

Vermont State Employees' Retirement System

Actuarial Valuation and Review

As of June 30, 2020



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

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October 28, 2020

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

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2020, of the Vermont State Employees' Retirement System. This report summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirement for the fiscal year ending June 30, 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 September 2020, the Board adopted new assumptions, effective for the June 30, 2020 valuation. 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, 2020, pursuant to section 471, subsection (k), of Title 3, Chapter 16, Vermont Statutes Annotated, relating to the Vermont State Employees' Retirement System. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The measurements shown in this actuarial valuation may not be applicable for other purposes. In particular, the measures herein are not necessarily appropriate for assessing the sufficiency of System assets to cover the estimated cost of settling the System's benefit obligations. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law.

Certain disclosure information required by GASB Statements No. 67 and 68 as of June 30, 2020 for the System is provided in separate reports.

The contribution requirements presented in this report are based on:

- The benefit provisions of the System, as administered by the Board;
- The characteristics of covered active members, inactive members, and retired members and beneficiaries as of June 30, 2020, provided by the Office of the State Treasurer;
- The unaudited assets of the System as of June 30, 2020, provided by the Office of the State Treasurer;
- Economic assumptions regarding future salary increases and investment earnings;
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.; and
- The funding policy prescribed by State statute.

Section 1: Actuarial Valuation Summary

Valuation highlights

1. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2020. Due to the COVID-19 pandemic, market conditions have changed significantly since the valuation date. The System's actuarial status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the Plan Year. While it is impossible to determine how the market will perform over the next several months, and how that will affect the results of next year's valuation, Segal is available to prepare projections of potential outcomes upon request.
2. Segal strongly recommends an actuarial funding policy that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. The funding policy set in the Vermont State Pension Code meets this standard. Section 473, subsection (c)(4), of Title 3, Chapter 16, Subchapter 1, Vermont Statutes Annotated calls for annual payments on the unfunded actuarial accrued liability to be made over a closed period ending on June 30, 2038. From July 1, 2009 to June 30, 2019, the amount of each annual payment was calculated assuming that the amortization period would remain closed and that the amortization amount would increase annually at the rate of 5% over the preceding year. Beginning on July 1, 2019 and annually thereafter, the amount of each annual payment is calculated assuming that the amortization period will remain closed and that the amortization amount will increase annually at the rate of 3% over the preceding year.
3. Actual employer contributions made during the fiscal year ending June 30, 2020, were \$84.4 million, or 107.0% of the actuarially determined contribution of \$78.9 million. In the prior fiscal year, actual employer contributions were \$66.6 million, or 105.8% of the prior year's actuarially determined contribution.
4. The actuarially determined contribution for the fiscal year ending June 30, 2021, is \$83.9 million as determined with the June 30, 2019, actuarial valuation.
5. The funded percentage (the ratio of the actuarial value of assets to actuarial accrued liability) is 66.39%, compared to the prior year's funded percentage of 70.7%. 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 63.3%, compared to 68.7% as of the prior valuation date. These measurements are not necessarily appropriate for assessing the sufficiency of System assets to cover the estimated cost of settling the System's benefit obligation or the need for or the amount of future contributions.
6. The results of this June 30, 2020, actuarial valuation are used to determine the actuarially determined contribution for the fiscal year ending June 30, 2022, and to estimate the actuarially determined contribution for the fiscal year ending June 30, 2023. The actuarially determined contribution for fiscal 2022 is \$120.0 million, an increase of \$36.1 million from fiscal 2021. The estimated fiscal 2023 actuarially determined contribution is \$123.7 million. The actuarially determined contribution is equal to the System's employer normal cost, plus the amount necessary to amortize the unfunded actuarial accrued liability as of June 30, 2020, over a period ending on June 30, 2038, assuming that the amortization period will remain closed and that the amortization amount will increase annually at the rate of 3% over the preceding year.
7. The unfunded actuarial accrued liability is \$1,040.5 million, which is an increase of \$225.0 million since the prior valuation.

Section 1: Actuarial Valuation Summary

8. The rate of return on the market value of assets was 4.30% for the July 1, 2019 to June 30, 2020 plan year. The return on the actuarial value of assets was 6.27% 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.
9. The actuarial value of assets is 104.9% of the market value of assets. The investment experience in the past years has only been partially recognized in the actuarial value of assets. As the deferred net loss is recognized in future years, the cost of the System is likely to increase unless the net loss is offset by future experience. The recognition of the deferred market losses of \$95.8 million will also have an impact on the future funded percentage. If the net deferred losses were recognized immediately in the actuarial value of assets, the actuarially determined contribution rate would increase from 19.90% to about 21.19% of payroll.
10. The actuarial loss from investment experience is \$23.9 million.
11. The net experience gain from sources other than investment experience was approximately, \$9.4 million, or 0.3% of the actuarial accrued liability. Additional detail regarding this loss is shown in *Section 2, Other experience*.
12. Changes in actuarial assumptions, which include lowering the investment return assumption from 7.5% to 7.0%, were approved by the Board on September 24, 2020. The assumptions adopted are outlined in detail in *Section 4, Exhibit I*. As a result of these assumption changes, the total normal cost increased by \$15.4 million and the actuarial accrued liability increased by \$222.8 million. The total impact was an increase to the actuarially determined contribution of \$30.2 million, or 5.17% of payroll.
13. This report constitutes an actuarial valuation for the purpose of determining the actuarially determined contribution under the System's funding policy and measuring the progress of that funding policy. The Net Pension Liability (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, 2020, and June 30, 2021, 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.
14. This actuarial report as of June 30, 2020, 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.
15. 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

		2020	2019
Actuarially determined employer contributions:	• Actuarially determined employer contributions for fiscal 2022 (and 2021)	\$119,967,769	\$83,876,570
	• Estimated actuarially determined employer contributions for fiscal 2023 (and 2022)	123,742,634	86,484,565
Actuarial accrued liability for plan year beginning July 1:	• Retired members and beneficiaries	\$1,838,530,387	\$1,702,648,997
	• Deferred members as reported by the System	55,757,513	47,020,528
	• Inactive members as reported by the System	29,009,517	45,509,277
	• Active members	1,171,993,555	984,786,721
	• Total	3,095,290,972	2,779,965,523
	• Employer normal cost for plan year beginning July 1	33,977,161	17,719,313
Assets for plan year beginning July 1:	• Market value of assets (MVA)	\$1,959,066,641	\$1,909,469,823
	• Actuarial value of assets (AVA)	2,054,825,853	1,964,500,825
	• Actuarial value of assets as a percentage of market value of assets	104.89%	102.88%
Funded status for plan year beginning July 1:	• Unfunded actuarial accrued liability based on MVA	\$1,136,224,331	\$870,495,700
	• Funded percentage on MVA basis	63.29%	68.69%
	• Unfunded actuarial accrued liability based on AVA	\$1,040,465,119	\$815,464,698
	• Funded percentage on AVA basis	66.39%	70.67%
	• Remaining amortization period	18	19
Key assumptions:	• Investment return	7.00%	7.50%
	• Inflation rate	2.30%	2.50%
Demographic data for plan year beginning July 1:	• Number of retired members and beneficiaries	7,424	7,268
	• Number of deferred members as reported by System	768	747
	• Number of inactive members as reported by System	1,482	1,443
	• Number of active members	8,539	8,443
	• Total payroll	\$551,981,002	\$527,571,033
	• Average payroll	64,642	62,486
	• Total monthly benefits for all retired members and beneficiaries	12,581,175	12,050,134
	• Average monthly benefit for all retired members and beneficiaries	1,695	1,658

Section 1: Actuarial Valuation Summary

Important information about actuarial valuations

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

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

Plan of benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Member data	An actuarial valuation for a plan is based on data provided to the actuary by the System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	The valuation is based on the market value of assets as of the valuation date, as provided by the System. The System uses an “actuarial value of assets” that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan members for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each member for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

Section 1: Actuarial Valuation Summary

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

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

An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

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

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

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

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

Actuarial Valuation Results

Member data

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive 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: 2011 – 2020

As of June 30	Active Members	Deferred Members as Reported by the System*	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives
2011	7,768	774	5,375	6,149	0.79
2012	7,878	767	5,600	6,367	0.81
2013	8,158	741	5,795	6,536	0.80
2014	8,325	732	5,980	6,712	0.81
2015	8,446	735	6,204	6,939	0.82
2016	8,436	728	6,542	7,270	0.86
2017	8,620	742	6,727	7,469	0.87
2018	8,530	753	6,974	7,727	0.91
2019	8,443	747	7,268	8,015	0.95
2020	8,539	768	7,424	8,192	0.96

* Excludes inactive members as reported by the System.

