



**Cavanaugh Macdonald**  
CONSULTING, LLC

*The experience and dedication you deserve*

**Indiana Public Retirement System**  
**Public Employees' Retirement Fund**

Actuarial Valuation as of  
June 30, 2020





**Cavanaugh Macdonald**  
CONSULTING, LLC  
*The experience and dedication you deserve*

November 6, 2020

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

Dear Members of the Board:

At your request, we performed an actuarial valuation of the Public Employees' Retirement Fund (PERF) as of June 30, 2020, for the purpose of estimating the actuarial required contribution for the plan year ending June 30, 2022. The major findings of the valuation are contained in this report, which reflects the benefit and funding provisions in place on June 30, 2020. There were no changes in the benefit provisions or actuarial methods from last year. However, this report reflects the updated economic and demographic assumptions proposed in the 2014-2019 Experience Study that were adopted by the Board in June 2020. Please refer to that Study (available on the INPRS web site) for complete details.

In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by Indiana Public Retirement System (INPRS) staff. This information includes, but is not limited to, statutory provisions, member data and financial information. We did review the data to ensure that it was reasonably consistent and comparable with data from prior years. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our results may be different and our calculations may need to be revised.

We certify that all costs and liabilities for PERF have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the plan and reasonable expectations); and which, in combination, offer the best estimate of anticipated experience affecting the plan. Nevertheless, the emerging costs will vary from those presented in this report to the extent actual experience differs from that projected by the actuarial assumptions.

We believe the actuarial assumptions used herein are reasonable. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C. Specifically, we presented the proposed assumptions for the 2020 valuations to the Board on February 21, 2020, and the Board subsequently adopted their use. These assumptions are applicable to both the funding and Governmental Accounting Standards Board (GASB) Statement Number 67 valuation calculations, unless otherwise noted.



We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information, but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions. We will continue to monitor the situation and advise the Board in the future of any adjustments that we believe would be appropriate.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

We prepared a Risk Report for the INPRS Board in August 2019 that contains information which is relevant to PERF and should be considered part of this valuation report. Although the report was prepared using the data, methods, and assumptions of the June 30, 2018 valuation report, it is our professional opinion that the results of the risk report are applicable to the June 30, 2020 valuation report as well.

Actuarial computations presented in this report are for purposes of determining the funding rates for the Plan. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Plan's funding requirements and goals as adopted by the Board. Additionally, we have included actuarial computations for use in preparing certain reporting and disclosure requirements under Governmental Accounting Standards Board Statements Number 67 and Number 68. Determinations for purposes other than meeting these funding and disclosure requirements may be significantly different from the results contained in this report and require additional analysis.

The Comprehensive Annual Financial Report (CAFR) for INPRS contains several exhibits that disclose the actuarial position of the System. This annual report, prepared as of June 30, 2020, provides data and tables that we prepared for use in the following sections of the CAFR:

Financial Section:

- Note 1 - Tables of Plan Membership
- Note 8 - Net Pension Liability and Actuarial Information - Defined Benefit Plans
- Schedule of Changes in Net Pension Liability and Plan Fiduciary Net Position
- Schedule of Contributions
- Schedule of Notes to Required Supplementary Information

Actuarial Section:

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

Statistical Section:

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



The consultants who worked on this assignment are pension actuaries. Cavanaugh Macdonald's advice is not intended to be a substitute for qualified legal or accounting counsel.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and the assumptions and methods used meet the guidance provided in the applicable Actuarial Standards of Practice. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

The calculations were completed in compliance with applicable law and the calculations for GASB disclosure, in our opinion, meet the requirements of GASB 67 and GASB 68. We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate.

We respectfully submit the following report and look forward to discussing it with you.

Sincerely,

A handwritten signature in blue ink that reads "Brent A. Banister".

Brent A. Banister, PhD, FSA, EA, FCA, MAAA  
Chief Actuary

A handwritten signature in blue ink that reads "Edward J. Koebel".

Edward Koebel, FCA, EA, MAAA  
Chief Executive Officer

A handwritten signature in blue ink that reads "Virginia Fritz".

Virginia Fritz, FSA, EA, FCA, MAAA  
Senior Actuary



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## SECTION 1 – BOARD SUMMARY FOR COMBINED BASE AND SUPPLEMENTAL BENEFITS

This report presents the results of the June 30, 2020 actuarial valuation of the Public Employees’ Retirement Fund (PERF). The primary purposes of performing this actuarial valuation are to:

- Determine the level of contributions for the plan year ending June 30, 2022 (December 31, 2022 for political subdivisions), along with the actuarial surcharge rate for the 2021 calendar year, that will be sufficient to meet the funding policy set out by the Board to comply with Indiana statutes.
- Disclose asset and liability measurements as well as the plan’s funded status on the valuation date.
- Compare actual and expected experience of the Fund during the plan year ending June 30, 2020.
- Analyze and report on trends in plan contributions, assets and liabilities over the past several years.

### VALUATION RESULTS

The 2014-2019 Experience Study was presented to the Board in February 2020 and the recommended assumptions and methods were adopted by the Board at their June meeting. Once the Asset-Liability Model work is completed, there may be a need to propose revised economic assumptions, particularly if the work leads to significant changes in the investment portfolio. There were no changes to the plan benefits, actuarial methods, or funding policy between the June 30, 2019 and June 30, 2020 valuations.

The actuarial valuation results provide a “snapshot” view of the plan’s financial condition on June 30, 2020. The plan’s UAAL changed from \$3.418 billion last year to \$2.721 billion this year and the funded ratio increased from 79.4% to 83.3%. The primary factor behind the increase in the funded ratio was a decrease on liabilities due to assumption changes made to better reflect the plan experience shown in the 2014-2019 Experience Study (a \$617 million decrease when including the base and supplemental plan benefits), along with liability experience gains. In addition, actual contributions exceeded the actuarially determined contribution but were offset by investment losses.

A summary of the key results from the June 30, 2020 actuarial valuation compared to the June 30, 2019 valuation is shown in the following table. Further detail on the valuation results can be found in the following sections of this Board Summary.

Valuation Results	June 30, 2019	June 30, 2020
Unfunded Actuarial Accrued Liability	\$ 3,418,258,147	\$ 2,721,294,319
Funded Ratio (Actuarial Assets)	79.38%	83.29%
Normal Cost	3.60%	3.56%
UAAL Amortization	4.47%	3.33%
Actuarially Determined Contribution Rate	8.07%	6.89%
Actuarially Determined Surcharge Rate	0.44%	0.37%

Numerous components, as examined in the following discussion, contributed to the change in the plan’s assets, liabilities, and actuarial determined contribution rate between June 30, 2019 and June 30, 2020.



**SECTION 1 – BOARD SUMMARY FOR COMBINED BASE AND SUPPLEMENTAL BENEFITS**

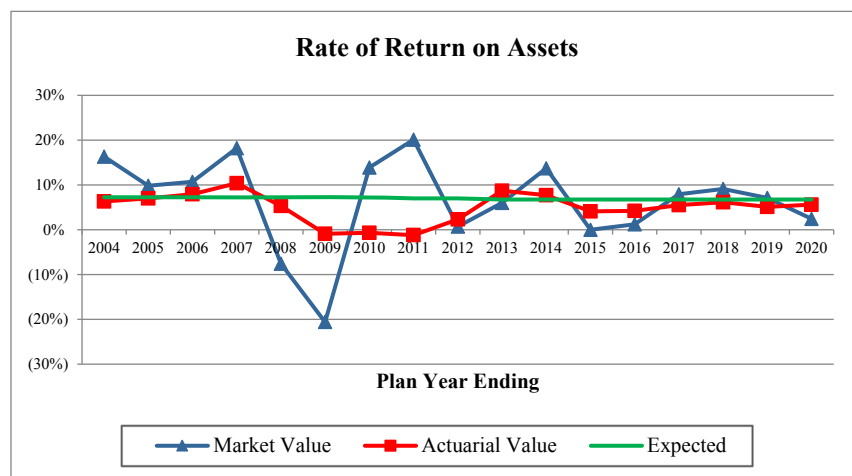
**ASSETS**

As of June 30, 2020, the plan had net assets of \$13.261 billion, when measured on a market value basis. This was a decrease of \$10 million from the prior year.

The market value of assets is not used directly in the calculation of the unfunded actuarial accrued liability and the actuarial required contribution rate. An asset valuation method, which smoothes the effect of market fluctuations, is applied to determine the value of assets used in the valuation, termed the actuarial value of assets. In this year’s valuation, the actuarial value of assets is \$13.560 billion, an increase of \$402 million from the prior year. The components of change in the asset values are shown in the following table:

	<b>Market Value</b>	<b>Actuarial Value</b>
<b>Net Assets, June 30, 2019</b>	\$ 13,270,996,471	\$ 13,157,802,020
- Receipts	+ 599,464,016	+ 599,464,016
- Expenditures, Net of Administrative Expenses	- 925,353,391	- 925,353,391
- Net Investment Income	+ 316,252,865	+ 728,547,271
<b>Net Assets, June 30, 2020</b>	<b>\$ 13,261,359,961</b>	<b>\$ 13,560,459,916</b>
Estimated Rate of Return, Net of Expenses	2.4%	5.6%

The estimated rate of return on the actuarial value of assets was 5.6%, which was lower than the 6.75% investment return assumption applicable for the year ended June 30, 2020. As a result, there was an experience loss on assets of nearly \$150 million. The estimated investment return on the market value of assets for FY 2020 of 2.4% resulted in a change in the deferred investment experience from a net deferred investment gain of \$113 million in last year’s valuation to a net deferred investment loss of \$299 million in the current valuation. See Tables 1 through 4 of this report for detailed information on the market and actuarial value of assets for the base and supplemental plan benefits.



*The rate of return of the actuarial value of assets has been less volatile than the market value return, illustrating the benefits of using an asset smoothing method.*





## SECTION 1 – BOARD SUMMARY FOR COMBINED BASE AND SUPPLEMENTAL BENEFITS

### LIABILITIES

The actuarial accrued liability is that portion of the present value of future benefits that is allocated to past service. The remaining portion will be paid by future normal costs. The difference between this liability and the actuarial value of assets as of the valuation date is called the unfunded actuarial accrued liability (UAAL). The dollar amount of unfunded actuarial accrued liability is reduced if the contributions to the plan exceed the normal cost for the year plus interest on the prior year's UAAL.

The unfunded actuarial accrued liability on both a market value and actuarial value of assets basis is shown as of June 30, 2020 in the following table:

	Market Value	Actuarial Value
Actuarial Accrued Liability	\$ 16,281,754,235	\$ 16,281,754,235
Value of Assets	13,261,359,961	13,560,459,916
Unfunded Actuarial Accrued Liability	\$ 3,020,394,274	\$ 2,721,294,319
Funded Ratio	81.45%	83.29%

See Table 5 of this report for the development of the unfunded actuarial accrued liability.

The total plan UAAL (on an actuarial basis) as of June 30, 2020 was \$2.721 billion, a \$697 million change from the \$3.418 billion total UAAL last year, primarily driven by a \$617 million reduction in liabilities due to assumption changes along with additional gains from favorable liability experience. Due to lower than expected market returns, there was an actuarial loss on assets of \$148 million, though that was largely offset by approximately \$135 million of contributions in excess of the actuarially determined contribution for base benefits. The components of the change in the base UAAL are quantified in Table 7 of this report. See Table 8 and Table 9 of this report for a breakdown of the components of experience gains/losses for greater detail on the base plan benefits.

An evaluation of the UAAL on a pure dollar basis may not provide a complete analysis since only the difference between the assets and liabilities (which are both large numbers) is reflected. Another way to evaluate the UAAL and the progress made in its funding is to track the funded ratio, the ratio of the actuarial value of assets to the actuarial accrued liability. The funded status information, which is based on the actuarial value of assets, is shown below (in millions).

	6/30/2016	6/30/2017	6/30/2018	6/30/2019	6/30/2020
Funded Ratio	75.5%	75.5%	79.7%	79.4%	83.3%
UAAL (in millions)	\$3,855.9	\$4,007.3	\$3,267.4	\$3,418.3	\$2,721.3

Note: Results before 2018 exclude the DC assets in the funded ratio calculation.

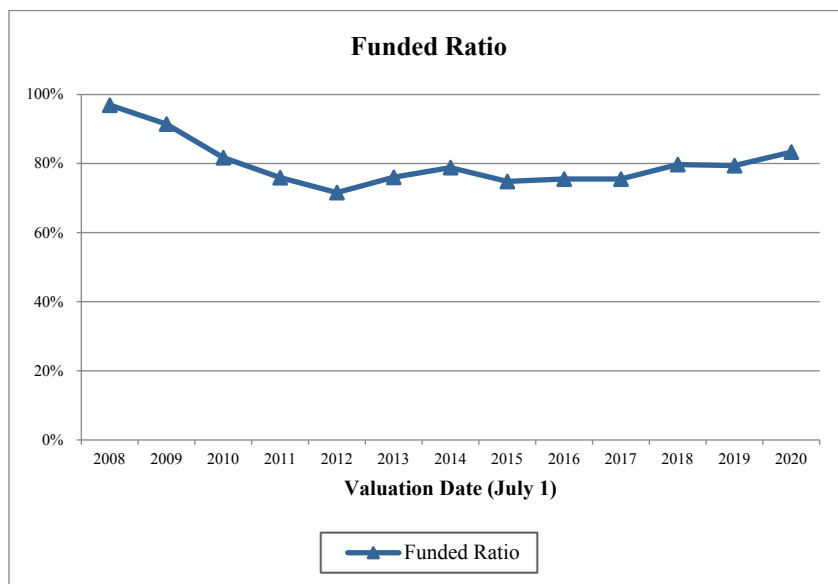
Note that the funded ratio does not indicate whether or not the plan assets are sufficient to settle benefits earned to date. The funded ratio, by itself, also may not be indicative of future funding requirements. In addition, if the funded ratios were shown using the market value of assets, the results would differ.





## SECTION 1 – BOARD SUMMARY FOR COMBINED BASE AND SUPPLEMENTAL BENEFITS

The funded ratio over a longer period of years is shown in the following graph. The Plan’s funded status has been steady for a number of years.



Note: Funded ratios exclude DC account balances.

### ACTUARIALLY DETERMINED CONTRIBUTION RATE

The Plan’s actuarially determined contribution rate consists of two components:

- A “normal cost” for the portion of projected liabilities allocated by the actuarial cost method to service of members during the year following the valuation date.
- An “unfunded actuarial accrued liability contribution” for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets.

The UAAL contribution rate is determined by calculating the amortization payment on the UAAL as a level dollar amount over 20 years for each new amortization base. Because the COLA portion of the benefits are funded through the surcharge, this portion of the benefit only considers the base benefit without any COLA. If the Fund funded ratio exceeds 100% on a combined basis (base benefits plus future assumed COLAs), all prior amortization bases are eliminated and the negative UAAL (or “surplus”) is amortized over an open 30-year period, as an offset to other Fund costs.

In addition to the components above that are designed to fund the guaranteed base benefit, the Board is responsible for determining the surcharge to fund future COLAs and/or 13<sup>th</sup> checks. Because there are five plans that must, by law, provide the same COLA or 13<sup>th</sup> check each year, the funding strategy needs to consider the funding needs of the entire System as well as the specific fund. The long-term assumption is that a COLA of 0.4% will be granted starting in 2022, 0.5% starting in 2034, and then 0.6% in 2039 and beyond. Considering the biennial budgeting cycle in Indiana, the near-term goal is to accumulate funds by June 30, 2021 to fund the two COLAs in the following biennium (January 2022 and January 2023). For



**SECTION 1 – BOARD SUMMARY FOR COMBINED BASE AND SUPPLEMENTAL BENEFITS**

calendar year 2020, the surcharge rate is 0.44%, and the actuarially determined surcharge rate is 0.37% effective January 1, 2021. For Funds with a 2021 surcharge rate, the Board chose to maintain the previous surcharge rate unless the new actuarially recommended surcharge rate was higher. Therefore, the 2021 surcharge rate for PERF will remain at 0.44%. See Table 12 for further details. Note that this surcharge rate, while it will apply to calendar year 2021, is designed to bring the Supplemental Reserve Account to a target level as of June 30, 2021, and may not be reflective of what is needed for long-term funding of the target COLA.

