6
b. Average Age	48.2	N/A	48.2
c. Average Years of Service	19.9	N/A	19.9
3. Inactive - Non-Vested <sup>3</sup>			
a. Number	101	19	120
4. Retiree/Beneficiary/Disabled			
a. Number	173	50	223
b. Average Age	66.3	80.2	69.4
c. Annual Benefits Payable <sup>4</sup>	\$ 5,332,334	\$ 579,745	\$ 5,912,079

<sup>1</sup> The valuation results as of June 30, 2017 were calculated using June 30, 2016 census data, adjusted for certain activity during fiscal year 2017.

<sup>2</sup> Figures shown are the anticipated pay for the one-year period following June 30, 2017.

<sup>3</sup> As of June 30, 2016, inactive non-vested members entitled to a refund of their member contribution had balances totaling \$484,030.

<sup>4</sup> Annual allowances reflect cost-of-living increases effective January 1 following the date of the census data, if provided, but do not reflect one-time 13th check amounts.



SECTION IV - CENSUS DATA

**C. Schedule of Active Member Valuation Data**<sup>1, 2</sup>

1. Valuation Date	2. Active Members	3. Anticipated Payroll (\$ in Thousands) <sup>3</sup>	4. Average Pay (3) / (2)	5. Annual Percent Change
6/30/2008	410	21,333	52,033	1.0%
6/30/2009	443	25,238	56,971	9.5%
6/30/2010	471	26,709	56,707	(0.5%)
6/30/2011	440	24,028	54,609	(3.7%)
6/30/2012	468	25,752	55,026	0.8%
6/30/2013	473	26,201	55,393	0.7%
6/30/2014	473	26,664	56,372	1.8%
6/30/2015	448	25,761	57,502	2.0%
6/30/2016	421	26,164	62,147	8.1%
6/30/2017	440	28,114	63,895	2.8%

<sup>1</sup> Valuation results prior to June 30, 2010 were calculated by the prior actuary.

<sup>2</sup> 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.

<sup>3</sup> Figures shown are the anticipated pay for the one-year period following the valuation date.

SECTION IV - CENSUS DATA

**D. Schedule of Retirees, Beneficiaries, and Disabled Members**<sup>1, 2</sup>

1.	2.	3.	4.	5.	6.	7.	8.	9.
Valuation Date	Added Number	Annual Allowances (\$ in Thousands) <sup>4</sup>	Removed Number	Annual Allowances (\$ in Thousands) <sup>4</sup>	End of Year <sup>3</sup> Number	Annual Allowances (\$ in Thousands) <sup>4</sup>	% Increase in Annual Allowances <sup>4</sup>	Average Annual Allowances <sup>4</sup>
6/30/2008	9	302	12	119	137	2,518	15.8%	18,382
6/30/2009	59	748	39	258	157	3,056	21.3%	19,465
6/30/2010	6	136	6	49	157	3,134	2.6%	19,962
6/30/2011	22	902	3	23	176	3,978	26.9%	22,602
6/30/2012	14	495	3	14	187	4,452	11.9%	23,810
6/30/2013	8	253	2	9	193	4,666	4.8%	24,177
6/30/2014	-	-	-	-	193	4,666	0.0%	24,177
6/30/2015	15	556	1	5	207	5,210	11.7%	25,170
6/30/2016	14	506	1	4	220	5,661	8.7%	25,733
6/30/2017	8	314	5	60	223	5,912	4.4%	26,512

<sup>1</sup> Valuation results prior to June 30, 2010 were calculated by the prior actuary.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> Annual allowances reflect cost-of-living increases effective January 1 following the date of the census data, if provided, but do not reflect one-time 13th check amounts.

SECTION IV - CENSUS DATA

**E. Distribution of Active Members by Age and Service** <sup>1</sup>

<b>Attained Age</b>	Distribution of Active Members by Age and Service as of June 30, 2016 <sup>1</sup>								
	Under 10 years	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	15								15
25-29	46								46
30-34	55	21							76
35-39	31	27	5						63
40-44	32	16	18	4					70
45-49	18	10	9	22	5				64
50-54	20	6	2	5	13	4			50
55-59	20	3	2		2	7	2		36
60-64	10	5				1	3	1	20
65-69									
70&Up									
Total	247	88	36	31	20	12	5	1	440

<sup>1</sup> The valuation results as of June 30, 2017 were calculated using June 30, 2016 census data, adjusted for certain activity during fiscal year 2017.

