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Indiana Public Retirement System

Excise, Gaming and Conservation Officers' Retirement Fund

Actuarial Valuation as of
June 30, 2020

www.CavMacConsulting.com

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 Excise, Gaming and Conservation Officers' Fund (EG&C) as of June 30, 2020, for the purpose of estimating the actuarial determined contribution rate for the calendar year 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. Senate Enrolled Act 181 (SEA 181) was passed this year and provided for enhanced pre-retirement death benefits under certain conditions. This report also reflects the updated economic and demographic assumptions proposed in the 2014-2019 Experience Study that were adopted by the Board in June 2020, though there were no changes in the actuarial methods. 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 EG&C 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.

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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 EG&C 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,

Brent A. Banister

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

Edward J. Koebel

Edward Koebel, FCA, EA, MAAA
Chief Executive Officer

Virginia Fritz

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

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This report presents the results of the June 30, 2020 actuarial valuation of the Excise, Gaming and Conservation Officers' Retirement Fund (EG&C). The primary purposes of performing this actuarial valuation are to:

- Determine the employer contribution rate for the calendar year ending December 31, 2022, 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 actuarial methods or funding policy between the June 30, 2019 and June 30, 2020 valuations. However, Senate Enrolled Act 181 (SEA 181) was passed this year and provided for enhanced pre-retirement death benefits under certain conditions.

The actuarial valuation results provide a "snapshot" view of the plan's financial condition on June 30, 2020. The plan's UAAL increased from $11.6 million last year to $14.6 million this year and the funded ratio decreased from 92% to 91%. The most substantial factor was a $5.4 million increase in liability resulting from FYE 2019 actual salaries increasing above the expected level as continuing actives saw, on average, increases of more than 10%. Other demographic and asset experience combined with this for a loss of just over $7.0 million on base benefits. SEA 181 added about $800,000 of liability. Actual contributions exceeded the actuarially determined contribution needed by about $3.6 million, partially offsetting the 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	$ 11,648,042	$ 14,618,674
Funded Ratio (Actuarial Assets)	92.35%	91.08%
Normal Cost	11.09%	11.56%
UAAL Amortization	1.29%	2.06%
Recommended Contribution	12.38%	13.62%
Estimated Member Contributions	(4.00%)	(4.00%)
Actuarially Determined Contribution Rate	8.38%	9.62%
Actuarially Determined Surcharge Rate	0.61%	0.85%

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

ASSETS

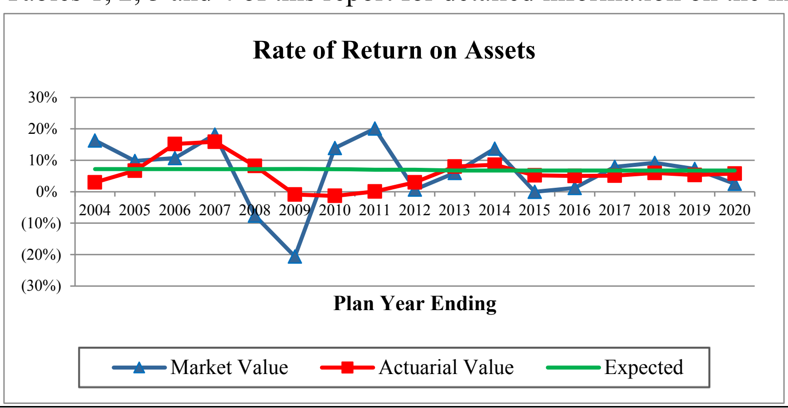
As of June 30, 2020, the plan had net assets of $146.4 million, when measured on a market value basis. This was an increase of $4.2 million from the prior year.

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 $149.4 million, an increase of $8.8 million from the prior year.

The components of change in the asset values are shown in the following table:

		Market Value		Actuarial Value
Net Assets, June 30, 2019	$	142,114,618	$	140,558,668
- Employer and Member Contributions	+	8,040,437	+	8,040,437
- Benefit Payments and Refunds	-	7,367,304	-	7,367,304
- Net Investment Income	+	3,570,649	+	8,127,382
Net Assets, June 30, 2020	$	146,358,400	$	149,359,183
Estimated Rate of Return, Net of Expenses		2.5%		5.8%

The estimated rate of return on the actuarial value of assets was 5.8%, 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 $1.4 million. The estimated return on the market value of assets for FY 2020 of 2.5% resulted in a change in the deferred investment experience from a net deferred investment gain of $1.6 million in last year's valuation to a net deferred investment loss of $3.0 million in the current valuation. See Tables 1, 2, 3 and 4 of this report for detailed information on the market and actuarial value of assets.



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.

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, including expected future COLAs, on both a market value and actuarial value of assets is shown as of June 30, 2020 in the following table:

	Market Value	Actuarial Value
Actuarial Accrued Liability	$ 163,977,857	$ 163,977,857
Value of Assets	146,358,400	149,359,183
Unfunded Actuarial Accrued Liability	$ 17,619,457	$ 14,618,674
Funded Ratio	89.25%	91.08%

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

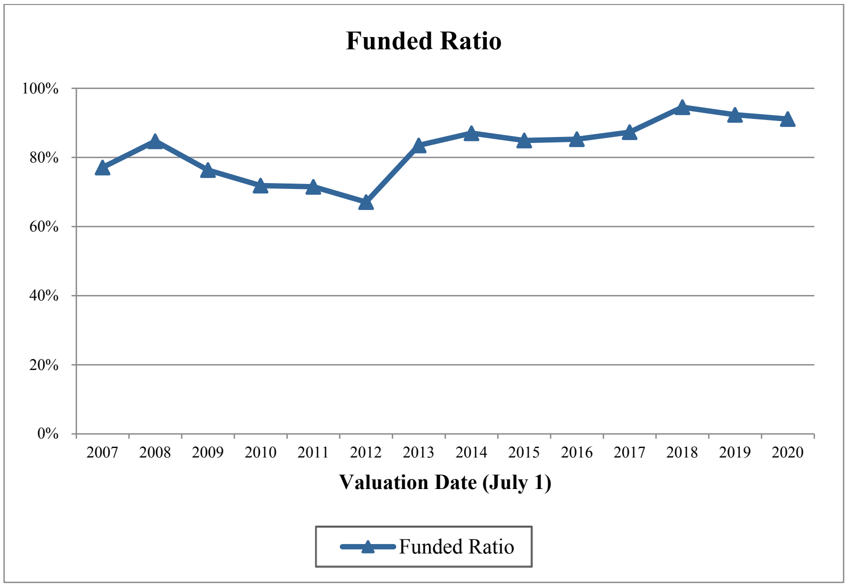
The total plan UAAL (on an actuarial basis) as of June 30, 2020 was $14.6 million, a $3.0 million change from the $11.6 million total UAAL last year. The most significant factor in this change was the liability experience loss arising from larger than expected FYE 2019 salary increases. The new assumptions decreased liabilities by $2.0 million, while the legislative changes increased the liabilities by $0.8 million. 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	85.3%	87.3%	94.6%	92.4%	91.1%
UAAL (in millions)	$20.4	$18.1	$7.6	$11.6	$14.6

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.

As the following graph shows, the EG&C Plan has generally been making progress towards a fully funded level, especially since 2012.



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's 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 13th checks. Because there are five plans that must, by law, provide the same COLA or 13th check each year, the funding strategy needs to consider the funding needs of the 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 calendar year 2020, the surcharge rate is 0.61%, and the actuarially determined surcharge rate is 0.85% effective January 1, 2021. While this rate is currently adequate to fund the increase anticipated in the next biennium, the Board may wish to consider a surcharge of 1.0% in anticipation of the longer term needs. 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 EG&C will increase to 0.85%. See Table 12 for further details.

The total employer rate is the sum of the contributions to fund the base benefits plus the surcharge less the member contributions. The total employer contribution rate is lowered part way toward the normal cost rate when the Fund has a funded ratio over 105%, and then ultimately reduced to the normal cost rate should the funded ratio reach 120%. 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 11 of this report for the detailed development of the contribution rates which are summarized in the following table:

Contribution Rate	June 30, 2019	June 30, 2020
Normal Cost	11.09%	11.56%
UAAL Amortization	1.29%	2.06%
Recommended Contribution	12.38%	13.62%
Estimated Member Contributions	(4.00%)	(4.00%)
Actuarially Determined Contribution Rate	8.38%	9.62%
Actuarially Determined Surcharge Rate	0.61%	0.85%

The actuarial required 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.

Two significant factors in the increase in the Actuarially Determined Contribution Rate this year were the assumption changes and the large salary increases. While the rate increased over 1% of pay, it still remains well below the Board-approve employer contribution rate. The additional margin will help move the Fund toward being fully funded ahead of the more than 20 years suggested by the amortization schedule.

