

# Vermont Municipal Employees' Retirement System

## **Actuarial Valuation and Review**

As of June 30, 2022



This report has been prepared at the request of the Board to assist in administering the Vermont Municipal Employees' Retirement System. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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**Segal**



101 North Wacker Drive, Suite 500  
Chicago, IL 60606-1724  
segalco.com  
T 312.984.8500

October 25, 2022

Board of Trustees  
Vermont Municipal Employees' Retirement System  
Montpelier, Vermont 05609

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2022, of the Vermont Municipal Employees' Retirement System (VMERS). This report summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the actuarially determined contribution (ADC) requirement for fiscal 2023.

This report was prepared in accordance with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board, at the request of the Board to assist in administering the Retirement System. The census information and financial information on which our calculations were based was prepared by the Office of the State Treasurer. That assistance is gratefully acknowledged.

Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results.

The measurements shown in this actuarial valuation may not be applicable for other purposes. 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; and changes in plan provisions or applicable law.

The actuarial calculations were directed under the supervision of Kathleen A. Riley, FSA, MAAA, EA and Matthew A. Strom, FSA, MAAA, EA. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. The assumptions used in this actuarial valuation were selected by the Board based upon our analysis and recommendations. In our opinion, the assumptions are reasonable and take into account the experience of the Plan and reasonable expectations.

We look forward to reviewing this report and to answering any questions at the next Board meeting.

Sincerely,  
Segal



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Kathleen A. Riley, FSA, MAAA, EA  
Senior Vice President and Chief Actuary



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Matthew A. Strom, FSA, MAAA, EA  
Senior Vice President and Actuary

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# Section 1: Actuarial Valuation Summary

## Purpose and basis

This report was prepared by Segal to present a valuation of the System as of June 30, 2022, pursuant to section 5062 of Title 24, Chapter 125, Vermont Statutes Annotated, relating to the Vermont Municipal Employees' Retirement System. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board;
- The characteristics of covered active members, inactive members, and retired members and beneficiaries as of June 30, 2022, provided by the Office of the State Treasurer;
- The unaudited assets of the System as of June 30, 2022, provided by the Office of the State Treasurer;
- Economic assumptions regarding future salary increases, inflation, and investment earnings;
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.; and
- The funding policy adopted by the Board of Trustees.

Certain disclosure information required by GASB Statements No. 67 and 68 as of June 30, 2022, for the System is provided in separate reports.

# Section 1: Actuarial Valuation Summary

## Valuation highlights

1. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. The funding policy outlined in the Vermont State Pension Code and adhered to by the Board meets this standard. Section 5064, subsection (c)(4), of Title 24, Chapter 125, Vermont Statutes Annotated calls for the calculation of an accrued liability contribution rate to be calculated for each membership group, based on the actuarial assumptions and methodology adopted by the Retirement Board. Actuarially determined contribution rates are determined as a percent of payroll and calculated such that the rate for each membership group is sufficient to fully fund that group's actuarial accrued liability by June 30, 2038. These actuarially determined contribution rates determined by the funding policy are compared to the statutory contribution rates as a measure of adequacy, and the contribution rates for both employers and members are updated from time to time, as necessary, to ensure proper funding of the System.
2. Actual employer contributions made during the fiscal year ending June 30, 2022, were \$25.2 million, or 63.9% of the actuarially determined contribution of \$39.5 million. In the prior fiscal year, actual employer contributions were \$22.3 million, or 60.7% of the actuarially determined contribution of \$36.7 million. Each year that actual employer contributions are less than the actuarially determined amounts generates contribution losses that must be funded by additional contributions in the future.
3. The average funding policy contribution rate for the fiscal year ending June 30, 2024, is 6.92%. Compared to the projected fiscal 2024 actuarially determined contribution rate of 11.35%<sup>1</sup>, there is a contribution rate shortfall of 4.43% in aggregate. Each group has a contribution deficiency. At the November 17, 2020, Board meeting, the Board voted unanimously to authorize employer contribution rate increases of 0.50% each year for a period of four years, beginning July 1, 2022. In 2022, the Legislature passed H.740, which effectively split the Board-authorized increases evenly between members and employers by including an increase in the employee rate of 0.25% for each group for four years, beginning July 1, 2022. If the remaining two 0.50% contribution rate increases for the fiscal years ending June 30, 2025, and June 30, 2026, were applied immediately, the contribution rate shortfall for fiscal year ending June 30, 2024, would effectively reduce from 4.43% to 3.43%. Details can be found in *Section 2, Actuarially determined contribution*.
4. The rate of return on the market value of assets was -8.69% for the July 1, 2021, to June 30, 2022, plan year. The return on the actuarial value of assets was 6.65% for the same period due to the recognition of prior years' investment gains and losses. This resulted in an actuarial loss when measured against the assumed rate of return of 7.0%. We advise the Board to continue to monitor actual and anticipated investment returns relative to the assumed long-term rate of return on investments.

<sup>1</sup> The actuarially determined contribution rate is projected to the next fiscal year by taking the rate for the current fiscal year (11.60%) and adjusting for the scheduled member contribution rate increase of 0.25% effective July 1, 2023.

## Section 1: Actuarial Valuation Summary

5. The actuarial value of assets is 105.6% of the market value of assets, compared to the prior year where the actuarial value of assets was 90.4% of the market value of assets. The investment experience in the past years has only been partially recognized in the actuarial value of assets. As the deferred net loss is recognized in future years, the actuarially determined cost of the System is likely to increase unless the net loss is offset by future experience. The recognition of the deferred market losses of \$47.2 million will also have an impact on the future funded percentage. If the net deferred losses were recognized immediately in the actuarial value of assets, the actuarially determined contribution rate would increase from 11.60% to about 12.67% of payroll.
6. The actuarial loss from investment experience is \$2.9 million.
7. The net experience loss from sources other than investment experience was approximately \$18.1 million, or 1.6% of the actuarial accrued liability. Of this \$18.1 million loss, \$7.2 million is due to the higher-than-expected actual 2023 COLA and \$10.2 million is attributable to salary increases that were larger than assumed. Additional detail regarding this loss is shown in *Section 2, Other experience*.

### Changes from prior valuation

8. The funded percentage (the ratio of the actuarial value of assets to actuarial accrued liability) is 77.05%, compared to the prior year's funded percentage of 77.93%. This percentage is one measure of funding status and its history is a measure of funding progress. Using the market value of assets, the funded percentage is 72.97%, compared to 86.21% as of the prior valuation date. These measurements are not necessarily appropriate for assessing the sufficiency of System assets to cover the estimated cost of settling the System's benefit obligation or the need for or the amount of future contributions.
9. The actuarially determined contribution for the upcoming year (fiscal year ending June 30, 2023) is \$43.3 million. The actuarially determined contribution as a percentage of payroll increased from 11.31% of payroll to 11.60% of payroll. The actuarially determined contribution is equal to the System's employer normal cost, plus the amount necessary to amortize the unfunded actuarial accrued liability as of June 30, 2022, over a period ending on June 30, 2038, assuming that the amortization period will remain closed and that the amortization payment will increase annually at the rate of 3% over the preceding year.
10. The unfunded actuarial accrued liability is \$266.1 million, which is an increase of \$29.0 million since the prior valuation.

## Section 1: Actuarial Valuation Summary

### Risk

11. It is important to note that this actuarial valuation is based on financial and demographic data as of June 30, 2022. The Plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the plan year. Moreover, this actuarial valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after June 30, 2022, due to COVID-19. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.
12. Since the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions. We have included a discussion of various risks that may affect the System in *Section 2, Risk*.

### GASB

13. This report constitutes an actuarial valuation for the purpose of determining the actuarially determined contribution under the System's funding policy and measuring the progress of that funding policy. The Net Pension Liability and Pension Expense under Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68, for inclusion in the plan and employer's financial statements as of June 30, 2022, and June 30, 2023, will be provided separately. The actuarially determined contribution in this valuation is expected to be used as the actuarially determined contribution for GASB financial reporting.

## Section 1: Actuarial Valuation Summary

### Summary of key valuation results

		2022	2021
<b>Contributions for plan year beginning July 1:</b>	• Funding policy contribution rate	6.67%	6.42%
	• Actuarially determined employer contributions as a percent of payroll <sup>1</sup>	11.60%	11.31%
	• Contribution rate excess/(shortfall)	-4.93%	-4.89%
<b>Actuarial cost method measures for plan year beginning July 1:</b>	• Unfunded liability to be amortized through June 30, 2038	\$266,055,606	\$237,072,174
	• Normal contribution rates for plan year beginning July 1		
	– Employee normal contribution rate	6.549%	6.294%
	– Employer normal contribution rate	5.568%	5.798%
	– Total normal contribution rate	12.117%	12.092%
<b>Actuarial accrued liability (EAN) for plan year beginning July 1:</b>	• Total actuarial accrued liability	\$1,159,279,879	\$1,074,167,813
	• Employer normal cost dollars	20,802,944	20,222,287
	• Employer normal cost rate	5.568%	5.798%
<b>Assets for plan year beginning July 1:</b>	• Market value of assets (MVA)	\$845,979,471	\$926,034,330
	• Actuarial value of assets (AVA)	893,224,273	837,095,639
	• Actuarial value of assets as a percentage of market value of assets	105.58%	90.40%
<b>Funded status (EAN) for plan year beginning July 1:</b>	• Unfunded actuarial accrued liability based on MVA	\$313,300,408	\$148,133,483
	• Funded percentage on MVA basis	72.97%	86.21%
	• Unfunded actuarial accrued liability based on AVA	\$266,055,606	\$237,072,174
	• Funded percentage on AVA basis	77.05%	77.93%
	• Remaining amortization period (years)	16	17
<b>Key assumptions:</b>	• Investment return	7.00%	7.00%
	• Inflation rate	2.30%	2.30%
<b>Demographic data for plan year beginning July 1:</b>	• Number of retired members and beneficiaries	4,149	3,938
	• Number of deferred members as reported by the System	1,048	998
	• Number of inactive members as reported by the System	3,997	3,343
	• Number of active members	8,059	7,879
	• Total payroll	\$355,708,896	\$331,960,355
	• Average payroll	44,138	42,132
	• Total monthly benefits for all retired members and beneficiaries	3,887,934	3,544,190
	• Average monthly benefit for all retired members and beneficiaries	937	900

<sup>1</sup> For fiscal years ending June 30, 2023, and June 30, 2022, respectively.

## Section 1: Actuarial Valuation Summary

### Summary of key June 30, 2022, valuation results by group

		Group A	Group B	Group C	Group D	Total
<b>Contributions:</b>	• Current funding policy rate <sup>1</sup>	5.000%	6.500%	8.250%	10.850%	6.674%
	• Actuarially determined rate	7.328%	11.621%	15.529%	17.902%	11.602%
	• Excess/(shortfall)	-2.328%	-5.121%	-7.279%	-7.052%	-4.928%
<b>Actuarial cost method measures:</b>	• Unfunded actuarial accrued liability	\$33,114,609	\$134,433,505	\$74,273,782	\$24,233,710	\$266,055,606
	• Normal contribution rates					
	– Employee rate	3.500%	5.875%	11.000%	12.350%	6.549%
	– Employer rate	4.237%	5.834%	6.070%	7.372%	5.568%
	– Total rate	7.737%	11.709%	17.070%	19.722%	12.117%
<b>Actuarial accrued liability:</b>	• Total actuarial accrued liability	\$218,768,974	\$589,816,535	\$268,368,353	\$82,326,017	\$1,159,279,879
	• Employer normal cost dollars	3,845,460	11,482,018	4,038,142	1,437,324	20,802,944
	• Employer normal cost rate	4.237%	5.834%	6.070%	7.372%	5.568%
<b>Assets:</b>	• Market value of assets (MVA)	\$175,834,655	\$431,296,715	\$183,828,438	\$55,019,664	\$845,979,471
	• Actuarial value of assets (AVA)	185,654,365	455,383,030	194,094,571	58,092,307	893,224,273
<b>Funded status:</b>	• Unfunded liability on MVA basis	\$42,934,319	\$158,519,820	\$84,539,915	\$27,306,353	\$313,300,408
	• Funded percentage on MVA basis	80.37%	73.12%	68.50%	66.83%	72.97%
	• Unfunded liability on AVA basis	\$33,114,609	\$134,433,505	\$74,273,782	\$24,233,710	\$266,055,606
	• Funded percentage on AVA basis	84.86%	77.21%	72.32%	70.56%	77.05%
<b>Demographic data:</b>	• Retired members and beneficiaries	1,523	2,043	504	79	4,149
	• Deferred members as reported by the System	575	411	48	14	1,048
	• Inactive members as reported by the System	1,657	2,082	207	51	3,997
	• Active members	2,565	4,269	969	256	8,059
	• Total payroll	\$86,369,014	\$187,389,550	\$63,343,396	\$18,606,936	\$355,708,896
	• Average payroll	33,672	43,895	65,370	72,683	44,138

<sup>1</sup> Current funding policy rates are as of July 1, 2022.

## Section 1: Actuarial Valuation Summary

### Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal relies on a number of input items. These include:

<b>Plan provisions</b>	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
<b>Member information</b>	An actuarial valuation for a plan is based on data provided to the actuary by the System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
<b>Financial Information</b>	Part of the cost of a plan will be paid from existing assets — the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, typically reported by the Office of the State Treasurer. A snapshot as of a single date may not be an appropriate value for determining a single year’s contribution requirement, especially in volatile markets. Plan sponsors often use an “actuarial value of assets” that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
<b>Actuarial assumptions</b>	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan members for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of members in each year, as well as forecasts of the Plan’s benefits for each of those events. In addition, the benefits forecasted for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that is expected to be achieved on the plan’s assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions are selected within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this may have a significant impact on the reported results, it does not mean that the previous assumptions were unreasonable or wrong.

## Section 1: Actuarial Valuation Summary

### Models

Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

The actuarial valuation is prepared at the request of the System and Board. Segal is not responsible for the use or misuse of its report, particularly by any other party.

An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.

Actuarial results in this report are not rounded, but that does not imply precision.

