



Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

Indiana Public Retirement System
1977 Police Officers' and Firefighters'
Retirement Fund

Actuarial Valuation as of
June 30, 2022





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

November 3, 2022

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 1977 Police Officers' and Firefighters' Retirement Fund ('77 Fund) as of June 30, 2022, for the purpose of estimating the actuarial determined contribution rate for the calendar year 2024. Actuarial valuations are performed annually. The major findings of the valuation are contained in this report, which reflects the benefit and funding provisions in place on June 30, 2022. There were no changes to the ongoing benefit provisions, actuarial assumptions or actuarial methods from last year, though the Board approved a new funding policy in June 2022.

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 the '77 Fund 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 2022 valuations to the Board on February 18, 2022, and the Board subsequently adopted their use at its April 29, 2022 meeting. These assumptions are applicable to both the funding and Governmental Accounting Standards Board (GASB) Statement Number 67 valuation calculations, unless otherwise noted.



In order to prepare the results in this report, we have utilized actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and assumptions about future contingent events along with recognized actuarial approaches to develop the needed results. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. 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 the '77 Fund 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 general results of the risk report are applicable to the June 30, 2022 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 Annual Comprehensive Financial Report (ACFR) for INPRS contains several exhibits that disclose the actuarial position of the System. This annual report, prepared as of June 30, 2022, provides data and tables that we prepared for use in the following sections of the ACFR:

Financial Section:

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

Actuarial Section:

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



Statistical Section:

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

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

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

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

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

Sincerely,

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

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

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

Edward Koebel, FCA, EA, MAAA
Chief Executive Officer

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

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



TABLE OF CONTENTS

<u>Sections</u>	<u>Page</u>
Actuarial Certification Letter	
Section 1 – Board Summary.....	1
Section 2 – Scope of the Report.....	7
Section 3 – Assets	8
Table 1 – Development of Market Value of Assets	9
Table 2 – Development of Actuarial Value of Assets	10
Section 4 – Plan Liabilities	11
Table 3 – Actuarial Accrued Liability	12
Table 4 – Solvency Test	13
Table 5 – Reconciliation of Unfunded Actuarial Accrued Liability	14
Table 6 – Actuarial Gain/(Loss).....	15
Table 7 – Gain/(Loss) Analysis by Source.....	16
Table 8 – Projected Benefit Payments.....	17
Section 5 – Employer Contributions	18
Table 9 – Schedule of Amortization Bases	19
Table 10 – Actuarially Determined Contribution Rate	20
Table 11 – Investment Return Sensitivity	21
Section 6 – GASB Information	22
Table 12 – Statement of Fiduciary Net Position under GASB No. 67	23
Table 13 – Statement of Changes in Fiduciary Net Position under GASB No. 67	24
Table 14 – Schedule of Changes in Net Pension Liability under GASB No. 68.....	25
Table 15 – Deferred Outflow of Resources.....	26
Table 16 – Deferred Inflow of Resources	27
Table 17 – Deferred Inflows and Outflows to be Recognized in Pension Expense	28
Table 18 – Pension Expense under GASB No. 68	29
Notes to the Financial Statements under GASB No. 67 and 68	30
Required Supplemental Information under GASB No. 67 and 68	33
 Appendix A – Membership Data	 39
Appendix B – Summary of Plan Provisions	48
Appendix C – Summary of Actuarial Methods and Assumptions	53
Appendix D – Glossary of Actuarial Terms	58



SECTION 1 – BOARD SUMMARY

This report presents the results of the June 30, 2022 actuarial valuation of the 1977 Police Officers’ and Firefighters’ Retirement Fund (’77 Fund). The primary purposes of performing this actuarial valuation are to:

- Determine the employer contribution rate for the calendar year ending December 31, 2024 that will be sufficient to meet the funding policy.
- 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, 2022.
- Analyze and report on trends in plan contributions, assets and liabilities over the past several years.

VALUATION RESULTS

In June 2022, the funding policy was modified to change certain parameters related to setting the employer contribution rates. Once the plan reaches 95% funded, the employer contribution rate will be decreased by 25% of the difference between the existing rate and the actuarially determined contribution (ADC) until the plan reaches a 110% funded status. When the plan reaches a 110% funded status, the employer contribution rate will be decreased to equal the ADC. Note that there is no longer a requirement to contribute at least the normal cost rate, thus reducing the chances of extremely high funded statuses. The updated funding policy is effective for the June 30, 2022 valuation, but since the Fund has a funded ratio just under the trigger of 95%, the new policy will not have an impact on the employer contribution rates set forth with this valuation. There were no other changes to the ongoing benefit provisions, actuarial assumptions and methods.

The actuarial valuation results provide a “snapshot” view of the plan’s financial condition on June 30, 2022. The plan’s unfunded actuarial accrued liability (UAAL) increased from \$267.1 million last year to \$437.5 million this year and the funded ratio decreased from 96.5% to 94.7%. The primary factor behind the decrease in the funded ratio was an actuarial loss due to overall pay increases beyond what was expected, along with some losses due to retirements and terminations. Note that this was partially offset by an asset experience gain as portions of prior deferred asset gains were recognized.

A summary of the key results from the June 30, 2022 actuarial valuation compared to the June 30, 2021 valuation is shown in the following table.

Valuation Results	June 30, 2021	June 30, 2022
Unfunded Actuarial Accrued Liability	\$ 267,119,327	\$ 437,541,478
Funded Ratio (Actuarial Assets)	96.48%	94.72%
Normal Cost	21.56%	21.39%
UAAL Amortization	2.34%	3.61%
Total Recommended Contribution	23.90%	25.00%
Estimated Member Contributions	(5.90%)	(5.91%)
Actuarially Determined Contribution Rate	18.00%	19.09%



SECTION 1 – BOARD SUMMARY

Further detail on the valuation results can be found in the following sections of this Board Summary, including discussion regarding the change in the plan’s assets, liabilities, and actuarial determined contribution rate between June 30, 2021 and June 30, 2022.

ASSETS

As of June 30, 2022, the plan had net assets of \$7.63 billion when measured on a market value basis. This was a decrease of \$556 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. An asset valuation method, which smoothes the effect of market fluctuations, is applied to determine the value of assets used in the valuation. The resulting amount is called the actuarial value of assets. In this year’s valuation, the actuarial value of assets is \$7.84 billion, an increase of \$513 million from the prior year.

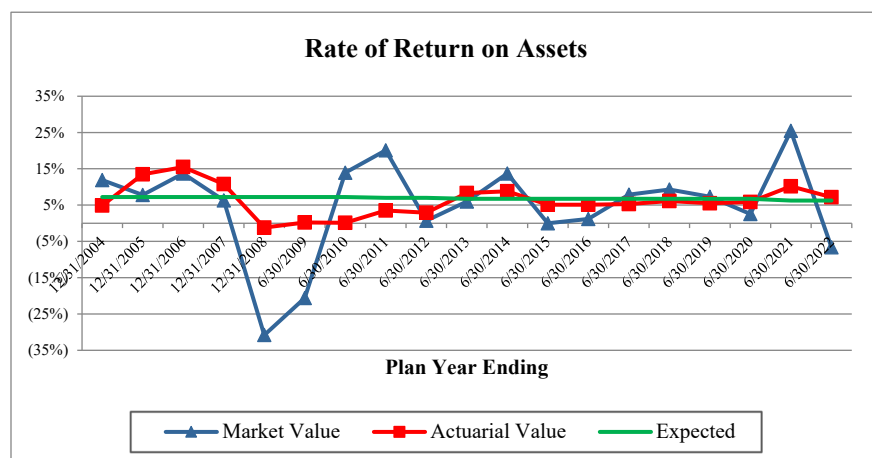
The components of change in the asset values are shown in the following table:

	Market Value	Actuarial Value
Net Assets, June 30, 2021	\$ 8,189,788,822	\$ 7,331,654,215
- Employer and Member Contributions	+ 235,981,092	+ 235,981,092
- Benefit Payments and Refunds	- 249,119,113	- 249,119,113
- Net Investment Income	+ 542,637,774	+ 525,807,197
Net Assets, June 30, 2022	\$ 7,634,013,027	\$ 7,844,323,391
Estimated Rate of Return, Net of Expenses	(6.6%)	7.2%

The estimated rate of return on the actuarial value of assets was 7.2%, which was higher than the 6.25% investment return assumption applicable for the year ended June 30, 2022. As a result, there was an experience gain on actuarial assets of \$68 million. The FY 2022 return on the market value of assets of -6.6% resulted in a change in the deferred investment experience from a net deferred investment gain of \$858 million in last year’s valuation to a net deferred investment loss of \$210 million in the current valuation. See Table 1 and Table 2 of this report for detailed information on the market and actuarial value of assets.



SECTION 1 – BOARD SUMMARY



The rate of return on the actuarial value of assets has been less volatile than the market value return, illustrating the benefits of using an asset smoothing method. The smoothed actuarial value of plan assets has led to relatively steady actuarial valuation results over the last two years, even with a large gain followed by an offsetting loss.

LIABILITIES

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

The unfunded actuarial accrued liability on both a market value and actuarial value of assets basis is shown as of June 30, 2022 in the following table:

	Market Value	Actuarial Value
Actuarial Accrued Liability	\$ 8,281,864,869	\$ 8,281,864,869
Value of Assets	7,634,013,027	7,844,323,391
Unfunded Actuarial Accrued Liability	\$ 647,851,842	\$ 437,541,478
Funded Ratio	92.18%	94.72%

See Table 3 of this report for the development of the unfunded actuarial accrued liability.

The UAAL (on an actuarial basis) as of June 30, 2022 was a \$438 million deficit, an increase of \$171 million from the \$267 million deficit last year. This increase was primarily driven by an actuarial loss on liability experience of \$240 million, largely due to salaries increasing by more than expected, along with smaller losses from retirement and termination experience. The change in UAAL also includes an actuarial gain of \$68 million on the actuarial value of assets. While this experience reflects the heart of the pandemic, the impact due to mortality experience, though a slight gain, was much smaller than these other items. The components of the change in the UAAL are quantified in Table 5 of this report. See Table 6 and Table 7 of this report for a breakdown of the components of experience gains/losses for greater detail.