SUMMARY OF PRINCIPAL RESULTS

	June 30, 2018	June 30, 2019	June 30, 2020
MEMBERSHIP			
Active Members	430	423	414
Active Members in DROP	13	13	6
Retired Members and Beneficiaries	231	237	245
Disabled Members	3	3	3
Inactive Members	146	141	137
Total Members	823	817	805
Projected Annual Salaries in Following Year	$ 30,121,351	$ 34,103,346	$ 33,384,399
Annual Retirement Payments for Retired Members, Disabled Members and Beneficiaries	$ 6,245,912	$ 6,426,356	$ 6,800,329
ASSETS AND LIABILITIES			
Net Assets			
Market Value of Assets (MVA)	$ 131,491,187	$ 142,114,618	$ 146,358,400
Actuarial Value of Assets (AVA)	132,440,635	140,558,668	149,359,183
Actuarial Accrued Liability (AAL)	140,055,567	152,206,710	163,977,857
Unfunded Actuarial Accrued Liability (UAAL):			
AAL - AVA	$ 7,614,932	$ 11,648,042	$ 14,618,674
Funded Ratios			
AVA / AAL	94.56%	92.35%	91.08%
MVA / AAL	93.89%	93.37%	89.25%
CONTRIBUTIONS			
Normal Cost Rate	11.22%	11.09%	11.56%
UAAL Rate	0.56%	1.29%	2.06%
Total Recommended Contribution Rate	11.78%	12.38%	13.62%
Expected Employee Contribution Rate	(4.00%)	(4.00%)	(4.00%)
Actuarially Determined Contribution Rate	7.78%	8.38%	9.62%
Actuarially Determined Surcharge Rate (applicable next calendar year)	0.73%	0.61%	0.85%

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

This report presents the actuarial valuation results of the Excise, Gaming and Conservation Officers' 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.

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 benefit 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 benefit.

TABLE 1

DEVELOPMENT OF MARKET VALUE OF ASSETS
(Base Benefits)

	June 30, 2019	June 30, 2020
1. Market Value of Assets, Beginning of Year	$ 131,491,187	$ 141,989,364
2. Receipts		
a. Member (Includes Purchased Service) [1]	$ 1,367,778	$ 1,298,579
b. Employer	6,861,463	6,524,187
c. Miscellaneous	0	0
d. Total	$ 8,229,241	$ 7,822,766
3. Expenditures		
a. Benefit Payments	$ 7,249,375	$ 7,269,944
b. Refund of Contributions	75,882	97,360
c. Member Reassignments	0	0
d. Administrative Expense	112,002	106,513
e. Miscellaneous	0	0
f. Total	$ 7,437,259	$ 7,473,817
4. Investment Return		
a. Investment Income	$ 9,695,478	$ 3,663,709
b. Securities Lending Income	10,717	7,828
c. Total Investment Return	$ 9,706,195	$ 3,671,537
5. Market Value of Assets, End of Year: (1) + (2d) - (3f) + (4c)	$ 141,989,364	$ 146,009,850
6. Estimated Rate of Return, Net of Expenses [2]	7.27%	2.51%

[1] Includes $50,070 of member service purchases during fiscal year 2019 and $0 of member service purchases during fiscal year 2020.
[2] 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	$ 125,254
2. Receipts		
a. Employer Surcharge	$ 120,092	$ 217,671
b. Lottery Allocation	0	0
c. Miscellaneous	0	0
d. Total	$ 120,092	$ 217,671
3. Expenditures		
a. Benefit Payments	$ 0	$ 0
b. Administrative Expense	0	0
c. Miscellaneous Expenditures	0	0
d. Total	$ 0	$ 0
4. Investment Return		
a. Investment Income	$ 5,161	$ 5,612
b. Securities Lending Income	1	13
c. Total Investment Return	$ 5,162	$ 5,625
5. Market Value of Assets, End of Year: (1) + (2d) - (3d) + (4c)	$ 125,254	$ 348,550
6. Rate of Return on Market Value of Assets, Net of Expenses [1]	8.60%	2.40%

[1] Based on individual fund experience. Assumes cash flows occur at mid-year.

TABLE 3

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
(Base Benefits)

		For the Year Ending June 30, 2020
1. Market Value as of June 30, 2019	$	141,989,364
2. Receipts	$	7,822,766
3. Expenditures, Net of Administrative Expenses	$	(7,367,304)
4. Expected Return on Assets [1]	$	9,599,654
5. Expected Market Value as of June 30, 2020: (1) + (2) + (3) + (4)	$	152,044,480
6. Actual Market Value as of June 30, 2020	$	146,009,850
7. Year End 2020 Asset Gain/(Loss): (6) - (5)	$	(6,034,630)

8. Deferred Investment Gains and Losses

	Year Ended June 30:		Gain/(Loss)	Factor		Deferred Amount
a.	2017	$	1,232,806	20%	$	246,561
b.	2018		2,937,547	40%		1,175,019
c.	2019		688,028	60%		412,817
d.	2020		(6,034,630)	80%		(4,827,704)
e.	Total				$	(2,993,307)

9. Initial Actuarial Value as of June 30, 2020: (6) - (8e)	$	149,003,157
10. Constraining Values		
a. 80% of Market Value: (6) x 0.8	$	116,807,880
b. 120% of Market Value: (6) x 1.2	$	175,211,820
11. Actuarial Value as of June 30, 2020	$	149,003,157
12. Actuarial Rate of Return, Net of Expenses [2]		5.77%
13. Actuarial Value of Assets as a Percent of Market Value: (11) / (6)		102.1%
14. Actuarial Value of Assets		
a. Base Benefits	$	149,003,157
b. Supplemental Benefits	$	356,026
c. Total	$	149,359,183

[1] Assumes cash flows occur at mid-year and a discount rate of 6.75%.
[2] Assumes cash flows occur at mid-year.

TABLE 4

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
(Supplemental Benefits)

		For Plan Year Ending June 30, 2020
1. Market Value, as of June 30, 2019	$	125,254
2. Receipts	$	217,671
3. Expenditures, Net of Administrative Expenses	$	0
4. Expected Return on Assets [1]	$	15,801
5. Expected Market Value as of June 30, 2020: (1) + (2) + (3) + (4)	$	358,726
6. Actual Market Value as of June 30, 2020	$	348,550
7. Year end 2020 asset gain/(loss): (6) - (5)	$	(10,176)

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		1,109	60%		665
d.	2020		(10,176)	80%		(8,141)
e.	Total				$	(7,476)

9. Initial Actuarial Value as of June 30, 2020: (6) - (8e)	$	356,026
10. Constraining Values		
a. 80% of Market Value: (6) x 0.8	$	278,840
b. 120% of Market Value: (6) x 1.2	$	418,260
11. Actuarial Value as of June 30, 2020	$	356,026
12. Actuarial Rate of Return, Net of Expenses [2]		6.00%
13. Actuarial Value of Assets as a Percent of Market Value: (11) / (6)		102.1%

[1] Assumes cash flows occur at mid-year and a return assumption of 6.75%.
[2] Assumes cash flows occur at mid-year.

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 Excise, Gaming and Conservation Officers' 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 Excise, Gaming and Conservation Officers' 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, including SEA 181.

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 plan. Once permanent COLAs have been granted, the obligation for future payments will also be included.

TABLE 5

ACTUARIAL ACCRUED LIABILITY
(Base and Supplemental Benefits)

As of June 30, 2020	Base Benefits	Supplemental Benefits: *Granted*	Supplemental Benefits: *Future*	Total
1. Actuarial Accrued Liability				
a. Member Contribution Balances	$ 12,927,068	$ 0	$ 0	$ 12,927,068
b. Active & Inactive Members	76,177,260	0	4,510,339	80,687,599
c. In-pay Members	68,029,700	0	2,333,490	70,363,190
d. Total	$ 157,134,028	$ 0	$ 6,843,829	$ 163,977,857
2. Actuarial Value of Assets	$ 149,003,157	$ 0	$ 356,026	$ 149,359,183
3. Unfunded Actuarial Accrued Liability: (1d) - (2)	$ 8,130,871	$ 0	$ 6,487,803	$ 14,618,674
4. Funded Ratio: (2) / (1d)	94.8%	N/A	5.2%	91.1%

TABLE 6

COMBINED BASE AND SUPPLEMENTAL PLANS:
SOLVENCY TEST
(Base and Supplemental Benefits)

	Actuarial Accrued Liabilities (AAL)					Portion of AAL Covered by Assets			
Actuarial Valuation as of June 30	Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities	Actuarial Value of Assets	Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total Actuarial Accrued Liabilities
2020	$12,927	$70,363	$80,688	$163,978	$149,359	100.0%	100.0%	81.9%	91.1%
2019	11,661	68,652	71,894	152,207	140,559	100.0	100.0	83.8	92.3
2018	10,715	68,750	60,591	140,056	132,441	100.0	100.0	87.4	94.6
2017	9,737	69,217	63,649	142,603	124,531	100.0	100.0	71.6	87.3
2016	9,085	67,424	62,456	138,965	118,515	100.0	100.0	67.3	85.3
2015	8,456	61,503	62,837	132,796	112,765	100.0	100.0	68.1	84.9
2014	8,042	54,626	60,933	123,601	107,563	100.0	100.0	73.7	87.0
2013	7,494	56,028	54,575	118,097	98,608	100.0	100.0	64.3	83.5
2012	6,532	53,929	52,822	113,283	76,007	100.0	100.0	29.4	67.1
2011	6,271	46,695	48,568	101,534	72,599	100.0	100.0	40.4	71.5

Note: Dollar amounts are in thousands of dollars.