The total employer rate is the sum of the contributions to fund the base benefits plus the surcharge. The total employer contribution rate is lowered part way toward the normal cost rate when the funded ratio is over 105% funded, and then ultimately reduced to the normal cost rate should the Fund reach 120% funded. The Board could decide, however, to set the rate higher in order to provide a sufficient surcharge for the COLA funding while preserving the base funding.

See Table 13 of this report for the detailed development of the contribution rates which are summarized in the following table:

	June 30, 2019	June 30, 2020
Normal Cost	3.60%	3.56%
UAAL Amortization	4.47%	3.33%
Actuarially Determined Contribution Rate	8.07%	6.89%
Actuarially Determined Surcharge Rate	0.44%	0.37%

The actuarial determined contribution, determined this year based on the snapshot of the plan taken on the valuation date of June 30, 2020, will change each year as the deferred investment experience is recognized and other experience (both investment and demographic) impacts the plan. Therefore, it is expected to change each year.

The Actuarially Determined Contribution Rate is down noticeably this year as compared to last year. Much of this decline is a result of the new assumptions that we believe better reflect the anticipated mortality experience of the Fund. The Board policy of holding contributions steady at a level above what is currently needed is also helping to improve funding.

**SECTION 1 – BOARD SUMMARY FOR COMBINED BASE AND SUPPLEMENTAL BENEFITS****SUMMARY OF PRINCIPAL RESULTS**

	<b>June 30, 2018</b>	<b>June 30, 2019</b>	<b>June 30, 2020</b>
<b>MEMBERSHIP</b>			
Active Members	132,176	129,099	125,780
Inactive Vested Members	31,924	33,062	33,575
Retired Members and Beneficiaries	85,100	86,961	89,823
Disabled Members	2,890	2,971	2,613
Total Members	<u>252,090</u>	<u>252,093</u>	<u>251,791</u>
Projected Annual Salaries of Active Members	\$ 5,210,209,085	\$ 5,335,373,772	\$ 5,528,816,114
Annual Retirement Payments for Retired Members, Disabled Members and Beneficiaries	\$ 801,550,526	\$ 829,034,603	\$ 859,427,002
<b>ASSETS AND LIABILITIES</b>			
Net Assets			
Market Value of Assets (MVA)	\$ 12,694,327,690	\$ 13,270,996,471	\$ 13,261,359,961
Actuarial Value of Assets (AVA)	12,823,929,955	13,157,802,020	13,560,459,916
Actuarial Accrued Liability (AAL)	16,091,372,940	16,576,060,167	16,281,754,235
Unfunded Actuarial Accrued Liability (UAAL):			
AAL - AVA	\$ 3,267,442,985	\$ 3,418,258,147	\$ 2,721,294,319
Funded Ratios			
AVA / AAL	79.69%	79.38%	83.29%
MVA / AAL	78.89%	80.06%	81.45%
<b>CONTRIBUTIONS</b>			
Normal Cost	3.58%	3.60%	3.56%
Amortization of UAAL	4.25%	4.47%	3.33%
Actuarially Determined Contribution Rate	<u>7.83%</u>	<u>8.07%</u>	<u>6.89%</u>
Actuarially Determined Surcharge Rate (applicable next calendar year)	0.43%	0.44%	0.37%

Note: Liability and funded ratio results include both the base benefit and the supplemental benefit.



## **SECTION 2 – SCOPE OF THE REPORT**

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This report presents the actuarial valuation results of the Public Employees’ Retirement Fund as of June 30, 2020. This valuation was prepared at the request of the Indiana Public Retirement System.

Please pay particular attention to our actuarial certification letter, where the guidelines employed in the preparation of this report are outlined. We also comment on the sources and reliability of both the data and the actuarial assumptions upon which our findings are based. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

A summary of the findings which result from this valuation is presented in the previous section. Section 3 describes the assets and investment experience of the plan. Sections 4 and 5 describe how the obligations of the plan are to be met under the actuarial cost method in use. Section 6 provides information required by the Governmental Accounting Standards Board (GASB) for reporting and disclosure under GASB 67 and GASB 68.

This report includes several appendices:

- Appendix A Schedules of valuation data classified by various categories of members.
- Appendix B A summary of the current benefit structure, as determined by the provisions of governing law on June 30, 2020.
- Appendix C A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.
- Appendix D A glossary of actuarial terms.



## SECTION 3 – ASSETS

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In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is June 30, 2020. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the plan, which are generally in excess of assets. The actuarial process then leads to a method of determining the contributions needed by members and the employer in the future to balance the plan assets and liabilities.

### **Market Value of Assets**

The current market value represents the "snapshot" or "cash-out" value of plan assets as of the valuation date. In addition, the market value of assets provides a basis for measuring investment performance from time to time.

Table 1 summarizes the changes in the market value of assets for the last two years for the base benefits, whereas Table 2 shows the changes for the supplemental reserve account. Table 15 (in the GASB section) provides detail regarding the allocation of investments in the trust.

### **Actuarial Value of Assets**

The market value of assets, representing a "cash-out" value of plan assets, may not be the best measure of the plan's ongoing ability to meet its obligations. To arrive at a suitable value of assets for the actuarial valuation, a technique for determining the actuarial value of assets is used which dampens swings in the market value while still indirectly recognizing market values. Under the asset smoothing methodology, the difference between the actual and assumed investment return on the market value of assets is recognized evenly over a five-year period.

Table 3 shows the development of the actuarial value of assets (AVA) as of the valuation date for the base benefits and Table 4 shows the information for the supplemental benefits.



**TABLE 1**  
**DEVELOPMENT OF MARKET VALUE OF ASSETS**  
(Base Benefits)

	June 30, 2019	June 30, 2020
1. Market Value of Assets, Beginning of Year	\$ 12,694,327,690	\$ 13,259,490,887
2. Receipts		
a. Member (Includes Purchased Service) <sup>1</sup>	\$ 294,752	\$ 126,815
b. Employer (Includes Purchased Service) <sup>2</sup>	570,851,947	576,501,775
c. Miscellaneous	882,074	236,722
d. Total	<u>\$ 572,028,773</u>	<u>\$ 576,865,312</u>
3. Expenditures		
a. Benefit Payments	\$ 888,510,777	\$ 922,190,241
b. Refund of Contributions	0	0
c. Member Reassignment Transfers	5,787,037	3,163,150
d. Administrative Expense	18,471,916	18,886,120
e. Miscellaneous Expenditures	0	0
f. Total	<u>\$ 912,769,730</u>	<u>\$ 944,239,511</u>
4. Investment Return		
a. Investment Income	\$ 904,887,104	\$ 333,918,526
b. Securities Lending Income	1,017,050	718,948
c. Total Investment Return	<u>\$ 905,904,154</u>	<u>\$ 334,637,474</u>
5. Market Value of Assets, End of Year: (1) + (2d) - (3f) + (4c)	\$ 13,259,490,887	\$ 13,226,754,162
6. Rate of Return on Market Value of Assets, Net of Expenses <sup>3</sup>	7.08%	2.41%

<sup>1</sup> Includes \$294,752 of member service purchases during fiscal year 2019 and \$126,815 of member service purchases during fiscal year 2020.

<sup>2</sup> Includes \$23,003 of employer service purchases during fiscal year 2019 and \$197,135 of employer service purchases during fiscal year 2020.

<sup>3</sup> Based on individual fund experience. Assumes cash flows occur at mid-year.



**TABLE 2**  
**DEVELOPMENT OF MARKET VALUE OF ASSETS**  
 (Supplemental Benefits)

	June 30, 2019	June 30, 2020
1. Market Value of Assets, Beginning of Year	\$ 0	\$ 11,505,584
2. Receipts		
a. Employer Surcharge	\$ 11,021,737	\$ 22,598,704
b. Lottery Allocation	0	0
c. Miscellaneous	0	0
d. Total	<u>\$ 11,021,737</u>	<u>\$ 22,598,704</u>
3. Expenditures		
a. Benefit Payments	\$ 0	\$ 0
b. Administrative Expense	0	0
c. Miscellaneous Expenditures	0	0
d. Total	<u>\$ 0</u>	<u>\$ 0</u>
4. Investment Return		
a. Investment Income	\$ 483,707	\$ 500,247
b. Securities Lending Income	140	1,264
c. Total Investment Return	<u>\$ 483,847</u>	<u>\$ 501,511</u>
5. Market Value of Assets, End of Year: (1) + (2d) - (3d) + (4c)	\$ 11,505,584	\$ 34,605,799
6. Rate of Return on Market Value of Assets, Net of Expenses <sup>1</sup>	8.78%	2.20%

<sup>1</sup>Based on individual fund experience. Assumes cash flows occur at mid-year.



**SECTION 3 – ASSETS****TABLE 3****DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS  
(Base Benefits)**

		<b>For Plan Year Ending June 30, 2020</b>		
1. Market Value, as of June 30, 2019		\$	13,259,490,887	
2. Receipts <sup>1</sup>		\$	576,865,312	
3. Expenditures, Net of Administrative Expenses <sup>2</sup>		\$	(925,353,391)	
4. Expected Return on Assets <sup>3</sup>		\$	883,254,162	
5. Expected Market Value as of June 30, 2020: (1) + (2) + (3) + (4)		\$	13,794,256,970	
6. Actual Market Value as of June 30, 2020		\$	13,226,754,162	
7. Year end 2020 asset gain/(loss): (6) - (5)		\$	(567,502,808)	
8. Deferred Investment Gains and Losses				
	Year Ended June 30:	Gain/(Loss)	Factor	Deferred Amount
a.	2017	\$ 95,467,510	20%	\$ 19,093,502
b.	2018	279,267,274	40%	111,706,910
c.	2019	41,441,699	60%	24,865,019
d.	2020	(567,502,808)	80%	(454,002,246)
e.	Total			\$ (298,336,815)
9. Initial Actuarial Value as of June 30, 2020: (6) - (8e)		\$	13,525,090,977	
10. Constraining Values				
a.	80% of Market Value: (6) x 0.8		\$ 10,581,403,330	
b.	120% of Market Value: (6) x 1.2		\$ 15,872,104,994	
11. Actuarial Value as of June 30, 2020		\$	13,525,090,977	
12. Actuarial Rate of Return, Net of Expenses <sup>4</sup>			5.61%	
13. Actuarial Value of Assets as a Percent of Market Value: (11) / (6)			102.3%	
14. Actuarial Value of Assets				
a.	Base Benefits	\$	13,525,090,977	
b.	Supplemental Benefits	\$	35,368,939	
c.	Total	\$	13,560,459,916	

<sup>1</sup> Includes Employer Contributions, Employee Service Purchases, and Miscellaneous Receipts.<sup>2</sup> Includes DB Benefit Payments, Member Reassignment Transfers, and Miscellaneous Expenses.<sup>3</sup> Assumes cash flows occur at mid-year and a return assumption of 6.75%.<sup>4</sup> Assumes cash flows occur at mid-year.

**SECTION 3 – ASSETS****TABLE 4****DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS  
(Supplemental Benefits)**

		<b>For Plan Year Ending June 30, 2020</b>		
1. Market Value, as of June 30, 2019	\$		11,505,584	
2. Receipts	\$		22,598,704	
3. Expenditures, Net of Administrative Expenses	\$		0	
4. Expected Return on Assets <sup>1</sup>	\$		1,539,333	
5. Expected Market Value as of June 30, 2020: (1) + (2) + (3) + (4)	\$		35,643,621	
6. Actual Market Value as of June 30, 2020	\$		34,605,799	
7. Year end 2020 asset gain/(loss): (6) - (5)	\$		(1,037,822)	
8. Deferred Investment Gains and Losses				
	Year Ended June 30:	Gain/(Loss)	Factor	Deferred Amount
a.	2017	\$ 0	20%	\$ 0
b.	2018	0	40%	0
c.	2019	111,863	60%	67,118
d.	2020	(1,037,822)	80%	(830,258)
e.	Total			\$ (763,140)
9. Initial Actuarial Value as of June 30, 2020: (6) - (8e)	\$			35,368,939
10. Constraining Values				
a.	80% of Market Value: (6) x 0.8			\$ 27,684,639
b.	120% of Market Value: (6) x 1.2			\$ 41,526,959
11. Actuarial Value as of June 30, 2020	\$			35,368,939
12. Actuarial Rate of Return, Net of Expenses <sup>2</sup>				5.96%
13. Actuarial Value of Assets as a Percent of Market Value: (11) / (6)				102.2%

<sup>1</sup> Assumes cash flows occur at mid-year and a return assumption of 6.75%.<sup>2</sup> Assumes cash flows occur at mid-year.



## SECTION 4 – PLAN LIABILITIES

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In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of assets of the Public Employees' Retirement Fund as of the valuation date, June 30, 2020. In this section, the discussion will focus on the commitments (future benefit payments) of the plan, which are referred to as its liabilities.

The liability calculations for the June 30, 2020 Public Employees' Retirement Fund valuation are based on census data collected as of June 30, 2019. Standard actuarial techniques are used to adjust these results from June 30, 2019 to June 30, 2020. While these roll-forward techniques are based on all actuarial assumptions being met during the intervening year, there will, of course, be many of the assumptions that will not be met exactly. In general, this does not materially affect the resulting calculations or conclusions in this report. Should there be a year in which events, such as plan changes, occur that would affect the results, adjustments in the roll-forward methods would be made to appropriately reflect the events.

All liabilities reflect the benefit provisions and actuarial assumptions in place as of June 30, 2020.

### **Actuarial Accrued Liability**

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to the period in which benefits are earned, rather than to the period of benefit distribution. An actuarial cost method is a mathematical technique that allocates the present value of future benefits into annual costs. In order to do this allocation, it is necessary for the funding method to "breakdown" the present value of future benefits into two components:

- (1) that which is attributable to the past and
- (2) that which is attributable to the future.

Actuarial terminology calls the part attributable to the past the "past service liability" or the "actuarial accrued liability." The portion allocated to the future is known as the present value of future normal costs, with the specific piece of it allocated to the current year being called the "normal cost."

Table 5 contains the calculation of actuarial accrued liability for the Plan under the Entry Age Normal actuarial cost. This amount is split between the base benefit and the supplemental benefit. Once permanent COLAs have been granted, the obligation for future payments will also be included.



