

Vermont State Employees' Retirement System

**Governmental Accounting Standards Board
(GASB) Statement 68 Accounting Valuation Report
for the Fiscal Year Ending June 30, 2023**





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June 27, 2023

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

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards Board (GASB) Statement No. 68 Accounting Valuation for the fiscal year ending June 30, 2023, for the Vermont State Employees' Retirement System, a single-employer defined benefit pension plan, based on a June 30, 2022, measurement date for employer reporting as of June 30, 2023. It contains the actuarial information that will need to be disclosed in order to comply with GASB 68.

It is important to note that GASB 68 only defines pension liability for financial reporting purposes, and does not apply to contribution amounts for pension funding purposes. The assumptions used in this valuation are the same as those in the Actuarial Valuation and Review report as of June 30, 2021, dated October 29, 2021, except as noted herein. Additional details can be found in that report.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist the State in preparing its financial reports. The financial information on which our calculations were based was provided by the Office of the State Treasurer. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

The actuarial calculations were directed under the supervision of Matthew Strom, FSA, MAAA, EA. He is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of his knowledge, the information supplied in this actuarial valuation is complete and accurate.

The assumptions used in this actuarial valuation were approved by the Board based upon our analysis and recommendations. In our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the System and are appropriate for purposes of the valuation.

We look forward to reviewing this report with you and to answering any questions.

Sincerely,

Segal



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



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

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Section 1: 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.
Participant 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 participants 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 participant 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

Modeling

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

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 Vermont State Employees' Retirement System. 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.

Sections of this report may include actuarial results that 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 their 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.

Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present certain disclosure information required by Governmental Accounting Standards Board Statement No. 68 for the fiscal year ending June 30, 2023. This report, based on financial information as of June 30, 2022, provided by the Office of the State Treasurer and the Vermont State Employees' Retirement System Actuarial Valuation Report as of June 30, 2021, dated October 29, 2021, reflects:

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

The assumptions are the same as shown in the Vermont State Employees' Retirement System Actuarial Valuation Report as of June 30, 2021, except as noted herein.

Highlights of the valuation

The following key findings were the result of this actuarial valuation:

1. GASB 68 permits a measurement date as early as the end of the fiscal year prior to the reporting date. This report for the fiscal year ending June 30, 2023, uses a measurement date of June 30, 2022. The Net Pension Liability (NPL) measured as of June 30, 2022, and June 30, 2021, was determined based upon the results of the actuarial valuations as of June 30, 2021, and June 30, 2020, respectively, adjusted forward using standard actuarial techniques.
2. The NPL is equal to the difference between the Total Pension Liability (TPL) and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) on a market value basis. The NPL increased from \$829.8 million as of June 30, 2021, to \$1.124 billion as of June 30, 2022, and the Plan's Fiduciary Net Position as a percent of the TPL decreased from 74.51% to 66.95%.
3. The discount rate used to determine the TPL and NPL as of June 30, 2022, and June 30, 2021, was 7.00%.
4. At the June 9, 2022, board meeting, the Actuarially Determined Contribution for the fiscal year ending June 30, 2023, calculated as part of the June 30, 2021, actuarial valuation, was recertified to reflect the additional funding and benefit changes from Act 114. In the determination of this recertified amount, various plan provisions and actuarial assumptions per the June 30, 2021, actuarial valuation were updated to reflect Act 114. Those updates were also used in the determination of pension liabilities as of June 30, 2022, for GASB purposes. Details on the specific updates can be located in the June 30, 2022, Actuarial Valuation and Review report dated October 25, 2022.

Section 1: Actuarial Valuation Summary

5. The annual pension expense arises from certain changes in the Net Pension Liability and changes in outstanding balances of deferred outflows and deferred inflows of resources related to pensions from the beginning of the year to the end of the year. The pension expense increased from \$125.3 million for fiscal year ending June 30, 2022, to \$144.1 million for fiscal year ending June 30, 2023.

Section 2: GASB 68 Net Pension Liability Information

Exhibit 1 – Membership data

	June 30, 2021	June 30, 2020
Retired members and beneficiaries	7,716	7,424
Deferred members as reported by the System	771	768
Inactive members as reported by the System	1,716	1,482
Active members:		
Vested	5,523	5,431
Non-vested	<u>2,669</u>	<u>3,108</u>
Total active members	8,192	8,539
Total membership	18,395	18,213

Note: The NPL amounts measured as of June 30, 2022, and June 30, 2021, were determined based on the membership data as of June 30, 2021, and June 30, 2020, respectively.

Section 2: GASB 68 Net Pension Liability Information

Exhibit 2 – Net Pension Liability

The components of the Net Pension Liability of the Vermont State Employees' Retirement System are as follows:

Reporting Date for Employer Under GASB 68	June 30, 2023	June 30, 2022
Measurement Date	June 30, 2022	June 30, 2021
Total Pension Liability	\$3,400,578,949	\$3,255,050,102
Plan Fiduciary Net Position	2,276,645,124	2,425,222,408
System's Net Pension Liability	1,123,933,825	829,827,694
Plan Fiduciary Net Position as a percentage of the Total Pension Liability*	66.95%	74.51%

* These funded percentages are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for or the amount of future contributions.

Plan Provisions. The plan provisions used in the measurement of the Net Pension Liability are the same as those used in the actuarial valuation as of June 30, 2021, but updated to reflect Act 114. Details on the specific updates can be located in the June 30, 2022, Actuarial Valuation and Review report dated October 25, 2022.