TABLE 7

RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
(Base Benefits)

	For Plan Year Ending June 30, 2020
1. Unfunded Actuarial Accrued Liability as of June 30, 2019	$ 5,400,583
2. Normal Cost	3,782,061
3. Actuarially Determined Contribution	(4,222,697)
4. Interest	334,796
5. Expected Unfunded Actuarial Accrued Liability as of June 30, 2020	$ 5,294,743
6. Actuarial Value of Asset Changes	
a. Investment Experience (Gain)/Loss	$ 1,381,293
b. Contributions (Above)/Below the Actuarially Determined Contribution and Other (Gain)/Loss	$ (3,578,150)
7. Actuarial Accrued Liability Changes	
a. Actuarial Accrued Liability Experience (Gain)/Loss	$ 5,677,578
b. Additional Liability Due to Benefit Changes	766,941
c. Additional Liability Due to Assumption Changes	(1,411,534)
8. Total Experience (Gain)/Loss	$ 2,836,128
9. Unfunded Actuarial Accrued Liability as of June 30, 2020: (5) + (8)	$ 8,130,871

TABLE 8

ACTUARIAL GAIN/(LOSS)
(Base Benefits)

Liabilities		
1. Actuarial Accrued Liability as of June 30, 2019	$	145,834,884
2. Normal Cost for Plan Year Ending June 30, 2020		3,782,061
3. Benefit Payments During Plan Year		(7,366,429)
4. Service Purchases (employee and employer)		0
5. Interest at 6.75%		9,850,527
6. Change Due to Benefit Changes		766,941
7. Change Due to Assumption Changes		(1,411,534)
8. Expected Actuarial Accrued Liability as of June 30, 2020	$	151,456,450
9. Actuarial Accrued Liability as of June 30, 2020	$	157,134,028
Assets		
10. Actuarial Value of Assets as of June 30, 2019	$	140,434,301
11. Receipts During Plan Year		7,822,766
12. Expenditures, Excluding Expenses, During Plan Year		(7,367,304)
13. Interest at 6.75%		9,494,687
14. Expected Actuarial Value of Assets as of June 30, 2020	$	150,384,450
15. Actuarial Value of Assets as of June 30, 2020	$	149,003,157
Experience Gain / (Loss)		
16. Liability Actuarial Experience Gain/(Loss): (8) - (9)	$	(5,677,578)
17. Asset Actuarial Experience Gain/(Loss): (15) - (14)		(1,381,293)
18. Total Actuarial Experience Gain/(Loss): (16) + (17)	$	(7,058,871)

TABLE 9

EXPERIENCE GAIN/(LOSS) ANALYSIS BY SOURCE
(Base Benefits)

Liability Sources (in thousands)		**Gain/(Loss)**
Retirement	$	(113)
Termination		(284)
Disability		430
Mortality		(492)
Salary		(5,400)
New Entrants/Rehires		(36)
Miscellaneous/COLA		217
Total Liability Experience Gain/(Loss)	$	(5,678)
as a % of AAL		(3.6%)
Asset Experience Gain/(Loss)	$	(1,381)
Total Actuarial Experience Gain/(Loss)	$	(7,059)

TABLE 10

PROJECTED BENEFIT PAYMENTS
(Base and Supplemental Benefits)

Plan Year Ending June 30	Benefit Amount
2021	$ 7,649,301
2022	8,120,814
2023	8,893,545
2024	9,060,842
2025	9,676,582
2026	10,137,767
2027	10,332,206
2028	10,985,735
2029	11,318,942
2030	11,779,191
2031	12,465,578
2032	13,382,091
2033	13,774,242
2034	14,508,828
2035	15,769,217
2036	16,872,660
2037	17,583,948
2038	18,271,957
2039	18,682,941
2040	19,024,720
2041	19,309,145
2042	19,605,834
2043	19,852,407
2044	20,017,943
2045	20,030,448
2046	20,076,903
2047	20,006,413
2048	19,801,144
2049	19,567,123
2050	19,285,690

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

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 EG&C 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 will be used to calculate the actuarially determined employer contribution rate to the Excise, Gaming and Conservation Officers' Retirement Fund for the 2022 calendar year. 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.

TABLE 11

SCHEDULE OF AMORTIZATION BASES
(Base Benefits)

Amortization Bases	Original Amount [1]	June 30, 2020 Remaining Payments	Date of Last Payment	Outstanding Balance as of June 30, 2020	Annual Contribution
2009 UAAL Base	12,159,924	17	7/1/2037	9,714,172	915,986
2010 UAAL Base	3,839,282	20	7/1/2040	3,258,849	282,586
2011 UAAL Base	1,009,127	21	7/1/2041	876,673	74,276
2012 UAAL Base	5,037,093	22	7/1/2042	4,470,012	370,750
2013 UAAL Base	(1,646,934)	23	7/1/2043	(1,490,326)	(121,221)
2014 UAAL Base	(3,141,667)	24	7/1/2044	(2,894,401)	(231,239)
2015 UAAL Base	4,288,938	25	7/1/2045	4,017,204	315,683
2016 UAAL Base	782,014	16	7/1/2036	695,303	67,811
2017 UAAL Base	(1,969,636)	17	7/1/2037	(1,811,297)	(170,794)
2018 UAAL Base	(15,408,361)	18	7/1/2038	(14,609,818)	(1,336,113)
2019 UAAL Base	(15,408,361)	19	7/1/2039	3,068,372	272,910
2020 UAAL Base	2,836,128	20	7/1/2040	2,836,128	245,931
Total				$ 8,130,871	$ 686,566

1. Total UAAL Amortization Payments	$ 686,566
2. Projected Payroll for FY 2021	$ 33,384,399
3. UAAL Amortization Payment Rate	2.06%
4. Remaining Amortization Period in Years (Weighted) [2]	21.5

[1] The original amounts from 2013 to 2017 were provided by the prior actuary. Amounts prior to 2013 were estimated by INPRS.
[2] 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.

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	$	315,468
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		314,510
7. Total COLA Funding Requirement as of July 1, 2021: (3) + (6)	$	629,978

Funding Sources for Projected COLAs

8. Assets as of June 30, 2020 Available for Future COLAs	$	356,026
9. Projected Contributions from 7/1/2020 to 12/31/2020		101,822
10. Expected Earnings through July 1, 2021		29,186
11. Projected Available Assets at July 1, 2021	$	487,034
12. Required Additional Funding for Anticipated COLAs: (7) - (11)		142,944

Surcharge Rate

13. Projected Payroll from 1/1/2021 to 6/30/2021		16,692,200
14. Value of (13) as of July 1, 2021	$	16,973,880
15. Surcharge Rate: (12) /(14)		0.85%

TABLE 13

ACTUARIAL REQUIRED CONTRIBUTION RATE
(Base and Supplemental Benefits)

	Base Benefits	Supplemental Benefits	Total
1. Projected Payroll for FY 2021	$ 33,384,399		
2. Normal Cost Rate	11.56%	0.57%	12.13%
3. Amortization of UAAL as of June 30, 2020			
a. Dollar Amount	$ 686,566		
b. Percent of Projected Pay	2.06%		
4. Expected Employee Contribution Rate	(4.00%)		
5. Preliminary Actuarially Determined Contribution (ADC) Rate: (2) + (3b) + (4)	9.62%		
6. Supplemental Benefit Surcharge Rate		0.85%	
7. ADC Rate Subject to Legal Constraints	9.62%	0.85%	
8. Actuarially Determined Contribution Rate for FY 2021:			
a. July 1, 2020 - December 31, 2020	7.78%	0.61%	8.39%
b. January 1, 2021 - June 30, 2021	8.38%	0.85%	9.23%
c. Average	8.08%	0.73%	8.81%
9. Approved Board Policy Contribution Rate	20.02%	0.73%	20.75%
10. Expected Percentage of ADC Contributed: (9) / (8c)			235.53%

TABLE 14

INVESTMENT RETURN SENSITIVITY
(Base and Supplemental Benefits)

	1.00% Decrease: (5.75%)	0.75% Decrease: (6.00%)	0.50% Decrease: (6.25%)	0.25% Decrease: (6.50%)	Current Assumption: (6.75%)
Funded Status					
Actuarial Accrued Liability	$186,073,597	$180,135,226	$174,484,405	$169,103,946	$163,977,857
Actuarial Value of Assets	149,359,183	149,359,183	149,359,183	149,359,183	149,359,183
Unfunded Actuarial Accrued Liability	$36,714,414	$30,776,043	$25,125,222	$19,744,763	$14,618,674
Funded Ratio	80.3%	82.9%	85.6%	88.3%	91.1%
Actuarially Determined Contribution Amount					
Normal Cost	$5,129,365	$4,830,095	$4,551,384	$4,291,671	$4,049,528
UAAL Amortization	2,946,136	2,511,981	2,084,655	1,663,817	1,249,143
Member Contributions	(1,335,376)	(1,335,376)	(1,335,376)	(1,335,376)	(1,335,376)
Actuarially Determined Contribution Amount	$6,740,125	$6,006,700	$5,300,663	$4,620,113	$3,963,295
Actuarially Determined Contribution Rate	20.19%	17.99%	15.88%	13.84%	11.87%

	0.25% Increase: (7.00%)	0.50% Increase: (7.25%)	0.75% Increase: (7.50%)	1.00% Increase: (7.75%)	1.25% Increase: (8.00%)
Funded Status					
Actuarial Accrued Liability	$159,091,248	$154,430,240	$149,981,900	$145,734,153	$141,675,730
Actuarial Value of Assets	149,359,183	149,359,183	149,359,183	149,359,183	149,359,183
Unfunded Actuarial Accrued Liability	$9,732,065	$5,071,057	$622,717	($3,625,030)	($7,683,453)
Funded Ratio	93.9%	96.7%	99.6%	102.5%	105.4%
Actuarially Determined Contribution Amount					
Normal Cost	$3,823,639	$3,612,799	$3,415,900	$3,231,923	$3,059,928
UAAL Amortization	840,340	437,116	39,212	(291,821)	(631,946)
Member Contributions	(1,335,376)	(1,335,376)	(1,335,376)	(1,335,376)	(1,335,376)
Actuarially Determined Contribution Amount	$3,328,603	$2,714,539	$2,119,736	$1,604,726	$1,092,606
Actuarially Determined Contribution Rate	9.97%	8.13%	6.35%	4.81%	3.27%

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.