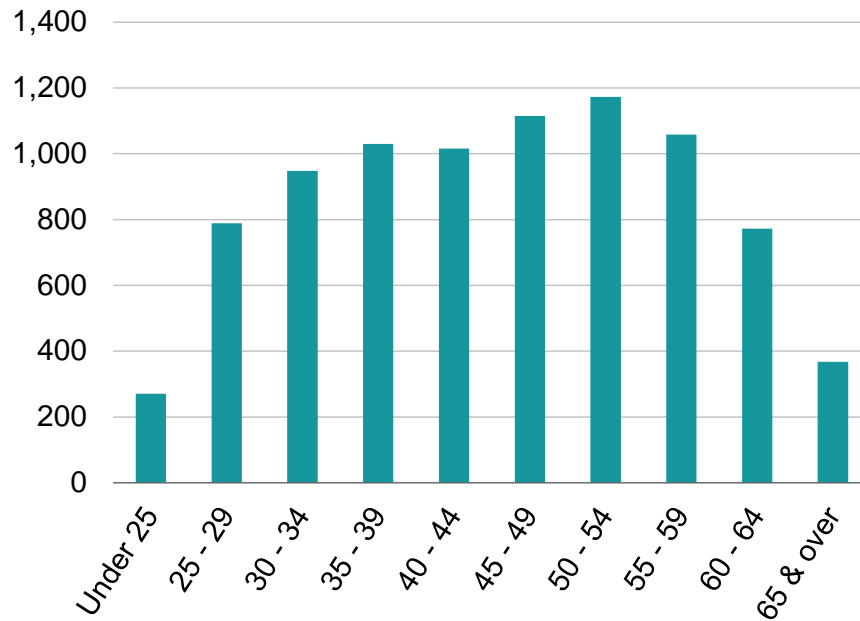
Section 2: Actuarial Valuation Results

Active members

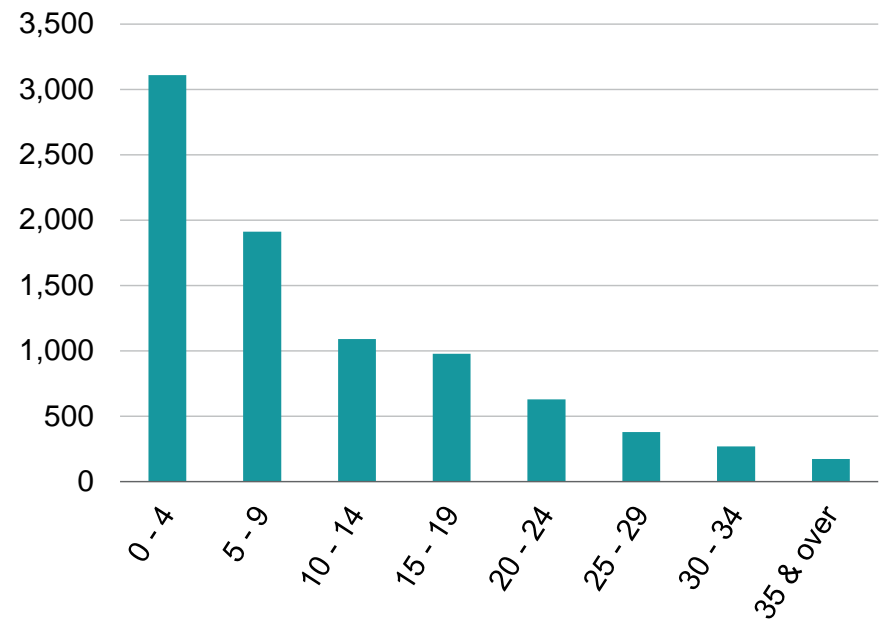
Plan costs are affected by the age, years of creditable service and payroll of active members. In this year's valuation, there were 8,539 active members with an average age of 45.6, average years of creditable service of 10.8 years, and average payroll of \$64,642. The 8,443 active members in the prior valuation had an average age of 45.7, average service of 10.8 years and average payroll of \$62,486.

Distribution of Active Members as of June 30, 2020

Actives by Age



Actives by Years of Service



Section 2: Actuarial Valuation Results

Inactive and deferred members

In this year's valuation, there were 1,482 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 768 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

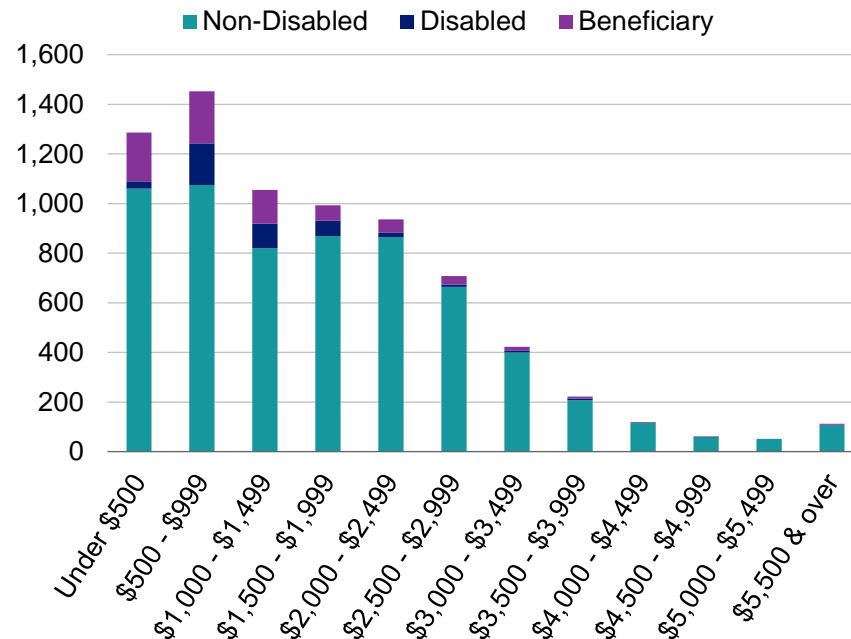
Retired members and beneficiaries

As of June 30, 2020, 6,704 retired members (including disability retirees) and 720 beneficiaries were receiving total monthly benefits of \$12,581,175. For comparison, in the previous valuation, there were 6,567 retired members and 701 beneficiaries receiving monthly benefits of \$12,050,134.

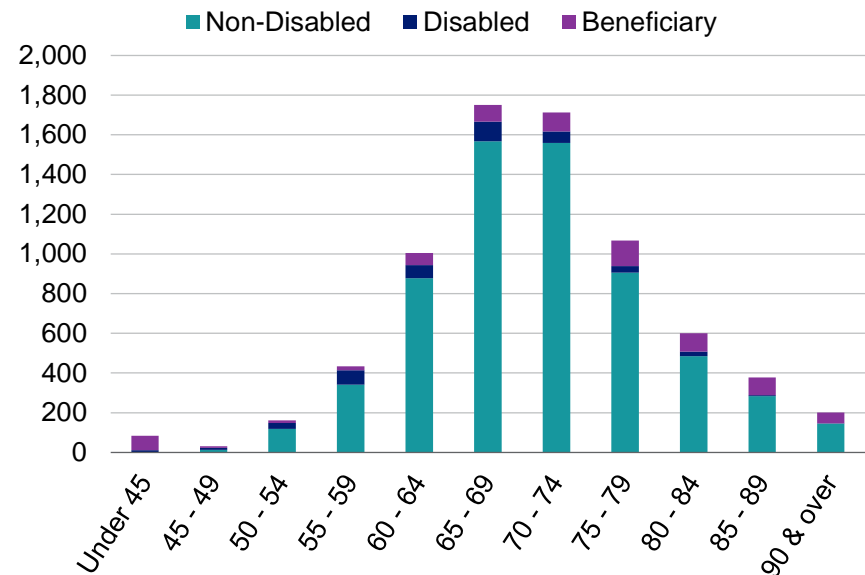
As of June 30, 2020, the average monthly benefit for retired members and beneficiaries is \$1,695, compared to \$1,658 in the previous valuation. The average age for retired members and beneficiaries is 70.9 in the current valuation, compared with 70.5 in the prior valuation.

Distribution of Pensioners as of June 30, 2020

Pensioners by Type and Monthly Amount



Pensioners by Type and Age



Section 2: Actuarial Valuation Results

Historical plan population

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

Member Data Statistics: 2011 – 2020

As of June 30	Active Members			Retired Members*		
	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2011	7,768	47.0	12.6	4,851	--	\$1,398
2012	7,878	46.4	12.5	5,060	--	1,450
2013	8,158	46.2	12.2	5,248	--	1,478
2014	8,325	45.2	11.8	5,421	69.7	1,510
2015	8,446	46.5	11.7	5,554	70.0	1,561
2016	8,436	46.2	11.3	5,858	70.1	1,587
2017	8,620	46.0	11.1	6,092	70.3	1,616
2018	8,530	45.9	11.0	6,302	70.4	1,663
2019	8,443	45.7	10.8	6,567	70.6	1,718
2020	8,539	45.6	10.8	6,704	70.9	1,755

* Not including beneficiaries

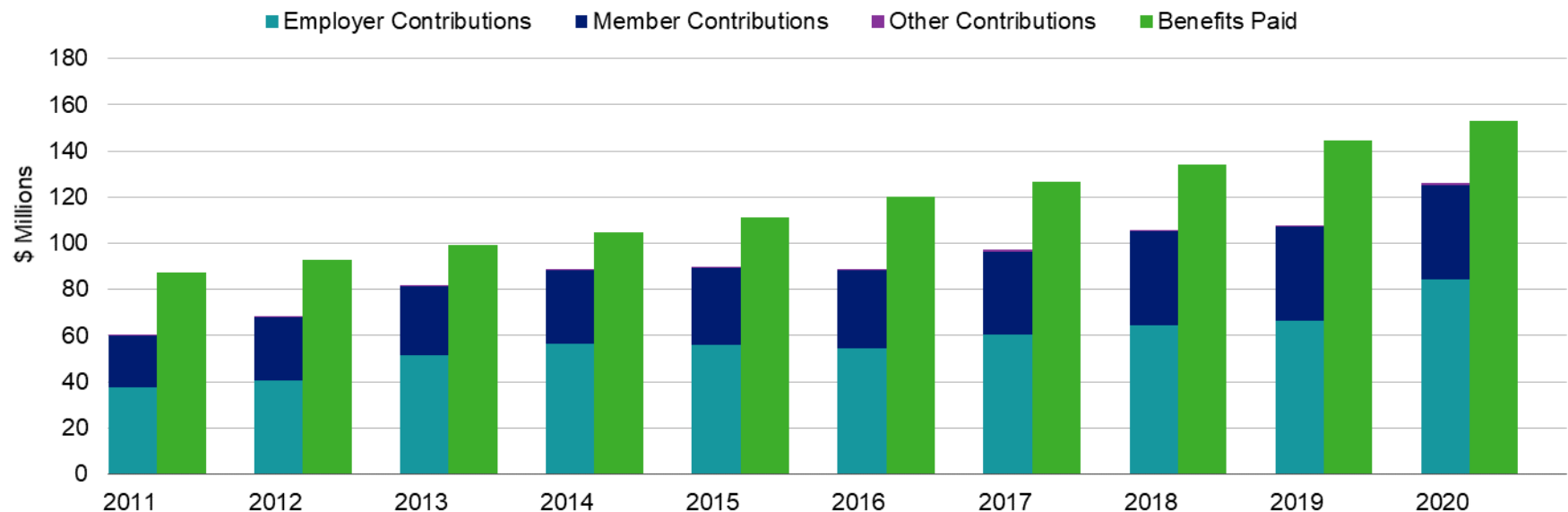
Section 2: Actuarial Valuation Results

Financial information

Retirement plan funding anticipates that, over the long term, both contributions and investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components. Benefits have exceeded employer and member contributions for the most recent period shown. Benefits were 1.2 times employer and member contributions.