If the System is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The System should look to its other advisors for expertise in these areas.

While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.

Segal's report shall be deemed to be final and accepted by the System upon delivery and review. Trustees should notify Segal immediately of any questions or concerns about the final content.

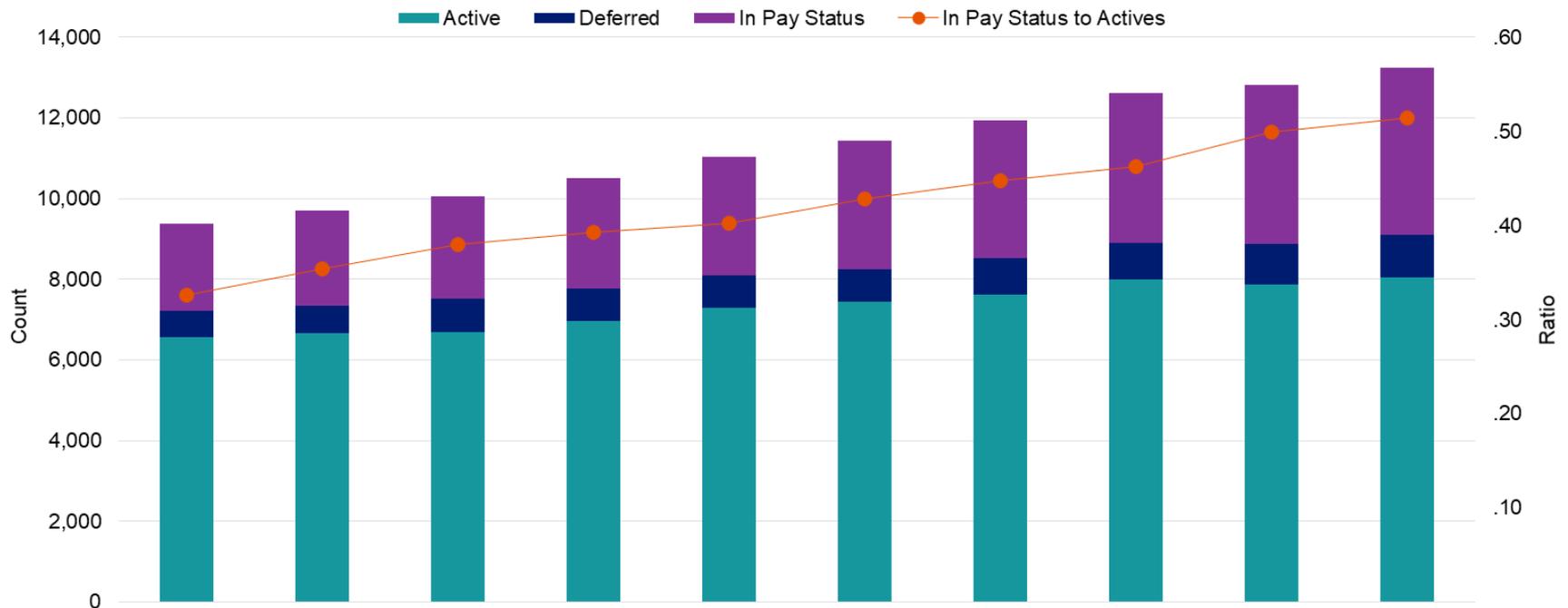
As Segal has no discretionary authority with respect to the management or assets of the System, it is not a fiduciary in its capacity as actuaries and consultants with respect to the System.

# Section 2: Actuarial Valuation Results

## Member data

This section presents a summary of significant statistical data on covered members.

Member Population as of June 30



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
In Pay Status	2,146	2,359	2,539	2,734	2,942	3,189	3,415	3,693	3,938	4,149
Deferred <sup>1</sup>	652	692	837	811	797	798	896	927	998	1,048
Active	6,577	6,664	6,685	6,966	7,302	7,452	7,630	7,987	7,879	8,059
Ratio <sup>2</sup>	0.33	0.35	0.38	0.39	0.40	0.43	0.45	0.46	0.50	0.51

<sup>1</sup> Excludes inactive members as reported by the System.

<sup>2</sup> Effective for the June 30, 2022, actuarial valuation, all historical ratios were updated to reflect the ratio of in pay status members to active members.

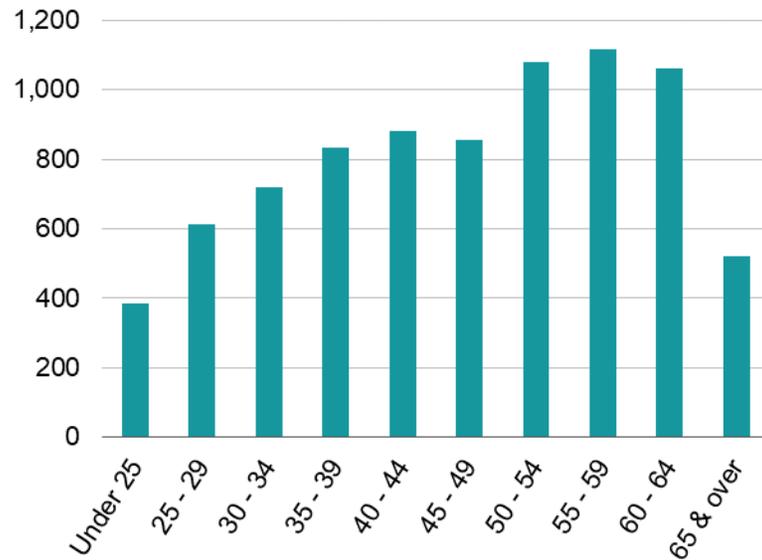
## Section 2: Actuarial Valuation Results

### Active members

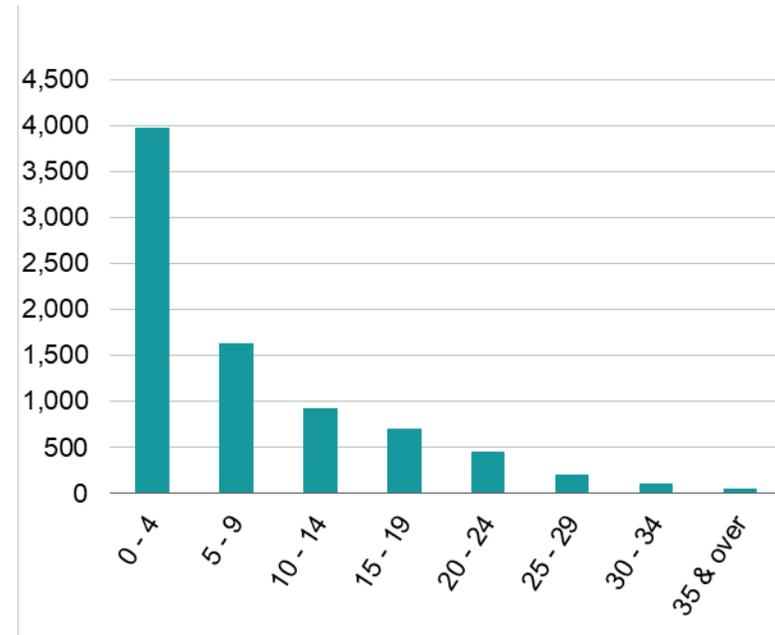
As of June 30	2022	2021	Change
Active members	8,059	7,879	2.3%
Average age	47.3	47.7	-0.4
Average years of creditable service	8.1	8.4	-0.3
Average payroll	\$44,138	\$42,132	4.8%

Distribution of Active Members as of June 30, 2022

Actives by Age



Actives by Years of Service



## Section 2: Actuarial Valuation Results

### **Inactive and deferred members**

In this year's valuation, there were 3,997 inactive members as reported by the System. A member is reported as inactive if they have withdrawn from active employment within the three-year period preceding the valuation date, or if they withdrew prior to the three-year period preceding the valuation date, but do not have a vested right to a deferred or immediate vested benefit and have not taken a refund of their employee contributions.

In addition, there were 1,048 deferred members as reported by the System. A member is reported as deferred if they have withdrawn from active employment prior to the three-year period preceding the valuation date and have a vested right to a deferred or immediate vested benefit.

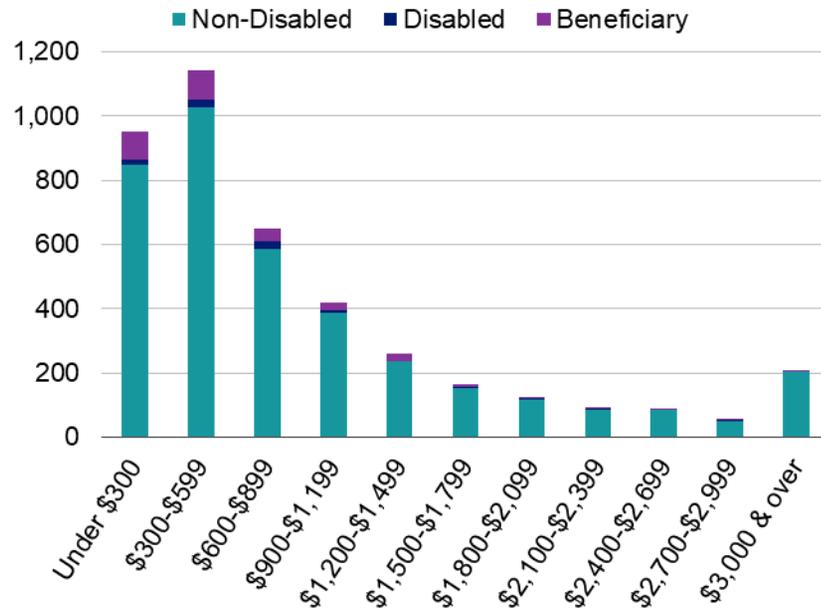
## Section 2: Actuarial Valuation Results

### Retired members and beneficiaries

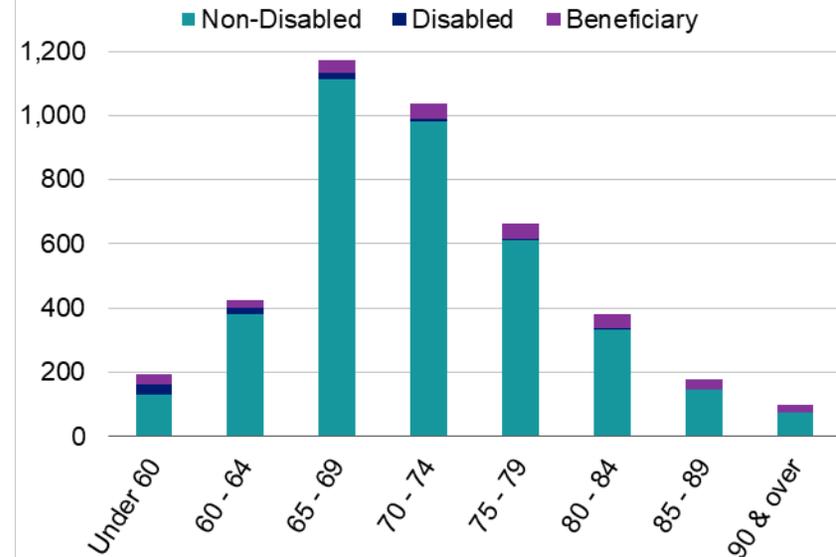
As of June 30	2022	2021	Change
Retired members (including disability)	3,864	3,670	5.3%
Average age	71.9	71.8	0.1
Average amount	\$955	\$916	4.3%
Beneficiaries	285	268	6.3%
Total monthly amount	\$3,887,934	\$3,544,190	9.7%

#### Distribution of Pensioners as of June 30, 2022

Pensioners by Type and Monthly Amount



Pensioners by Type and Age



## Section 2: Actuarial Valuation Results

### Historical plan population

#### Member Data Statistics: 2013 – 2022

As of June 30	Active Members			Retired Members <sup>1</sup>		
	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2013	6,577	48.8	9.1	1,982	--	\$659
2014	6,664	48.9	9.1	2,177	71.2	693
2015	6,685	48.7	9.1	2,329	71.3	718
2016	6,966	48.5	9.0	2,523	71.4	738
2017	7,302	48.4	8.8	2,731	71.4	773
2018	7,452	48.3	8.6	2,962	71.3	828
2019	7,630	48.0	8.5	3,173	71.4	855
2020	7,987	47.9	8.3	3,435	71.6	891
2021	7,879	47.7	8.4	3,670	71.8	916
2022	8,059	47.3	8.1	3,864	71.9	955

<sup>1</sup> Not including beneficiaries.

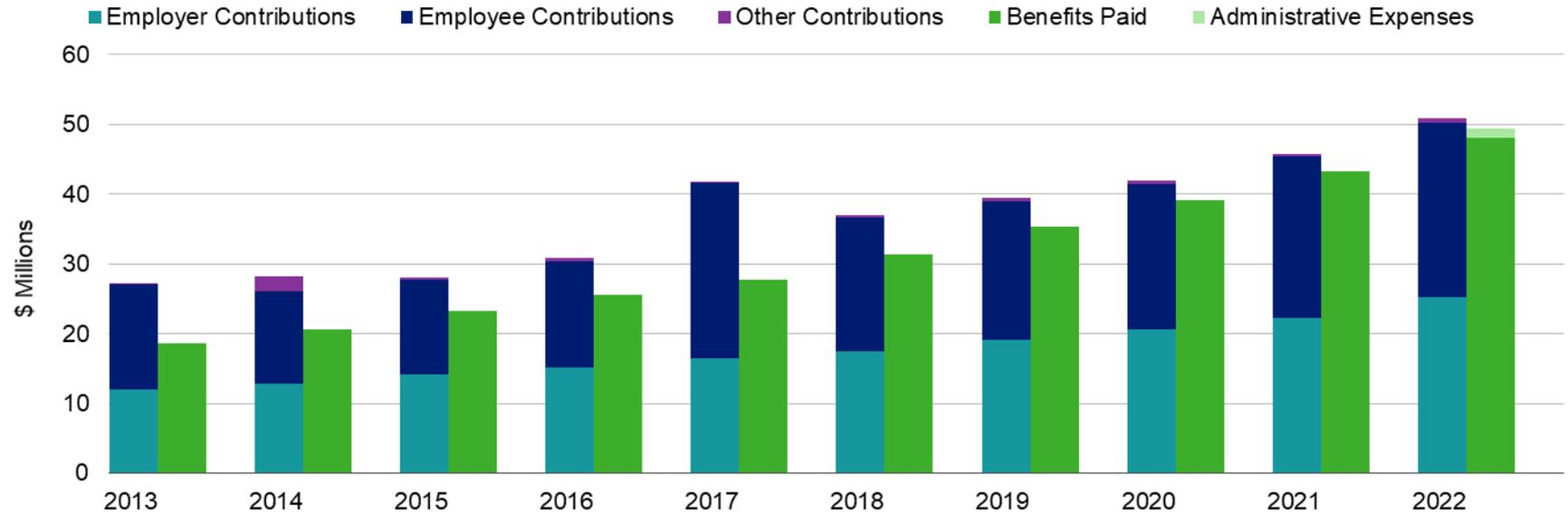
## Section 2: Actuarial Valuation Results

### Financial information

Retirement plan funding anticipates that, over the long term, both contributions and investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components. Employer and member contributions have exceeded benefits for the most recent period shown. Benefits were 0.96 times employer and member contributions.