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 the required actuarial calculations set out in GASB 67 and 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
1. Assets			
a. Cash		$	0
b. Receivables			
i.	Contributions and Miscellaneous Receivables	$	0
ii.	Investments Receivable		4,040,630
iii.	Foreign Exchange Contracts Receivable		34,336,628
iv.	Interest and Dividends		337,154
v.	Receivables Due From Other Funds		0
vi.	Total Receivables	$	38,714,412
c. Investments			
i.	Short-Term Investments	$	0
ii.	Pooled Repurchase Agreements		33,813
iii.	Pooled Short-Term Investments		6,649,771
iv.	Pooled Fixed Income		50,613,432
v.	Pooled Equity		32,481,076
vi.	Pooled Alternative Investments		63,182,093
vii.	Pooled Derivatives		67,173
viii.	Pooled Investments		0
ix.	Securities Lending Collateral		757,719
x.	Total Investments	$	153,785,077
d. Net Capital Assets			0
e. Other Assets			0
f. Total Assets: a + b(vi) + c(x) + d + e		$	192,499,489
2. Liabilities			
a. Administrative Payable		$	1,937
b. Retirement Benefits Payable			49,870
c. Investments Payable			9,056,266
d. Foreign Exchange Contracts Payable			34,416,951
e. Securities Lending Obligations			757,719
f. Securities Sold Under Agreement to Repurchase			1,850,644
g. Due To Other Funds			7,702
h. Due to Other Governments			0
i. Total Liabilities: a + b + c + d + e + f + g + h		$	46,141,089
3. Fiduciary Net Position Restricted for Pensions: (1)(f) - (2)(i)		**$**	**146,358,400**

TABLE 16

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

			For Fiscal Year Ending June 30, 2020
1. Fiduciary Net Position as of June 30, 2019		**$**	**142,114,618**
2. Additions			
a. Contributions			
i.	Member Contributions		1,298,579
ii.	Employer Contributions		6,741,858
iii.	Service Purchases (Employer and Member)		0
iv.	Non-Employer Contributing Entity Contributions		0
v.	Total Contributions	$	8,040,437
b. Investment Income/(Loss)			
i.	Net Appreciation/(Depreciation)	$	3,431,944
ii.	Net Interest and Dividend Income		1,199,464
iii.	Securities Lending Income		10,161
iv.	Other Net Investment Income		16,337
v.	Investment Management Expenses		(944,093)
vi.	Direct Investment Expenses		(34,331)
vii.	Securities Lending Expenses		(2,320)
viii.	Total Investment Income/(Loss)	$	3,677,162
c. Other Additions			
i.	Member Reassignments		0
ii.	Miscellaneous Receipts		0
iii.	Total Other Additions	$	0
d. Total Revenue (Additions): a(v) + b(viii) + c(iii)		$	11,717,599
3. Deductions			
a. Pension, Survivor and Disability Benefits		$	7,269,944
b. Death and Funeral Benefits			0
c. Distributions of Contributions and Interest			97,360
d. Administrative Expenses			106,513
e. Member Reassignments			0
f. Miscellaneous Expenses			0
g. Total Expenses (Deductions)		$	7,473,817
4. Net Increase (Decrease) in Fiduciary Net Position: (2)(d) - (3)(g)		**$**	**4,243,782**
5. Fiduciary Net Position as of June 30, 2020: (1) + (4)		**$**	**146,358,400**

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)
1. Balance at June 30, 2019	$ 152,206,710	$ 142,114,618	$ 10,092,092
2. Changes for the Year:			
Service Cost (SC) [1]	3,983,271		3,983,271
Interest Cost	10,294,177		10,294,177
Experience (Gains)/Losses	6,031,421		6,031,421
Assumption Changes	(1,984,346)		(1,984,346)
Plan Amendments	813,928		813,928
Benefit Payments [2]	(7,367,304)	(7,367,304)	0
Service Purchases			
Employer Contributions	0	0	0
Employee Contributions	0	0	0
Member Reassignments	0	0	0
Employer Contributions		6,741,858	(6,741,858)
Non-employer Contributions		0	0
Employee Contributions		1,298,579	(1,298,579)
Net Investment Income		3,677,162	(3,677,162)
Administrative Expenses		(106,513)	106,513
Other		0	0
Net Changes	$ 11,771,147	$ 4,243,782	$ 7,527,365
3. Balance at June 30, 2020	$ 163,977,857	$ 146,358,400	$ 17,619,457

[1] Service cost provided as of beginning of year. Interest to end of year is included in the interest cost.

[2] Includes refund of member contributions of $97,360.

TABLE 18

DEFERRED OUTFLOWS OF RESOURCES

	June 30, 2019	Remaining Period	Recognition	June 30, 2020
1. Liability Experience				
June 30, 2020 Loss	$ 6,031,421	5.80	$ 1,039,901	$ 4,991,520
June 30, 2019 Loss	5,315,142	4.78	1,111,955	4,203,187
June 30, 2018 Loss	0	3.95	0	0
June 30, 2017 Loss	62,401	3.26	19,143	43,258
June 30, 2016 Loss	168,549	2.24	75,246	93,303
June 30, 2015 Loss	224,718	1.81	124,156	100,562
June 30, 2014 Loss	0	2.68	0	0
2. Assumption Changes				
June 30, 2020 Loss	$ 0	5.80	$ 0	$ 0
June 30, 2019 Loss	0	4.78	0	0
June 30, 2018 Loss	0	3.95	0	0
June 30, 2017 Loss	0	3.26	0	0
June 30, 2016 Loss	0	2.24	0	0
June 30, 2015 Loss	709,413	1.81	391,944	317,469
June 30, 2014 Loss	0	2.68	0	0
3. Investment Experience				
June 30, 2020 Loss	$ 5,934,698	5.00	$ 1,186,940	$ 4,747,758
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	1,223,381	1.00	1,223,381	0
Total Outflows: (1)+(2)+(3)	**$ 19,669,723**		**$ 5,172,666**	**$ 14,497,057**

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
1. Liability Experience				
June 30, 2020 Gain	$ 0	5.80	$ 0	$ 0
June 30, 2019 Gain	0	4.78	0	0
June 30, 2018 Gain	389,572	3.95	98,626	290,946
June 30, 2017 Gain	0	3.26	0	0
June 30, 2016 Gain	0	2.24	0	0
June 30, 2015 Gain	0	1.81	0	0
June 30, 2014 Gain	132,644	2.68	49,497	83,147
2. Assumption Changes				
June 30, 2020 Gain	$ 1,984,346	5.80	$ 342,129	$ 1,642,217
June 30, 2019 Gain	0	4.78	0	0
June 30, 2018 Gain	5,321,175	3.95	1,347,133	3,974,042
June 30, 2017 Gain	1,342,737	3.26	411,883	930,854
June 30, 2016 Gain	0	2.24	0	0
June 30, 2015 Gain	0	1.81	0	0
June 30, 2014 Gain	0	2.68	0	0
3. Investment Experience				
June 30, 2020 Gain	$ 0	5.00	$ 0	$ 0
June 30, 2019 Gain	643,935	4.00	160,984	482,951
June 30, 2018 Gain	1,846,910	3.00	615,637	1,231,273
June 30, 2017 Gain	542,587	2.00	271,295	271,292
June 30, 2016 Gain	0	1.00	0	0
Total Inflows: (1)+(2)+(3)	**$ 12,203,906**		**$ 3,297,184**	**$ 8,906,722**

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

Fiscal Year Ending June 30	Deferred Outflows	Deferred Inflows	Net Deferred Outflows/(Inflows)
Current Year:			
2020	$ 5,172,666	$ 3,297,184	$ 1,875,482
Future Years:			
2021	$ 3,851,216	$ 3,297,181	$ 554,035
2022	3,375,996	3,010,041	365,955
2023	3,343,768	1,983,670	1,360,098
2024	3,094,161	342,129	2,752,032
2025	831,916	273,701	558,215
Thereafter	0	0	0

TABLE 21

PENSION EXPENSE UNDER GASB NO. 68

			For Fiscal Year Ending June 30, 2020
1. Service Cost, beginning of year		$	3,983,271
2. Interest Cost, including interest on service cost			10,294,177
3. Member Contributions			(1,298,579)
4. Administrative Expenses			106,513
5. Expected Return on Assets [1]			(9,611,860)
6. Plan Amendments			813,928
7. Recognition of Deferred Inflows / Outflows of Resources Related to:			
a. Liability Experience (Gains) / Losses	2,222,278		
b. Assumption Change (Gains) / Losses	(1,709,201)		
c. Investment Experience (Gains) / Losses	1,362,405		
d. Total: (7a)+(7b)+(7c)			1,875,482
8. Miscellaneous (Income) / Expense			0
9. Total Collective Pension Expense: (1)+(2)+(3)+(4)+(5)+(6)+(7d)+(8)			6,162,932
10. Employer Service Purchases			0
Pension Expense / (Income): (9) + (10)		**$**	**6,162,932**

[1] Cash flows assumed to occur mid-year.