SECTION 4 – PLAN LIABILITIES

TABLE 5

ACTUARIAL ACCRUED LIABILITY  
(Base and Supplemental Benefits)

As of June 30, 2020	Base Benefits	Supplemental Benefits		Total
		Granted	Future	
1. Actuarial Accrued Liability				
a. Active & Inactive Members	\$ 7,882,613,067	\$ 0	\$ 348,350,123	\$ 8,230,963,190
b. In-pay Members	7,849,314,603	0	201,476,442	8,050,791,045
c. Total	\$ 15,731,927,670	\$ 0	\$ 549,826,565	\$ 16,281,754,235
2. Actuarial Value of Assets	\$ 13,525,090,977	\$ 0	\$ 35,368,939	\$ 13,560,459,916
3. Unfunded Actuarial Accrued Liability: (1c) - (2)	\$ 2,206,836,693	\$ 0	\$ 514,457,626	\$ 2,721,294,319
4. Funded Ratio: (2) / (1c)	86.0%	N/A	6.4%	83.3%



**SECTION 4 – PLAN LIABILITIES**

**TABLE 6**  
**SOLVENCY TEST**  
**(Base and Supplemental Benefits)**

Actuarial Valuation as of June 30	Actuarial Accrued Liabilities (AAL)				Actuarial Value of Assets	Portion of AAL Covered by Assets			
	Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities		Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities
2020	\$0	\$8,050,791	\$8,230,963	\$16,281,754	\$13,560,460	N/A	100.0%	66.9%	83.3%
2019	0	8,068,490	8,507,570	16,576,060	13,157,802	N/A	100.0	59.8	79.4
2018	0	7,768,231	8,323,142	16,091,373	12,823,930	N/A	100.0	60.7	79.7
2017	2,770,962	7,834,962	8,500,291	19,106,215	15,098,920	100.0	100.0	52.9	79.0
2016	2,656,892	7,595,088	8,156,966	18,408,946	14,553,059	100.0	100.0	52.7	79.1
2015	2,717,173	6,981,308	8,282,087	17,980,568	14,131,884	100.0	100.0	53.5	78.6
2014	2,851,501	6,250,902	7,629,820	16,732,223	13,791,261	100.0	100.0	61.5	82.4
2013	2,796,103	6,367,819	6,981,759	16,145,681	12,947,283	100.0	100.0	54.2	80.2
2012	2,749,449	5,895,779	7,139,012	15,784,240	12,088,225	100.0	100.0	48.2	76.6
2011	2,805,023	5,370,786	6,737,338	14,913,147	12,000,586	100.0	100.0	56.8	80.5

Note: Dollar amounts are in thousands of dollars. Amounts before 2018 reflect the inclusion of DC balances in both the active member contributions and the assets.



TABLE 7

RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY  
(Base Benefits)

	<b>For Year Ending June 30, 2020</b>
1. Unfunded Actuarial Accrued Liability as of June 30, 2019	\$ 2,890,623,943
2. Normal Cost	192,073,456
3. Actuarially Determined Contribution	(430,418,226)
4. Interest	<u>179,028,844</u>
5. Expected Unfunded Actuarial Accrued Liability as of June 30, 2020	\$ 2,831,308,017
6. Actuarial Value of Asset Changes	
a. Investment Experience (Gain)/Loss	\$ 148,426,447
b. Contributions (Above)/Below the Actuarially Determined Contribution and Other (Gain)/Loss	\$ (135,099,804)
7. Actuarial Accrued Liability Changes	
a. Actuarial Accrued Liability Experience (Gain)/Loss	\$ (59,239,000)
b. Additional Liability Due to Benefit Changes	0
c. Additional Liability Due to Assumption Changes	<u>(578,558,967)</u>
8. Total Experience (Gain)/Loss	\$ (624,471,324)
9. Unfunded Actuarial Accrued Liability as of June 30, 2020: (5) + (8)	\$ 2,206,836,693



**TABLE 8**  
**ACTUARIAL GAIN/(LOSS)**  
**(Base Benefits)**

<b>Liabilities</b>	
1. Actuarial Accrued Liability as of June 30, 2019	\$ 16,037,009,869
2. Normal Cost for Plan Year Ending June 30, 2020	192,073,456
3. Benefit Payments During Plan Year <sup>1</sup>	(920,808,502)
4. Service Purchases (employee and employer)	323,950
5. Member Reassignment Transfers	(3,163,150)
6. Interest at 6.75%	1,064,290,014
7. Change Due to Benefit Changes	0
8. Change Due to Assumption Changes	(578,558,967)
9. Expected Actuarial Accrued Liability as of June 30, 2020	\$ 15,791,166,670
10. Actuarial Accrued Liability as of June 30, 2020	\$ 15,731,927,670
<b>Assets</b>	
11. Actuarial Value of Assets as of June 30, 2019	\$ 13,146,385,926
12. Receipts During Plan Year	576,865,312
13. Expenditures, Excluding Expenses, During Plan Year	(925,353,391)
14. Interest at 6.75%	875,619,577
15. Expected Actuarial Value of Assets as of June 30, 2020	\$ 13,673,517,424
16. Actuarial Value of Assets as of June 30, 2020	\$ 13,525,090,977
<b>Experience Gain / (Loss)</b>	
17. Liability Actuarial Experience Gain/(Loss): (9) - (10)	\$ 59,239,000
18. Asset Actuarial Experience Gain/(Loss): (16) - (15)	(148,426,447)
19. Total Actuarial Experience Gain/(Loss): (17) + (18)	\$ (89,187,447)

<sup>1</sup> Does not include miscellaneous expenses or benefit overpayments.





**TABLE 9**  
**EXPERIENCE GAIN/(LOSS) ANALYSIS BY SOURCE**  
(Base Benefits)

<b>Liability Sources (in thousands)</b>		<b>Gain/(Loss)</b>
Retirement	\$	7,951
Termination		13,005
Disability		(2,272)
Mortality		31,525
Salary		25,429
New Entrants/Rehires		(37,510)
Miscellaneous/COLA		21,111
Total Liability Experience Gain/(Loss)	\$	59,239
as a % of AAL		0.4%
Asset Experience Gain/(Loss)	\$	(148,426)
Net Actuarial Experience Gain/(Loss)	\$	(89,187)



**TABLE 10**

**PROJECTED BENEFIT PAYMENTS**  
(Base and Supplemental Benefits)

<b>Plan Year Ending June 30</b>	<b>Benefit Amount</b>
2021	\$ 1,010,578,334
2022	1,017,662,960
2023	1,060,971,927
2024	1,102,611,408
2025	1,137,928,020
2026	1,172,801,836
2027	1,205,572,069
2028	1,235,369,998
2029	1,262,344,897
2030	1,286,483,069
2031	1,307,194,573
2032	1,324,868,997
2033	1,338,363,947
2034	1,349,025,231
2035	1,357,367,120
2036	1,362,002,005
2037	1,363,707,924
2038	1,361,555,725
2039	1,356,966,079
2040	1,350,416,947
2041	1,341,159,281
2042	1,328,936,360
2043	1,314,466,935
2044	1,297,720,606
2045	1,279,443,404
2046	1,259,049,752
2047	1,236,869,430
2048	1,212,933,799
2049	1,187,401,402
2050	1,160,229,657

Note: Payouts reflect nominal payouts for current members, assuming that all future assumptions are met.

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## SECTION 5 – EMPLOYER CONTRIBUTIONS

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The previous two sections were devoted to a discussion of the assets and liabilities of the plan. We now turn to considering how the benefits will be funded. The method used to determine the incidence of the contributions in various years is called the actuarial cost method. Under an actuarial cost method, the contributions required to meet the difference between current assets and current liabilities are allocated each year between two elements: (1) the normal cost rate and (2) the unfunded actuarial accrued liability contribution rate.

The term “fully funded” is often applied to a plan in which contributions at the normal cost rate are sufficient to pay for the benefits of existing employees as well as for those of new employees. More often than not, plans are not fully funded, either because of past benefit improvements that have not been completely funded, contribution levels, or because of actuarial deficiencies that have occurred because experience has not been as favorable as anticipated by the actuarial assumptions. Under these circumstances, an unfunded actuarial accrued liability (UAAL) exists. Likewise, when the actuarial value of assets is greater than the actuarial accrued liability, a surplus exists.

### **Description of Contribution Rate Components**

The Entry Age Normal (EAN) actuarial cost method is used for the valuation. Under that method, the normal cost for each year from entry age to assumed exit age is a constant percentage of the member's year by year projected compensation. The portion of the present value of future benefits not provided by the present value of future normal costs is the actuarial accrued liability. The unfunded actuarial accrued liability/(surplus) represents the difference between the actuarial accrued liability and the actuarial value of assets as of the valuation date. For PERF purposes, this calculation excludes consideration of future COLAs. The unfunded actuarial accrued liability is calculated each year and reflects experience gains and losses. New amortization bases are funded over 20 years.

Funding for future COLAs is provided by using a surcharge. This rate is intended to fund the COLAs anticipated to be granted in the next biennium by the start of that biennium.

In general, contributions are computed in accordance with a level percent-of-payroll funding objective. The contribution rate based on the June 30, 2020 actuarial valuation will be used to calculate the actuarially determined employer contribution rate to the Public Employees’ Retirement Fund for the plan year beginning July 1, 2021 for state employers and for the calendar year beginning January 1, 2022 for the political subdivisions. The supplemental benefit surcharge rate will be used to calculate the actuarially determined employer contribution rate for the 2021 calendar year.

### **Contribution Rate Summary**

In Table 11 the amortization payment related to the unfunded actuarial accrued liability/(surplus), as of June 30, 2020, is developed. The surcharge needed to fund the assumed COLAs is developed in Table 12. Table 13 develops the actuarial required contribution rate for the Plan. The contribution rates shown in this report are based on the actuarial assumptions and cost methods described in Appendix C. Additionally, in Table 14 the contribution amounts under alternative discount rates are provided to illustrate the sensitivity of the contribution requirements relative to the selection of the investment return assumption.

**SECTION 5 – EMPLOYER CONTRIBUTIONS****TABLE 11****SCHEDULE OF AMORTIZATION BASES  
(Base Benefits)**

<b>Amortization Bases <sup>1</sup></b>	<b>Original Amount <sup>2</sup></b>	<b>June 30, 2020 Remaining Payments</b>	<b>Date of Last Payment</b>	<b>Outstanding Balance as of June 30, 2020</b>	<b>Annual Contribution</b>
2006 Fresh Start - Political Only	233,415,887	16	7/1/2036	176,158,276	17,180,318
2007 UAAL Base - Political Only	4,630,369	17	7/1/2037	3,593,295	338,826
2008 State Fresh Start and PSD Experience	91,514,739	18	7/1/2038	73,653,479	6,735,841
2009 UAAL Base	618,751,215	19	7/1/2039	512,041,158	45,542,498
2010 UAAL Base	1,223,323,148	20	7/1/2040	1,038,377,091	90,041,345
2011 UAAL Base	788,425,716	21	7/1/2041	684,943,522	58,031,201
2012 UAAL Base	817,830,775	22	7/1/2042	725,759,088	60,195,529
2013 UAAL Base	(450,263,746)	23	7/1/2043	(407,448,325)	(33,141,164)
2014 UAAL Base	(211,870,908)	24	7/1/2044	(195,195,630)	(15,594,523)
2015 UAAL Base	954,017,677	25	7/1/2045	893,574,736	70,219,414
2016 UAAL Base	67,185,548	16	7/1/2036	59,735,789	5,825,896
2017 UAAL Base	217,123,363	17	7/1/2037	199,668,748	18,827,534
2018 UAAL Base	(1,186,925,679)	18	7/1/2038	(1,125,412,789)	(102,922,518)
2019 UAAL Base	196,792,517	19	7/1/2039	191,859,579	17,064,574
2020 UAAL Base	(624,471,324)	20	7/1/2040	<u>(624,471,324)</u>	<u>(54,150,114)</u>
Total				\$ 2,206,836,693	\$ 184,194,657
1. Total UAAL Amortization Payments					\$ 184,194,657
2. Projected Payroll for FY 2021					\$ 5,528,816,114
3. UAAL Amortization Payment Rate					3.33%
4. Remaining Amortization Period in Years (Weighted) <sup>3</sup>					21.9

<sup>1</sup> Amortization bases prior to 2018 are the State and Political Subdivision bases combined.<sup>2</sup> The original amounts from 2017 to 2013 were provided by the prior actuary. Amounts prior to that were estimated by INPRS.<sup>3</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 5 – EMPLOYER CONTRIBUTIONS**

**TABLE 12**

**DEVELOPMENT OF SURCHARGE RATE**  
(Supplemental Benefits)

**Projected COLAs in Next Biennium Beginning July 1, 2021**

First Anticipated COLA

1. Date of COLA commencement		January 1, 2022
2. Rate of COLA		0.4%
3. Value as of July 1, 2021 of COLA	\$	30,356,220

Second Anticipated COLA

4. Date of COLA commencement		January 1, 2023
5. Rate of COLA		0.4%
6. Value as of July 1, 2021 of COLA		29,587,947
7. Total COLA Funding Requirement as of July 1, 2021: (3) + (6)	\$	59,944,167

**Funding Sources for Projected COLAs**

8. Assets as of June 30, 2020 Available for Future COLAs	\$	35,368,939
9. Projected Contributions from 7/1/20 to 12/31/20		11,773,822
10. Expected Earnings through July 1, 2021		2,983,453
11. Projected Available Assets at July 1, 2021	\$	50,126,214
12. Required Additional Funding for Anticipated COLAs: (7) - (11)		9,817,953

**Surcharge Rate**

13. Projected Payroll from 1/1/21 to 6/30/21		2,675,868,565
14. Value of (13) as of July 1, 2021	\$	2,721,023,847
15. Surcharge Rate: (12)/(14)		0.37%



**SECTION 5 – EMPLOYER CONTRIBUTIONS**

**TABLE 13**

**ACTUARIAL REQUIRED CONTRIBUTION RATE**  
(Base and Supplemental Benefits)

	<u>Base Benefits</u>	<u>Supplemental Benefits</u>	<u>Total</u>
1. Projected Payroll for FY 2021	\$ 5,528,816,114		
2. Normal Cost Rate as of June 30, 2019 Census	3.56%	0.17%	3.73%
a. State Normal Cost Rate	3.11%	0.15%	3.26%
b. Political Subdivision Normal Cost Rate	3.76%	0.18%	3.94%
3. Amortization of UAAL as of June 30, 2020			
a. Dollar Amount	\$ 184,194,657		
b. Percent of Projected Pay	3.33%		
4. Preliminary Actuarially Determined Contribution Rate: (2) + (3b)	6.89%		
5. Supplemental Benefit Surcharge Rate (May not exceed 1%)		0.37%	
6. Actuarially Determined Contribution Rate	6.89%	0.37%	
7. Board Policy Surcharge Rate (for 2021 calendar year)		0.44%	
8. Board Policy Contribution Rate			11.20%



**SECTION 5 – EMPLOYER CONTRIBUTIONS**

**TABLE 14**  
**INVESTMENT RETURN SENSITIVITY**  
(Base and Supplemental Benefits)

	<b>1.00% Decrease: (5.75%)</b>	<b>0.75% Decrease: (6.00%)</b>	<b>0.50% Decrease: (6.25%)</b>	<b>0.25% Decrease: (6.50%)</b>	<b>Current Assumption: (6.75%)</b>
<b>Funded Status</b>					
Actuarial Accrued Liability	\$18,185,629,999	\$17,676,730,960	\$17,190,608,882	\$16,726,008,892	\$16,281,754,235
Actuarial Value of Assets	13,560,459,916	13,560,459,916	13,560,459,916	13,560,459,916	13,560,459,916
Unfunded Actuarial Accrued Liability	\$4,625,170,083	\$4,116,271,044	\$3,630,148,966	\$3,165,548,976	\$2,721,294,319
Funded Ratio	74.6%	76.7%	78.9%	81.1%	83.3%
<b>Actuarially Determined Contribution Amount</b>					
Normal Cost	\$269,474,042	\$251,824,065	\$235,465,770	\$220,297,193	\$206,224,841
UAAL Amortization	366,071,058	331,108,753	296,589,924	262,494,930	228,805,092
Actuarially Determined Contribution Amount	\$635,545,100	\$582,932,818	\$532,055,694	\$482,792,123	\$435,029,933
Actuarially Determined Contribution Rate	11.50%	10.54%	9.62%	8.73%	7.87%
	<b>0.25% Increase: (7.00%)</b>	<b>0.50% Increase: (7.25%)</b>	<b>0.75% Increase: (7.50%)</b>	<b>1.00% Increase: (7.75%)</b>	<b>1.25% Increase: (8.00%)</b>
<b>Funded Status</b>					
Actuarial Accrued Liability	\$15,856,741,013	\$15,449,933,306	\$15,060,358,619	\$14,687,103,681	\$14,329,310,509
Actuarial Value of Assets	13,560,459,916	13,560,459,916	13,560,459,916	13,560,459,916	13,560,459,916
Unfunded Actuarial Accrued Liability	\$2,296,281,097	\$1,889,473,390	\$1,499,898,703	\$1,126,643,765	\$768,850,593
Funded Ratio	85.5%	87.8%	90.0%	92.3%	94.6%
<b>Actuarially Determined Contribution Amount</b>					
Normal Cost	\$193,162,956	\$181,032,863	\$169,762,361	\$159,285,169	\$149,540,425
UAAL Amortization	195,502,661	162,570,773	129,993,412	97,755,371	65,842,220
Actuarially Determined Contribution Amount	\$388,665,617	\$343,603,636	\$299,755,773	\$257,040,540	\$215,382,645
Actuarially Determined Contribution Rate	7.03%	6.21%	5.42%	4.65%	3.90%

Note: Comparisons are based on funding the COLA in the same method as the base benefit, rather than with a surcharge. Consequently, these results are for comparative purposes only and will not match the actual results under the funding policy.





