

Vermont State Employees' Retirement System

Actuarial Valuation and Review

As of June 30, 2021



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

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October 29, 2021

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

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2021, of the Vermont State Employees' Retirement System. This report summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirement for the fiscal year ending June 30, 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. We have not subjected this data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data.

Actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the System's actuary. In our opinion, the actuarial assumptions as approved by the Board are reasonable, taking into account the experience of the System and reasonable long-term expectations, and represent our best estimate of the anticipated long-term experience of the System.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates, and funding periods.

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. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the System.

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

Sincerely,
Segal



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



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

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Actuarial Valuation Summary

Purpose and basis

This report was prepared by Segal to present a valuation of the System as of June 30, 2021, pursuant to section 471, subsection (k), of Title 3, Chapter 16, Vermont Statutes Annotated, relating to the Vermont State Employees' Retirement System. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The measurements shown in this actuarial valuation may not be applicable for other purposes. In particular, the measures herein are not necessarily appropriate for assessing the sufficiency of System assets to cover the estimated cost of settling the System's benefit obligations. 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.

Certain disclosure information required by GASB Statements No. 67 and 68 as of June 30, 2021 for the System is provided in separate reports.

The contribution requirements presented in this report are based on:

- The benefit provisions of the System, as administered by the Board;
- The characteristics of covered active members, inactive members, and retired members and beneficiaries as of June 30, 2021, provided by the Office of the State Treasurer;
- The unaudited assets of the System as of June 30, 2021, 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 prescribed by State statute.

Section 1: Actuarial Valuation Summary

Valuation highlights

1. Segal strongly recommends an actuarial funding policy 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 set in the Vermont State Pension Code meets this standard. Section 473, subsection (c)(4), of Title 3, Chapter 16, Subchapter 1, Vermont Statutes Annotated calls for annual payments on the unfunded actuarial accrued liability to be made over a closed period ending on June 30, 2038. Beginning on July 1, 2019 and annually thereafter, the amount of each annual payment is calculated assuming that the amortization period will remain closed and that the amortization amount will increase annually at the rate of 3% over the preceding year.
2. Actual employer contributions made during the fiscal year ending June 30, 2021, were \$88.9 million, or 106.0% of the actuarially determined contribution of \$83.9 million. In the prior fiscal year, actual employer contributions were \$84.4 million, or 107.0% of the prior year's actuarially determined contribution.
3. The actuarially determined contribution for the fiscal year ending June 30, 2022, is \$120.0 million as determined with the June 30, 2020 actuarial valuation.
4. The funded percentage (the ratio of the actuarial value of assets to actuarial accrued liability) is 67.6%, compared to the prior year's funded percentage of 66.4%. 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 73.9%, compared to 63.3% 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.
5. The results of this June 30, 2021, actuarial valuation are used to determine the actuarially determined contribution for the fiscal year ending June 30, 2023, and to estimate the actuarially determined contribution for the fiscal year ending June 30, 2024. The actuarially determined contribution for fiscal 2023 is \$125.9 million, an increase of \$6.0 million from fiscal 2022. Last year's estimate of the actuarially determined contribution for fiscal 2023 is \$2.2 less than this year's actual amount. This is due to demographic losses combined with the addition of the administrative expenses assumption, partially offset by investment gains on an actuarial basis. The estimated fiscal 2024 actuarially determined contribution is \$129.9 million. The actuarially determined contribution is equal to the System's employer normal cost, plus the amount necessary to amortize the unfunded actuarial accrued liability.
6. The unfunded actuarial accrued liability is \$1.064 billion, which is an increase of \$23.9 million since the prior valuation.
7. The rate of return on the market value of assets was 25.71% for the July 1, 2020, to June 30, 2021, plan year. The return on the actuarial value of assets was 9.56% for the same period due to the recognition of prior year's investment gains and losses. We advise the Board to continue to monitor actual and anticipated investment returns relative to the assumed long-term rate of return on investments.

Section 1: Actuarial Valuation Summary

8. The actuarial value of assets is 91.4% of the market value of assets, compared to the prior year where the actuarial value of assets was 104.9% 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 gain is recognized in future years, the cost of the System is likely to increase less than expected unless the net gain is offset by future experience. The recognition of the deferred market gains of \$208.7 million will also have an impact on the future funded percentage. If the net deferred gains were recognized immediately in the actuarial value of assets, the actuarially determined contribution rate would decrease from 21.08% to about 18.15% of payroll.
9. The actuarial gain from investment experience is \$52.2 million.
10. The net experience loss from sources other than investment experience was approximately, \$63.4 million, or 1.9% of the actuarial accrued liability. Of this \$63.4 million loss, \$35.6 million is due to the higher-than-expected actual 2022 COLA. Additional detail regarding this loss is shown in *Section 2, Other experience*.
11. 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 (NPL) 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, 2021, and June 30, 2022, will be provided separately. The actuarially determined contribution in this valuation is expected to be used as the actuarially determined contribution (ADC) for GASB financial reporting.
12. This actuarial report as of June 30, 2021, is based on financial and demographic data as of that date. Changes subsequent to that date are not reflected and will affect future actuarial costs of the System.
13. 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*.

Section 1: Actuarial Valuation Summary

Summary of key valuation results

		2021	2020
Actuarially determined employer contributions:	• Actuarially determined employer contributions for fiscal 2023 (and 2022)	\$125,938,400	\$119,967,769
	• Estimated actuarially determined employer contributions for fiscal 2024 (and 2023)	129,900,967	123,742,634
Actuarial accrued liability for plan year beginning July 1:	• Retired members and beneficiaries	\$2,034,378,826	\$1,838,530,387
	• Deferred members as reported by the System	58,539,643	55,757,513
	• Inactive members as reported by the System	30,597,369	29,009,517
	• Active members	1,157,351,839	1,171,993,555
	• Total	3,280,867,677	3,095,290,972
	• Employer normal cost for plan year beginning July 1	35,635,765	33,977,161
Assets for plan year beginning July 1:	• Market value of assets (MVA)	\$2,425,222,408	\$1,959,066,641
	• Actuarial value of assets (AVA)	2,216,499,478	2,054,825,853
	• Actuarial value of assets as a percentage of market value of assets	91.39%	104.89%
Funded status for plan year beginning July 1:	• Unfunded actuarial accrued liability based on MVA	\$855,645,269	\$1,136,224,331
	• Funded percentage on MVA basis	73.92%	63.29%
	• Unfunded actuarial accrued liability based on AVA	\$1,064,368,199	\$1,040,465,119
	• Funded percentage on AVA basis	67.56%	66.39%
	• Remaining amortization period	17	18
Key assumptions:	• Investment return	7.00%	7.00%
	• Inflation rate	2.30%	2.30%
Demographic data for plan year beginning July 1:	• Number of retired members and beneficiaries	7,716	7,424
	• Number of deferred members as reported by System	771	768
	• Number of inactive members as reported by System	1,716	1,482
	• Number of active members	8,192	8,539
	• Total payroll	\$552,316,523	\$551,981,002
	• Average payroll	67,421	64,642
	• Total monthly benefits for all retired members and beneficiaries	13,456,088	12,581,175
	• Average monthly benefit for all retired members and beneficiaries	1,744	1,695

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:

Plan of benefits	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.
Member data	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.
Assets	The valuation is based on the market value of assets as of the valuation date, as provided by the System. The System uses 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.
Actuarial assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan members for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each member for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

Section 1: Actuarial Valuation Summary

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 of Trustees. Segal is not responsible for the use or misuse of its report, particularly by any other party.

An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. 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.

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.

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.

Actuarial Valuation Results

Member data

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, deferred members, retired members and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in *Section 3, Exhibits A and B*.

Member Population: 2012 – 2021

As of June 30	Active Members	Deferred Members as Reported by the System*	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives
2012	7,878	767	5,600	6,367	0.81
2013	8,158	741	5,795	6,536	0.80
2014	8,325	732	5,980	6,712	0.81
2015	8,446	735	6,204	6,939	0.82
2016	8,436	728	6,542	7,270	0.86
2017	8,620	742	6,727	7,469	0.87
2018	8,530	753	6,974	7,727	0.91
2019	8,443	747	7,268	8,015	0.95
2020	8,539	768	7,424	8,192	0.96
2021	8,192	771	7,716	8,487	1.04

* Excludes inactive members as reported by the System.

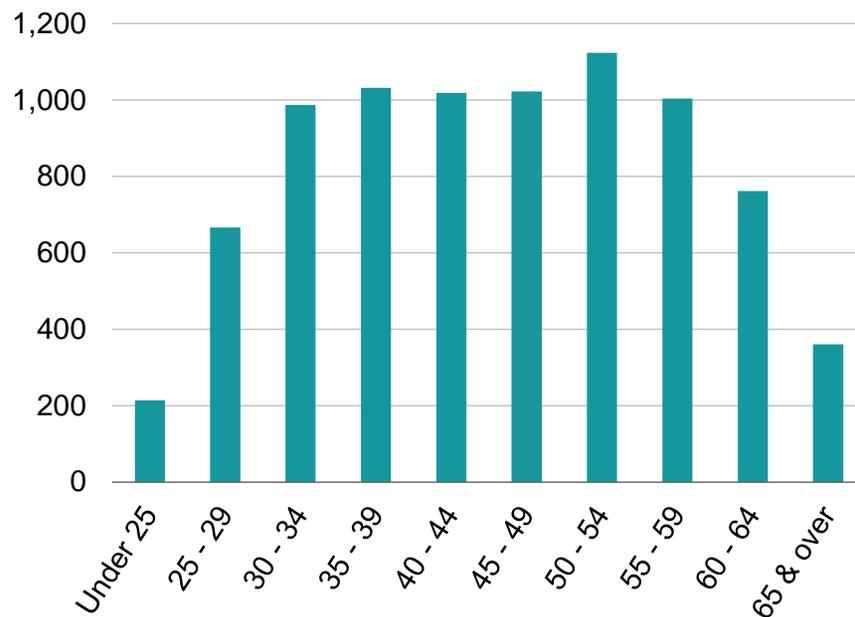
Section 2: Actuarial Valuation Results

Active members

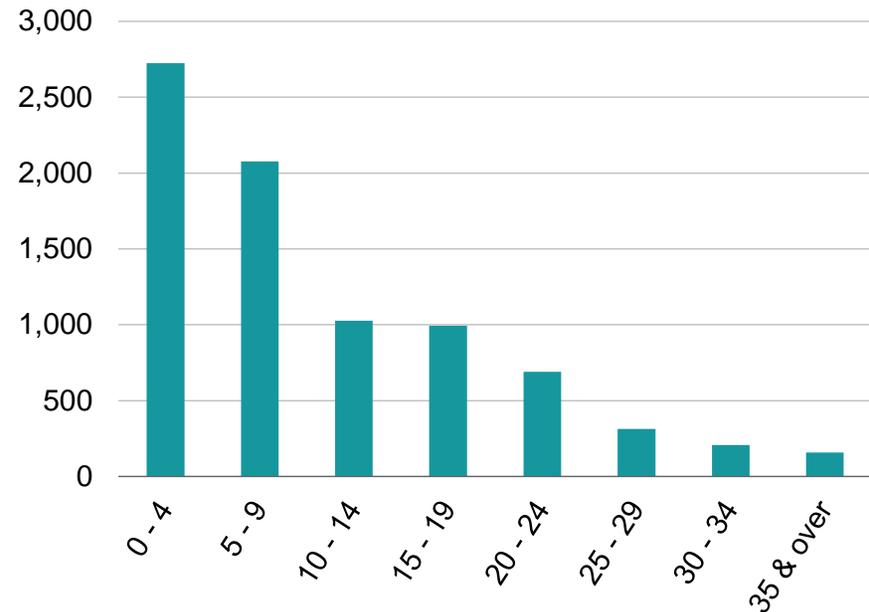
Plan costs are affected by the age, years of creditable service and payroll of active members. In this year's valuation, there were 8,192 active members with an average age of 45.7, average years of creditable service of 10.9 years, and average payroll of \$67,421. The 8,539 active members in the prior valuation had an average age of 45.6, average service of 10.8 years and average payroll of \$64,642.