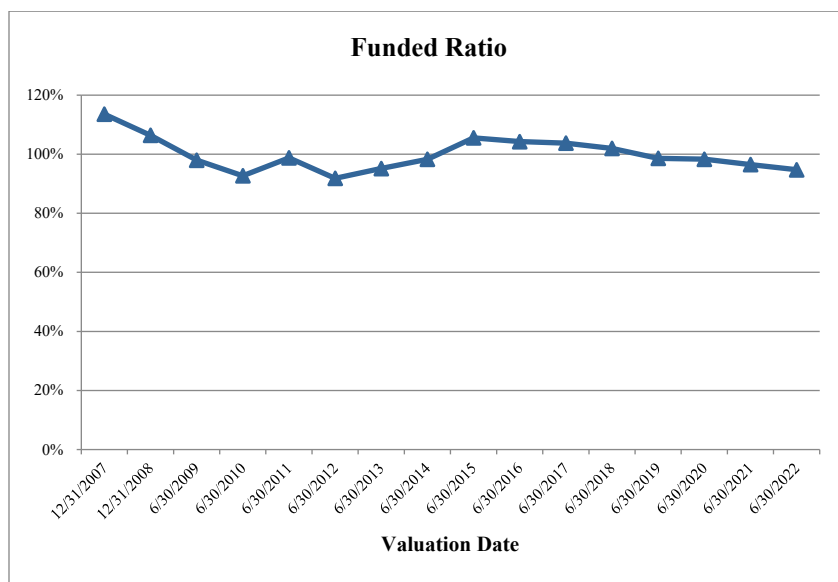
SECTION 1 – BOARD SUMMARY

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).

	6/30/2018	6/30/2019	6/30/2020	6/30/2021	6/30/2022
Funded Ratio	102.0%	98.6%	98.3%	96.5%	94.7%
UAAL (in millions)	(\$114.3)	\$89.3	\$115.6	\$267.1	\$437.5

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 of historical funded ratios shows, the ‘77 Fund has maintained a strong funded level for a number of years.



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.



SECTION 1 – BOARD SUMMARY

The UAAL contribution rate is determined by calculating the amortization payment on the UAAL as a level dollar amount over 20 years for each amortization base. Whenever the Plan funded ratio exceeds 100%, 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 Plan costs.

The employer actuarially determined contribution rate is the total actuarially determined contribution rate (ADC) less the expected member contribution rate. Members with less than 32 years of service contribute 6% of pay into the plan, so the effective member contribution rate over all payroll (including the members with more than 32 years of service) is estimated to be 5.91% of pay.

The funding policy is for the employers to contribute a rate of pay equal to the greater of the current employer contribution rate or the ADC. Once the plan reaches 95% funded, the employer contribution rate will be decreased by 25% of the difference between the existing rate and the ADC until the plan reaches 110% funded status. When the plan reaches 110% funded status, the employer contribution rate will be decreased to equal the ADC. The Board could decide, however, to set the rate higher in order to provide a cushion above the actuarially determined contribution rate which helps improve the plan’s funded status.

See Table 10 of this report for the detailed development of the contribution rates which are summarized in the following table:

	June 30, 2021	June 30, 2022
Normal Cost	21.56%	21.39%
UAAL Amortization	2.34%	3.61%
Total Recommended Contribution	23.90%	25.00%
Estimated Member Contributions	(5.90%)	(5.91%)
Actuarially Determined Contribution Rate	18.00%	19.09%
Approved Employer Funding Rate	18.00%	19.10%
Estimated Payroll	\$ 976,510,484	\$ 1,045,593,111
Actuarially Determined Contribution Amount	\$ 175,771,887	\$ 199,603,725

Last year, the Board approved funding rate was 18.00%, an increase from the previous year’s approved funding rate of 17.50%. The funding policy for this year states that the approved funding rate should be the greater of the current employer funding rate or the ADC. The June 30, 2022 actuarially determined contribution rate is 19.09%, resulting in an increase in the recommended employer funding rate from 18.00%. The Board has approved an employer funding rate of 19.10% for the calendar year starting January 1, 2024.

**SECTION 1 – BOARD SUMMARY****SUMMARY OF PRINCIPAL RESULTS**

	June 30, 2020	June 30, 2021	June 30, 2022
MEMBERSHIP			
Active Members	13,686	13,788	13,632
Members in DROP	556	590	755
Retired Members and Beneficiaries	4,731	5,201	5,625
Disabled Members	850	879	930
Inactive Members	1,590	1,681	1,800
Total Members	<u>21,413</u>	<u>22,139</u>	<u>22,742</u>
Projected Annual Salaries in Following Year	\$ 966,359,445	\$ 976,510,484	\$ 1,045,593,111
Annual Retirement Payments for Retired Members, Disabled Members and Beneficiaries	\$ 169,933,139	\$ 192,843,101	\$ 217,397,186
ASSETS AND LIABILITIES			
Net Assets			
Market Value of Assets (MVA)	\$ 6,542,799,991	\$ 8,189,788,822	\$ 7,634,013,027
Actuarial Value of Assets (AVA)	6,670,034,208	7,331,654,215	7,844,323,391
Actuarial Accrued Liability (AAL)	6,785,607,786	7,598,773,542	8,281,864,869
Unfunded Actuarial Accrued Liability (UAAL): AAL - AVA	\$ 115,573,578	\$ 267,119,327	\$ 437,541,478
Funded Ratios			
AVA / AAL	98.30%	96.48%	94.72%
MVA / AAL	96.42%	107.78%	92.18%
CONTRIBUTIONS			
Normal Cost Rate	19.49%	21.56%	21.39%
UAAL Rate	1.06%	2.34%	3.61%
Total Recommended Contribution Rate	<u>20.55%</u>	<u>23.90%</u>	<u>25.00%</u>
Expected Employee Contribution Rate	<u>(5.88%)</u>	<u>(5.90%)</u>	<u>(5.91%)</u>
Actuarially Determined Contribution Rate	14.67%	18.00%	19.09%
Actuarially Determined Contribution Amount	\$ 141,764,931	\$ 175,771,887	\$ 199,603,725



SECTION 2 – SCOPE OF THE REPORT

This report presents the actuarial valuation results of the 1977 Police Officers’ and Firefighters’ Retirement Fund as of June 30, 2022. 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, 2022.
- Appendix C A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.
- Appendix D A glossary of actuarial terms.



SECTION 3 – ASSETS

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, 2022. 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. Table 12 (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 2 shows the development of the actuarial value of assets (AVA) as of the valuation date.



TABLE 1
DEVELOPMENT OF MARKET VALUE OF ASSETS

	June 30, 2021	June 30, 2022
1. Market Value of Assets, Beginning of Year	\$ 6,542,799,991	\$ 8,189,788,822
2. Receipts		
a. Member (Includes Purchased Service) ¹	\$ 55,702,995	\$ 58,920,419
b. Employer (Includes Purchased Service) ²	166,436,369	177,035,424
c. Member Reassignment Transfers	0	8,462
d. Miscellaneous	18,603	16,787
e. Total	<u>\$ 222,157,967</u>	<u>\$ 235,981,092</u>
3. Expenditures		
a. Benefit Payments	\$ 235,564,067	\$ 244,926,018
b. Refund of Contributions	3,339,085	4,193,095
c. Administrative Expense	1,933,818	2,072,601
d. Miscellaneous	0	0
e. Total	<u>\$ 240,836,970</u>	<u>\$ 251,191,714</u>
4. Investment Return		
a. Investment Income	\$ 1,665,319,701	\$ (540,832,857)
b. Securities Lending Income	348,133	267,684
c. Total Investment Return	<u>\$ 1,665,667,834</u>	<u>\$ (540,565,173)</u>
5. Market Value of Assets, End of Year: (1) + (2e) - (3e) + (4c)	\$ 8,189,788,822	\$ 7,634,013,027
6. Estimated Rate of Return, Net of Expenses ³	25.46%	(6.63%)

¹ Includes \$976,246 of member service purchases during fiscal year 2021 and \$736,917 of member service purchases during fiscal year 2022.

² Includes \$342,447 of employer service purchases during fiscal year 2021 and \$368,799 of employer service purchases during fiscal year 2022.

³ Based on individual fund experience. Assumes cash flows occur at mid-year.



TABLE 2
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

		For the Year Ending June 30, 2022		
1. Market Value as of June 30, 2021		\$		8,189,788,822
2. Receipts ¹				235,981,092
3. Expenditures, Net of Administrative Expenses				(249,119,113)
4. Expected Return on Assets ²				<u>511,451,238</u>
5. Expected Market Value as of June 30, 2022: (1) + (2) + (3) + (4)		\$		8,688,102,039
6. Actual Market Value as of June 30, 2022		\$		7,634,013,027
7. Year End 2022 Asset Gain/(Loss): (6) - (5)		\$		(1,054,089,012)
8. Deferred Investment Gains and Losses				
	Year Ended June 30:	Gain/(Loss)	Factor	Deferred Amount
a.	2019	\$ 33,610,404	20%	\$ 6,722,081
b.	2020	(268,393,337)	40%	(107,357,335)
c.	2021	1,222,660,167	60%	733,596,100
d.	2022	(1,054,089,012)	80%	<u>(843,271,210)</u>
e.	Total			\$ (210,310,364)
9. Initial Actuarial Value as of June 30, 2022: (6) - (8e)		\$		7,844,323,391
10. Constraining Values				
a. 80% of Market Value: (6) x 0.8		\$		6,107,210,422
b. 120% of Market Value: (6) x 1.2		\$		9,160,815,632
11. Actuarial Value as of June 30, 2022		\$		7,844,323,391
12. Actuarial Rate of Return, Net of Expenses ³				7.18%
13. Actuarial Value of Assets as a Percent of Market Value: (11) / (6)				102.8%

¹ Includes Contributions, Service Purchases, Member Reassignment Transfers, and Miscellaneous Receipts.

² Assumes cash flows occur at mid-year and a return assumption of 6.25%.

³ Assumes cash flows occur at mid-year.



SECTION 4 – PLAN LIABILITIES

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 1977 Police Officers' and Firefighters' Retirement Fund as of the valuation date, June 30, 2022. 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, 2022 valuation of the 1977 Police Officers' and Firefighters' Retirement Fund valuation are based on census data collected as of June 30, 2021. Standard actuarial techniques are used to adjust these results from June 30, 2021 to June 30, 2022. While these roll-forward techniques are based on the expectation that all actuarial assumptions are met during the intervening year, there will, of course, be many of the assumptions that are not 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, 2022.

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 perform 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 3 contains the calculation of actuarial accrued liability for the plan. The Entry Age Normal actuarial cost method is used to develop the actuarial accrued liability.