Actuarial assumptions. The Total Pension Liability as of June 30, 2022, was determined by rolling forward the Total Pension Liability as of June 30, 2021, to June 30, 2022, using the following actuarial assumptions:

Investment rate of return	7.00%, net of pension plan investment expense, including inflation
Inflation	2.30%
Salary increases	Ranging from 3.40% to 5.55%

Section 2: GASB 68 Net Pension Liability Information

Cost of Living Adjustments	For active Group A, C, and F members who are first eligible for normal or unreduced early retirement on or after July 1, 2022, and for active Group D members who are first appointed or elected on or after July 1, 2022:
• Group A	Assumed to occur on January 1 following two years of retirement at the rate of 2.40% per annum. The January 1, 2023, COLA was 5.00% ¹ .
• Group C	Assumed to occur on January 1 following two years of retirement at the rate of 2.15% per annum. The January 1, 2023, COLA was 4.00% ¹ .
¹ These amounts were required to be calculated in 2023 as a result of Act 114; however, they will not be applied to any members in 2023.	
• Group D	Assumed to occur on January 1 following two years of retirement at the rate of 2.40% per annum on the first \$75,000 of retirement benefits paid and 1.15% per annum on retirement benefits paid above \$75,000. The January 1, 2023, COLA was 5.00% ¹ on the first \$75,000 of retirement benefits paid and 2.50% ¹ on retirement benefits paid above \$75,000.
• Group F	Assumed to occur on January 1 following two years of retirement at the rate of 2.25% per annum. For members hired before July 1, 2008, assumed to begin two years after the attainment of age 62 for deferred retirements. For members hired on or after July 1, 2008, assumed to begin two years after the attainment of age 65 for deferred retirements. The January 1, 2023, COLA was 4.00% ¹ .

Section 2: GASB 68 Net Pension Liability Information

Cost of Living Adjustments (continued)

For all other members:

- Groups A/C/D Assumed to occur on January 1 following one year of retirement at the rate of 2.40% per annum. The January 1, 2022, COLA was 4.60%. The January 1, 2023, COLA was 5.00%.
- Groups E/F Assumed to occur on January 1 following one year of retirement at the rate of 1.35% per annum (beginning one year after the attainment of age 62 for deferred retirements) for members who retired on or before June 30, 2008. The January 1, 2022, COLA was 2.30%. The January 1, 2023, COLA was 2.50%.

For members retiring on or after July 1, 2008, assumed to occur on January 1 following one year of retirement at the rate of 2.40% per annum. For members hired before July 1, 2008, assumed to begin one year after the attainment of age 62 for deferred retirements. For members hired on or after July 1, 2008, assumed to begin one year after the attainment of age 65 for deferred retirements. The January 1, 2022, COLA was 4.60%. The January 1, 2023, COLA is was 5.00%.

¹These amounts were required to be calculated in 2023 as a result of Act 114; however, they will not be applied to any members in 2023.

Section 2: GASB 68 Net Pension Liability Information

Mortality

- *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 Amount-Weighted with generational projection using scale MP-2019
- * *30% of deaths are assumed to be accidental*
- *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:*
 - 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 rates were based on historical and current demographic data, adjusted to reflect health characteristics of the underlying groups and estimated future experience and professional judgment. The mortality tables were then adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

Section 2: GASB 68 Net Pension Liability Information

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2022, are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*
Passive Global Equities	24.00%	4.30%
Active Global Equities	5.00%	4.30%
Large Cap US Equities	4.00%	3.25%
Small/Mid Cap US Equities	3.00%	3.75%
Non-US Developed Market Equities	7.00%	5.00%
Private Equity	10.00%	6.50%
Emerging Market Debt	4.00%	3.50%
Private and alternative Credit	10.00%	4.75%
Non-Core Real Estate	4.00%	6.00%
Core Fixed Income	19.00%	0.00%
Core Real Estate	3.00%	3.50%
US TIPS	3.00%	-0.50%
Infrastructure/Farmland	<u>4.00%</u>	4.25%
	100.00%	

* Calculated as the Arithmetic Rates of Return minus the Rate of Inflation, as provided by the Vermont State Treasurers' Office

Section 2: GASB 68 Net Pension Liability Information

Discount rate: The discount rate used to measure the Total Pension Liability was 7.00%. In accordance with paragraph 43 of GASB 67, professional judgement was applied to determine that the System's projected Fiduciary Net Position exceeds projected benefit payments for current active and inactive members for all years. Our analysis was based on the expectation that the employer will continue to contribute an amount at least equal to the actuarially determined contribution, which is comprised of an employer normal cost payment and a payment to reduce the unfunded liability to zero by June 30, 2038, in accordance with Vermont statute. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability.

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the Net Pension Liability, calculated using the discount rate of 7.00%, as well as what the Net Pension Liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%) than the current rate:

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Net Pension Liability as of June 30, 2022	\$1,562,330,178	\$1,123,933,825	\$762,918,056