Distribution of Active Members as of June 30, 2021

Actives by Age



Actives by Years of Service



Section 2: Actuarial Valuation Results

Inactive and deferred members

In this year's valuation, there were 1,716 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 771 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

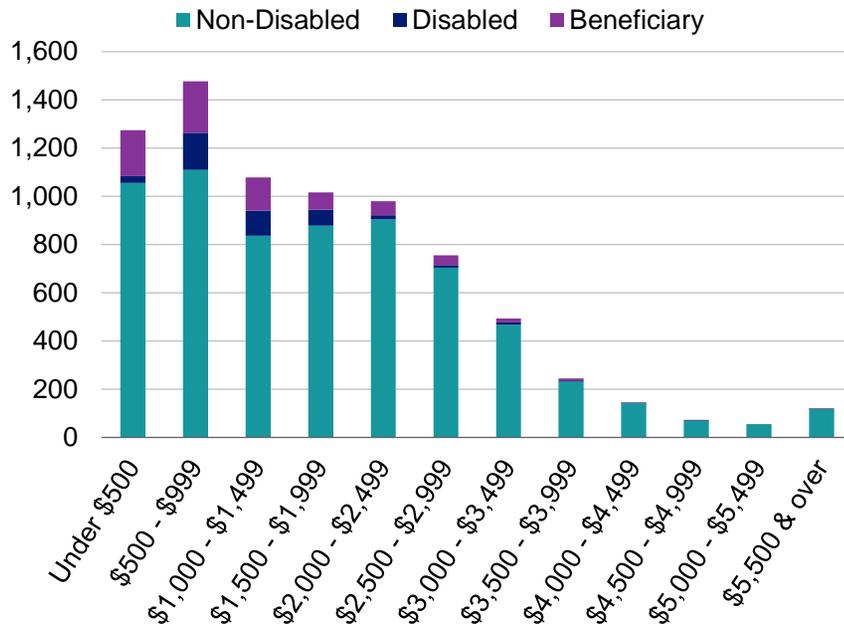
Retired members and beneficiaries

As of June 30, 2021, 6,973 retired members (including disability retirees) and 743 beneficiaries were receiving total monthly benefits of \$13,456,088. For comparison, in the previous valuation, there were 6,704 retired members and 720 beneficiaries receiving monthly benefits of \$12,581,175.

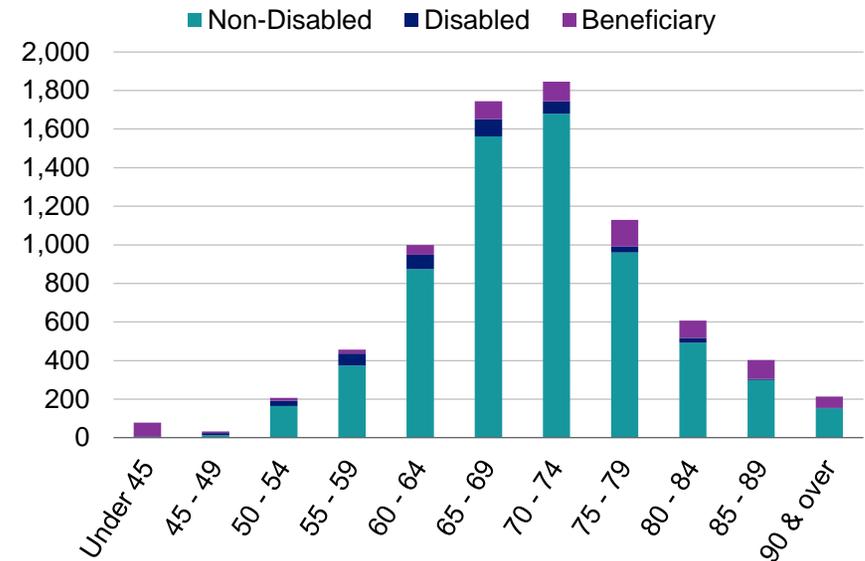
As of June 30, 2021, the average monthly benefit for retired members and beneficiaries is \$1,744, compared to \$1,695 in the previous valuation. The average age for retired members and beneficiaries is 70.9 in the current valuation, which remains unchanged from the prior valuation.

Distribution of Pensioners as of June 30, 2021

Pensioners by Type and Monthly Amount



Pensioners by Type and Age



Section 2: Actuarial Valuation Results

Historical plan population

The chart below demonstrates the progression of the active population over the last ten years. The chart also shows the growth among the retired population over the same time period.

Member Data Statistics: 2012 – 2021

As of June 30	Active Members			Retired Members*		
	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2012	7,878	46.4	12.5	5,060	--	\$1,450
2013	8,158	46.2	12.2	5,248	--	1,478
2014	8,325	45.2	11.8	5,421	69.7	1,510
2015	8,446	46.5	11.7	5,554	70.0	1,561
2016	8,436	46.2	11.3	5,858	70.1	1,587
2017	8,620	46.0	11.1	6,092	70.3	1,616
2018	8,530	45.9	11.0	6,302	70.4	1,663
2019	8,443	45.7	10.8	6,567	70.6	1,718
2020	8,539	45.6	10.8	6,704	70.9	1,755
2021	8,192	45.7	10.9	6,973	71.0	1,805

* Not including beneficiaries

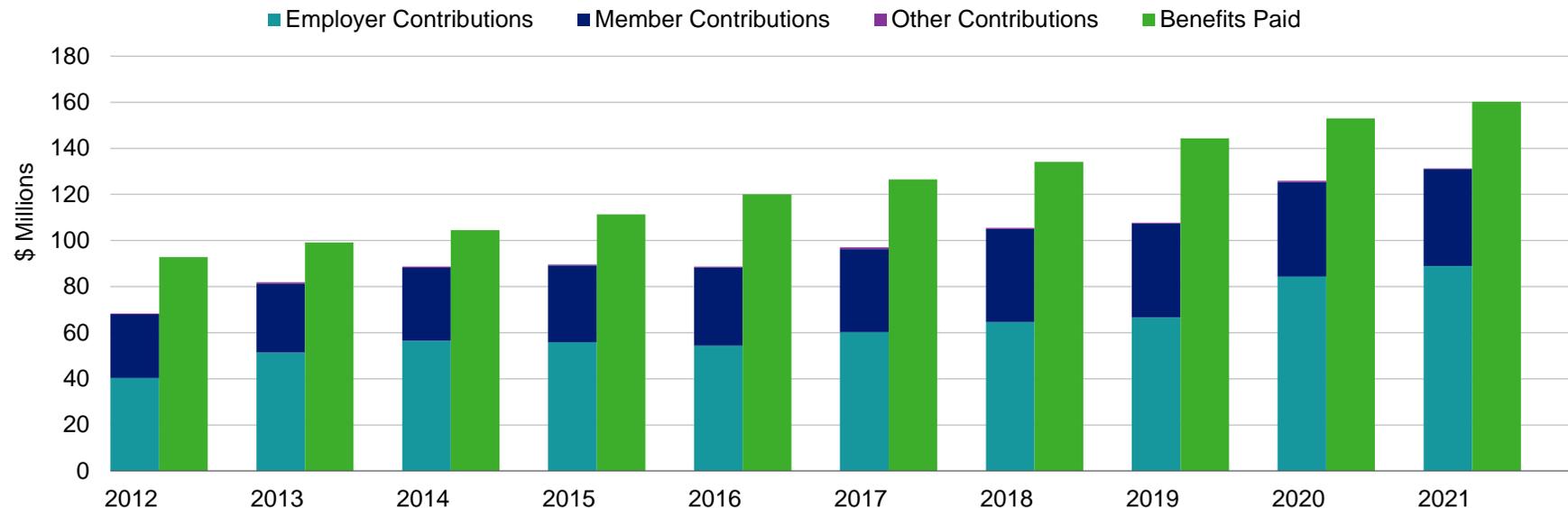
Section 2: Actuarial Valuation Results

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. Benefits have exceeded employer and member contributions for the most recent period shown. Benefits were 1.2 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 and Paid
for Years Ended June 30, 2012 – 2021



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 fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. 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, 2021

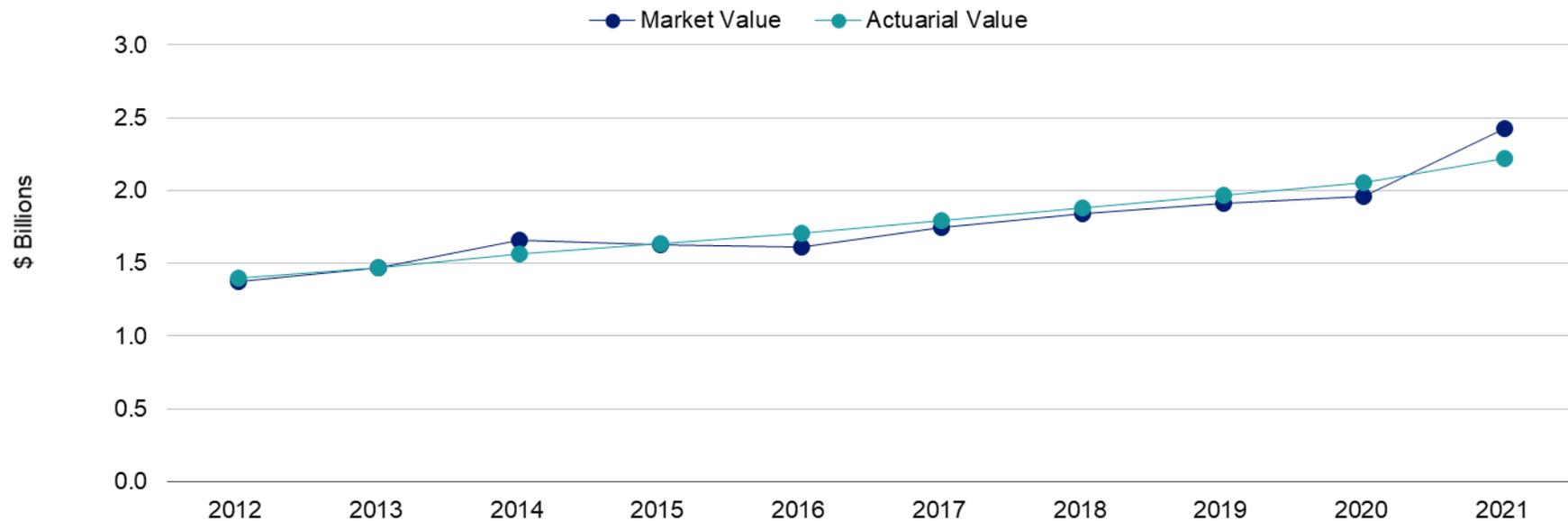
1	Actuarial value of assets, June 30, 2020		\$2,054,825,853
2	Net new money*, including expected investment income (7.00%)		109,492,892
3	Preliminary asset value: 1 + 2		2,164,318,745
4	Smoothing adjustment		
	a) Market value, June 30, 2021	\$2,425,222,408	
	b) Preliminary asset value	2,164,318,745	
	c) Unrecognized appreciation	260,903,663	
	d) Adjustment	X 20%	52,180,733
5	Actuarial value of assets, June 30, 2021: 3 + 4d		\$2,216,499,478
6	Actuarial value of assets as a percentage of market value: 1 / 5		91.39%

* Net new money is comprised of contributions, interest, and dividends, less benefit payments and expenses.