## **SECTION 6 – GASB INFORMATION**

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### **GASB NO. 67 AND GASB NO. 68**

The Governmental Accounting Standards Board issued Statement No. 67 (GASB 67), “Financial Reporting for Pension Plans” and Statement No. 68 (GASB 68), “Accounting and Financial Reporting for Pensions” in June 2012. The effective date for reporting under GASB 67 for the INPRS Plans was the fiscal year ending June 30, 2014. GASB 68’s effective date for employers is the first fiscal year beginning after June 15, 2014.

The sections that follow provide the results of all the required calculations, presented in the order set out in GASB 68 for note disclosure and Required Supplementary Information (RSI). Some of this information was provided by the INPRS for use in this report.

The discount rate used for these disclosures is the assumed return on assets of 6.75%. We have verified that the current assets in conjunction with future contributions made on behalf of current members (including all contributions to fund any past service liability) will be sufficient to make the anticipated benefit payments to be provided to the current members.

To the best of our knowledge, the information contained in this report is complete and accurate. The calculations were performed by qualified actuaries according to generally accepted actuarial principles and practices, as well as in conformity with Actuarial Standards of Practice issued by the Actuarial Standards Board. The calculations are based on the current provisions of the plan, and on actuarial assumptions that are internally consistent and individually reasonable based on the actual experience of the plan. In addition, the calculations were completed in compliance with applicable law and, in our opinion, meet the requirements of GASB 67 and GASB 68.



TABLE 15

## STATEMENT OF FIDUCIARY NET POSITION

	June 30, 2020
<b>1. Assets</b>	
a. Cash	\$ 1,185,157
b. Receivables	
i. Contributions and Miscellaneous Receivables	\$ 5,287,868
ii. Investments Receivable	365,818,158
iii. Foreign Exchange Contracts Receivable	3,108,664,479
iv. Interest and Dividends	30,524,254
v. Receivables Due From Other Funds	3,227,283
vi. Total Receivables	\$ 3,513,522,042
c. Investments	
i. Short-Term Investments	\$ 0
ii. Pooled Repurchase Agreements	3,061,297
iii. Pooled Short-Term Investments	602,036,642
iv. Pooled Fixed Income	4,582,283,940
v. Pooled Equity	2,940,672,219
vi. Pooled Alternative Investments	5,720,186,934
vii. Pooled Derivatives	6,081,473
viii. Pooled Investments	0
ix. Securities Lending Collateral	68,600,031
x. Total Investments	\$ 13,922,922,536
d. Net Capital Assets	4,600,280
e. Other Assets	228,654
f. Total Assets: a + b(vi) + c(x) + d + e	\$ 17,442,458,669
<b>2. Liabilities</b>	
a. Administrative Payable	\$ 8,194,138
b. Retirement Benefits Payable	911,509
c. Investments Payable	819,908,478
d. Foreign Exchange Contracts Payable	3,115,936,608
e. Securities Lending Obligations	68,600,031
f. Securities Sold Under Agreement to Repurchase	167,547,944
g. Due To Other Funds	0
h. Due to Other Governments	0
i. Total Liabilities: a + b + c + d + e + f + g + h	\$ 4,181,098,708
<b>3. Fiduciary Net Position Restricted for Pensions: (1)(f) - (2)(i)</b>	<b>\$ 13,261,359,961</b>



TABLE 16

## STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

		For Fiscal Year Ending June 30, 2020
<b>1. Fiduciary Net Position as of June 30, 2019</b>	\$	<b>13,270,996,471</b>
<b>2. Additions</b>		
a. Contributions		
i. Member Contributions		0
ii. Employer Contributions		598,903,344
iii. Service Purchases (Employer and Member) <sup>1</sup>		323,950
iv. Non-Employer Contributing Entity Contributions		0
v. Total Contributions	\$	599,227,294
b. Investment Income/(Loss)		
i. Net Appreciation/(Depreciation)	\$	314,975,614
ii. Net Interest and Dividend Income		110,685,474
iii. Securities Lending Income		933,196
iv. Other Net Investment Income		1,501,876
v. Investment Management Expenses		(86,582,577)
vi. Direct Investment Expenses		(6,161,614)
vii. Securities Lending Expenses		(212,984)
viii. Total Investment Income/(Loss)	\$	335,138,985
c. Other Additions		
i. Member Reassignments		4,244,053
ii. Miscellaneous Receipts		236,722
iii. Total Other Additions	\$	4,480,775
d. Total Revenue (Additions): a(v) + b(viii) + c(iii)	\$	938,847,054
<b>3. Deductions</b>		
a. Pension, Survivor and Disability Benefits	\$	922,190,241
b. Death and Funeral Benefits		0
c. Distributions of Contributions and Interest		0
d. Administrative Expenses <sup>2</sup>		18,886,120
e. Member Reassignments		7,407,203
f. Miscellaneous Expenses		0
g. Total Expenses (Deductions)	\$	948,483,564
<b>4. Net Increase (Decrease) in Fiduciary Net Position: (2)(d) - (3)(g)</b>	\$	<b>(9,636,510)</b>
<b>5. Fiduciary Net Position as of June 30, 2020: (1) + (4)</b>	\$	<b>13,261,359,961</b>

<sup>1</sup> Service purchases paid by employer of \$197,135 and employee of \$126,815.

<sup>2</sup> Includes \$1,274,150 of hybrid plan contributions and \$326,352 of My Choice plan contributions made by INPRS.



TABLE 17

## SCHEDULE OF CHANGES IN NET PENSION LIABILITY

	For Fiscal Year Ending June 30, 2020		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
<b>1. Balance at June 30, 2019</b>	\$ 16,576,060,167	\$ 13,270,996,471	\$ 3,305,063,696
<b>2. Changes for the Year:</b>			
Service Cost (SC) <sup>1</sup>	201,143,591		201,143,591
Interest Cost	1,101,241,510		1,101,241,510
Experience (Gains)/Losses	(54,831,797)		(54,831,797)
Assumption Changes	(616,829,795)		(616,829,795)
Plan Amendments	0		0
Benefit Payments	(922,190,241)	(922,190,241)	0
Service Purchases			
Employer Contributions	197,135	197,135	0
Employee Contributions	126,815	126,815	0
Member Reassignments <sup>2</sup>	(3,163,150)	(3,163,150)	0
Employer Contributions <sup>3</sup>		598,903,344	(598,903,344)
Non-employer Contributions		0	0
Employee Contributions		0	0
Net Investment Income		335,138,985	(335,138,985)
Administrative Expenses <sup>4</sup>		(18,886,120)	18,886,120
Other		236,722	(236,722)
Net Changes	\$ (294,305,932)	\$ (9,636,510)	\$ (284,669,422)
<b>3. Balance at June 30, 2020</b>	\$ 16,281,754,235	\$ 13,261,359,961	\$ 3,020,394,274

<sup>1</sup> Service cost provided as of beginning of year. Interest to end of year is included in the interest cost.

<sup>2</sup> Includes net interfund transfers of employer contributed amounts.

<sup>3</sup> Includes \$5,030,000 of state appropriations to the fund.

<sup>4</sup> Includes contributions made by INPRS for its employees of \$1,274,150 in the hybrid plan and \$326,352 in the My Choice plan.



**TABLE 18**  
**DEFERRED OUTFLOWS OF RESOURCES**

	June 30, 2019	Remaining Period	Recognition	June 30, 2020
<b>1. Liability Experience</b>				
June 30, 2020 Loss	\$ 0	3.84	\$ 0	\$ 0
June 30, 2019 Loss	74,968,024	2.86	26,212,596	48,755,428
June 30, 2018 Loss	9,872,650	1.93	5,115,364	4,757,286
June 30, 2017 Loss	2,676,245	0.10	2,676,245	0
June 30, 2016 Loss	0	0.00	0	0
June 30, 2015 Loss	0	0.00	0	0
June 30, 2014 Loss	0	0.00	0	0
<b>2. Assumption Changes</b>				
June 30, 2020 Loss	\$ 0	3.84	\$ 0	\$ 0
June 30, 2019 Loss	0	2.86	0	0
June 30, 2018 Loss	0	1.93	0	0
June 30, 2017 Loss	735,779	0.10	735,779	0
June 30, 2016 Loss	0	0.00	0	0
June 30, 2015 Loss	0	0.00	0	0
June 30, 2014 Loss	0	0.00	0	0
<b>3. Investment Experience</b>				
June 30, 2020 Loss	\$ 549,017,104	5.00	\$ 109,803,421	\$ 439,213,683
June 30, 2019 Loss	0	4.00	0	0
June 30, 2018 Loss	0	3.00	0	0
June 30, 2017 Loss	0	2.00	0	0
June 30, 2016 Loss	120,788,953	1.00	120,788,953	0
<b>Total Outflows:</b>				
<b>(1)+(2)+(3)</b>	<b>\$ 758,058,755</b>		<b>\$ 265,332,358</b>	<b>\$ 492,726,397</b>

Information was provided prospectively from June 30, 2013 for GASB No. 68 purposes. Results prior to 2018 were produced by the prior actuary.

In accordance with GASB, the original amortization period for liability experience and assumption changes are amortized over the expected future working lifetime of all members, whereas the investment experience is amortized over five years.



**TABLE 19**  
**DEFERRED INFLOWS OF RESOURCES**

	June 30, 2019	Remaining Period	Recognition	June 30, 2020
<b>1. Liability Experience</b>				
June 30, 2020 Gain	\$ 54,831,797	3.84	\$ 14,279,114	\$ 40,552,683
June 30, 2019 Gain	0	2.86	0	0
June 30, 2018 Gain	0	1.93	0	0
June 30, 2017 Gain	0	0.10	0	0
June 30, 2016 Gain	0	0.00	0	0
June 30, 2015 Gain	0	0.00	0	0
June 30, 2014 Gain	0	0.00	0	0
<b>2. Assumption Changes</b>				
June 30, 2020 Gain	\$ 616,829,795	3.84	\$ 160,632,760	\$ 456,197,035
June 30, 2019 Gain	0	2.86	0	0
June 30, 2018 Gain	359,284,828	1.93	186,157,943	173,126,885
June 30, 2017 Gain	0	0.10	0	0
June 30, 2016 Gain	0	0.00	0	0
June 30, 2015 Gain	0	0.00	0	0
June 30, 2014 Gain	0	0.00	0	0
<b>3. Investment Experience</b>				
June 30, 2020 Gain	\$ 0	5.00	\$ 0	\$ 0
June 30, 2019 Gain	48,519,124	4.00	12,129,782	36,389,342
June 30, 2018 Gain	180,488,856	3.00	60,162,953	120,325,903
June 30, 2017 Gain	48,002,978	2.00	24,001,491	24,001,487
June 30, 2016 Gain	0	1.00	0	0
<b>Total Inflows:</b>				
<b>(1)+(2)+(3)</b>	<b>\$ 1,307,957,378</b>		<b>\$ 457,364,043</b>	<b>\$ 850,593,335</b>

Information was provided prospectively from June 30, 2013 for GASB No. 68 purposes. Results prior to 2018 were produced by the prior actuary.

In accordance with GASB, the original amortization period for liability experience and assumption changes are amortized over the expected future working lifetime of all members, whereas the investment experience is amortized over five years.



TABLE 20

DEFERRED INFLOWS / OUTFLOWS TO BE RECOGNIZED IN PENSION EXPENSE

<b>Fiscal Year Ending June 30</b>	<b>Deferred Outflows</b>	<b>Deferred Inflows</b>	<b>Net Deferred Outflows/(Inflows)</b>
Current Year:			
2020	\$ 265,332,358	\$ 457,364,043	\$ (192,031,685)
Future Years:			
2021	\$ 140,773,303	\$ 444,332,981	\$ (303,559,678)
2022	132,346,253	247,204,606	(114,858,353)
2023	109,803,421	159,055,748	(49,252,327)
2024	109,803,420	0	109,803,420
2025	0	0	0
Thereafter	0	0	0



**SECTION 6 – GASB INFORMATION****TABLE 21****PENSION EXPENSE UNDER GASB NO. 68**

	<b>For Fiscal Year Ending June 30, 2020</b>	
1. Service Cost, beginning of year	\$	201,143,591
2. Interest Cost, including interest on service cost		1,101,241,510
3. Member Contributions <sup>1</sup>		0
4. Administrative Expenses <sup>2</sup>		17,285,618
5. Expected Return on Assets <sup>3</sup>		(884,156,089)
6. Plan Amendments		0
7. Recognition of Deferred Inflows / Outflows of Resources Related to:		
a. Liability Experience (Gains) / Losses	19,725,091	
b. Assumption Change (Gains) / Losses	(346,054,924)	
c. Investment Experience (Gains) / Losses	<u>134,298,148</u>	
d. Total: (7a)+(7b)+(7c)		(192,031,685)
8. Miscellaneous (Income) / Expense		(236,722)
9. Total Collective Pension Expense: (1)+(2)+(3)+(4)+(5)+(6)+(7d)+(8)		243,246,223
10. Employer Service Purchases <sup>4</sup>		197,135
<b>Pension Expense / (Income): (9) + (10)</b>	<b>\$</b>	<b>243,443,358</b>

<sup>1</sup> Excludes member paid service purchases of \$126,815.<sup>2</sup> Excludes contributions made by INPRS for its employees of \$1,274,150 in the hybrid plan and \$326,352 in the My Choice plan.<sup>3</sup> Cash flows assumed to occur mid-year.<sup>4</sup> To be expensed by the employers who purchased the service.



**GASB NO. 67 and GASB NO. 68  
NOTES TO THE FINANCIAL STATEMENTS**

The material presented herein is a subset of the information requested as Notes to the Financial Statements. Required information not provided herein is to be supplied by the plan.