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

Comparison of Contributions to Benefits and Paid
for Years Ended June 30, 2011 – 2020



Section 2: Actuarial Valuation Results

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

Determination of Actuarial Value of Assets for Year Ended June 30, 2020

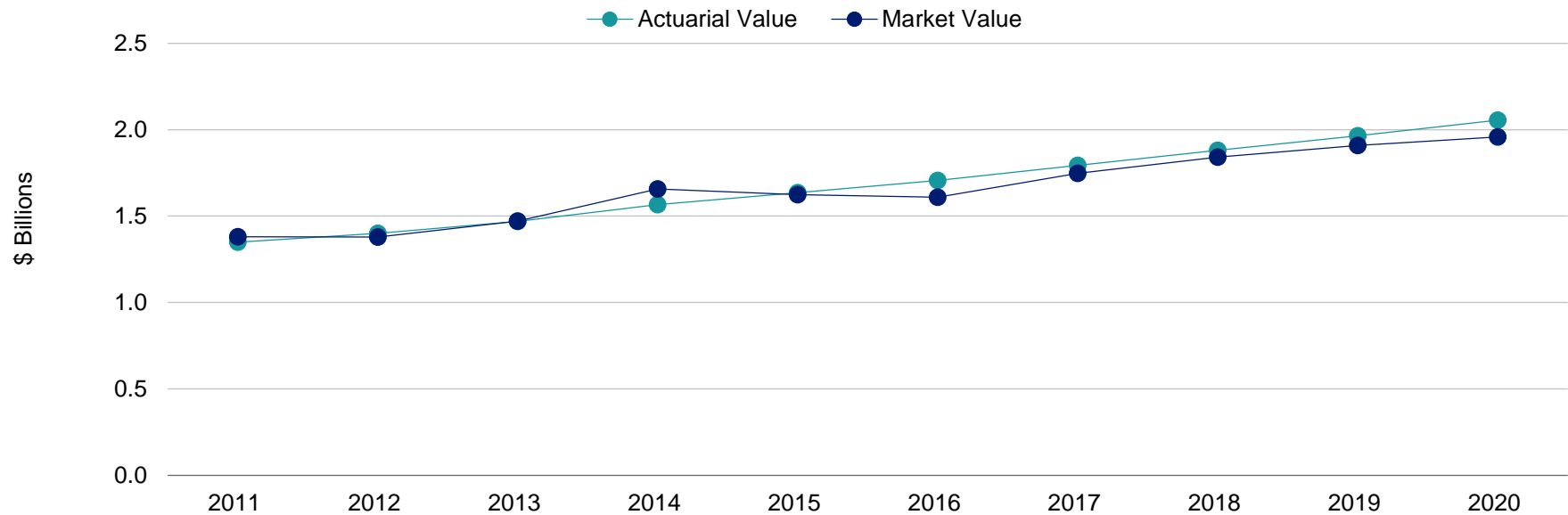
1	Actuarial value of assets, June 30, 2019		\$1,964,500,825
2	Net new money, including expected investment income (7.50%*)		114,264,831
3	Preliminary asset value: 1 + 2		2,078,765,656
4	Smoothing adjustment		
	a) Market value, June 30, 2020	\$1,959,066,641	
	b) Preliminary asset value	2,078,765,656	
	c) Unrecognized appreciation	-119,699,015	
	d) Adjustment	X 20%	-23,939,803
5	Actuarial value of assets, June 30, 2020: 3 + 4d		\$2,054,825,853
6	Actuarial value of assets as a percentage of market value: 1 / 5		104.89%

* The investment return assumption was lowered from 7.50% to 7.00% effective July 1, 2020. However, the return assumption during the year ended June 30, 2020 was 7.50%. As such, the expectation of income is based on the assumptions in place at the beginning of the year (7.50%). If a 7.00% assumption was applied, the resulting unrecognized depreciation would be lowered. This change will be reflected in the next year.

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, 2011 – 2020



Section 2: Actuarial Valuation Results

Actuarial experience

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

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

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

The net experience loss is \$14,522,907, which includes \$23,939,803 from investment losses and \$9,416,896 in gains from all other sources. The net experience variation from individual sources other than investments was 0.3% 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, 2020

1	Net loss from investments*	-\$23,939,803
2	Net gain from other experience	<u>9,416,896</u>
3	Net experience loss: 1 + 2	-\$14,522,907

* 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 4.30% for the year ended June 30, 2020.

For valuation purposes, the assumed rate of return on the actuarial value of assets for the year ended June 30, 2020, is 7.50%. The actual rate of return on an actuarial basis for the 2020 plan year was 6.27%. Since the actual return for the year was less than the assumed return, the System experienced an actuarial loss during the year ended June 30, 2020, with regard to its investments.

Investment Experience

		Year Ended June 30, 2020	
		Market Value	Actuarial Value
1	Investment income	\$81,474,149	\$122,202,359
2	Average value of assets	1,893,531,158	1,948,562,159
3	Rate of return: 1 ÷ 2	4.30%	6.27%
4	Assumed rate of return*	7.50%	7.50%
5	Expected investment income: 2 x 4	\$142,014,837	\$146,142,162
6	Actuarial gain/(loss): 1 – 5	-\$60,540,688	-\$23,939,803

* The investment return assumption was lowered from 7.50% to 7.00% effective July 1, 2020. However, the return assumption during the year ended June 30, 2020 was 7.50%. As such, the expectation of income is based on the assumptions in place at the beginning of the year (7.50%).

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: 2001 – 2020

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	
2001	\$89,249,154	10.14%	-\$66,366,171	-6.36%	2011	\$116,660,083	9.34%	\$244,063,320	21.16%	
2002	57,320,146	6.07	-49,030,960	-5.15	2012	83,600,231	6.27	29,466,721	2.16	
2003	55,169,045	5.63	45,639,510	5.17	2013	93,222,330	6.71	116,835,891	8.55	
2004	75,261,848	7.41	142,588,476	15.70	2014	120,645,037	8.28	210,491,370	14.43	
2005	84,075,397	7.83	95,845,599	9.28	2015	100,145,920	6.46	-2,430,832	-0.15	
2006	94,266,315	8.28	119,220,681	10.74	2016	108,862,988	6.73	22,651,623	1.41	
2007	94,266,315	9.93	197,642,924	16.37	2017	122,942,180	7.28	175,207,530	11.01	
2008	89,281,830	6.85	-78,966,292	-5.74	2018	123,141,054	6.93	128,188,928	7.41	
2009	-130,060,430	-9.55	-238,392,427	-18.80	2019	125,762,614	6.76	111,036,177	6.10	
2010	80,550,116	6.71	187,930,419	18.82	2020	122,202,359	6.27	81,474,149	4.30	
							Most recent five-year average return		6.78%	6.00%
							Most recent ten-year average return		7.04%	7.16%
							Most recent 15-year average return		6.16%	6.05%
							Most recent 20-year average return		6.39%	5.58%

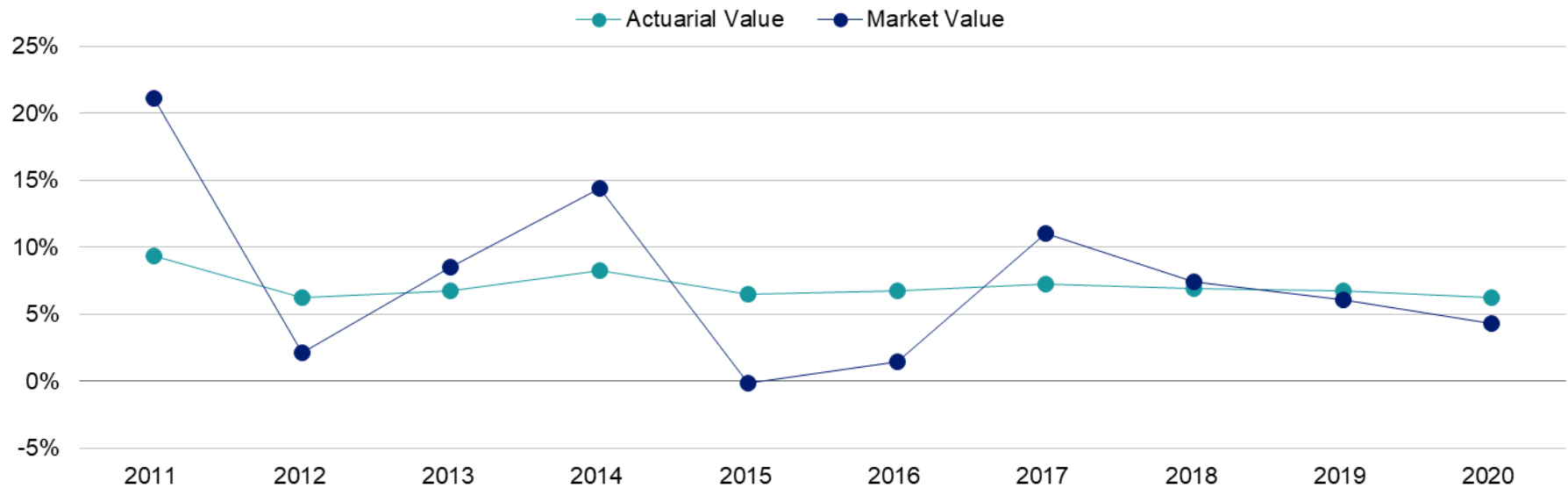
Note: Each year's yield is weighted by the average asset value in that year.

Section 2: Actuarial Valuation Results

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

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

Market and Actuarial Rates of Return for Years Ended June 30, 2011–2020



Section 2: Actuarial Valuation Results

Administrative expenses

Administrative expenses for the System are paid by the State, therefore there is no provision for administrative expenses in the determination of the actuarially determined contribution.

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 gain from this other experience for the year ended June 30, 2020, amounted to \$9,416,896, which is 0.3% of the actuarial accrued liability.

Experience Gain/(Loss) Due to Changes in Demographics for Year Ended June 30, 2020

Net turnover	-\$2,812,974
Retirement	-8,892,489
Mortality	3,692,473
Disability retirements	-434,494
Salary and service increases for continuing actives	-3,697,977
COLA experience	23,969,841
Miscellaneous	<u>-2,407,484</u>
Total	\$9,416,896

Section 2: Actuarial Valuation Results

Changes in the actuarial accrued liability

The actuarial accrued liability as of June 30, 2020, is \$3,095,290,972, an increase of \$315,325,449, or 11.3%, 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 (as discussed below).