Section 2: GASB 68 Net Pension Liability Information

Exhibit 3 – Schedule of changes in Net Pension Liability – last ten fiscal years

	Year End June 30,				
	2022	2021	2020	2019	2018
Total Pension Liability					
Service cost	\$67,751,943	\$70,993,081	\$53,009,586	\$51,945,814	\$49,743,850
Interest	226,513,442	214,277,050	204,548,093	194,126,755	180,860,845
Differences between expected and actual experience	74,200,948	59,817,790	5,122,992	40,475,950	83,265,679
Changes of assumptions	0	0	209,786,856	0	0
Changes of benefit terms	-49,146,013	0	0	0	0
Benefit payments, including refunds of employee contributions	<u>-173,791,473</u>	<u>-160,290,898</u>	<u>-153,025,531</u>	<u>-144,296,719</u>	<u>-134,090,344</u>
Net change in Total Pension Liability	\$145,528,847	\$184,797,023	\$319,441,996	\$142,251,800	\$179,780,030
Total Pension Liability – beginning	<u>3,255,050,102</u>	<u>3,070,253,079</u>	<u>2,750,811,083</u>	<u>2,608,559,283</u>	<u>2,428,779,253</u>
Total Pension Liability – ending (a)	\$3,400,578,949	\$3,255,050,102	\$3,070,253,079	\$2,750,811,083	\$2,608,559,283
Plan Fiduciary Net Position					
Contributions – employer	\$197,523,008	\$88,944,172	\$84,429,972	\$66,617,894	\$64,564,323
Contributions – employee	44,654,960	42,113,318	40,902,188	40,818,039	40,423,239
Net investment income	-215,473,911	497,422,655	78,964,510	106,777,462	123,632,169
Benefit payments, including refunds of employee contributions	-173,791,473	-160,290,898	-153,025,531	-144,296,719	-134,090,344
Administrative expenses	-2,352,151	-2,280,512	-2,268,390	-2,246,008	-1,720,253
Other	<u>862,283</u>	<u>247,032</u>	<u>594,069</u>	<u>298,872</u>	<u>248,855</u>
Net change in Fiduciary Net Position	-\$148,577,284	\$466,155,767	\$49,596,818	\$67,969,540	\$93,057,989
Plan Fiduciary Net Position – beginning	<u>2,425,222,408</u>	<u>1,959,066,641</u>	<u>1,909,469,823</u>	<u>1,841,500,283</u>	<u>1,748,442,294</u>
Plan Fiduciary Net Position – ending (b)	\$2,276,645,124	\$2,425,222,408	\$1,959,066,641	\$1,909,469,823	\$1,841,500,283
Net Pension Liability – ending: (a)-(b)	\$1,123,933,825	\$829,827,694	\$1,111,186,438	\$841,341,260	\$767,059,000
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	66.95%	74.51%	63.81%	69.41%	70.59%
Covered-employee payroll	\$552,316,523	\$551,981,002	\$527,571,033	\$521,670,606	\$504,553,289
Net Pension Liability as a percentage of covered-employee payroll	203.49%	150.34%	210.62%	161.28%	152.03%

Note: Covered-employee payroll reflects actual compensation amounts from the prior Plan year.

Section 2: GASB 68 Net Pension Liability Information

Exhibit 3 – Schedule of changes in Net Pension Liability – last ten fiscal years (continued)

	Year End June 30,				
	2017	2016	2015	2014	2013*
Total Pension Liability					
Service cost	\$42,703,770	\$47,012,283	\$41,786,352	\$39,368,808	
Interest	178,958,654	171,562,804	164,404,550	156,634,668	
Differences between expected and actual experience	19,283,274	25,051,322	3,979,303	0	
Changes of assumptions	42,724,968	-21,853,404	62,246,999	0	
Changes of benefit terms	0	0	0	0	
Benefit payments, including refunds of employee contributions	<u>-126,479,801</u>	<u>-120,093,586</u>	<u>-111,396,184</u>	<u>-104,492,554</u>	
Net change in Total Pension Liability	\$157,190,865	\$101,679,419	\$161,021,020	\$91,510,922	
Total Pension Liability – beginning	<u>2,271,588,388</u>	<u>2,169,908,969</u>	<u>2,008,887,949</u>	<u>1,917,377,027</u>	
Total Pension Liability – ending (a)	\$2,428,779,253	\$2,271,588,388	\$2,169,908,969	\$2,008,887,949	
Plan Fiduciary Net Position					
Contributions – employer	\$60,280,480	\$54,347,060	\$55,881,364	\$56,482,985	
Contributions – employee	35,966,987	34,055,217	33,296,248	31,745,692	
Net investment income	170,358,016	17,962,424	-8,484,694	203,721,748	
Benefit payments, including refunds of employee contributions	-126,479,801	-120,093,586	-111,396,184	-104,492,554	
Administrative expenses	-1,776,653	-1,468,605	-1,858,854	-1,158,183	
Other	<u>443,113</u>	<u>-13,597</u>	<u>177,491</u>	<u>453,853</u>	
Net change in Fiduciary Net Position	\$138,792,142	-\$15,211,087	-\$32,384,629	\$186,753,541	
Plan Fiduciary Net Position – beginning	<u>1,609,650,152</u>	<u>1,624,861,239</u>	<u>1,657,245,868</u>	<u>1,470,492,327</u>	
Plan Fiduciary Net Position – ending (b)	\$1,748,442,294	\$1,609,650,152	\$1,624,861,239	\$1,657,245,868	
Net Pension Liability – ending: (a)-(b)	\$680,336,959	\$661,938,236	\$545,047,730	\$351,642,087	
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	71.99%	70.86%	74.88%	82.50%	
Covered-employee payroll	\$471,268,111	\$462,057,022	\$437,675,917	\$416,766,302	
Net Pension Liability as a percentage of covered-employee payroll	144.36%	143.26%	124.53%	84.37%	

* Historical information prior to implementation of GASB 67/68 is not required.

Note: Covered-employee payroll reflects actual compensation amounts from the prior Plan year.

Section 2: GASB 68 Net Pension Liability Information

Exhibit 3 – Schedule of changes in Net Pension Liability – last ten fiscal years (continued)

Notes to Exhibit 3:

Changes in Assumptions: There have been no changes in actuarial assumptions since the last measurement date.

Changes in Plan Provisions: Effective for the June 30, 2022, actuarial valuation, the following plan provisions were updated to reflect Act 114:

- Average Final Compensation;
- Normal Retirement – Eligibility;
- Normal Retirement – Amount;
- Early Retirement – Amount;
- Post-Retirement Adjustments; and
- Member Contribution Rates.