TABLE 3
ACTUARIAL ACCRUED LIABILITY

		As of June 30, 2022
1. Actuarial Accrued Liability		
a. Member Contribution Balances	\$	895,986,527
b. Active & Inactive Members		4,137,472,648
c. In-pay Members		3,248,405,694
d. Total	\$	8,281,864,869
2. Actuarial Value of Assets	\$	7,844,323,391
3. Unfunded Actuarial Accrued Liability: (1d) – (2)	\$	437,541,478
4. Funded Ratio: (2)/(1d)		94.72%



SECTION 4 – PLAN LIABILITIES

**TABLE 4
SOLVENCY TEST**

Actuarial Valuation as of June 30	Actuarial Accrued Liabilities (AAL)				Portion of AAL Covered by Assets				
	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
2022	\$895,987	\$3,248,406	\$4,137,472	\$8,281,865	\$7,844,323	100.0%	100.0%	89.4%	94.7%
2021	886,016	2,816,400	3,896,358	7,598,774	7,331,654	100.0	100.0	93.1	96.5
2020	895,203	2,377,937	3,512,468	6,785,608	6,670,034	100.0	100.0	96.7	98.3
2019	883,706	2,169,744	3,335,552	6,389,002	6,299,748	100.0	100.0	97.3	98.6
2018	866,551	1,910,154	3,062,954	5,839,659	5,953,978	100.0	100.0	103.7	102.0
2017	857,426	1,715,503	2,812,824	5,385,753	5,587,551	100.0	100.0	107.2	103.7
2016	843,628	1,532,936	2,663,272	5,039,836	5,255,255	100.0	100.0	108.1	104.3
2015	832,760	1,362,021	2,485,913	4,680,694	4,939,330	100.0	100.0	110.4	105.5
2014	809,877	1,280,920	2,616,200	4,706,997	4,625,475	100.0	100.0	96.9	98.3
2013	782,124	1,288,457	2,322,366	4,392,947	4,180,704	100.0	100.0	90.9	95.2

Note: Dollar amounts are in thousands of dollars.



TABLE 5

RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY

	For Year Ending June 30, 2022
1. Unfunded Actuarial Accrued Liability as of June 30, 2021	\$ 267,119,327
2. Normal Cost	210,535,660
3. Actuarially Determined Contribution	(233,373,769)
4. Interest	<u>15,267,576</u>
5. Expected Unfunded Actuarial Accrued Liability as of June 30, 2022	\$ 259,548,794
6. Actuarial Value of Asset Changes	
a. Investment Experience (Gain)/Loss	\$ (67,989,372)
b. Contributions (Above)/Below the Actuarially Determined Contribution and Other (Gain)/Loss	\$ 5,786,873
7. Actuarial Accrued Liability Changes	
a. Actuarial Accrued Liability Experience (Gain)/Loss	\$ 240,195,183
b. Additional Liability Due to Benefit Changes	0
c. Additional Liability Due to Assumption Changes	<u>0</u>
8. Total Experience (Gain)/Loss	\$ 177,992,684
9. June 30, 2022 Unfunded Actuarial Accrued Liability: (5) + (8)	\$ 437,541,478



TABLE 6
ACTUARIAL GAIN/(LOSS)

Liabilities	
1. Actuarial Accrued Liability as of June 30, 2021	\$ 7,598,773,542
2. Normal Cost for Plan Year Ending June 30, 2022	210,535,660
3. Benefit Payments During Plan Year ¹	(249,086,388)
4. Service Purchases (employee and employer)	1,105,716
5. Member Reassignment Transfers	8,462
6. Interest at 6.25%	480,332,694
7. Change Due to Benefit Changes	0
8. Change Due to Assumption Changes	0
9. Expected Actuarial Accrued Liability as of June 30, 2022	\$ 8,041,669,686
10. Actuarial Accrued Liability as of June 30, 2022	\$ 8,281,864,869
Assets	
11. Actuarial Value of Assets as of June 30, 2021	\$ 7,331,654,215
12. Receipts During Plan Year	235,981,092
13. Expenditures, Excluding Expenses, During Plan Year	(249,119,113)
14. Interest at 6.25%	457,817,825
15. Expected Actuarial Value of Assets as of June 30, 2022	\$ 7,776,334,019
16. Actuarial Value of Assets as of June 30, 2022	\$ 7,844,323,391
Experience Gain / (Loss)	
17. Liability Actuarial Experience Gain/(Loss): (9) - (10)	\$ (240,195,183)
18. Asset Actuarial Experience Gain/(Loss): (16) - (15)	67,989,372
19. Total Actuarial Experience Gain/(Loss): (17) + (18)	\$ (172,205,811)

¹ Does not include miscellaneous expenses or benefit overpayments.



TABLE 7
EXPERIENCE GAIN/(LOSS) ANALYSIS BY SOURCE

Liability Sources (in thousands)		Gain/(Loss)
Retirement/DROP	\$	(57,703)
Termination		(12,018)
Disability		(5,804)
Mortality		7,958
Salary		(113,368)
New Entrants/Rehires		(9,367)
Miscellaneous/COLA		<u>(49,893)</u>
Total Liability Experience Gain/(Loss)	\$	(240,195)
as a % of AAL		(2.9%)
Asset Experience Gain/(Loss)	\$	67,989
Total Actuarial Experience Gain/(Loss)	\$	(172,206)



TABLE 8
PROJECTED BENEFIT PAYMENTS

<u>Plan Year Ending June 30</u>	<u>Benefit Amount</u>
2023	\$ 300,059,850
2024	333,585,157
2025	380,069,085
2026	378,432,611
2027	405,828,107
2028	433,635,922
2029	462,649,201
2030	491,660,482
2031	520,848,868
2032	550,289,035
2033	580,718,761
2034	609,643,651
2035	638,192,689
2036	666,033,884
2037	693,920,829
2038	722,275,702
2039	749,493,728
2040	777,973,111
2041	806,634,243
2042	835,730,120
2043	865,033,334
2044	893,279,855
2045	921,746,722
2046	948,854,185
2047	973,728,400
2048	996,777,539
2049	1,017,488,648
2050	1,035,274,299
2051	1,050,237,073
2052	1,061,625,415

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



SECTION 5 – EMPLOYER CONTRIBUTIONS

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 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. The unfunded actuarial accrued liability is calculated each year and reflects experience gains and losses.

In general, contributions are computed in accordance with a level percent-of-payroll funding objective. The contribution rate based on the June 30, 2022 actuarial will be used to calculate the actuarially determined employer contribution rate to the 1977 Police Officers' and Firefighters' Retirement Fund for the 2024 calendar year. Based on the Board funding policy, the employer funding rate for calendar year 2024 has been approved to be 19.10%. This rate is an increase over prior years to ensure the plan contributes the actuarially determined contribution rate and maintains adequate funding of the retirement system.

Contribution Rate Summary

In Table 9, the amortization payment related to the unfunded actuarial accrued liability/(surplus), as of June 30, 2022, is developed. Table 10 develops the actuarial determined 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 11 the contribution rates under alternative discount rates are provided to illustrate the sensitivity of the contribution requirements to the selection of the investment return assumption.



SECTION 5 – EMPLOYER CONTRIBUTIONS

TABLE 9

SCHEDULE OF AMORTIZATION BASES

Amortization Bases	Original Amount	June 30, 2022 Remaining Payments	Date of Last Payment	Outstanding Balance as of June 30, 2022	Annual Contribution
2019 UAAL Base ¹	89,253,395	17	7/1/2039	81,953,735	7,494,876
2020 UAAL Base	28,557,471	18	7/1/2040	27,037,552	2,394,522
2021 UAAL Base	154,649,894	19	7/1/2041	150,557,507	12,948,711
2022 UAAL Base	177,992,684	20	7/1/2042	<u>177,992,684</u>	<u>14,903,184</u>
Total				\$ 437,541,478	\$ 37,741,293
1. Total UAAL Amortization Payments					\$ 37,741,293
2. Projected Payroll for FY 2023					\$ 1,045,593,111
3. UAAL Amortization Payment Rate					3.61%
4. Remaining Amortization Period in Years (Weighted) ²					18.9

¹ The 2019 UAAL base reflects the change from a plan surplus position, which was amortized over an open, 30-year period, to the closed, 20-year period.

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.



SECTION 5 – EMPLOYER CONTRIBUTIONS

TABLE 10

ACTUARIAL DETERMINED CONTRIBUTION RATE

1. Projected Payroll for FY 2023	\$ 1,045,593,111
2. Normal Cost Rate	21.39%
3. Amortization of UAAL as of June 30, 2022	
a. Dollar Amount	\$ 37,741,293
b. Percent of Projected Pay	3.61%
4. Total Recommended Contribution Rate: (2) + (3b)	25.00%
5. Expected Employee Contribution Rate ¹	5.91%
6. Actuarially Determined Contribution Rate: (4) - (5)	19.09%
7. Estimated Actuarially Determined Contribution Amount: (1) x (6)	\$ 199,603,725
8. Actuarially Determined Contribution Rate for FY 2024	
a. July 1, 2023 to December 31, 2023	18.00%
b. January 1, 2024 to June 30, 2024	<u>19.09%</u>
c. Average	18.55%
9. Approved Funding Rate	
a. July 1, 2023 to December 31, 2023	18.00%
b. January 1, 2024 to June 30, 2024	<u>19.10%</u>
c. Average	18.55%
10. Expected Percentage of Actuarially Determined Contribution Contributed	100.00%

¹ Member contribution rate of 6% is made only on payroll of those with less than 32 years of service.



SECTION 5 – EMPLOYER CONTRIBUTIONS

TABLE 11

INVESTMENT RETURN SENSITIVITY

	1.00% Decrease: (5.25%)	0.75% Decrease: (5.50%)	0.50% Decrease: (5.75%)	0.25% Decrease: (6.00%)	Current Assumption: (6.25%)
Funded Status					
Actuarial Accrued Liability	\$9,576,407,249	\$9,225,543,011	\$8,893,645,313	\$8,579,469,735	\$8,281,864,869
Actuarial Value of Assets	<u>7,844,323,391</u>	<u>7,844,323,391</u>	<u>7,844,323,391</u>	<u>7,844,323,391</u>	<u>7,844,323,391</u>
Unfunded Actuarial Accrued Liability	\$1,732,083,858	\$1,381,219,620	\$1,049,321,922	\$735,146,344	\$437,541,478
Funded Ratio	81.9%	85.0%	88.2%	91.4%	94.7%
Actuarially Determined Contribution Amount					
Normal Cost Rate	28.14%	26.25%	24.50%	22.88%	21.39%
UAAL Amortization Rate	13.01%	10.59%	8.21%	5.89%	3.61%
Expected Member Contribution Rate	<u>(5.91%)</u>	<u>(5.91%)</u>	<u>(5.91%)</u>	<u>(5.91%)</u>	<u>(5.91%)</u>
Actuarially Determined Employer Contrib. Rate	35.24%	30.93%	26.80%	22.86%	19.09%
	0.25% Increase: (6.50%)	0.50% Increase: (6.75%)	0.75% Increase: (7.00%)	1.00% Increase: (7.25%)	1.25% Increase: (7.50%)
Funded Status					
Actuarial Accrued Liability	\$7,999,764,684	\$7,732,181,545	\$7,478,199,857	\$7,236,970,252	\$7,007,704,304
Actuarial Value of Assets	<u>7,844,323,391</u>	<u>7,844,323,391</u>	<u>7,844,323,391</u>	<u>7,844,323,391</u>	<u>7,844,323,391</u>
Unfunded Actuarial Accrued Liability	\$155,441,293	(\$112,141,846)	(\$366,123,534)	(\$607,353,139)	(\$836,619,087)
Funded Ratio	98.1%	101.5%	104.9%	108.4%	111.9%
Actuarially Determined Contribution Amount					
Normal Cost Rate	20.01%	18.73%	17.54%	16.45%	15.43%
UAAL Amortization Rate	1.37%	(0.79%)	(2.64%)	(4.47%)	(6.30%)
Expected Member Contribution Rate	<u>(5.91%)</u>	<u>(5.91%)</u>	<u>(5.91%)</u>	<u>(5.91%)</u>	<u>(5.91%)</u>
Actuarially Determined Employer Contrib. Rate	15.47%	12.03%	9.00%	6.06%	3.22%