Actuarial assumptions

The assumption changes reflected in this report are:

- The investment return assumption was lowered from 7.50% to 7.00%.
- The inflation assumption was lowered from 2.50% to 2.30%.
- The COLA assumption was lowered from 2.55% to 2.40% for Group A, C, and D members and for Group F members who retired after July 1, 2008, and from 1.40% to 1.35% for all other Group F members.
- The mortality assumptions were updated as follows:
 - Pre-Retirement:
 - Groups A/F 60% of PubG-2010 General Employee Amount-Weighted Above Median, 40% of PubG-2010 General Employee Amount-Weighted with generational projection using scale MP-2019
 - Group C PubS-2010 Public Safety Employee Amount-Weighted with generational projection using scale MP-2019
 - Group D 70% of PubG-2010 General Employee Amount-Weighted Above Median, 30% of PubG-2010 General Employee with generational projection using scale MP-2019
 - Healthy Post-Retirement - Retirees:
 - Groups A/F 109% of PubG-2010 General Healthy Retiree Amount-Weighted with generational projection using scale MP-2019
 - Group C 40% of PubS-2010 Public Safety Retiree Amount-Weighted Above Median, 60% of PubS-2010 Public Safety Retiree Amount-Weighted with generational projection using scale MP-2019
 - Group D PubG-2010 General Healthy Retiree Amount-Weighted Above Median with generational projection using scale MP-2019

Section 2: Actuarial Valuation Results

- Healthy Post-Retirement - Beneficiaries:
 - Groups A/F Pub-2010 Contingent Survivor Amount-Weighted with generational projection using MP-2019
 - Group C 40% of Pub-2010 Contingent Survivor Amount-Weighted Above Median, 60% of Pub-2010 Contingent Survivor Amount-Weighted with generational projection using MP-2019
 - Group D Pub-2010 Contingent Survivor Amount-Weighted Above Median with generational projection using MP-2019
 - Disabled Retirees:
 - All Groups PubNS-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table with generational projection using scale MP-2019
 - There were minor increases to the merit and seniority (and productivity) portion of individual salary increases based on years from hire plus the revised inflation assumption.
 - There were slight increases to the current active retirement rates for members in Group F.
 - The inactive retirement assumption was updated to add a rate of 10% from early retirement age for each year until normal retirement age, then 100% at normal retirement age.
 - The liability load of accumulated contributions for Inactive Members was removed. Liabilities for Inactive Members are now based on 100% of the accumulated contributions. Inactive Members who are vested immediately become Deferred, and the liabilities for all Deferred Members are based on the accrued benefit.
 - The termination rates were updated as follows:
 - Group C: Reduce current rates by 25% for both males and females.
 - Group F: Reduce the ultimate rates for 10+ years of service by roughly 14% and reduce the higher, select rates for each of the first 10 years of service.
 - The disability retirement rates for Groups A, D, and F were increased by 5.5%.
 - These changes increased the actuarial accrued liability by \$222.8 million and increased the total normal cost by \$15.4 million.
- Details on actuarial assumptions and methods are in *Section 4, Exhibit I*.

Plan provisions

There were no changes in plan provisions since the prior valuation. A summary of plan provisions is in *Section 4, Exhibit II*.

Section 2: Actuarial Valuation Results

Development of unfunded actuarial accrued liability

Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2020

1	Unfunded actuarial accrued liability at beginning of year		\$815,464,698
2	Normal cost at beginning of year		53,151,094
3	Total contributions		-125,926,229
4	Interest		
	• For whole year on 1 + 2	\$65,146,184	
	• For half year on 3	<u>-4,722,234</u>	
	Total interest		<u>60,423,950</u>
5	Expected unfunded actuarial accrued liability		\$803,113,513
6	Changes due to:		
	• (Gain)/loss	\$14,522,907	
	• Assumptions	222,828,699	
	• Funding method	0	
	• Plan provisions	<u>0</u>	
	Total changes		<u>237,351,606</u>
7	Unfunded actuarial accrued liability at end of year		\$1,040,465,119

Section 2: Actuarial Valuation Results

Actuarially determined contribution

The actuarially determined contribution is equal to the employer normal cost payment and a payment on the unfunded actuarial accrued liability. The statute governing the System specifies the funding policy used to calculate the actuarially determined contribution based on a closed amortization period ending on June 30, 2038. As of June 30, 2020, there are 18 years remaining on this schedule.

The actuarially determined contribution for the fiscal year ending June 30, 2021, is \$83,876,570 as determined with the June 30, 2019, actuarial valuation. The results of this June 30, 2020, actuarial valuation are used to determine the actuarially determined contribution for the fiscal year ending June 30, 2022, and to estimate the actuarially determined contribution for the fiscal year ending June 30, 2023, as shown in *Section 2, Actuarially determined contribution for following two fiscal years*.

The preliminary contribution requirement as of June 30, 2020, 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.

Preliminary Contribution Requirement

	Year Beginning July 1				
	2020		2019		
	Amount	% of Payroll	Amount	% of Payroll	
1	Total normal cost, adjusted for timing*	\$73,231,049	12.67%	\$55,108,227	10.01%
2	Expected employee contributions	<u>-39,253,888</u>	<u>-6.79%</u>	<u>-37,388,914</u>	<u>-6.79%</u>
3	Employer normal cost: 1 + 2	\$33,977,161	5.88%	\$17,719,313	3.22%
4	Actuarial accrued liability	3,095,290,972		2,779,965,523	
5	Actuarial value of assets	2,054,825,853		1,964,500,825	
6	Unfunded actuarial accrued liability: 4 - 5	<u>1,040,465,119</u>		<u>815,464,698</u>	
7	Payment on unfunded actuarial accrued liability, adjusted for timing*	\$81,066,478	14.02%	\$63,628,234	11.56%
8	Preliminary contribution requirement: 3 + 7	\$115,043,638	19.90%	\$81,347,547	14.78%
9	Projected payroll	\$578,206,224		\$550,510,718	

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

Section 2: Actuarial Valuation Results

Reconciliation of preliminary contribution requirement

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

Reconciliation of Preliminary Contribution Requirement from July 1, 2019 to July 1, 2020

	Amount	% of Payroll
Preliminary contribution requirement as of June 30, 2019	\$81,347,547	14.78%
• Effect of plan amendment(s)	0	0.00%
• Effect of change in asset method	0	0.00%
• Effect of expected change in amortization payment due to payroll growth	1,908,847	0.35%
• Effect of change in amortization method	0	0.00%
• Effect of change in actuarial assumptions	30,694,764	5.58%
• Effect of contributions (more)/less than actuarially determined contribution	-603,052	-0.11%
• Effect of investment (gain)/loss	1,935,408	0.35%
• Effect of other gains and losses on accrued liability	-761,307	-0.14%
• Net effect of other changes, including composition and number of members, payroll	<u>521,431</u>	<u>-0.91%</u>
Total change	\$33,696,091	5.12%
Preliminary contribution requirement as of June 30, 2020	115,043,638	19.90%

Section 2: Actuarial Valuation Results

Amortization schedule for unfunded actuarial accrued liability

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

Unfunded Liability Amortization Schedule

As of July 1	Balance	Amortization Payment* (Year Following)	Funded Percentage
2020	\$1,040,465,119	\$65,537,081	66.39%
2021	1,045,505,594	84,801,408	67.29%
2022	1,030,971,727	87,345,450	68.96%
2023	1,012,788,912	89,965,813	70.63%
2024	990,622,775	92,664,788	72.32%
2025	964,113,167	95,444,731	74.02%
2026	932,872,291	98,308,073	75.75%
2027	896,482,689	101,257,316	77.51%
2028	854,495,096	104,295,035	79.30%
2029	806,426,129	107,423,886	81.14%
2030	751,755,827	110,646,603	83.02%
2031	689,924,999	113,966,001	84.95%
2032	620,332,401	117,384,981	86.94%
2033	542,331,700	120,906,530	88.97%
2034	455,228,232	124,533,726	91.07%
2035	358,275,520	128,269,738	93.22%
2036	250,671,558	132,117,830	95.42%
2037	131,554,821	136,081,365	97.69%
2038	0	0	100.00%

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

Section 2: Actuarial Valuation Results

Actuarially determined contribution for following two fiscal years

On the basis of the June 30, 2020, actuarial valuation, the employer normal cost rate is 5.88%. This rate is applied to the projected payrolls for fiscal 2022 and fiscal 2023 to determine the employer normal cost for each year. The payment on the unfunded liability is added to the employer normal cost to determine the actuarially determined contribution for the fiscal year ending June 30, 2022, and to estimate the actuarially determined contribution for the fiscal year ending June 30, 2023, as shown below. The final actuarially determined contribution for fiscal 2023 will be determined with the next valuation.

Actuarially Determined Contribution: 2022 – 2023

Fiscal Year Ended June 30	Projected Payroll*	Employer Normal Cost Rate	Projected Contributions		
			Employer Normal Cost	Unfunded Liability	Total
2022	\$598,443,442	5.88%	\$35,166,362	\$84,801,408	\$119,967,769
2023	619,388,962	5.88%	36,397,184	87,345,450	123,742,634

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

Section 2: Actuarial Valuation Results

History of employer contributions

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

History of Employer Contributions: 2012 – 2021

Fiscal Year Ended June 30	Actuarially Determined Contribution		Actual Employer Contribution		
	Amount*	Percentage of Payroll**	Amount	Percentage of Payroll**	Percent Contributed
2012	\$36,587,864	8.89%	\$40,302,433	9.79%	110.15%
2013	37,081,933	8.91%	51,370,307	12.34%	138.53%
2014	40,217,666	9.98%	56,482,985	14.02%	140.44%
2015	44,651,783	10.25%	55,881,364	12.83%	125.15%
2016	46,237,853	10.11%	54,347,060	11.88%	117.54%
2017	48,503,358	10.14%	60,280,480	12.60%	124.28%
2018	52,065,397	10.67%	64,564,323	12.26%	124.01%
2019	62,984,742	11.57%	66,617,894	12.24%	105.77%
2020	78,943,914	14.01%	84,429,972	15.34%	106.95%
2021	83,876,570	14.51%	--	--	--

