

Vermont Municipal 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 Municipal Employees' Retirement System. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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Segal



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

October 29, 2021

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

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2021, of the Vermont Municipal Employees' Retirement System. This report summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the actuarially determined contribution requirement for fiscal 2022.

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.

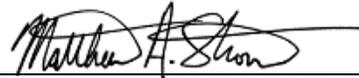
The actuarial calculations were directed under the supervision of Kathleen A. Riley, FSA, MAAA, EA and Matthew A. Strom, FSA, MAAA, EA. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. 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 5062 of Title 24, Chapter 125, Vermont Statutes Annotated, relating to the Vermont Municipal Employees' Retirement System. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The 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 Pension Plan, 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 adopted by the Board of Trustees.

Section 1: Actuarial Valuation Summary

Valuation highlights

1. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. The funding policy outlined in the Vermont State Pension Code and adhered to by the Board meets this standard. Section 5064, subsection (c)(4), of Title 24, Chapter 125, Vermont Statutes Annotated calls for the calculation of an accrued liability contribution rate to be calculated for each membership group, based on the actuarial assumptions and methodology adopted by the Retirement Board. Actuarially determined contribution rates are determined as a percent of payroll and calculated such that the rate for each membership group is sufficient to fully fund that group's actuarial accrued liability by June 30, 2038. These actuarially determined contribution rates determined by the funding policy are compared to the statutory contribution rates as a measure of adequacy, and the contribution rates for both employers and members are updated from time to time, as necessary, to ensure proper funding of the System.
2. Actual employer contributions made during the fiscal year ending June 30, 2021, were \$22.3 million, or 60.7% of the actuarially determined contribution of \$36.7 million. In the prior fiscal year, actual employer contributions were \$20.7 million, or 91.4% of the actuarially determined contribution of \$22.6 million. Each year that actual employer contributions are less than the actuarially determined amounts generates contribution losses that must be funded by additional contributions in the future.
3. The funded percentage (the ratio of the actuarial value of assets to actuarial accrued liability determined under the Entry Age Normal cost method) is 77.9%, compared to the prior year's funded percentage of 75.8%. 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 86.2%, compared to 73.7% as of the prior valuation date. These measurements are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the System's benefit obligation or the need for or the amount of future contributions.
4. The actuarially determined contribution for the upcoming year is \$39.5 million. The contribution as a percentage of payroll increased from 10.67% of payroll to 11.31% of payroll. The actuarially determined contribution is equal to the System's employer normal cost, plus the amount necessary to amortize the unfunded actuarial accrued liability as of June 30, 2021, over a period ending on June 30, 2038, assuming that the amortization period will remain closed and that the amortization payment will increase annually at the rate of 3% over the preceding year.
5. The average funding policy contribution rate for the fiscal year ending June 30, 2023, is 6.92%. Compared to the actuarially determined contribution rate of 11.31%, there is a contribution rate shortfall of 4.39% in aggregate. Each group has a contribution deficiency. At the November 17, 2020 Board meeting, the Board voted unanimously to authorize employer contribution rate increases of 0.50% each year for a period of four years, beginning July 1, 2022, to be offset by any increases in the employee contribution rates as negotiated with employee groups and approved by the Legislature. For this valuation report,

Section 1: Actuarial Valuation Summary

the entire contribution increase is assumed to be an increase in employer contribution rates for illustrative purposes. If the remaining three 0.50% contribution rate increases were applied immediately, the contribution rate shortfall for fiscal year ending 2023 would effectively reduce from 4.39% to 2.89%. Details can be found in *Section 2, Actuarially determined contribution*.

6. The rate of return on the market value of assets was 25.07% for the July 1, 2020, to June 30, 2021, plan year. The return on the actuarial value of assets was 9.87% 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.
7. The actuarial value of assets is 90.40% of the market value of assets, compared to the prior year where the actuarial value of assets was 102.90% 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 actuarially-determined cost of the System is likely to decrease unless the net gain is offset by future experience. The recognition of the deferred market gains of \$88.9 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 11.31% to about 9.24% of payroll.
8. The actuarial gain from investment experience is \$21.9 million.
9. The net experience loss from sources other than investment experience was approximately \$6.5 million, or 0.6% of the actuarial accrued liability. Of this \$6.5 million loss, \$4.3 million is due to the higher-than-expected actual 2022 COLA. The remaining \$2.2 million loss is less than one-fifth of the non-COLA related loss of \$12.8 million from the prior year. Additional detail regarding this loss is shown in *Section 2, Other experience*.
10. 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.
11. 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.
12. Since the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions. We have included a discussion of various risks that may affect the System in *Section 2, Risk*.

Section 1: Actuarial Valuation Summary

Summary of key valuation results

		2021	2020
Contributions for plan year beginning July 1:	• Funding policy contribution rate	6.42%	6.14%
	• Actuarially determined employer contributions as a percent of payroll	11.31%	10.67%
	• Contribution rate excess/(shortfall)	-4.89%	-4.53%
Actuarial cost method measures for plan year beginning July 1:	• Unfunded liability to be amortized through June 30, 2038	\$237,072,174	\$243,054,058
	• Normal contribution rates for plan year beginning July 1		
	– Employee normal contribution rate	6.294%	5.994%
	– Employer normal contribution rate	5.798%	5.168%
	– Total normal contribution rate	12.092%	11.162%
Actuarial accrued liability (EAN) for plan year beginning July 1:	• Total actuarial accrued liability	\$1,074,167,813	\$1,004,560,034
	• Employer normal cost dollars	20,222,287	17,785,062
	• Employer normal cost rate	5.798%	5.168%
Assets for plan year beginning July 1:	• Market value of assets (MVA)	\$926,034,330	\$740,052,895
	• Actuarial value of assets (AVA)	837,095,639	761,505,976
	• Actuarial value of assets as a percentage of market value of assets	90.40%	102.90%
Funded status (EAN) for plan year beginning July 1:	• Unfunded actuarial accrued liability based on MVA	\$148,133,483	\$264,507,139
	• Funded percentage on MVA basis	86.21%	73.67%
	• Unfunded actuarial accrued liability based on AVA	\$237,072,174	\$243,054,058
	• Funded percentage on AVA basis	77.93%	75.80%
	• 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	3,938	3,693
	• Number of deferred members as reported by the System	998	927
	• Number of inactive members as reported by the System	3,343	2,941
	• Number of active members	7,879	7,987
	• Total payroll	\$331,960,355	\$327,491,743
	• Average payroll	42,132	41,003
	• Total monthly benefits for all retired members and beneficiaries	3,544,190	3,227,813
	• Average monthly benefit for all retired members and beneficiaries	900	874

Section 1: Actuarial Valuation Summary

Summary of key June 30, 2021, valuation results by group

		Group A	Group B	Group C	Group D	Total
Contributions:	• Current funding policy rate*	4.750%	6.250%	8.000%	10.600%	6.422%
	• Actuarially determined rate	7.353%	11.330%	14.867%	17.494%	11.311%
	• Excess/(shortfall)	-2.603%	-5.080%	-6.867%	-6.894%	-4.889%
Actuarial cost method measures:	• Unfunded actuarial accrued liability	\$30,476,829	\$117,940,527	\$65,554,862	\$23,099,956	\$237,072,174
	• Normal contribution rates					
	– Employee rate	3.250%	5.625%	10.750%	12.100%	6.294%
	– Employer rate	4.437%	6.129%	6.300%	7.096%	5.798%
	– Total rate	7.687%	11.754%	17.050%	19.196%	12.092%
Actuarial accrued liability:	• Total actuarial accrued liability	\$207,173,410	\$545,278,745	\$246,966,357	\$74,749,301	\$1,074,167,813
	• Employer normal cost dollars	3,761,430	11,272,184	3,910,076	1,278,597	20,222,287
	• Employer normal cost rate	4.437%	6.129%	6.300%	7.096%	5.798%
Assets:	• Market value of assets (MVA)	\$195,470,018	\$472,741,515	\$200,685,877	\$57,136,920	\$926,034,330
	• Actuarial value of assets (AVA)	176,696,581	427,338,218	181,411,495	51,649,345	837,095,639
Funded status:	• Unfunded liability on MVA basis	\$11,703,392	\$72,537,230	\$46,280,480	\$17,612,381	\$148,133,483
	• Funded percentage on MVA basis	94.35%	86.70%	81.26%	76.44%	86.21%
	• Unfunded liability on AVA basis	\$30,476,829	\$117,940,527	\$65,554,862	\$23,099,956	\$237,072,174
	• Funded percentage on AVA basis	85.29%	78.37%	73.46%	69.10%	77.93%
Demographic data:	• Retired members and beneficiaries	1,467	1,915	479	77	3,938
	• Deferred members as reported by the System	564	383	44	7	998
	• Inactive members as reported by the System	1,443	1,689	160	51	3,343
	• Active members	2,524	4,185	927	243	7,879
	• Total payroll	\$80,653,220	\$175,049,121	\$59,086,585	\$17,171,428	\$331,960,355
	• Average payroll	31,955	41,828	63,740	70,664	42,132

* Current funding policy rates are as of July 1, 2021.