**Actuarial Assumptions and Inputs**

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

Type of Plan	The Public Employees’ Retirement Fund is a cost-sharing multiple-employer plan for GASB accounting purposes.
Measurement Date	June 30, 2020
Valuation Date	
Assets:	June 30, 2020
Liabilities:	June 30, 2019 – The TPL as of June 30, 2020 was determined based on an actuarial valuation prepared as of June 30, 2019 rolled forward one year to June 30, 2020, using the following key actuarial assumptions and other inputs, such as benefit accruals and actual benefit payments during that time period.
Inflation	2.25%
Future Salary Increases	2.75% - 8.75% based on service
Cost-of-Living Increases	As of June 30, 2020: In lieu of a COLA on January 1, 2021, members in pay were provided a 13 <sup>th</sup> check on October 1, 2020. Thereafter, the following COLAs, compounded annually, were assumed: 0.4% beginning on January 1, 2022 0.5% beginning on January 1, 2034 0.6% beginning on January 1, 2039  As of June 30, 2019: In lieu of a COLA on January 1, 2020 and January 1, 2021, members in pay were provided a 13 <sup>th</sup> check on October 1, 2019 and October 1, 2020. Thereafter, the following COLAs, compounded annually, were assumed: 0.4% beginning on January 1, 2022 0.5% beginning on January 1, 2034 0.6% beginning on January 1, 2039



## SECTION 6 – GASB INFORMATION

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Mortality Assumption	<p>Pub-2010 Public Retirement Plans Mortality Tables (Amount-Weighted) with a fully generational projection of mortality improvements using SOA Scale MP-2019.</p> <p><i>Healthy Employees</i> – General Employee table with a 3 year set forward for males and a 1 year set forward for females.</p> <p><i>Retirees</i> – General Retiree table with a 3 year set forward for males and a 1 year set forward for females.</p> <p><i>Beneficiaries</i> – Contingent Survivor table with no set forward for males and a 2 year set forward for females.</p> <p><i>Disableds</i> – General Disabled table with a 140% load.</p>
Experience Study	<p>The most recent comprehensive experience study, based on member experience between June 30, 2014 and June 30, 2019, was completed in February 2020. The demographic assumptions were approved by the Board in June 2020 and were updated as appropriate based on the results of the study for this June 30, 2020 actuarial valuation.</p>
Discount Rate	<p>6.75%, net of investment expenses</p> <p>The discount rate is equal to the expected long-term rate of return on plan investments, net of investment expense and including price inflation. There was no change in the discount rate from the prior measurement date.</p> <p>The INPRS Board of Trustees has established a funding policy of setting the employer contribution rate equal to the greater of 11.2% (the current contribution rate) or a rate equal to the actuarially determined contribution rate, which is based on the assumptions and methods selected by the Board for the annual actuarial valuations and projected covered member payroll. The June 30, 2020 actuarial valuation assumes a long-term rate of return on assets of 6.75%, a 20-year level dollar closed method for amortizing the 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.</p> <p>In the past several years, the Board has followed its current funding policy and the State has complied in its contributions to the plan. Therefore, if past practice is continued, the appropriations will be sufficient to fully fund the plan within 20 to 30 years. In the past, deterministic projections have shown the actuarially determined contribution rate to reach a peak of 10.9% which is slightly below the current rate. As a result, it is presumed that the projected plan assets will be sufficient to cover the future benefit payments</p>



## SECTION 6 – GASB INFORMATION

for current members and a detailed projection of plan assets and cash flows has not been prepared.

### Discount Rate Sensitivity

	1% Decrease 5.75%	Current Rate 6.75%	1% Increase 7.75%
Net Pension Liability	\$4,924,270,038	\$3,020,394,274	\$1,425,743,720

### Classes of Plan Members Covered

The June 30, 2020 valuation was performed using census data provided by INPRS as of June 30, 2019. Standard actuarial techniques were used to roll forward the total pension liability computed as of June 30, 2019 to the June 30, 2020 measurement date using actual benefit payments during that period of time.

Number as of June 30, 2019	
1. Currently Receiving Benefits:	
Retired Members, Disabled Members, and Beneficiaries	92,436
2. Inactive Members Entitled To But Not Yet Receiving Benefits	33,575
3. Inactive Non-vested Members Entitled to a Refund of Member Contributions	0
4. Active Members	125,780
Total Covered Plan Members: (1)+(2)+(3)+(4)	251,791

### 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, 2020, the money-weighted return on the plan assets is 2.6%.

### Components of Net Pension Liability

As of June 30, 2020	
Total Pension Liability	\$ 16,281,754,235
Fiduciary Net Position	13,261,359,961
Net Pension Liability	\$ 3,020,394,274
Ratio of Fiduciary Net Position to Total Pension Liability	81.45%



**SECTION 6 – GASB INFORMATION**

**GASB NO. 67 AND GASB NO. 68: REQUIRED SUPPLEMENTAL INFORMATION  
SCHEDULE OF CHANGES IN THE TOTAL PENSION LIABILITY AND PLAN FIDUCIARY NET POSITION**

<b>Fiscal Year Ending June 30</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>Total Pension Liability</b>					
Total Pension Liability - beginning	\$17,980,568,263	\$18,408,946,980	\$19,106,214,994	\$16,091,372,940	\$16,576,060,167
DC Account Balances - beginning <sup>1</sup>	2,717,173,311	2,656,892,220	2,770,961,812	0	0
DB Pension Liability - beginning	\$15,263,394,952	\$15,752,054,760	\$16,335,253,182	\$16,091,372,940	\$16,576,060,167
Service Cost (SC), beginning-of-year	191,055,506	194,101,310	202,323,634	195,382,841	201,143,591
Interest Cost, including interest on SC	1,018,992,903	1,051,217,483	1,088,503,109	1,069,184,188	1,101,241,510
Experience (Gains)/Losses	(4,869,991)	82,963,628	20,103,378	101,180,620	(54,831,797)
Assumption Changes	0	22,809,173	(731,600,714)	0	(616,829,795)
Plan Amendments	0	(22,765,723)	0	12,919,637	0
DC Annuities	75,035,755	78,792,615	43,873,966	0	0
Actual Benefit Payments	(786,606,562)	(820,721,414)	(860,613,831)	(888,510,777)	(922,190,241)
Member Reassignments	(5,441,493)	(3,617,572)	(7,030,159)	(5,787,037)	(3,163,150)
Service Purchases	493,690	418,922	560,375	317,755	323,950
Net Change in Total Pension Liability	488,659,808	583,198,422	(243,880,242)	484,687,227	(294,305,932)
DB Pension Liability - ending	\$15,752,054,760	\$16,335,253,182	\$16,091,372,940	\$16,576,060,167	\$16,281,754,235
DC Account Balances - ending <sup>1</sup>	2,656,892,220	2,770,961,812	0	0	0
<b>(a) Total Pension Liability - ending</b>	<b>\$18,408,946,980</b>	<b>\$19,106,214,994</b>	<b>\$16,091,372,940</b>	<b>\$16,576,060,167</b>	<b>\$16,281,754,235</b>
<b>Plan Fiduciary Net Position</b>					
Plan Fiduciary Net Position – beginning	\$13,907,666,213	\$13,870,502,444	\$14,644,671,525	\$12,694,327,690	\$13,270,996,471
DC Account Balances - beginning <sup>1</sup>	2,717,173,311	2,656,892,220	2,770,961,812	0	0
DB Plan Fiduciary Net Position – beginning	\$11,190,492,902	\$11,213,610,224	\$11,873,709,713	\$12,694,327,690	\$13,270,996,471
Contributions – employer	615,773,383	558,892,767	571,373,825	581,873,684	599,100,479
Contributions – non-employer	0	0	0	0	0
Contributions – member	442,809	589,663	708,034	294,752	126,815
Net investment income	147,106,621	870,591,483	1,093,094,099	906,388,001	335,138,985
Actual benefit payments	(786,606,562)	(820,721,414)	(860,613,831)	(888,510,777)	(922,190,241)
Net member reassignments	(5,441,493)	(3,617,572)	(7,030,159)	(5,787,037)	(3,163,150)
DC Annuities	75,035,755	78,792,615	43,873,966	0	0
Administrative expense	(24,098,191)	(24,483,053)	(20,844,003)	(18,471,916)	(18,886,120)
Other	905,000	55,000	56,046	882,074	236,722
Net change in Plan Fiduciary Net Position	23,117,322	660,099,489	820,617,977	576,668,781	(9,636,510)
DB Plan Fiduciary Net Position – ending	\$11,213,610,224	\$11,873,709,713	\$12,694,327,690	\$13,270,996,471	\$13,261,359,961
DC Account Balances - ending <sup>1</sup>	2,656,892,220	2,770,961,812	0	0	0
<b>(b) Plan Fiduciary Net Position - ending</b>	<b>\$13,870,502,444</b>	<b>\$14,644,671,525</b>	<b>\$12,694,327,690</b>	<b>\$13,270,996,471</b>	<b>\$13,261,359,961</b>
<b>Net Pension Liability - ending, (a) - (b)</b>	<b>\$4,538,444,536</b>	<b>\$4,461,543,469</b>	<b>\$3,397,045,250</b>	<b>\$3,305,063,696</b>	<b>\$3,020,394,274</b>

<sup>1</sup> Effective January 1, 2018, DC account balances are handled by a third party annuity provider and are treated as a separate defined contribution plan.

Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Results prior to 2018 were produced by the prior actuary.



**SECTION 6 – GASB INFORMATION**

**GASB NO. 67 AND GASB NO. 68: REQUIRED SUPPLEMENTAL INFORMATION  
SCHEDULE OF CHANGES IN THE TOTAL PENSION LIABILITY AND PLAN FIDUCIARY NET POSITION (continued)**

<b>Fiscal Year Ending June 30</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<b>Total Pension Liability</b>			
Total Pension Liability - beginning	\$15,784,239,911	\$16,145,680,789	\$16,732,222,649
DC Account Balances - beginning <sup>1</sup>	2,749,448,762	2,796,102,616	2,851,500,608
DB Pension Liability - beginning	\$13,034,791,149	\$13,349,578,173	\$13,880,722,041
Service Cost (SC), beginning-of-year	270,973,983	258,069,653	273,909,865
Interest Cost, including interest on SC	875,615,527	895,453,921	936,403,574
Experience (Gains)/Losses	(104,470,833)	(15,161,517)	247,977,703
Assumption Changes	0	0	488,354,517
Plan Amendments	(167,485,633)	(42,984,699)	0
DC Annuity Payments	107,520,485	119,094,145	196,788,238
Actual Benefit Payments	(662,283,487)	(680,203,104)	(752,895,719)
Member Reassignments	(5,083,018)	(3,124,531)	(8,155,200)
Service Purchases	0	0	289,933
Net Change in Total Pension Liability	314,787,024	531,143,868	1,382,672,911
DB Pension Liability - ending	\$13,349,578,173	\$13,880,722,041	\$15,263,394,952
DC Account Balances - ending <sup>1</sup>	2,796,102,616	2,851,500,608	2,717,173,311
<b>(a) Total Pension Liability - ending</b>	<b>\$16,145,680,789</b>	<b>\$16,732,222,649</b>	<b>\$17,980,568,263</b>
<b>Plan Fiduciary Net Position</b>			
Plan Fiduciary Net Position – beginning	\$12,243,753,114	\$12,720,601,718	\$14,104,287,554
DC Account Balances - beginning <sup>1</sup>	2,749,448,762	2,796,102,616	2,851,500,608
DB Plan Fiduciary Net Position – beginning	\$9,494,304,352	\$9,924,499,102	\$11,252,786,946
Contributions – employer	455,658,474	526,089,688	538,059,283
Contributions – non-employer	0	0	0
Contributions – member	0	0	0
Net investment income	563,532,572	1,393,813,042	(10,667,128)
Actual benefit payments	(662,283,487)	(680,203,104)	(752,895,719)
Net member reassignments	(5,083,018)	(3,124,531)	(8,155,200)
DC Annuity Payments	107,520,485	119,094,145	196,788,238
Administrative expense	(29,181,276)	(27,433,396)	(25,506,518)
Other	31,000	52,000	83,000
Net change in Plan Fiduciary Net Position	430,194,750	1,328,287,844	(62,294,044)
DB Plan Fiduciary Net Position – ending	\$9,924,499,102	\$11,252,786,946	\$11,190,492,902
DC Account Balances - ending <sup>1</sup>	2,796,102,616	2,851,500,608	2,717,173,311
<b>(b) Plan Fiduciary Net Position - ending</b>	<b>\$12,720,601,718</b>	<b>\$14,104,287,554</b>	<b>\$13,907,666,213</b>
<b>Net Pension Liability - ending, (a) - (b)</b>	<b>\$3,425,079,071</b>	<b>\$2,627,935,095</b>	<b>\$4,072,902,050</b>

<sup>1</sup> Effective January 1, 2018, DC account balances are handled by a third party annuity provider and are treated as a separate defined contribution plan. Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Results prior to 2018 were produced by the prior actuary.



**SECTION 6 – GASB INFORMATION**

**GASB NO. 67 AND GASB NO. 68: REQUIRED SUPPLEMENTAL INFORMATION**

**SCHEDULE OF THE NET PENSION LIABILITY**

<b>Fiscal Year Ending June 30</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Total Pension Liability	\$18,408,946,980	\$19,106,214,994	\$16,091,372,940	\$16,576,060,167	\$16,281,754,235
Plan Fiduciary Net Position	<u>13,870,502,444</u>	<u>14,644,671,525</u>	<u>12,694,327,690</u>	<u>13,270,996,471</u>	<u>13,261,359,961</u>
Net Pension Liability	\$4,538,444,536	\$4,461,543,469	\$3,397,045,250	\$3,305,063,696	\$3,020,394,274
Ratio of Plan Fiduciary Net Position to Total Pension Liability	75.35%	76.65%	78.89%	80.06%	81.45%
Covered-employee payroll <sup>1</sup>	\$4,868,709,366	\$4,997,555,495	\$5,083,130,815	\$5,205,242,704	\$5,380,842,933
Net Pension Liability as a percentage of covered-employee payroll	93.22%	89.27%	66.83%	63.49%	56.13%
<b>Fiscal Year Ending June 30</b>	<b>2013</b>			<b>2014</b>	<b>2015</b>
Total Pension Liability	\$16,145,680,789			\$16,732,222,649	\$17,980,568,263
Plan Fiduciary Net Position	<u>12,720,601,718</u>			<u>14,104,287,554</u>	<u>13,907,666,213</u>
Net Pension Liability	\$3,425,079,071			\$2,627,935,095	\$4,072,902,050
Ratio of Plan Fiduciary Net Position to Total Pension Liability	78.79%			84.29%	77.35%
Covered-employee payroll <sup>1</sup>	\$4,700,000,000			\$4,896,635,240	\$4,804,145,033
Net Pension Liability as a percentage of covered-employee payroll	72.87%			53.67%	84.78%

<sup>1</sup> As provided by INPRS.

Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Results prior to 2018 were produced by the prior actuary.



SECTION 6 – GASB INFORMATION

GASB NO. 67 AND GASB NO. 68: REQUIRED SUPPLEMENTAL INFORMATION

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending June 30	2016	2017	2018	2019	2020
Actuarially Determined Contribution <sup>1</sup>	\$491,999,602	\$496,867,070	\$502,205,573	\$527,836,147	\$482,316,183
Actual employer contributions <sup>2</sup>	<u>\$547,684,477</u>	<u>\$558,660,887</u>	<u>\$571,098,939</u>	<u>\$581,850,681</u>	<u>\$598,903,344</u>
Annual contribution (deficiency) / excess	\$55,684,875	\$61,793,817	\$68,893,366	\$54,014,534	\$116,587,161
Covered-employee payroll <sup>3</sup>	\$4,868,709,366	\$4,997,555,495	\$5,083,130,815	\$5,205,242,704	\$5,380,842,933
Actual contributions as a percentage of covered-employee payroll	11.25%	11.18%	11.24%	11.18%	11.13%

Fiscal Year Ending June 30	2013	2014	2015
Actuarially Determined Contribution <sup>1</sup>	\$464,046,667	\$528,562,365	\$517,716,612
Actual employer contributions <sup>2</sup>	<u>\$455,658,474</u>	<u>\$519,575,670</u>	<u>\$536,202,332</u>
Annual contribution (deficiency) / excess	(\$8,388,193)	(\$8,986,695)	\$18,485,720
Covered-employee payroll <sup>3</sup>	\$4,700,000,000	\$4,896,635,240	\$4,804,145,033
Actual contributions as a percentage of covered-employee payroll	9.69%	10.61%	11.16%

<sup>1</sup> The State and Political Subdivision employer rates were applied to the actual covered employee payroll for the fiscal year to determine the contribution amount. The surcharge rate used for both State and Political Subdivision uses the valuation completed two years ago for July-December and one year ago for January-June. State - The actuarially determined amortization and normal cost rates were developed in the actuarial report completed one year prior to the fiscal year. Political Subdivisions - The rate is determined as the average of these two rates:

- a. Actuarially determined amortization and normal cost rates for January-June were developed in the actuarial report completed one year prior to the fiscal year.
- b. Actuarially determined amortization and normal cost rates for July-December were developed in the actuarial report completed two years prior to the fiscal year.