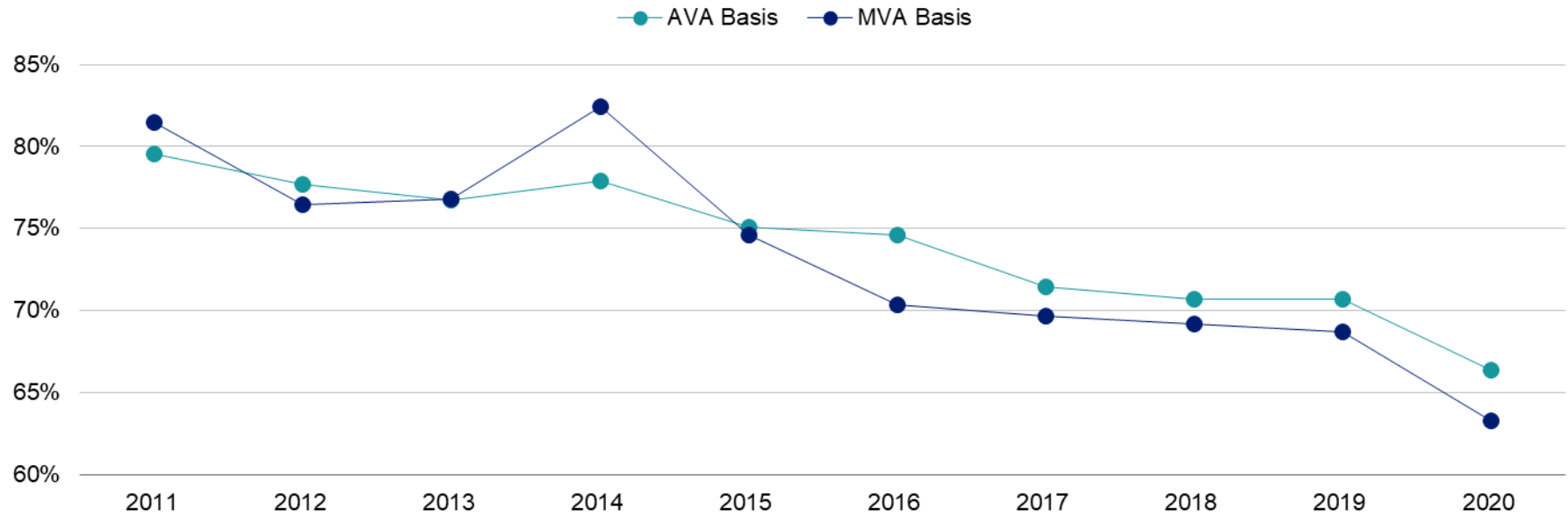
* Budgeted contribution amount from prior valuation

** Based on expected payroll

Section 2: Actuarial Valuation Results

History of funded percentage

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



Section 2: Actuarial Valuation Results

Actuarial balance sheet

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

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

Actuarial Balance Sheet

	Year Ended	
	June 30, 2020	June 30, 2019
Liabilities		
• Present value of benefits for retired members and beneficiaries	\$1,838,530,387	\$1,702,648,997
• Present value of benefits for inactive former members	84,767,030	92,529,805
• Present value of benefits for active members	<u>1,790,875,029</u>	<u>1,426,520,699</u>
Total liabilities	\$3,714,172,446	\$3,221,699,501
Assets		
• Total valuation value of assets	\$2,054,825,853	\$1,964,500,825
• Present value of future contributions by members	370,751,779	335,499,078
• Present value of future employer contributions for:		
• Entry age cost	248,129,695	106,234,900
• Unfunded actuarial accrued liability	<u>1,040,465,119</u>	<u>815,464,698</u>
Total of current and future assets	\$3,714,172,446	\$3,221,699,501

Section 2: Actuarial Valuation Results

Risk

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

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

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

A detailed risk assessment is important for VSERS because:

- The negative cash flow position of the System could be exacerbated by relatively small deviations from assumed future experience.
- Retired and inactive members account for more than half of the System's liabilities limiting options for reducing plan liabilities in the event of adverse experience.
- Most actuarial assumptions have been revised and updated since the last detailed risk analysis was performed.
- The risks identified below show significant potential for variability.

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

- **Investment Risk** (the risk that returns will be different than expected)
 - If the prior year's investment performance resulted in a market value of assets that is 10% different than the current value, it would result in a change of \$195.9 million in the asset value. A 10% increase in assets would cause the unfunded liability (market value basis) to decrease from \$1,136.2 million to \$940.3 million. Likewise, a 10% decrease in the asset value would cause the unfunded liability to increase from \$1,136.2 million to \$1,332.1 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 0.26% of payroll, disregarding the effects of the five-year phase-in of investment gains and losses.

To illustrate the potential for future investment volatility, the market value rate of return over the last 20 years has ranged from a low of -18.80% to a high of 21.16%.

Section 2: Actuarial Valuation Results

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

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

The current mortality assumptions represent our best estimate of the mortality rates for this plan; however, a 10% reduction in the assumed mortality rates results in an increase in the liabilities of roughly 3% for most plans. For VSERS, a 3% liability increase would result in an increase in the unfunded accrued liability of \$92.9 million. The unfunded accrued liability (market value of assets basis) would increase from \$1.14 billion to \$1.23 billion.

- **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 \$18.6 million to a gain of \$29.6 million.
 - The non-investment gain(loss) for a year has ranged from a loss of \$83.4 million to a gain of \$9.4 million.
- The funded percentage on the actuarial value of assets has ranged from a low of 66.4% to a high of 81.1% over the past ten years.

- **Maturity Measures**

- The risk associated with a pension plan increases as it becomes more mature, meaning that the actives represent a smaller portion of the liabilities of the plan. When this happens, there is a greater risk that fluctuations in the experience of the non-active members or of the assets of the plan can result in large swings in the contribution requirements.
- Over the past ten years, the ratio of non-active members to active members has increased from a low of 0.77 to a high of 0.96. Currently the System has a non-active to active member ratio of 0.96.

Section 2: Actuarial Valuation Results

- As of June 30, 2020, the retired life actuarial accrued liability represents 59% 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 \$27.7 million more than contributions received, or 1.4% of the market value of assets. As the System matures, more cash will be needed from the investment portfolio to meet benefit payments.

Supplemental Information

Exhibit A: Table of Plan Coverage

Category	As of June 30		Change From Prior Year
	2020	2019	
Active members in valuation:			
• Number	8,539	8,443	1.1%
• Average age	45.6	45.7	-0.1
• Average years of creditable service	10.8	10.8	0.0
• Total payroll	\$551,981,002	\$527,571,033	4.6%
• Average payroll	64,642	62,486	3.5%
• Total active vested members	5,431	5,340	1.7%
Inactive members			
Number of deferreds as reported by the System	768	747	2.8%
Number of inactives as reported by the System	1,482	1,443	2.7%
Retired members:			
• Number in pay status	6,295	6,157	2.2%
• Average age	71.3	70.9	0.4
• Average monthly benefit	\$1,787	\$1,750	2.1%
Disability retirees:			
• Number in pay status	409	410	-0.2%
• Average age	65.4	65.0	0.4
• Average monthly benefit	\$1,274	\$1,243	2.5%
Beneficiaries:			
• Number in pay status	720	701	2.7%
• Average age	70.3	69.7	0.6
• Average monthly benefit	\$1,130	\$1,093	3.4%

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, 2019	8,443	747	1,443	410	6,157	701	17,901
• New members	742	N/A	137	0	7	15	901
• Inactives as reported by the System	-323	N/A	323	N/A	N/A	N/A	0
• Deferred as reported by the System	N/A	80	-80	N/A	N/A	N/A	0
• Retirements	-240	-46	-9	-1	296	N/A	0
• New disabilities	-10	0	-2	15	-3	N/A	0
• Return to work from disability	0	N/A	N/A	0	N/A	N/A	0
• Died with beneficiary	-5	0	-1	-2	-29	37	0
• Died without beneficiary	-9	-1	0	-13	-127	-25	-175
• Refunds of contributions	-127	-10	-262	0	-3	0	-402
• Rehire	68	-3	-65	N/A	0	N/A	0
• Certain period expired	N/A	N/A	0	0	-2	-8	-10
• Data adjustments	0	1	-2	0	-1	0	-2
Number as of July 1, 2020	8,539	768	1,482	409	6,295	720	18,213

Section 3: Supplemental Information

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

	Year Ended June 30, 2020	Year Ended June 30, 2019
Net assets at market value at the beginning of the year	\$1,909,469,823	\$1,841,500,283
Contribution income:		
• Employer contributions	\$84,429,972	\$66,617,894
• Member contributions	40,902,188	40,818,039
• Less administrative expenses	<u>-2,268,390</u>	<u>-2,246,008</u>
<i>Net contribution income</i>	<i>\$123,063,770</i>	<i>\$105,189,925</i>
Net other income	\$594,069	\$298,872
Investment income:		
• Interest, dividends and other income	\$17,654,148	\$24,531,137
• Asset appreciation	63,820,001	86,505,040
• Less investment fees	<u>-2,509,639</u>	<u>-4,258,715</u>
<i>Net investment income</i>	<i>\$78,964,510</i>	<i>\$106,777,462</i>
Total income available for benefits	\$202,622,349	\$212,266,259
Less benefit payments:		
• Benefits	-\$148,336,649	-\$139,182,095
• Refunds of contributions	-3,494,656	-4,160,675
• Death claims	-488,556	-438,683
• Transfers to other pension trust funds	<u>-705,670</u>	<u>-515,266</u>
<i>Net benefit payments</i>	<i>-\$153,025,531</i>	<i>-\$144,296,719</i>
Change in reserve for future benefits	\$49,596,818	\$67,969,540
Net assets at market value at the end of the year	\$1,959,066,641	\$1,909,469,823

Section 3: Supplemental Information

Exhibit D: Summary Statement of Plan Assets

	June 30, 2020	June 30, 2019
Cash equivalents	\$23,139,051	\$15,874,524
Total accounts receivable	54,038,001	142,449,904
Prepaid expenses	61,720	54,966
Capital assets, net of depreciation	993,281	1,253,633
Investments:		
• Fixed income	\$129,613,142	\$149,500,856
• Equities	142,912,040	144,778,289
• Mutual and commingled funds	1,416,006,540	1,427,977,444
• Real estate and venture capital	<u>251,830,930</u>	<u>170,054,992</u>
Total investments at market value	\$1,940,362,652	\$1,892,311,581
Total assets	\$2,018,594,705	\$2,051,944,608
Total liabilities	-\$59,528,064	-\$142,474,785
Net assets at market value	\$1,959,066,641	\$1,909,469,823
Net assets at actuarial value	\$2,054,825,853	\$1,964,500,825