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.
Membership 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

Year Ended 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	6,606	623	1,991	2,614	0.40
2013	6,577	652	2,146	2,798	0.43
2014	6,664	692	2,359	3,051	0.46
2015	6,685	837	2,539	3,376	0.51
2016	6,966	811	2,734	3,545	0.51
2017	7,302	797	2,942	3,739	0.51
2018	7,452	798	3,189	3,987	0.54
2019	7,630	896	3,415	4,311	0.57
2020	7,987	927	3,693	4,620	0.58
2021	7,879	998	3,938	4,936	0.63

* Excludes inactive members as reported by the System

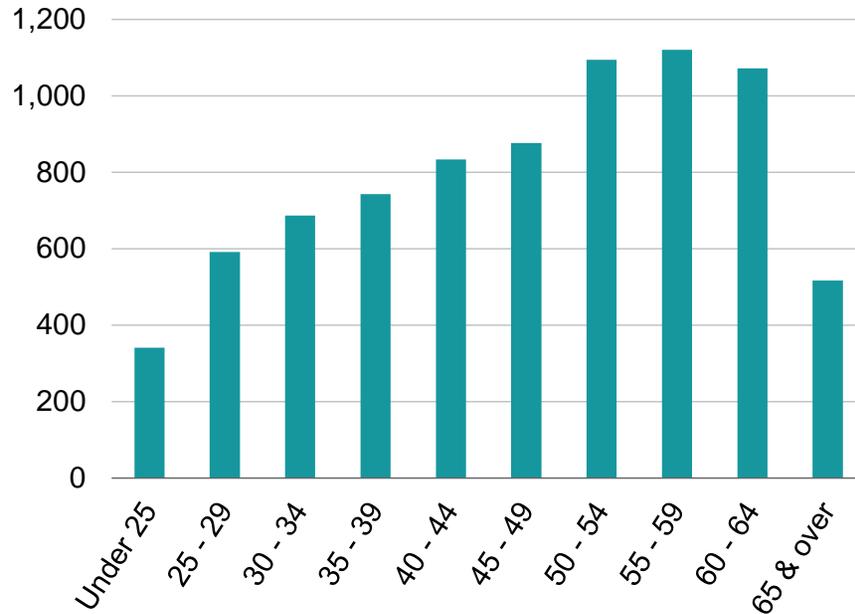
Section 2: Actuarial Valuation Results

Active members

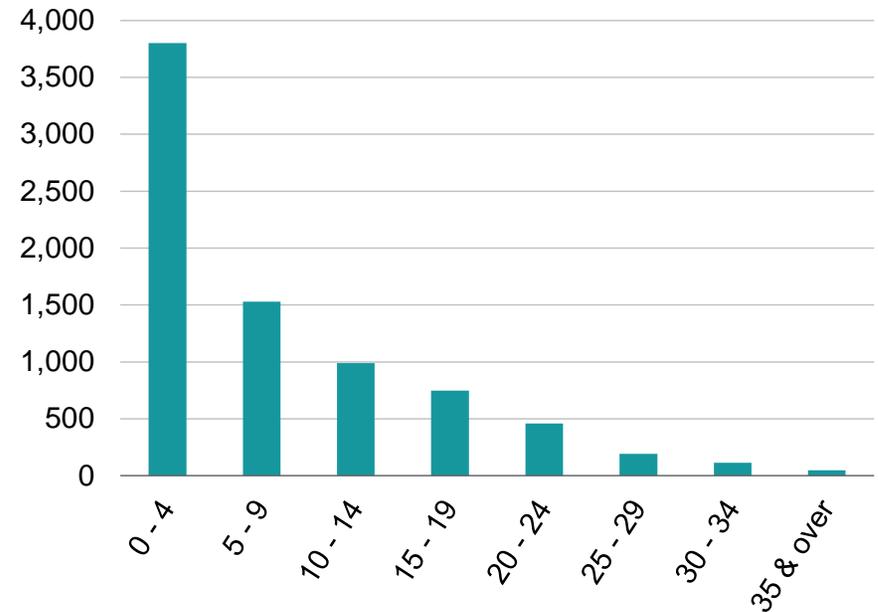
Plan costs are affected by the age, years of creditable service and payroll of active members. In this year's valuation, there were 7,879 active members with an average age of 47.7, average years of creditable service of 8.4 years, and average payroll of \$42,132. The 7,987 active members in the prior valuation had an average age of 47.9, average service of 8.3 years and average payroll of \$41,003.

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 3,343 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 998 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

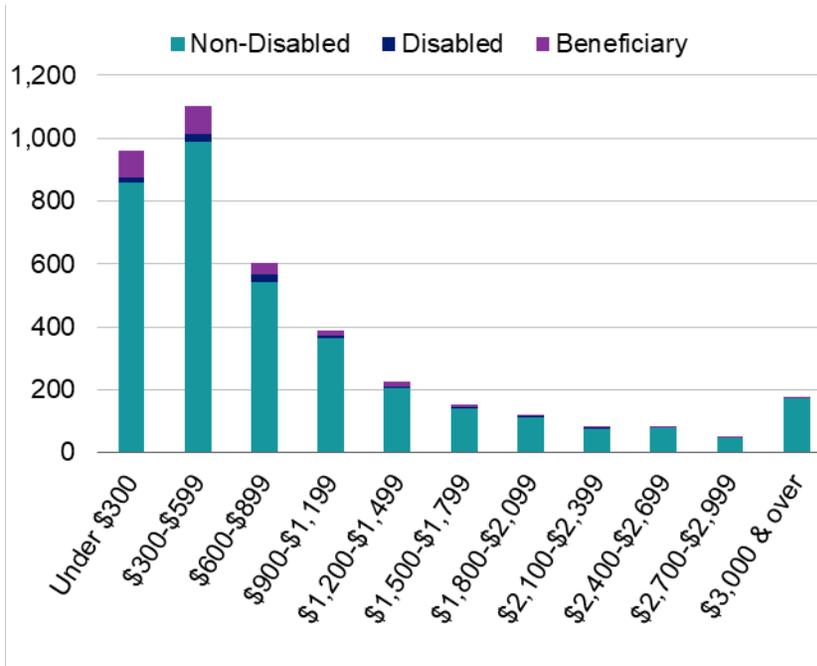
Retired members and beneficiaries

As of June 30, 2021, 3,670, retired members (including disability retirees) and 268 beneficiaries were receiving total monthly benefits of \$3,544,190. For comparison, in the previous valuation, there were 3,435 retired members and 258 beneficiaries receiving monthly benefits of \$3,227,813.

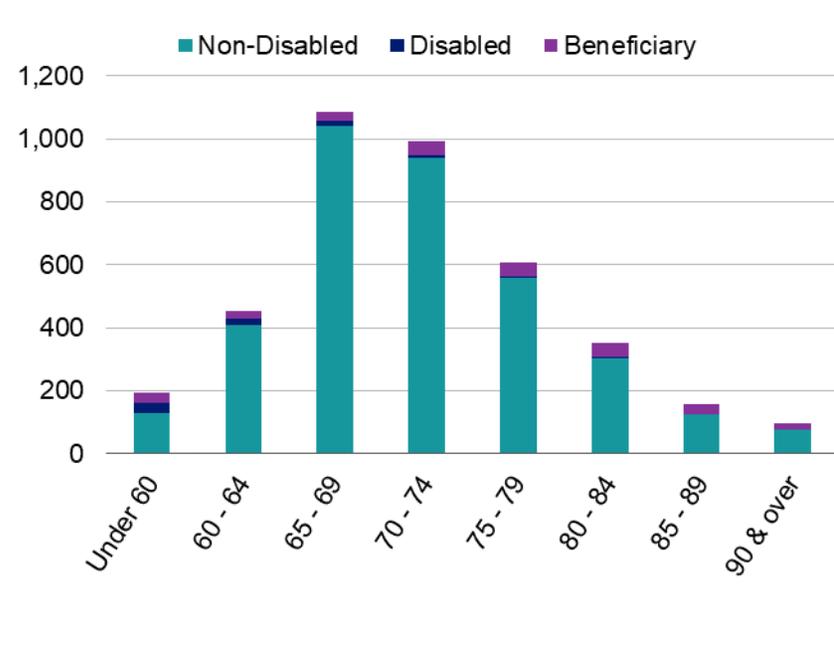
As of June 30, 2021, the average monthly benefit for retired members and beneficiaries is \$900, compared to \$874 in the previous valuation. The average age for retired members and beneficiaries is 71.9 in the current valuation, compared with 71.6 in the prior valuation.

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.

Membership Data Statistics: 2012 – 2021

As of July 1	Active Members			Retired Members*		
	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2012	6,606	48.5	8.9	1,826	--	\$634
2013	6,577	48.8	9.1	1,982	--	659
2014	6,664	48.9	9.1	2,177	71.2	693
2015	6,685	48.7	9.1	2,329	71.3	718
2016	6,966	48.5	9.0	2,523	71.4	738
2017	7,302	48.4	8.8	2,731	71.4	773
2018	7,452	48.3	8.6	2,962	71.3	828
2019	7,630	48.0	8.5	3,173	71.4	855
2020	7,987	47.9	8.3	3,435	71.6	891
2021	7,879	47.7	8.4	3,670	71.8	916

* Not including beneficiaries.

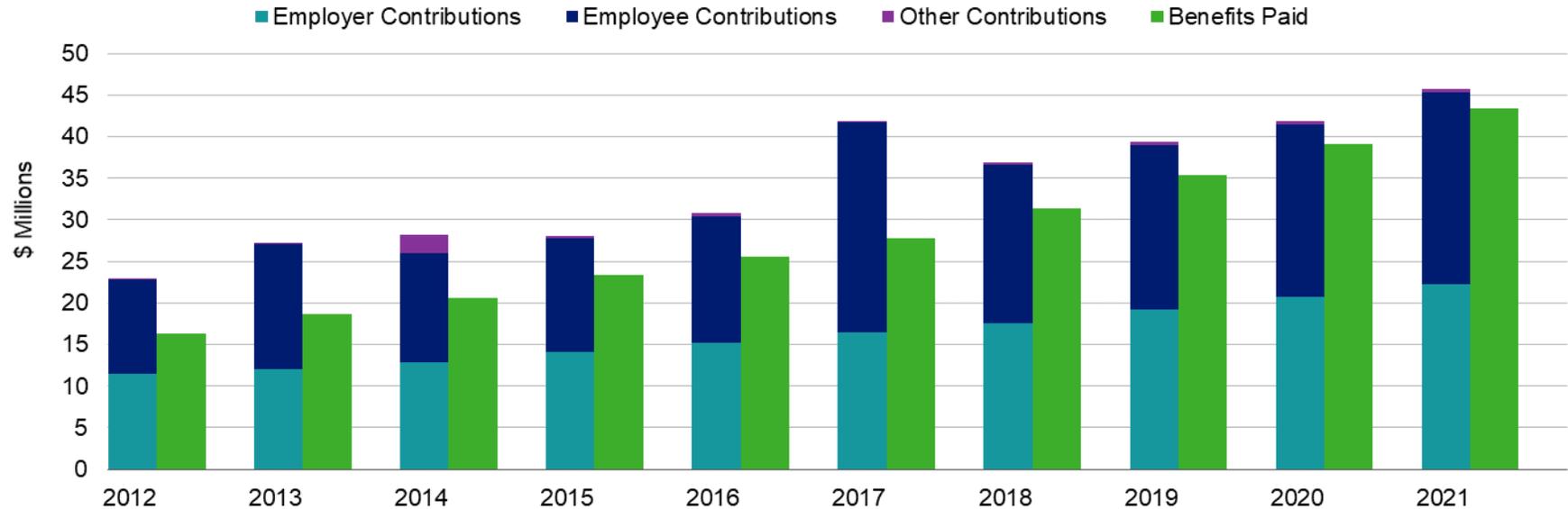
Section 2: Actuarial Valuation Results

Financial information

Retirement plan funding anticipates that, over the long term, both contributions and investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components. Employer and member contributions have exceeded benefits for the most recent period shown. Benefits were 0.9 times employer and member contributions.