Section 2: Actuarial Valuation Results

Both the actuarial value and market value of assets are representations of the System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

Actuarial Value of Assets vs. Market Value of Assets as of June 30, 2012 – 2021



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 \$11,219,916, which includes \$52,180,733 from investment gains and \$63,400,649 in losses from all other sources. The net experience variation from individual sources other than investments was 1.9% 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, 2021

1	Net gain from investments*	\$52,180,733
2	Net loss from other experience	-63,400,649
3	Net experience loss: 1 + 2	-\$11,219,916

* Details on next page

Section 2: Actuarial Valuation Results

Investment experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the System's investment policy. The rate of return on the market value of assets was 25.71% for the year ended June 30, 2021.

For valuation purposes, the assumed rate of return on the actuarial value of assets for the year ended June 30, 2021, is 7.00%. The actual rate of return on an actuarial basis for the 2021 plan year was 9.56%. Since the actual return for the year was more than the assumed return, the System experienced an actuarial gain during the year ended June 30, 2021, with regard to its investments.

Investment Experience

		Year Ended June 30, 2021	
		Market Value	Actuarial Value
1	Investment income	\$499,339,262	\$194,857,120
2	Average value of assets	1,942,474,894	2,038,234,105
3	Rate of return: $1 \div 2$	25.71%	9.56%
4	Assumed rate of return	7.00%	7.00%
5	Expected investment income: 2×4	\$135,973,243	\$142,676,387
6	Actuarial gain/(loss): $1 - 5$	\$363,366,019	\$52,180,733

Section 2: Actuarial Valuation Results

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the actual market value investment return for the last 20 years, including averages over select time periods.

Investment Return – Actuarial Value vs. Market Value: 2002 – 2021

Year Ended June 30	Actuarial Value Investment Return		Market Value Investment Return		Year Ended June 30	Actuarial Value Investment Return		Market Value Investment Return			
	Amount	Percent	Amount	Percent		Amount	Percent	Amount	Percent		
2002	\$57,320,146	6.07%	-\$49,030,960	-5.15%	2012	\$83,600,231	6.27%	\$29,466,721	2.16%		
2003	55,169,045	5.63	45,639,510	5.17	2013	93,222,330	6.71	116,835,891	8.55		
2004	75,261,848	7.41	142,588,476	15.70	2014	120,645,037	8.28	210,491,370	14.43		
2005	84,075,397	7.83	95,845,599	9.28	2015	100,145,920	6.46	-2,430,832	-0.15		
2006	94,266,315	8.28	119,220,681	10.74	2016	108,862,988	6.73	22,651,623	1.41		
2007	94,266,315	9.93	197,642,924	16.37	2017	122,942,180	7.28	175,207,530	11.01		
2008	89,281,830	6.85	-78,966,292	-5.74	2018	123,141,054	6.93	128,188,928	7.41		
2009	-130,060,430	-9.55	-238,392,427	-18.80	2019	125,762,614	6.76	111,036,177	6.10		
2010	80,550,116	6.71	187,930,419	18.82	2020	122,202,359	6.27	81,474,149	4.30		
2011	116,660,083	9.34	244,063,320	21.16	2021	194,857,120	9.56	499,339,262	25.71		
							Most recent five-year average return		7.40%		11.08%
							Most recent ten-year average return		7.17%		8.37%
							Most recent 15-year average return		6.36%		7.52%
							Most recent 20-year average return		6.50%		7.47%

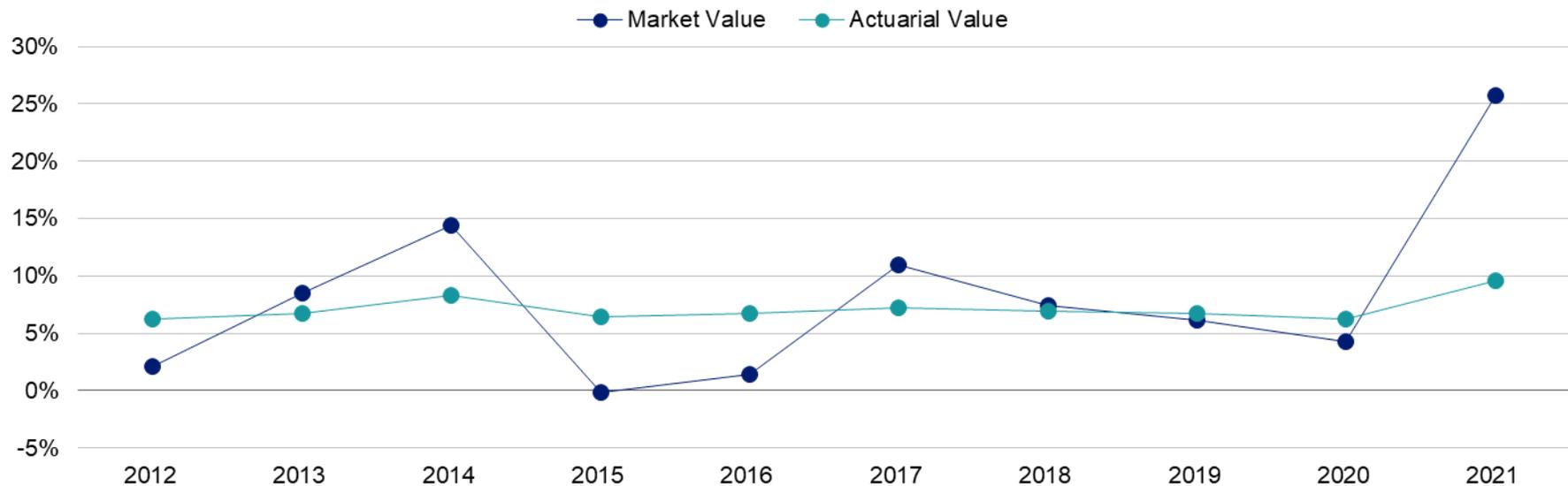
Note: Each year's yield is weighted by the average asset value in that year.

Section 2: Actuarial Valuation Results

Section 2, *Financial Information* described the actuarial asset valuation method that gradually recognizes fluctuations in the market value rate of return. The goal of this is to stabilize the actuarial rate of return and to produce more level pension plan costs.

As described earlier in this section, the actuarial asset valuation method gradually recognizes fluctuations in the market value rate of return. The goal of this is to stabilize the actuarial rate of return and to produce more level pension plan costs.

Market and Actuarial Rates of Return for Years Ended June 30, 2012 – 2021



Section 2: Actuarial Valuation Results

Administrative expenses

There was no provision for administrative expenses in the determination of the actuarially determined contribution for the year ending June 30, 2021.

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, 2021, amounted to \$63,400,649, which is 1.9% of the actuarial accrued liability.

Experience Gain/(Loss) Due to Changes in Experience Other than Investments for Year Ended June 30, 2021

Net turnover	\$3,446,914
Retirement	-19,015,951
Mortality	-4,440,365
Disability retirements	-158,342
Salary and service increases for continuing actives	-4,448,937
COLA experience*	-35,588,639
Miscellaneous	<u>-3,195,329</u>
Total	-\$63,400,649

*COLA experience loss is due to actual 2022 COLAs being greater than expected (4.60% actual vs 2.40% expected for Group A, C, and D members, 2.30% actual vs 1.35% expected for Group F members who retired before July 1, 2008, and 4.60% actual vs 2.40% expected for Group F members who retired after July 1, 2008).

Section 2: Actuarial Valuation Results

Changes in the actuarial accrued liability

The actuarial accrued liability as of June 30, 2021, is \$3,280,867,677, an increase of \$185,576,705, or 6.0%, from the actuarial accrued liability as of the prior valuation date. The liability is expected to grow each year with normal cost and interest, and to decline due to benefit payments made. Additional fluctuations can occur due to actual experience that differs from expected (as discussed previously) and changes in assumptions.

Actuarial assumptions

Effective July 1, 2021, an administrative expenses assumption equal to 0.40% of projected payroll was established. Details on actuarial assumptions and methods are in *Section 4, Exhibit I*.

Plan provisions

There were no changes in plan provisions since the prior valuation. 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, 2021

1	Unfunded actuarial accrued liability at beginning of year		\$1,040,465,119
2	Normal cost at beginning of year		70,795,127
3	Total contributions		-131,304,523
4	Interest		
	• For whole year on 1 + 2	\$77,788,216	
	• For half year on 3	<u>-4,595,658</u>	
	Total interest		<u>73,192,558</u>
5	Expected unfunded actuarial accrued liability		\$1,053,148,283
6	Changes due to:		
	• (Gain)/loss	\$11,219,916	
	• Assumptions	0	
	• Funding method	0	
	• Plan provisions	0	
	Total changes		<u>11,219,916</u>
7	Unfunded actuarial accrued liability at end of year		\$1,064,368,199

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. 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. As of June 30, 2021, there are 17 years remaining on this schedule.

The actuarially determined contribution for the fiscal year ending June 30, 2022, is \$119,967,769 as determined with the June 30, 2020, actuarial valuation. The results of this June 30, 2021, actuarial valuation are used to determine the actuarially determined contribution for the fiscal year ending June 30, 2023, and to estimate the actuarially determined contribution for the fiscal year ending June 30, 2024, as shown in *Section 2, Actuarially determined contribution for following two fiscal years*.

The preliminary contribution requirement as of June 30, 2021, 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, and actuarial gains and losses.

Preliminary Contribution Requirement

	Year Beginning July 1				
	2021		2020		
	Amount	% of Payroll	Amount	% of Payroll	
1	Total normal cost, adjusted for timing*	\$72,547,501	12.54%	\$73,231,049	12.67%
2	Administrative expenses	2,314,752	0.40%	N/A	N/A
3	Expected employee contributions	<u>-39,226,488</u>	<u>-6.78%</u>	<u>-39,253,888</u>	<u>-6.79%</u>
4	Employer normal cost: 1 + 2 + 3	\$35,635,765	6.16%	\$33,977,161	5.88%
5	Actuarial accrued liability	3,280,867,677		3,095,290,972	
6	Actuarial value of assets	<u>2,216,499,478</u>		<u>2,054,825,853</u>	
7	Unfunded actuarial accrued liability: 5 – 6	\$1,064,368,199		\$1,040,465,119	
8	Payment on unfunded actuarial accrued liability, adjusted for timing*	\$86,331,362	14.92%	\$81,066,478	14.02%
9	Preliminary contribution requirement: 4 + 8	\$121,967,127	21.08%	\$115,043,638	19.90%
10	Projected payroll	\$578,687,947		\$578,206,224	

* Contributions are assumed to be paid at the middle of the year.