Section 3: Supplemental Information

Exhibit E: Development of the Fund through June 30, 2020

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
2010							\$1,169,844,902	\$1,265,404,195	108.17%
2011	\$37,572,599	\$22,269,041	\$743,172	\$238,386,383	-\$1,147,576	-\$87,061,787	1,380,606,734	1,348,762,790	97.69%
2012	40,302,433	27,708,009	377,562	23,604,774	-1,328,919	-92,781,097	1,378,489,496	1,400,779,062	101.62%
2013	51,370,307	29,847,352	638,436	110,717,567	-1,374,643	-99,194,618	1,470,493,897	1,469,169,902	99.91%
2014	56,482,985	31,745,692	453,852	203,720,178	-1,158,183	-104,492,553	1,657,245,868	1,566,075,540	94.50%
2015	55,881,364	33,296,248	423,273	-8,484,694	-2,104,636	-111,396,184	1,624,861,239	1,636,267,663	100.70%
2016	54,347,060	34,055,217	293,444	17,962,425	-1,775,647	-120,093,586	1,609,650,152	1,707,267,941	106.06%
2017	60,280,480	35,966,987	785,504	170,358,016	-2,119,044	-126,479,801	1,748,442,294	1,793,794,733	102.59%
2018	64,564,323	40,423,239	554,842	123,632,169	-2,026,240	-134,090,344	1,841,500,283	1,881,804,847	102.19%
2019	66,617,894	40,818,039	298,872	106,777,462	-2,246,008	-144,296,719	1,909,469,823	1,964,500,825	102.88%
2020	84,429,972	40,902,188	594,069	78,964,510	-2,268,390	-153,025,531	1,959,066,641	2,054,825,853	104.89%

* On a market basis, net of investment fees

** Includes "other expenses"

Section 3: Supplemental Information

Exhibit F: Definition of Pension Terms

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

Actuarial Accrued Liability for Actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability for Pensioners:	The single-sum value of lifetime benefits to existing pensioners. This sum takes into account life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial Cost Method:	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
Actuarial Gain or Loss:	A measure of the difference between actual experience and expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge that may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.
Actuarially Equivalent:	Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV):	<p>The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is:</p> <ul style="list-style-type: none">Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, andDiscounted according to an assumed rate (or rates) of return to reflect the time value of money.

Section 3: Supplemental Information

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

Section 3: Supplemental Information

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

Section 3: Supplemental Information

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

Actuarial Valuation Basis

Exhibit I: Actuarial Assumptions, Methods and Models

Rationale for Assumptions:	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the Actuarial Experience Study dated September 24, 2020 (as prepared by Segal).	
Inflation:	2.30%.	
Investment Return:	7.00%. The investment return assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes, as well as the System's target asset allocation.	
Salary Increases:	Service	Annual Rate of Salary Increase (%)
	0	5.55%
	5	5.31%
	10	4.77%
	15	4.42%
	20	4.20%
	25	3.99%
	30	3.82%
	35	3.62%
	40+	3.40%
Cost-of-Living Adjustments:	Assumed to occur at the rate of 2.40% per annum for Groups A, C and D members and 1.35% per annum for Group E and F members (beginning at age 62 for deferred retirements) who retired before July 1, 2008. For Group F members retiring after July 1, 2008, assumed to occur at the rate of 2.40% per annum. The January 1, 2021 COLA is assumed to be 1.00% for those in group E and F who retired before July 1, 2008, and 0.00% for all other groups.	
Mortality Rates:	<i>Pre-retirement:</i> <ul style="list-style-type: none"> Groups A/F 60% of PubG-2010 General Employee Amount-Weighted Above Median, 40% of PubG-2010 General Employee Amount-Weighted with generational projection using scale MP-2019 	

Section 4: Actuarial Valuation Basis

Mortality Rates: *continued*

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

Healthy Post-retirement - Retirees:

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

Healthy Post-retirement - Beneficiaries:

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

Disabled Post-retirement:

- All Groups PubNS-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table with generational projection using scale MP-2019

The tables with the generational projection to the ages of members as of the measurement date reasonably reflect the mortality experience of the System as of the measurement date. The mortality tables were then adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

* 30% of deaths are assumed to be accidental.

Section 4: Actuarial Valuation Basis

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

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

Rate (%)							
Withdrawal					Disability ¹		
Groups A/D			Group C				
Age	Male/Female	Service	Male	Female	Age	Groups A/D/F	Group C
25	4.9066%	0	10.800%	21.600%	25	0.0158%	0.0770%
30	3.9275%	1	6.480%	12.960%	30	0.0204%	0.0990%
35	3.2826%	2	5.400%	10.800%	35	0.0272%	0.1325%
40	3.0392%	3	3.456%	6.912%	40	0.0406%	0.1980%
45	2.6920%	4	3.456%	6.912%	45	0.0665%	0.3235%
50	2.2464%	5	3.456%	6.912%	50	0.1055%	0.5455%
55	1.8935%	6-19	3.240%	6.480%	55	0.1862%	0.9080%
60	1.8935%				60	0.3005%	1.4640%

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

Withdrawal Group F²

Ultimate Rates		Increase Factors	
Age	Male/Female	Service	Male/Female
25	6.3933%	1	2.800
30	5.1207%	3	1.750
35	4.2723%	5	1.350
40	3.9542%	7	1.175
45	3.5148%	9	1.515
50	2.9240%		
55	2.4695%		
60	2.4695%		

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

Section 4: Actuarial Valuation Basis

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

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

Inactive Members as Reported by the System:	Not Vested: Valuation liability equals 100% of accumulated contributions. Vested: Valuation liability based on accrued benefit and assumed to retire at their Normal Retirement Age with a deferred vested benefit.
Deferred Members as Reported by the System:	Assumed to retire at their Normal Retirement Age with a deferred vested benefit.
Future Administrative Expenses:	No provisions made; expenses of the System are paid by the State.
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:	<ul style="list-style-type: none"> Groups A/D 75.4% of male members and 64.0% of female members are assumed to be married. Group C 73.3% of male members and 61.0% of female members are assumed to be married. Group F 71.4% of male members and 63.1% of female members are assumed to be married.
Age of Spouse:	Females three years younger than males.
Benefit Election:	<ul style="list-style-type: none"> Non-Group C All members are assumed to elect the single life annuity option. Group C Single members are assumed to elect single life annuity. Married members are assumed to elect the 70% joint & survivor option

Section 4: Actuarial Valuation Basis

Actuarial Value of Assets:	The amount of the assets for valuation purposes equals the preliminary asset value plus 20% of the difference between market and preliminary asset values. The preliminary asset value is equal to the previous year's asset value (for valuation purposes) adjusted for contributions less benefit payments and expenses plus expected investment income. If necessary, a further adjustment is made to ensure that the valuation assets are within 20% of the market value.
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.
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 supervision of the responsible actuary.
Justification for Change in Actuarial Assumptions:	<p>Based on reviews of economic assumptions and demographic assumptions in the experience study completed in September of 2020, the following actuarial assumptions were changed:</p> <ul style="list-style-type: none">• Inflation• Investment Return• Salary Scale• COLA• Mortality• Retirement (Active, Inactive, and Disability)• Termination <p>For more information on how these assumptions were changed, please refer to the Vermont State Employees' Retirement System Experience Review presentation that was completed in September of 2020.</p>

Section 4: Actuarial Valuation Basis

Exhibit II: Summary of Plan Provisions

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

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

Section 4: Actuarial Valuation Basis

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

Section 4: Actuarial Valuation Basis

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

Additional Summary Tables of Member Data

Table 1A: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Payroll – All Employee Groups

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	269	267	2	--	--	--	--	--	--
	\$36,870	\$36,763	\$51,163	--	--	--	--	--	--
25 - 29	792	681	109	2	--	--	--	--	--
	\$50,407	\$48,503	\$61,956	\$69,573	--	--	--	--	--
30 - 34	945	531	352	62	--	--	--	--	--
	\$57,734	\$51,052	\$65,510	\$70,812	--	--	--	--	--
35 - 39	1,033	425	347	186	75	--	--	--	--
	\$62,246	\$52,875	\$67,137	\$70,546	\$72,141	--	--	--	--
40 - 44	1,014	308	275	188	188	54	1	--	--
	\$67,220	\$51,391	\$68,625	\$72,893	\$80,515	\$84,736	\$43,621	--	--
45 - 49	1,115	293	217	170	203	166	62	4	--
	\$70,543	\$53,411	\$66,758	\$75,138	\$79,685	\$85,451	\$82,605	\$65,910	--
50 - 54	1,174	250	211	174	175	145	136	79	4
	\$69,357	\$54,231	\$65,415	\$71,539	\$74,829	\$76,649	\$80,278	\$78,897	\$64,388
55 - 59	1,059	190	191	138	167	129	100	97	47
	\$69,475	\$52,827	\$64,757	\$67,097	\$74,426	\$76,931	\$82,394	\$79,673	\$76,347
60 - 64	769	117	132	114	122	91	57	67	69
	\$70,295	\$59,563	\$66,620	\$69,791	\$71,887	\$72,620	\$75,910	\$80,005	\$76,408
65 & over	369	46	76	54	49	45	21	23	55
	\$74,279	\$65,548	\$67,942	\$66,122	\$74,838	\$72,571	\$79,054	\$91,675	\$90,146
Total	8,539	3,108	1,912	1,088	979	630	377	270	175
	\$64,642	\$50,670	\$66,265	\$71,105	\$76,287	\$78,846	\$80,396	\$80,347	\$80,434

Section 5: Additional Summary Tables of Member Data

Table 1B: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Payroll – General Employees – Group A

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	--	--	--	--	--	--	--	--	--
25 - 29	--	--	--	--	--	--	--	--	--
30 - 34	--	--	--	--	--	--	--	--	--
35 - 39	--	--	--	--	--	--	--	--	--
40 - 44	--	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--	--
50 - 54	--	--	--	--	--	--	--	--	--
55 - 59	--	--	--	--	--	--	--	--	--
60 - 64	--	--	--	--	--	--	--	--	--
65 & over	1	--	--	--	--	--	--	--	1
	\$59,507	--	--	--	--	--	--	--	\$59,507
Total	1	--	--	--	--	--	--	--	1
	\$59,507	--	--	--	--	--	--	--	\$59,507

Section 5: Additional Summary Tables of Member Data

Table 1C: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Payroll – Law Enforcement Personnel – Group C