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 Excise, Gaming and Conservation Officers' Fund is a single-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% to 5.00%, 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 13th 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 13th 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

Mortality Assumption	Pub-2010 Public Retirement Plans Mortality Tables (Amount-Weighted) with a fully generational projection of mortality improvements using SOA Scale MP-2019. *Healthy Employees* – Safety Employee table with a 3 year set forward for males and no set forward for females. *Retirees* – Safety Retiree table with a 3 year set forward for males and no 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.
Experience Study	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.
Discount Rate	6.75%, net of investment expenses 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. The INPRS Board of Trustees has established a funding policy of setting the employer contribution rate equal to the greater of 20.75% (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.

Discount Rate Sensitivity

	1% Decrease 5.75%	Current Rate 6.75%	1% Increase 7.75%
Net Pension Liability	$39,715,196	$17,619,457	($624,246)

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	248
2. Inactive Members Entitled To But Not Yet Receiving Benefits	4
3. Inactive Non-vested Members Entitled to a Refund of Member Contributions	133
4. Active Members	420
Total Covered Plan Members: (1)+(2)+(3)+(4)	805

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	$	163,977,857
Fiduciary Net Position		146,358,400
Net Pension Liability	$	17,619,457
Ratio of Fiduciary Net Position to Total Pension Liability		89.25%

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

SCHEDULE OF CHANGES IN THE TOTAL PENSION LIABILITY AND PLAN FIDUCIARY NET POSITION

Fiscal Year Ending June 30	2016	2017	2018	2019	2020
Total Pension Liability					
Total Pension Liability - beginning	$132,795,504	$138,965,050	$142,602,804	$140,055,567	$152,206,710
Service Cost (SC), beginning-of-year	3,011,127	3,550,386	3,369,314	3,551,307	3,983,271
Interest Cost, including interest on SC	8,955,451	9,388,843	9,619,116	9,447,926	10,294,177
Experience (Gains)/Losses	469,533	119,830	(586,824)	6,427,097	6,031,421
Assumption Changes	0	(2,578,386)	(8,015,441)	0	(1,984,346)
Plan Amendments	0	0	0	0	813,928
Actual Benefit Payments	(6,245,234)	(6,826,316)	(6,934,957)	(7,325,257)	(7,367,304)
Member Reassignments	(21,331)	(25,694)	0	0	0
Service Purchases	0	9,091	1,555	50,070	0
Net Change in Total Pension Liability	6,169,546	3,637,754	(2,547,237)	12,151,143	11,771,147
(a) Total Pension Liability - ending	$138,965,050	$142,602,804	$140,055,567	$152,206,710	$163,977,857
Plan Fiduciary Net Position					
Plan Fiduciary Net Position – beginning	$110,037,215	$111,329,476	$120,016,301	$131,491,187	$142,114,618
Contributions – employer	5,366,551	5,691,313	6,174,724	6,981,555	6,741,858
Contributions – non-employer	0	0	0	0	0
Contributions – member	1,015,896	1,101,958	1,172,194	1,367,778	1,298,579
Net investment income	1,314,506	8,869,229	11,188,935	9,711,357	3,677,162
Actual benefit payments	(6,245,234)	(6,826,316)	(6,934,957)	(7,325,257)	(7,367,304)
Net member reassignments	(21,331)	(25,694)	0	0	0
Administrative expense	(138,127)	(123,665)	(136,045)	(112,002)	(106,513)
Other	0	0	10,035	0	0
Net change in Plan Fiduciary Net Position	1,292,261	8,686,825	11,474,886	10,623,431	4,243,782
(b) Plan Fiduciary Net Position - ending	$111,329,476	$120,016,301	$131,491,187	$142,114,618	$146,358,400
Net Pension Liability - ending, (a) - (b)	$27,635,574	$22,586,503	$8,564,380	$10,092,092	$17,619,457

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 CHANGES IN THE TOTAL PENSION LIABILITY AND PLAN FIDUCIARY NET POSITION

(continued)

Fiscal Year Ending June 30	2013	2014	2015
Total Pension Liability			
Total Pension Liability - beginning	$113,282,644	$118,097,227	$123,600,704
Service Cost (SC), beginning-of-year	3,810,650	3,841,382	3,904,932
Interest Cost, including interest on SC	7,740,113	8,030,425	8,383,598
Experience (Gains)/Losses	(1,845,309)	(429,626)	845,498
Assumption Changes	(40,954)	0	2,669,133
Plan Amendments	0	0	0
Actual Benefit Payments	(4,835,348)	(5,938,704)	(6,608,361)
Member Reassignments	(14,569)	0	0
Service Purchases	0	0	0
Net Change in Total Pension Liability	4,814,583	5,503,477	9,194,800
(a) Total Pension Liability - ending	$118,097,227	$123,600,704	$132,795,504
Plan Fiduciary Net Position			
Plan Fiduciary Net Position – beginning	$76,543,260	$97,018,792	$110,656,502
Contributions – employer	19,740,031	5,358,617	5,215,010
Contributions – non-employer	0	0	0
Contributions – member	1,005,564	1,019,371	1,003,661
Net investment income	4,700,988	13,338,780	(71,559)
Actual benefit payments	(4,835,348)	(5,938,704)	(6,608,361)
Net member reassignments	(14,569)	0	0
Administrative expense	(121,134)	(140,354)	(158,038)
Other	0	0	0
Net change in Plan Fiduciary Net Position	20,475,532	13,637,710	(619,287)
(b) Plan Fiduciary Net Position - ending	$97,018,792	$110,656,502	$110,037,215
Net Pension Liability - ending, (a) - (b)	$21,078,435	$12,944,202	$22,758,289

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 THE NET PENSION LIABILITY

Fiscal Year Ending June 30	2016	2017	2018	2019	2020
Total Pension Liability	$138,965,050	$142,602,804	$140,055,567	$152,206,710	$163,977,857
Plan Fiduciary Net Position	111,329,476	120,016,301	131,491,187	142,114,618	146,358,400
Net Pension Liability	$27,635,574	$22,586,503	$8,564,380	$10,092,092	$17,619,457
Ratio of Plan Fiduciary Net Position to Total Pension Liability	80.11%	84.16%	93.89%	93.37%	89.25%
Covered-employee payroll [1]	$25,525,549	$27,428,006	$29,386,684	$33,271,557	$32,490,899
Net Pension Liability as a percentage of covered-employee payroll	108.27%	82.35%	29.14%	30.33%	54.23%

Fiscal Year Ending June 30	2013	2014	2015
Total Pension Liability	$118,097,227	$123,600,704	$132,795,504
Plan Fiduciary Net Position	97,018,792	110,656,502	110,037,215
Net Pension Liability	$21,078,435	$12,944,202	$22,758,289
Ratio of Plan Fiduciary Net Position to Total Pension Liability	82.15%	89.53%	82.86%
Covered-employee payroll [1]	$24,675,000	$25,824,626	$25,132,559
Net Pension Liability as a percentage of covered-employee payroll	85.42%	50.12%	90.55%

[1] 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 EMPLOYER CONTRIBUTIONS

Fiscal Year Ending June 30	2016	2017	2018	2019	2020
Actuarially Determined Contribution [1]	$4,077,706	$4,033,288	$4,393,309	$4,874,283	$3,647,103
Actual employer contributions	$5,366,551	$5,691,313	$6,174,724	$6,981,555	$6,741,858
Annual contribution (deficiency) / excess	$1,288,845	$1,658,025	$1,781,415	$2,107,272	$3,094,755
Covered-employee payroll [2]	$25,525,549	$27,428,006	$29,386,684	$33,271,557	$32,490,899
Actual contributions as a percentage of covered-employee payroll	21.02%	20.75%	21.01%	20.98%	20.75%

Fiscal Year Ending June 30	2013	2014	2015
Actuarially Determined Contribution [1]	$4,794,353	$5,340,533	$4,820,425
Actual employer contributions	$19,740,031	$5,358,617	$5,215,010
Annual contribution (deficiency) / excess	$14,945,678	$18,084	$394,585
Covered-employee payroll [2]	$24,675,000	$25,824,626	$25,132,559
Actual contributions as a percentage of covered-employee payroll	80.00%	20.75%	20.75%

[1] Actuarially determined contribution rate for July-December was developed in the actuarial funding valuation completed two years prior to the fiscal year.
Actuarially determined contribution rate for January-June was developed in the actuarial funding valuation completed one year prior to the fiscal year.
The average of these two rates was applied to the actual covered employee payroll for the fiscal year to determine the contribution amount.
The surcharge rate uses the valuation completed two years ago for July-December and one year ago for January-June.