SECTION 6 – GASB INFORMATION

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 6.25%. 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 12

STATEMENT OF FIDUCIARY NET POSITION

	June 30, 2022
1. Assets	
a. Cash	\$ 393,291
b. Receivables	
i. Contributions and Miscellaneous Receivables	\$ 958,919
ii. Investments Receivable	61,850,543
iii. Foreign Exchange Contracts Receivable	1,483,538,613
iv. Interest and Dividends	17,410,768
v. Receivables Due From Other Funds	0
vi. Total Receivables	<u>\$ 1,563,758,843</u>
c. Investments	
i. Short-Term Investments	\$ 0
ii. Pooled Repurchase Agreements	17,434,096
iii. Pooled Short-Term Investments	601,274,318
iv. Pooled Fixed Income	2,063,650,080
v. Pooled Equity	998,220,645
vi. Pooled Alternative Investments	4,177,300,819
vii. Pooled Derivatives	(55,763,184)
viii. Pooled Investments	0
ix. Securities Lending Collateral	35,440,247
x. Total Investments	<u>\$ 7,837,557,021</u>
d. Net Capital Assets	0
e. Other Assets	0
f. Total Assets: a + b(vi) + c(x) + d + e	\$ 9,401,709,155
2. Liabilities	
a. Administrative Payable	\$ 96,143
b. Retirement Benefits Payable	1,332,584
c. Investments Payable	212,615,679
d. Foreign Exchange Contracts Payable	1,471,523,583
e. Securities Lending Obligations	35,440,247
f. Securities Sold Under Agreement to Repurchase	46,398,704
g. Due To Other Funds	289,188
h. Due to Other Governments	0
i. Total Liabilities: a + b + c + d + e + f + g + h	<u>\$ 1,767,696,128</u>
3. Fiduciary Net Position Restricted for Pensions: (1)(f) - (2)(i)	\$ 7,634,013,027



TABLE 13

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

	For Fiscal Year Ending June 30, 2022	
1. Fiduciary Net Position as of June 30, 2021	\$	8,189,788,822
2. Additions		
a. Contributions		
i. Member Contributions	\$	58,183,502
ii. Employer Contributions		176,666,625
iii. Service Purchases (Employer and Member) ¹		1,105,716
iv. Non-Employer Contributing Entity Contributions		0
v. Total Contributions	\$	235,955,843
b. Investment Income/(Loss)		
i. Net Appreciation/(Depreciation)	\$	(1,240,592,915)
ii. Net Interest and Dividend Income		756,168,505
iii. Securities Lending Income		311,633
iv. Other Net Investment Income		238,530
v. Investment Management Expenses		(55,478,619)
vi. Direct Investment Expenses		(1,168,358)
vii. Securities Lending Expenses		(43,949)
viii. Total Investment Income/(Loss)	\$	(540,565,173)
c. Other Additions		
i. Member Reassignments		173,878
ii. Miscellaneous Receipts		16,787
iii. Total Other Additions	\$	190,665
d. Total Revenue (Additions): a(v) + b(viii) + c(iii)	\$	(304,418,665)
3. Deductions		
a. Pension, Survivor and Disability Benefits	\$	243,534,018
b. Death and Funeral Benefits		1,392,000
c. Distributions of Contributions and Interest		4,193,095
d. Administrative Expenses		2,072,601
e. Member Reassignments		165,416
f. Miscellaneous Expenses		0
g. Total Expenses (Deductions)	\$	251,357,130
4. Net Increase (Decrease) in Fiduciary Net Position: (2)(d) - (3)(g)	\$	(555,775,795)
5. Fiduciary Net Position as of June 30, 2022: (1) + (4)	\$	7,634,013,027

¹ Service purchases paid by employer of \$368,799 and employee of \$736,917.



TABLE 14

SCHEDULE OF CHANGES IN NET PENSION LIABILITY

	For Fiscal Year Ending June 30, 2022		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
1. Balance at June 30, 2021	\$ 7,598,773,542	\$ 8,189,788,822	\$ (591,015,280)
2. Changes for the Year:			
Service Cost (SC) ¹	210,535,660		210,535,660
Interest Cost	480,331,671		480,331,671
Experience (Gains)/Losses	240,228,931		240,228,931
Assumption Changes	0		0
Plan Amendments	0		0
Benefit Payments ²	(249,119,113)	(249,119,113)	0
Service Purchases			
Employer Contributions	368,799	368,799	0
Employee Contributions	736,917	736,917	0
Member Reassignments ³	8,462	8,462	0
Employer Contributions		176,666,625	(176,666,625)
Non-employer Contributions		0	0
Employee Contributions		58,183,502	(58,183,502)
Net Investment Income		(540,565,173)	540,565,173
Administrative Expenses		(2,072,601)	2,072,601
Other		16,787	(16,787)
Net Changes	\$ 683,091,327	\$ (555,775,795)	\$ 1,238,867,122
3. Balance at June 30, 2022	\$ 8,281,864,869	\$ 7,634,013,027	\$ 647,851,842

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

² Includes special death benefits of \$1,392,000 and refund of member contributions of \$4,193,095.



TABLE 15
DEFERRED OUTFLOWS OF RESOURCES

	June 30, 2021	Remaining Period	Recognition	June 30, 2022
1. Liability Experience				
June 30, 2022 Loss	\$ 240,228,931	7.87	\$ 30,524,642	\$ 209,704,289
June 30, 2021 Loss	29,436,858	7.04	4,181,372	25,255,486
June 30, 2020 Loss	8,809,945	6.11	1,441,890	7,368,055
June 30, 2019 Loss	20,223,668	5.62	3,598,518	16,625,150
June 30, 2018 Loss	66,420,458	4.69	14,162,145	52,258,313
June 30, 2017 Loss	14,490,974	3.83	3,783,546	10,707,428
June 30, 2016 Loss	14,030,910	3.04	4,615,431	9,415,479
June 30, 2015 Loss	0	2.31	0	0
June 30, 2014 Loss	0	1.29	0	0
2. Assumption Changes				
June 30, 2022 Loss	\$ 0	7.87	\$ 0	\$ 0
June 30, 2021 Loss	320,534,786	7.04	45,530,510	275,004,276
June 30, 2020 Loss	1,716,359	6.11	280,910	1,435,449
June 30, 2019 Loss	0	5.62	0	0
June 30, 2018 Loss	0	4.69	0	0
June 30, 2017 Loss	0	3.83	0	0
June 30, 2016 Loss	0	3.04	0	0
June 30, 2015 Loss	0	2.31	0	0
3. Investment Experience				
June 30, 2022 Loss	\$ 1,051,951,642	5.00	\$ 210,390,329	\$ 841,561,313
June 30, 2021 Loss	0	4.00	0	0
June 30, 2020 Loss	159,819,855	3.00	53,273,286	106,546,569
June 30, 2019 Loss	0	2.00	0	0
June 30, 2018 Loss	0	1.00	0	0
Total Outflows:				
(1)+(2)+(3)	\$ 1,927,664,386		\$ 371,782,579	\$ 1,555,881,807

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 16
DEFERRED INFLOWS OF RESOURCES

	June 30, 2021	Remaining Period	Recognition	June 30, 2022
1. Liability Experience				
June 30, 2022 Gain	\$ 0	7.87	\$ 0	\$ 0
June 30, 2021 Gain	0	7.04	0	0
June 30, 2020 Gain	0	6.11	0	0
June 30, 2019 Gain	0	5.62	0	0
June 30, 2018 Gain	0	4.69	0	0
June 30, 2017 Gain	0	3.83	0	0
June 30, 2016 Gain	0	3.04	0	0
June 30, 2015 Gain	15,294,239	2.31	6,620,886	8,673,353
June 30, 2014 Gain	1,632,179	1.29	1,265,261	366,918
2. Assumption Changes				
June 30, 2022 Gain	\$ 0	7.87	\$ 0	\$ 0
June 30, 2021 Gain	0	7.04	0	0
June 30, 2020 Gain	0	6.11	0	0
June 30, 2019 Gain	0	5.62	0	0
June 30, 2018 Gain	0	4.69	0	0
June 30, 2017 Gain	10,149,465	3.83	2,649,992	7,499,473
June 30, 2016 Gain	0	3.04	0	0
June 30, 2015 Gain	76,867,943	2.31	33,276,169	43,591,774
3. Investment Experience				
June 30, 2022 Gain	\$ 0	5.00	\$ 0	\$ 0
June 30, 2021 Gain	979,727,400	4.00	244,931,851	734,795,549
June 30, 2020 Gain	0	3.00	0	0
June 30, 2019 Gain	14,231,385	2.00	7,115,694	7,115,691
June 30, 2018 Gain	27,937,910	1.00	27,937,910	0
Total Inflows: (1)+(2)+(3)	\$ 1,125,840,521		\$ 323,797,763	\$ 802,042,758

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 17

DEFERRED INFLOWS / OUTFLOWS TO BE RECOGNIZED IN PENSION EXPENSE

Fiscal Year Ending June 30	Deferred Outflows	Deferred Inflows	Net Deferred Outflows/(Inflows)
Current Year:			
2022	\$ 371,782,579	\$ 323,797,763	\$ 47,984,816
Future Years:			
2023	\$ 371,782,579	\$ 294,961,507	\$ 76,821,072
2024	371,782,576	259,949,915	111,832,661
2025	313,435,269	247,131,336	66,303,933
2026	305,720,046	0	305,720,046
2027	84,190,402	0	84,190,402
Thereafter	108,970,935	0	108,970,935



TABLE 18
PENSION EXPENSE UNDER GASB NO. 68

		For Fiscal Year Ending June 30, 2022
1. Service Cost, beginning of year		\$ 210,535,660
2. Interest Cost, including interest on service cost		480,331,671
3. Member Contributions ¹		(58,183,502)
4. Administrative Expenses		2,072,601
5. Expected Return on Assets ²		(511,386,469)
6. Plan Amendments		0
7. Recognition of Deferred Inflows / Outflows of Resources Related to:		
a. Liability Experience (Gains) / Losses	54,421,397	
b. Assumption Change (Gains) / Losses	9,885,259	
c. Investment Experience (Gains) / Losses	<u>(16,321,840)</u>	
d. Total: (7a)+(7b)+(7c)		47,984,816
8. Miscellaneous (Income) / Expense		(16,787)
9. Total Collective Pension Expense: (1)+(2)+(3)+(4)+(5)+(6)+(7d)+(8)		171,337,990
10. Employer Service Purchases ³		368,799
Pension Expense / (Income): (9) + (10)		\$ 171,706,789

¹ Excludes member paid service purchases of \$736,917.