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	24	24	--	--	--	--	--	--	--
	\$50,335	\$50,335	--	--	--	--	--	--	--
25 - 29	76	66	10	--	--	--	--	--	--
	\$74,124	\$72,860	\$82,468	--	--	--	--	--	--
30 - 34	81	26	44	11	--	--	--	--	--
	\$81,680	\$71,526	\$84,207	\$95,575	--	--	--	--	--
35 - 39	65	6	22	27	10	--	--	--	--
	\$87,465	\$63,494	\$82,575	\$92,986	\$97,699	--	--	--	--
40 - 44	71	3	7	20	31	10	--	--	--
	\$100,201	\$76,633	\$86,968	\$90,333	\$104,521	\$122,878	--	--	--
45 - 49	87	6	6	11	30	25	9	--	--
	\$104,179	\$59,133	\$71,899	\$89,759	\$109,023	\$119,540	\$114,541	--	--
50 - 54	53	1	5	4	24	11	5	3	--
	\$101,655	\$71,887	\$76,479	\$83,603	\$104,760	\$107,769	\$112,485	\$112,304	--
55 - 59	1	--	--	--	--	1	--	--	--
	\$81,574	--	--	--	--	\$81,574	--	--	--
60 - 64	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
65 & over	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
Total	458	132	94	73	95	47	14	3	--
	\$89,061	\$67,531	\$82,649	\$91,649	\$105,285	\$116,687	\$113,806	\$112,304	--

Section 5: Additional Summary Tables of Member Data

Table 1D: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Payroll – Judges – Group D

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
25 - 29	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
30 - 34	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
35 - 39	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--
40 - 44	1	1	--	--	--	--	--	--	--
	\$53,189	\$53,189	--	--	--	--	--	--	--
45 - 49	4	2	1	1	--	--	--	--	--
	\$100,533	\$67,557	\$132,492	\$134,527	--	--	--	--	--
50 - 54	10	4	2	2	1	1	--	--	--
	\$149,442	\$134,654	\$159,300	\$159,300	\$159,300	\$159,300	--	--	--
55 - 59	10	1	4	2	2	--	1	--	--
	\$143,088	\$112,844	\$161,367	\$150,927	\$105,705	--	\$159,300	--	--
60 - 64	11	3	1	2	3	2	--	--	--
	\$160,407	\$159,300	\$159,300	\$159,300	\$162,056	\$161,254	--	--	--
65 & over	16	2	6	4	2	--	1	1	--
	\$120,926	\$105,124	\$110,215	\$100,385	\$171,573	--	\$159,300	\$159,300	--
Total	52	13	14	11	8	3	2	1	--
	\$136,152	\$117,532	\$136,939	\$134,102	\$150,003	\$160,603	\$159,300	\$159,300	--

Section 5: Additional Summary Tables of Member Data

Table 1E: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Payroll – General Employees – Group F

Age	Years of Creditable Service								
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 & over
Under 25	245	243	2	--	--	--	--	--	--
	\$35,551	\$35,423	\$51,163	--	--	--	--	--	--
25 - 29	716	615	99	2	--	--	--	--	--
	\$47,890	\$45,889	\$59,884	\$69,573	--	--	--	--	--
30 - 34	864	505	308	51	--	--	--	--	--
	\$55,489	\$49,998	\$62,839	\$65,471	--	--	--	--	--
35 - 39	968	419	325	159	65	--	--	--	--
	\$60,553	\$52,723	\$66,092	\$66,735	\$68,209	--	--	--	--
40 - 44	942	304	268	168	157	44	1	--	--
	\$64,749	\$51,136	\$68,146	\$70,817	\$75,775	\$76,068	\$43,621	--	--
45 - 49	1,024	285	210	158	173	141	53	4	--
	\$67,568	\$53,191	\$66,298	\$73,744	\$74,597	\$79,406	\$77,182	\$65,910	--
50 - 54	1,111	245	204	168	150	133	131	76	4
	\$67,096	\$52,846	\$64,223	\$70,207	\$69,477	\$73,454	\$79,049	\$77,578	\$64,388
55 - 59	1,048	189	187	136	165	128	99	97	47
	\$68,761	\$52,509	\$62,691	\$65,864	\$74,046	\$76,895	\$81,617	\$79,673	\$76,347
60 - 64	758	114	131	112	119	89	57	67	69
	\$68,987	\$56,938	\$65,913	\$68,193	\$69,614	\$70,628	\$75,910	\$80,005	\$76,408
65 & over	352	44	70	50	47	45	20	22	54
	\$72,200	\$63,749	\$64,319	\$63,381	\$70,722	\$72,571	\$75,041	\$88,601	\$90,713
Total	8,028	2,963	1,804	1,004	876	580	361	266	174
	\$62,787	\$49,626	\$64,863	\$68,921	\$72,469	\$75,357	\$78,663	\$79,690	\$80,555

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	70	\$490,464
36	0	0	0	0	0	0
37	0	0	1	37,426	0	0
38	0	0	0	0	0	0
39	0	0	0	0	0	0
40	0	0	1	9,373	0	0
41	0	0	0	0	2	9,428
42	0	0	0	0	0	0
43	0	0	3	67,101	0	0
44	1	20,709	5	109,028	0	0
45	0	0	0	0	1	9,649
46	0	0	1	8,493	1	11,140
47	1	10,538	2	38,458	1	8,433
48	7	201,227	4	127,446	3	33,031
49	5	143,736	3	76,542	2	40,180
50	9	387,874	5	68,983	3	75,380
51	19	956,140	3	44,429	4	37,806
52	28	1,297,020	12	261,979	2	18,224
53	26	1,224,399	4	105,277	3	39,860
54	36	1,615,755	6	195,970	2	23,920
55	49	1,641,741	12	208,380	3	45,074
56	64	2,096,940	12	211,139	4	77,861
57	62	2,154,211	11	187,438	1	11,161
58	84	2,444,652	20	308,492	8	118,067
59	82	2,299,542	18	293,761	4	85,267
60	100	3,010,343	13	247,198	8	88,185
61	107	2,684,445	13	171,332	7	118,061
62	177	3,919,603	19	303,101	17	293,132
63	242	5,674,795	14	208,285	10	131,109
64	251	4,968,053	8	144,293	18	303,358
65	270	6,203,196	20	241,930	22	336,598

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	318	\$6,463,767	16	\$152,726	18	\$297,561
67	316	7,092,780	21	306,230	17	292,952
68	331	6,829,062	25	281,173	11	184,655
69	333	7,216,249	17	242,965	15	181,095
70	349	7,320,963	15	201,100	19	295,496
71	332	6,884,208	13	193,102	12	156,211
72	337	6,720,593	11	112,852	20	285,936
73	326	7,259,196	10	226,982	24	341,970
74	215	4,589,158	9	119,336	21	310,161
75	212	4,029,732	7	88,565	23	322,408
76	191	3,644,581	6	82,954	30	416,709
77	202	4,103,572	6	69,457	25	375,047
78	170	3,416,440	6	49,359	29	374,727
79	131	2,118,284	7	124,484	23	324,730
80	131	2,181,375	7	111,440	19	261,093
81	96	1,492,028	3	17,738	21	280,195
82	86	1,457,160	6	86,333	11	122,176
83	77	1,436,649	5	43,803	15	248,033
84	94	1,577,882	2	16,322	28	447,462
85	69	1,286,815	2	20,861	23	287,695
86	58	867,685	1	8,800	21	239,401
87	66	979,833	2	12,476	12	130,015
88	44	590,269	0	0	19	242,793
89	46	683,419	1	4,913	13	145,583
90	40	509,620	0	0	14	295,494
91	25	302,334	0	0	10	134,134
92	17	272,292	1	5,108	10	121,916
93	13	159,194	0	0	1	6,658
94	19	249,960	0	0	8	50,274
≥ 95	31	267,943	0	0	12	183,240
Total	6,295	\$134,957,964	409	\$6,254,932	720	\$9,761,208

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	0	\$0
36	0	0	0	0	0	0
37	0	0	0	0	0	0
38	0	0	0	0	0	0
39	0	0	0	0	0	0
40	0	0	0	0	0	0
41	0	0	0	0	0	0
42	0	0	0	0	0	0
43	0	0	0	0	0	0
44	0	0	0	0	0	0
45	0	0	0	0	0	0
46	0	0	0	0	0	0
47	0	0	0	0	0	0
48	0	0	0	0	0	0
49	0	0	0	0	0	0
50	0	0	0	0	0	0
51	0	0	0	0	0	0
52	0	0	0	0	0	0
53	0	0	0	0	0	0
54	0	0	0	0	0	0
55	0	0	0	0	0	0
56	2	95,472	0	0	0	0
57	0	0	0	0	0	0
58	1	9,028	0	0	0	0
59	0	0	0	0	0	0
60	0	0	0	0	0	0
61	0	0	0	0	0	0
62	2	67,966	0	0	1	7,308
63	0	0	0	0	0	0
64	0	0	0	0	0	0
65	2	57,340	1	5,809	0	0

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	0	\$0	1	\$1,913	0	\$0
67	3	93,669	1	17,647	1	9,617
68	5	113,763	1	8,295	0	0
69	3	80,073	0	0	0	0
70	3	81,809	0	0	1	45,227
71	3	84,565	1	22,091	1	11,691
72	5	132,819	0	0	1	24,405
73	3	66,254	0	0	2	61,292
74	6	172,865	0	0	0	0
75	0	0	0	0	2	19,705
76	3	94,695	0	0	3	23,334
77	0	0	0	0	1	15,761
78	6	200,960	0	0	2	26,241
79	4	108,546	0	0	4	48,569
80	2	47,081	0	0	0	0
81	5	149,797	0	0	0	0
82	4	102,027	1	12,654	0	0
83	6	128,497	0	0	0	0
84	2	52,687	0	0	1	21,510
85	7	225,698	0	0	0	0
86	4	98,588	0	0	0	0
87	3	86,742	0	0	0	0
88	3	72,754	0	0	2	22,449
89	3	103,398	0	0	2	26,592
90	4	61,370	0	0	1	4,343
91	2	44,160	0	0	1	13,720
92	2	57,685	0	0	1	5,887
93	1	7,730	0	0	0	0
94	3	48,958	0	0	5	34,789
≥ 95	1	12,248	0	0	1	3,554
Total	103	\$2,759,242	6	\$68,408	33	\$425,994

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	0	\$0
36	0	0	0	0	0	0
37	0	0	0	0	0	0
38	0	0	0	0	0	0
39	0	0	0	0	0	0
40	0	0	0	0	0	0
41	0	0	0	0	0	0
42	0	0	0	0	0	0
43	0	0	0	0	0	0
44	0	0	0	0	0	0
45	0	0	0	0	0	0
46	0	0	0	0	0	0
47	0	0	0	0	0	0
48	0	0	0	0	0	0
49	0	0	0	0	0	0
50	0	0	0	0	0	0
51	0	0	0	0	0	0
52	0	0	0	0	0	0
53	0	0	0	0	0	0
54	0	0	0	0	0	0
55	0	0	0	0	1	21,087
56	0	0	0	0	0	0
57	0	0	0	0	0	0
58	0	0	0	0	0	0
59	0	0	0	0	0	0
60	0	0	0	0	0	0
61	0	0	0	0	0	0
62	1	11,911	0	0	0	0
63	0	0	0	0	0	0
64	1	9,426	0	0	0	0
65	0	0	0	0	0	0