[2] 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

For Fiscal Year Ending June 30	Money-Weighted Return
2020	2.6%
2019	7.4%
2018	9.3%
2017	8.0%
2016	1.2%
2015	(0.1%)
2014	13.7%
2013	5.5%

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

Appendix **Page**

MEMBER DATA RECONCILIATION
For June 30, 2019 Data used in the June 30, 2020 Valuation

	Active Members	Actives in DROP	Inactive Vested	Inactive Nonvested	Disabled	Retired	Beneficiary	Total
1. As of June 30, 2018	**423**	**13**	**4**	**137**	**3**	**190**	**47**	**817**
2. Data Adjustments								
New Participants	5	0	0	0	0	0	0	5
Rehires	0	0	0	0	0	0	0	0
Terminations:								
Not Vested	(5)	0	0	5	0	0	0	0
Deferred Vested	0	0	0	0	0	0	0	0
DROP	2	(2)	0	0	0	0	0	0
Disability	0	0	0	0	0	0	0	0
Retirements	(8)	(5)	0	0	0	13	0	0
Refund / Benefits Ended	(2)	0	0	(9)	0	0	0	(11)
Deaths:								
With Beneficiary	0	0	0	0	0	(2)	2	0
Without Beneficiary	(1)	0	0	0	0	0	(5)	(6)
Data Corrections	0	0	0	0	0	0	0	0
Net Change	(9)	(7)	0	(4)	0	11	(3)	(12)
3. As of June 30, 2019	**414**	**6**	**4**	**133**	**3**	**201**	**44**	**805**

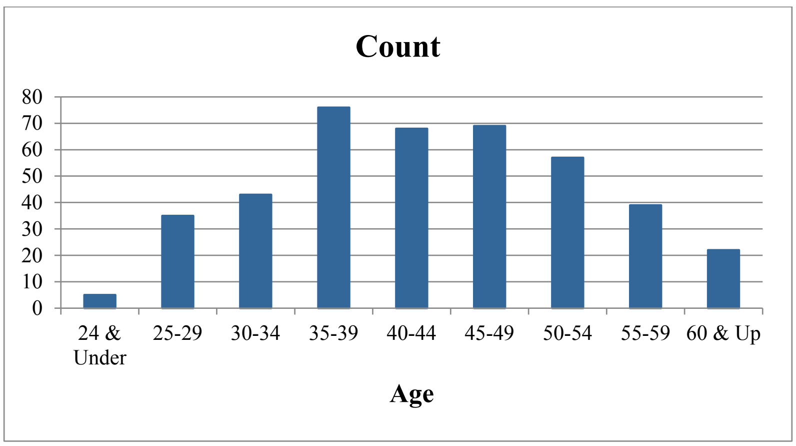
SUMMARY OF MEMBERSHIP DATA

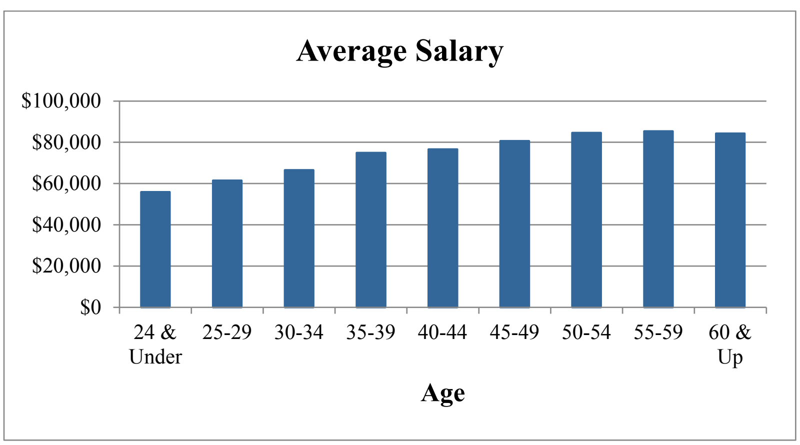
Valuation Date	June 30, 2019	June 30, 2020	% Change
Date of Membership Data [1]	July 1, 2018	July 1, 2019	
ACTIVE MEMBERS			
Number of Members			
Active	423	414	(2.1%)
Active in DROP	13	6	(53.8%)
Total	436	420	(3.7%)
Annual Membership Data Salary [2]	$ 29,871,173	$ 32,305,311	8.1%
Anticipated Payroll for Next Fiscal Year	$ 34,103,346	$ 33,384,399	(2.1%)
Active Member Averages			
Age	42.8	43.5	1.6%
Service	11.6	12.3	6.0%
Annual Membership Data Salary	$ 68,512	$ 76,917	12.3%
INACTIVE MEMBERS			
Number of Members			
Inactive Vested	4	4	0.0%
Inactive Non-Vested	137	133	(2.9%)
Total	141	137	(2.8%)
Inactive Vested Member Averages			
Age	48.3	49.3	2.1%
Service	17.3	17.3	0.0%
RETIREES, DISABLEDS, AND BENEFICIARIES			
Number of Members			
Retired	190	201	5.8%
Disabled	3	3	0.0%
Beneficiaries	47	44	(6.4%)
Total	240	248	3.3%
Annual Benefits			
Retired	$ 5,876,331	$ 6,280,836	6.9%
Disabled	48,610	48,610	0.0%
Beneficiaries	501,415	470,883	(6.1%)
Total	$ 6,426,356	$ 6,800,329	5.8%

[1] The valuation results were calculated using the prior year's census data and were adjusted for certain activity during fiscal year.
[2] Annualized for actives with less than a year of service. Actives with no salary provided are defaulted to the average salary.

ACTIVE MEMBERS [1]
As of June 30, 2019 for the June 30, 2020 Valuation

	Count of Members			FY 2019 Annual Membership Data Salary		
Age	Male	Female	Total	Male	Female	Total
24 & Under	5	0	5	$ 279,395	$ 0	$ 279,395
25-29	33	2	35	2,013,444	137,057	2,150,501
30-34	41	2	43	2,720,936	139,521	2,860,457
35-39	64	12	76	4,772,208	918,831	5,691,039
40-44	55	13	68	4,242,944	969,118	5,212,062
45-49	63	6	69	5,089,049	474,241	5,563,290
50-54	54	3	57	4,576,351	244,071	4,820,422
55-59	38	1	39	3,233,405	95,026	3,328,431
60 & Up	21	1	22	1,774,703	80,406	1,855,109
Total	374	40	414	$ 28,702,435	$ 3,058,271	$ 31,760,706





[1] Actives with no salary provided are defaulted to the average salary.

AGE AND SERVICE DISTRIBUTION
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
24 & Under	Number	5	0	0	0	0	0	0	0	5
	Total Salary	$ 279,395	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 279,395
	Average Sal.	$ 55,879	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 55,879
25-29	Number	21	14	0	0	0	0	0	0	35
	Total Salary	$ 1,220,389	$ 930,112	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 2,150,501
	Average Sal.	$ 58,114	$ 66,437	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 61,443
30-34	Number	12	28	3	0	0	0	0	0	43
	Total Salary	$ 715,036	$ 1,922,728	$ 222,693	$ 0	$ 0	$ 0	$ 0	$ 0	$ 2,860,457
	Average Sal.	$ 59,586	$ 68,669	$ 74,231	$ 0	$ 0	$ 0	$ 0	$ 0	$ 66,522
35-39	Number	6	15	44	11	0	0	0	0	76
	Total Salary	$ 392,901	$ 1,033,347	$ 3,385,277	$ 879,514	$ 0	$ 0	$ 0	$ 0	$ 5,691,039
	Average Sal.	$ 65,484	$ 68,890	$ 76,938	$ 79,956	$ 0	$ 0	$ 0	$ 0	$ 74,882
40-44	Number	5	12	32	13	6	0	0	0	68
	Total Salary	$ 341,818	$ 877,854	$ 2,528,037	$ 957,815	$ 506,538	$ 0	$ 0	$ 0	$ 5,212,062
	Average Sal.	$ 68,364	$ 73,155	$ 79,001	$ 73,678	$ 84,423	$ 0	$ 0	$ 0	$ 76,648
45-49	Number	6	8	22	9	21	3	0	0	69
	Total Salary	$ 492,498	$ 585,630	$ 1,736,550	$ 728,840	$ 1,782,639	$ 237,133	$ 0	$ 0	$ 5,563,290
	Average Sal.	$ 82,083	$ 73,204	$ 78,934	$ 80,982	$ 84,888	$ 79,044	$ 0	$ 0	$ 80,627
50-54	Number	11	3	17	4	11	10	1	0	57
	Total Salary	$ 928,705	$ 268,767	$ 1,384,667	$ 314,629	$ 920,587	$ 908,476	$ 94,591	$ 0	$ 4,820,422
	Average Sal.	$ 84,428	$ 89,589	$ 81,451	$ 78,657	$ 83,690	$ 90,848	$ 94,591	$ 0	$ 84,569
55-59	Number	10	6	10	0	0	4	8	1	39
	Total Salary	$ 757,648	$ 535,325	$ 848,871	$ 0	$ 0	$ 328,766	$ 765,887	$ 91,934	$ 3,328,431
	Average Sal.	$ 75,765	$ 89,221	$ 84,887	$ 0	$ 0	$ 82,192	$ 95,736	$ 91,934	$ 85,344
60 & Up	Number	2	3	15	0	1	0	0	1	22
	Total Salary	$ 163,695	$ 250,812	$ 1,262,618	$ 0	$ 75,901	$ 0	$ 0	$ 102,083	$ 1,855,109
	Average Sal.	$ 81,848	$ 83,604	$ 84,175	$ 0	$ 75,901	$ 0	$ 0	$ 102,083	$ 84,323
Total	Number	78	89	143	37	39	17	9	2	414
	Total Salary	$ 5,292,085	$ 6,404,575	$ 11,368,713	$ 2,880,798	$ 3,285,665	$ 1,474,375	$ 860,478	$ 194,017	$ 31,760,706
	Average Sal.	$ 67,847	$ 71,962	$ 79,501	$ 77,859	$ 84,248	$ 86,728	$ 95,609	$ 97,008	$ 76,717

[1] Actives with no salary provided are defaulted to the average salary.