Section 2: GASB 68 Net Pension Liability Information

Exhibit 4 – Schedule of contributions – last ten fiscal years

	Year End June 30				
	2022	2021	2020	2019	2018
Actuarially determined contribution	\$119,967,769	\$83,876,570	\$78,943,914	\$62,984,742	\$52,065,397
Contributions in relation to the actuarially determined contribution*	<u>197,523,008**</u>	<u>88,944,172</u>	<u>84,429,972</u>	<u>66,617,894</u>	<u>64,564,323</u>
Contribution deficiency (excess)	-\$77,555,239	-\$5,067,602	-\$5,486,058	-\$3,633,152	-\$12,498,926
Covered-employee payroll	\$552,316,523	\$551,981,002	\$527,571,033	\$521,670,606	\$504,553,289
Contributions as a percentage of covered-employee payroll	35.76%	16.11%	16.00%	12.77%	12.80%
	2017	2016	2015	2014	2013***
Actuarially determined contribution	\$48,503,358	\$46,237,853	\$44,651,783	\$40,217,666	
Contributions in relation to the actuarially determined contribution*	<u>60,280,480</u>	<u>54,347,060</u>	<u>55,881,364</u>	<u>56,482,985</u>	
Contribution deficiency (excess)	-\$11,777,122	-\$8,109,207	-\$11,229,581	-\$16,265,319	
Covered-employee payroll	\$471,268,111	\$462,057,022	\$437,675,917	\$416,766,302	
Contributions as a percentage of covered-employee payroll	12.79%	11.76%	12.77%	13.55%	

* Includes a portion of the contribution amount denoted as "other" in Exhibit 3.

** Includes an additional one-time payment of \$75 million per Act 114.

*** Historical information prior to implementation of GASB 67/68 is not required.

Note: Actuarially determined contributions for a given fiscal year are based on results from the June 30 actuarial valuation two years prior.

Section 2: GASB 68 Net Pension Liability Information

Notes to Exhibit 4:

Valuation date	Actuarially determined contribution for the year ending June 30, 2022, is based on results from the June 30, 2020, actuarial valuation, and was calculated as of June 30, with appropriate interest to the middle of the fiscal year.
Actuarial cost method	Entry Age Normal actuarial cost method
Amortization method	Amortization payments calculated to fully fund unfunded actuarial accrued liability with annual increases of 3% over a closed period.
Remaining amortization period	18 years as of July 1, 2020 The amortization of unfunded actuarial accrued liability (UAAL) within the actuarially determined contribution rate calculation is based on payments increasing at 3% per year required to amortize the UAAL over the 30-year closed period that began July 1, 2008.
Asset valuation method	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 assumptions:	
Investment rate of return	7.00%, net of pension plan investment expenses, including inflation
Inflation rate	2.30%
Projected salary increases	Ranging from 3.40% to 5.55% based on service

Section 2: GASB 68 Net Pension Liability Information

Mortality

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

* 30% of deaths are assumed to be accidental

Other assumptions

Same as those used in the June 30, 2020, funding actuarial valuation.

Section 3: Additional Information for GASB 68

Changes in the Net Pension Liability from the prior measurement date to the current measurement date arise from the net difference between changes in the Total Pension Liability and Plan Fiduciary Net Position that occurred during the year. Changes in Net Pension Liability will be recognized immediately as pension expense or reported as deferred outflows of resources related to pensions or deferred inflows of resources related to pensions, depending on the nature of the change.

Differences between actual and expected investment-related experience are recognized over a closed five-year period. Differences between actual and expected non-investment-related experience and changes of assumptions are recognized over the average of the expected remaining service lives of all members who are provided with pensions through the pension plan (active employees and inactive employees). The amounts below that are not included in pension expense for the current year are included in deferred outflows of resources or deferred inflows of resources related to pensions.

Exhibit A – Reconciliation of Net Pension Liability

	Increase/(Decrease) From June 30, 2021, to June 30, 2022		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
Balances at beginning of year	\$3,255,050,102	\$2,425,222,408	\$829,827,694
Changes for the year			
Service cost	67,751,943		67,751,943
Interest	226,513,442		226,513,442
Differences between expected and actual experience	74,200,948		74,200,948
Contributions – employer		197,523,008	-197,523,008
Contributions – member		44,654,960	-44,654,960
Net investment income		-215,473,911	215,473,911
Benefit payments, including refunds of employee contributions	-173,791,473	-173,791,473	0
Administrative expense		-2,352,151	2,352,151
Other		862,283	-862,283
Changes of assumptions	0		0
Change of benefit terms	<u>-49,146,013</u>		<u>-49,146,013</u>
Net changes	\$145,528,847	-\$148,577,284	\$294,106,131
Balances at end of year	\$3,400,578,949	\$2,276,645,124	\$1,123,933,825

Section 3: Additional Information for GASB 68

As shown in Exhibit A, the change in Net Pension Liability due to differences between expected and actual demographic experience is an increase of \$74,200,948. The average expected remaining service lives of all members is 6 years, determined as of July 1, 2021 (the beginning of the measurement period ending June 30, 2022). Therefore, of the \$74,200,948 demographic loss, \$12,366,823 is recognized in pension expense in the current year and \$61,834,125 is reflected as a deferred outflow of resources related to pensions. The \$49,146,013 increase in Net Pension Liability due to a change in plan provisions is reflected in expense without deferral. There was no change in Net Pension Liability due to assumption changes.

Based on the assumed investment return of 7.00%, the expected net investment income for the year was \$172,106,951. As shown in Exhibit A, the actual net investment income for the year was -\$215,473,911. The difference between actual and expected investment experience is an increase in Net Pension Liability of \$387,580,862, which is recognized over a 5-year period. Of this amount, \$77,516,174 is reflected in the current year and \$310,064,688 is reflected as a deferred outflow of resources related to pensions.