Section 5: Additional Summary Tables of Member Data

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

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

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	23	\$212,052
36	0	0	0	0	0	0
37	0	0	1	37,426	0	0
38	0	0	0	0	0	0
39	0	0	0	0	0	0
40	0	0	0	0	0	0
41	0	0	0	0	0	0
42	0	0	0	0	0	0
43	0	0	1	46,885	0	0
44	1	20,709	2	83,970	0	0
45	0	0	0	0	0	0
46	0	0	0	0	0	0
47	0	0	1	32,736	0	0
48	0	0	3	117,165	1	12,881
49	1	12,000	1	47,875	0	0
50	5	302,390	0	0	1	38,847
51	10	655,881	0	0	1	13,565
52	15	923,983	3	100,771	0	0
53	9	589,841	1	47,534	0	0
54	15	870,463	3	163,337	0	0
55	20	848,064	1	51,842	0	0
56	16	710,647	1	16,979	1	24,872
57	14	831,629	1	27,554	0	0
58	14	518,297	0	0	1	31,660
59	7	365,413	2	83,084	0	0
60	19	974,852	0	0	0	0
61	14	621,380	0	0	0	0
62	15	797,143	1	38,050	1	21,598
63	19	951,343	1	11,863	1	29,707
64	14	607,825	0	0	1	37,894
65	17	855,338	0	0	1	23,980

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	7	\$307,169	0	\$0	1	\$32,901
67	14	650,628	2	77,995	2	45,400
68	9	380,077	0	0	1	12,440
69	5	258,957	0	0	1	32,101
70	13	577,116	1	37,179	1	17,189
71	4	151,623	1	32,677	1	25,632
72	9	360,892	0	0	2	71,474
73	12	582,427	3	125,969	2	46,734
74	9	409,051	1	45,286	2	57,393
75	1	29,003	1	36,434	0	0
76	5	201,031	0	0	3	91,581
77	10	492,997	0	0	2	67,514
78	6	296,464	0	0	1	30,013
79	5	200,175	0	0	2	60,774
80	4	186,048	1	31,588	1	39,671
81	2	98,099	0	0	2	51,768
82	2	93,780	1	30,246	0	0
83	3	157,844	0	0	2	50,037
84	2	78,690	0	0	3	116,208
85	2	107,323	0	0	2	52,109
86	0	0	0	0	1	32,888
87	1	51,293	0	0	2	60,229
88	1	44,117	0	0	2	66,265
89	4	148,356	0	0	1	32,914
90	1	45,240	0	0	4	88,575
91	1	38,752	0	0	0	0
92	0	0	0	0	1	28,678
93	1	45,394	0	0	0	0
94	0	0	0	0	0	0
≥ 95	0	0	0	0	2	46,720
Total	358	\$17,449,747	34	\$1,324,444	76	\$1,704,262

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	0	\$0
36	0	0	0	0	0	0
37	0	0	0	0	0	0
38	0	0	0	0	0	0
39	0	0	0	0	0	0
40	0	0	0	0	0	0
41	0	0	0	0	0	0
42	0	0	0	0	0	0
43	0	0	0	0	0	0
44	0	0	0	0	0	0
45	0	0	0	0	0	0
46	0	0	0	0	0	0
47	0	0	0	0	0	0
48	0	0	0	0	0	0
49	0	0	0	0	0	0
50	0	0	0	0	0	0
51	0	0	0	0	0	0
52	0	0	0	0	0	0
53	0	0	0	0	0	0
54	0	0	0	0	0	0
55	0	0	0	0	0	0
56	0	0	0	0	0	0
57	0	0	0	0	0	0
58	0	0	0	0	0	0
59	0	0	0	0	0	0
60	1	92,299	0	0	0	0
61	0	0	0	0	0	0
62	1	27,415	0	0	0	0
63	0	0	0	0	0	0
64	0	0	0	0	0	0
65	4	291,606	0	0	0	0

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	2	\$163,987	0	\$0	0	\$0
67	4	278,243	0	0	0	0
68	2	154,992	0	0	0	0
69	4	319,756	0	0	0	0
70	3	267,550	0	0	0	0
71	6	385,575	0	0	0	0
72	2	212,146	0	0	0	0
73	3	378,671	0	0	0	0
74	3	66,087	0	0	0	0
75	1	17,754	0	0	1	21,105
76	3	189,252	0	0	0	0
77	4	338,429	0	0	0	0
78	4	289,499	0	0	0	0
79	0	0	0	0	0	0
80	1	80,043	0	0	0	0
81	1	37,548	0	0	0	0
82	1	85,688	0	0	0	0
83	3	182,844	0	0	1	92,128
84	1	65,853	0	0	1	35,227
85	1	105,908	0	0	1	68,971
86	0	0	0	0	0	0
87	1	102,428	0	0	0	0
88	1	38,550	0	0	0	0
89	0	0	0	0	0	0
90	1	41,587	0	0	3	174,066
91	0	0	0	0	1	70,855
92	1	52,751	0	0	0	0
93	0	0	0	0	0	0
94	0	0	0	0	0	0
≥ 95	2	28,692	0	0	2	79,476
Total	61	\$4,295,154	0	\$0	10	\$541,828

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
≤ 35	0	\$0	0	\$0	47	\$278,412
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	1	9,373	0	0
41	0	0	0	0	2	9,428
42	0	0	0	0	0	0
43	0	0	2	20,217	0	0
44	0	0	3	25,058	0	0
45	0	0	0	0	1	9,649
46	0	0	1	8,493	1	11,140
47	1	10,538	1	5,722	1	8,433
48	7	201,227	1	10,282	2	20,151
49	4	131,736	2	28,667	2	40,180
50	4	85,484	5	68,983	2	36,532
51	9	300,259	3	44,429	3	24,242
52	13	373,037	9	161,208	2	18,224
53	17	634,558	3	57,743	3	39,860
54	21	745,292	3	32,633	2	23,920
55	29	793,677	11	156,538	2	23,987
56	46	1,290,821	11	194,160	3	52,989
57	48	1,322,583	10	159,884	1	11,161
58	69	1,917,327	20	308,492	7	86,407
59	75	1,934,129	16	210,677	4	85,267
60	80	1,943,192	13	247,198	8	88,185
61	93	2,063,065	13	171,332	7	118,061
62	158	3,015,167	18	265,051	15	264,227
63	223	4,723,453	13	196,422	9	101,402
64	236	4,350,802	8	144,293	17	265,464
65	247	4,998,912	19	236,121	21	312,618

Section 5: Additional Summary Tables of Member Data

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

Age	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
66	308	\$5,982,378	15	\$150,813	17	\$264,660
67	295	6,070,240	18	210,588	14	237,935
68	315	6,180,230	24	272,879	10	172,215
69	320	6,552,256	17	242,965	14	148,994
70	330	6,394,488	14	163,920	17	233,080
71	319	6,262,446	10	116,409	10	118,889
72	321	6,014,735	11	112,852	16	176,274
73	307	6,191,751	7	101,014	20	233,944
74	195	3,871,803	8	74,049	19	252,767
75	210	3,982,974	6	52,131	19	267,901
76	180	3,159,602	5	60,068	24	301,793
77	187	3,262,700	6	69,457	21	273,668
78	154	2,629,518	6	49,359	26	318,474
79	122	1,809,562	7	124,484	17	215,387
80	124	1,868,203	6	79,852	18	221,422
81	88	1,206,584	3	17,738	19	228,427
82	79	1,175,665	4	43,433	11	122,176
83	65	967,465	5	43,803	12	105,868
84	89	1,380,652	2	16,322	23	274,516
85	59	847,887	2	20,861	20	166,615
86	54	769,098	1	8,800	20	206,513
87	61	739,370	2	12,476	10	69,786
88	39	434,848	0	0	15	154,078
89	39	431,665	1	4,913	10	86,077
90	34	361,423	0	0	6	28,511
91	22	219,422	0	0	8	49,559
92	14	161,856	1	5,108	8	87,351
93	11	106,070	0	0	1	6,658
94	16	201,002	0	0	3	15,486
≥ 95	28	227,003	0	0	7	53,489
Total	5,765	\$110,298,155	367	\$4,817,269	597	\$7,022,453

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	1	\$4,343	\$4,343
1971	0	0	0
1972	0	0	0
1973	0	0	0
1974	1	7,645	7,645
1975	0	0	0
1976	0	0	0
1977	1	12,654	12,654
1978	2	27,662	13,831
1979	1	6,109	6,109
1980	4	25,397	6,349
1981	0	0	0
1982	8	99,710	12,464
1983	7	96,935	13,848
1984	7	94,497	13,500
1985	11	160,814	14,619
1986	15	195,475	13,032
1987	28	324,257	11,581
1988	25	448,846	17,954
1989	28	483,410	17,265
1990	54	691,419	12,804
1991	57	1,071,771	18,803
1992	42	459,253	10,935
1993	75	1,154,153	15,389
1994	43	730,242	16,982
1995	81	1,096,039	13,531
1996	280	4,799,150	17,140
1997	82	1,489,958	18,170
1998	79	1,333,741	16,883
1999	104	1,863,923	17,922
2000	129	2,226,652	17,261

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	138	\$2,185,800	\$15,839
2002	155	2,881,764	18,592
2003	167	3,428,123	20,528
2004	232	4,680,247	20,173
2005	234	4,238,087	18,111
2006	234	4,738,567	20,250
2007	269	5,211,135	19,372
2008	283	6,013,388	21,249
2009	464	10,148,306	21,871
2010	341	7,268,813	21,316
2011	327	6,737,283	20,603
2012	342	7,145,014	20,892
2013	319	6,542,304	20,509
2014	350	7,202,527	20,579
2015	500	10,432,822	20,866
2016	389	8,776,344	22,561
2017	393	9,164,083	23,318
2018	436	9,791,603	22,458
2019	495	11,364,782	22,959
2020	191	4,119,056	21,566
Total	7,424	\$150,974,105	\$20,336

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