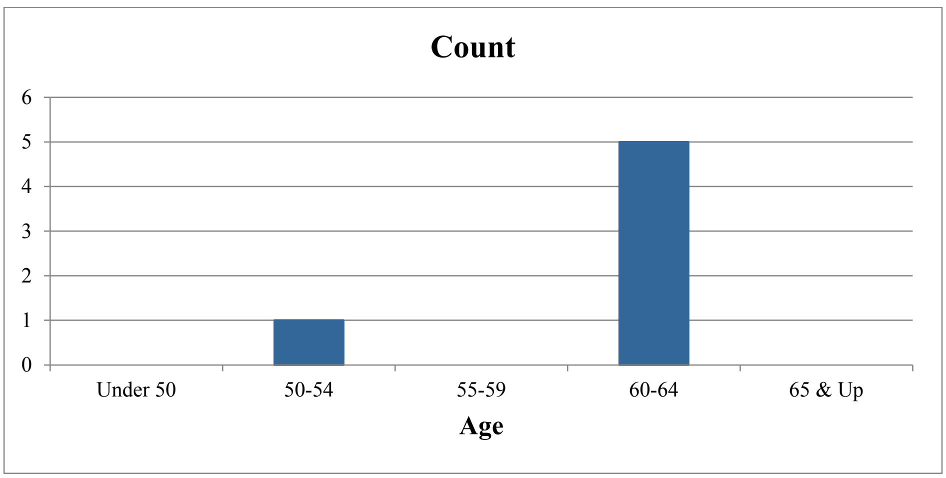
ACTIVE MEMBERS IN DROP
As of June 30, 2019 for the June 30, 2020 Valuation

Count of Members

Age	Male	Female	Total
Under 50	0	0	0
50-54	1	0	1
55-59	0	0	0
60-64	5	0	5
65 & Up	0	0	0
Total	6	0	6

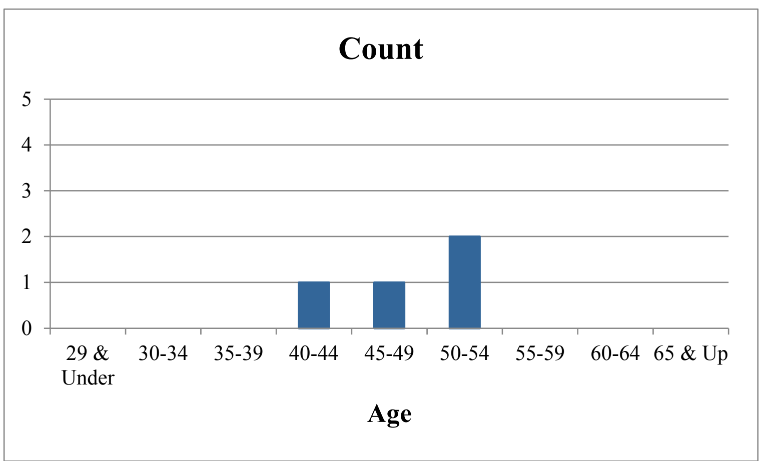
FY 2019 Annual Membership Data Salary

Total Salary	$ 544,605
Average Salary	$ 90,768



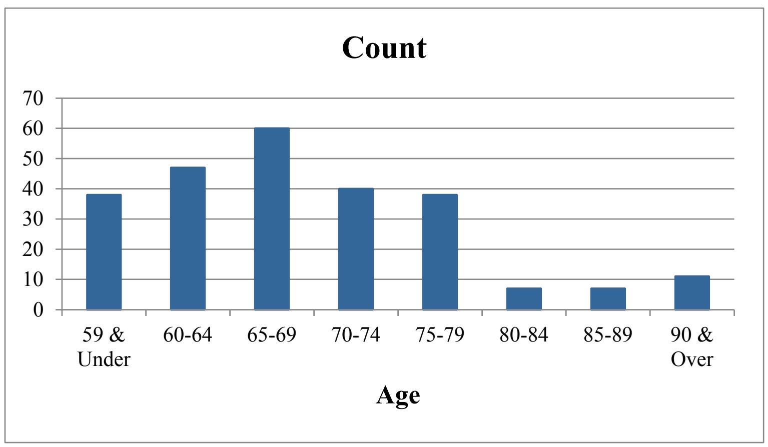
INACTIVE VESTED MEMBERS
As of June 30, 2019 for the June 30, 2020 Valuation

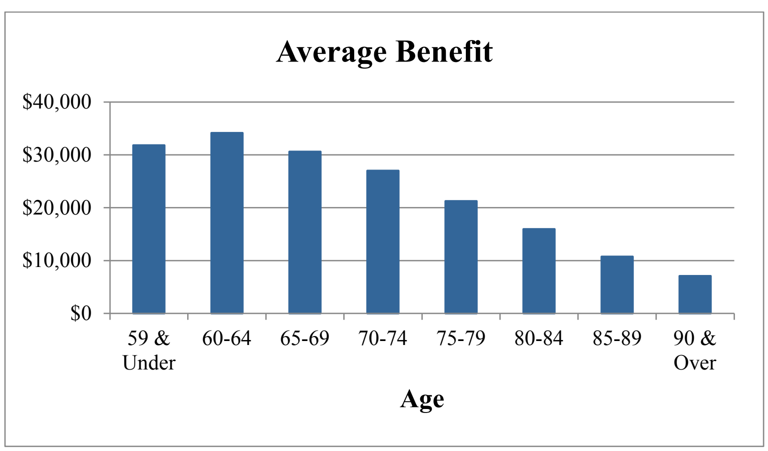
	Count of Members		
Age	Male	Female	Total
29 & Under	0	0	0
30-34	0	0	0
35-39	0	0	0
40-44	1	0	1
45-49	1	0	1
50-54	2	0	2
55-59	0	0	0
60-64	0	0	0
65 & Up	0	0	0
Total	4	0	4



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

	Count of Members			Annual Benefits		
Age	Male	Female	Total	Male	Female	Total
59 & Under	34	4	38	$ 1,121,947	$ 86,811	$ 1,208,758
60-64	41	6	47	1,492,640	111,657	1,604,297
65-69	51	9	60	1,678,796	157,564	1,836,360
70-74	32	8	40	978,368	101,079	1,079,447
75-79	26	12	38	657,837	148,986	806,823
80-84	5	2	7	95,109	16,513	111,622
85-89	2	5	7	34,265	40,959	75,224
90 & Over	2	9	11	22,081	55,717	77,798
Total	193	55	248	$ 6,081,043	$ 719,286	$ 6,800,329





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

Schedule of Average Benefit Payments[1]

	Years of Credited Service						
For the Year Ended June 30, 2020	< 10	10 - 14	15 - 19	20 - 24	25 - 29	30 +	Total
Average Monthly Defined Benefit	$851	$1,386	$602	$1,064	$2,249	$2,860	$2,285
Average Final Average Salary [2]	$51,086	$65,326	$33,535	$39,323	$54,691	$57,745	$54,522
Number of Benefit Recipients	2	11	18	19	78	120	248

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

	Number of Recipients by Benefit Option			
Amount of Monthly Benefit (in dollars)	Joint with 50% Survivor Benefits	Survivors	Disability	Total Benefit Recipients
1 - 500	2	9	1	12
501 - 1,000	12	19	0	31
1,001 - 1,500	24	13	1	38
1,501 - 2,000	9	2	0	11
2,001 - 2,500	35	1	1	37
2,501 - 3,000	49	0	0	49
Over 3,000	70	0	0	70
Total	201	44	3	248

[1]Calculated using the prior year census data, adjusted for certain activity during the fiscal year.
[2]Excludes the 18 in-pay members who are missing a final average salary in the data.

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

	Added to Rolls		Removed from Rolls		Rolls - End of Year				
	Number	Annual Benefits	Number	Annual Benefits	Number	Total Annual Benefits	Percent Change In Total Annual Benefits[1,2]	Average Annual Benefit	Percent Change In Average Annual Benefit
2020 [3]	13	$438	5	$46	248	$6,800	5.8%	$27,421	2.4%
2019 [3]	9	216	3	19	240	6,426	2.9	26,776	0.3
2018 [3]	13	404	2	23	234	6,246	5.6	26,692	0.7
2017 [3]	8	314	5	60	223	5,912	4.4	26,512	3.0
2016 [3]	14	506	1	4	220	5,661	8.7	25,733	2.2
2015 [3]	15	556	1	5	207	5,210	11.7	25,170	4.1
2014 [3]	0	0	0	0	193	4,666	0.0	24,177	0.0
2013	8	253	2	9	193	4,666	4.8	24,177	1.5
2012	14	495	3	14	187	4,452	11.9	23,810	5.3
2011	22	902	3	23	176	3,978	26.9	22,602	13.2

[1] Dollar amounts are in thousands except for the average annual benefit.
[2] 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.
[3] The valuation results were calculated using the prior year census data, adjusted for certain activity during the fiscal year.