Exhibit B – Deferred outflows of resources and deferred inflows of resources related to pensions

	Measurement Date Year Established	Original Balance	Original Amortization Period	Amortization Amount During 2022	Outstanding Balance at June 30, 2022
Outflows					
Demographics	2017	\$19,283,274	6 years	\$3,213,879	\$0
Assumptions	2017	42,724,968	6 years	7,120,828	0
Demographics	2018	83,265,679	6 years	13,877,613	13,877,614
Investments	2018	6,354,471	5 years	1,270,895	0
Demographics	2019	40,475,950	6 years	6,745,992	13,491,984
Investments	2019	29,879,762	5 years	5,975,952	5,975,952
Demographics	2020	5,122,992	6 years	853,832	2,561,496
Assumptions	2020	209,786,856	6 years	34,964,476	104,893,428
Investments	2020	63,144,438	5 years	12,628,888	25,257,776
Demographics	2021	59,817,790	6 years	9,969,632	39,878,528
Demographics	2022	74,200,948	6 years	12,366,823	61,834,125
Investments	2022	387,580,862	5 years	77,516,174	310,064,688
Total outflows				\$186,504,984	\$577,835,591
Inflows					
Investments	2021	\$361,382,331	5 years	\$72,276,466	\$216,829,398
Total inflows				\$72,276,466	\$216,829,398

Section 3: Additional Information for GASB 68

Exhibit B – Deferred outflows of resources and deferred inflows of resources related to pensions (*continued*)

Reporting Date for Employer Under GASB 68	June 30, 2023	June 30, 2022
Measurement Date	June 30, 2022	June 30, 2021
Deferred Outflows of Resources		
Difference between expected and actual experience in the Total Pension Liability	\$131,643,747	\$104,470,570
Changes of assumptions	104,893,428	146,978,732
Net difference between projected and actual earnings on pension plan investments	<u>124,469,018</u>	<u>N/A</u>
Total Deferred Outflows of Resources	\$361,006,193	\$251,449,302
Deferred Inflows of Resources		
Difference between expected and actual experience in the Total Pension Liability	\$0	\$0
Changes of assumptions	0	0
Net difference between projected and actual earnings on pension plan investments	<u>N/A</u>	<u>237,996,401</u>
Total Deferred Inflows of Resources	\$0	\$237,996,401
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Year Ended June 30:		
2023	N/A	\$24,345,521
2024	\$102,622,917	12,739,920
2025	82,769,351	-7,113,646
2026	63,394,471	-26,488,526
2027	99,852,629	9,969,632
2028	12,366,825	0
Thereafter	0	0

Section 3: Additional Information for GASB 68

Exhibit C below shows the individual components of collective pension expense, which totaled \$144,075,847 for the fiscal year that ended June 30, 2023.

Annual pension expense for the year can also be viewed as the change in Net Pension Liability, plus employer contributions for the year, less the change in outstanding balances of deferred outflows and deferred inflows of resources from the end of the prior fiscal year to end of the current fiscal year. From Exhibit A, the change in Net Pension Liability during the year was \$294,106,131 and employer contributions were \$197,523,008. The net value of deferred outflows and deferred inflows of resources as of the end of the current fiscal year is \$361,006,193 compared to the net value as of the end of the prior fiscal year of \$13,452,901 for a change of \$347,553,292. Therefore, the pension expense for the fiscal year that ended June 30, 2023, is \$294,106,131 + \$197,523,008 - \$347,553,292, or \$144,075,847.

Exhibit C – Pension Expense

Reporting Date for Employer under GASB 68	June 30, 2023	June 30, 2022
Measurement Date	June 30, 2022	June 30, 2021
Components of Pension Expense		
Service cost	\$67,751,943	\$70,993,081
Interest on the Total Pension Liability	226,513,442	214,277,050
Projected earnings on plan investments	-172,106,951	-136,040,324
Contributions – member	-44,654,960	-42,113,318
Administrative expense	2,352,151	2,280,512
Other	-862,283	-247,032
Current-year recognition of:		
• Changes of assumptions	0	0
• Difference between expected and actual experience	12,366,823	9,969,630
• Difference between projected and actual earnings on pension plan investments	77,516,174	-72,276,467
Current year change in benefit terms	-49,146,013	0
Recognition of beginning of year's deferred outflows of resources as pension expense	96,621,987	90,827,576
Recognition of beginning of year's deferred inflows of resources as pension expense	<u>-72,276,466</u>	<u>-12,371,350</u>
Total Pension Expense	\$144,075,847	\$125,299,358

Section 4: Supplemental Information

Exhibit I: Actuarial Assumptions and Methods

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).	
Roll-forward Techniques:	The results as of June 30, 2022, are based on the results of the Vermont State Employees' Retirement System Actuarial Valuation Report as of June 30, 2021, adjusted forward, using standard actuarial techniques.	
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%

Section 4: Actuarial Assumptions and Methods and Appendices

Cost-of-Living Adjustments (COLA):

For active Group A, C, and F members who are first eligible for normal or unreduced early retirement on or after July 1, 2022, and for active Group D members who are first appointed or elected on or after July 1, 2022:

- Group A Assumed to occur on January 1 following two years of retirement at the rate of 2.40% per annum. The January 1, 2023, COLA was 5.00%¹.
- Group C Assumed to occur on January 1 following two years of retirement at the rate of 2.15% per annum. The January 1, 2023, COLA was 4.00%¹.
- Group D Assumed to occur on January 1 following two years of retirement at the rate of 2.40% per annum on the first \$75,000 of retirement benefits paid and 1.15% per annum on retirement benefits paid above \$75,000. The January 1, 2023, COLA was 5.00%¹ on the first \$75,000 of retirement benefits paid and 2.50%¹ on retirement benefits paid above \$75,000.
- Group F Assumed to occur on January 1 following two years of retirement at the rate of 2.25% per annum. For members hired before July 1, 2008, assumed to begin two years after the attainment of age 62 for deferred retirements. For members hired on or after July 1, 2008, assumed to begin two years after the attainment of age 65 for deferred retirements. The January 1, 2023, COLA was 4.00%¹.