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

Comparison of Contributions to Benefits Paid
for Years Ended June 30, 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 fluctuation is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The asset method provides a degree of conservatism to increase the likelihood that benefits are funded. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

Determination of Actuarial Value of Assets for Year Ended June 30, 2021

1	Market value of assets, June 30, 2021				\$926,034,330
2	Calculation of unrecognized return	Original Amount*	Percent Deferred	Unrecognized Amount**	
	(a) Year ended June 30, 2021	\$133,751,919	80%	\$107,001,535	
	(b) Year ended June 30, 2020	-23,172,070	60%	-13,903,242	
	(c) Year ended June 30, 2019	-9,847,339	40%	-3,938,936	
	(d) Year ended June 30, 2018	-1,103,330	20%	-220,666	
	(e) Year ended June 30, 2017	17,171,553	0%	0	
	(f) Total unrecognized return			\$88,938,691	
3	Preliminary actuarial value: 1 – 2f				\$837,095,639
4	Adjustment to be within 20% corridor				0
5	Final actuarial value of assets as of June 30, 2021: 3 + 4				\$837,095,639
6	Actuarial value as a percentage of market value: 5 ÷ 1				90.40%
7	Amount deferred for future recognition: 1 – 5				\$88,938,691

* Total return minus expected return on a market value basis

** Recognition at 20% per year over five years

Section 2: Actuarial Valuation Results

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

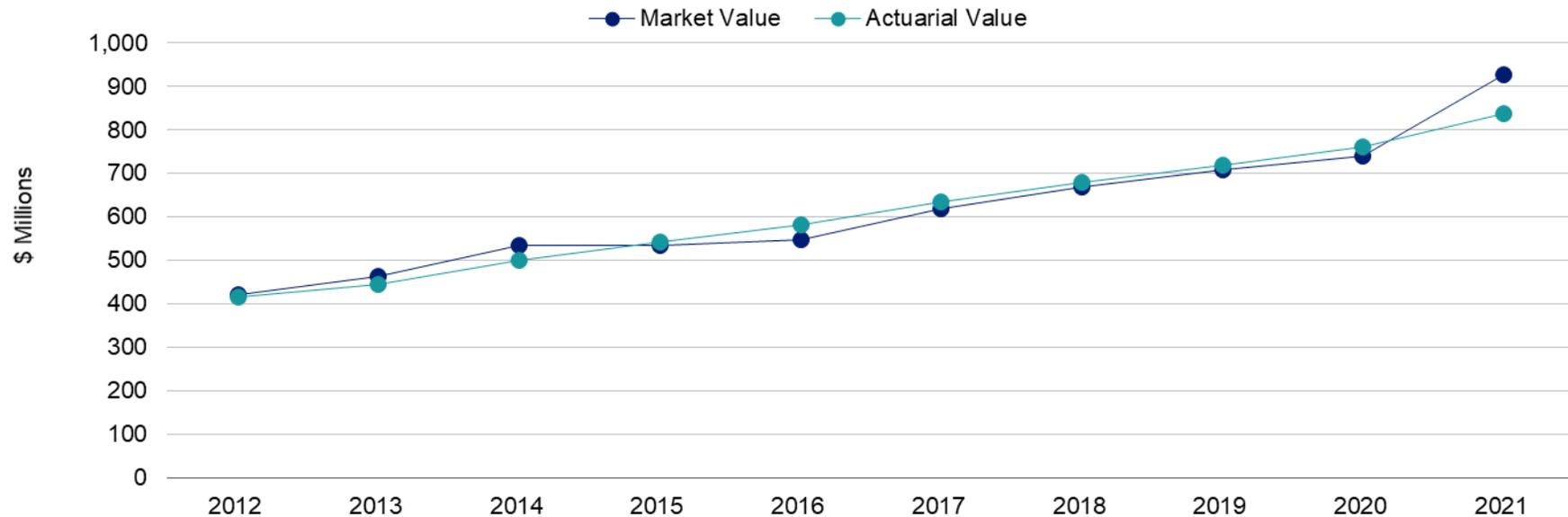
Allocation of Actuarial Value of Assets as of June 30, 2021

	Group A	Group B	Group C	Group D	Total
Valuation assets as of July 1, 2020:	\$164,377,125	\$388,125,592	\$164,281,879	\$44,721,380	\$761,505,976
Contributions:	6,682,745	22,802,268	11,749,254	4,137,705	45,371,972
Income:	16,077,127	38,339,095	16,245,197	4,516,830	75,178,249
Benefit payments:	-9,174,117	-21,026,147	-10,644,618	-1,921,896	-42,766,778
Expenses:	-424,930	-1,003,339	-424,684	-115,609	-1,968,562
Net transfers:	-48,615	-114,789	-48,587	-13,227	-225,218
Surplus reallocation for transferring members:	-792,754	215,538	253,054	324,162	0
Valuation assets as of June 30, 2021:	\$176,696,581	\$427,338,218	\$181,411,495	\$51,649,345	\$837,095,639

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 gain is \$15,394,131, which includes \$21,858,431 from investment gains offset by \$6,464,300 in losses from all other sources. The net experience variation from individual sources other than investments was 0.6% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

Actuarial Experience for Year Ended June 30, 2021

1	Net gain from investments*	\$21,858,431
2	Net loss from other experience	-6,464,300
3	Net experience gain: 1 + 2	\$15,394,131

* 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 25.07% 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 9.87%. 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	\$185,570,021	\$75,178,249
2	Average value of assets	740,258,602	761,711,683
3	Rate of return: 1 ÷ 2	25.07%	9.87%
4	Assumed rate of return	7.00%	7.00%
5	Expected investment income: 2 x 4	\$51,818,102	\$53,319,818
6	Actuarial gain/(loss): 1 – 5	\$133,751,919	\$21,858,431

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

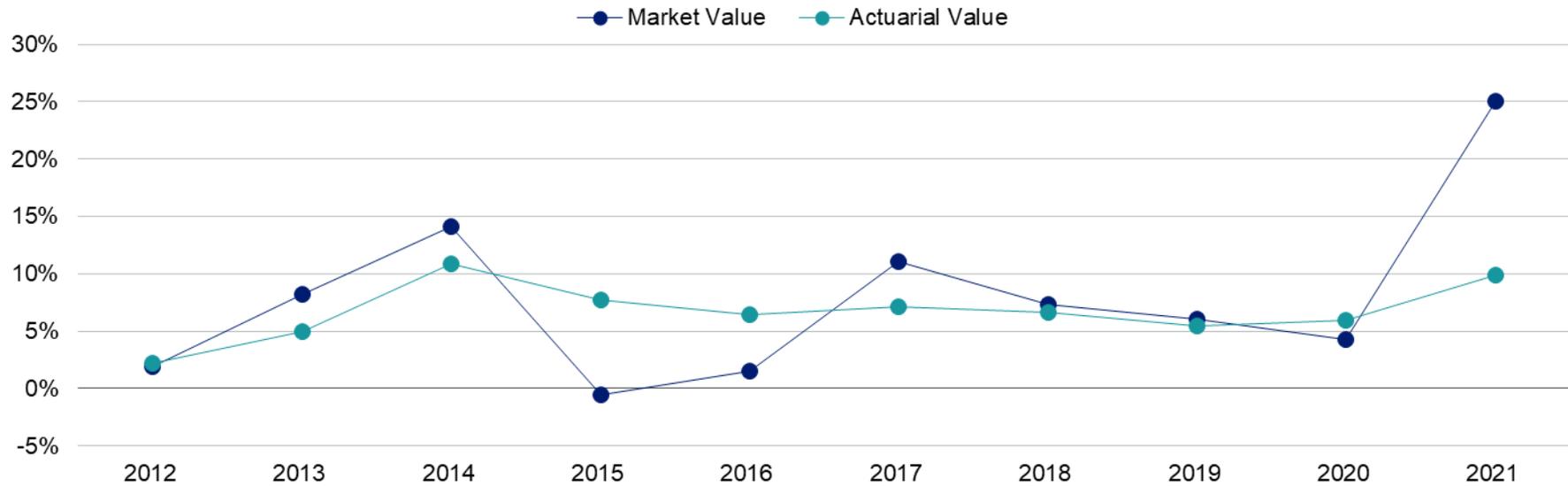
Year Ended June 30	Actuarial Value Investment Return		Market Value Investment Return		Year Ended June 30	Actuarial Value Investment Return		Market Value Investment Return			
	Amount	Percent	Amount	Percent		Amount	Percent	Amount	Percent		
2002	\$11,545,636	6.42%	-\$3,094,678	-1.78%	2012	\$8,922,492	2.20%	\$7,667,705	1.87%		
2003	7,138,256	3.49	2,449,864	1.33	2013	20,983,866	4.98	34,837,755	8.21		
2004	2,420,328	1.07	27,853,903	13.84	2014	48,812,262	10.87	65,829,312	14.13		
2005	18,398,538	7.77	17,789,133	7.51	2015	38,990,631	7.76	-2,841,341	-0.53		
2006	22,173,822	8.44	27,735,589	10.59	2016	33,518,944	6.14	6,787,237	1.26		
2007	29,551,551	10.11	46,635,359	15.69	2017	41,695,777	7.10	61,111,748	11.06		
2008	24,090,810	7.41	-19,625,280	-5.65	2018	42,443,698	6.67	45,467,607	7.32		
2009	-25,653,211	-7.27	-59,207,777	-17.88	2019	37,005,996	5.44	40,291,049	6.03		
2010	36,633,414	10.92	47,603,471	16.99	2020	42,639,610	5.93	30,057,718	4.24		
2011	18,319,813	4.82	66,935,648	19.93	2021	75,178,249	9.87	185,570,021	25.07		
							Most recent five-year average return		7.06%		11.01%
							Most recent ten-year average return		6.83%		8.38%
							Most recent 15-year average return		6.40%		7.68%
							Most recent 20-year average return		6.29%		7.57%

Note: Each year's yield is weighted by the average asset value in that year.
2004 includes restart of AVA method (reset to MVA).