Additional financial information, including a summary of these transactions for the valuation year, is presented in *Section 3, Exhibits C, D and E*.

Comparison of Contributions to Benefits Paid  
for Years Ended June 30, 2013 – 2022



## Section 2: Actuarial Valuation Results

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has adopted an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuation is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The asset method provides a degree of conservatism to increase the likelihood that benefits are funded. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

### Determination of Actuarial Value of Assets for Year Ended June 30, 2022

<b>1</b>	Market value of assets, June 30, 2022				\$845,979,471
<b>2</b>	Calculation of unrecognized return	<b>Original Amount<sup>1</sup></b>	<b>Percent Deferred</b>	<b>Unrecognized Amount<sup>2</sup></b>	
	(a) Year ended June 30, 2022	-\$145,322,072	80%	-\$116,257,658	
	(b) Year ended June 30, 2021	133,751,919	60%	80,251,152	
	(c) Year ended June 30, 2020	-23,172,070	40%	-9,268,828	
	(d) Year ended June 30, 2019	-9,847,339	20%	-1,969,468	
	(e) Year ended June 30, 2018	-1,103,330	0%	<u>0</u>	
	(f) Total unrecognized return			-\$47,244,802	
<b>3</b>	Preliminary actuarial value: <b>1 - 2f</b>				\$893,224,273
<b>4</b>	Adjustment to be within 20% corridor				<u>0</u>
<b>5</b>	Final actuarial value of assets as of June 30, 2022: <b>3 + 4</b>				\$893,224,273
<b>6</b>	Actuarial value as a percentage of market value: <b>5 ÷ 1</b>				105.58%
<b>7</b>	Amount deferred for future recognition: <b>1 - 5</b>				-\$47,244,802

<sup>1</sup> Total return minus expected return on a market value basis

<sup>2</sup> Recognition at 20% per year over five years

## Section 2: Actuarial Valuation Results

The following table presents an allocation of total valuation assets to each member group. The amounts shown for reallocation of surplus for members transferring among groups were derived by estimation of the contributions made on behalf of these members in their prior groups and accumulation of these amounts with interest at the historical rates of return calculated for the System.

### Allocation of Actuarial Value of Assets as of June 30, 2022

	Group A	Group B	Group C	Group D	Total
<b>Valuation assets as of June 30, 2021:</b>	\$176,696,581	\$427,338,218	\$181,411,495	\$51,649,345	\$837,095,639
<b>Contributions:</b>	\$7,729,534	\$24,490,192	\$13,176,682	\$4,846,510	\$50,242,918
<b>Income:</b>	11,675,176	28,403,354	12,100,566	3,519,770	55,698,866
<b>Benefit payments:</b>	-9,540,290	-23,845,441	-11,612,682	-2,157,167	-47,155,580
<b>Expenses:</b>	-490,921	-1,187,286	-504,021	-143,499	-2,325,727
<b>Net transfers:</b>	-70,046	-169,407	-71,915	-20,475	-331,843
<b>Surplus reallocation for transferring members:</b>	-345,669	353,400	-405,554	397,823	0
<b>Valuation assets as of June 30, 2022:</b>	\$185,654,365	\$455,383,030	\$194,094,571	\$58,092,307	\$893,224,273

## Section 2: Actuarial Valuation Results

### Asset history for years ended June 30

Actuarial Value of Assets vs. Market Value of Assets



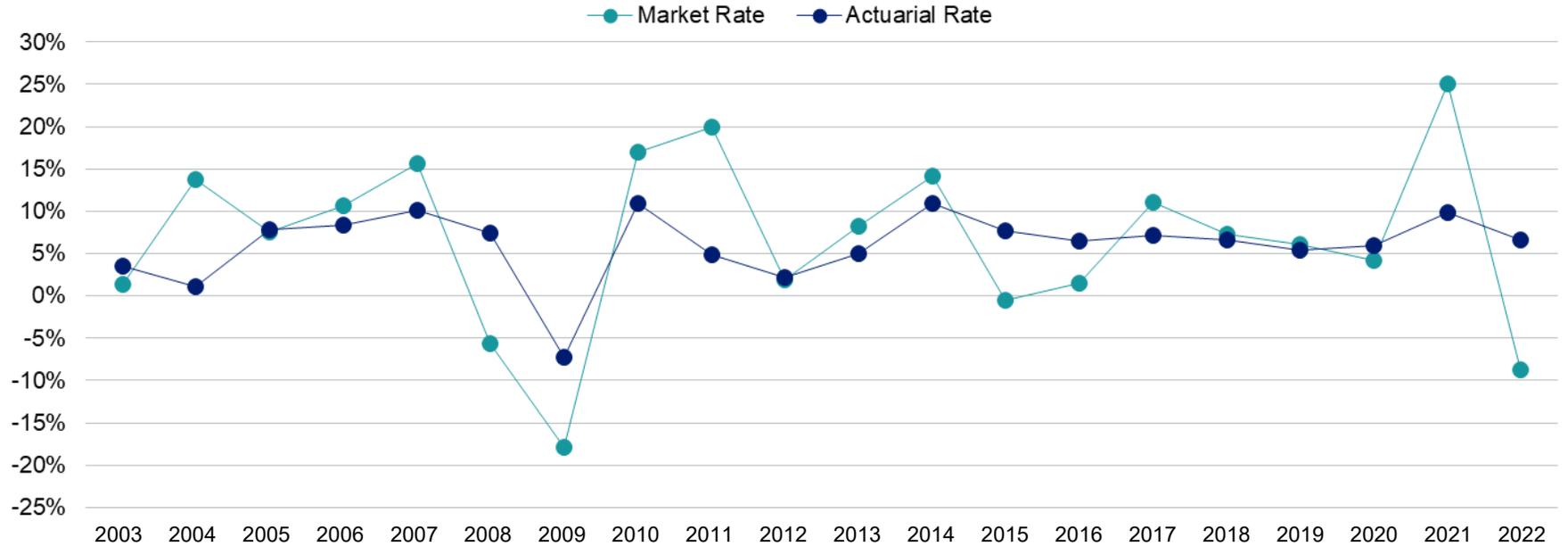
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Actuarial Value <sup>1</sup>	\$446.2	\$500.6	\$543.8	\$581.6	\$634.7	\$680.0	\$718.3	\$761.5	\$837.1	\$893.2
Market Value <sup>1</sup>	463.2	534.5	535.9	547.0	619.5	667.8	709.5	740.1	926.0	846.0
Ratio	0.96	0.94	1.01	1.06	1.02	1.02	1.01	1.03	0.90	1.06

<sup>1</sup> In millions

## Section 2: Actuarial Valuation Results

### Historical investment returns

Market and Actuarial Rates of Return for Years Ended June 30



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Market rate	1.3%	13.8%	7.5%	10.6%	15.7%	-5.7%	-17.9%	17.0%	19.9%	1.9%	8.2%	14.1%	-0.5%	1.3%	11.1%	7.3%	6.0%	4.2%	25.1%	-8.7%
Actuarial rate	3.5%	1.1%	7.8%	8.4%	10.1%	7.4%	-7.3%	10.9%	4.8%	2.2%	5.0%	10.9%	7.8%	6.1%	7.1%	6.7%	5.4%	5.9%	9.9%	6.7%
Assumed rate	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.5%	8.5%	8.5%	8.5%	8.5%	7.95%	7.95%	7.5%	7.5%	7.0%	7.0%	7.0%

Average Rates of Return	Actuarial Value	Market Value
Most recent five-year average return:	6.96%	6.03%
Most recent ten-year average return:	7.14%	6.28%
Most recent fifteen-year average return:	6.31%	5.47%
20-year average return:	6.34%	6.11%

## Section 2: Actuarial Valuation Results

### Actuarial experience

To calculate the actuarially determined contribution (ADC), assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the ADC will decrease relative to the previous year. On the other hand, the ADC will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single years' experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The net experience loss is \$20,877,161, which includes \$2,912,871 from investment losses and \$17,964,290 in losses from all other sources. The net experience variation from individual sources other than investments was 1.6% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

#### Actuarial Experience for Year Ended June 30, 2022

<b>1</b>	Net loss from investments <sup>1</sup>	-\$2,912,871
<b>2</b>	Gain on administrative expenses	145,431
<b>3</b>	Net loss from other experience	<u>-18,109,721</u>
<b>4</b>	Net experience loss: <b>1 + 2 + 3</b>	-\$20,877,161

<sup>1</sup> Details on next page

## Section 2: Actuarial Valuation Results

### Investment experience

Actuarial planning is long term. The obligations of a pension plan are expected to continue for the lifetime of all its participants.

The assumed long-term rate of return of 7.00% considers past experience, the System's asset allocation policy, and future expectations.

#### Investment Experience

		Year Ended June 30, 2022	
		Market Value	Actuarial Value
<b>1</b>	Investment income	-\$80,484,627	\$55,698,866
<b>2</b>	Average value of assets	926,249,214	837,310,523
<b>3</b>	Rate of return: <b>1 ÷ 2</b>	-8.69%	6.65%
<b>4</b>	Assumed rate of return	7.00%	7.00%
<b>5</b>	Expected investment income: <b>2 x 4</b>	\$64,837,445	\$58,611,737
<b>6</b>	Actuarial gain/(loss): <b>1 - 5</b>	-\$145,322,072	-\$2,912,871

## Section 2: Actuarial Valuation Results

### Administrative expenses

Administrative expenses for the year ending June 30, 2022, totaled \$1,302,589, as compared to the assumption of \$1,395,177.

### Contributions

Contributions for the year ended June 30, 2022, totaled \$50,893,902 compared to the projected amount of \$61,405,191. This resulted in a loss of \$10,879,185 for the year, with interest.

### Other experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among members,
- retirement experience (earlier or later than projected),
- mortality (more or fewer deaths than projected),
- the number of disability retirements (more or fewer than projected),
- actual COLAs paid (more or less than assumed), and
- salary and service increases (greater or smaller than projected).

The net loss from this other experience for the year ended June 30, 2022, amounted to \$18,109,721.

#### Liability Changes Due to Demographic Experience for Year Ended June 30

	2018	2019	2020	2021	2022
Net turnover	-\$4,430,054	-\$3,643,639	-\$6,643,287	-\$1,910,229	\$8,419,883
Retirement	-8,275,342	-6,418,409	-4,895,347	-2,674,401	-3,610,731
Mortality	407,980	-1,150,243	-3,822,241	515,840	216,665
Disability retirements	-627,976	58,501	-108,472	-192,529	-52,895
Salary/service increases	753,988	1,849,148	5,013,461	1,670,345	-10,247,586
COLA experience <sup>1</sup>	-80,372	1,463,253	3,060,227	-4,281,130	-7,223,911
Miscellaneous <sup>2</sup>	-5,120,647	-4,408,256	-2,305,236	407,804	-5,611,146
Total	-\$17,372,423	-\$12,249,645	-\$9,700,895	-\$6,464,300	-\$18,109,721

<sup>1</sup> COLA experience loss for 2022 is due to actual 2023 COLAs being greater than expected (2.00% actual vs 1.10% expected for Group A, 3.00% actual vs 1.20% expected for Groups B, C, and D).

<sup>2</sup> Miscellaneous gains and losses are comprised of all demographic gains and losses that are not individually listed in the table above. Some of the largest attributing items typically include data updates, show-up/drop-off records (records that were not previously valued, or records that were previously valued that are no longer being valued), and actual timing of cash flows being different than assumed.

## Section 2: Actuarial Valuation Results

### Actuarial assumptions

There are no assumption changes reflected in this report. Details on actuarial assumptions and methods are in *Section 4, Exhibit I*.

### Plan provisions

At the November 17, 2020, Board meeting, the Board voted unanimously to authorize employer contribution rate increases of 0.50% each year for a period of four years, beginning July 1, 2022. In 2022, the Legislature passed H.740, which effectively split the Board-authorized increases evenly between members and employers by including an increase in the employee rate of 0.25% for each group for four years, beginning July 1, 2022. A summary of plan provisions is in *Section 4, Exhibit II*.

## Section 2: Actuarial Valuation Results

### Development of unfunded actuarial accrued liability

#### Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2022

<b>1</b>	Unfunded actuarial accrued liability at beginning of year	\$237,072,174
<b>2</b>	Normal cost at beginning of year	40,773,238
<b>3</b>	Total contributions	-50,893,902
<b>4</b>	Interest on <b>1, 2 &amp; 3</b>	<u>17,667,892</u>
<b>5</b>	Expected unfunded actuarial accrued liability	\$244,619,402
<b>6</b>	Changes due to:	
	(a) Net experience (gain)/loss	\$20,877,161
	(b) Assumptions	0
	(c) Funding method	0
	(d) Plan provisions	<u>0</u>
	Total changes	<u>20,877,161</u>
<b>7</b>	Unfunded actuarial accrued liability at end of year	\$265,496,563

## Section 2: Actuarial Valuation Results

### Actuarially determined contribution

The actuarially determined contribution is equal to the employer normal cost payment and a payment on the unfunded actuarial accrued liability. As of July 1, 2022, the actuarially determined contribution for fiscal year ending June 30, 2023, is \$43,343,569, or 11.602% of payroll.