For all other members:

- Groups A/C/D Assumed to occur on January 1 following one year of retirement at the rate of 2.40% per annum. The January 1, 2022, COLA was 4.60%. The January 1, 2023, COLA was 5.00%.
- Groups E/F Assumed to occur on January 1 following one year of retirement at the rate of 1.35% per annum (beginning one year after the attainment of age 62 for deferred retirements) for members who retired on or before June 30, 2008. The January 1, 2022, COLA was 2.30%. The January 1, 2023, COLA was 2.50%.

For members retiring on or after July 1, 2008, assumed to occur on January 1 following one year of retirement at the rate of 2.40% per annum. For members hired before July 1, 2008, assumed to begin one year after the attainment of age 62 for deferred retirements. For members hired on or after July 1, 2008, assumed to begin one year after the attainment of age 65 for deferred retirements. The January 1, 2022, COLA was 4.60%. The January 1, 2023, COLA was 5.00%.

¹These amounts were required to be calculated in 2023 as a result of Act 114; however, they will not be applied to any members in 2023.

Section 4: Actuarial Assumptions and Methods and Appendices

Mortality Rates:

Pre-retirement:

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

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

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

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

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

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

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

Section 4: Actuarial Assumptions and Methods and Appendices

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

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

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

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

Retirement Rates:

Retirement Group F ¹					
Age	Male	Female	Age	Male	Female
40-52	20.00%	10.00%	63	17.50%	15.00%
53	15.00%	10.00%	64	20.00%	15.00%
54	15.00%	10.00%	65	22.50%	20.00%
55	5.00%	5.00%	66	25.00%	30.00%
56	5.00%	5.00%	67	25.00%	30.00%
57	5.00%	5.00%	68	25.00%	30.00%
58	5.00%	7.50%	69	25.00%	30.00%
59	7.50%	7.50%	70+	100.00%	100.00%
60	7.50%	7.50%			
61	15.00%	12.50%			
62	25.00%	25.00%			

¹ All Group A and D members are assumed to retire when first eligible.

Section 4: Actuarial Assumptions and Methods and Appendices

Retirement Rates (continued):	Retirement Group C ²	
	Age	Male/Female
	50	50.00%
	51	10.00%
	52	10.00%
	53	10.00%
	54	5.00%
	55	5.00%
	56	5.00%
	57+	100.00%

² Effective July 1, 2022, the mandatory retirement age for Group C members was increased from age 55 to age 57.

Inactive Members as Reported by the System:	Not Vested: Valuation liability equals 100% of accumulated contributions. Vested: Valuation liability based on accrued benefit and 20% of members are assumed to retire from Early Retirement Age for each year until Normal Retirement Age, then 100% of members are assumed to retire at their Normal Retirement Age with a deferred vested benefit.
Deferred Members as Reported by the System:	Valuation liability based on accrued benefit and 20% of members are assumed to retire from Early Retirement Age for each year until Normal Retirement Age, then 100% of members are assumed to retire at their Normal Retirement Age with a deferred vested benefit.
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
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.
Changes in Actuarial Assumptions:	There were no changes in actuarial assumptions since the last valuation.

Section 4: Actuarial Assumptions and Methods and Appendices

Exhibit II: Summary of Plan Provisions

This exhibit summarizes the major provisions of the Plan 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).
Creditable Service:	Service as a member plus purchased service.
Average Final Compensation (AFC):	<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 For active members who retire on or after July 1, 2022, and do not meet one of the following two requirements: (1) at least age 57 with 5 or more years of service as a judge in Group D as of June 30, 2022; (2) Group D as of June 30, 2022, with 15 or more years of service:<ul style="list-style-type: none">- Average annual compensation during final 2 years of service.For all other members:<ul style="list-style-type: none">- Annual compensation during final year of service.
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 For members first appointed or elected on or before June 30, 2022:<ul style="list-style-type: none">- Age 62 with 5 years of service.For members first appointed or elected on or after July 1, 2022:<ul style="list-style-type: none">- Age 65 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 a maximum benefit cap of 50% of AFC. The maximum benefit cap is increased by 1.5% of AFC for each year worked after attaining the later of age 50 or 20 years of benefit service, applied prospectively to service worked after July 1, 2022.

Section 4: Actuarial Assumptions and Methods and Appendices

<p>Normal Retirement – Amount <i>(continued)</i>:</p>	<ul style="list-style-type: none"> • Group D For active members who retire on or after July 1, 2022, and do not meet one of the following two requirements: (1) at least age 57 with 5 or more years of service as a judge in Group D as of June 30, 2022; (2) Group D as of June 30, 2022, with 15 or more years of service: - 3.33% of AFC times service, up to a maximum benefit cap of 80% of AFC. For all other members: - 3.33% of AFC times service, up to a maximum benefit cap of 100% of AFC. • 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 cap of 50% of AFC. For members hired on or after July 1, 2008, the maximum benefit cap is 60% of AFC. 												
<p>Early Retirement – Eligibility:</p>	<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. 												
<p>Early Retirement – Amount:</p>	<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 For members first appointed or elected on or before June 30, 2022: - Normal allowance reduced by 3% for each year commencement precedes age 62. For members first appointed or elected on or after July 1, 2022: - Normal allowance reduced by 3% for each year commencement precedes age 65. • 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" data-bbox="961 1101 1619 1343" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Years of Service</th> <th>Reduction in Benefit</th> </tr> </thead> <tbody> <tr> <td>35</td> <td>One-eighth of 1% per month</td> </tr> <tr> <td>30</td> <td>One-fourth of 1% per month</td> </tr> <tr> <td>25</td> <td>One-third of 1% per month</td> </tr> <tr> <td>20</td> <td>Five-twelfths of 1% per month</td> </tr> <tr> <td>Less than 20</td> <td>Five-ninths of 1% per month</td> </tr> </tbody> </table>	Years of Service	Reduction in Benefit	35	One-eighth of 1% per month	30	One-fourth of 1% per month	25	One-third of 1% per month	20	Five-twelfths of 1% per month	Less than 20	Five-ninths of 1% per month
Years of Service	Reduction in Benefit												
35	One-eighth of 1% per month												
30	One-fourth of 1% per month												
25	One-third of 1% per month												
20	Five-twelfths of 1% per month												
Less than 20	Five-ninths of 1% per month												