Section 2: Actuarial Valuation Results

As described earlier in this section, 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.

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.

Contributions

Contributions for the year ended June 30, 2021, totaled \$45,737,194 compared to the projected amount of \$57,351,923. This resulted in a loss of \$12,021,244 for the year, with interest.

Other experience

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

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

The net loss from this other experience for the year ended June 30, 2021, amounted to \$6,464,300.

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

Net turnover	-\$1,910,229
Retirement	-2,674,401
Mortality	515,840
Disability requirements	-192,529
Salary and service increases for continuing actives	1,670,345
COLA experience*	-4,281,130
Miscellaneous	407,804
Total	-\$6,464,300

* COLA experience loss is due to actual 2022 COLAs being greater than expected (2.00% actual vs. 1.10% expected for Group A members, 2.30% actual vs. 1.20% expected for Group B, C, and D members).

Section 2: Actuarial Valuation Results

Change in the actuarial accrued liability

The actuarial accrued liability under the Entry Age Normal cost method as of June 30, 2021, is \$1,074,167,813, an increase of \$69,607,779, or 6.93%, 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

At the November 17, 2020 Board meeting, the Board voted unanimously to authorize employer contribution rate increases of 0.50% each year for a period of four years, beginning July 1, 2022, to be offset by any increases in the employee contribution rates as negotiated with employee groups and approved by the Legislature. For this valuation report, the entire contribution increase is assumed to be an increase in employer contribution rates for illustrative purposes. 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 Based on Current Funding Method

1	Unfunded actuarial accrued liability at beginning of year		\$243,054,058
2	Normal cost at beginning of year		37,136,878
3	Total contributions		-45,737,194
4	Interest		
	• For whole year on 1 + 2	\$19,613,365	
	• For half year on 3	<u>-1,600,802</u>	
	Total interest		<u>18,012,563</u>
5	Expected unfunded actuarial accrued liability		\$252,466,305
6	Changes due to:		
	• (Gain)/loss	-\$15,394,131	
	• Assumptions	0	
	• Funding method	0	
	• Plan provisions	<u>0</u>	
	Total changes		<u>-15,394,131</u>
7	Unfunded actuarial accrued liability at end of year		\$237,072,174

Section 2: Actuarial Valuation Results

Actuarially determined contribution

The actuarially determined contribution is equal to the employer normal cost payment and a payment on the unfunded actuarial accrued liability. As of July 1, 2021, the actuarially determined contribution is \$39,451,313, or 11.311% of payroll.

The statute governing the System specifies the funding policy used to calculate the actuarially determined contribution based on a closed amortization period ending on June 30, 2038, assuming that the amortization amount will increase annually at the rate of 3% over the preceding year. As of July 1, 2021, there are 17 years remaining on this schedule.

The contribution requirement as of July 1, 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, actuarial gains and losses, and changes in the actuarial assumptions.

Actuarially Determined Contribution Requirement

	Year Beginning July 1			
	2021		2020	
	Amount	% of Payroll	Amount	% of Payroll
1 Total normal cost, adjusted for timing*	\$40,780,988	11.692%	\$38,414,685	11.162%
2 Administrative expenses	1,395,177	0.400%	N/A	N/A
3 Expected employee contributions	<u>-21,953,878</u>	<u>-6.294%</u>	<u>-20,629,623</u>	<u>-5.994%</u>
4 Employer normal cost: 1 + 2 + 3	\$20,222,287	5.798%	\$17,785,062	5.168%
5 Actuarial accrued liability	1,074,167,813		1,004,560,034	
6 Actuarial value of assets	<u>837,095,639</u>		<u>761,505,976</u>	
7 Unfunded actuarial accrued liability: 5 – 6	\$237,072,174		\$243,054,058	
8 Payment on unfunded actuarial accrued liability, adjusted for timing*	\$19,229,026	5.513%	\$18,937,239	5.503%
9 Actuarially determined contribution requirement: 4 + 8	\$39,451,313	11.311%	\$36,722,301	10.671%
10 Projected payroll	\$348,794,207		\$344,147,789	

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

Section 2: Actuarial Valuation Results

Actuarially determined contribution by group

The following table shows a comparison of the Actuarially Determined Contribution to the current funding policy rates, by group.

Actuarially Determined Contribution by Group
for Fiscal Year Ending June 30, 2023

		Group A	Group B	Group C	Group D	Total
1	Normal contributions					
	a. Member	3.250%	5.625%	10.750%	12.100%	6.294%
	b. Employer	<u>4.437%</u>	<u>6.129%</u>	<u>6.300%</u>	<u>7.096%</u>	<u>5.798%</u>
	c. Total	7.687%	11.754%	17.050%	19.196%	12.092%
2	Payment on unfunded liability through June 30, 2038	2.916%	5.201%	8.567%	10.398%	5.513%
3	Actuarially determined contribution rate: 1b + 2	7.353%	11.330%	14.867%	17.494%	11.311%
4	Current funding policy contribution rate	5.250%	6.750%	8.500%	11.100%	6.922%
5	Contribution excess/(shortfall): 4 – 3	-2.103%	-4.580%	-6.367%	-6.394%	-4.389%

We recommend that the Board set future contribution rates to ultimately target the rates specified in item 3 in the table above. At the November 17, 2020 Board meeting, the Board voted unanimously to authorize employer contribution rate increases of 0.50% each year for a period of four years, beginning July 1, 2022, to be offset by any increases in the employee contribution rates as negotiated with employee groups and approved by the Legislature. For this valuation report, the entire contribution increase is assumed to be an increase in employer contribution rates for illustrative purposes.

The difference between the current funding policy rate and the actuarially determined contribution rate is a shortfall of 4.389% of payroll in the aggregate. If the remaining three 0.50% contribution rate increases were applied immediately, the contribution shortfall would effectively reduce to 2.889%. Projected payroll for fiscal 2022 is \$348,794,207.

Section 2: Actuarial Valuation Results

Amortization schedule for unfunded actuarial accrued liability

A schedule of projected future unfunded actuarial accrued liability amortization payments, which, if made, would amortize the unfunded actuarial accrued liability by 2038, is shown below. Because the current funding policy rates are lower than the actuarially determined contribution rates, we have projected the funded percentage based on the funding policy rates. As shown below, the funded percentage increases through 2038, where the projected funded percentage is 81.94%.

As of July 1	Balance	Amortization Payment (Year Following)	Projected Funded Percentage if Contributions are Based on Current Contribution Rates*
2021	\$237,072,174	\$19,229,026	77.93%
2022	233,776,567	19,805,897	77.98%
2023	229,653,548	20,400,074	78.06%
2024	224,627,296	21,012,076	78.25%
2025	218,616,147	21,642,438	78.55%
2026	211,532,165	22,291,711	78.94%
2027	203,280,692	22,960,462	79.29%
2028	193,759,853	23,649,276	79.61%
2029	182,860,041	24,358,755	79.91%
2030	170,463,352	25,089,517	80.17%
2031	156,442,988	25,842,203	80.41%
2032	140,662,615	26,617,469	80.64%
2033	122,975,674	27,415,993	80.87%
2034	103,224,648	28,238,473	81.09%
2035	81,240,270	29,085,627	81.30%
2036	56,840,682	29,958,196	81.51%
2037	29,830,531	30,856,942	81.72%
2038	0	0	81.94%

* At the November 17, 2020 Board meeting, the Board voted unanimously to authorize employer contribution rate increases of 0.50% each year for a period of four years, beginning July 1, 2022, to be offset by any increases in the employee contribution rates as negotiated with employee groups and approved by the Legislature. The funded percentages shown in the table above assume that the Actuarial Value of Assets earns 7% per year in each future year and do not reflect the \$88.9 million of deferred net investment gains as of the June 30, 2021, valuation date. For comparison, the projected funded percentage in 2038 based on the Market Value of Assets is 93.37%.