SECTION IV - CENSUS DATA

**F. Distribution of Inactive Vested Members by Age and Service**<sup>1</sup>

<b>Attained Age</b>	Distribution of Inactive Vested Members by Age and Service as of June 30, 2016 <sup>1</sup>					
	Under 15 years	15 to 19 years	20 to 24 years	25 to 29 years	Over 30 years	Total
<25						
25-29						
30-34						
35-39						
40-44		1				1
45-49		2	1			3
50-54		1			1	2
55-59						
60-64						
65-69						
70&Up						
Total		4	1		1	6

<sup>1</sup> The valuation results as of June 30, 2017 were calculated using June 30, 2016 census data, adjusted for certain activity during fiscal year 2017.

SECTION IV - CENSUS DATA

**G. Distribution of Retired Members, Beneficiaries, and Disabled Members by Age and Number of Years Retired <sup>1</sup>**

<b>Attained Age</b>	Distribution of Retired Members, Beneficiaries, and Disabled Members by Age and Number of Years Retired as of June 30, 2016 <sup>1</sup>						
	Under 10 years	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	Over 30 years	Total
<40							
40-44	1						1
45-49	1						1
50-54	9						9
55-59	35	1					36
60-64	36	1	3				40
65-69	35	11		2			48
70-74		15	9	4	2		30
75-79			14	5	2	1	22
80-84			1	6	1	1	9
85-89					6	4	10
90&Up					1	16	17
<b>Total</b>	117	28	27	17	12	22	223

<sup>1</sup> The valuation results as of June 30, 2017 were calculated using June 30, 2016 census data, adjusted for certain activity during fiscal year 2017.

SECTION IV - CENSUS DATA

**H. Schedule of Benefit Recipients by Type of Benefit Option <sup>1</sup>**

Number of Benefit Recipients by Benefit Option as of June 30, 2016

Amount of Monthly Benefit	Retiree Single Life Annuity	Retiree 50%		Survivors	Disability	Total
		Joint and Survivor Annuity	Survivors			
\$ 1 - 500	-	2	12	1	15	
501 - 1,000	-	11	19	-	30	
1,001 - 1,500	-	15	10	1	26	
1,501 - 2,000	-	12	2	-	14	
2,001 - 3,000	-	81	-	1	82	
over 3,000	1	55	-	-	56	
Total	1	176	43	3	223	

**I. Schedule of Average Benefit Payments as of June 30, 2016 <sup>1,2</sup>**

	Years of Credited Service						Total
	<10	10-14	15-19	20-24	25-29	30+	
Average Monthly Defined Benefit	\$ 504	\$ 1,386	\$ 615	\$ 999	\$ 2,101	\$ 2,810	\$ 2,209
Average Final Average Salary	\$ 33,205	\$ 66,535	\$ 26,878	\$ 37,858	\$ 51,105	\$ 56,019	\$ 51,549
Number of Benefit Recipients	15	1	7	19	68	113	223

<sup>1</sup> The valuation results as of June 30, 2017 were calculated using June 30, 2016 census data, adjusted for certain activity during fiscal year 2017.

Monthly benefits do not reflect 13th check payments made in October 2016, October 2017, and October 2018. No cost-of-living increases were approved for January 1, 2017, January 1, 2018, or January 1, 2019.

<sup>2</sup> For some members, average salary at retirement were not available. The average salary for each group excluded these members.

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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 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                 1.0% per year in retirement beginning January 1, 2020. 13th checks were provided to members in pay status in lieu of a permanent cost-of-living increase in fiscal 2017, 2018 and 2019. The fiscal 2018 and 2019 13th check, payable to members in October 2017 and October 2018, respectively, is included in the liability valuation at June 30, 2017.

Mortality (Healthy)                      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.