The statute governing the System specifies the funding policy used to calculate the actuarially determined contribution based on a closed amortization period ending on June 30, 2038, assuming that the amortization amount will increase annually at the rate of 3% over the preceding year. As of July 1, 2022, there are 16 years remaining on this schedule.

The contribution requirement as of July 1, 2022, is based on the data previously described, the actuarial assumptions and Plan provisions described in *Section 4*, including all changes affecting future costs adopted at the time of the actuarial valuation, actuarial gains and losses, and changes in the actuarial assumptions.

#### Actuarially Determined Contribution Requirement

	Year Beginning July 1			
	2022		2021	
	Amount	% of Payroll	Amount	% of Payroll
<b>1</b> Total normal cost, adjusted for timing <sup>1</sup>	\$43,773,351	11.717%	\$40,780,988	11.692%
<b>2</b> Administrative expenses	1,494,362	0.400%	1,395,177	0.400%
<b>3</b> Expected employee contributions	<u>-24,464,769</u>	<u>-6.549%</u>	<u>-21,953,878</u>	<u>-6.294%</u>
<b>4</b> Employer normal cost: <b>1 + 2 + 3</b>	\$20,802,944	5.568%	\$20,222,287	5.798%
<b>5</b> Actuarial accrued liability	1,159,279,879		1,074,167,813	
<b>6</b> Actuarial value of assets	<u>893,224,273</u>		<u>837,095,639</u>	
<b>7</b> Unfunded actuarial accrued liability: <b>5 - 6</b>	\$266,055,606		\$237,072,174	
<b>8</b> Payment on unfunded actuarial accrued liability, adjusted for timing <sup>1</sup>	\$22,540,625	6.034%	\$19,229,026	5.513%
<b>9</b> Actuarially determined contribution requirement: <b>4 + 8</b>	\$43,343,569	11.602%	\$39,451,313	11.311%
<b>10</b> Projected payroll	\$373,590,492		\$348,794,207	

<sup>1</sup> Contributions are assumed to be paid at the middle of the year.

## Section 2: Actuarial Valuation Results

### Actuarially determined contribution by group

The following table shows a comparison of the projected Actuarially Determined Contribution for the fiscal year ending June 30, 2024, to the projected funding policy rates for the same period, by group.

Actuarially Determined Contribution by Group  
for Fiscal Year Ending June 30, 2024

		Group A	Group B	Group C	Group D	Total
<b>1</b>	Normal contributions					
	(a) Member <sup>1</sup>	3.750%	6.125%	11.250%	12.600%	6.799%
	(b) Employer	<u>3.987%</u>	<u>5.584%</u>	<u>5.820%</u>	<u>7.122%</u>	<u>5.318%</u>
	(c) Total	7.737%	11.709%	17.070%	19.722%	12.117%
<b>2</b>	Payment on unfunded liability through June 30, 2038	3.091%	5.787%	9.459%	10.530%	6.034%
<b>3</b>	Actuarially determined contribution rate: <b>1b + 2</b>	7.078%	11.371%	15.279%	17.652%	11.352%
<b>4</b>	Current funding policy contribution rate	5.250%	6.750%	8.500%	11.100%	6.924%
<b>5</b>	Contribution excess/(shortfall): <b>4 – 3</b>	-1.828%	-4.621%	-6.779%	-6.552%	-4.428%

We recommend that the Board set future contribution rates to ultimately target the rates specified in item 3 in the table above. At the November 17, 2020, Board meeting, the Board voted unanimously to authorize employer contribution rate increases of 0.50% each year for a period of four years, beginning July 1, 2022. In 2022, the Legislature passed H.740, which effectively split the Board-authorized increases evenly between members and employers by including an increase in the employee rate of 0.25% for each group for four years, beginning July 1, 2022.

The difference between the current funding policy rate and the actuarially determined contribution rate is a shortfall of 4.428% of payroll in the aggregate. If the remaining two 0.50% contribution rate increases were applied immediately, the contribution shortfall would effectively reduce to 3.428%. Projected payroll for fiscal 2023 is \$373,590,492.

<sup>1</sup> Includes two 0.25% member contribution rate increases per group, as defined in H.740.

## Section 2: Actuarial Valuation Results

### Amortization schedule for unfunded actuarial accrued liability

A schedule of projected future unfunded actuarial accrued liability amortization payments, which, if made, would amortize the unfunded actuarial accrued liability by 2038, is shown below. Because the current funding policy rates are lower than the actuarially determined contribution rates, we have projected the funded percentage based on the funding policy rates. As shown below, the funded percentage increases through 2038, where the projected funded percentage is 80.99%.

As of July 1	Balance	Amortization Payment (Year Following)	Projected Funded Percentage if Contributions are Based on Current Contribution Rates <sup>1</sup>
2022	\$266,055,606	\$22,540,625	77.05%
2023	261,363,295	23,216,843	77.21%
2024	255,643,036	23,913,349	77.40%
2025	248,801,889	24,630,749	77.70%
2026	240,739,776	25,369,672	78.10%
2027	231,348,968	26,130,762	78.46%
2028	220,513,526	26,914,685	78.78%
2029	208,108,707	27,722,125	79.07%
2030	194,000,327	28,553,789	79.33%
2031	178,044,081	29,410,402	79.57%
2032	160,084,810	30,292,715	79.79%
2033	139,955,719	31,201,496	80.00%
2034	117,477,541	32,137,541	80.20%
2035	92,457,638	33,101,667	80.40%
2036	64,689,042	34,094,717	80.60%
2037	33,949,425	35,117,559	80.79%
2038	0	0	80.99%

<sup>1</sup> At the November 17, 2020, Board meeting, the Board voted unanimously to authorize employer contribution rate increases of 0.50% each year for a period of four years, beginning July 1, 2022. In 2022, the Legislature passed H.740, which effectively split the Board-authorized increases evenly between members and employers by including an increase in the employee rate of 0.25% for each group for four years, beginning July 1, 2022. The funded percentages shown in the table above assume that the Actuarial Value of Assets earns 7% per year in each future year and do not reflect the \$47.2 million of deferred net investment losses as of the June 30, 2022, valuation date. For comparison, the projected funded percentage in 2038 based on the Market Value of Assets is 75.44%.

## Section 2: Actuarial Valuation Results

### History of employer contributions

A history of the most recent years of contributions is shown below.

#### History of Employer Contributions: 2014 – 2023

Fiscal Year Ended June 30	Actuarially Determined Contribution		Actual Employer Contribution		
	Amount	Percentage of Payroll <sup>1</sup>	Amount	Percentage of Payroll <sup>1</sup>	Percent Contributed
2014	11,638,928	5.03%	12,805,737	5.53%	110.03%
2015	11,956,121	4.93%	14,136,067	5.83%	118.23%
2016 <sup>2</sup>	15,235,742	N/A	15,235,742	N/A	100.00%
2017	12,895,672	4.64%	16,481,881	5.93%	127.81%
2018	15,066,601	5.22%	17,519,690	6.07%	116.28%
2019	17,263,214	5.67%	19,202,981	6.31%	111.24%
2020	22,618,468	7.04%	20,680,856	6.44%	91.43%
2021	36,722,301	10.67%	22,297,570	6.48%	60.72%
2022	39,451,313	11.31%	25,217,676	7.23%	63.92%
2023	43,343,569	11.60%	--	--	--

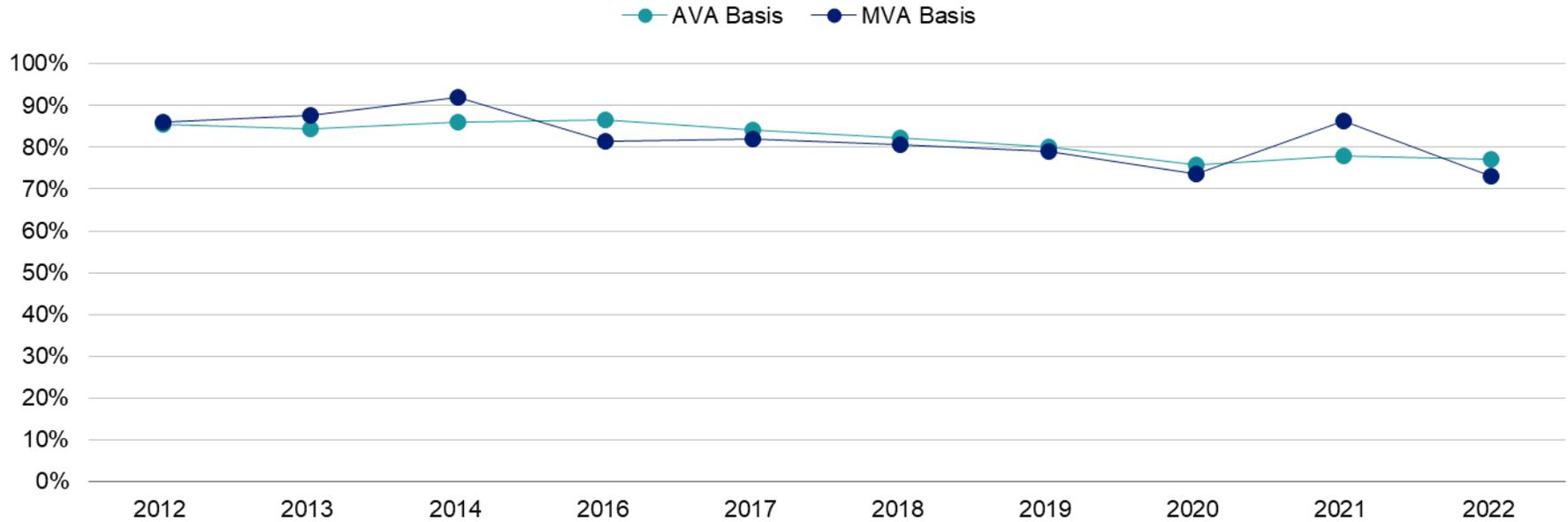
<sup>1</sup> Based on expected payroll

<sup>2</sup> While no formal actuarial valuation was produced for the fiscal year ended June 30, 2015, contribution rates for the year were developed by the actuary.

## Section 2: Actuarial Valuation Results

### History of funded percentage

A history of the most recent years of funded percentage as of June 30<sup>th</sup> is shown below.



\* No formal actuarial valuation was produced for the fiscal year ended June 30, 2015. Therefore, no funded percentage is shown as of June 30, 2015.

## Section 2: Actuarial Valuation Results

### Actuarial balance sheet

An overview of the System's funding is provided by an Actuarial Balance Sheet, which compares the total liabilities (current and future) to the total assets (current and future). The liabilities are calculated by determining the amount and timing of all future payments that will be made by the System for current members. These payments are discounted at the valuation interest rate to the date of the valuation, thereby determining the present value of all benefits, referred to as the "liability" of the System.

Second, this liability is compared to the assets. The "assets" for this purpose include the net amount of assets already accumulated by the System, the present value of future member contributions, the present value of future employer normal cost contributions, and the present value of future employer amortization payments for the unfunded actuarial accrued liability.

#### Actuarial Balance Sheet

	Year Ended	
	June 30, 2022	June 30, 2021
Liabilities		
• Present value of benefits for retired members and beneficiaries	\$526,609,714	\$478,948,467
• Present value of benefits for inactive former members	82,579,636	71,470,807
• Present value of benefits for active members	<u>853,630,464</u>	<u>805,956,487</u>
<b>Total liabilities</b>	<b>\$1,462,819,814</b>	<b>\$1,356,375,761</b>
Assets		
• Total valuation value of assets	\$893,224,273	\$837,095,639
• Present value of future contributions by members	207,050,583	171,776,008
• Present value of future employer contributions <sup>1</sup> for:		
• Entry age cost/employer normal contributions	303,539,935	110,431,940
• Unfunded actuarial accrued liability	<u>266,055,606</u>	<u>237,072,174</u>
<b>Total of current and future assets</b>	<b>\$1,462,819,814</b>	<b>\$1,356,375,761</b>

<sup>1</sup> Based on actuarially determined contribution rates, not the current contribution rates

## Section 2: Actuarial Valuation Results

### Risk

Since the actuarial valuation results are dependent on a given set of assumptions and data as of a specific date, there is a risk that emerging results may differ significantly as actual experience differs from the assumptions.

Below is a brief discussion of some of the risks that may affect the System. This discussion is focused on funding-related risks, but similar concerns may apply to risks regarding the level of expense and liabilities reported for System accounting purposes as well.

There are external factors including legislative or financial reporting changes that could impact the System's funding and disclosure requirements. While we do not assume any changes in such external factors, it is important to understand that they could have significant consequences for the System.

In 2019, the Board engaged Segal to perform a detailed analysis of the potential range of the impact of risks relative to the System's future financial condition. This study included an overview of risks that affect the System and stakeholders, as well as various stochastic and deterministic modeling scenarios, primarily focusing on investment returns.

A detailed risk assessment is important for VMERS because:

- The current positive cash flow position of the System could be reversed by relatively small deviations from assumed future experience or simply as the result of the ongoing maturity of the plan over time.
- Investment volatility could affect plan sustainability and require increased contributions from members and/or employers.
- Most actuarial assumptions have been revised and updated since the last detailed risk analysis was performed.
- The risks identified below show significant potential for variability.

The following risks could significantly affect the System's future condition:

- **Investment Risk** (the risk that returns will be different than expected)

If the prior year's investment performance resulted in a market value of assets that is 10% different than the current value, it would result in a change of \$84.6 million in the asset value. A 10% increase in assets would cause the unfunded actuarial accrued liability using the market value of assets to decrease from \$313.3 million to \$228.7 million. Likewise, a 10% decrease in the asset value would cause the unfunded actuarial accrued liability to increase from \$313.3 million to \$397.9 million.