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	\$10,704,263	4.74%	\$12,014,186	5.32%	112.24%
2014	11,638,928	5.03%	12,805,737	5.53%	110.03%
2015	11,956,121	4.93%	14,136,067	5.83%	118.23%
2016**	15,235,742	N/A	15,235,742	N/A	100.00%
2017	12,895,672	4.64%	16,481,881	5.93%	127.81%
2018	15,066,601	5.22%	17,519,690	6.07%	116.28%
2019	17,263,214	5.67%	19,202,981	6.31%	111.24%
2020	22,618,468	7.04%	20,680,856	6.44%	91.43%
2021	36,722,301	10.67%	22,297,570	6.48%	60.72%
2022	39,451,313	11.31%	--	--	--

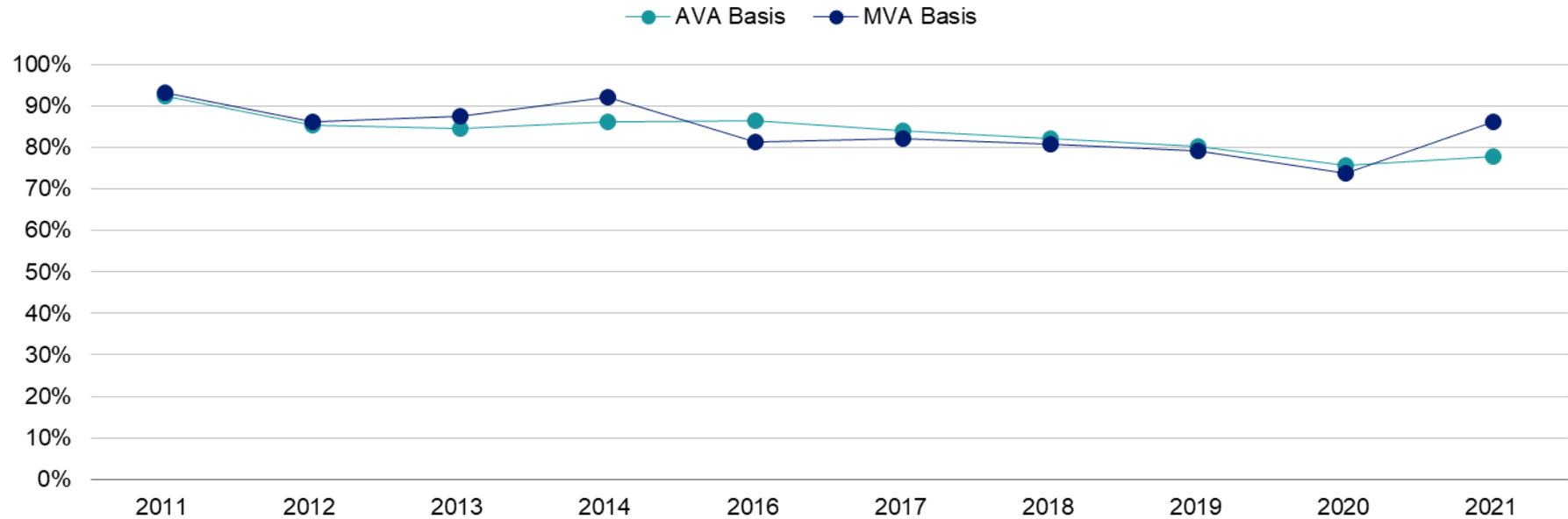
* Based on expected payroll

** While no formal actuarial valuation was produced for the fiscal year ended June 30, 2015, contribution rates for the year were developed by the actuary.

Section 2: Actuarial Valuation Results

History of funded percentage

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



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

Section 2: Actuarial Valuation Results

Actuarial balance sheet

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

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

Actuarial Balance Sheet

	Year Ended	
	June 30, 2021	June 30, 2020
Liabilities		
• Present value of benefits for retired members and beneficiaries	\$478,948,467	\$430,438,971
• Present value of benefits for inactive former members	71,470,807	61,307,603
• Present value of benefits for active members	<u>805,956,487</u>	<u>786,037,445</u>
Total liabilities	\$1,356,375,761	\$1,277,784,019
Assets		
• Total valuation value of assets	\$837,095,639	\$761,505,976
• Present value of future contributions by members	171,776,008	168,313,278
• Present value of future employer contributions* for:		
• Entry age cost/employer normal contributions	110,431,940	104,910,707
• Unfunded actuarial accrued liability	<u>237,072,174</u>	<u>243,054,058</u>
Total of current and future assets	\$1,356,375,761	\$1,277,784,019

*Based on actuarially determined contribution rates, not the current contribution rates

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 VMERS because:

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

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

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

If the prior year's investment performance resulted in a market value of assets that is 10% different than the current value, it would result in a change of \$92.6 million in the asset value. A 10% increase in assets would cause the unfunded actuarial accrued liability using the market value of assets to decrease from \$148.1 million to \$55.5 million. Likewise, a 10% decrease in the asset value would cause the unfunded actuarial accrued liability to increase from \$148.1 million to \$240.7 million.

Since the System's assets are much larger than contributions, investment performance may create volatility in the actuarially determined contribution requirements. For example, for each 1% difference in actual return, the actuarially determined contribution would increase or decrease by 0.21% of payroll, disregarding the effects of the five-year phase-in of investment gains and losses.

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

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 VMERS, a 3% liability increase would result in an increase in the unfunded accrued liability of \$32.2 million. The unfunded accrued liability (market value of assets basis) would increase from \$148.1 million to \$180.3 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 \$14.0 million to a gain of \$21.9 million.
 - The non-investment gain(loss) for a year has ranged from a loss of \$17.3 million to a gain of \$7.2 million.
- The funded percentage on the actuarial value of assets has ranged from a low of 75.8% to a high of 92.3% over the past ten years.

Section 2: Actuarial Valuation Results

- **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 0.40 to a high of 0.63. Currently the System has a non-active to active member ratio of 0.63.
- As of June 30, 2021, the retired life actuarial accrued liability represents 45% of the total actuarial accrued liability. In addition, the actuarial accrued liability for inactive vested members represents 3% of the total. The higher the non-active actuarial accrued liability is as a percent of the total liability, the greater the danger of volatility in results.

For the prior year, benefits paid were \$2.4 million less than contributions received, or 0.3% of the market value of assets. As the System matures and benefits paid exceed contributions received, cash will be needed from the investment portfolio to meet benefit payments.

Supplemental Information

Exhibit A: Table of Plan Coverage

Category	As of June 30		Change From Prior Year
	2021	2020	
Active members in valuation:			
• Number	7,879	7,987	-1.4%
• Average age	47.7	47.9	-0.2
• Average years of service	8.4	8.3	0.1
• Total payroll	\$331,960,355	\$327,491,743	1.4%
• Average payroll	42,132	41,003	2.8%
• Total active vested members	4,079	4,097	-0.4%
Inactive members			
• Number of deferreds as reported by the System	998	927	7.7%
• Number of inactives as reported by the System	3,343	2,941	13.7%
Retired members:			
• Number in pay status	3,587	3,358	6.8%
• Average age	72.0	71.8	0.2
• Average monthly benefit	\$920	\$894	2.9%
Disability Retirees:			
• Number in pay status	83	77	7.8%
• Average age	62.7	62.9	-0.2
• Average monthly benefit	\$765	\$729	4.9%
Beneficiaries:			
• Number in pay status	268	258	3.9%
• Average age	73.2	72.5	0.7
• Average monthly benefit	\$675	\$651	3.7%

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	7,987	927	2,941	77	3,358	258	15,548
• New members	1,010	N/A	230	0	8	0	1,248
• Inactives as reported by the System	-910	N/A	910	N/A	N/A	N/A	0
• Deferreds as reported by the System	N/A	128	-128	N/A	N/A	N/A	0
• Retirements	-234	-36	-27	0	297	N/A	0
• New disabilities	-6	0	-2	8	N/A	N/A	0
• Return to work from disability	0	N/A	N/A	0	N/A	N/A	0
• Died with beneficiary	-1	0	0	0	-18	19	0
• Died without beneficiary	-8	-2	-2	-3	-42	-10	-67
• Refunds of contributions	-85	-10	-463	-1	-13	0	-572
• Rehire	126	-9	-117	N/A	0	N/A	0
• Certain period expired	N/A	N/A	0	0	0	-1	-1
• Data adjustments	0	0	1	2	-3	2	2
Number as of July 1, 2021	7,879	998	3,343	83	3,587	268	16,158

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	\$740,052,895	\$709,465,831
Contribution income:		
• Employer contributions	\$22,297,570	\$20,680,856
• Member contributions	23,074,402	20,771,304
• Less administrative expenses	<u>-1,248,638</u>	<u>-1,354,418</u>
<i>Net contribution income</i>	<i>\$44,123,334</i>	<i>\$40,097,742</i>
Other income	\$365,222	\$459,660
Investment income:		
• Interest, dividends and other income	\$6,831,731	\$6,885,163
• Asset appreciation	178,738,290	23,172,555
• Less investment fees	<u>-719,924</u>	<u>-943,932</u>
<i>Net investment income</i>	<i>\$184,850,097</i>	<i>\$29,113,786</i>
Total income available for benefits	\$229,338,653	\$69,671,188
Less benefit payments:		
• Benefits	-\$39,925,945	-\$36,124,010
• Refunds of contributions	-2,384,391	-1,951,540
• Death claims	-456,442	-251,990
• Transfer to other pension trust funds	<u>-590,440</u>	<u>-756,584</u>
<i>Net benefit payments</i>	<i>-\$43,357,218</i>	<i>-\$39,084,124</i>
Change in reserve for future benefits	\$185,981,435	\$30,587,064
Net assets at market value at the end of the year	\$926,034,330	\$740,052,895

Section 3: Supplemental Information

Exhibit D: Summary Statement of Plan Assets

	June 30, 2021	June 30, 2020
Cash equivalents	\$3,845,509	\$12,700,310
Total accounts receivable	16,559,669	27,983,997
Prepaid expenses	42,795	37,718
Capital assets, net of depreciation	333,818	429,066
Investments:		
• Fixed income	\$42,103,731	\$46,768,960
• Equities	93,886,722	55,914,524
• Mutual and commingled funds	632,022,316	528,958,025
• Real estate and venture capital	<u>143,334,152</u>	<u>88,431,147</u>
Total investments at market value	\$911,346,921	\$720,072,656
Total assets	\$932,128,712	\$761,223,747
Total liabilities	-\$6,094,382	-\$21,170,852
Net assets at market value	\$926,034,330	\$740,052,895
Net assets at actuarial value	\$837,095,639	\$761,505,976

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	\$11,117,363	\$11,702,728	\$266,425	\$66,957,781	-\$569,603	-\$14,461,590	\$406,901,556	\$402,550,150	98.93%
2012	11,532,230	11,337,926	118,191	7,661,464	-672,851	-16,338,446	420,540,070	417,443,451	99.26%
2013	12,014,186	15,060,665	170,381	34,838,507	-749,447	-18,687,932	463,186,430	446,235,922	96.34%
2014	12,805,737	13,233,728	2,142,868	64,346,116	-588,022	-20,601,380	534,525,477	500,557,919	93.65%
2015	14,136,067	13,587,975	384,009	-2,358,518	-1,056,094	-23,315,174	535,903,742	543,768,156	101.47%
2016	15,235,742	15,226,948	351,434	6,776,933	-890,802	-25,588,884	547,015,114	581,611,235	106.32%
2017	16,481,881	25,210,413	149,556	59,486,928	-1,030,159	-27,803,390	619,510,342	634,690,493	102.45%
2018	17,519,690	19,166,537	271,783	43,889,050	-1,064,034	-31,444,463	667,848,905	680,005,147	101.82%
2019	19,202,981	19,777,956	450,746	38,740,356	-1,158,070	-35,397,043	709,465,831	718,337,020	101.25%
2020	20,680,856	20,771,304	459,660	29,113,786	-1,354,418	-39,084,124	740,052,895	761,505,976	102.90%
2021	22,297,570	23,074,402	365,222	184,850,097	-1,248,638	-43,357,218	926,034,330	837,095,639	90.40%

* On a market basis, net of investment fees

** Includes "transfers to other pension trust funds"

Section 3: Supplemental Information

Exhibit F: Definition of Pension Terms

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

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.