<sup>2</sup> Excludes service purchases paid for by the employer of \$197,135.

<sup>3</sup> As provided by INPRS.

Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Results prior to 2018 were produced by the prior actuary.





**GASB NO. 67 AND GASB NO. 68: REQUIRED SUPPLEMENTAL INFORMATION**

**SCHEDULE OF MONEY-WEIGHTED RETURNS**

<u>For Fiscal Year Ending June 30</u>	<u>Money-Weighted Return</u>
2020	2.6%
2019	7.3%
2018	9.3%
2017	7.6%
2016	1.1%
2015	0.3%
2014	12.3%
2013	5.8%

Information was provided prospectively from June 30, 2013 for GASB No. 67 and GASB No. 68 purposes. Returns provided by INPRS.



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APPENDIX A – MEMBERSHIP DATA

MEMBER DATA RECONCILIATION

	Active Members	Inactive Vested	Inactive Deceased	Disabled	Retired	Beneficiary	Total
<b>1. As of June 30, 2018</b>	<b>129,099</b>	<b>32,894</b>	<b>168</b>	<b>2,971</b>	<b>76,812</b>	<b>10,149</b>	<b>252,093</b>
<b>2. Data Adjustments</b>							
New Participants	15,301	0	0	0	0	0	15,301
Rehires	498	(498)	0	(1)	0	0	(1)
Terminations:							
Not Vested	(12,569)	0	0	0	0	0	(12,569)
Deferred Vested	(3,348)	3,348	0	0	0	0	0
Disability	(95)	0	0	95	0	0	0
Retirements	(2,937)	(1,890)	0	0	4,827	0	0
Refund / Benefits Ended	0	(233)	(1)	(2)	0	(136)	(372)
Transfer / Millie Morgan	(13)	(398)	(4)	0	0	0	(415)
Deaths:							
With Beneficiary	(50)	(21)	(12)	(50)	(810)	943	0
Without Beneficiary	(102)	(74)	(16)	(47)	(1,940)	(544)	(2,723)
Entitled to Future Benefit	(4)	(1)	5	0	0	0	0
Data Corrections <sup>1</sup>	0	314	(6)	(353)	482	40	477
Net Change	(3,319)	547	(34)	(358)	2,559	303	(302)
<b>3. As of June 30, 2019 <sup>2</sup></b>	<b>125,780</b>	<b>33,441</b>	<b>134</b>	<b>2,613</b>	<b>79,371</b>	<b>10,452</b>	<b>251,791</b>

<sup>1</sup> Includes adjustments by INPRS resulting from a comprehensive review of disableds who had previously aged into retirement and are now treated as retired.

<sup>2</sup> Valuation results as of June 30, 2020 were calculated using June 30, 2019 census data, adjusted for certain activity before the valuation date. Headcounts may include multiple records for individuals, such as members with multiple periods of service.

**APPENDIX A – MEMBERSHIP DATA****SUMMARY OF MEMBERSHIP DATA**

<b>Valuation Date</b>	<b>June 30, 2019</b>	<b>June 30, 2020</b>	<b>% Change</b>
Date of Membership Data <sup>1</sup>	July 1, 2018	July 1, 2019	
<b>ACTIVE MEMBERS</b>			
Number of Active Members <sup>2</sup>	129,099	125,780	(2.6%)
Annual Membership Data Salary <sup>3</sup>	\$ 4,993,318,176	\$ 4,994,902,497	0.0%
Anticipated Payroll for Next Fiscal Year	\$ 5,335,373,772	\$ 5,528,816,114	3.6%
Active Member Averages			
Age	47.5	47.6	0.2%
Service	11.2	11.2	0.0%
Annual Membership Data Salary	\$ 38,678	\$ 39,711	2.7%
<b>INACTIVE MEMBERS</b>			
Number of Inactive Members	33,062	33,575	1.6%
Inactive Member Averages			
Age	53.8	53.7	(0.2%)
Service	11.6	11.7	0.9%
<b>RETIREES, DISABLEDS, AND BENEFICIARIES</b>			
Number of Members			
Retired	76,812	79,371	3.3%
Disabled	2,971	2,613	(12.0%)
Beneficiaries	10,149	10,452	3.0%
Total	89,932	92,436	2.8%
Annual Benefits			
Retired	746,690,589	776,149,299	3.9%
Disabled	15,653,156	13,262,833	(15.3%)
Beneficiaries	66,690,858	70,014,870	5.0%
Total	\$ 829,034,603	\$ 859,427,002	3.7%
Annual Benefits			
Pension	696,864,914	729,882,390	4.7%
DC Plan Annuities	132,169,689	129,544,612	(2.0%)
Total	\$ 829,034,603	\$ 859,427,002	3.7%

<sup>1</sup> The valuation results were calculated using the prior year's census data and were adjusted for certain activity during fiscal year, such as new units, enlargements, or withdrawals.

<sup>2</sup> Data specs provided without data adjustments for activity that occurred during the year.

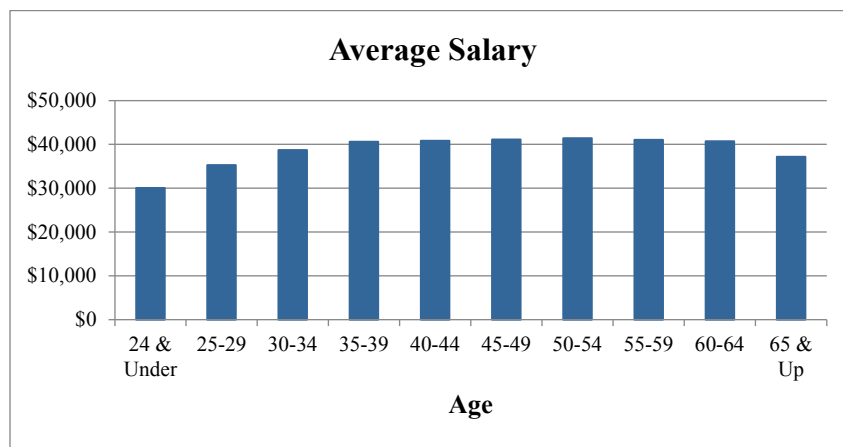
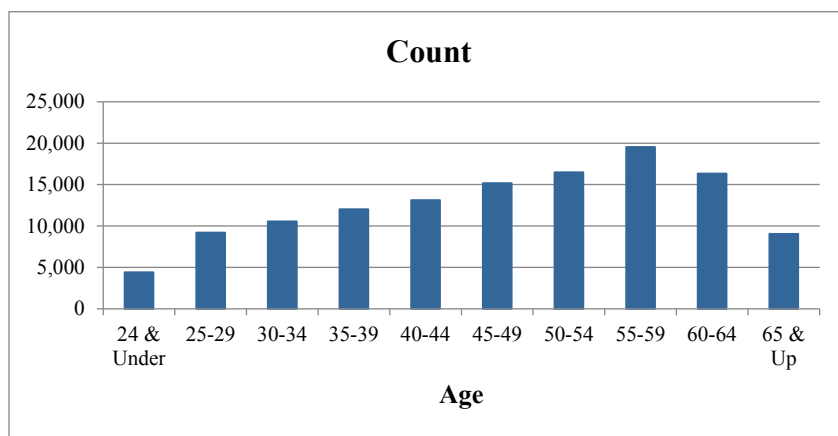
<sup>3</sup> Annualized for actives with less than a year of service. Actives with no salary provided are defaulted to the average salary.



**APPENDIX A – MEMBERSHIP DATA**

**ACTIVE MEMBERS <sup>1</sup>  
As of June 30, 2019 for the June 30, 2020 Valuation**

Age	Count of Members			FY 2019 Annual Membership Data Salary		
	Male	Female	Total	Male	Female	Total
24 & Under	2,290	2,115	4,405	\$ 75,449,894	\$ 56,914,447	\$ 132,364,341
25-29	4,123	5,064	9,187	158,722,135	165,371,808	324,093,943
30-34	4,465	6,079	10,544	197,373,912	210,828,012	408,201,924
35-39	4,784	7,229	12,013	227,066,055	260,825,331	487,891,386
40-44	4,856	8,254	13,110	239,972,090	295,136,799	535,108,889
45-49	5,626	9,538	15,164	281,154,669	342,061,430	623,216,099
50-54	6,042	10,428	16,470	298,070,687	383,976,164	682,046,851
55-59	7,388	12,133	19,521	363,353,320	437,955,820	801,309,140
60-64	6,325	10,005	16,330	304,730,800	360,161,998	664,892,798
65 & Up	<u>4,122</u>	<u>4,914</u>	<u>9,036</u>	<u>174,166,998</u>	<u>161,610,128</u>	<u>335,777,126</u>
<b>Total</b>	<b>50,021</b>	<b>75,759</b>	<b>125,780</b>	<b>\$ 2,320,060,560</b>	<b>\$ 2,674,841,937</b>	<b>\$ 4,994,902,497</b>



<sup>1</sup> Includes 175 actives who were missing a salary. Their salaries are defaulted to the average salary of \$39,711.



**APPENDIX A – MEMBERSHIP DATA**

**AGE AND SERVICE DISTRIBUTION <sup>1</sup>  
As of June 30, 2019 for the June 30, 2020 Valuation**

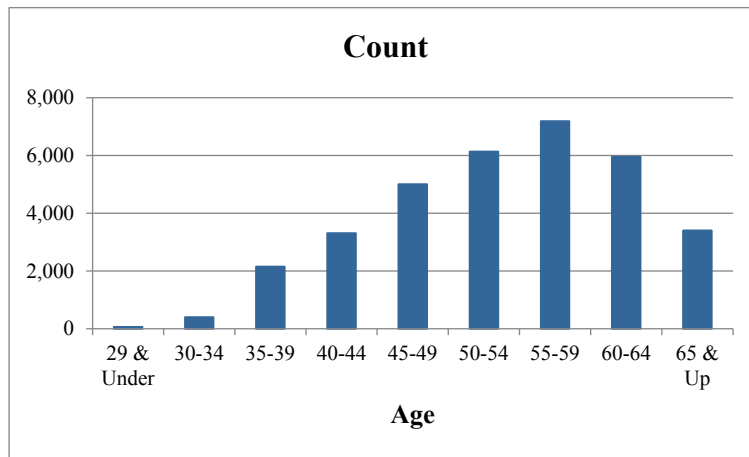
Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
<b>24 &amp; Under</b>	Number	4,391	14	0	0	0	0	0	0	4,405
	Total Salary	\$ 131,811,749	\$ 552,592	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 132,364,341
	Average Sal.	\$ 30,019	\$ 39,471	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 30,049
<b>25-29</b>	Number	8,176	1,007	4	0	0	0	0	0	9,187
	Total Salary	\$ 282,423,774	\$ 41,481,566	\$ 188,603	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 324,093,943
	Average Sal.	\$ 34,543	\$ 41,193	\$ 47,151	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 35,277
<b>30-34</b>	Number	6,522	3,242	763	17	0	0	0	0	10,544
	Total Salary	\$ 223,555,264	\$ 147,505,000	\$ 36,356,804	\$ 784,856	\$ 0	\$ 0	\$ 0	\$ 0	\$ 408,201,924
	Average Sal.	\$ 34,277	\$ 45,498	\$ 47,650	\$ 46,168	\$ 0	\$ 0	\$ 0	\$ 0	\$ 38,714
<b>35-39</b>	Number	5,532	3,091	2,670	696	24	0	0	0	12,013
	Total Salary	\$ 178,312,953	\$ 137,873,031	\$ 135,080,625	\$ 35,472,926	\$ 1,151,851	\$ 0	\$ 0	\$ 0	\$ 487,891,386
	Average Sal.	\$ 32,233	\$ 44,605	\$ 50,592	\$ 50,967	\$ 47,994	\$ 0	\$ 0	\$ 0	\$ 40,614
<b>40-44</b>	Number	5,128	2,882	2,457	1,932	694	15	2	0	13,110
	Total Salary	\$ 160,815,722	\$ 116,777,372	\$ 117,656,731	\$ 101,889,633	\$ 37,051,207	\$ 830,595	\$ 87,629	\$ 0	\$ 535,108,889
	Average Sal.	\$ 31,360	\$ 40,520	\$ 47,886	\$ 52,738	\$ 53,388	\$ 55,373	\$ 43,815	\$ 0	\$ 40,817
<b>45-49</b>	Number	4,687	3,107	2,724	2,166	1,822	619	35	4	15,164
	Total Salary	\$ 145,657,338	\$ 118,788,861	\$ 117,587,710	\$ 105,669,657	\$ 99,861,928	\$ 33,809,321	\$ 1,669,102	\$ 172,182	\$ 623,216,099
	Average Sal.	\$ 31,077	\$ 38,233	\$ 43,167	\$ 48,786	\$ 54,809	\$ 54,619	\$ 47,689	\$ 43,046	\$ 41,098
<b>50-54</b>	Number	3,868	2,908	2,955	2,324	1,958	1,628	777	52	16,470
	Total Salary	\$ 122,627,111	\$ 105,836,183	\$ 118,339,317	\$ 102,850,746	\$ 97,452,707	\$ 90,173,166	\$ 42,028,169	\$ 2,739,452	\$ 682,046,851
	Average Sal.	\$ 31,703	\$ 36,395	\$ 40,047	\$ 44,256	\$ 49,772	\$ 55,389	\$ 54,090	\$ 52,682	\$ 41,411
<b>55-59</b>	Number	3,486	2,830	3,156	3,108	2,708	1,791	1,641	801	19,521
	Total Salary	\$ 109,465,498	\$ 104,340,503	\$ 120,763,378	\$ 125,621,246	\$ 118,416,329	\$ 88,616,237	\$ 90,429,049	\$ 43,656,900	\$ 801,309,140
	Average Sal.	\$ 31,401	\$ 36,869	\$ 38,265	\$ 40,419	\$ 43,728	\$ 49,479	\$ 55,106	\$ 54,503	\$ 41,049
<b>60-64</b>	Number	2,343	2,236	2,581	2,394	2,319	1,618	1,283	1,556	16,330
	Total Salary	\$ 70,073,464	\$ 80,666,288	\$ 99,690,796	\$ 94,647,458	\$ 94,742,554	\$ 72,972,040	\$ 65,047,304	\$ 87,052,894	\$ 664,892,798
	Average Sal.	\$ 29,908	\$ 36,076	\$ 38,625	\$ 39,535	\$ 40,855	\$ 45,100	\$ 50,699	\$ 55,947	\$ 40,716
<b>65 &amp; Up</b>	Number	1,448	1,596	1,675	1,249	1,039	711	564	754	9,036
	Total Salary	\$ 35,123,745	\$ 50,417,928	\$ 60,907,712	\$ 48,717,981	\$ 40,798,052	\$ 30,015,092	\$ 25,685,666	\$ 44,110,950	\$ 335,777,126
	Average Sal.	\$ 24,257	\$ 31,590	\$ 36,363	\$ 39,006	\$ 39,267	\$ 42,215	\$ 45,542	\$ 58,503	\$ 37,160
<b>Total</b>	Number	45,581	22,913	18,985	13,886	10,564	6,382	4,302	3,167	125,780
	Total Salary	\$ 1,459,866,618	\$ 904,239,324	\$ 806,571,676	\$ 615,654,503	\$ 489,474,628	\$ 316,416,451	\$ 224,946,919	\$ 177,732,378	\$ 4,994,902,497
	Average Sal.	\$ 32,028	\$ 39,464	\$ 42,485	\$ 44,336	\$ 46,334	\$ 49,580	\$ 52,289	\$ 56,120	\$ 39,711

<sup>1</sup> Includes 175 actives who were missing a salary. Their salaries are defaulted to the average salary of \$39,711.