Section 4: Actuarial Assumptions and Methods and Appendices

Vesting:	<ul style="list-style-type: none"> All groups – 5 years of service.
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%).
Accidental Death – Eligibility:	<ul style="list-style-type: none"> Groups A/C/D/F – Death because of work related accident.
Accidental Death – Amount:	<ul style="list-style-type: none"> Groups A/D/F Allowance equal to 25% of AFC payable to spouse. Group C Allowance equal to 35% of AFC payable to spouse plus 10% for each dependent child (up to 30%).

Section 4: Actuarial Assumptions and Methods and Appendices

Post-Retirement Adjustments:

For active Group A, C, and F members who are first eligible for normal or unreduced early retirement on or after July 1, 2022, and for active Group D members who are first appointed or elected on or after July 1, 2022:

- Group A Allowances in payment for at least two years, increased on each January 1 by the net percentage increase in Consumer Price Index (CPI). The maximum net percentage increase in CPI is capped at 5%. If the net percentage increase in CPI is less than 1%, members will not receive an increase.
- Group C Allowances in payment for at least two years, increased on each January 1 by the net percentage increase in CPI. The maximum net percentage increase in CPI is capped at 4%. If the net percentage increase in CPI is less than 1%, members will not receive an increase.
- Group D Allowances in payment for at least two years, increased on each January 1 by the net percentage increase in CPI on the first \$75,000 of retirement benefits paid and half of the net percentage increase in CPI on retirement benefits paid above \$75,000. The maximum net percentage increase in CPI is capped at 5%. If the net percentage increase in CPI is less than 1%, members will not receive an increase.
- Group F Allowances in payment for at least two years, increased on each January 1 by the net percentage increase in CPI. The maximum net percentage increase in CPI is capped at 4%. If the net percentage increase in CPI is less than 0%, members will not receive an increase.

For all other members:

- Groups A/C/D Allowances in payment for at least one year, increased on each January 1 by the net percentage increase in CPI. The maximum net percentage increase in CPI is capped at 5%. If the net percentage increase in CPI is less than 1%, members will not receive an increase.
- Groups E/F For members who retired on or before June 30, 2008, allowances in payment for at least one year, increased on each January 1 by half of the net percentage increase in CPI. The maximum net percentage increase in CPI is capped at 5%. If the net percentage increase in CPI is between 0-1%, members will receive a 1% increase. If the net percentage increase in CPI is less than 0%, members will not receive an increase. A Group F member in receipt of an early retirement allowance shall not receive a post-retirement adjustment until such time as the member has attained normal retirement eligibility.

For members who retired on or after July 1, 2008, allowances in payment for at least one year, increased on each January 1 by the net percentage increase in CPI. The maximum net percentage increase in CPI is capped at 5%. If the net percentage increase in CPI is between 0-1%, members will receive a 1% increase. If the net percentage increase in CPI is less than 0%, members will not receive an increase. A Group F member in receipt of an early retirement allowance shall not receive a post-retirement adjustment until such time as the member has attained normal retirement eligibility.

Section 4: Actuarial Assumptions and Methods and Appendices

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: Member contributions as a percentage of earnable compensation are described in the table below:

	Salary Percentile	FY22	FY23	FY24	FY25	FY26	FY27+
Group A	All	6.65%	6.65%	6.65%	6.65%	6.65%	6.65%
Group C	All	8.53%	9.03%	9.53%	10.03%	10.03%	10.03%
Group D	<25 th	6.65%	6.65%	6.65%	6.65%	6.65%	6.65%
	25 th -50 th	6.65%	7.15%	7.65%	8.15%	8.15%	8.15%
	50 th -75 th	6.65%	7.15%	7.65%	8.15%	8.65%	8.65%
	75 th +	6.65%	7.15%	7.65%	8.15%	8.65%	9.15%
Group F	<25 th	6.65%	6.65%	6.65%	6.65%	6.65%	6.65%
	25 th -50 th	6.65%	7.15%	7.65%	8.15%	8.15%	8.15%
	50 th -75 th	6.65%	7.15%	7.65%	8.15%	8.65%	8.65%
	75 th +	6.65%	7.15%	7.65%	8.15%	8.65%	9.15%

Changes in Plan Provisions: At the June 9, 2022, Board meeting, the Actuarially Determined Contribution for the fiscal year ending June 30, 2023, calculated as part of the June 30, 2021, actuarial valuation, was recertified to reflect the additional funding and benefit changes from Act 114. In the determination of this recertified amount, the following plan provisions per the June 30, 2021, actuarial valuation were updated to reflect Act 114:

- Average Final Compensation;
- Normal Retirement – Eligibility;
- Normal Retirement – Amount;
- Early Retirement – Amount;
- Post-Retirement Adjustments; and
- Member Contribution Rates.

Those updates were also used in the determination of the TPL as of June 30, 2022. Details on the specific updates can be located in the June 30, 2022, Actuarial Valuation and Review report dated October 25, 2022.

Appendix: Definition of Terms

Definitions of certain terms as they are used in Statements 67/68. The terms may have different meanings in other contexts.