Section 3: Supplemental Information

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; <u>Retirement rates</u> - the rate or probability of retirement at a given age; <u>Withdrawal rates</u> - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; <u>Salary increase rates</u> - the rates of salary increase due to inflation and productivity growth.
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 Ratio:	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.

Section 3: Supplemental Information

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.
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:	Varying service based rates from 0-10 years of service, then a single rate of 4.50% for all subsequent years.																								
	<table border="1"> <thead> <tr> <th>Service</th> <th>Annual Rate of Salary Increase (%)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>7.00%</td> </tr> <tr> <td>1</td> <td>6.50%</td> </tr> <tr> <td>2</td> <td>5.75%</td> </tr> <tr> <td>3</td> <td>5.25%</td> </tr> <tr> <td>4</td> <td>5.00%</td> </tr> <tr> <td>5</td> <td>4.75%</td> </tr> <tr> <td>6</td> <td>4.75%</td> </tr> <tr> <td>7</td> <td>4.75%</td> </tr> <tr> <td>8</td> <td>4.75%</td> </tr> <tr> <td>9</td> <td>4.75%</td> </tr> <tr> <td>10+</td> <td>4.50%</td> </tr> </tbody> </table>	Service	Annual Rate of Salary Increase (%)	0	7.00%	1	6.50%	2	5.75%	3	5.25%	4	5.00%	5	4.75%	6	4.75%	7	4.75%	8	4.75%	9	4.75%	10+	4.50%
Service	Annual Rate of Salary Increase (%)																								
0	7.00%																								
1	6.50%																								
2	5.75%																								
3	5.25%																								
4	5.00%																								
5	4.75%																								
6	4.75%																								
7	4.75%																								
8	4.75%																								
9	4.75%																								
10+	4.50%																								

Section 4: Actuarial Valuation Basis

Cost-of-Living Adjustments:

Assumed to occur on January 1 following one year of retirement at the rate of 1.10% per annum for Group A members and 1.20% per annum for Groups B, C and D members (beginning at Normal Retirement eligibility age for members who elect reduced early retirement, at age 62 for members of Groups A, B, and D who receive a disability retirement benefit, and at age 55 for members of Group C who receive a disability retirement benefit). The January 1, 2022 COLA is expected to be 2.00% for Group A and 2.30% for Groups B, C, and D.

Mortality Rates:

Pre-retirement:

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

Healthy Post-retirement - Retirees:

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

Healthy Post-retirement - Beneficiaries:

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

Disabled Post-retirement:

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

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

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

Section 4: Actuarial Valuation Basis

Withdrawal from Service before Retirement:

Assumed annual rates of withdrawal are as follows:

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

Section 4: Actuarial Valuation Basis

Disability Incidence:

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

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

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

Retirement Rates:

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

Section 4: Actuarial Valuation Basis

Retirement Rates: *continued*

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

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

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

Section 4: Actuarial Valuation Basis

Retirement Rates: <i>continued</i>	Rates shown are for members with 5 or more years of service (unless otherwise indicated). For members with less than 5 years of service, 0% is assumed.
Inactive Members as Reported by the System:	Not Vested: Valuation liability equals 100% of accumulated contributions. Vested: Valuation liability is based on accrued benefit and members are assumed to retire 10% of the time each year from their Early Retirement Age until their Normal Retirement Age, than 100% of the time at their Normal Retirement age, with a deferred vested benefit.
Deferred Members as Reported by the System:	Assumed to retire 10% of the time each year from their Early Retirement Age until their Normal Retirement Age, than 100% of the time at their Normal Retirement age, with a deferred vested benefit.
Future Administrative Expenses:	0.40% of projected payroll.
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, Members are assumed to be male.
Percent Married:	85% of male members and 50% of female members are assumed to be married.
Age of Spouse:	Females three years younger than males.
Benefit Elections:	<ul style="list-style-type: none"> • Non-Group D All members are assumed to elect the single life annuity option with a refund of contributions guarantee. • Group D Single members are assumed to elect single life annuity. Married members are assumed to elect the 70% joint & survivor option.
Actuarial Value of Assets:	A smoothing method is used, under which the value of assets for actuarial purposes equals market value less a five-year phase-in of the differences between actual and assumed investment return. The value of assets for actuarial purposes may not differ from market value of assets by more than 20%.
Actuarial Cost Method:	Entry Age Actuarial Cost Method. Entry Age is the age at date of employment or, if date is unknown, current age minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary, with Normal Cost determined using the plan of benefits applicable to each member. (Adopted effective June 30, 2020)
Modeling:	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.
Change in Actuarial Assumptions:	Effective July 1, 2021, an administrative expenses assumption equal to 0.40% of projected payroll was established.

Section 4: Actuarial Valuation Basis

Exhibit II: Summary of Plan Provisions

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

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

Section 4: Actuarial Valuation Basis

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

Section 4: Actuarial Valuation Basis

Member Contribution Rates:	<ul style="list-style-type: none">• Group A 3.250% effective July 1, 2021• Group B 5.625% effective July 1, 2021• Group C 10.750% effective July 1, 2021• Group D 12.100% effective July 1, 2021
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Employer Contribution Rates:	<ul style="list-style-type: none">• Group A 4.750% effective July 1, 2021• Group B 6.250% effective July 1, 2021• Group C 8.000% effective July 1, 2021• Group D 10.600% effective July 1, 2021
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At the November 17, 2020 Board meeting, the Board voted unanimously to authorize employer contribution rate increases of 0.50% each year for a period of four years, beginning July 1, 2022, to be offset by any increases in the employee contribution rates as negotiated with employee groups and approved by the Legislature.

Changes in Plan Provisions:	Aside from the future contribution rate increases shown above, there were no other changes in plan provisions since the prior valuation.
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Additional Summary Tables of Member Data

Table 1A: Members in Active Service as of June 30, 2021 by Age, Years of Creditable Service, and Average Payroll – All Employee Groups

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	341	338	3	--	--	--	--	--	--
	\$26,710	\$26,625	\$36,230	--	--	--	--	--	--
25 - 29	594	519	73	2	--	--	--	--	--
	\$35,155	\$32,898	\$50,912	\$45,766	--	--	--	--	--
30 - 34	685	474	170	40	1	--	--	--	--
	\$41,695	\$35,790	\$53,402	\$61,527	\$57,379	--	--	--	--
35 - 39	743	424	206	81	32	--	--	--	--
	\$43,244	\$34,807	\$50,910	\$59,910	\$63,501	--	--	--	--
40 - 44	835	465	182	103	73	12	--	--	--
	\$42,790	\$34,034	\$47,032	\$60,782	\$61,388	\$50,191	--	--	--
45 - 49	878	411	198	126	87	48	7	1	--
	\$45,461	\$36,460	\$46,465	\$54,329	\$60,591	\$64,939	\$62,488	\$58,510	--
50 - 54	1,094	401	212	188	148	85	40	20	--
	\$46,196	\$37,523	\$46,627	\$48,813	\$54,480	\$52,989	\$66,659	\$59,846	--
55 - 59	1,120	336	219	192	164	127	44	26	12
	\$43,112	\$36,334	\$43,980	\$45,719	\$46,260	\$43,951	\$52,298	\$56,081	\$61,676
60 - 64	1,072	279	183	171	172	132	70	42	23
	\$43,214	\$35,075	\$45,121	\$46,890	\$41,417	\$41,537	\$51,105	\$57,796	\$71,858
65 & over	517	154	83	86	71	55	30	24	14
	\$39,622	\$32,132	\$38,138	\$41,423	\$42,688	\$41,554	\$43,513	\$47,174	\$75,347
Total	7,879	3,801	1,529	989	748	459	191	113	49
	\$42,132	\$34,358	\$47,148	\$50,603	\$50,329	\$47,001	\$53,862	\$55,515	\$70,362

Section 5: Additional Summary Tables of Member Data

Table 1B: Members in Active Service as of June 30, 2021 by Age, Years of Creditable Service, and Average Payroll – Group A

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	110	109	1	--	--	--	--	--	--
	\$19,129	\$18,997	\$33,533	--	--	--	--	--	--
25 - 29	174	162	12	--	--	--	--	--	--
	\$26,265	\$25,892	\$31,309	--	--	--	--	--	--
30 - 34	186	148	32	6	--	--	--	--	--
	\$28,016	\$26,368	\$34,810	\$32,432	--	--	--	--	--
35 - 39	240	159	59	17	5	--	--	--	--
	\$29,589	\$27,569	\$33,500	\$37,258	\$21,574	--	--	--	--
40 - 44	259	143	66	27	18	5	--	--	--
	\$32,069	\$28,684	\$36,555	\$38,406	\$31,043	\$39,158	--	--	--
45 - 49	249	126	57	34	18	11	3	--	--
	\$34,069	\$29,917	\$36,241	\$35,722	\$39,404	\$49,496	\$59,890	--	--
50 - 54	344	138	73	51	48	19	8	7	--
	\$34,225	\$32,110	\$36,954	\$32,605	\$35,794	\$35,415	\$33,628	\$45,967	--
55 - 59	384	114	65	67	66	44	13	7	8
	\$35,417	\$31,167	\$37,076	\$37,202	\$34,007	\$36,642	\$45,013	\$37,093	\$55,391
60 - 64	369	102	66	58	64	41	25	12	1
	\$34,016	\$30,151	\$35,291	\$36,536	\$33,217	\$36,102	\$35,673	\$40,154	\$48,505
65 & over	209	61	36	36	23	25	13	10	5
	\$33,261	\$27,452	\$33,443	\$33,025	\$33,505	\$35,931	\$39,636	\$38,556	\$62,892
Total	2,524	1,262	467	296	242	145	62	36	14
	\$31,955	\$27,858	\$35,586	\$35,618	\$34,029	\$37,268	\$39,370	\$40,245	\$57,578