Since the System's assets are much larger than contributions, investment performance may create volatility in the actuarially determined contribution requirements. For example, for each 1% difference in actual return, the actuarially determined

## Section 2: Actuarial Valuation Results

contribution would increase or decrease by 0.19% of payroll, disregarding the effects of the five-year phase-in of investment gains and losses.

To illustrate the potential for future investment volatility, the single year market value rate of return over the last 20 years has ranged from a low of -17.88% to a high of 25.07%.

- **Longevity Risk** (the risk that mortality experience will be different than expected)

The actuarial valuation includes an expectation of future improvement in life expectancy. Emerging plan experience that does not match these expectations will result in either an increase or decrease in the actuarially determined contribution.

The current mortality assumptions represent our best estimate of the mortality rates for this plan; however, a 10% reduction in the assumed mortality rates results in an increase in the liabilities of roughly 3% for most plans. For VMERS, a 3% liability increase would result in an increase in the unfunded accrued liability of \$34.8 million. The unfunded accrued liability (market value of assets basis) would increase from \$313.3 million to \$348.1 million.

- **Demographic Risk** (the risk that member experience will be different than assumed)

Examples of this risk include:

- Actual retirements occurring earlier or later than assumed. The value of retirement plan benefits is sensitive to the rate of benefit accruals and any early retirement subsidies that apply.
- More or less active member turnover than assumed.
- Salary increases more or less than assumed.

## Section 2: Actuarial Valuation Results

- **Maturity Measures**

As pension plans mature, the cash need to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Plan's asset allocation is aligned to meet emerging pension liabilities.

- Over the past ten years, the ratio of in-pay-status members to active members has increased from a low of 0.33 to a high of 0.51. Currently the System has an in-pay-status to active member ratio of 0.51.
- As of June 30, 2022, the in-payment-status actuarial accrued liability represents 45% of the total actuarial accrued liability. In addition, the actuarial accrued liability for inactive vested members represents 7% of the total. The higher the non-active actuarial accrued liability is as a percent of the total liability, the greater the danger of volatility in results.
- For the prior year, benefits paid were \$2.8 million less than contributions received, or 0.3% of the market value of assets. As the System matures and benefits paid exceed contributions received, cash will be needed from the investment portfolio to meet benefit payments.

- **Actual Experience Over the Last Five Years and Implications for the Future**

Plan Year Ended	Investment Gain/(Loss)	Administrative Expense Gain/(Loss)	All Other Gains and (Losses)
2018	-\$5,265,750	N/A	-\$17,372,423
2019	-14,044,110	N/A	-12,249,645
2020	-11,255,517	N/A	-9,700,895
2021	21,858,431	N/A	-6,464,300
2022	-2,912,871	\$145,431	-18,109,721

- Past experience can help demonstrate the sensitivity of key results to the System's actual experience. Over the past five years:
  - The investment gain(loss) for a year (actuarial basis) has ranged from a loss of \$14.0 million to a gain of \$21.9 million.
  - The non-investment gain(loss) for a year has ranged from a loss of \$18.1 million to a loss of \$6.5 million.
- The funded percentage on the actuarial value of assets has ranged from a low of 75.8% to a high of 86.5% over the past ten years.

# Section 3: Supplemental Information

## Exhibit A: Table of Plan Coverage

Category	As of June 30		Change From Prior Year
	2022	2021	
<b>Active members in valuation:</b>			
• Number	8,059	7,879	2.3%
• Average age	47.3	47.7	-0.4
• Average years of service	8.1	8.4	-0.3
• Total payroll	\$355,708,896	\$331,960,355	7.2%
• Average payroll	44,138	42,132	4.8%
• Total active vested members	4,082	4,079	0.1%
<b>Inactive members</b>			
• Number of deferreds as reported by the System	1,048	998	5.0%
• Number of inactives as reported by the System	3,997	3,343	19.6%
<b>Retired members:</b>			
• Number in pay status	3,778	3,587	5.3%
• Average age	72.1	72.0	0.1
• Average monthly benefit	\$958	\$920	4.1%
<b>Disability Retirees:</b>			
• Number in pay status	86	83	3.6%
• Average age	63.2	62.7	0.5
• Average monthly benefit	\$838	\$765	9.5%
<b>Beneficiaries:</b>			
• Number in pay status	285	268	6.3%
• Average age	74.1	73.2	0.9
• Average monthly benefit	\$695	\$675	3.0%

## Section 3: Supplemental Information

### Exhibit B: Reconciliation of Member Data

	Active Members	Deferreds	Inactives	Disability Retirees	Retired Members	Beneficiaries	Total
<b>Number as of July 1, 2021</b>	<b>7,879</b>	<b>998</b>	<b>3,343</b>	<b>83</b>	<b>3,587</b>	<b>268</b>	<b>16,158</b>
• New members	1,455	N/A	348	0	7	0	1,810
• Inactives as reported by the System	-1,086	N/A	1,086	N/A	N/A	N/A	0
• Deferreds as reported by the System	N/A	114	-114	N/A	N/A	N/A	0
• Retirements	-214	-31	-36	0	281	N/A	0
• New disabilities	-2	0	-2	4	N/A	N/A	0
• Return to work from disability	0	N/A	N/A	0	N/A	N/A	0
• Died with beneficiary	-3	0	-1	0	-20	24	0
• Died without beneficiary	-6	-2	-2	-2	-58	-7	-77
• Refunds of contributions	-122	-19	-486	0	-11	0	-638
• Rehire	158	-13	-139	N/A	-6	N/A	0
• Certain period expired	N/A	N/A	0	0	0	-1	-1
• Data adjustments	0	1	0	1	-2	1	1
<b>Number as of July 1, 2022</b>	<b>8,059</b>	<b>1,048</b>	<b>3,997</b>	<b>86</b>	<b>3,778</b>	<b>285</b>	<b>17,253</b>

## Section 3: Supplemental Information

### Exhibit C: Summary Statement of Income and Expenses on a Market Value Basis

	Year Ended June 30, 2022	Year Ended June 30, 2021
Net assets at market value at the beginning of the year	\$926,034,330	\$740,052,895
<b>Contribution income:</b>		
• Employer contributions	\$25,217,676	\$22,297,570
• Member contributions	25,025,242	23,074,402
• Less administrative expenses	<u>-1,302,589</u>	<u>-1,248,638</u>
<i>Net contribution income</i>	\$48,940,329	\$44,123,334
Other income	\$650,984	\$365,222
<b>Investment income:</b>		
• Interest, dividends and other income	\$6,689,467	\$6,831,731
• Asset appreciation	-87,174,094	178,738,290
• Less investment fees	<u>-1,023,138</u>	<u>-719,924</u>
<i>Net investment income</i>	<u>-\$81,507,765</u>	<u>\$184,850,097</u>
<b>Total income available for benefits</b>	<b>-\$31,916,452</b>	<b>\$229,338,653</b>
<b>Less benefit payments:</b>		
• Benefits	-\$44,227,059	-\$39,925,945
• Refunds of contributions	-2,541,159	-2,384,391
• Death claims	-387,362	-456,442
• Transfer to other pension trust funds	<u>-982,827</u>	<u>-590,440</u>
<i>Net benefit payments</i>	-\$48,138,407	-\$43,357,218
<b>Change in reserve for future benefits</b>	<b>-\$80,054,859</b>	<b>\$185,981,435</b>
<b>Net assets at market value at the end of the year</b>	<b>\$845,979,471</b>	<b>\$926,034,330</b>

## Section 3: Supplemental Information

### Exhibit D: Summary Statement of Plan Assets

	June 30, 2022	June 30, 2021
Cash equivalents	\$5,407,263	\$3,845,509
Total accounts receivable	15,733,247	16,559,669
Prepaid expenses	43,984	42,795
Capital assets, net of depreciation	229,667	333,818
<b>Investments:</b>		
• Fixed income	\$48,155,258	\$42,103,731
• Equities	73,932,086	93,886,722
• Mutual and commingled funds	558,488,401	632,022,316
• Real estate and venture capital	<u>154,043,839</u>	<u>143,334,152</u>
Total investments at market value	\$834,619,584	\$911,346,921
Total assets	\$856,033,745	\$932,128,712
Total liabilities	-\$10,054,274	-\$6,094,382
<b>Net assets at market value</b>	<b>\$845,979,471</b>	<b>\$926,034,330</b>
<b>Net assets at actuarial value</b>	<b>\$837,095,639</b>	<b>\$837,095,639</b>

## Section 3: Supplemental Information

### Exhibit E: Development of the Fund through June 30, 2022

Year Ended June 30	Employer Contributions	Member Contributions	Net Other Income	Net Investment Return <sup>1</sup>	Admin. Expenses	Benefit Payments <sup>2</sup>	Market Value of Assets at Year-End	Actuarial Value of Assets at Year-End	Actuarial Value as a Percent of Market Value
2012	\$11,532,230	\$11,337,926	\$118,191	\$7,661,464	-\$672,851	-\$16,338,446	\$420,540,070	\$417,443,451	99.26%
2013	12,014,186	15,060,665	170,381	34,838,507	-749,447	-18,687,932	463,186,430	446,235,922	96.34%
2014	12,805,737	13,233,728	2,142,868	64,346,116	-588,022	-20,601,380	534,525,477	500,557,919	93.65%
2015	14,136,067	13,587,975	384,009	-2,358,518	-1,056,094	-23,315,174	535,903,742	543,768,156	101.47%
2016	15,235,742	15,226,948	351,434	6,776,933	-890,802	-25,588,884	547,015,114	581,611,235	106.32%
2017	16,481,881	25,210,413	149,556	59,486,928	-1,030,159	-27,803,390	619,510,342	634,690,493	102.45%
2018	17,519,690	19,166,537	271,783	43,889,050	-1,064,034	-31,444,463	667,848,905	680,005,147	101.82%
2019	19,202,981	19,777,956	450,746	38,740,356	-1,158,070	-35,397,043	709,465,831	718,337,020	101.25%
2020	20,680,856	20,771,304	459,660	29,113,786	-1,354,418	-39,084,124	740,052,895	761,505,976	102.90%
2021	22,297,570	23,074,402	365,222	184,850,097	-1,248,638	-43,357,218	926,034,330	837,095,639	90.40%
2022	25,217,676	25,025,242	650,984	-81,507,765	-1,302,589	-48,138,407	845,979,471	893,224,273	105.58%

<sup>1</sup> On a market basis, net of investment fees.

<sup>2</sup> Includes "transfers to other pension trust funds"

## Section 3: Supplemental Information

### Exhibit F: Definition of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

<b>Actuarial Accrued Liability for Actives:</b>	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
<b>Actuarial Accrued Liability for Pensioners:</b>	The single-sum value of lifetime benefits to existing pensioners. This sum takes into account life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.
<b>Actuarial Cost Method:</b>	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
<b>Actuarial Gain or Loss:</b>	A measure of the difference between actual experience and expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge that may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.
<b>Actuarially Equivalent:</b>	Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.
<b>Actuarial Present Value (APV):</b>	<p>The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is:</p> <p>Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)</p> <p>Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and</p> <p>Discounted according to an assumed rate (or rates) of return to reflect the time value of money.</p>

## Section 3: Supplemental Information

<b>Actuarial Present Value of Future Plan Benefits:</b>	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
<b>Actuarial Valuation:</b>	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the Actuarially Determined Contribution (ADC) and the Net Pension Liability.
<b>Actuarial Value of Assets (AVA):</b>	The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded percentage and the ADC.
<b>Actuarially Determined:</b>	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.
<b>Actuarially Determined Contribution (ADC):</b>	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the System's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
<b>Amortization Method:</b>	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
<b>Amortization Payment:</b>	The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

## Section 3: Supplemental Information

<b>Assumptions or Actuarial Assumptions:</b>	The estimates upon which the cost of the Fund is calculated, including: <u>Investment return</u> - the rate of investment yield that the Fund will earn over the long-term future; <u>Mortality rates</u> - the death rates of employees and pensioners; life expectancy is based on these rates; <u>Retirement rates</u> - the rate or probability of retirement at a given age; <u>Withdrawal rates</u> - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; <u>Salary increase rates</u> - the rates of salary increase due to inflation and productivity growth.
<b>Closed Amortization Period:</b>	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Open Amortization Period.
<b>Decrements:</b>	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
<b>Defined Benefit Plan:</b>	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
<b>Defined Contribution Plan:</b>	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
<b>Employer Normal Cost:</b>	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
<b>Experience Study:</b>	A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more Actuarial Assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
<b>Funded Ratio:</b>	The ratio of the Actuarial Value of Assets (AVA) to the Actuarial Accrued Liability (AAL). Plans sometimes calculate a market funded percentage, using the market value of assets (MVA), rather than the AVA.
<b>GASB 67 and GASB 68:</b>	Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.