² Cash flows assumed to occur mid-year.

³ To be expensed by the employers who purchased the service.



GASB NO. 67 and GASB NO. 68

NOTES TO THE FINANCIAL STATEMENTS

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

Actuarial Assumptions and Inputs

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

Type of Plan	The 1977 Police Officers’ and Firefighters’ Retirement Fund is a cost-sharing multiple-employer plan for GASB accounting purposes.
Measurement Date	June 30, 2022
Valuation Date	
Assets:	June 30, 2022
Liabilities:	June 30, 2021 – The TPL as of June 30, 2022 was determined based on an actuarial valuation prepared as of June 30, 2021 rolled forward one year to June 30, 2022, using the following key actuarial assumptions and other inputs, such as benefit accruals and actual benefit payments during that time period.
Inflation	2.00%
Future Salary Increases	2.65%
Cost-of-Living Increases	As of June 30, 2022: 1.95% compounded annually, beginning July 1, 2023. Actual COLA increases at July 1, 2021 (1.90%) and July 1, 2022 (3.00%) are reflected in the valuation. As of June 30, 2021: 1.95% compounded annually, beginning July 1, 2022. Actual COLA increases at July 1, 2020 (2.10%) and July 1, 2021 (1.90%) are reflected in the valuation.
Mortality Assumption	Pub-2010 Public Retirement Plans Mortality Tables (Amount-Weighted) with a fully generational projection of mortality improvements using SOA Scale MP-2019. <i>Healthy Employees</i> – Safety Employee table with a 3-year set forward for males and no set forward for females.



SECTION 6 – GASB INFORMATION

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 used beginning with the June 30, 2020 actuarial valuation. Economic assumptions were updated and approved by the Board in May 2021 following the completion of an Asset-Liability study and first used in the June 30, 2021 actuarial valuation.

Discount Rate

6.25%, 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 18.00% (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, 2022 actuarial valuation assumes a long-term rate of return on assets of 6.25%, a 20-year level dollar closed method for amortizing the future layers of unfunded actuarial accrued liability (dropped below 100% funded as of June 30, 2019), and a 5-year smoothing method for recognizing investment gains and losses in the actuarial value of assets.



SECTION 6 – GASB INFORMATION

Discount Rate Sensitivity

	1% Decrease 5.25%	Current Rate 6.25%	1% Increase 7.25%
Net Pension Liability	\$1,942,394,222	\$647,851,842	(\$397,042,775)

Classes of Plan Members Covered

The June 30, 2022 valuation was performed using census data provided by INPRS as of June 30, 2021. Standard actuarial techniques were used to roll forward the total pension liability computed as of June 30, 2021 to the June 30, 2022 Measurement Date using actual benefit payments during that period of time.

Number as of June 30, 2021	
1. Currently Receiving Benefits:	
Retired Members, Disabled Members, and Beneficiaries	6,555
2. Inactive Members Entitled To But Not Yet Receiving Benefits	291
3. Inactive Non-vested Members Entitled to a Refund of Member Contributions	1,509
4. Active Members	14,387
Total Covered Plan Members: (1)+(2)+(3)+(4)	22,742

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, 2022, the money-weighted return on the plan assets is -6.6%.

Components of Net Pension Liability

As of June 30, 2022	
Total Pension Liability	\$ 8,281,864,869
Fiduciary Net Position	7,634,013,027
Net Pension Liability	\$ 647,851,842
Ratio of Fiduciary Net Position to Total Pension Liability	92.18%



SECTION 6 – GASB INFORMATION

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

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

Fiscal Year Ending June 30	2018	2019	2020	2021	2022
Total Pension Liability					
Total Pension Liability - beginning	\$5,385,753,140	\$5,839,659,033	\$6,389,001,606	\$6,785,607,786	\$7,598,773,542
Service Cost (SC), beginning-of-year	136,640,454	150,288,863	162,496,087	188,343,456	210,535,660
Interest Cost, including interest on SC	366,931,750	398,001,952	434,975,340	462,723,233	480,331,671
Experience (Gains)/Losses	123,069,038	31,019,222	11,693,725	33,618,230	240,228,931
Assumption Changes	0	0	2,278,179	366,065,296	0
Plan Amendments	0	157,277,908	0	0	0
Actual Benefit Payments	(172,907,999)	(189,951,437)	(215,750,367)	(238,903,152)	(249,119,113)
Member Reassignments	0	0	0	0	8,462
Service Purchases	172,650	2,706,065	913,216	1,318,693	1,105,716
Net Change in Total Pension Liability	453,905,893	549,342,573	396,606,180	813,165,756	683,091,327
(a) Total Pension Liability - ending	\$5,839,659,033	\$6,389,001,606	\$6,785,607,786	\$7,598,773,542	\$8,281,864,869
Plan Fiduciary Net Position					
Plan Fiduciary Net Position – beginning	\$5,401,178,536	\$5,927,570,189	\$6,379,785,641	\$6,542,799,991	\$8,189,788,822
Contributions – employer	147,094,151	155,051,201	162,302,282	166,436,369	177,035,424
Contributions – non-employer	0	0	0	0	0
Contributions – member	48,838,461	52,810,729	54,175,163	55,702,995	58,920,419
Net investment income	504,991,361	436,228,998	164,228,138	1,665,667,835	(540,565,173)
Actual benefit payments	(172,907,999)	(189,951,437)	(215,750,367)	(238,903,152)	(249,119,113)
Net member reassignments	0	0	0	0	8,462
Administrative expense	(1,642,550)	(1,903,810)	(1,960,735)	(1,933,818)	(2,072,601)
Other	18,229	(20,229)	19,869	18,602	16,787
Net change in Plan Fiduciary Net Position	526,391,653	452,215,452	163,014,350	1,646,988,831	(555,775,795)
(b) Plan Fiduciary Net Position - ending	\$5,927,570,189	\$6,379,785,641	\$6,542,799,991	\$8,189,788,822	\$7,634,013,027
Net Pension Liability - ending, (a) - (b)	(\$87,911,156)	\$9,215,965	\$242,807,795	(\$591,015,280)	\$647,851,842

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



SECTION 6 – GASB INFORMATION

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

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

(continued)

Fiscal Year Ending June 30	2013	2014	2015	2016	2017
Total Pension Liability					
Total Pension Liability - beginning	\$4,122,436,112	\$4,392,946,977	\$4,706,997,462	\$4,680,694,445	\$5,039,835,987
Service Cost (SC), beginning-of-year	130,912,451	133,074,656	138,204,281	129,369,091	134,489,476
Interest Cost, including interest on SC	283,732,680	301,824,523	323,129,528	320,218,564	344,396,796
Experience (Gains)/Losses	(39,592,111)	(11,754,267)	(61,640,441)	41,723,496	33,408,704
Assumption Changes	(4,810,241)	0	(309,801,126)	0	(23,399,425)
Plan Amendments	0	0	0	0	1,323,025
Actual Benefit Payments	(99,802,915)	(109,094,427)	(116,489,902)	(132,746,835)	(148,865,005)
Member Reassignments	71,001	0	0	(74,416)	0
Service Purchases	0	0	294,643	651,642	4,563,582
Net Change in Total Pension Liability	270,510,865	314,050,485	(26,303,017)	359,141,542	345,917,153
(a) Total Pension Liability - ending	\$4,392,946,977	\$4,706,997,462	\$4,680,694,445	\$5,039,835,987	\$5,385,753,140
Plan Fiduciary Net Position					
Plan Fiduciary Net Position – beginning	\$3,817,013,634	\$4,116,861,121	\$4,757,977,785	\$4,828,414,561	\$4,950,999,065
Contributions – employer	137,110,691	140,119,065	146,696,360	151,674,202	150,857,418
Contributions – non-employer	0	0	0	0	0
Contributions – member	40,786,098	41,791,345	43,523,241	44,918,203	51,520,565
Net investment income	223,527,670	570,088,526	(1,584,662)	60,464,690	398,273,550
Actual benefit payments	(99,802,915)	(109,094,427)	(116,489,902)	(132,746,835)	(148,865,005)
Net member reassignments	71,001	0	0	(74,416)	0
Administrative expense	(1,845,058)	(1,787,845)	(1,708,261)	(1,651,340)	(1,607,057)
Other	0	0	0	0	0
Net change in Plan Fiduciary Net Position	299,847,487	641,116,664	70,436,776	122,584,504	450,179,471
(b) Plan Fiduciary Net Position - ending	\$4,116,861,121	\$4,757,977,785	\$4,828,414,561	\$4,950,999,065	\$5,401,178,536
Net Pension Liability - ending, (a) - (b)	\$276,085,856	(\$50,980,323)	(\$147,720,116)	\$88,836,922	(\$15,425,396)

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



SECTION 6 – GASB INFORMATION

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

SCHEDULE OF THE NET PENSION LIABILITY

Fiscal Year Ending June 30	2018	2019	2020	2021	2022
Total Pension Liability	\$5,839,659,033	\$6,389,001,606	\$6,785,607,786	\$7,598,773,542	\$8,281,864,869
Plan Fiduciary Net Position	<u>5,927,570,189</u>	<u>6,379,785,641</u>	<u>6,542,799,991</u>	<u>8,189,788,822</u>	<u>7,634,013,027</u>
Net Pension Liability	(\$87,911,156)	\$9,215,965	\$242,807,795	(\$591,015,280)	\$647,851,842
Ratio of Plan Fiduciary Net Position to Total Pension Liability	101.51%	99.86%	96.42%	107.78%	92.18%
Covered-employee payroll ¹	\$842,178,524	\$866,299,278	\$940,495,810	\$951,301,008	\$1,018,600,205
Net Pension Liability as a percentage of covered-employee payroll	-10.44%	1.06%	25.82%	-62.13%	63.60%
Fiscal Year Ending June 30	2013	2014	2015	2016	2017
Total Pension Liability	\$4,392,946,977	\$4,706,997,462	\$4,680,694,445	\$5,039,835,987	\$5,385,753,140
Plan Fiduciary Net Position	<u>4,116,861,121</u>	<u>4,757,977,785</u>	<u>4,828,414,561</u>	<u>4,950,999,065</u>	<u>5,401,178,536</u>
Net Pension Liability	\$276,085,856	(\$50,980,323)	(\$147,720,116)	\$88,836,922	(\$15,425,396)
Ratio of Plan Fiduciary Net Position to Total Pension Liability	93.72%	101.08%	103.16%	98.24%	100.29%
Covered-employee payroll ¹	\$695,000,000	\$710,580,690	\$745,336,167	\$771,948,731	\$809,382,060
Net Pension Liability as a percentage of covered-employee payroll	39.72%	-7.17%	-19.82%	11.51%	-1.91%

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.