Section 2: Actuarial Valuation Results

Reconciliation of preliminary contribution requirement

The chart below details the changes in the preliminary contribution requirement from the prior valuation to the current year's valuation.

Reconciliation of Preliminary Contribution Requirement from July 1, 2020 to July 1, 2021

	Amount	% of Payroll
Preliminary contribution requirement as of June 30, 2020	\$115,043,638	19.90%
• Effect of plan amendment(s)	0	0.00%
• Effect of change in asset method	0	0.00%
• Effect of expected change in amortization payment due to payroll growth	2,431,995	0.42%
• Effect of change in amortization method	0	0.00%
• Effect of change in actuarial assumptions	0	0.00%
• Effect of contributions (more)/less than actuarially determined contribution	1,930,246	0.33%
• Effect of investment (gain)/loss	-4,232,402	-0.73%
• Effect of other gains and losses on accrued liability	5,142,454	0.89%
• Effect of change in administrative expenses	2,314,752	0.40%
• Net effect of other changes, including composition and number of members, payroll*	<u>-663,556</u>	<u>-0.13%</u>
Total change	\$6,923,489	1.18%
Preliminary contribution requirement as of June 30, 2021	121,967,127	21.08%

* The percent of payroll value includes the effect of the change in projected payroll basis.

Section 2: Actuarial Valuation Results

Amortization schedule for unfunded actuarial accrued liability

A schedule of projected future unfunded actuarial accrued liability payments and projected funded percentage is shown below.

Unfunded Liability Amortization Schedule

As of July 1	Balance	Amortization Payment* (Year Following)	Funded Percentage
2021	\$1,064,368,199	\$84,801,408	67.56%
2022	1,051,154,714	89,055,382	69.04%
2023	1,032,615,940	91,727,044	70.65%
2024	1,010,015,864	94,478,855	72.28%
2025	982,987,287	97,313,221	73.94%
2026	951,134,818	100,232,618	75.63%
2027	914,032,830	103,239,596	77.36%
2028	871,223,259	106,336,784	79.13%
2029	822,213,263	109,526,887	80.95%
2030	766,472,698	112,812,694	82.82%
2031	703,431,428	116,197,075	84.75%
2032	632,476,440	119,682,987	86.74%
2033	552,948,746	123,273,477	88.79%
2034	464,140,082	126,971,681	90.90%
2035	365,289,360	130,780,831	93.08%
2036	255,578,871	134,704,256	95.32%
2037	134,130,226	138,745,384	97.63%
2038	0	0	100.00%

* The annual payment to amortize the unfunded actuarial liability is calculated based upon installments increasing at a rate of 3% per year.

Section 2: Actuarial Valuation Results

Actuarially determined contribution for following two fiscal years

On the basis of the June 30, 2021, actuarial valuation, the employer normal cost rate is 6.16%. This rate is applied to the projected payrolls for fiscal 2023 and fiscal 2024 to determine the employer normal cost for each year. The payment on the unfunded liability is added to the employer normal cost to determine the actuarially determined contribution for the fiscal year ending June 30, 2023, and to estimate the actuarially determined contribution for the fiscal year ending June 30, 2024, as shown below. The final actuarially determined contribution for fiscal 2024 will be determined with the next valuation.

Actuarially Determined Contribution: 2023 – 2024

Fiscal Year Ended June 30	Projected Payroll*	Employer Normal Cost Rate	Projected Contributions		
			Employer Normal Cost	Unfunded Liability	Total
2023	\$598,942,025	6.16%	\$36,883,018	\$89,055,382	\$125,938,400
2024	619,904,996	6.16%	38,173,923	91,727,044	129,900,967

* In these projections, total payroll is assumed to increase by 3.5% per year.

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: 2013 – 2022

Fiscal Year Ended June 30	Actuarially Determined Contribution		Actual Employer Contribution		
	Amount*	Percentage of Payroll**	Amount	Percentage of Payroll**	Percent Contributed
2013	\$37,081,933	8.91%	\$51,370,307	12.34%	138.53%
2014	40,217,666	9.98%	56,482,985	14.02%	140.44%
2015	44,651,783	10.25%	55,881,364	12.83%	125.15%
2016	46,237,853	10.11%	54,347,060	11.88%	117.54%
2017	48,503,358	10.14%	60,280,480	12.60%	124.28%
2018	52,065,397	10.67%	64,564,323	12.26%	124.01%
2019	62,984,742	11.57%	66,617,894	12.24%	105.77%
2020	78,943,914	14.01%	84,429,972	15.34%	106.95%
2021	83,876,570	14.51%	88,944,172	15.38%	106.04%
2022	119,967,769	20.73%	--	--	--

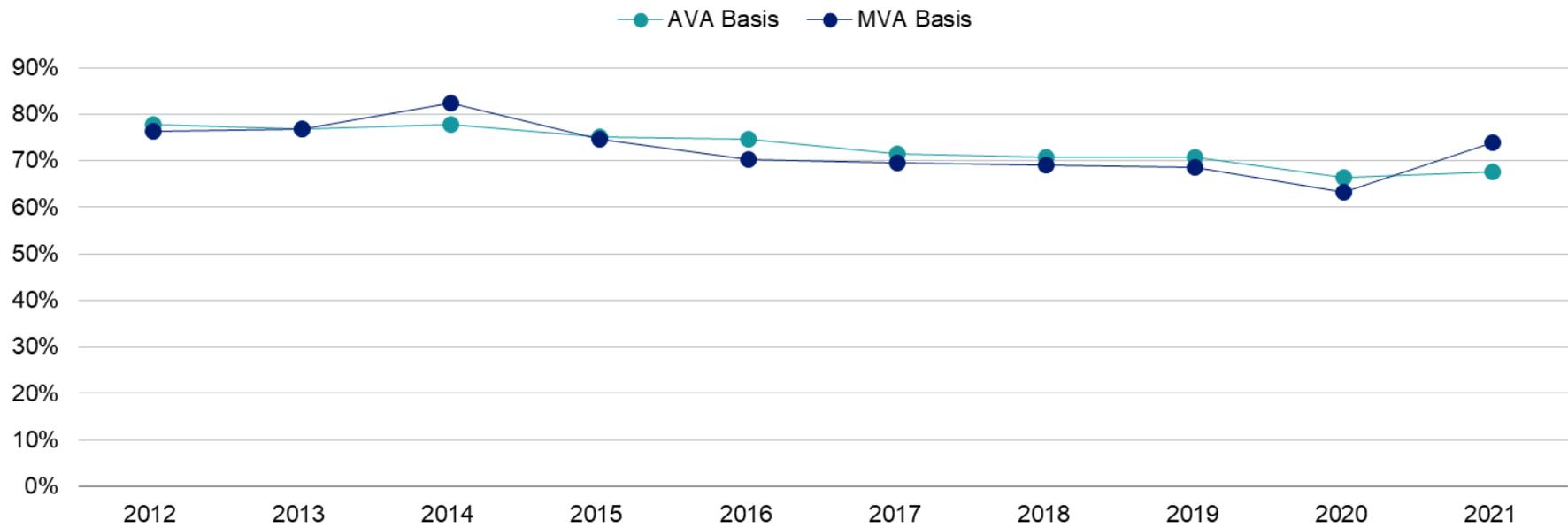
* Budgeted contribution amount from prior valuation

** Based on expected payroll

Section 2: Actuarial Valuation Results

History of funded percentage

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



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, 2021	June 30, 2020
Liabilities		
• Present value of benefits for retired members and beneficiaries	\$2,034,378,826	\$1,838,530,387
• Present value of benefits for inactive former members	89,137,012	84,767,030
• Present value of benefits for active members	<u>1,780,248,655</u>	<u>1,790,875,029</u>
Total liabilities	\$3,903,764,493	\$3,714,172,446
Assets		
• Total valuation value of assets	\$2,216,499,478	\$2,054,825,853
• Present value of future contributions by members	375,117,172	370,751,779
• Present value of future employer contributions for:		
• Entry age cost	247,779,644	248,129,695
• Unfunded actuarial accrued liability	<u>1,064,368,199</u>	<u>1,040,465,119</u>
Total of current and future assets	\$3,903,764,493	\$3,714,172,446

Section 2: Actuarial Valuation Results

Risk

The actuarial valuation results depend on a single set of assumptions; however, there is a risk that emerging results may differ significantly as actual experience proves to be different than projected from the current assumptions.

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.

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.

A detailed risk assessment is important for VSERS because:

- The negative cash flow position of the System could be exacerbated by relatively small deviations from assumed future experience.
- Retired and inactive members account for more than half of the System's liabilities limiting options for reducing plan liabilities in the event of adverse experience.
- 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 \$242.5 million in the asset value. A 10% increase in assets would cause the unfunded liability (market value basis) to decrease from \$855.6 million to \$613.1 million. Likewise, a 10% decrease in the asset value would cause the unfunded liability to increase from \$855.6 million to \$1.098 billion.
 - 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 contribution would increase or decrease by 0.34% 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 market value rate of return over the last 20 years has ranged from a low of -18.80% to a high of 25.71%.

Section 2: Actuarial Valuation Results

- **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 VSERS, a 3% liability increase would result in an increase in the unfunded accrued liability of \$98.4 million. The unfunded accrued liability (market value of assets basis) would increase from \$855.6 million to \$954.0 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.

- **Actual Experience**

- Past experience can help demonstrate the sensitivity of key results to the System's actual experience. Over the past ten years:
 - The investment gain(loss) for a year (actuarial basis) has ranged from a loss of \$24.6 million to a gain of \$52.2 million.
 - The non-investment gain(loss) for a year has ranged from a loss of \$83.4 million to a gain of \$9.4 million.
- The funded percentage on the actuarial value of assets has ranged from a low of 66.4% to a high of 77.9% over the past ten years.

- **Maturity Measures**

- The risk associated with a pension plan increases as it becomes more mature, meaning that the actives represent a smaller portion of the liabilities of the plan. When this happens, there is a greater risk that fluctuations in the experience of the non-active members or of the assets of the plan can result in large swings in the contribution requirements.
- Over the past ten years, the ratio of non-active members to active members has increased from a low of 0.80 to a high of 1.04. Currently the System has a non-active to active member ratio of 1.04.

Section 2: Actuarial Valuation Results

- As of June 30, 2021, the retired life actuarial accrued liability represents 62% of the total actuarial accrued liability. In addition, the actuarial accrued liability for inactive vested members represents 2% 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 \$29.0 million more than contributions received, or 1.2% of the market value of assets. As the System matures, more cash will be needed from the investment portfolio to meet benefit payments.