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

Disability                                    150% of 1964 OASDI Table. Illustrative rates shown below:

Age	Rate
20	0.0900%
25	0.1275%
30	0.1650%
35	0.2205%
40	0.3300%
45	0.5400%
50	0.9090%
55	1.5135%
60	2.4405%
65+	0.0000%



SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**A. Actuarial Assumptions (Continued)**

Termination

Based on 2010-2014 experience. Rates shown below:

<u>Service</u>	<u>Rate</u>	<u>Service</u>	<u>Rate</u>
0-1	10%	7	4%
2	9%	8	3%
3	8%	9	2%
4	7%	>=10	1%
5	6%		
6	5%		

Retirement

Based on 2010-2014 experience. Rates shown below:

<u>Age</u>	<u>Rate</u>
<=44	0%
45	3%
46 - 49	2%
50	3%
51 - 59	15%
60-64	40%
>=65	100%

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

90% of members are assumed to be married or to have a dependent beneficiary. Males are assumed to be three (3) years older than females.

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SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**A. Actuarial Assumptions (Continued)**

Data Assumptions	Spouse gender is assumed to be the opposite gender of the member. Additionally, payroll for new hires is annualized.
Changes in Assumptions	For disabled members, the mortality assumption is updated from the RP-2014 (with MP-2014 improvement removed) Blue Collar Mortality tables to the RP-2014 (with MP-2014 improvement removed) Disability Mortality tables.

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SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**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.

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## SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

### **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 (gain or loss bases established prior to June 30, 2016 were amortized over 30 years and will continue to be amortized over 30-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 than 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, 2016 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2016 and June 30, 2017. The valuation results from June 30, 2016 were rolled-forward to June 30, 2017 to reflect benefit accruals during the year less benefits paid.

#### 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.

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## SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

### **C. Actuarial Methods (Continued)**

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 \$28,113,707 for the fiscal year beginning July 1, 2017 is equal to the actual payroll during the year ending June 30, 2017, increased with one year of salary scale.

5. Changes in Actuarial Methods

There were no method changes for the June 30, 2017 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 EG&C Fund are set forth in IC 5-10-5.5. 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 Indiana State Excise Police Officers, all Indiana State Conservation Enforcement officers, all Indiana Gaming Agents, and all Indiana Gaming Control Officers must become members as a condition of employment.

Eligibility for Defined Pension Benefits

- a. Normal Retirement      Earliest of:
  - Age 65 (mandatory retirement)
  - 10 or more years of creditable service for members hired on or after age 50
  - Age 55 with sum of age and creditable service equal to 85 or more
  - Age 50 with 25 or more years of creditable service
  
- b. Early Retirement        Age 45 with 15 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            15 or more years of creditable service and no longer active (i.e. vested inactive)
  
- f. Pre-Retirement Death    15 or more years of creditable service

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## SECTION VI - SUMMARY OF PLAN PROVISIONS

### **A. Summary of Plan Provisions (Continued)**

#### Amount of Benefits

- a. **Normal Retirement**      The normal retirement benefit is a monthly annuity payable in a Joint and 50% Surviving Beneficiary form and is equal to 25% of average monthly earnings<sup>1</sup>, plus 1-2/3% of average monthly earnings for years of creditable service more than 10 years. The normal retirement benefit may not exceed 75% of the average annual salary.
  
- b. **Early Retirement**      The early retirement benefit is the accrued retirement benefit determined as of the early retirement date and payable commencing at the normal retirement date. A member may elect to have the benefit commence prior to normal retirement provided the benefit is reduced by 1/4% for each month that the benefit commencement date precedes age 60. The early retirement benefit may not exceed 75% of the average annual salary.
  
- 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**      If disability occurs in the line of duty, the disability retirement benefit is the member's monthly salary multiplied by the degree of impairment and is payable commencing the month following disability date without reduction for early commencement. The benefit shall not be less than 20% of the member's salary if the member has more than 5 years of service, or 10% if 5 or less years of service.

If disability does not occur in the line of duty, the disability retirement benefit is equal to 50% of the member's monthly salary multiplied by the degree of impairment and is payable commencing the month following disability date without reduction for early commencement. The benefit shall not be less than 10% of the member's salary if the member has more than 5 years of service, or 5% if 5 or less years of service.