## Section 3: Supplemental Information

<b>Investment Return:</b>	The rate of earnings of the Fund from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
<b>Net Pension Liability:</b>	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.
<b>Normal Cost:</b>	That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment with respect to an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated.
<b>Open Amortization Period:</b>	An open amortization period is one that is used to determine the Amortization Payment, but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period with level percentage of payroll is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never decrease, but will become smaller each year, in relation to covered payroll, if the Actuarial Assumptions are realized.
<b>Plan Fiduciary Net Position:</b>	Market value of assets.
<b>Total Pension Liability (TPL):</b>	The actuarial accrued liability under the entry age normal cost method and based on the blended discount rate as described in GASB 67 and 68.
<b>Unfunded Actuarial Accrued Liability (UAAL):</b>	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.
<b>Valuation Date or Actuarial Valuation Date:</b>	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

# Section 4: Actuarial Valuation Basis

## Exhibit I: Actuarial Assumptions, Methods and Models

<b>Rationale for Assumptions:</b>	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the Actuarial Experience Study dated September 24, 2020 (as prepared by Segal).																								
<b>Inflation:</b>	2.30%.																								
<b>Investment Return:</b>	7.00%. The investment return assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes, as well as the System's target asset allocation.																								
<b>Salary Increases:</b>	Varying service based rates from 0-10 years of service, then a single rate of 4.50% for all subsequent years. <table border="1" data-bbox="632 727 1192 1325"> <thead> <tr> <th>Service</th> <th>Annual Rate of Salary Increase (%)</th> </tr> </thead> <tbody> <tr><td>0</td><td>7.00%</td></tr> <tr><td>1</td><td>6.50%</td></tr> <tr><td>2</td><td>5.75%</td></tr> <tr><td>3</td><td>5.25%</td></tr> <tr><td>4</td><td>5.00%</td></tr> <tr><td>5</td><td>4.75%</td></tr> <tr><td>6</td><td>4.75%</td></tr> <tr><td>7</td><td>4.75%</td></tr> <tr><td>8</td><td>4.75%</td></tr> <tr><td>9</td><td>4.75%</td></tr> <tr><td>10+</td><td>4.50%</td></tr> </tbody> </table>	Service	Annual Rate of Salary Increase (%)	0	7.00%	1	6.50%	2	5.75%	3	5.25%	4	5.00%	5	4.75%	6	4.75%	7	4.75%	8	4.75%	9	4.75%	10+	4.50%
Service	Annual Rate of Salary Increase (%)																								
0	7.00%																								
1	6.50%																								
2	5.75%																								
3	5.25%																								
4	5.00%																								
5	4.75%																								
6	4.75%																								
7	4.75%																								
8	4.75%																								
9	4.75%																								
10+	4.50%																								

## Section 4: Actuarial Valuation Basis

### Cost-of-Living Adjustments:

Assumed to occur on January 1 following one year of retirement at the rate of 1.10% per annum for Group A members and 1.20% per annum for Groups B, C and D members (beginning at Normal Retirement eligibility age for members who elect reduced early retirement, at age 62 for members of Groups A, B, and D who receive a disability retirement benefit, and at age 55 for members of Group C who receive a disability retirement benefit). The January 1, 2023, COLA is expected to be 2.00% for Group A and 3.00% for Groups B, C, and D.

### Mortality Rates:

#### *Pre-retirement:*

- Groups A/B/C 40% PubG-2010 General Employee Amount-Weighted below-median and 60% of PubG-2010 General Employee Amount-Weighted, with generational projection using Scale MP-2019.
- Group D PubG-2010 General Employee Amount-Weighted above-median, with generational projection using scale MP-2019.

#### *Healthy Post-retirement - Retirees:*

- Groups A/B/C 104% of 40% PubG-2010 General Healthy Retiree Amount-Weighted below-median and 60% of PubG-2010 General Healthy Retiree Amount-Weighted, with generational projection using scale MP-2019.
- Group D PubG-2010 General Healthy Retiree Amount-Weighted, with generational projection using scale MP-2019.

#### *Healthy Post-retirement - Beneficiaries:*

- Groups A/B/C 70% Pub-2010 Contingent Survivor Amount-Weighted below-median and 30% of Pub-2010 Contingent Survivor Amount-Weighted, with generational projection using scale MP-2019.
- Group D Pub-2010 Contingent Survivor Amount-Weighted, with generational projection using scale MP-2019.

#### *Disabled Post-retirement:*

- All Groups PubNS-2010 Non-Safety Disabled Retiree Amount-Weighted with generational projection using Scale MP-2019.

The tables with the generational projection to the ages of members as of the measurement date reasonably reflect the mortality experience of the System as of the measurement date.

The mortality rates were based on historical and current demographic data, adjusted to reflect health characteristics of the underlying groups and estimated future experience and professional judgment. The mortality tables were then adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

## Section 4: Actuarial Valuation Basis

### Withdrawal from Service before Retirement:

Assumed annual rates of withdrawal are as follows:

Service	Rate (%)	
	Male	Female
0	22.50	25.00
1	16.20	22.00
2	13.50	17.50
3	12.15	15.50
4	10.80	12.00
5	9.00	11.00
6	8.10	10.50
7	7.20	10.00
8	7.20	7.50
9	6.30	7.00
10	3.60	6.00

## Section 4: Actuarial Valuation Basis

### Disability Incidence:

Representative values of the assumed annual rates of disability incidence are as follows:

Age	Rate (%) <sup>1</sup>	
	Male	Female
25	0.0100	0.0050
30	0.0130	0.0065
35	0.0170	0.0085
40	0.0300	0.0150
45	0.0500	0.0250
50	0.0900	0.0450
55	0.1800	0.0900
60	0.3150	0.1575
65	0.3150	0.1575

<sup>1</sup> Disability rates stop after age 55 with 5 or more years of service for Group B, C and D members and after age 55 with 35 or more years of service for Group A members.

### Retirement Rates:

Retirement Group A					
Age	Male	Female	Age	Male	Female
55	3.00%	4.00%	63	15.00%	15.00%
56	6.00	6.00	64	15.00	20.00
57	4.00	6.00	65	45.00	20.00
58	4.00	4.00	66	15.00	20.00
59	5.75	7.50	67	15.00	20.00
60	7.50	4.00	68	15.00	25.00
61	10.00	7.50	69	15.00	25.00
62	22.50	7.50	70	100.00	100.00

## Section 4: Actuarial Valuation Basis

### Retirement Rates: *continued*

Retirement Group B					
Age	Male	Female	Age	Male	Female
55	4.00%	4.00%	63	20.00%	12.50%
56	4.00	4.00	64	20.00	17.50
57	4.00	4.00	65	40.00	27.50
58	4.00	5.00	66	35.00	22.50
59	4.00	5.00	67	30.00	17.50
60	4.00	5.00	68	30.00	17.50
61	14.00	12.50	69	30.00	17.50
62	28.00	17.50	70	100.00	100.00

Retirement Group C			
Age	Unisex	Age	Unisex
55	20.00%	63	10.00%
56	10.00	64	22.50
57	10.00	65	35.00
58	15.00	66	35.00
59	17.50	67	35.00
60	15.00	68	35.00
61	10.00	69	35.00
62	20.00	70	100.00

Retirement Group D					
Age	<20 Years of Service	20+ Years of Service	Age	<20 Years of Service	20+ Years of Service
50	0.00%	40.0%	58	15.0%	10.0%
51	0.00	35.0	59	15.0	10.0
52	0.00	30.0	60	15.0	15.0
53	0.00	25.0	61	10.0	10.0
54	0.00	20.0	62	25.0	25.0
55	20.00	15.0	63	25.0	25.0
56	20.00	10.0	64	25.0	25.0
57	20.00	10.0	65	100.0	100.0

## Section 4: Actuarial Valuation Basis

<b>Retirement Rates: <i>continued</i></b>	Rates shown are for members with 5 or more years of service (unless otherwise indicated). For members with less than 5 years of service, 0% is assumed.
<b>Inactive Members as Reported by the System:</b>	Not Vested: Valuation liability equals 100% of accumulated contributions. Vested: Valuation liability is based on accrued benefit and members are assumed to retire 10% of the time each year from their Early Retirement Age until their Normal Retirement Age, then 100% of the time at their Normal Retirement age, with a deferred vested benefit.
<b>Deferred Members as Reported by the System:</b>	Assumed to retire 10% of the time each year from their Early Retirement Age until their Normal Retirement Age, then 100% of the time at their Normal Retirement age, with a deferred vested benefit.
<b>Future Administrative Expenses:</b>	0.40% of projected payroll.
<b>Unknown Data for Members:</b>	Same as those exhibited by members with similar known characteristics. If not specified, Members are assumed to be male.
<b>Percent Married:</b>	85% of male members and 50% of female members are assumed to be married.
<b>Age of Spouse:</b>	Females three years younger than males.
<b>Benefit Elections:</b>	<ul style="list-style-type: none"> <li>• Non-Group D All members are assumed to elect the single life annuity option with a refund of contributions guarantee.</li> <li>• Group D Single members are assumed to elect single life annuity. Married members are assumed to elect the 70% joint &amp; survivor option.</li> </ul>
<b>Actuarial Value of Assets:</b>	A smoothing method is used, under which the value of assets for actuarial purposes equals market value less a five-year phase-in of the differences between actual and assumed investment return. The value of assets for actuarial purposes may not differ from market value of assets by more than 20%.
<b>Actuarial Cost Method:</b>	Entry Age Actuarial Cost Method. Entry Age is the age at date of employment or, if date is unknown, current age minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary, with Normal Cost determined using the plan of benefits applicable to each member. (Adopted effective June 30, 2020)
<b>Modeling:</b>	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Deterministic cost projections are based on a proprietary forecasting model. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the direction of the supervising actuary.
<b>Change in Actuarial Assumptions:</b>	Effective July 1, 2021, an administrative expenses assumption equal to 0.40% of projected payroll was established.

## Section 4: Actuarial Valuation Basis

### Exhibit II: Summary of Plan Provisions

This exhibit summarizes the major provisions of the System included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

<b>Effective Date:</b>	July 1, 1975.
<b>Creditable Service:</b>	Service as a member plus purchased service.
<b>Membership:</b>	Full time employees of participating municipalities. Municipality elects coverage under Groups A, B, C or D provisions.
<b>Average Final Compensation (AFC):</b>	<ul style="list-style-type: none"><li>• Group A Average annual compensation during highest 5 consecutive years.</li><li>• Groups B/C Average annual compensation during highest 3 consecutive years.</li><li>• Group D Average annual compensation during highest 2 consecutive years.</li></ul>
<b>Normal Retirement - Eligibility:</b>	<ul style="list-style-type: none"><li>• Group A Earlier of age 65 with 5 years of service or age 55 with 35 years of service.</li><li>• Group B Earlier of age 62 with 5 years of service or age 55 with 30 years of service.</li><li>• Groups C/D Age 55 with 5 years of service.</li></ul>
<b>Normal Retirement - Amount:</b>	<ul style="list-style-type: none"><li>• Group A 1.4% of AFC times service.</li><li>• Group B 1.7% of AFC times service as a Group B member plus percentage earned as a Group A member times AFC.</li><li>• Group C 2.5% of AFC times service as a Group C member plus percentage earned as a Group A or B member times AFC.</li><li>• Group D 2.5% of AFC times service as a Group D member plus percentage earned as a Group A, B or C member times AFC.</li><li>• Maximum benefit is 60% of AFC for Groups A and B and 50% of AFC for Groups C and D. The above amounts include the portion of the allowance provided by member contributions.</li></ul>
<b>Early Retirement - Eligibility:</b>	<ul style="list-style-type: none"><li>• Groups A/B Age 55 with 5 years of service.</li><li>• Group C None.</li><li>• Group D Age 50 with 20 years of service.</li></ul>
<b>Early Retirement - Amount:</b>	Normal retirement allowance based on service and AFC at early retirement, reduced by 6% for each year commencement precedes Normal Retirement Age for Group A and B members; payable without reduction to Group D members.

## Section 4: Actuarial Valuation Basis

<b>Vesting:</b>	<p>All groups – 5 years of service.</p> <p>Allowance beginning at normal retirement age based on AFC and service at termination. The AFC is to be adjusted annually by one-half of the percentage change in the Consumer Price Index, subject to the limits on “Post-Retirement Adjustments” described below.</p>
<b>Disability Retirement - Eligibility:</b>	<ul style="list-style-type: none"> <li>All groups – 5 years of service and disability as determined by Retirement Board.</li> </ul>
<b>Disability Retirement - Amount:</b>	<ul style="list-style-type: none"> <li>All groups – Immediate allowance based on AFC and service to date of disability. Children’s benefit of 10% of AFC payable to up to three minor children (or children up to age 23 if enrolled in full-time studies) of a disabled Group D member.</li> </ul>
<b>Death Benefit - Eligibility:</b>	<ul style="list-style-type: none"> <li>All groups – Death after 5 years of service.</li> </ul>
<b>Death Benefit - Amount:</b>	<ul style="list-style-type: none"> <li>Groups A/B/C Reduced early retirement allowance under 100% survivor option commencing immediately or, if greater, survivor’s benefit under disability allowance computed as of date of death.</li> <li>Group D 70% of the unreduced accrued benefit, plus children’s benefit.</li> </ul>
<b>Post-Retirement Adjustments:</b>	<ul style="list-style-type: none"> <li>Group A Allowances in pay status for at least one year increased on each January 1 by one-half of the percentage increase in Consumer Price Index, but not more than 2%. If receiving an Early Retirement benefit, no increases until after reaching attaining Normal Retirement eligibility. If receiving a Disability Retirement benefit, no increases until after attaining age 62.</li> <li>Groups B/C/D Allowances in payment for at least one year increased on each January 1 by one-half of the percentage increase in Consumer Price Index, but not more than 3%. If receiving an Early Retirement benefit, no increases until after reaching attaining Normal Retirement eligibility. If receiving a Disability Retirement benefit, no increases until after attaining age 62 (age 55 for Group C).</li> </ul>
<b>Retirement Stipend:</b>	\$25 per month payable at the option of the Retirement Board.
<b>Optional Benefit and Death after Retirement:</b>	<ul style="list-style-type: none"> <li>Groups A/B/C A lifetime allowance or actuarially equivalent 50% or 100% joint and survivor allowance with refund of contribution guarantee.</li> <li>Group D A lifetime allowance or 70% contingent annuitant option with no reduction.</li> </ul>
<b>Refund of Contributions:</b>	Upon termination, if the member so elects, or if no other benefit is payable, the member’s accumulated contributions with interest are refunded.