Supplemental Information

Exhibit A: Table of Plan Coverage

Category	As of June 30		Change From Prior Year
	2021	2020	
Active members in valuation:			
• Number	8,192	8,539	-4.1%
• Average age	45.7	45.6	0.1
• Average years of creditable service	10.9	10.8	0.1
• Total payroll	\$552,316,523	\$551,981,002	0.1%
• Average payroll	67,421	64,642	4.3%
• Total active vested members	5,523	5,431	1.7%
Inactive members:			
• Number of deferreds as reported by the System	771	768	0.4%
• Number of inactives as reported by the System	1,716	1,482	15.8%
Retired members:			
• Number in pay status	6,573	6,295	4.4%
• Average age	71.3	71.3	0.0
• Average monthly benefit	\$1,837	\$1,787	2.8%
Disability retirees:			
• Number in pay status	400	409	-2.2%
• Average age	66.0	65.4	0.6
• Average monthly benefit	\$1,284	\$1,274	0.8%
Beneficiaries:			
• Number in pay status	743	720	3.2%
• Average age	70.7	70.3	0.4
• Average monthly benefit	\$1,167	\$1,130	3.3%

Section 3: Supplemental Information

Exhibit B: Reconciliation of Member Data

	Active Members	Deferreds	Inactives	Disability Retirees	Retired Members	Beneficiaries	Total
Number as of July 1, 2020	8,539	768	1,482	409	6,295	720	18,213
• New members	486	N/A	194	0	42	N/A	722
• Inactives as reported by the System	-367	N/A	367	N/A	N/A	N/A	0
• Deferred as reported by the System	N/A	62	-62	N/A	N/A	N/A	0
• Retirements	-360	-46	-8	N/A	414	N/A	0
• New disabilities	-6	0	-1	9	-2	N/A	0
• Return to work from disability	0	N/A	N/A	0	N/A	N/A	0
• Died with beneficiary	-2	0	0	0	-40	42	0
• Died without beneficiary	-10	-3	0	-14	-135	-28	-190
• Refunds of contributions	-126	-9	-221	0	0	0	-356
• Rehire	38	-4	-34	N/A	0	N/A	0
• Certain period expired	N/A	N/A	0	0	0	-8	-8
• Data adjustments	0	3	-1	-4	-1	17	14
Number as of July 1, 2021	8,192	771	1,716	400	6,573	743	18,395

Section 3: Supplemental Information

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

	Year Ended June 30, 2021	Year Ended June 30, 2020
Net assets at market value at the beginning of the year	\$1,959,066,641	\$1,909,469,823
Contribution income:		
• Employer contributions	\$88,944,172	\$84,429,972
• Member contributions	42,113,318	40,902,188
• Less administrative expenses	<u>-2,280,512</u>	<u>-2,268,390</u>
<i>Net contribution income</i>	\$128,776,978	\$123,063,770
Net other income	\$247,033	\$594,069
Investment income:		
• Interest, dividends and other income	\$17,698,906	\$17,654,148
• Asset appreciation	481,640,356	63,820,001
• Less investment fees	<u>-1,916,608</u>	<u>-2,509,639</u>
<i>Net investment income</i>	<u>\$497,422,654</u>	<u>\$78,964,510</u>
Total income available for benefits	\$626,446,665	\$202,622,349
Less benefit payments:		
• Benefits	-\$155,493,584	-\$148,336,649
• Refunds of contributions	-3,650,081	-3,494,656
• Death claims	-615,965	-488,556
• Transfers to other pension trust funds	<u>-531,268</u>	<u>-705,670</u>
<i>Net benefit payments</i>	-\$160,290,898	-\$153,025,531
Change in reserve for future benefits	\$466,155,767	\$49,596,818
Net assets at market value at the end of the year	\$2,425,222,408	\$1,959,066,641

Section 3: Supplemental Information

Exhibit D: Summary Statement of Plan Assets

	June 30, 2021	June 30, 2020
Cash equivalents	\$11,604,916	\$23,139,051
Total accounts receivable	22,485,409	54,038,001
Prepaid expenses	66,741	61,720
Capital assets, net of depreciation	760,461	993,281
Investments:		
• Fixed income	\$110,059,937	\$129,613,142
• Equities	249,360,731	142,912,040
• Mutual and commingled funds	1,643,304,253	1,416,006,540
• Real estate and venture capital	<u>404,646,859</u>	<u>251,830,930</u>
Total investments at market value	\$2,407,371,780	\$1,940,362,652
Total assets	\$2,442,289,307	\$2,018,594,705
Total liabilities	-\$17,066,899	-\$59,528,064
Net assets at market value	\$2,425,222,408	\$1,959,066,641
Net assets at actuarial value	\$2,216,499,478	\$2,054,825,853

Section 3: Supplemental Information

Exhibit E: Development of the Fund through June 30, 2021

Year Ended June 30	Employer Contributions	Member Contributions	Net Other Income	Net Investment Return*	Admin. Expenses	Benefit Payments**	Market Value of Assets at Year-End	Actuarial Value of Assets at Year-End	Actuarial Value as a Percent of Market Value
2011	\$37,572,599	\$22,269,041	\$743,172	\$238,386,383	-\$1,147,576	-\$87,061,787	\$1,380,606,734	\$1,348,762,790	97.69%
2012	40,302,433	27,708,009	377,562	23,604,774	-1,328,919	-92,781,097	1,378,489,496	1,400,779,062	101.62%
2013	51,370,307	29,847,352	638,436	110,717,567	-1,374,643	-99,194,618	1,470,493,897	1,469,169,902	99.91%
2014	56,482,985	31,745,692	453,852	203,720,178	-1,158,183	-104,492,553	1,657,245,868	1,566,075,540	94.50%
2015	55,881,364	33,296,248	423,273	-8,484,694	-2,104,636	-111,396,184	1,624,861,239	1,636,267,663	100.70%
2016	54,347,060	34,055,217	293,444	17,962,425	-1,775,647	-120,093,586	1,609,650,152	1,707,267,941	106.06%
2017	60,280,480	35,966,987	785,504	170,358,016	-2,119,044	-126,479,801	1,748,442,294	1,793,794,733	102.59%
2018	64,564,323	40,423,239	554,842	123,632,169	-2,026,240	-134,090,344	1,841,500,283	1,881,804,847	102.19%
2019	66,617,894	40,818,039	298,872	106,777,462	-2,246,008	-144,296,719	1,909,469,823	1,964,500,825	102.88%
2020	84,429,972	40,902,188	594,069	78,964,510	-2,268,390	-153,025,531	1,959,066,641	2,054,825,853	104.89%
2021	88,944,172	42,113,318	247,033	497,422,654	-2,280,512	-160,290,898	2,425,222,408	2,216,499,478	91.39%

* On a market basis, net of investment fees

** Includes "other expenses"

Section 3: Supplemental Information

Exhibit F: Definition of Pension Terms

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

Actuarial Accrued Liability for Actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability for Pensioners:	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.
Actuarial Cost Method:	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.
Actuarial Gain or Loss:	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.
Actuarially Equivalent:	Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV):	<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

Actuarial Present Value of Future Plan Benefits:	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.
Actuarial Valuation:	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 (NPL).
Actuarial Value of Assets (AVA):	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.
Actuarially Determined:	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.
Actuarially Determined Contribution (ADC):	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.
Amortization Method:	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.
Amortization Payment:	The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.
Assumptions or Actuarial Assumptions:	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;

Section 3: Supplemental Information

Assumptions or Actuarial Assumptions: <i>continued</i>	<p><u>Retirement rates</u> - the rate or probability of retirement at a given age;</p> <p><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;</p> <p><u>Salary increase rates</u> - the rates of salary increase due to inflation and productivity growth.</p>
Closed Amortization Period:	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.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
Defined Contribution Plan:	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.
Employer Normal Cost:	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Experience Study:	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.
Funded Percentage:	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.
GASB 67 and GASB 68:	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.
Investment Return:	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.

Section 3: Supplemental Information

Net Pension Liability (NPL):	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.
Normal Cost:	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.
Open Amortization Period:	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.
Plan Fiduciary Net Position:	Market value of assets.
Total Pension Liability (TPL):	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.
Unfunded Actuarial Accrued Liability (UAAL):	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.
Valuation Date or Actuarial Valuation Date:	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.

Actuarial Valuation Basis

Exhibit I: Actuarial Assumptions, Methods and Models

Rationale for Assumptions:	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).	
Inflation:	2.30%.	
Investment Return:	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.	
Salary Increases:	Service	Annual Rate of Salary Increase (%)
	0	5.55%
	5	5.31%
	10	4.77%
	15	4.42%
	20	4.20%
	25	3.99%
	30	3.82%
	35	3.62%
	40+	3.40%
Cost-of-Living Adjustments:	Assumed to occur at the rate of 2.40% per annum for Groups A, C and D members and 1.35% per annum for Group E and F members (beginning at age 62 for deferred retirements) who retired before July 1, 2008. For Group F members retiring after July 1, 2008, assumed to occur at the rate of 2.40% per annum (beginning at age 65 for deferred retirements). The January 1, 2022 COLA is expected to be 2.30% for those in group E and F who retired before July 1, 2008, and 4.60% for all other groups.	

Section 4: Actuarial Valuation Basis

Mortality Rates:

Pre-retirement:

- Groups A/F 60% of PubG-2010 General Employee Amount-Weighted Above Median, 40% of PubG-2010 General Employee Amount-Weighted with generational projection using scale MP-2019
- Group C PubS-2010 Public Safety Employee Amount-Weighted with generational projection using scale MP-2019
- Group D* 70% of PubG-2010 General Employee Amount-Weighted Above Median, 30% of PubG-2010 General Employee with generational projection using scale MP-2019

Healthy Post-retirement - Retirees:

- Groups A/F 109% of PubG-2010 General Healthy Retiree Amount-Weighted with generational projection using scale MP-2019
- Group C 40% of PubS-2010 Public Safety Retiree Amount-Weighted Above Median, 60% of PubS-2010 Public Safety Retiree Amount-Weighted with generational projection using scale MP-2019
- Group D PubG-2010 General Healthy Retiree Amount-Weighted Above Median with generational projection using scale MP-2019

Healthy Post-retirement - Beneficiaries:

- Groups A/F Pub-2010 Contingent Survivor Amount-Weighted with generational projection using MP-2019
- Group C 40% of Pub-2010 Contingent Survivor Amount-Weighted Above Median, 60% of Pub-2010 Contingent Survivor Amount-Weighted with generational projection using MP-2019
- Group D Pub-2010 Contingent Survivor Amount-Weighted Above Median with generational projection using MP-2019

Disabled Post-retirement:

- All Groups PubNS-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table 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 tables were then adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

* 30% of deaths are assumed to be accidental.

Section 4: Actuarial Valuation Basis

Separation from Service before Retirement (Due to Withdrawal and Disability):

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

Rate (%)						
Withdrawal Groups A/D ¹				Disability ²		
Ultimate Rates		Increase Factors				
Age	Male/Female	Service	Male/Female	Age	Groups A/D/F	Group C
25	4.9066%	1	4.000	25	0.0158%	0.0770%
30	3.9275%	3	2.500	30	0.0204%	0.0990%
35	3.2826%	5	1.900	35	0.0272%	0.1325%
40	3.0392%	7	1.600	40	0.0406%	0.1980%
45	2.6920%	9	1.300	45	0.0665%	0.3235%
50	2.2464%			50	0.1055%	0.5455%
55	1.8346%			55	0.1862%	0.9080%
60	3.9019%			60	0.3005%	1.4640%

¹ 20% of disability incidents are assumed to be accidental for Group C and 10% of disability incidents are assumed to be accidental for all other members.