**INACTIVE VESTED MEMBERS  
As of June 30, 2019 for the June 30, 2020 Valuation**

<u>Age</u>	<u>Count of Members</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>
29 & Under	13	46	59
30-34	135	260	395
35-39	738	1,410	2,148
40-44	1,099	2,208	3,307
45-49	1,585	3,413	4,998
50-54	1,862	4,267	6,129
55-59	2,141	5,041	7,182
60-64	1,649	4,307	5,956
65 & Up	<u>1,114</u>	<u>2,287</u>	<u>3,401</u>
Total	10,336	23,239	33,575

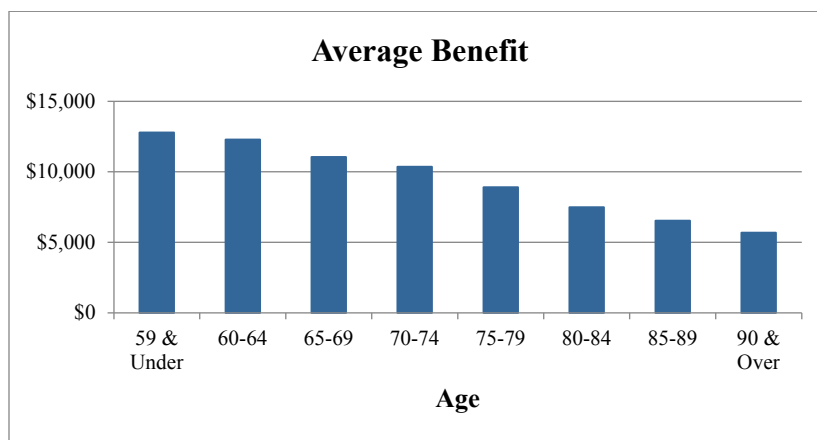
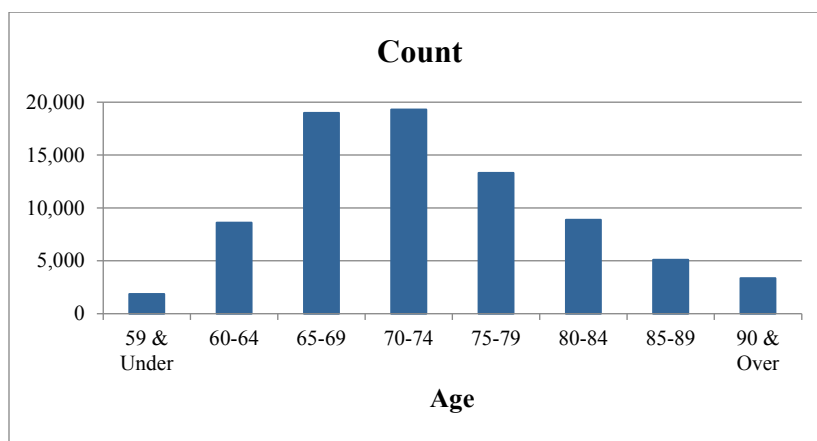




**APPENDIX A – MEMBERSHIP DATA**

**RETIRED MEMBERS  
As of June 30, 2019 for the June 30, 2020 Valuation**

<u>Age</u>	<u>Count of Members</u>			<u>Annual Benefits</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
59 & Under	863	992	1,855	\$ 12,968,850	\$ 10,752,949	\$ 23,721,799
60-64	3,406	5,198	8,604	50,623,823	55,052,928	105,676,751
65-69	6,890	12,092	18,982	93,108,887	116,634,223	209,743,110
70-74	6,776	12,527	19,303	85,103,716	114,738,944	199,842,660
75-79	4,142	9,172	13,314	44,283,357	74,204,894	118,488,251
80-84	2,615	6,257	8,872	24,200,721	42,183,677	66,384,398
85-89	1,409	3,682	5,091	11,173,090	22,076,288	33,249,378
90 & Over	<u>715</u>	<u>2,635</u>	<u>3,350</u>	<u>5,423,920</u>	<u>13,619,032</u>	<u>19,042,952</u>
Total	26,816	52,555	79,371	\$ 326,886,364	\$ 449,262,935	\$ 776,149,299



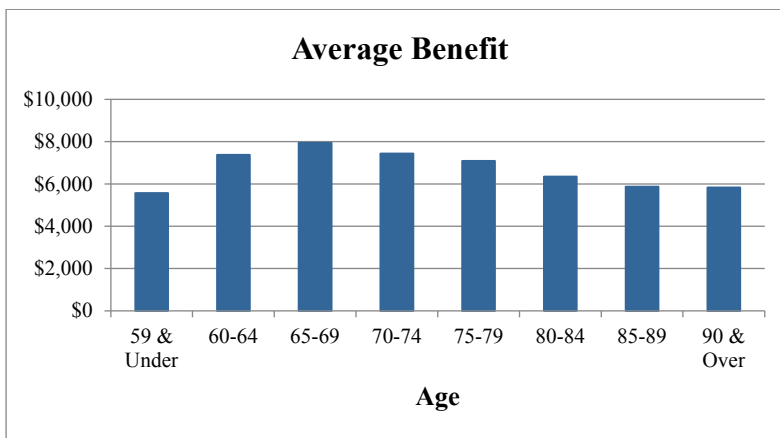
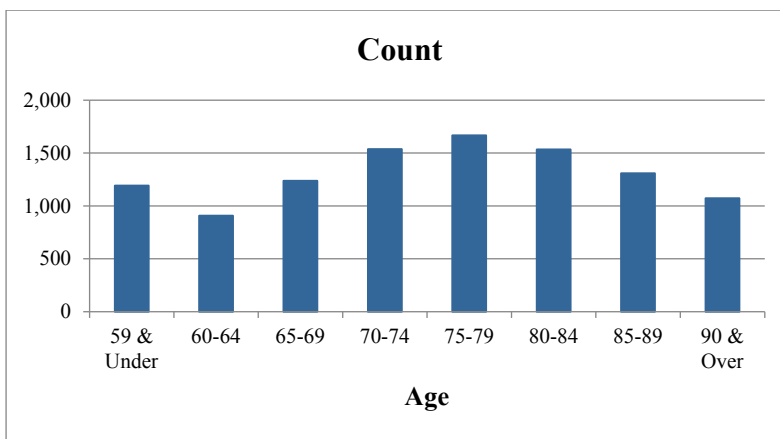




**APPENDIX A – MEMBERSHIP DATA**

**BENEFICIARIES RECEIVING BENEFITS  
As of June 30, 2019 for the June 30, 2020 Valuation**

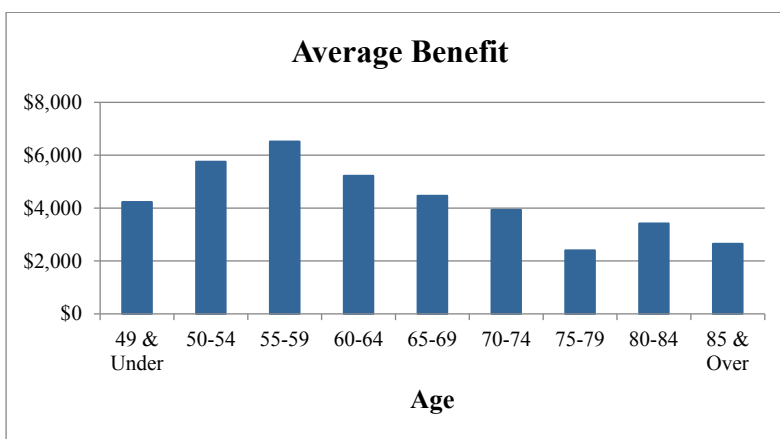
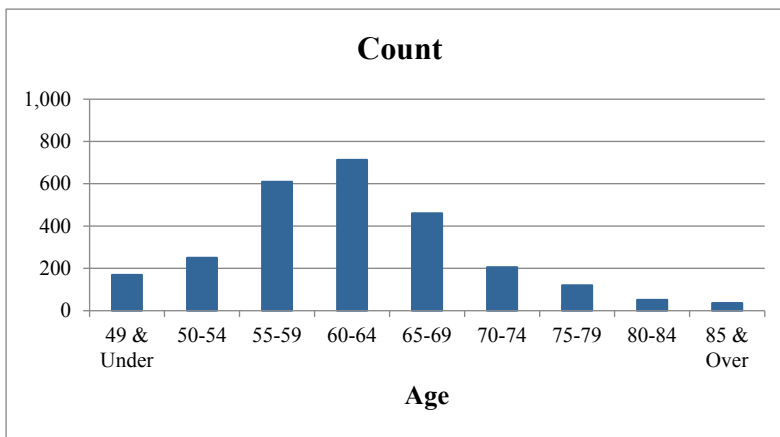
<u>Age</u>	<u>Count of Members</u>			<u>Annual Benefits</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
59 & Under	322	869	1,191	\$ 1,591,853	\$ 5,032,003	\$ 6,623,856
60-64	199	708	907	1,193,198	5,492,941	6,686,139
65-69	294	943	1,237	2,151,984	7,668,532	9,820,516
70-74	369	1,168	1,537	2,179,017	9,242,323	11,421,340
75-79	357	1,310	1,667	1,968,223	9,843,207	11,811,430
80-84	302	1,231	1,533	1,552,791	8,172,955	9,725,746
85-89	226	1,082	1,308	1,056,355	6,619,832	7,676,187
90 & Over	<u>112</u>	<u>960</u>	<u>1,072</u>	<u>532,538</u>	<u>5,717,118</u>	<u>6,249,656</u>
Total	2,181	8,271	10,452	\$ 12,225,959	\$ 57,788,911	\$ 70,014,870





**DISABLED MEMBERS**  
**As of June 30, 2019 for the June 30, 2020 Valuation**

<u>Age</u>	<u>Count of Members</u>			<u>Annual Benefits</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
49 & Under	68	101	169	\$ 327,227	\$ 387,467	\$ 714,694
50-54	103	147	250	733,786	704,593	1,438,379
55-59	260	349	609	2,015,313	1,953,928	3,969,241
60-64	279	434	713	1,666,563	2,056,659	3,723,222
65-69	178	282	460	867,475	1,186,574	2,054,049
70-74	90	115	205	436,685	369,457	806,142
75-79	47	73	120	114,502	173,189	287,691
80-84	19	32	51	86,687	87,472	174,159
85 & Over	<u>9</u>	<u>27</u>	<u>36</u>	<u>18,893</u>	<u>76,363</u>	<u>95,256</u>
Total	1,053	1,560	2,613	\$ 6,267,131	\$ 6,995,702	\$ 13,262,833





ADDITIONAL IN PAY INFORMATION  
As of June 30, 2019 for the June 30, 2020 Valuation

Schedule of Average Benefit Payments <sup>1</sup>

For the Year Ended June 30, 2020	Years of Credited Service						Total
	< 10 <sup>2</sup>	10 - 14	15 - 19	20 - 24	25 - 29	30 +	
Average Monthly Defined Benefit	\$152	\$299	\$415	\$580	\$813	\$1,308	\$658
Average Monthly DC Annuity <sup>3</sup>	\$48	\$109	\$149	\$206	\$279	\$483	\$239
Average Final Average Salary <sup>4</sup>	\$25,808	\$26,557	\$28,596	\$30,912	\$34,538	\$42,235	\$32,285
Number of Benefit Recipients	3,207	15,984	22,572	18,140	13,905	18,628	92,436

<sup>1</sup>Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

<sup>2</sup>Members with less than 10 years of service are: (1) a member receiving a disability benefit from INPRS; (2) a member who has at least eight years of creditable service as a county clerk, county auditor, county recorder, county treasurer, county sheriff or county coroner eligible for a normal retirement after reaching age 65 (applies to only members retiring after June 30, 2002); (3) a member who has at least eight years of creditable service as a state auditor, state treasurer, or secretary of state (whose term commences after the November 5, 2002 election).

<sup>3</sup>This represents those retirees who elected to receive their DC account as a supplemental monthly payment in addition to the monthly Defined Benefit payment.

<sup>4</sup>Excludes the 2,011 in-pay members who are missing a final average salary in the data.



**ADDITIONAL IN PAY INFORMATION**  
**As of June 30, 2019 for the June 30, 2020 Valuation**

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

Amount of Monthly Benefit (in dollars)	Number of Recipients by Benefit Option <sup>2</sup>							Total Benefit Recipients
	5-Year Certain & Life <sup>3</sup>	Straight Life	Joint with 100% Survivor Benefits	Joint with Two-Thirds Survivor Benefits	Joint with One-Half Survivor Benefits	Survivors	Disability	
1-500	11,618	9,426	7,737	878	1,937	6,205	1,912	39,713
501-1,000	7,523	9,360	5,319	1,101	2,318	2,859	503	28,983
1,001-1,500	2,746	4,317	3,030	703	1,235	935	137	13,103
1,501-2,000	1,109	2,001	1,308	422	561	285	50	5,736
2,001-2,500	464	1,000	659	184	323	106	6	2,742
2,501-3,000	214	396	263	95	143	38	3	1,152
Over 3,000	138	398	208	110	127	24	2	1,007
Total	23,812	26,898	18,524	3,493	6,644	10,452	2,613	92,436

<sup>1</sup> Calculated using the prior year census data, adjusted for certain activity during the fiscal year.

<sup>2</sup> Beginning October 2014, social security integration can apply to any optional form.

<sup>3</sup> Includes members who elected a modified cash refund plus 5-year certain & life.



**APPENDIX A – MEMBERSHIP DATA**

**ADDITIONAL IN PAY INFORMATION  
As of June 30, 2019 for the June 30, 2020 Valuation**

**Schedule of Retirees and Beneficiaries <sup>1</sup>**

	<u>Added to Rolls</u>		<u>Removed from Rolls</u>		<u>Rolls - End of Year</u>				
	<b>Number</b>	<b>Annual Benefits <sup>2</sup></b>	<b>Number</b>	<b>Annual Benefits <sup>2</sup></b>	<b>Number</b>	<b>Total Annual Benefits <sup>2</sup></b>	<b>Percent Change In Total Annual Benefits</b>	<b>Average Annual Benefit</b>	<b>Percent Change In Average Annual Benefit</b>
2020 <sup>3</sup>	5,194	\$50,481	2,690	\$18,520	92,436	\$859,427	3.7%	\$9,298	0.9%
2019 <sup>3</sup>	5,077	50,319	3,135	21,565	89,932	829,035	3.4	9,218	1.2
2018 <sup>3</sup>	5,249	55,236	2,389	15,609	87,990	801,551	5.8	9,110	2.3
2017 <sup>3</sup>	4,855	49,980	2,913	18,808	85,130	757,851	3.9	8,902	1.5
2016 <sup>3</sup>	6,478	78,487	2,488	15,597	83,188	729,366	9.9	8,768	4.6
2015 <sup>3</sup>	5,489	60,538	2,241	14,107	79,198	663,767	7.4	8,381	3.0
2014 <sup>3</sup>	0	0	0	0	75,950	617,977	0.0	8,137	0.0
2013	5,231	55,523	2,273	13,898	75,950	617,977	7.2	8,137	3.0
2012	4,751	49,766	2,139	12,540	72,992	576,678	6.8	7,901	3.0
2011	5,402	56,185	2,188	11,698	70,380	539,747	8.3	7,669	3.4

<sup>1</sup>Dollar amounts are in thousands except for the average annual benefit.