Section 5: Additional Summary Tables of Member Data

Table 1C: Members in Active Service as of June 30, 2021 by Age, Years of Creditable Service, and Average Payroll – Group B

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	175	173	2	--	--	--	--	--	--
	\$25,741	\$25,605	\$37,579	--	--	--	--	--	--
25 - 29	294	250	42	2	--	--	--	--	--
	\$32,184	\$29,247	\$49,019	\$45,766	--	--	--	--	--
30 - 34	338	241	76	20	1	--	--	--	--
	\$39,332	\$35,060	\$46,655	\$62,086	\$57,379	--	--	--	--
35 - 39	344	210	96	26	12	--	--	--	--
	\$41,642	\$36,525	\$49,064	\$50,842	\$51,883	--	--	--	--
40 - 44	438	274	88	42	28	6	--	--	--
	\$41,733	\$34,596	\$47,945	\$61,324	\$59,867	\$54,786	--	--	--
45 - 49	480	243	109	64	38	22	3	1	--
	\$43,409	\$35,828	\$45,596	\$56,766	\$55,709	\$54,964	\$47,541	\$58,510	--
50 - 54	591	223	111	104	65	53	24	11	--
	\$45,205	\$36,164	\$46,258	\$49,184	\$50,416	\$52,673	\$68,331	\$63,024	--
55 - 59	635	200	129	102	80	74	28	18	4
	\$44,670	\$38,555	\$44,469	\$44,773	\$51,712	\$45,222	\$52,921	\$60,506	\$74,243
60 - 64	613	157	101	97	94	82	40	26	16
	\$44,966	\$36,091	\$47,379	\$49,796	\$41,593	\$41,376	\$56,888	\$60,988	\$69,923
65 & over	277	87	41	47	42	26	13	13	8
	\$42,244	\$34,435	\$39,647	\$47,751	\$44,576	\$41,038	\$47,803	\$53,430	\$72,596
Total	4,185	2,058	795	504	360	263	108	69	28
	\$41,828	\$34,248	\$46,366	\$50,834	\$49,081	\$46,144	\$57,049	\$59,727	\$71,304

Section 5: Additional Summary Tables of Member Data

Table 1D: Members in Active Service as of June 30, 2021 by Age, Years of Creditable Service, and Average Payroll – Group C

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	42	42	--	--	--	--	--	--	--
	\$43,999	\$43,999	--	--	--	--	--	--	--
25 - 29	86	71	15	--	--	--	--	--	--
	\$54,792	\$52,157	\$67,263	--	--	--	--	--	--
30 - 34	128	69	50	9	--	--	--	--	--
	\$62,349	\$54,238	\$71,703	\$72,568	--	--	--	--	--
35 - 39	115	43	39	23	10	--	--	--	--
	\$66,989	\$52,620	\$73,542	\$73,745	\$87,689	--	--	--	--
40 - 44	100	41	24	23	11	1	--	--	--
	\$61,497	\$44,411	\$66,472	\$77,434	\$79,523	\$77,786	--	--	--
45 - 49	108	32	29	19	20	7	1	--	--
	\$66,792	\$56,902	\$67,182	\$67,163	\$72,209	\$86,996	\$115,125	--	--
50 - 54	134	37	25	29	29	8	4	2	--
	\$73,169	\$63,220	\$72,589	\$68,998	\$87,829	\$75,638	\$78,944	\$90,943	--
55 - 59	98	22	25	23	15	9	3	1	--
	\$62,174	\$42,919	\$59,410	\$74,724	\$65,215	\$69,241	\$78,054	\$109,356	--
60 - 64	85	19	15	16	13	9	5	2	6
	\$67,641	\$52,370	\$69,580	\$66,810	\$76,682	\$67,756	\$82,001	\$69,831	\$80,913
65 & over	31	6	6	3	6	4	4	1	1
	\$59,083	\$46,318	\$55,997	\$43,049	\$64,668	\$80,050	\$42,172	\$52,020	\$159,638
Total	927	382	228	145	104	38	17	6	7
	\$63,740	\$51,712	\$68,796	\$71,200	\$77,942	\$74,869	\$73,162	\$80,487	\$92,159

Section 5: Additional Summary Tables of Member Data

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

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	14	14	--	--	--	--	--	--	--
	\$46,499	\$46,499	--	--	--	--	--	--	--
25 - 29	40	36	4	--	--	--	--	--	--
	\$53,445	\$51,798	\$68,275	--	--	--	--	--	--
30 - 34	33	16	12	5	--	--	--	--	--
	\$62,883	\$54,381	\$69,448	\$74,329	--	--	--	--	--
35 - 39	44	12	12	15	5	--	--	--	--
	\$68,191	\$36,817	\$77,714	\$80,090	\$84,936	--	--	--	--
40 - 44	38	7	4	11	16	--	--	--	--
	\$78,813	\$60,532	\$83,179	\$78,814	\$85,720	--	--	--	--
45 - 49	41	10	3	9	11	8	--	--	--
	\$82,473	\$68,820	\$72,004	\$80,194	\$90,998	\$94,307	--	--	--
50 - 54	25	3	3	4	6	5	4	--	--
	\$89,773	\$70,630	\$79,285	\$99,450	\$86,800	\$86,874	\$110,401	--	--
55 - 59	3	--	--	--	3	--	--	--	--
	\$75,644	--	--	--	\$75,644	--	--	--	--
60 - 64	5	1	1	--	1	--	--	2	--
	\$91,918	\$49,046	\$98,950	--	\$91,367	--	--	\$110,112	--
65 & over	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
Total	243	99	39	44	42	13	4	2	--
	\$70,664	\$52,530	\$74,989	\$80,897	\$86,578	\$91,448	\$110,401	\$110,112	--

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	4	\$24,856
36	0	0	0	0	2	9,852
37	0	0	0	0	1	3,120
38	0	0	0	0	0	0
39	0	0	0	0	1	1,876
40	0	0	0	0	0	0
41	0	0	0	0	0	0
42	0	0	1	8,365	0	0
43	0	0	0	0	0	0
44	0	0	2	20,851	1	2,593
45	0	0	0	0	2	5,453
46	0	0	1	27,290	0	0
47	0	0	0	0	2	2,801
48	0	0	0	0	2	22,090
49	0	0	5	52,087	1	21,256
50	1	2,541	3	49,537	0	0
51	1	14,724	0	0	3	34,791
52	0	0	3	23,696	0	0
53	1	58,537	0	0	2	23,892
54	0	0	2	12,425	2	11,483
55	18	508,308	4	38,422	1	10,780
56	26	438,269	4	59,167	2	12,564
57	25	517,157	0	0	2	40,605
58	31	607,681	4	22,075	2	76,882
59	27	470,338	1	5,250	5	27,124
60	33	834,728	4	57,252	4	53,358
61	35	838,938	4	36,563	5	56,353
62	80	1,224,906	5	45,008	2	17,835
63	106	1,364,250	4	20,464	7	58,499
64	159	2,358,994	3	10,319	5	48,374
65	164	2,098,765	5	47,827	10	165,901

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	229	\$2,875,479	1	\$10,766	6	\$70,114
67	246	3,096,277	5	42,615	7	64,957
68	194	1,982,471	4	63,983	5	62,832
69	205	2,403,992	1	3,752	4	27,509
70	200	2,090,792	3	17,163	9	78,180
71	186	1,903,641	2	8,757	7	64,519
72	212	1,914,858	1	13,743	6	64,387
73	180	1,750,997	1	4,187	14	90,750
74	160	1,480,866	1	12,893	9	62,594
75	128	1,305,959	0	0	11	75,733
76	135	1,176,246	2	16,239	11	62,723
77	97	808,482	2	12,479	9	69,489
78	99	900,259	0	0	6	25,536
79	99	815,171	1	2,018	6	21,996
80	81	684,709	0	0	5	15,701
81	67	631,763	1	4,485	8	50,729
82	65	472,321	1	4,678	14	113,781
83	43	275,858	1	3,542	10	81,905
84	49	383,035	1	3,831	6	68,932
85	36	277,579	0	0	5	41,320
86	36	263,792	0	0	5	23,035
87	21	157,804	0	0	7	46,509
88	21	131,132	0	0	7	42,622
89	13	67,006	0	0	6	15,827
90	27	153,251	0	0	5	41,167
91	13	56,244	0	0	5	26,664
92	8	54,387	0	0	3	19,275
93	10	52,679	0	0	3	6,203
94	5	28,476	0	0	0	0
≥ 95	15	65,544	0	0	1	2,013
Total	3,587	\$39,599,205	83	\$761,728	268	\$2,169,344

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	1	\$4,917
36	0	0	0	0	1	3,136
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	1	4,389
46	0	0	0	0	0	0
47	0	0	0	0	1	1,748
48	0	0	0	0	1	6,660
49	0	0	1	11,553	0	0
50	0	0	0	0	0	0
51	0	0	0	0	1	23,404
52	0	0	1	7,794	0	0
53	0	0	0	0	0	0
54	0	0	0	0	0	0
55	0	0	1	2,111	0	0
56	0	0	0	0	1	3,268
57	1	1,694	0	0	0	0
58	6	28,263	3	13,641	1	3,155
59	3	22,495	1	5,250	2	4,102
60	5	22,608	2	22,857	0	0
61	3	34,331	2	16,532	2	3,007
62	11	85,731	3	27,294	0	0
63	18	138,714	3	16,233	4	21,278
64	30	174,272	3	10,319	2	11,074
65	56	395,688	1	6,317	2	7,340