² The Ultimate Rates are multiplied by the Increase Factors during the first 10 years of service.

Withdrawal Group C		
Service	Male	Female
0	10.800%	21.600%
1	6.480%	12.960%
2	5.400%	10.800%
3	3.456%	6.912%
4	3.456%	6.912%
5	3.456%	6.912%
6-19	3.240%	6.480%
20+	0.000%	0.000%

Section 4: Actuarial Valuation Basis

Separation from Service before Retirement (Due to Withdrawal and Disability) (continued):

Withdrawal Group F ¹					
Ultimate Rates 0-10 Years of Service		Increase Factors		Ultimate Rates ² 10-30 Years of Service	
Age	Male/Female	Service	Male/Female	Age	Male/Female
25	6.3933%	0	2.850	25	4.2200%
30	5.1207%	2	2.300	30	3.3800%
35	4.2723%	4	1.550	35	2.8200%
40	3.9542%	6	1.300	40	2.6100%
45	3.5148%	8	1.150	45	2.3200%
50	2.9240%			50	1.9300%
55	2.4695%			55	1.6300%
60	2.4695%			60	1.6300%

¹ The Ultimate Rates are multiplied by the Increase Factors during the first 10 years of service.

² Withdrawal Rates are 0.00% for all Group F members with 30+ years of service

Retirement Rates:

Retirement Group F ³					
Age	Male	Female	Age	Male	Female
40-52	20.00%	10.00%	63	17.50%	15.00%
53	15.00%	10.00%	64	20.00%	15.00%
54	15.00%	10.00%	65	22.50%	20.00%
55	5.00%	5.00%	66	25.00%	30.00%
56	5.00%	5.00%	67	25.00%	30.00%
57	5.00%	5.00%	68	25.00%	30.00%
58	5.00%	7.50%	69	25.00%	30.00%
59	7.50%	7.50%	70+	100.00%	100.00%
60	7.50%	7.50%			
61	15.00%	12.50%			
62	25.00%	25.00%			

³ All Group A, C, and D members are assumed to retire when first eligible.

Section 4: Actuarial Valuation Basis

Inactive Members as Reported by the System:	<p>Not Vested: Valuation liability equals 100% of accumulated contributions.</p> <p>Vested: Valuation liability based on accrued benefit and 20% of members are assumed to retire from Early Retirement Age for each year until Normal Retirement Age, then 100% of members are assumed to retire at their Normal Retirement Age with a deferred vested benefit.</p>
Deferred Members as Reported by the System:	<p>Valuation liability based on accrued benefit and 20% of members are assumed to retire from Early Retirement Age for each year until Normal Retirement Age, then 100% of members are assumed to retire at their Normal Retirement Age with a deferred vested benefit.</p>
Future Administrative Expenses:	<p>0.40% of projected payroll</p>
Unknown Data for Members:	<p>Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.</p>
Percent Married:	<ul style="list-style-type: none"> • Groups A/D 75.4% of male members and 64.0% of female members are assumed to be married. • Group C 73.3% of male members and 61.0% of female members are assumed to be married. • Group F 71.4% of male members and 63.1% of female members are assumed to be married.
Age of Spouse:	<p>Females three years younger than males.</p>
Benefit Election:	<ul style="list-style-type: none"> • Non-Group C All members are assumed to elect the single life annuity option. • Group C Single members are assumed to elect single life annuity. Married members are assumed to elect the 70% joint & survivor option
Actuarial Value of Assets:	<p>The amount of the assets for valuation purposes equals the preliminary asset value plus 20% of the difference between market and preliminary asset values. The preliminary asset value is equal to the previous year's asset value (for valuation purposes) adjusted for contributions less benefit payments and expenses plus expected investment income. If necessary, a further adjustment is made to ensure that the valuation assets are within 20% of the market value.</p>
Actuarial Cost Method:	<p>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.</p>
Modeling:	<p>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.</p>
Justification for Change in Actuarial Assumptions:	<p>Effective July 1, 2021, an administrative expenses assumption equal to 0.40% of projected payroll was established.</p>

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.

Effective Date:	July 1, 1972 (for consolidated system).
Credible Service:	Service as a member plus purchased service.
Average Final Compensation:	<ul style="list-style-type: none">• Groups A/F Average annual compensation during highest 3 consecutive years.• Group C Average annual compensation during highest 2 consecutive years.• Group D Annual compensation at retirement.
Normal Retirement – Eligibility:	<ul style="list-style-type: none">• Group A Earlier of age 65 with 5 years of service or age 62 with 20 years of service.• Group C Age 55.• Group D Age 62 with 5 years of service.• Group F Age 62 or 30 years of service. For members hired after June 30, 2008, age 65 or a sum of age plus service greater than or equal to 87.
Normal Retirement – Amount:	<ul style="list-style-type: none">• Group A 1.67% of AFC times service.• Group C 2.50% of AFC times service up to 20 years.• Group D 3.33% of AFC times service up to 30 years.• Group F 1.25% of AFC times service prior to January 1, 1991, plus 1.67% of AFC times service after 1990, up to a maximum benefit of 50% of AFC. For members hired on or after July 1, 2008, the maximum benefit is 60% of AFC.
Early Retirement – Eligibility:	<ul style="list-style-type: none">• Groups A/D Age 55 with 5 years of service or 30 years of service.• Group C Age 50 with 20 years of service.• Group F Age 55 with 5 years of service.

Section 4: Actuarial Valuation Basis

Early Retirement – Amount:	<ul style="list-style-type: none"> Group A Actuarial equivalent of normal retirement allowance. For members with 30 years of service, there is no reduction. Group C Same as normal retirement allowance. Group D Normal allowance reduced by 3% for each year commencement precedes age 62. Group F For members hired prior to July 1, 2008, no reduction if 30 years of service; otherwise normal allowance reduced by 6% for each year commencement precedes age 62. For members hired on or after July 1, 2008, no reduction if combination of years and service equal 87; other reduced from age 65 based on the following table: 												
	<table border="1"> <thead> <tr> <th>Years of Service</th> <th>Reduction in Benefit</th> </tr> </thead> <tbody> <tr> <td>35</td> <td>One-eighth of 1% per month</td> </tr> <tr> <td>30</td> <td>One-fourth of 1% per month</td> </tr> <tr> <td>25</td> <td>One-third of 1% per month</td> </tr> <tr> <td>20</td> <td>Five-twelfths of 1% per month</td> </tr> <tr> <td>Less than 20</td> <td>Five-ninths of 1% per month</td> </tr> </tbody> </table>	Years of Service	Reduction in Benefit	35	One-eighth of 1% per month	30	One-fourth of 1% per month	25	One-third of 1% per month	20	Five-twelfths of 1% per month	Less than 20	Five-ninths of 1% per month
Years of Service	Reduction in Benefit												
35	One-eighth of 1% per month												
30	One-fourth of 1% per month												
25	One-third of 1% per month												
20	Five-twelfths of 1% per month												
Less than 20	Five-ninths of 1% per month												
Vesting:	<ul style="list-style-type: none"> All groups – 5 years of service. Allowance beginning at normal retirement age based on AFC and service at termination. 												
Ordinary Disability – Eligibility:	<ul style="list-style-type: none"> All groups – 5 years of service and incapacitated, not work related, for performance of duty. 												
Ordinary Disability – Amount:	All groups – Immediate allowance based on service to date of disability. Benefit is the greatest of 25% of AFC and unreduced accrued benefit as of date of disability.												
Accidental Disability – Eligibility:	All groups – Incapacitated because of work related accident.												
Accidental Disability – Amount:	<ul style="list-style-type: none"> Groups A/D/F Immediate allowance equal to the greater of 25% of AFC and unreduced accrued benefit as of date of disability. Group C Immediate allowance equal to 50% of AFC with additional 10% of AFC for each dependent child (up to 30%). 												
Ordinary Death – Eligibility:	<ul style="list-style-type: none"> Groups A/F Death after eligibility for early retirement or 10 years of service. Groups C/D Death after normal retirement age or 10 years of service. 												
Ordinary Death – Amount:	<ul style="list-style-type: none"> Groups A/D/F Maximum of reduced allowance under 100% survivor option and disability allowance under 100% disability survivor option, commencing immediately. Group C 70% of the allowance that would have been payable to the member plus additional allowance equal to 10% of AFC for each dependent child (up to 30%). 												

Section 4: Actuarial Valuation Basis

Accidental Death – Eligibility:	<ul style="list-style-type: none"> Groups A/D/C – Death because of work related accident.
Accidental Death – Amount:	<ul style="list-style-type: none"> Groups A/D Allowance equal to 25% of AFC payable to spouse. Group C to Allowance equal to 35% of AFC payable to spouse plus 10% for each dependent child (up to 30%).
Post-Retirement Adjustments:	<ul style="list-style-type: none"> Groups A/C/D percentage Allowances in payment for at least one year increased on each January 1 by the increase in Consumer Price Index, but not more than 5%. Group F based Same, but increase is based on half of the Consumer Price Index increase. Increase is on the full Consumer Price Index increase starting in 2014 for employees retiring after July 1, 2008.
Optional Benefit and Death after Retirement:	Lifetime allowance or actuarially equivalent allowance with survivor benefit as elected by member upon retirement. Upon death of a Group C member, an allowance equal to 70% of the member's allowance is continue to the surviving spouse.
Refund of Contributions:	Upon termination, if the member so elects, or if no other benefit is payable, the member's accumulated contributions with interest are refunded.
Member Contribution Rates:	<ul style="list-style-type: none"> Groups A/D/F 6.65%. Group C 8.53%.
Changes in Plan Provisions:	There have been no changes in plan provisions since the last valuation.