<sup>2</sup> Annual benefits includes members selecting an annuity for their DC account. End of year annual benefits are not equal to prior end of year annual benefits plus additions less removals due to beneficiary benefit changes, data changes, and COLA increases.

<sup>3</sup>The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.



## APPENDIX B – SUMMARY OF PLAN PROVISIONS

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### Definitions

Fiscal year	Twelve month period ending June 30.
Participation	All full time employees of the State of Indiana and all full time employees of Political Subdivisions which have adopted the plan become members of PERF upon date of hire.
Average monthly earnings	The monthly average of earnings during 20 quarters (in groups of 4 consecutive contribution quarters) preceding retirement that produce the highest such average. Earnings include basic salary, the member's 3% mandatory contribution paid by the employer, the member's salary reduction agreement under Section 125, 430(b), or 457 of the Internal Revenue Code, and up to \$2,000 of additional compensation received from the employer in anticipation of the member's termination or retirement.
Member contributions	<p>Each member is required to contribute to an Annuity Savings Account at the rate of 3% of pay (unless the employer has opted to make the contribution for the employee). These contributions are kept on deposit and credited with interest based on the investment elections of each member until such time as they are withdrawn or annuitized by the member.</p> <p>The Annuity Savings Account benefit is in addition to the annuity benefits provided by employer contributions. During FYE 2018, the Annuity Savings Accounts were completely separated from the defined benefit plan, and so are no longer relevant to the valuation process.</p>
Minimum pension benefit	The minimum pension benefit paid to a member with 10 or more years of creditable service receiving any pension benefit is \$180 per month.

### Eligibility for Benefits

Deferred vested	10 or more years of vesting service and no longer active.
Disability retirement	5 or more years of vesting service and qualified for Social Security disability benefits or federal Civil Service disability benefits.
Early retirement	Age 50 with 15 or more years of vesting service.



## APPENDIX B – SUMMARY OF PLAN PROVISIONS

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Normal retirement	Earliest of: <ul style="list-style-type: none"><li>- Age 65 with 10 or more years of vesting service</li><li>- Age 60 with 15 or more years of vesting service</li><li>- Age 55 with sum of age and vesting service equal to 85 or more.</li></ul>
Pre-retirement death	10 or more years of vesting service.

### Monthly Benefits Payable

Normal retirement	The normal retirement benefit is a pension payable for life with 60 months guaranteed and is equal to 1.1% of average monthly earnings multiplied by years of creditable service earned. The minimum monthly benefit is \$180 if the member has at least 10 years of creditable service.
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 1/10% for each of the first 60 months and by 5/12% for each of the next 120 months that the benefit commencement date precedes the normal retirement date. The minimum monthly benefit is \$180 if the member has at least 10 years of creditable service.
Deferred retirement	The termination benefit is the accrued retirement benefit determined as of the termination date and payable commencing at age 65. If the member has 15 or more years of creditable service, then the member may elect to receive a reduced early retirement benefit prior to age 65. The minimum monthly benefit is \$180 if the member has at least 10 years of creditable service.
Disability	The disability retirement benefit is the accrued retirement benefit determined as of the disability date and payable commencing the month following disability date without reduction for early commencement. The minimum monthly benefit is \$180.
Pre-retirement death	The spouse or dependent beneficiary is entitled to receive the monthly life benefit payable immediately under the assumption that the member retired on the later of age 50 or the date before the date of death and elected the joint and full survivor option. The minimum monthly benefit is \$180 if the member has at least 10 years of creditable service.



## APPENDIX B – SUMMARY OF PLAN PROVISIONS

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### Cost-of-Living-Adjustments

The employer-funded monthly pension 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 will only be provided by legislative action.

A "13th check" was paid to each member in pay status during fiscal year 2018, 2019, 2020 and 2021. The amount of the 13th check varied based on the years of creditable service the member had earned prior to retirement.

Legislation passed in the 2018 legislative session creates a funding mechanism to provide for future benefit increases or 13<sup>th</sup> checks. The INPRS Board has the authority to have employers contribute up to 1% of member pay into the fund. Increases or payments are made upon passed legislation subject to the availability of funds to provide the benefit.

### Forms of payment

#### a. 5-Year Guaranteed Beneficiary Benefit (Option 10)

Member will receive a monthly benefit for the rest of their life. If the member dies before receiving benefits for 5 years, the beneficiary will receive that monthly benefit for the remainder of those 5 years or a lump sum distribution equal to the present value of those payments. After 5 years, there are no payments available to the beneficiary.

#### b. Benefit with No Guarantee (Option 20)

Member will receive a monthly benefit for life, but there are no monthly payments to anyone after death. However, the balance of the Annuity Savings Account will be distributed to the beneficiary or estate if it is larger than the payments previously made to the member.

#### c. Joint with Full Survivor Benefits (Option 30)

Member will be paid a monthly benefit for life. After death, the same monthly benefit will be paid to the beneficiary for their lifetime.

#### d. Joint with Two-Thirds Survivor Benefits (Option 40)

Member will be paid a monthly benefit for life. After death, two-thirds (2/3) of the benefit will be paid to the beneficiary for their lifetime.

#### e. Joint with One-Half Survivor Benefits (Option 50)

Member will be paid a monthly benefit for life. After death, one-half (1/2) of the benefit will be paid to the beneficiary for their lifetime.





## APPENDIX B – SUMMARY OF PLAN PROVISIONS

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f. Integration with Social Security (Option 61)      A member who retires between ages 50 and 62 may integrate the PERF monthly pension benefit with the member's estimated Social Security benefits. This does not affect the amount of the benefit received from the Social Security Administration.

Before age 62, the member's benefits will equal the sum of the member's Social Security estimate, multiplied by actuarial factors, and the member's early retirement benefit. This will result in the member receiving a larger monthly benefit payment before age 62. After age 62, the member's benefit will equal the difference between the member's Social Security estimate, multiplied by actuarial factors, and the member's pre-62 monthly pension benefit. Depending upon the member's estimated Social Security disbursement, benefit payments may be greatly reduced or terminated at age 62.

g. 5-Year Guaranteed Beneficiary Benefit with ASA Cash Refund (Option 71)      In order to select this option, the member must choose to combine at least a portion of their Annuity Savings Account (ASA) with their lifetime monthly pension benefit. If selected, the member will receive a monthly benefit for the rest of their life. If the member dies before receiving payments for 5 years, the beneficiary will receive the pension portion of their monthly benefit for the remainder of those 5 years or a lump sum equal to the present value of those remaining payments. Also, upon death (whether death occurs before or after receiving 5 years of benefits), the beneficiary may receive any remaining balance of the ASA.

### Changes in Plan Provisions since the Prior Year

None.



## **ACTUARIAL METHODS**

### **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. Effective June 30, 2018, the bases are calculated without regards to the COLA provisions. 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. 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, 2019 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2019 and June 30, 2020. The valuation results from June 30, 2019 were rolled-forward to June 30, 2020 to reflect benefit accruals during the year less benefits paid.

### **2. COLA Surcharge**

The COLA Surcharge is developed by determining the assets needed at the start of the next biennium to fund the post-retirement benefit increases anticipated to be granted in that biennium. This amount is divided by the present value of expected payroll over which the accumulations will occur.

### **3. Asset Valuation Method**

Actuarial Value of Assets is equal to a five-year smoothing of gains and losses on the Market Value of Assets subject to a 20% corridor.



## **APPENDIX C – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS**

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### **4. Anticipated Payroll**

The Anticipated Payroll for the fiscal year beginning July 1, 2020 is equal to the actual payroll during the year ending June 30, 2020, increased with one year of salary scale.

### **5. Employer Contribution Rates**

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

### **Changes in Methods since the Prior Year**

None.



**APPENDIX C – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS**

**ACTUARIAL ASSUMPTIONS**

Valuation Date June 30, 2020

**Economic Assumptions**

1. Investment return 6.75% per year, compounded annually (net of administrative and investment expenses)

2. Inflation 2.25% per year

3. Salary increase

Service	Wage Inflation	Merit	Salary Increase
0	2.75%	6.00%	8.75%
1	2.75%	5.00%	7.75%
2	2.75%	4.00%	6.75%
3	2.75%	3.00%	5.75%
4	2.75%	2.50%	5.25%
5	2.75%	2.00%	4.75%
6	2.75%	1.75%	4.50%
7	2.75%	1.50%	4.25%
8	2.75%	1.25%	4.00%
9	2.75%	1.00%	3.75%
10	2.75%	0.75%	3.50%
11	2.75%	0.50%	3.25%
12	2.75%	0.25%	3.00%
13+	2.75%	0.00%	2.75%

4. Cost-of-Living Adjustment (COLA) In lieu of a COLA on January 1, 2021, members in pay were provided a 13<sup>th</sup> check on October 1, 2020. Thereafter, the following COLAs, compounded annually, were assumed:

- 0.4% beginning on January 1, 2022
- 0.5% beginning on January 1, 2034
- 0.6% beginning on January 1, 2039



## APPENDIX C – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

### Demographic Assumptions

#### 1. Mortality

Pub-2010 Public Retirement Plans Mortality Tables (Amount-Weighted) with a fully generational projection of mortality improvements using SOA Scale MP-2019.

*Healthy Employees* – General Employee table with a 3 year set forward for males and a 1 year set forward for females.

*Retirees* – General Retiree table with a 3 year set forward for males and a 1 year set forward for females.

*Beneficiaries* – Contingent Survivor table with no set forward for males and a 2 year set forward for females.

*Disableds* – General Disabled table with a 140% load.

#### 2. Disability

Age	Sample Rates	
	Male	Female
20	0.004%	0.003%
25	0.008%	0.006%
30	0.014%	0.010%
35	0.024%	0.018%
40	0.042%	0.032%
45	0.080%	0.061%
50	0.160%	0.124%
55+	0.300%	0.200%

#### 3. Retirement

Age	Eligible for Reduced Benefit	Eligible for Unreduced Benefit
50-54	4%	N/A
55	5%	14%
56-59	5%	10%
60	N/A	12%
61	N/A	16%
62	N/A	22%
63	N/A	19%
64	N/A	24%
65-74	N/A	30%
75+	N/A	100%

Active members: 30% commence benefit immediately (reduced for early retirement, if applicable). 70% defer to earliest unreduced retirement date.

Inactive vested members are assumed to commence their retirement benefit at their earliest normal retirement date.



**APPENDIX C – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS**

4. Termination

Service	State	PSD, Salary >\$20K		PSD, Salary <\$20k		
	Unisex	Unisex		Age	Male	Female
0	24.00%	18.00%		15-22	34.00%	40.00%
1	20.00%	16.00%		23	34.00%	38.00%
2	18.00%	14.00%		24	34.00%	36.00%
3	16.00%	12.00%		25	34.00%	34.00%
4	14.00%	10.00%		26	34.00%	32.00%
5	12.00%	8.00%		27	34.00%	30.00%
6	11.00%	7.50%		28	34.00%	29.00%
7	10.00%	7.00%		29	34.00%	28.00%
8	9.00%	6.50%		30	29.00%	27.00%
9	8.00%	6.50%		31	29.00%	26.00%
10	7.00%	6.50%		32	29.00%	25.00%
11	6.50%	6.25%		33	29.00%	24.00%
12	6.00%	6.00%		34	29.00%	23.00%
13	5.75%	5.75%		35	25.00%	22.00%
14	5.50%	5.50%		36	25.00%	21.00%
15	5.25%	5.25%		37	25.00%	20.00%
16	5.00%	5.00%		38	25.00%	19.00%
17	4.75%	4.75%		39	25.00%	18.00%
18	4.50%	4.50%		40	24.00%	17.00%
19	4.25%	4.25%		41	24.00%	16.00%
20	4.00%	4.00%		42	24.00%	15.00%
21	4.00%	3.75%		43	24.00%	14.00%
22	4.00%	3.50%		44	24.00%	13.00%
23	4.00%	3.25%		45-49	21.00%	12.00%
24	4.00%	3.00%		50-60	17.00%	12.00%
25	4.00%	3.00%		61+	14.00%	12.00%
26	4.00%	3.00%				
27+	1.00%	3.00%				



## APPENDIX C – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

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### Other Assumptions

- |                              |  |
|------------------------------|--|
| 1. Form of payment           | 100% of members are assumed to elect the normal form of benefit payment, a single life annuity with a five-year certain period.                                    |
| 2. Marital status            |  |
| a. Percent married           | 80% of male members and 65% of female members are assumed to be married and or to have a dependent beneficiary.  |
| b. Spouse's age              | Male members are assumed to be three (3) years older than their spouses and female members are assumed to be two (2) years younger than their spouses.             |
| 3. Decrement timing          | Decrements are assumed to occur at the beginning of the year.  |
| 4. Miscellaneous adjustments | For active members, the Average Annual Compensation was increased by \$200 for additional wages received upon termination, such as severance or unused sick leave. |

### Changes in Assumptions since the Prior Year

As a result of the 2014-2019 Experience Study, there were changes to many assumptions. Please see that Study for complete details (available on the INPRS web site).

### Data Adjustments

Active and retired member data is reported as of June 30. Member census data as of June 30, 2019 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2019 and June 30, 2020. Standard actuarial roll-forward techniques were then used to project the liability computed as of June 30, 2019 to the June 30, 2020 measurement date. The normal cost rate is assumed to remain unchanged between June 30, 2019 and June 30, 2020.

The member payroll and asset information for this valuation were furnished as of June 30, 2020. Projected FYE 2021 payroll is assumed to increase by the salary growth assumption over the total payroll observed for FYE 2020. We did not audit the information provided, but we did review it thoroughly for reasonableness and compared it with the prior year's submission for consistency.

Actives and inactives with no date of birth are assumed to be the average age of the member population with their respective status. Additionally, payroll for new hires is annualized, and actives missing a salary are assumed to earn the average active salary amount.



**Other Technical Valuation Procedures**

Salary increases are assumed to apply to annual amounts.

Decrements are assumed to occur at the beginning of the year. Standard adjustments are made for multiple decrements.

No actuarial liability is included for participants who terminated without being vested prior to the valuation date.





## APPENDIX D – GLOSSARY OF ACTUARIAL TERMS

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<b>Accrued Service</b>	Service credited under the plan that was rendered before the date of the actuarial valuation.
<b>Actuarial Assumptions</b>	Estimates of future experience with respect to demographic or economic events. Demographic assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.
<b>Actuarial Cost Method</b>	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of retirement plan benefits between future normal cost and actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”
<b>Actuarial Equivalent</b>	A single amount or series of amounts of equal value to another single amount or series of amounts computed on the basis of a given set of actuarial assumptions.
<b>Actuarial Accrued Liability</b>	The difference between the actuarial present value of plan benefits and the actuarial value of future normal costs. Also referred to as “accrued liability” or “actuarial liability.”
<b>Actuarial Present Value</b>	The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.
<b>Amortization</b>	Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with lump sum payment.
<b>Experience Gain (Loss)</b>	The difference between actual experience and actuarial assumptions anticipated experience during the period between two actuarial valuation dates.
<b>Normal Cost</b>	The actuarial present value of retirement plan benefits allocated to the current year by the actuarial cost method.
<b>Unfunded Actuarial Accrued Liability</b>	<p>The difference between actuarial liability and the actuarial value of assets. Sometimes referred to as “unfunded accrued liability” or “unfunded liability”.</p> <p>Most retirement plans have unfunded actuarial liability. They arise anytime new benefits are added and anytime an actuarial loss is realized.</p>