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	86	\$623,530	1	\$10,766	2	\$4,950
67	91	663,901	2	10,699	1	3,083
68	79	465,627	1	7,917	3	8,238
69	83	575,716	0	0	1	1,142
70	80	497,371	1	2,082	5	17,386
71	73	431,763	1	2,451	0	0
72	99	521,477	1	13,743	3	33,525
73	78	448,238	1	4,187	3	6,603
74	77	416,974	1	12,893	2	18,984
75	58	393,087	0	0	4	29,652
76	67	387,279	1	7,000	6	32,116
77	40	198,324	1	5,742	1	3,813
78	36	238,668	0	0	3	7,056
79	39	224,030	0	0	3	6,479
80	34	169,723	0	0	2	6,249
81	27	188,661	0	0	4	12,649
82	29	157,772	1	4,678	6	24,123
83	17	58,820	1	3,542	3	11,014
84	17	97,922	1	3,831	1	3,131
85	12	53,720	0	0	0	0
86	19	96,831	0	0	3	11,740
87	7	68,071	0	0	2	6,111
88	13	68,891	0	0	2	8,212
89	5	23,818	0	0	3	7,920
90	12	41,396	0	0	1	4,614
91	8	26,537	0	0	2	8,827
92	4	16,209	0	0	1	3,222
93	5	24,445	0	0	3	6,203
94	3	18,016	0	0	0	0
≥ 95	10	32,542	0	0	1	2,013
Total	1,341	\$8,133,157	35	\$229,432	91	\$386,533

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	1	\$6,815
36	0	0	0	0	1	6,717
37	0	0	0	0	1	3,120
38	0	0	0	0	0	0
39	0	0	0	0	1	1,876
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	4,511	1	2,593
45	0	0	0	0	1	1,065
46	0	0	0	0	0	0
47	0	0	0	0	1	1,053
48	0	0	0	0	0	0
49	0	0	1	20,205	1	21,256
50	1	2,541	0	0	0	0
51	1	14,724	0	0	2	11,387
52	0	0	2	15,902	0	0
53	0	0	0	0	2	23,892
54	0	0	1	3,055	2	11,483
55	2	31,811	2	29,870	1	10,780
56	9	128,118	1	3,461	1	9,297
57	3	80,811	0	0	2	40,605
58	6	94,106	1	8,434	0	0
59	6	61,858	0	0	3	23,022
60	10	226,392	2	34,395	4	53,358
61	14	326,532	2	20,031	2	14,809
62	45	463,903	1	10,239	1	1,578
63	65	594,457	1	4,231	2	22,643
64	99	1,365,135	0	0	2	22,542
65	84	1,019,702	4	41,509	7	140,803

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	112	\$1,444,942	0	\$0	3	\$13,938
67	121	1,558,901	2	14,001	3	33,716
68	98	1,175,145	3	56,066	2	54,594
69	99	1,323,975	1	3,752	1	8,532
70	109	1,299,479	2	15,081	4	60,794
71	94	1,063,564	1	6,306	5	34,403
72	93	976,531	0	0	2	25,020
73	84	936,444	0	0	10	68,913
74	68	719,868	0	0	5	19,510
75	58	671,757	0	0	7	46,080
76	56	552,770	1	9,239	4	25,095
77	51	546,325	1	6,738	7	61,937
78	48	374,032	0	0	2	15,265
79	51	472,911	1	2,018	3	15,517
80	38	369,959	0	0	3	9,452
81	32	310,298	1	4,485	3	21,056
82	29	258,439	0	0	6	71,704
83	25	210,455	0	0	6	57,305
84	30	268,870	0	0	5	65,801
85	21	189,907	0	0	4	37,563
86	14	105,345	0	0	2	11,295
87	13	79,535	0	0	4	31,176
88	7	55,136	0	0	5	34,411
89	7	36,703	0	0	3	7,907
90	14	110,189	0	0	4	36,554
91	4	25,415	0	0	2	12,792
92	4	38,178	0	0	2	16,053
93	5	28,234	0	0	0	0
94	2	10,460	0	0	0	0
≥ 95	5	33,002	0	0	0	0
Total	1,737	\$19,656,856	32	\$313,527	146	\$1,327,076

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	0	\$0
36	0	0	0	0	0	0
37	0	0	0	0	0	0
38	0	0	0	0	0	0
39	0	0	0	0	0	0
40	0	0	0	0	0	0
41	0	0	0	0	0	0
42	0	0	1	8,365	0	0
43	0	0	0	0	0	0
44	0	0	1	16,340	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	1	15,430
49	0	0	2	10,523	0	0
50	0	0	1	2,810	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	1	9,370	0	0
55	15	470,603	1	6,442	0	0
56	10	201,336	2	28,590	0	0
57	15	305,285	0	0	0	0
58	8	243,606	0	0	1	73,728
59	10	208,950	0	0	0	0
60	14	472,579	0	0	0	0
61	15	376,390	0	0	1	38,537
62	19	537,338	1	7,474	1	16,256
63	19	473,380	0	0	1	14,578
64	24	651,388	0	0	1	14,758
65	22	636,936	0	0	1	17,758

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	29	\$695,740	0	\$0	1	\$51,226
67	32	821,034	0	0	2	11,023
68	16	317,060	0	0	0	0
69	22	474,542	0	0	2	17,835
70	10	229,056	0	0	0	0
71	19	408,315	0	0	2	30,116
72	20	416,851	0	0	1	5,842
73	17	311,441	0	0	1	15,234
74	15	344,023	0	0	2	24,100
75	11	226,052	0	0	0	0
76	11	220,123	0	0	1	5,512
77	6	63,833	0	0	1	3,740
78	15	287,558	0	0	1	3,215
79	9	118,230	0	0	0	0
80	9	145,027	0	0	0	0
81	8	132,804	0	0	1	17,024
82	7	56,110	0	0	2	17,954
83	1	6,582	0	0	1	13,587
84	2	16,243	0	0	0	0
85	3	33,952	0	0	1	3,757
86	3	61,616	0	0	0	0
87	1	10,198	0	0	1	9,223
88	1	7,105	0	0	0	0
89	1	6,484	0	0	0	0
90	1	1,666	0	0	0	0
91	1	4,292	0	0	1	5,045
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	441	\$9,993,729	10	\$89,914	28	\$425,475

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	2	\$13,124
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	1	27,290	0	0
47	0	0	0	0	0	0
48	0	0	0	0	0	0
49	0	0	1	9,805	0	0
50	0	0	2	46,728	0	0
51	0	0	0	0	0	0
52	0	0	0	0	0	0
53	1	58,537	0	0	0	0
54	0	0	0	0	0	0
55	1	5,894	0	0	0	0
56	7	108,815	1	27,116	0	0
57	6	129,366	0	0	0	0
58	11	241,706	0	0	0	0
59	8	177,035	0	0	0	0
60	4	113,149	0	0	0	0
61	3	101,684	0	0	0	0
62	5	137,934	0	0	0	0
63	4	157,699	0	0	0	0
64	6	168,200	0	0	0	0
65	2	46,438	0	0	0	0

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	2	\$111,267	0	\$0	0	\$0
67	2	52,441	1	17,915	1	17,136
68	1	24,639	0	0	0	0
69	1	29,758	0	0	0	0
70	1	64,887	0	0	0	0
71	0	0	0	0	0	0
72	0	0	0	0	0	0
73	1	54,875	0	0	0	0
74	0	0	0	0	0	0
75	1	15,064	0	0	0	0
76	1	16,074	0	0	0	0
77	0	0	0	0	0	0
78	0	0	0	0	0	0
79	0	0	0	0	0	0
80	0	0	0	0	0	0
81	0	0	0	0	0	0
82	0	0	0	0	0	0
83	0	0	0	0	0	0
84	0	0	0	0	0	0
85	0	0	0	0	0	0
86	0	0	0	0	0	0
87	0	0	0	0	0	0
88	0	0	0	0	0	0
89	0	0	0	0	0	0
90	0	0	0	0	0	0
91	0	0	0	0	0	0
92	0	0	0	0	0	0
93	0	0	0	0	0	0
94	0	0	0	0	0	0
≥ 95	0	0	0	0	0	0
Total	68	\$1,815,462	6	\$128,854	3	\$30,259

Section 5: Additional Summary Tables of Member Data

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

Year of Retirement	Number	Annual Allowance	Average Annual Allowance
≤ 1970	0	\$0	\$0
1971	0	0	0
1972	0	0	0
1973	0	0	0
1974	0	0	0
1975	0	0	0
1976	0	0	0
1977	0	0	0
1978	0	0	0
1979	0	0	0
1980	1	1,748	1,748
1981	0	0	0
1982	1	829	829
1983	1	2,279	2,279
1984	0	0	0
1985	1	1,002	1,002
1986	1	2,049	2,049
1987	1	2,635	2,635
1988	2	4,856	2,428
1989	3	6,204	2,068
1990	8	38,637	4,830
1991	14	56,209	4,015
1992	12	62,708	5,226
1993	15	83,348	5,557
1994	17	90,237	5,308
1995	30	196,288	6,543
1996	22	130,965	5,953
1997	31	179,110	5,778
1998	37	229,920	6,214
1999	35	241,820	6,909
2000	33	238,151	7,217

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	45	\$321,061	\$7,135
2002	59	464,425	7,872
2003	67	496,709	7,414
2004	76	661,264	8,701
2005	81	665,489	8,216
2006	82	791,450	9,652
2007	125	1,087,925	8,703
2008	108	1,003,976	9,296
2009	118	969,296	8,214
2010	145	1,476,556	10,183
2011	171	1,900,673	11,115
2012	179	1,886,342	10,538
2013	200	2,303,439	11,517
2014	239	2,435,990	10,192
2015	231	2,575,827	11,151
2016	236	2,428,400	10,290
2017	321	4,008,220	12,487
2018	302	3,945,448	13,064
2019	338	4,005,630	11,851
2020	337	4,457,828	13,228
2021	213	3,075,334	14,438
Total	3,938	\$42,530,276	\$10,800

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