Additional Summary Tables of Member Data

Table 1A: Members in Active Service as of June 30, 2021 by Age, Years of 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	214	212	2	--	--	--	--	--	--
	\$39,512	\$39,197	\$72,903	--	--	--	--	--	--
25 - 29	667	560	106	1	--	--	--	--	--
	\$52,871	\$50,519	\$64,984	\$85,942	--	--	--	--	--
30 - 34	986	537	388	61	--	--	--	--	--
	\$58,631	\$51,943	\$65,477	\$73,970	--	--	--	--	--
35 - 39	1,032	385	379	198	70	--	--	--	--
	\$64,247	\$53,364	\$69,325	\$72,450	\$73,405	--	--	--	--
40 - 44	1,021	281	306	173	200	61	--	--	--
	\$71,060	\$55,706	\$70,290	\$75,754	\$84,805	\$87,267	--	--	--
45 - 49	1,021	228	222	152	209	163	44	3	--
	\$73,678	\$57,407	\$68,916	\$77,871	\$82,130	\$85,947	\$81,329	\$82,396	--
50 - 54	1,124	211	236	162	170	176	112	56	1
	\$72,781	\$54,009	\$69,309	\$75,631	\$79,652	\$81,288	\$83,908	\$79,456	\$106,045
55 - 59	1,004	161	205	111	176	147	85	71	48
	\$72,134	\$59,940	\$66,113	\$70,442	\$74,767	\$78,187	\$85,372	\$81,018	\$77,892
60 - 64	762	100	160	110	113	103	55	59	62
	\$72,399	\$56,905	\$71,058	\$71,760	\$74,543	\$72,598	\$78,953	\$85,863	\$79,119
65 & over	361	49	73	59	56	41	18	19	46
	\$75,652	\$57,149	\$71,164	\$65,901	\$85,974	\$81,842	\$78,405	\$86,470	\$91,363
Total	8,192	2,724	2,077	1,027	994	691	314	208	157
	\$67,421	\$52,613	\$68,366	\$73,747	\$79,680	\$80,993	\$82,759	\$82,489	\$80,434

Section 5: Additional Summary Tables of Member Data

Table 1B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Payroll – General Employees – 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	--	--	--	--	--	--	--	--	--
25 - 29	--	--	--	--	--	--	--	--	--
30 - 34	--	--	--	--	--	--	--	--	--
35 - 39	--	--	--	--	--	--	--	--	--
40 - 44	--	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--	--
50 - 54	--	--	--	--	--	--	--	--	--
55 - 59	--	--	--	--	--	--	--	--	--
60 - 64	--	--	--	--	--	--	--	--	--
65 & over	1	--	--	--	--	--	--	--	1
	\$61,369	--	--	--	--	--	--	--	\$61,369
Total	1	--	1						
	\$61,369	--	--	--	--	--	--	--	\$61,369

Section 5: Additional Summary Tables of Member Data

Table 1C: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Payroll – Law Enforcement Personnel – 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	20	20	--	--	--	--	--	--	--
	\$41,804	\$41,804	--	--	--	--	--	--	--
25 - 29	70	60	9	1	--	--	--	--	--
	\$68,708	\$65,124	\$90,685	\$85,942	--	--	--	--	--
30 - 34	87	34	42	11	--	--	--	--	--
	\$77,601	\$61,590	\$86,191	\$94,293	--	--	--	--	--
35 - 39	67	8	27	25	7	--	--	--	--
	\$83,367	\$56,146	\$78,718	\$91,497	\$103,372	--	--	--	--
40 - 44	70	4	5	16	36	9	--	--	--
	\$101,060	\$52,930	\$97,967	\$84,004	\$108,160	\$126,094	--	--	--
45 - 49	79	7	2	9	30	27	4	--	--
	\$104,346	\$69,689	\$85,428	\$88,807	\$106,087	\$118,699	\$99,481	--	--
50 - 54	46	--	7	5	22	8	4	--	--
	\$97,132	--	\$78,339	\$78,443	\$103,095	\$102,057	\$110,728	--	--
55 - 59	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
60 - 64	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
65 & over	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
Total	439	133	92	67	95	44	8	--	--
	\$86,032	\$60,047	\$84,463	\$88,748	\$105,980	\$117,186	\$105,104	--	--

Section 5: Additional Summary Tables of Member Data

Table 1D: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Payroll – Judges – 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	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
25 - 29	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
30 - 34	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
35 - 39	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
40 - 44	1	1	--	--	--	--	--	--	--
	\$55,359	\$55,359	--	--	--	--	--	--	--
45 - 49	3	1	1	1	--	--	--	--	--
	\$123,176	\$75,063	\$133,702	\$160,763	--	--	--	--	--
50 - 54	8	2	2	2	1	1	--	--	--
	\$135,752	\$60,719	\$160,763	\$160,763	\$160,763	\$160,763	--	--	--
55 - 59	10	2	3	3	1	1	--	--	--
	\$157,879	\$138,002	\$163,543	\$160,763	\$160,763	\$169,104	--	--	--
60 - 64	12	1	4	1	3	2	--	1	--
	\$151,748	\$160,763	\$160,763	\$160,763	\$121,923	\$164,934	--	\$160,763	--
65 & over	17	1	3	7	5	--	1	--	--
	\$124,417	\$51,418	\$136,275	\$93,879	\$167,386	--	\$160,763	--	--
Total	51	8	13	14	10	4	1	1	--
	\$137,760	\$92,506	\$153,672	\$127,321	\$152,422	\$164,934	\$160,763	\$160,763	--

Section 5: Additional Summary Tables of Member Data

Table 1E: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Payroll – General Employees – Group F

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	194	192	2	--	--	--	--	--	--
	\$39,275	\$38,925	\$72,903	--	--	--	--	--	--
25 - 29	597	500	97	--	--	--	--	--	--
	\$51,014	\$48,766	\$62,600	--	--	--	--	--	--
30 - 34	899	503	346	50	--	--	--	--	--
	\$56,795	\$51,290	\$62,962	\$69,499	--	--	--	--	--
35 - 39	965	377	352	173	63	--	--	--	--
	\$62,919	\$53,305	\$68,604	\$69,697	\$70,076	--	--	--	--
40 - 44	950	276	301	157	164	52	--	--	--
	\$68,866	\$55,748	\$69,830	\$74,913	\$79,678	\$80,547	--	--	--
45 - 49	939	220	219	142	179	136	40	3	--
	\$70,939	\$56,936	\$68,469	\$76,594	\$78,115	\$79,445	\$79,513	\$82,396	--
50 - 54	1,070	209	227	155	147	167	108	56	1
	\$71,263	\$53,945	\$68,224	\$74,442	\$75,592	\$79,817	\$82,914	\$79,456	\$106,045
55 - 59	994	159	202	108	175	146	85	71	48
	\$71,272	\$58,959	\$64,666	\$67,934	\$74,275	\$77,565	\$85,372	\$81,018	\$77,892
60 - 64	750	99	156	109	110	101	55	58	62
	\$71,129	\$55,856	\$68,758	\$70,944	\$73,250	\$70,770	\$78,953	\$84,572	\$79,119
65 & over	343	48	70	52	51	41	17	19	45
	\$73,277	\$57,268	\$68,373	\$62,134	\$77,992	\$81,842	\$73,561	\$86,470	\$92,029
Total	7,701	2,583	1,972	946	889	643	305	207	156
	\$65,896	\$52,107	\$67,052	\$71,892	\$76,052	\$77,994	\$81,918	\$82,111	\$82,638

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	65	\$470,792
36	1	8,755	0	0	2	15,220
37	0	0	0	0	0	0
38	0	0	1	37,426	0	0
39	0	0	0	0	0	0
40	0	0	0	0	0	0
41	0	0	1	9,467	1	28,033
42	0	0	0	0	2	9,522
43	0	0	1	16,775	1	15,793
44	0	0	3	67,217	0	0
45	1	20,709	5	109,278	0	0
46	0	0	0	0	1	9,649
47	0	0	1	8,578	2	12,422
48	3	68,865	2	38,515	2	26,928
49	8	242,761	4	127,549	3	33,233
50	20	948,376	3	47,433	2	40,180
51	29	1,136,569	5	69,672	3	74,863
52	37	1,606,925	3	44,873	4	37,908
53	44	1,878,417	12	263,641	2	18,300
54	36	1,660,467	5	117,198	3	40,005
55	60	2,331,696	6	178,308	3	44,481
56	63	2,005,532	12	209,946	3	45,314
57	77	2,454,836	12	213,081	5	95,864
58	76	2,533,702	11	189,037	2	26,327
59	97	2,818,533	21	339,834	8	118,287
60	100	2,938,805	17	288,930	6	134,119
61	120	3,630,782	13	228,245	8	87,486
62	177	3,643,284	12	158,094	8	129,476
63	214	4,740,012	19	305,962	19	335,270
64	263	6,183,527	14	210,238	10	131,986
65	274	5,440,206	10	182,304	18	305,899

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	291	\$6,590,742	20	\$264,730	22	\$355,363
67	342	7,186,458	17	174,023	18	300,153
68	322	7,405,404	20	290,689	19	320,266
69	333	7,017,176	23	266,775	15	224,503
70	341	7,520,955	15	223,477	17	225,999
71	349	7,393,679	15	202,739	21	353,898
72	331	6,893,256	13	194,266	15	179,485
73	339	6,792,847	11	113,981	21	298,632
74	322	7,309,738	9	207,180	28	451,110
75	209	4,519,416	9	120,076	22	319,363
76	207	3,935,963	7	89,087	26	396,591
77	186	3,617,197	6	83,555	28	407,132
78	195	4,008,656	6	70,152	28	476,420
79	161	3,297,420	5	41,559	33	458,803
80	129	2,115,410	6	67,689	25	342,740
81	121	1,997,148	6	102,996	18	250,811
82	92	1,461,861	2	11,499	20	275,958
83	82	1,356,270	5	75,360	13	154,034
84	69	1,274,978	5	44,242	14	246,131
85	90	1,459,591	1	9,780	25	371,789
86	62	1,186,633	2	21,070	22	276,125
87	47	760,120	1	8,888	21	278,452
88	60	984,337	1	8,170	11	125,418
89	40	542,227	0	0	19	236,168
90	38	557,660	1	4,962	13	149,556
91	32	434,256	0	0	13	279,580
92	21	246,507	0	0	6	44,881
93	13	161,175	1	5,159	8	88,513
94	7	124,982	0	0	1	6,725
≥ 95	42	455,244	0	0	18	227,329
Total	6,573	\$144,900,067	400	\$6,163,705	743	\$10,409,285

Section 5: Additional Summary Tables of Member Data

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

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	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	0	0	0	0
48	0	0	0	0	0	0
49	0	0	0	0	0	0
50	0	0	0	0	0	0
51	0	0	0	0	0	0
52	0	0	0	0	0	0
53	0	0	0	0	0	0
54	0	0	0	0	0	0
55	0	0	0	0	0	0
56	0	0	0	0	0	0
57	2	95,472	0	0	0	0
58	0	0	0	0	0	0
59	1	9,028	0	0	0	0
60	0	0	0	0	0	0
61	0	0	0	0	0	0
62	0	0	0	0	0	0
63	2	67,966	0	0	1	7,308
64	0	0	0	0	0	0
65	0	0	0	0	0	0

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	2	\$57,340	1	\$5,809	0	\$0
67	0	0	1	1,913	0	0
68	3	93,680	0	0	1	9,617
69	5	113,763	1	8,295	0	0
70	3	80,073	0	0	0	0
71	3	81,809	0	0	1	45,227
72	3	84,565	1	22,091	1	11,691
73	5	132,819	0	0	1	24,405
74	3	66,254	0	0	2	58,596
75	6	172,865	0	0	0	0
76	0	0	0	0	3	24,195
77	3	94,695	0	0	2	18,845
78	0	0	0	0	1	15,761
79	6	200,960	0	0	2	26,241
80	4	108,546	0	0	5	53,758
81	2	47,081	0	0	0	0
82	5	149,797	0	0	0	0
83	3	81,920	1	12,654	0	0
84	5	107,811	0	0	0	0
85	1	18,999	0	0	1	21,510
86	7	225,698	0	0	0	0
87	3	69,114	0	0	0	0
88	3	86,742	0	0	0	0
89	3	72,754	0	0	2	22,449
90	2	84,022	0	0	2	26,592
91	4	61,370	0	0	1	4,343
92	2	44,160	0	0	1	13,720
93	2	57,685	0	0	1	5,887
94	0	0	0	0	0	0
≥ 95	4	61,206	0	0	5	34,899
Total	97	\$2,628,194	5	\$50,760	33	\$425,044