## Section 4: Actuarial Valuation Basis

<b>Member Contribution Rates:</b>	<ul style="list-style-type: none"><li>• Group A 3.50% effective July 1, 2022; 3.75% effective July 1, 2023; 4.00% effective July 1, 2024; 4.25% effective July 1, 2025, and thereafter.</li><li>• Group B 5.875% effective July 1, 2022; 6.125% effective July 1, 2023; 6.375% effective July 1, 2024; 6.625% effective July 1, 2025, and thereafter.</li><li>• Group C 11.00% effective July 1, 2022; 11.25% effective July 1, 2023; 11.50% effective July 1, 2024; 11.75% effective July 1, 2025, and thereafter.</li><li>• Group D 12.35% effective July 1, 2022; 12.60% effective July 1, 2023; 12.85% effective July 1, 2024; 13.10% effective July 1, 2025, and thereafter.</li></ul>
<b>Employer Contribution Rates:</b>	<ul style="list-style-type: none"><li>• Group A 5.00% effective July 1, 2022; 5.25% effective July 1, 2023; 5.50% effective July 1, 2024; 5.75% effective July 1, 2025, and thereafter.</li><li>• Group B 6.50% effective July 1, 2022; 6.75% effective July 1, 2023; 7.00% effective July 1, 2024; 7.25% effective July 1, 2025, and thereafter.</li><li>• Group C 8.25% effective July 1, 2022; 8.50% effective July 1, 2023; 8.75% effective July 1, 2024; 9.00% effective July 1, 2025, and thereafter.</li><li>• Group D 10.85% effective July 1, 2022; 11.10% effective July 1, 2023; 11.35% effective July 1, 2024; 11.60% effective July 1, 2025, and thereafter.</li></ul>
<b>Changes in Plan Provisions:</b>	Aside from the future contribution rate increases shown above, there were no other changes in plan provisions since the prior valuation.

# Section 5: Additional Summary Tables of Member Data

**Table 1A: Members in Active Service as of June 30, 2022, by Age, Years of Creditable Service, and Average Payroll – All Employee Groups**

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	384	382	2	--	--	--	--	--	--
	\$26,736	\$26,689	\$35,755	--	--	--	--	--	--
25 - 29	610	530	78	2	--	--	--	--	--
	\$38,292	\$36,087	\$53,081	\$45,766	--	--	--	--	--
30 - 34	719	513	173	30	3	--	--	--	--
	\$42,715	\$36,105	\$59,048	\$60,534	\$52,888	--	--	--	--
35 - 39	833	506	215	92	19	1	--	--	--
	\$43,815	\$34,643	\$53,776	\$66,292	\$66,006	\$53,753	--	--	--
40 - 44	882	483	202	114	66	17	--	--	--
	\$45,061	\$35,283	\$51,258	\$59,898	\$66,012	\$68,408	--	--	--
45 - 49	855	412	196	105	86	46	9	1	--
	\$46,791	\$36,422	\$48,978	\$57,177	\$65,211	\$66,144	\$75,271	\$68,497	--
50 - 54	1,079	382	256	160	148	77	39	16	1
	\$48,710	\$37,835	\$48,317	\$55,330	\$60,140	\$53,655	\$67,968	\$71,597	\$55,151
55 - 59	1,117	341	211	184	177	116	52	22	14
	\$46,343	\$36,645	\$48,674	\$49,790	\$49,078	\$49,000	\$61,820	\$61,217	\$64,653
60 - 64	1,060	284	197	162	134	149	68	42	24
	\$45,918	\$38,324	\$46,959	\$48,594	\$47,516	\$43,846	\$54,484	\$57,960	\$67,786
65 & over	520	148	98	76	68	53	40	23	14
	\$42,465	\$33,072	\$45,252	\$42,859	\$45,860	\$38,279	\$49,323	\$51,402	\$85,194
Total	8,059	3,981	1,628	925	701	459	208	104	53
	\$44,138	\$35,204	\$50,533	\$54,035	\$54,852	\$49,317	\$58,753	\$59,398	\$71,318

## Section 5: Additional Summary Tables of Member Data

### Table 1B: Members in Active Service as of June 30, 2022, by Age, Years of Creditable Service, and Average Payroll – Group A

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	120	119	1	--	--	--	--	--	--
	\$20,258	\$20,106	\$38,345	--	--	--	--	--	--
25 - 29	170	157	13	--	--	--	--	--	--
	\$29,035	\$28,782	\$32,092	--	--	--	--	--	--
30 - 34	209	170	36	3	--	--	--	--	--
	\$29,320	\$27,595	\$36,897	\$36,178	--	--	--	--	--
35 - 39	272	190	59	20	3	--	--	--	--
	\$31,182	\$28,576	\$37,003	\$39,729	\$24,784	--	--	--	--
40 - 44	294	174	63	35	17	5	--	--	--
	\$33,766	\$29,284	\$40,854	\$40,924	\$36,421	\$41,257	--	--	--
45 - 49	240	127	57	24	16	13	2	1	--
	\$35,329	\$31,106	\$39,353	\$39,249	\$33,767	\$44,913	\$75,380	\$68,497	--
50 - 54	321	127	80	45	35	24	7	3	--
	\$36,518	\$32,391	\$38,660	\$38,135	\$39,181	\$42,494	\$38,689	\$45,927	--
55 - 59	369	117	61	49	75	36	15	7	9
	\$36,643	\$31,367	\$37,690	\$39,033	\$34,874	\$41,243	\$49,410	\$42,038	\$55,966
60 - 64	358	94	71	54	49	47	26	15	2
	\$37,088	\$31,962	\$39,384	\$41,297	\$37,207	\$32,948	\$42,303	\$41,863	\$73,514
65 & over	212	57	33	39	25	26	19	11	2
	\$35,215	\$28,189	\$38,154	\$32,999	\$39,296	\$36,556	\$43,605	\$35,719	\$79,167
<b>Total</b>	<b>2,565</b>	<b>1,332</b>	<b>474</b>	<b>269</b>	<b>220</b>	<b>151</b>	<b>69</b>	<b>37</b>	<b>13</b>
	<b>\$33,672</b>	<b>\$28,883</b>	<b>\$38,462</b>	<b>\$38,748</b>	<b>\$36,483</b>	<b>\$38,369</b>	<b>\$44,799</b>	<b>\$41,119</b>	<b>\$62,235</b>

## Section 5: Additional Summary Tables of Member Data

### Table 1C: Members in Active Service as of June 30, 2022, by Age, Years of Creditable Service, and Average Payroll – Group B

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	185	184	1	--	--	--	--	--	--
	\$25,661	\$25,620	\$33,164	--	--	--	--	--	--
25 - 29	305	263	40	2	--	--	--	--	--
	\$35,624	\$33,588	\$48,506	\$45,766	--	--	--	--	--
30 - 34	339	242	79	15	3	--	--	--	--
	\$41,277	\$36,092	\$54,435	\$53,297	\$52,888	--	--	--	--
35 - 39	390	246	104	31	8	1	--	--	--
	\$41,438	\$34,390	\$50,716	\$61,526	\$58,166	\$53,753	--	--	--
40 - 44	454	267	106	50	26	5	--	--	--
	\$44,466	\$37,338	\$50,125	\$59,448	\$61,142	\$68,551	--	--	--
45 - 49	473	243	107	60	40	18	5	--	--
	\$44,711	\$36,110	\$48,005	\$57,336	\$61,945	\$56,997	\$58,605	--	--
50 - 54	597	214	146	86	69	44	26	11	1
	\$46,776	\$35,966	\$47,803	\$55,633	\$50,817	\$53,263	\$67,585	\$72,995	\$55,151
55 - 59	639	204	125	109	80	71	31	14	5
	\$47,847	\$39,029	\$49,266	\$48,983	\$53,394	\$50,379	\$63,623	\$63,776	\$80,290
60 - 64	614	166	113	94	71	90	38	24	18
	\$47,690	\$39,797	\$48,880	\$49,082	\$49,755	\$45,163	\$58,841	\$64,239	\$64,613
65 & over	273	85	57	34	36	26	15	11	9
	\$45,761	\$35,506	\$47,065	\$53,822	\$48,069	\$39,135	\$52,244	\$63,806	\$80,958
Total	4,269	2,114	878	481	333	255	115	60	33
	\$43,895	\$35,368	\$49,364	\$53,593	\$53,250	\$48,726	\$61,236	\$65,657	\$71,159

## Section 5: Additional Summary Tables of Member Data

### Table 1D: Members in Active Service as of June 30, 2022, by Age, Years of Creditable Service, and Average Payroll – Group C

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	65	65	--	--	--	--	--	--	--
	\$38,132	\$38,132	--	--	--	--	--	--	--
25 - 29	92	74	18	--	--	--	--	--	--
	\$54,860	\$51,115	\$70,257	--	--	--	--	--	--
30 - 34	124	74	43	7	--	--	--	--	--
	\$63,940	\$52,350	\$81,440	\$78,972	--	--	--	--	--
35 - 39	133	59	41	27	6	--	--	--	--
	\$67,293	\$50,544	\$78,729	\$81,120	\$91,630	--	--	--	--
40 - 44	98	37	26	19	13	3	--	--	--
	\$68,300	\$46,796	\$71,190	\$84,318	\$94,709	\$92,560	--	--	--
45 - 49	103	34	29	15	17	6	2	--	--
	\$67,850	\$51,473	\$68,801	\$72,197	\$80,789	\$92,201	\$116,827	--	--
50 - 54	134	39	25	25	34	6	3	2	--
	\$77,486	\$62,458	\$76,746	\$80,938	\$89,937	\$80,455	\$86,595	\$102,413	--
55 - 59	102	19	25	25	20	7	5	1	--
	\$69,335	\$45,079	\$72,515	\$71,283	\$80,604	\$63,720	\$80,593	\$159,659	--
60 - 64	83	22	13	13	13	12	4	2	4
	\$68,356	\$51,542	\$71,628	\$71,336	\$71,043	\$76,656	\$92,263	\$75,896	\$79,201
65 & over	35	6	8	3	7	1	6	1	3
	\$60,676	\$44,989	\$61,627	\$46,781	\$57,939	\$60,797	\$60,127	\$87,470	\$101,920
Total	969	429	228	134	110	35	20	6	7
	\$65,370	\$49,638	\$74,545	\$76,875	\$83,213	\$78,295	\$81,311	\$100,625	\$88,937

## Section 5: Additional Summary Tables of Member Data

### Table 1E: Members in Active Service as of June 30, 2022, by Age, Years of Creditable Service, and Average Payroll – Group D

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	14	14	--	--	--	--	--	--	--
	\$43,549	\$43,548	--	--	--	--	--	--	--
25 - 29	43	36	7	--	--	--	--	--	--
	\$58,358	\$55,311	\$74,030	--	--	--	--	--	--
30 - 34	47	27	15	5	--	--	--	--	--
	\$56,647	\$45,279	\$72,309	\$71,043	--	--	--	--	--
35 - 39	38	11	11	14	2	--	--	--	--
	\$76,462	\$59,791	\$79,676	\$86,196	\$82,332	--	--	--	--
40 - 44	36	5	7	10	10	4	--	--	--
	\$81,549	\$49,030	\$88,010	\$82,162	\$91,673	\$84,054	--	--	--
45 - 49	39	8	3	6	13	9	--	--	--
	\$86,927	\$66,325	\$74,910	\$89,756	\$93,590	\$97,734	--	--	--
50 - 54	27	2	5	4	10	3	3	--	--
	\$93,617	\$103,389	\$75,694	\$82,221	\$96,527	\$95,110	\$120,976	--	--
55 - 59	7	1	--	1	2	2	1	--	--
	\$85,304	\$7,510	--	\$127,460	\$93,832	\$88,146	\$98,205	--	--
60 - 64	5	2	--	1	1	--	--	1	--
	\$88,215	\$69,628	--	\$101,151	\$87,832	--	--	\$112,834	--
65 & over	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
Total	256	106	48	41	38	18	4	1	--
	\$72,683	\$52,928	\$77,053	\$84,868	\$93,127	\$93,191	\$115,283	\$112,834	--

## Section 5: Additional Summary Tables of Member Data

### Table 2A: Summary of Retired Member and Beneficiary Data by Attained Age All Employee Groups

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	3	\$18,549
36	0	0	0	0	0	0
37	0	0	0	0	2	9,609
38	0	0	0	0	1	3,192
39	0	0	0	0	0	0
40	0	0	0	0	1	1,919
41	0	0	0	0	0	0
42	0	0	0	0	0	0
43	0	0	1	8,551	1	7,725
44	0	0	0	0	0	0
45	0	0	2	21,316	1	2,593
46	0	0	0	0	2	5,478
47	0	0	1	27,911	0	0
48	0	0	0	0	2	2,860
49	0	0	0	0	2	22,578
50	0	0	5	53,224	1	21,256
51	1	2,541	3	50,663	0	0
52	2	66,413	0	0	3	34,791
53	1	41,172	4	31,088	0	0
54	1	58,537	0	0	2	23,892
55	11	271,498	3	46,672	2	11,613
56	22	647,977	4	39,273	1	10,780
57	27	432,593	4	60,501	2	12,471
58	30	604,360	1	33,482	2	40,605
59	37	751,902	3	20,698	3	90,538
60	33	572,334	2	12,387	5	27,735
61	40	977,099	5	69,184	5	64,782
62	73	1,332,821	4	37,328	5	57,640
63	110	1,656,575	5	45,929	2	18,209
64	126	1,642,615	4	20,861	7	59,457
65	205	2,966,339	3	10,426	6	51,834

## Section 5: Additional Summary Tables of Member Data

### Table 2A: Summary of Retired Member and Beneficiary Data by Attained Age All Employee Groups (continued)

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	197	\$2,468,728	5	\$48,874	11	\$172,167
67	251	3,234,594	1	10,976	7	83,586
68	263	3,314,844	5	43,530	8	68,668
69	200	2,072,228	4	65,404	6	78,220
70	209	2,516,935	1	3,831	5	39,329
71	202	2,211,937	3	17,517	11	101,259
72	187	1,945,851	2	8,938	8	81,521
73	212	1,969,148	1	14,012	6	65,461
74	176	1,748,514	1	4,264	16	122,649
75	160	1,511,035	1	13,145	11	70,994
76	125	1,309,095	0	0	11	77,378
77	133	1,171,542	2	16,578	11	64,063
78	93	753,673	2	12,736	9	66,882
79	95	897,887	0	0	6	25,795
80	94	790,041	1	2,057	6	22,483
81	75	634,645	0	0	6	25,267
82	64	576,941	1	4,581	9	58,868
83	59	438,154	1	4,766	15	126,129
84	42	277,978	0	0	8	72,015
85	45	371,305	1	3,901	7	72,672
86	33	266,332	0	0	6	54,700
87	31	230,191	0	0	5	23,529
88	19	147,769	0	0	7	47,552
89	19	117,471	0	0	7	43,578
90	12	60,762	0	0	6	16,161
91	23	149,457	0	0	6	52,603
92	11	49,916	0	0	4	20,833
93	7	50,415	0	0	2	12,384
94	9	50,535	0	0	3	6,327
≥ 95	13	52,670	0	0	1	2,054
Total	3,778	\$43,415,367	86	\$864,603	285	\$2,375,234