Definitions

Fiscal year	Twelve month period ending June 30.
Participation	All Indiana State Excise Police Officers, all Indiana State Conservation Enforcement officers, all Indiana Gaming Agents, and all Indiana Gaming Control Officers must become members as a condition of employment.
Member contributions	Each member is required to contribute at the rate of 4% of pay. These contributions are kept on deposit and credited with interest until such time as they are refunded or used to provide benefits at retirement.
Average monthly earnings	Average monthly earnings is the monthly average of earnings calculated based on any five years of salary within the 10 years preceding retirement that produce the highest such average.

Eligibility for Benefits

Deferred vested	15 or more years of creditable service and no longer active.
Disability retirement	As determined by a disability medical panel.
Early retirement	Age 45 with 15 or more years of creditable service.
Normal retirement	Earliest of: - Age 65 (mandatory retirement) - 10 or more years of creditable service for members hired on or after age 50 - Age 55 with sum of age and creditable service equal to 85 or more - Age 50 with 25 or more years of creditable service
Pre-retirement death	Active member or 15 or more years of creditable service.

Monthly Benefits Payable

Normal retirement	The normal retirement benefit is a monthly annuity payable in a Joint and 50% Surviving Beneficiary form and is equal to 25% of average monthly earnings, plus 1-2/3% of average monthly earnings for years of creditable service more than 10 years. The normal retirement benefit may not exceed 75% of the average annual salary.

Early retirement	The early retirement benefit is the accrued retirement benefit determined as of the early retirement date and payable commencing at the normal retirement date. A member may elect to have the benefit commence prior to normal retirement provided the benefit is reduced by 1/4% for each month that the benefit commencement date precedes age 60. The early retirement benefit may not exceed 75% of the average annual salary.
Deferred retirement	If termination is prior to earning 15 years of service, the member shall be entitled to a lump sum refund of employee contributions plus accumulated interest. If termination is after earning 15 years of service, the termination benefit is the accrued retirement benefit determined as of the termination date and payable commencing as of the normal retirement date. The member may elect to receive a reduced early retirement benefit beginning at age 45.
Disability	If disability occurs in the line of duty, the disability retirement benefit is the member's monthly salary multiplied by the degree of impairment and is payable commencing the month following disability date without reduction for early commencement. The benefit shall not be less than 20% of the member's salary if the member has more than 5 years of service, or 10% if 5 or less years of service. If disability does not occur in the line of duty, the disability retirement benefit is equal to 50% of the member's monthly salary multiplied by the degree of impairment and is payable commencing the month following disability date without reduction for early commencement. The benefit shall not be less than 10% of the member's salary if the member has more than 5 years of service, or 5% if 5 or less years of service.
Pre-retirement death	If death is prior to earning 15 years of service, an inactive member's beneficiary or estate shall receive employee contributions plus accumulated interest. If death is for an active member, regardless of service, or an inactive member with 15 years of service, the spouse or dependent beneficiary is entitled to receive the monthly survivor annuity under the assumption that the member had retired with 25 years of service at age 50. The survivor annuity is paid as a 50% joint and survivor annuity, except in the case of an active death in the line of duty, where the benefit is payable as a 100% joint and survivor annuity.

Deferred retirement option plan ("DROP")	Effective July 1, 2008, a DROP is established for all plan participants.

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

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

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

- The member shall execute an irrevocable election to retire on the DROP retirement date and shall remain in active service until that date.
- While in the DROP, the member shall continue to make contributions to the EG&C Fund under the provisions of that fund.
- The member shall elect a DROP retirement date not less than 12 months and not more than 36 months after the member's DROP entry date.
- The member may not remain in the DROP after the date the member reaches any mandatory retirement age as set forth in the EG&C Fund.
- The member may make an election to enter the DROP only once in the member's lifetime.
- A member who retires on his/her DROP retirement date may elect to receive an annual retirement allowance:
  a) Computed as if the member had never entered the DROP; or
  b) Consisting of the DROP frozen benefit, plus an additional amount paid as the member elects, determined by multiplying the DROP frozen benefit by the number of months the member was in DROP.

No cost of living increase is applied to a DROP frozen benefit while the participant is in the DROP. After the participant's DROP retirement date, cost of living increases determined

	under the EG&C Fund apply to the participant's annual retirement allowance.
Cost-of-Living-Adjustments	The monthly annuity benefits for members in pay status are increased periodically to preserve purchasing power that is diminished due to inflation. Such increases are not guaranteed by Statute and will only be provided by legislative action. Legislation passed in the 2018 legislative session creates a funding mechanism to provide for future benefit increases or 13th 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. Single life annuity	Member will receive a monthly benefit for life, but there are no monthly payments to anyone after death.
b. Joint with one-half survivor benefits	Member will be paid a monthly benefit for life. After death, one-half (1/2) of the benefit will be paid to the spouse or parent for their lifetime or the dependent until age 18. If the spouse's age is more than 5 years younger than the member, the benefit is actuarially adjusted.

Changes in Plan Provisions since the Prior Year

SEA 181 updated the provision of the plan related to survivor benefits. The pre-retirement death benefit payable to survivors of active members was changed to eliminate the 15-year service requirement. Additionally, the benefit payable was increased from the regular death benefit to the amount with which the participant would have been entitled had the participant retired with 25 years of service at age 50. If the active death occurs in the line of duty, the survivor annuity is payable as a 100% joint and survivor annuity, in lieu of the 50% joint and survivor annuity.

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. The purpose of the method is to give a smooth progression of the costs from year to year and, at the same time, provide for an orderly funding of the unfunded liabilities.

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

Member census data as of June 30, 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**

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

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 Rate**

   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 rate.

Changes in Actuarial Methods since the Prior Year

None.

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%	2.25%	5.00%
1	2.75%	2.00%	4.75%
2	2.75%	1.75%	4.50%
3	2.75%	1.50%	4.25%
4	2.75%	1.25%	4.00%
5	2.75%	1.00%	3.75%
6	2.75%	0.75%	3.50%
7	2.75%	0.50%	3.25%
8	2.75%	0.25%	3.00%
9+	2.75%	0.00%	2.75%

4. Interest on member balances — 3.50% per year

5. Cost-of-Living Adjustment (COLA) — In lieu of a COLA on January 1, 2021, members in pay are provided a 13th 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

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 – Safety Employee table with a 3 year set forward for males and no set forward for females.

Retirees – Safety Retiree table with a 3 year set forward for males and no set forward for females.

Mortality (continued)

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

Disableds – General Disabled table.

2. Disability

Age	Sample Rates
<=30	0.100%
35	0.200%
40	0.300%
45	0.400%
50+	0.500%

Rates for ages 30-50 increase by 0.02% per year.

Active members who become disabled are assumed to receive 20% of their salary if they have less than 5 years of service and 40% of their salary if they have 5 or more years of service.

3. Retirement

Age	Eligible for **Reduced** Benefit	Eligible for **Unreduced** Benefit
45-54	2%	20%
55-58	2%	25%
59	2%	35%
60	N/A	55%
61	N/A	65%
62-64	N/A	75%
65+	N/A	100%

Active members: Of those who retire, 50% enter DROP and the other 50% retire immediately. Those who elect to enter DROP are assumed be in DROP for a period of 3 years, upon which time they take the full lump sum and commence their annuity benefit.

Inactive vested members are assumed to commence their retirement benefit at their earliest eligible retirement date (age 45, or current age if greater).

4. Termination

Years of Service	Rate
0-1	10.0%
2	9.0%
3	8.0%
4	7.0%
5	6.0%
6	5.0%
7	4.0%
8	3.0%
9	2.0%
10+	1.0%

Other Assumptions

1. Form of payment — Members are assumed to elect either a single life annuity or a 50% joint survivor benefit based on the marriage assumptions below.

2. Marital status
   a. Percent married — 90% of members are assumed to be married 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. Members in DROP — Members who are participating in the DROP are assumed to receive an annuity benefit commencing at the end of their DROP period as well as a lump sum payment equal to the number of years they were in the DROP times their annual annuity benefit. The annuity benefit is estimated based on salary and service at the time the member entered the DROP.

5. Active Member Death — 20% are assumed to be in the line of duty and 80% are other than in the line of duty.

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. Standard actuarial roll-forward techniques were then used to project the liability computed as of June 30, 2019 to the June 30, 2020 valuation date. The normal cost rate is assumed to remain unchanged between June 30, 2019 and June 30, 2020.

The member total payroll and the asset information for this valuation were furnished as of June 30, 2020. Total payroll in FYE 2021 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.

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, except those due a refund of contributions.

Accrued Service	Service credited under the plan that was rendered before the date of the actuarial valuation.
Actuarial Assumptions	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.
Actuarial Cost Method	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."
Actuarial Equivalent	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.
Actuarial Accrued Liability	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."
Actuarial Present Value	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.
Amortization	Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with lump sum payment.
Experience Gain (Loss)	The difference between actual experience and actuarial assumptions anticipated experience during the period between two actuarial valuation dates.
Normal Cost	The actuarial present value of retirement plan benefits allocated to the current year by the actuarial cost method.
Unfunded Actuarial Accrued Liability	The difference between actuarial liability and the actuarial value of assets. Sometimes referred to as "unfunded accrued liability" or "unfunded liability". Most retirement plans have unfunded actuarial liability. They arise anytime new benefits are added and anytime an actuarial loss is realized.