Section 5: Additional Summary Tables of Member Data

Table 2C: Summary of Retired Member and Beneficiary Data by Attained Age State Police and Motor Vehicle Inspectors – Group B

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	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	0	0	0	0
48	0	0	0	0	0	0
49	0	0	0	0	0	0
50	0	0	0	0	0	0
51	0	0	0	0	0	0
52	0	0	0	0	0	0
53	0	0	0	0	0	0
54	0	0	0	0	0	0
55	0	0	0	0	0	0
56	0	0	0	0	1	21,087
57	0	0	0	0	0	0
58	0	0	0	0	0	0
59	0	0	0	0	0	0
60	0	0	0	0	0	0
61	0	0	0	0	0	0
62	0	0	0	0	0	0
63	1	11,911	0	0	0	0
64	0	0	0	0	0	0
65	1	9,426	0	0	0	0

Section 5: Additional Summary Tables of Member Data

Table 2C: Summary of Retired Member and Beneficiary Data by Attained Age State Police and Motor Vehicle Inspectors – Group B (continued)

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	0	\$0	0	\$0	0	\$0
67	1	10,233	0	0	0	0
68	0	0	0	0	0	0
69	0	0	0	0	0	0
70	1	5,207	0	0	0	0
71	0	0	0	0	0	0
72	0	0	1	21,925	0	0
73	0	0	0	0	1	13,783
74	1	40,092	0	0	0	0
75	2	69,352	0	0	0	0
76	0	0	0	0	1	13,697
77	0	0	1	22,886	0	0
78	1	9,446	0	0	1	18,104
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	8	\$155,666	2	\$44,811	4	\$66,671

Section 5: Additional Summary Tables of Member Data

Table 2D: Summary of Retired Member and Beneficiary Data by Attained Age Law Enforcement Personnel – Group C

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	25	\$232,699
36	0	0	0	0	0	0
37	0	0	0	0	0	0
38	0	0	1	37,426	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	1	46,885	0	0
45	1	20,709	2	83,970	0	0
46	0	0	0	0	0	0
47	0	0	0	0	0	0
48	1	15,991	1	32,736	0	0
49	0	0	3	117,165	1	12,881
50	11	653,885	1	18,480	0	0
51	13	630,933	0	0	1	38,080
52	16	840,844	0	0	1	13,565
53	23	1,178,222	3	100,821	0	0
54	13	806,803	1	47,534	0	0
55	21	1,093,932	3	145,349	0	0
56	20	848,064	1	51,842	0	0
57	18	751,596	1	16,979	1	24,872
58	14	831,629	1	27,554	0	0
59	14	485,748	0	0	1	31,660
60	7	365,413	2	83,084	0	0
61	19	974,852	0	0	0	0
62	14	512,838	0	0	0	0
63	15	777,708	1	38,260	1	21,598
64	19	951,343	1	11,863	1	29,707
65	14	608,178	0	0	1	37,894

Section 5: Additional Summary Tables of Member Data

Table 2D: Summary of Retired Member and Beneficiary Data by Attained Age Law Enforcement Personnel – Group C (continued)

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	18	\$855,682	0	\$0	1	\$23,980
67	7	307,169	0	0	1	32,901
68	14	650,628	2	77,995	2	45,400
69	9	380,077	0	0	1	12,440
70	4	200,279	0	0	1	32,101
71	13	576,349	1	37,179	1	17,189
72	4	151,623	1	32,677	1	25,632
73	9	360,892	0	0	2	71,474
74	12	582,427	3	125,969	3	102,682
75	9	409,051	1	45,286	2	57,393
76	1	29,003	1	36,434	0	0
77	5	201,031	0	0	3	91,581
78	10	493,101	0	0	3	111,065
79	6	296,464	0	0	2	66,299
80	5	200,175	0	0	2	60,774
81	3	115,849	1	31,588	1	39,671
82	2	98,099	0	0	2	51,768
83	2	93,780	1	30,246	1	18,919
84	2	103,096	0	0	1	31,118
85	1	33,075	0	0	2	75,919
86	2	107,323	0	0	2	52,109
87	0	0	0	0	2	63,997
88	2	95,411	0	0	2	60,229
89	0	0	0	0	2	66,265
90	4	148,356	0	0	1	32,914
91	1	45,240	0	0	4	88,575
92	0	0	0	0	0	0
93	0	0	0	0	1	28,678
94	1	45,394	0	0	0	0
≥ 95	0	0	0	0	2	46,720
Total	399	\$18,928,261	34	\$1,277,321	81	\$1,850,748

Section 5: Additional Summary Tables of Member Data

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

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	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	0	0	0	0
48	0	0	0	0	0	0
49	0	0	0	0	0	0
50	0	0	0	0	0	0
51	1	10,688	0	0	0	0
52	0	0	0	0	0	0
53	0	0	0	0	0	0
54	0	0	0	0	0	0
55	0	0	0	0	0	0
56	0	0	0	0	0	0
57	0	0	0	0	1	17,754
58	0	0	0	0	0	0
59	0	0	0	0	0	0
60	0	0	0	0	0	0
61	1	92,299	0	0	0	0
62	0	0	0	0	0	0
63	1	27,415	0	0	0	0
64	0	0	0	0	0	0
65	0	0	0	0	0	0

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	4	\$291,983	0	\$0	0	\$0
67	2	164,115	0	0	0	0
68	5	296,334	0	0	0	0
69	3	271,703	0	0	0	0
70	4	320,207	0	0	0	0
71	4	320,761	0	0	0	0
72	5	332,811	0	0	0	0
73	2	212,270	0	0	0	0
74	3	379,356	0	0	0	0
75	3	66,118	0	0	0	0
76	0	0	0	0	1	21,105
77	3	189,287	0	0	0	0
78	5	359,106	0	0	0	0
79	3	275,670	0	0	0	0
80	0	0	0	0	0	0
81	1	80,043	0	0	0	0
82	1	37,548	0	0	0	0
83	1	85,688	0	0	0	0
84	3	182,856	0	0	1	92,128
85	1	65,853	0	0	1	35,227
86	1	105,908	0	0	1	68,971
87	0	0	0	0	0	0
88	1	102,428	0	0	0	0
89	1	38,550	0	0	0	0
90	0	0	0	0	0	0
91	1	41,748	0	0	3	161,360
92	0	0	0	0	0	0
93	0	0	0	0	0	0
94	0	0	0	0	0	0
≥ 95	2	28,703	0	0	2	79,476
Total	62	\$4,379,450	0	\$0	10	\$476,021

Section 5: Additional Summary Tables of Member Data

Table 2F: Summary of Retired Member and Beneficiary Data by Attained Age General Employees – Groups E/F

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	40	\$238,092
36	1	8,755	0	0	2	15,220
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	1	9,467	1	28,033
42	0	0	0	0	2	9,522
43	0	0	1	16,775	1	15,793
44	0	0	2	20,332	0	0
45	0	0	3	25,309	0	0
46	0	0	0	0	1	9,649
47	0	0	1	8,578	2	12,422
48	2	52,874	1	5,779	2	26,928
49	8	242,761	1	10,384	2	20,352
50	9	294,491	2	28,954	2	40,180
51	15	494,948	5	69,672	2	36,783
52	21	766,081	3	44,873	3	24,344
53	21	700,195	9	162,820	2	18,300
54	23	853,664	4	69,664	3	40,005
55	39	1,237,765	3	32,960	3	44,481
56	43	1,157,467	11	158,103	2	24,227
57	57	1,607,768	11	196,101	3	53,238
58	62	1,702,074	10	161,483	2	26,327
59	82	2,323,757	21	339,834	7	86,627
60	93	2,573,392	15	205,846	6	134,119
61	100	2,563,631	13	228,245	8	87,486
62	163	3,130,446	12	158,094	8	129,476
63	195	3,855,011	18	267,702	17	306,364
64	244	5,232,185	13	198,375	9	102,279
65	259	4,822,603	10	182,304	17	268,005

Section 5: Additional Summary Tables of Member Data

Table 2F: Summary of Retired Member and Beneficiary Data by Attained Age General Employees – Groups E/F (continued)

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	267	\$5,385,737	19	\$258,922	21	\$331,383
67	332	6,704,941	16	172,111	17	267,252
68	300	6,364,761	18	212,694	16	265,249
69	316	6,251,633	22	258,481	14	212,063
70	329	6,915,189	15	223,477	16	193,898
71	329	6,414,761	14	165,560	19	291,482
72	319	6,324,258	10	117,573	13	142,162
73	323	6,086,865	11	113,981	17	188,970
74	303	6,241,609	6	81,212	23	289,832
75	189	3,802,029	8	74,790	20	261,970
76	206	3,906,960	6	52,652	21	337,595
77	175	3,132,183	5	60,669	23	296,706
78	179	3,147,004	6	70,152	23	331,490
79	146	2,524,326	5	41,559	29	366,264
80	120	1,806,688	6	67,689	18	228,207
81	115	1,754,176	5	71,408	17	211,140
82	84	1,176,417	2	11,499	18	224,191
83	76	1,094,882	3	32,460	12	135,115
84	59	881,214	5	44,242	12	122,884
85	87	1,341,664	1	9,780	21	239,132
86	52	747,705	2	21,070	19	155,044
87	44	691,006	1	8,888	19	214,455
88	54	699,757	1	8,170	9	65,189
89	36	430,924	0	0	15	147,453
90	32	325,282	1	4,962	10	90,050
91	26	285,897	0	0	5	25,303
92	19	202,347	0	0	5	31,161
93	11	103,490	1	5,159	6	53,948
94	6	79,588	0	0	1	6,725
≥ 95	36	365,336	0	0	9	66,234
Total	6,007	\$118,808,496	359	\$4,790,812	615	\$7,590,801

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	0	0	0
1981	0	0	0
1982	4	12,006	3,002
1983	5	21,966	4,393
1984	5	25,815	5,163
1985	6	40,003	6,667
1986	8	42,866	5,358
1987	15	120,914	8,061
1988	15	138,661	9,244
1989	10	74,095	7,409
1990	40	470,881	11,772
1991	37	395,808	10,698
1992	31	259,887	8,383
1993	52	518,778	9,976
1994	29	305,389	10,531
1995	71	929,243	13,088
1996	232	3,647,054	15,720
1997	57	626,860	10,998
1998	59	640,562	10,857
1999	82	983,831	11,998
2000	105	1,428,426	13,604

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	125	\$1,852,126	\$14,817
2002	134	2,193,665	16,371
2003	137	2,406,729	17,567
2004	199	3,326,224	16,715
2005	218	3,707,909	17,009
2006	212	3,799,582	17,923
2007	240	4,137,318	17,239
2008	251	4,946,377	19,707
2009	430	8,966,979	20,853
2010	305	5,729,751	18,786
2011	300	5,730,798	19,103
2012	310	6,060,224	19,549
2013	289	5,382,109	18,623
2014	316	5,872,643	18,584
2015	467	9,249,940	19,807
2016	353	7,312,223	20,715
2017	348	7,329,701	21,062
2018	395	8,340,038	21,114
2019	459	9,745,089	21,231
2020	340	6,903,971	20,306
2021	290	7,513,671	25,909
Total	6,981	\$131,190,109	\$18,792

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