## Section 5: Additional Summary Tables of Member Data

### Table 2B: Summary of Retired Member and Beneficiary Data by Attained Age Group A

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	1	\$5,015
36	0	0	0	0	0	0
37	0	0	0	0	1	2,893
38	0	0	0	0	0	0
39	0	0	0	0	0	0
40	0	0	0	0	0	0
41	0	0	0	0	0	0
42	0	0	0	0	0	0
43	0	0	0	0	0	0
44	0	0	0	0	0	0
45	0	0	0	0	0	0
46	0	0	0	0	1	4,389
47	0	0	0	0	0	0
48	0	0	0	0	1	1,783
49	0	0	0	0	1	6,794
50	0	0	1	11,779	0	0
51	0	0	0	0	0	0
52	0	0	0	0	1	23,404
53	0	0	2	15,022	0	0
54	0	0	0	0	0	0
55	0	0	0	0	0	0
56	1	9,248	1	2,147	0	0
57	1	12,742	0	0	1	3,268
58	3	7,430	0	0	0	0
59	6	28,263	2	12,077	2	15,123
60	3	20,244	2	12,387	2	4,184
61	6	32,266	2	23,302	0	0
62	9	78,951	2	16,851	2	3,068
63	17	132,263	3	27,822	0	0
64	26	219,325	3	16,539	4	21,686
65	52	291,415	3	10,426	2	11,296

## Section 5: Additional Summary Tables of Member Data

### Table 2B: Summary of Retired Member and Beneficiary Data by Attained Age Group A (continued)

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	70	\$488,682	1	\$6,438	3	\$10,631
67	95	754,527	1	10,976	2	5,049
68	98	711,762	2	10,901	2	6,004
69	83	488,407	1	8,069	4	22,407
70	83	572,388	0	0	1	1,165
71	80	506,243	1	2,118	6	19,295
72	71	419,461	1	2,494	0	0
73	98	528,170	1	14,012	3	33,889
74	76	444,556	1	4,264	3	6,735
75	77	424,852	1	13,145	3	23,130
76	57	388,801	0	0	4	30,246
77	66	393,033	1	7,134	6	32,752
78	41	205,314	1	5,850	1	3,889
79	34	231,497	0	0	3	7,197
80	37	219,320	0	0	3	6,609
81	31	149,184	0	0	2	6,374
82	26	189,611	0	0	4	12,902
83	27	149,978	1	4,766	6	31,828
84	16	56,128	0	0	3	11,234
85	16	92,162	1	3,901	1	3,193
86	11	53,295	0	0	1	12,430
87	15	78,945	0	0	3	11,975
88	7	69,390	0	0	2	6,233
89	12	64,346	0	0	2	8,376
90	5	24,265	0	0	3	8,079
91	9	37,352	0	0	1	4,706
92	8	27,020	0	0	1	2,587
93	3	11,380	0	0	1	3,286
94	4	21,680	0	0	3	6,327
≥ 95	11	45,653	0	0	1	2,054
Total	1,391	\$8,679,548	35	\$242,420	97	\$443,486

## Section 5: Additional Summary Tables of Member Data

### Table 2C: Summary of Retired Member and Beneficiary Data by Attained Age Group B

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	1	\$6,972
36	0	0	0	0	0	0
37	0	0	0	0	1	6,717
38	0	0	0	0	1	3,192
39	0	0	0	0	0	0
40	0	0	0	0	1	1,919
41	0	0	0	0	0	0
42	0	0	0	0	0	0
43	0	0	0	0	0	0
44	0	0	0	0	0	0
45	0	0	1	4,608	1	2,593
46	0	0	0	0	1	1,089
47	0	0	0	0	0	0
48	0	0	0	0	1	1,077
49	0	0	0	0	0	0
50	0	0	1	20,663	1	21,256
51	1	2,541	0	0	0	0
52	1	14,724	0	0	2	11,387
53	0	0	2	16,066	0	0
54	0	0	0	0	2	23,892
55	2	40,188	1	3,118	2	11,613
56	2	31,811	2	30,543	1	10,780
57	11	138,533	1	3,534	1	9,204
58	6	137,397	1	33,482	2	40,605
59	10	135,305	1	8,621	0	0
60	11	144,940	0	0	3	23,551
61	15	296,529	3	45,882	5	64,782
62	44	709,621	2	20,478	2	15,150
63	66	779,071	1	10,468	1	1,578
64	75	770,611	1	4,321	2	23,164
65	117	1,661,440	0	0	3	25,441

## Section 5: Additional Summary Tables of Member Data

### Table 2C: Summary of Retired Member and Beneficiary Data by Attained Age Group B (continued)

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	102	\$1,256,830	4	\$42,437	7	\$143,369
67	125	1,631,841	0	0	4	26,133
68	131	1,710,611	2	14,309	3	34,251
69	100	1,227,257	3	57,335	2	55,812
70	103	1,429,026	1	3,831	2	19,920
71	110	1,365,585	2	15,399	4	62,193
72	96	1,104,907	1	6,444	6	50,713
73	94	1,014,701	0	0	2	25,596
74	82	929,388	0	0	12	100,330
75	68	734,993	0	0	6	23,210
76	56	673,769	0	0	7	47,133
77	56	556,725	1	9,444	4	25,672
78	47	497,354	1	6,886	7	59,167
79	46	372,364	0	0	2	15,309
80	49	467,006	1	2,057	3	15,874
81	36	366,118	0	0	4	18,893
82	31	305,159	1	4,581	4	28,550
83	26	238,134	0	0	7	75,934
84	25	215,123	0	0	4	46,881
85	27	262,539	0	0	6	69,479
86	19	178,325	0	0	4	38,427
87	13	88,233	0	0	2	11,554
88	11	67,953	0	0	4	31,884
89	6	45,864	0	0	5	35,202
90	6	29,871	0	0	3	8,082
91	13	110,408	0	0	5	47,897
92	3	22,896	0	0	2	13,086
93	4	39,035	0	0	1	9,098
94	5	28,856	0	0	0	0
≥ 95	2	7,017	0	0	0	0
Total	1,853	\$21,840,598	34	\$364,505	156	\$1,445,609

## Section 5: Additional Summary Tables of Member Data

### Table 2D: Summary of Retired Member and Beneficiary Data by Attained Age Group C

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	0	\$0
36	0	0	0	0	0	0
37	0	0	0	0	0	0
38	0	0	0	0	0	0
39	0	0	0	0	0	0
40	0	0	0	0	0	0
41	0	0	0	0	0	0
42	0	0	0	0	0	0
43	0	0	1	8,551	1	7,725
44	0	0	0	0	0	0
45	0	0	1	16,709	0	0
46	0	0	0	0	0	0
47	0	0	0	0	0	0
48	0	0	0	0	0	0
49	0	0	0	0	1	15,785
50	0	0	2	10,758	0	0
51	0	0	1	2,874	0	0
52	0	0	0	0	0	0
53	0	0	0	0	0	0
54	0	0	0	0	0	0
55	7	178,864	2	43,554	0	0
56	18	601,024	1	6,583	0	0
57	9	195,515	2	29,234	0	0
58	15	327,350	0	0	0	0
59	11	336,651	0	0	1	75,415
60	11	226,092	0	0	0	0
61	15	532,441	0	0	0	0
62	17	440,246	0	0	1	39,423
63	22	604,154	1	7,639	1	16,630
64	21	492,450	0	0	1	14,606
65	29	778,809	0	0	1	15,097

## Section 5: Additional Summary Tables of Member Data

### Table 2D: Summary of Retired Member and Beneficiary Data by Attained Age Group C (continued)

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	23	\$675,716	0	\$0	1	\$18,167
67	29	734,415	0	0	1	52,404
68	32	838,838	0	0	2	11,276
69	16	331,366	0	0	0	0
70	22	485,085	0	0	2	18,245
71	11	273,737	0	0	1	19,771
72	20	421,483	0	0	2	30,809
73	20	426,277	0	0	1	5,976
74	17	318,440	0	0	1	15,584
75	15	351,190	0	0	2	24,654
76	11	231,122	0	0	0	0
77	10	205,347	0	0	1	5,639
78	5	51,006	0	0	1	3,826
79	15	294,027	0	0	1	3,289
80	8	103,715	0	0	0	0
81	8	119,343	0	0	0	0
82	7	82,171	0	0	1	17,416
83	6	50,042	0	0	2	18,367
84	1	6,727	0	0	1	13,899
85	2	16,603	0	0	0	0
86	3	34,712	0	0	1	3,843
87	3	63,013	0	0	0	0
88	1	10,426	0	0	1	9,435
89	1	7,261	0	0	0	0
90	1	6,627	0	0	0	0
91	1	1,697	0	0	0	0
92	0	0	0	0	1	5,161
93	0	0	0	0	0	0
94	0	0	0	0	0	0
≥ 95	0	0	0	0	0	0
Total	463	\$10,853,982	11	\$125,902	30	\$462,442

## Section 5: Additional Summary Tables of Member Data

### Table 2E: Summary of Retired Member and Beneficiary Data by Attained Age Group D

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	1	\$6,562
36	0	0	0	0	0	0
37	0	0	0	0	0	0
38	0	0	0	0	0	0
39	0	0	0	0	0	0
40	0	0	0	0	0	0
41	0	0	0	0	0	0
42	0	0	0	0	0	0
43	0	0	0	0	0	0
44	0	0	0	0	0	0
45	0	0	0	0	0	0
46	0	0	0	0	0	0
47	0	0	1	27,911	0	0
48	0	0	0	0	0	0
49	0	0	0	0	0	0
50	0	0	1	10,023	0	0
51	0	0	2	47,789	0	0
52	1	51,688	0	0	0	0
53	1	41,172	0	0	0	0
54	1	58,537	0	0	0	0
55	2	52,446	0	0	0	0
56	1	5,894	0	0	0	0
57	6	85,803	1	27,733	0	0
58	6	132,182	0	0	0	0
59	10	251,683	0	0	0	0
60	8	181,058	0	0	0	0
61	4	115,862	0	0	0	0
62	3	104,002	0	0	0	0
63	5	141,086	0	0	0	0
64	4	160,229	0	0	0	0
65	7	234,675	0	0	0	0

## Section 5: Additional Summary Tables of Member Data

### Table 2E: Summary of Retired Member and Beneficiary Data by Attained Age Group D (continued)

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	2	\$47,499	0	\$0	0	\$0
67	2	113,812	0	0	0	0
68	2	53,633	1	18,321	1	17,136
69	1	25,199	0	0	0	0
70	1	30,436	0	0	0	0
71	1	66,372	0	0	0	0
72	0	0	0	0	0	0
73	0	0	0	0	0	0
74	1	56,130	0	0	0	0
75	0	0	0	0	0	0
76	1	15,403	0	0	0	0
77	1	16,437	0	0	0	0
78	0	0	0	0	0	0
79	0	0	0	0	0	0
80	0	0	0	0	0	0
81	0	0	0	0	0	0
82	0	0	0	0	0	0
83	0	0	0	0	0	0
84	0	0	0	0	0	0
85	0	0	0	0	0	0
86	0	0	0	0	0	0
87	0	0	0	0	0	0
88	0	0	0	0	0	0
89	0	0	0	0	0	0
90	0	0	0	0	0	0
91	0	0	0	0	0	0
92	0	0	0	0	0	0
93	0	0	0	0	0	0
94	0	0	0	0	0	0
≥ 95	0	0	0	0	0	0
Total	71	\$2,041,240	6	\$131,776	2	\$23,697

## Section 5: Additional Summary Tables of Member Data

### Table 3: Summary of Retired Member and Beneficiary Data by Year of Retirement – All Employee Groups

Year of Retirement	Number	Annual Allowance	Average Annual Allowance
≤ 1970	0	\$0	\$0
1971	0	0	0
1972	0	0	0
1973	0	0	0
1974	0	0	0
1975	0	0	0
1976	0	0	0
1977	0	0	0
1978	0	0	0
1979	0	0	0
1980	1	1,783	1,783
1981	0	0	0
1982	1	839	839
1983	1	2,318	2,318
1984	0	0	0
1985	1	1,016	1,016
1986	1	2,084	2,084
1987	0	0	0
1988	1	1,717	1,717
1989	2	3,753	1,877
1990	7	34,517	4,931
1991	11	45,547	4,141
1992	10	59,405	5,941
1993	13	75,590	5,815
1994	14	84,853	6,061
1995	28	179,993	6,428
1996	21	130,743	6,226
1997	29	159,929	5,515
1998	35	219,020	6,258
1999	33	237,161	7,187
2000	30	223,198	7,440

## Section 5: Additional Summary Tables of Member Data

### Table 3: Summary of Retired Member and Beneficiary Data by Year of Retirement – All Employee Groups *(continued)*

Year of Retirement	Number	Annual Allowance	Average Annual Allowance
2001	43	\$301,590	\$7,014
2002	52	434,095	8,348
2003	59	456,401	7,736
2004	73	655,510	8,980
2005	74	641,445	8,668
2006	80	796,775	9,960
2007	119	980,910	8,243
2008	104	996,253	9,579
2009	116	933,322	8,046
2010	143	1,503,516	10,514
2011	168	1,913,920	11,392
2012	174	1,868,278	10,737
2013	194	2,300,349	11,857
2014	238	2,478,462	10,414
2015	229	2,615,023	11,419
2016	235	2,471,888	10,519
2017	317	4,069,201	12,837
2018	298	4,031,386	13,528
2019	337	4,102,400	12,173
2020	335	4,524,622	13,506
2021	331	4,385,728	13,250
2022	191	2,730,660	14,297
Total	4,149	\$46,655,204	\$11,245

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