SECTION 6 – GASB INFORMATION

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

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending June 30	2018	2019	2020	2021	2022
Actuarially Determined Contribution ¹	\$74,490,690	\$78,010,250	\$91,134,044	\$113,014,560	\$142,145,659
Actual employer contributions ²	<u>\$147,074,327</u>	<u>\$154,228,438</u>	<u>\$162,055,659</u>	<u>\$166,093,922</u>	<u>\$176,666,625</u>
Annual contribution (deficiency) / excess	\$72,583,637	\$76,218,188	\$70,921,615	\$53,079,362	\$34,520,966
Covered-employee payroll ³	\$842,178,524	\$866,299,278	\$940,495,810	\$951,301,008	\$1,018,600,205
Actual contributions as a percentage of covered-employee payroll	17.46%	17.80%	17.23%	17.46%	17.34%

Fiscal Year Ending June 30	2013	2014	2015	2016	2017
Actuarially Determined Contribution ¹	\$112,590,000	\$103,425,019	\$118,881,119	\$113,437,866	\$91,257,827
Actual employer contributions ²	<u>\$137,110,691</u>	<u>\$140,119,065</u>	<u>\$146,401,717</u>	<u>\$151,299,454</u>	<u>\$150,698,652</u>
Annual contribution (deficiency) / excess	\$24,520,691	\$36,694,046	\$27,520,598	\$37,861,588	\$59,440,825
Covered-employee payroll ³	\$695,000,000	\$710,580,690	\$745,336,167	\$771,948,731	\$809,382,060
Actual contributions as a percentage of covered-employee payroll	19.73%	19.72%	19.64%	19.60%	18.62%

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.

² Excludes service purchases paid for by the employer of \$368,799.

³ As provided by INPRS.

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



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

SCHEDULE OF MONEY-WEIGHTED RETURNS

<u>For Fiscal Year Ending June 30</u>	<u>Money-Weighted Return</u>
2022	(6.6%)
2021	25.5%
2020	2.6%
2019	7.3%
2018	9.3%
2017	8.0%
2016	1.2%
2015	(0.1%)
2014	13.7%
2013	5.9%

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



APPENDIX TABLE OF CONTENTS

<u>Appendix</u>	<u>Page</u>
Appendix A – Membership Data	39
<i>Schedules of valuation data classified by various categories of members.</i>	
Appendix B – Summary of Plan Provisions	48
<i>A summary of the current benefit structure, as determined by the provisions of governing law on June 30, 2022.</i>	
Appendix C – Summary of Actuarial Methods and Assumptions	53
<i>A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.</i>	
Appendix D – Glossary of Actuarial Terms	58
<i>A glossary of actuarial terms used in the valuation report.</i>	



APPENDIX A – MEMBERSHIP DATA

**MEMBER DATA RECONCILIATION
For June 30, 2021 Data used in the June 30, 2022 Valuation**

	Active Members	Actives in DROP	Inactive Vested ¹	Inactive Nonvested	Disabled	Retired	Beneficiary	Total
1. As of June 30, 2020	13,788	590	300	1,381	879	4,341	860	22,139
2. Data Adjustments								
New Participants	862	0	0	0	0	0	0	862
Rehires	34	(3)	(1)	(30)	0	0	0	0
Terminations:								
Not Vested	(243)	0	0	243	0	0	0	0
Deferred Vested	(81)	(3)	84	0	0	0	0	0
DROP	(428)	428	0	0	0	0	0	0
Disability	(57)	(3)	0	0	60	0	0	0
Retirements	(150)	(250)	(86)	0	0	483	3	0
Refund / Benefits Ended	(84)	0	(1)	(84)	0	0	(2)	(171)
Deaths:								
With Beneficiary	(9)	(2)	(2)	0	(6)	(24)	43	0
Without Beneficiary	0	(1)	0	(1)	(9)	(42)	(41)	(94)
Entitled to Future Benefit	0	(1)	0	1	0	0	0	0
Data Corrections	0	0	(3)	(1)	6	1	3	6
Net Change	(156)	165	(9)	128	51	418	6	603
3. As of June 30, 2021	13,632	755	291	1,509	930	4,759	866	22,742

¹ Includes six inactive in DROP members as of June 30, 2020 and four inactive in DROP members as of June 30, 2021.

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

Valuation Date	June 30, 2021	June 30, 2022	% Change
Date of Membership Data ¹	June 30, 2020	June 30, 2021	
ACTIVE MEMBERS			
Number of Members			
Active	13,788	13,632	(1.1%)
Active in DROP	590	755	28.0%
Total	14,378	14,387	0.1%
Annual Membership Data Salary ²	\$ 941,209,898	\$ 990,197,433	5.2%
Anticipated Payroll for Next Fiscal Year	\$ 976,510,484	\$ 1,045,593,111	7.1%
Active Member Averages			
Age	41.3	41.1	(1.1%)
Service	13.7	13.6	(0.4%)
Annual Membership Data Salary	\$ 65,462	\$ 68,826	5.1%
INACTIVE MEMBERS			
Number of Members			
Inactive Vested	300	291	(3.0%)
Inactive Non-Vested	1,381	1,509	9.3%
Total	1,681	1,800	7.1%
Inactive Vested Member Averages			
Age	49.2	49.2	(0.1%)
Service	21.8	21.8	(0.1%)
RETIREES, DISABLEDS, AND BENEFICIARIES			
Number of Members			
Retired	4,341	4,759	9.6%
Disabled	879	930	5.8%
Beneficiaries	860	866	0.7%
Total	6,080	6,555	7.8%
Annual Benefits			
Retired	\$ 150,993,989	\$ 171,857,810	13.8%
Disabled	25,954,279	29,000,135	11.7%
Beneficiaries	15,894,833	16,539,241	4.1%
Total	\$ 192,843,101	\$ 217,397,186	12.7%

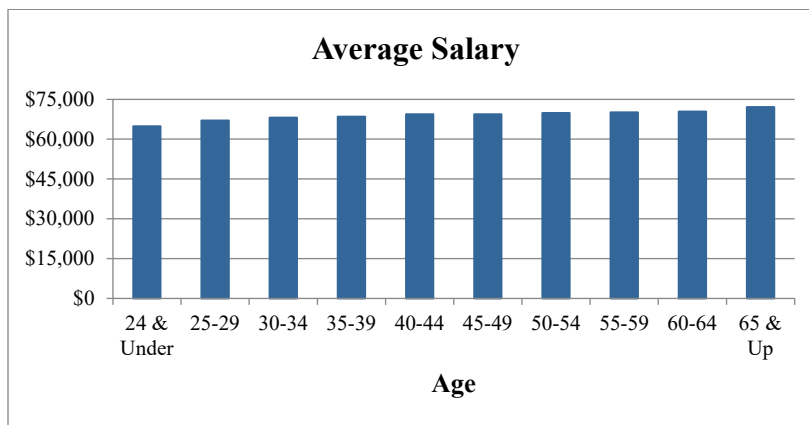
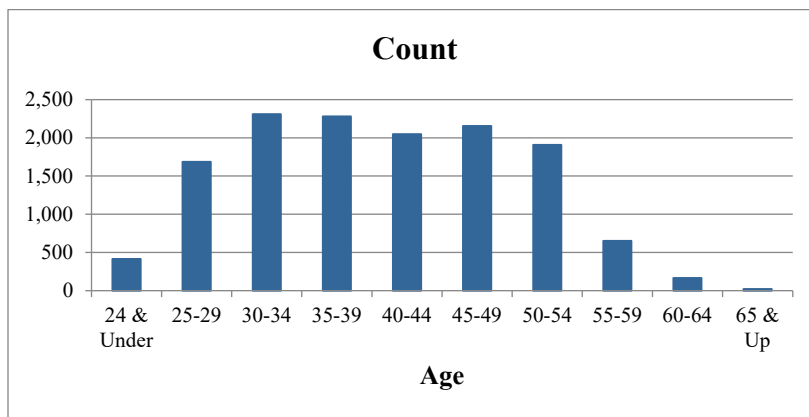
¹ Valuation results were calculated using the prior year's census data, adjusted for certain activity during fiscal year.² Annualized for actives with less than a year of service. Actives missing a salary are defaulted to the average salary.



APPENDIX A – MEMBERSHIP DATA

**ACTIVE MEMBERS
As of June 30, 2021 for the June 30, 2022 Valuation**

<u>Age</u>	<u>Count of Members</u>			<u>FY 2021 Annual Membership Data Salary</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
24 & Under	365	49	414	\$ 23,502,381	\$ 3,349,145	\$ 26,851,526
25-29	1,543	143	1,686	103,221,800	9,797,788	113,019,588
30-34	2,140	170	2,310	145,100,706	12,206,933	157,307,639
35-39	2,151	128	2,279	146,759,967	9,235,634	155,995,601
40-44	1,932	115	2,047	133,578,433	8,411,517	141,989,950
45-49	2,041	113	2,154	141,357,073	8,107,563	149,464,636
50-54	1,821	86	1,907	126,939,785	6,213,293	133,153,078
55-59	623	27	650	43,581,822	1,989,781	45,571,603
60-64	160	4	164	11,232,601	313,670	11,546,271
65 & Up	<u>19</u>	<u>2</u>	<u>21</u>	<u>1,372,186</u>	<u>141,539</u>	<u>1,513,725</u>
Total	12,795	837	13,632	\$ 876,646,754	\$ 59,766,863	\$ 936,413,617