<sup>1</sup> Average monthly earnings is the monthly average of earnings calculated based on any five years of salary within the 10 years preceding retirement that produce the highest such average.



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SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions (Continued)**

Amount of Benefits (continued)

- e. Termination                      If termination is prior to earning 15 years of service, the member shall be entitled to a lump sum refund of employee contributions plus accumulated interest.
- If termination is after earning 15 years of service, the termination benefit is the accrued retirement benefit determined as of the termination date and payable commencing as of the normal retirement date. The member may elect to receive a reduced early retirement benefit beginning at age 45.

- f. Pre-Retirement Death        If death is prior to earning 15 years of service, the member's beneficiary or estate shall receive employee contributions plus accumulated interest.
- If death is after earning 15 years of service, the spouse or dependent beneficiary is entitled to receive the monthly survivor annuity under the assumption that the member retired on the day before the date of death.

Member Contributions              Each member is required to contribute at the rate of 4% of pay. These contributions are kept on deposit and credited with interest until such time as they are refunded or used to provide benefits at retirement.

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 One-Half Survivor Benefits        Member will be paid a monthly benefit for life. After death, one-half (1/2) of the benefit will be paid to the spouse or parent for their lifetime or the dependent until age 18. If the spouse's age is more than 5 years younger than the member, the benefit is actuarially adjusted.

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SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. 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      Effective July 1, 2008, a DROP is established for all plan participants.  
(DROP)

An employee may make a DROP election as provided in this chapter only if, immediately upon termination, he/she is eligible to receive an unreduced annual retirement allowance under the provisions of the EG&C Fund on his/her entry date into the DROP.

The DROP retirement benefit will be based on average annual salary and years of creditable service on the date the member enters the DROP. Average annual salary is based on the 5 highest years of annual salary in the 10 years immediately preceding the member's retirement date.

Any member who chooses the DROP shall agree to the following:

- The member shall execute an irrevocable election to retire on the DROP retirement date and shall remain in active service until that date.
- While in the DROP, the member shall continue to make contributions to the EG&C Fund under the provisions of that fund.
- The member shall elect a DROP retirement date not less than 12 months and not more than 36 months after the member's DROP entry date.
- The member may not remain in the DROP after the date the member reaches any mandatory retirement age as set forth in the EG&C Fund.
- The member may make an election to enter the DROP only once in the member's lifetime.
- A member who retires on his/her DROP retirement date may elect to receive an annual retirement allowance.

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SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions (Continued)**

Deferred Retirement Option Plan (DROP) (continued)	<p>Any member who chooses the DROP shall agree to the following (continued):</p> <ul style="list-style-type: none"><li>- Computed as if the member had never entered the DROP; or</li><li>- Consisting of the DROP frozen benefit, plus an additional amount paid as the member elects, determined by multiplying the DROP frozen benefit by the number of months the member was in DROP.</li></ul> <p>No cost of living increase is applied to a DROP frozen benefit while the participant is in the DROP. After the participant's DROP retirement date, cost of living increases determined under the EG&amp;C Fund apply to the participant's annual retirement allowance.</p>
Cost-of-Living Adjustments	<p>The monthly annuity benefits for members in pay status are increased periodically to preserve purchasing power that is diminished due to inflation. Such increases are not guaranteed by Statute and have historically been provided on an "ad hoc" basis.</p> <p>A "13th check" will be paid to each member (or survivor or beneficiary) in pay status during fiscal year 2017, 2018 and 2019. The amount of the 13th check varied based on the years of creditable service the member earned prior to retirement.</p>
Changes in Provisions	<p>It is our understanding that there were no changes to the Plan that impacted the pension benefits during the fiscal year.</p>

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SECTION VII - DEFINITIONS OF TECHNICAL TERMS

**Definitions of Technical Terms**

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A. Definitions of Technical Terms	50

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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, 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.

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SECTION VII - DEFINITIONS OF TECHNICAL TERMS

**A. 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.

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SECTION VII - DEFINITIONS OF TECHNICAL TERMS

**A. 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.