APPENDIX A – MEMBERSHIP DATA

**AGE AND SERVICE DISTRIBUTION
As of June 30, 2021 for the June 30, 2022 Valuation**

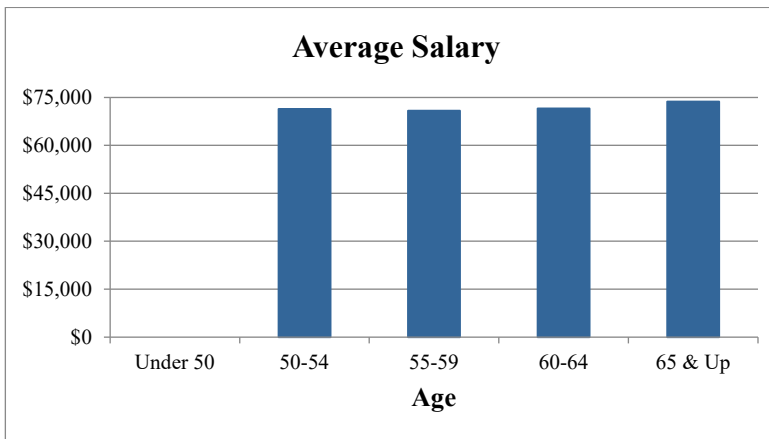
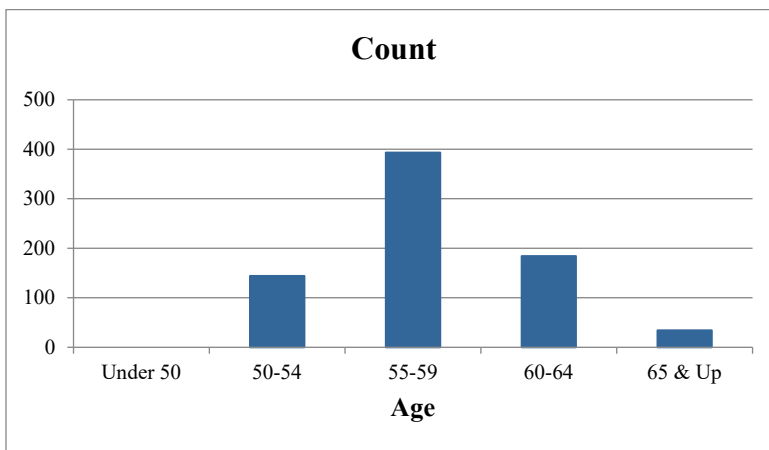
Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
24 & Under	Number	414	0	0	0	0	0	0	0	414
	Total Salary	\$ 26,851,526	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 26,851,526
	Average Sal.	\$ 64,859	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 64,859
25-29	Number	1,492	194	0	0	0	0	0	0	1,686
	Total Salary	\$ 99,905,321	\$ 13,114,267	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 113,019,588
	Average Sal.	\$ 66,961	\$ 67,599	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 67,034
30-34	Number	1,258	947	105	0	0	0	0	0	2,310
	Total Salary	\$ 85,039,226	\$ 65,007,545	\$ 7,260,868	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 157,307,639
	Average Sal.	\$ 67,599	\$ 68,646	\$ 69,151	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 68,099
35-39	Number	593	750	783	153	0	0	0	0	2,279
	Total Salary	\$ 39,967,802	\$ 51,237,977	\$ 54,317,255	\$ 10,472,567	\$ 0	\$ 0	\$ 0	\$ 0	\$ 155,995,601
	Average Sal.	\$ 67,399	\$ 68,317	\$ 69,371	\$ 68,448	\$ 0	\$ 0	\$ 0	\$ 0	\$ 68,449
40-44	Number	42	307	633	856	209	0	0	0	2,047
	Total Salary	\$ 2,700,767	\$ 20,654,651	\$ 44,177,002	\$ 59,773,938	\$ 14,683,592	\$ 0	\$ 0	\$ 0	\$ 141,989,950
	Average Sal.	\$ 64,304	\$ 67,279	\$ 69,790	\$ 69,829	\$ 70,256	\$ 0	\$ 0	\$ 0	\$ 69,365
45-49	Number	8	20	360	751	915	100	0	0	2,154
	Total Salary	\$ 480,376	\$ 1,252,350	\$ 24,487,665	\$ 52,080,733	\$ 64,150,239	\$ 7,013,273	\$ 0	\$ 0	\$ 149,464,636
	Average Sal.	\$ 60,047	\$ 62,618	\$ 68,021	\$ 69,349	\$ 70,110	\$ 70,133	\$ 0	\$ 0	\$ 69,389
50-54	Number	4	4	37	412	763	600	87	0	1,907
	Total Salary	\$ 254,651	\$ 258,587	\$ 2,536,601	\$ 28,595,267	\$ 53,407,873	\$ 41,939,326	\$ 6,160,773	\$ 0	\$ 133,153,078
	Average Sal.	\$ 63,663	\$ 64,647	\$ 68,557	\$ 69,406	\$ 69,997	\$ 69,899	\$ 70,813	\$ 0	\$ 69,823
55-59	Number	0	0	3	28	186	201	232	0	650
	Total Salary	\$ 0	\$ 0	\$ 172,237	\$ 1,830,906	\$ 12,703,411	\$ 14,142,673	\$ 16,722,376	\$ 0	\$ 45,571,603
	Average Sal.	\$ 0	\$ 0	\$ 57,412	\$ 65,390	\$ 68,298	\$ 70,362	\$ 72,079	\$ 0	\$ 70,110
60-64	Number	0	0	1	4	14	45	100	0	164
	Total Salary	\$ 0	\$ 0	\$ 66,110	\$ 275,534	\$ 1,029,684	\$ 2,989,005	\$ 7,185,938	\$ 0	\$ 11,546,271
	Average Sal.	\$ 0	\$ 0	\$ 66,110	\$ 68,884	\$ 73,549	\$ 66,422	\$ 71,859	\$ 0	\$ 70,404
65 & Up	Number	0	0	0	0	1	3	17	0	21
	Total Salary	\$ 0	\$ 0	\$ 0	\$ 0	\$ 82,554	\$ 217,548	\$ 1,213,623	\$ 0	\$ 1,513,725
	Average Sal.	\$ 0	\$ 0	\$ 0	\$ 0	\$ 82,554	\$ 72,516	\$ 71,390	\$ 0	\$ 72,082
Total	Number	3,811	2,222	1,922	2,204	2,088	949	436	0	13,632
	Total Salary	\$ 255,199,669	\$ 151,525,377	\$ 133,017,738	\$ 153,028,945	\$ 146,057,353	\$ 66,301,825	\$ 31,282,710	\$ 0	\$ 936,413,617
	Average Sal.	\$ 66,964	\$ 68,193	\$ 69,208	\$ 69,432	\$ 69,951	\$ 69,865	\$ 71,749	\$ 0	\$ 68,692



APPENDIX A – MEMBERSHIP DATA

**ACTIVE MEMBERS IN DROP
As of June 30, 2021 for the June 30, 2022 Valuation**

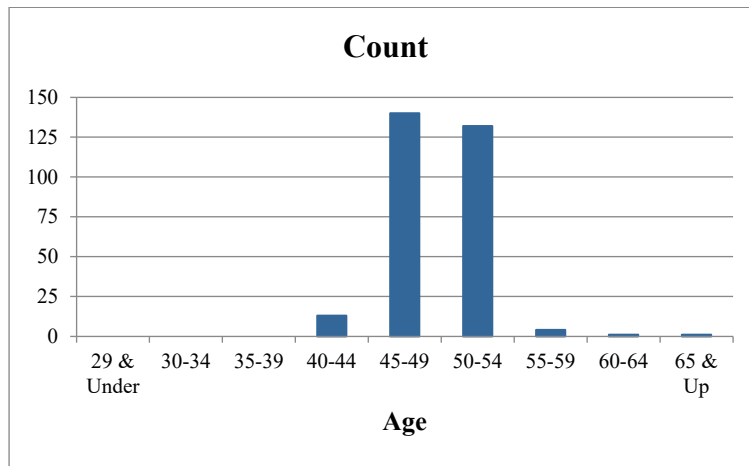
<u>Age</u>	<u>Count of Members</u>			<u>FY 2021 Annual Membership Data Salary</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Under 50	0	0	0	\$ 0	\$ 0	\$ 0
50-54	137	7	144	9,729,654	547,951	10,277,605
55-59	361	32	393	25,466,498	2,370,312	27,836,810
60-64	181	3	184	12,931,188	232,134	13,163,322
65 & Up	<u>34</u>	<u>0</u>	<u>34</u>	<u>2,506,079</u>	<u>0</u>	<u>2,506,079</u>
Total	713	42	755	\$ 50,633,419	\$ 3,150,397	\$ 53,783,816





INACTIVE VESTED MEMBERS
As of June 30, 2021 for the June 30, 2022 Valuation

<u>Age</u>	<u>Count of Members</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>
29 & Under	0	0	0
30-34	0	0	0
35-39	0	0	0
40-44	12	1	13
45-49	127	13	140
50-54	125	7	132
55-59	4	0	4
60-64	1	0	1
65 & Up	<u>1</u>	<u>0</u>	<u>1</u>
Total	270	21	291

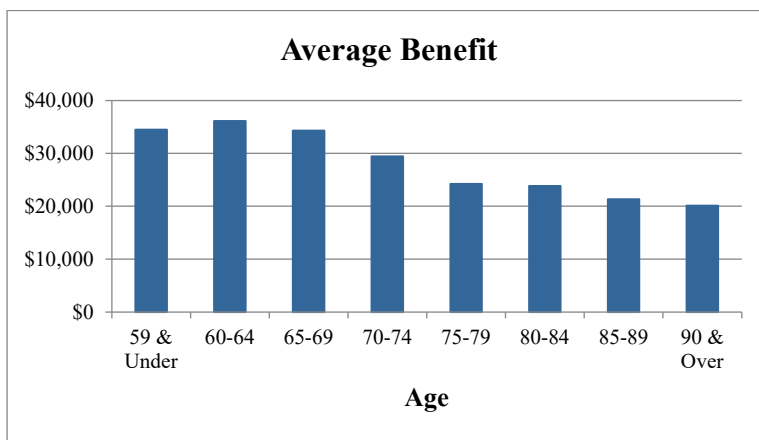
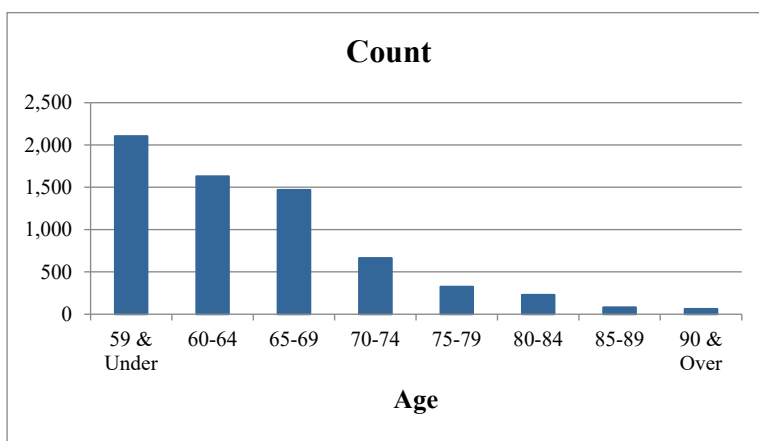




APPENDIX A – MEMBERSHIP DATA

**MEMBERS AND BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2021 for the June 30, 2022 Valuation**

Age	Count of Members			Annual Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	1,754	350	2,104	\$ 62,643,842	\$ 9,909,514	\$ 72,553,356
60-64	1,404	225	1,629	52,114,277	6,704,793	58,819,070
65-69	1,269	199	1,468	45,548,983	4,801,123	50,350,106
70-74	514	149	663	16,520,541	2,995,005	19,515,546
75-79	214	110	324	5,878,548	1,963,617	7,842,165
80-84	143	84	227	3,975,579	1,432,676	5,408,255
85-89	32	47	79	916,139	767,181	1,683,320
90 & Over	<u>17</u>	<u>44</u>	<u>61</u>	<u>473,236</u>	<u>752,132</u>	<u>1,225,368</u>
Total	5,347	1,208	6,555	\$ 188,071,145	\$ 29,326,041	\$ 217,397,186





APPENDIX A – MEMBERSHIP DATA

MEMBERS AND BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2021 for the June 30, 2022 Valuation

Schedule of Average Benefit Payments ¹

For the Year Ended June 30, 2022	Years of Credited Service						Total
	< 10	10 - 14	15 - 19	20 - 24	25 - 29	30 +	
Average Monthly Defined Benefit	\$2,194	\$2,425	\$2,315	\$2,290	\$2,988	\$3,551	\$2,764
Average Final Average Salary ²	\$47,220	\$54,934	\$52,943	\$50,813	\$53,827	\$57,629	\$53,469
Number of Benefit Recipients ³	259	278	330	2,393	1,899	1,396	6,555

Schedule of Benefit Recipients by Type of Benefit Option ¹

Amount of Monthly Benefit (in dollars)	Joint with 60% Survivor Benefits	Survivors	Disability	Total Benefit Recipients
1 - 500	0	6	0	6
501 - 1,000	2	89	15	106
1,001 - 1,500	58	365	51	474
1,501 - 2,000	333	251	143	727
2,001 - 2,500	896	91	240	1,227
2,501 - 3,000	1,234	38	222	1,494
Over 3,000	2,236	26	259	2,521
Total	4,759	866	930	6,555

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

² Members with less than 20 years of service are primarily members receiving a disability benefit.

³ Excludes the 1,226 in-pay members who are missing a final average salary in the data.



APPENDIX A – MEMBERSHIP DATA

MEMBERS AND BENEFICIARIES RECEIVING BENEFITS
As of June 30, 2021 for the June 30, 2022 Valuation

Schedule of Retirees and Beneficiaries

Table with 9 columns: Year, Added to Rolls (Number, Annual Benefits), Removed from Rolls (Number, Annual Benefits), Rolls - End of Year (Number, Total Annual Benefits), Percent Change In Total Annual Benefits, Average Annual Benefit, Percent Change In Average Annual Benefit.

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.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Definitions

Fiscal year	Twelve month period ending June 30.
Participation	All full-time, fully-paid police officers and firefighters who work for employers participating in the 1977 Fund and who are hired or rehired after April 30, 1977.
Member contributions	Members are assumed to contribute at the rate of 6% of salary until they have completed 32 years of service.

Eligibility for Benefits

Deferred vested	20 or more years of creditable service and no longer active.
Disability retirement	As determined by a disability medical panel.
Early retirement	Age 50 with 20 or more years of creditable service.
Normal retirement	Age 52 with 20 or more years of creditable service.
Pre-retirement death	Immediate.

Monthly Benefits Payable

Normal retirement	The retirement benefit valued is 52% of the base salary (first-class salary) of a First Class Police Officer and Firefighter with 20 years of service, plus an additional 1% for each completed 6 months of service over 20 years up to a maximum of 76% with 32 years of service.
Early retirement	Early retirement benefits are reduced by 7% per year for commencement between ages 50 and 52.
Deferred retirement	<p>If a member ends employment other than by death or disability before completing 20 years of active service, the member shall be entitled to the member's contributions plus accumulated interest. This benefit is not available to converted members.</p> <p>If termination is after earning 20 years of service, the termination benefit is the accrued retirement benefit determined as of the termination date and payable commencing of the normal retirement date. The member may elect to receive a reduced early retirement benefit.</p>



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Disability

Hired before 1990

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

2017 House Enrolled Act Number 1617 Enhanced Disability:

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

Hired after 1989

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

Class 1 Impairment:

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

Class 2 Impairment:

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



Class 3 Impairment:

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

2017 House Enrolled Act No. 1617 Enhanced Disability:

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

Pre-retirement death
Surviving spouse

If a member dies other than in the line of duty, the spouse's benefit is equal to 70% of the monthly benefit the member was receiving or was entitled to receive on the date of death.

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

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

Children

A payment shall be made to each child of a deceased member equal to 20% of the member's benefit until the later of (a) the date the child becomes age 18, or (b) the date the child becomes age 23 if enrolled in a qualified school. If a child is at least 18 and is mentally or physically incapacitated, the child is entitled to an amount equal to the greater of 30% of the base salary, or 55% of the member's benefit payable for the duration of the incapacity. If the member does not have 20 years of service or is not at least age 52 on the date of death, the benefit is computed as if the member does have 20 years of service and is age 52 on the date of death.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Dependent parents	If a deceased member leaves no surviving spouse and no qualified child but does leave a dependent parent or parents, an amount equal to 50% of the member's benefit shall be paid to the parent or parents jointly during their lifetime. If the member does not have 20 years of service or is not at least age 52 on the date of death, the benefit is computed as if the member does have 20 years of service and is age 52 on the date of death.
No spouse or dependent	If a deceased member leaves no surviving spouse, no qualified dependent child, nor a dependent parent, a refund of the member's contributions plus accumulated interest will be made to the member's estate.
Additional death benefits	A funeral death benefit is paid to the heirs or estate upon the member's death from any cause and is equal to at least \$12,000. An additional death benefit of \$150,000 is paid from the Pension Relief Fund to a surviving spouse, children, or parent(s) if death occurs in the line of duty.
Deferred retirement option plan (“DROP”)	<p>The DROP is an optional form of benefit, which allows members who are eligible for an unreduced retirement benefit to continue to work and earn a salary while accumulating a DROP benefit payable in a lump sum or three annual installments. A member who elects to enter the DROP shall execute an irrevocable election to retire on the DROP retirement date. The member shall select a DROP retirement date not less than 12 months and not more than 36 months after the member's DROP entry date. While in the DROP, the member shall continue to make applicable fund contributions.</p> <p>When a member enters the DROP, a “DROP frozen benefit” will be calculated. This is equal to the member's monthly retirement benefit based on accrued service and base salary as of the date member enters the DROP. Upon DROP retirement, the member is eligible to receive a lump sum equal to the amount of the DROP frozen benefit multiplied by the number of months in the DROP. You may elect to receive this amount in three annual installments instead of in a single lump sum. In addition, the member will receive a monthly retirement benefit equal to the DROP frozen benefit. The member will not continue to accrue service credit for the years in the DROP. Cost of living adjustments will not apply to the frozen monthly benefit while in the DROP. The cost of living adjustments will begin to be applied to the frozen monthly benefit, however, in the year after the year in which the member retires.</p>



APPENDIX B – SUMMARY OF PLAN PROVISIONS

If the member elected to participate in the DROP, the member may, upon retirement, elect to forego DROP benefits, and instead receive monthly retirement benefits calculated as if the member never elected to participate in the DROP. These benefits would be based on accrued service and base salary as of the date the member retires.

Cost-of-Living-Adjustments

Benefits for retired members are increased annually based on increases in the CPI-U index. The increase is subject to a 3% maximum and 0% minimum.

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 70% survivor benefits

Member will be paid a monthly benefit for life. After death, 70% of the benefit will be paid to the spouse or parent for their lifetime or the dependent until age 18.

Changes in Plan Provisions since the Prior Year

None.



ACTUARIAL METHODS

1. Actuarial Cost Method

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

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

For funding, gains and losses occurring from census experience different than assumed, assumption changes, and benefit changes are amortized over a closed 20-year period with level payments each year. A new gain or loss base is established each year based on the additional gain or loss during that year and that base is amortized over a new 20-year period. However, when the plan is at or above 100% funded (based on Actuarial Value of Assets), the past amortization bases are considered fully amortized and a single amortization base equal to the surplus is amortized over an open 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. 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, 2021 was used in the valuation and adjusted, where appropriate, to reflect changes between June 30, 2021 and June 30, 2022. The valuation results from June 30, 2021 were rolled-forward to June 30, 2022 to reflect benefit accruals during the year less benefits paid.

2. Asset Valuation Method

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

3. 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.

4. Anticipated Payroll

The anticipated payroll for the fiscal year following the valuation date is equal to the actual payroll during the year ending on the valuation date, increased with one year of salary scale.

Changes in Methods since the Prior Year – None



APPENDIX C – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

ACTUARIAL ASSUMPTIONS

Valuation Date June 30, 2022

Economic Assumptions

- 1. Investment return 6.25% per year, compounded annually (net of administrative and investment expenses)
- 2. Inflation 2.00% per year
- 3. Salary increase 2.65% per year
- 4. Interest on member balances 3.30% per year
- 5. Cost-of-Living Adjustment (COLA) 1.95% compounded annually, beginning July 1, 2023. Actual COLA increases at July 1, 2021 (1.90%) and July 1, 2022 (3.00%) are reflected in the valuation. For benefits paid under the 2017 House Enrolled Act No. 1617, the annual cost-of-living assumption is 2.65%, which is the same as the salary increase assumption for active members.

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.
 - 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.



APPENDIX C – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

3. Retirement

Retirement Rate		Of those who retire:		
Age	Rate	Service	Enter DROP	Commence Immediately
50-51	5.0%	<=20	35%	65%
52-55	15.0%	21	40%	60%
56-58	20.0%	22	45%	55%
59	22.5%	23	50%	50%
60-64	25.0%	24-26	55%	45%
65-69	50.0%	27	60%	40%
70+	100.0%	28	65%	35%
		29+	70%	30%

Active members 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 50, or current age if greater).

4. Termination

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

Other Assumptions

1. Form of payment

Members are assumed to elect either a single life annuity or a 70% joint survivor benefit based on the marriage assumptions below.

2. Marital status

a. Percent married

80% of male members and 60% of female 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.



APPENDIX C – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

- | | |
|--|--|
| 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. |
| 5. Active member death | 20% are assumed to be in the line of duty and 80% are other than in the line of duty. |
| 6. Active member disability retirement | <p>For members hired after 1989 who become disabled:
59% are assumed to be Class 1,
10% are assumed to be Class 2,
30% are assumed to be Class 3, and
1% are assumed to be a catastrophic disability (HEA 1617).</p> <p>The additional monthly amount determined under IC 36-8-8-13.5(f) based on the degree of impairment is assumed to be 17%.</p> <p>For members hired before 1989 who become disabled:
99% are assumed to be a non-catastrophic disability, and
1% are assumed to be a catastrophic disability (HEA 1617).</p> |

Changes in Assumptions since the Prior Year

None.



APPENDIX C – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Data Adjustments

Active and retired member data is reported as of June 30. Member census data as of June 30, 2021 was used in the valuation and adjusted. Standard actuarial roll-forward techniques were then used to project the liability computed as of June 30, 2021 to the June 30, 2022 valuation date. The normal cost rate is assumed to remain unchanged between June 30, 2021 and June 30, 2022.

The member total payroll and the asset information for this valuation were furnished as of June 30, 2022. Total payroll in FYE 2023 is assumed to increase by the salary growth assumption over the total payroll observed for FYE 2022. 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.



APPENDIX D – GLOSSARY OF ACTUARIAL TERMS

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	<p>The difference between actuarial liability and the actuarial value of assets. Sometimes referred to as “unfunded accrued liability” or “unfunded liability”.</p> <p>Most retirement plans have unfunded actuarial liability. They arise anytime new benefits are added and anytime an actuarial loss is realized.</p>