Active Employees:	Individuals employed at the end of the reporting or measurement period, as applicable.
Actual Contributions:	Cash contributions recognized as additions to a pension Plan Fiduciary Net Position.
Actuarial Present Value of Projected Benefit Payments:	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial Valuation:	The determination, as of a point in time (the actuarial valuation date), of the service cost, Total Pension Liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial Valuation Date:	The date as of which an actuarial valuation is performed.
Actuarially Determined Contribution:	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.
Ad Hoc Cost-of-Living Adjustments (Ad Hoc COLAs):	Cost-of-living adjustments that require a decision to grant by the authority responsible for making such decisions.
Ad Hoc Postemployment Benefit Changes:	Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.
Agent Employer:	An employer whose employees are provided with pensions through an agent multiple-employer defined benefit pension plan.
Agent Multiple-Employer Defined Benefit Pension Plan (Agent Pension Plan):	A multiple-employer defined benefit pension plan in which pension plan assets are pooled for investment purposes but separate accounts are maintained for each individual employer so that each employer's share of the pooled assets is legally available to pay the benefits of only its employees.
Allocated Insurance Contract:	A contract with an insurance company under which related payments to the insurance company are currently used to purchase immediate or deferred annuities for individual employees. Also may be referred to as an annuity contract.
Automatic Cost-of-Living Adjustments (Automatic COLAs):	Cost-of-living adjustments that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).

Automatic Postemployment Benefit Changes:	Postemployment benefit changes that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).
Closed Period:	A specific number of years that is counted from one date and declines to zero with the passage of time. For example, if the recognition period initially is five years on a closed basis, four years remain after the first year, three years after the second year, and so forth.
Collective Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions:	Deferred outflows of resources and deferred inflows of resources related to pensions arising from certain changes in the collective Net Pension Liability.
Collective Net Pension Liability:	The Net Pension Liability for benefits provided through (1) a cost-sharing pension plan or (2) a single-employer or agent pension plan in circumstances in which there is a special funding situation.
Collective Pension Expense:	Pension expense arising from certain changes in the collective Net Pension Liability.
Contributions:	Additions to a pension plan's fiduciary net position for amounts from employers, nonemployer contributing entities (for example, state government contributions to a local government pension plan), or employees. Contributions can result from cash receipts by the pension plan or from recognition by the pension plan of a receivable from one of these sources.
Cost-of-Living Adjustments:	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-Sharing Employer:	An employer whose employees are provided with pensions through a cost-sharing multiple-employer defined benefit pension plan.
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (Cost-Sharing Pension Plan):	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered-Employee Payroll:	The payroll of employees that are provided with pensions through the pension plan.
Deferred Retirement Option Program (DROP):	A program that permits an employee to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The employee continues to provide service to the employer and is paid for that service by the employer after the DROP entry date; however, the pensions that would have been paid to the employee (if the employee had retired and not entered the DROP) are credited to an individual employee account within the defined benefit pension plan until the end of the DROP period.
Defined Benefit Pension Plans:	Pension plans that are used to provide defined benefit pensions.

Defined Benefit Pensions:	Pensions for which the income or other benefits that the employee will receive at or after separation from employment are defined by the benefit terms. The pensions may be stated as a specified dollar amount or as an amount that is calculated based on one or more factors such as age, years of service, and compensation. (A pension that does not meet the criteria of a defined contribution pension is classified as a defined benefit pension for purposes of Statement 68.)
Defined Contribution Pension Plans:	Pension plans that are used to provide defined contribution pensions.
Defined Contribution Pensions:	Pensions having terms that (1) provide an individual account for each employee; (2) define the contributions that an employer is required to make (or the credits that it is required to provide) to an active employee's account for periods in which that employee renders service; and (3) provide that the pensions an employee will receive will depend only on the contributions (or credits) to the employee's account, actual earnings on investments of those contributions (or credits), and the effects of forfeitures of contributions (or credits) made for other employees, as well as pension plan administrative costs, that are allocated to the employee's account.
Discount Rate:	<p>The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following:</p> <ol style="list-style-type: none"> 1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension plan's fiduciary net position is projected (under the requirements of Statements 67/68) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments. 2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.
Entry Age Actuarial Cost Method:	A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called the <i>normal cost</i> . The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the <i>actuarial accrued liability</i> .
Inactive Employees:	Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.
Measurement Period:	The period between the prior and the current measurement dates.
Multiple-Employer Defined Benefit Pension Plan:	A defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Net Pension Liability (NPL):	The liability of employers and non-employer contributing entities to employees for benefits provided through a defined benefit pension plan.

Non-Employer Contributing Entities:	Entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of Statement 68, employees are not considered non-employer contributing entities.
Other Postemployment Benefits:	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits, regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
Pension Plans:	Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed and benefits are paid as they come due.
Pensions:	Retirement income and, if provided through a pension plan, postemployment benefits other than retirement income (such as death benefits, life insurance, and disability benefits). Pensions do not include postemployment healthcare benefits and termination benefits.
Plan Members:	Individuals that are covered under the terms of a pension plan. Plan members generally include (1) employees in active service (active plan members) and (2) terminated employees who have accumulated benefits but are not yet receiving them and retirees or their beneficiaries currently receiving benefits (inactive plan members).
Postemployment	The period after employment.
Postemployment Benefit Changes:	Adjustments to the pension of an inactive employee.
Postemployment Healthcare Benefits:	Medical, dental, vision, and other health-related benefits paid subsequent to the termination of employment.
Projected Benefit Payments:	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and their expected future service.
Public Employee Retirement System:	A special-purpose government that administers one or more pension plans; also may administer other types of employee benefit plans, including postemployment healthcare plans and deferred compensation plans.
Real Rate of Return:	The rate of return on an investment after adjustment to eliminate inflation.
Service Costs:	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Single Employer:	An employer whose employees are provided with pensions through a single-employer defined benefit pension plan.
Single-Employer Defined Benefit Pension Plan (Single-Employer Pension Plan)	A defined benefit pension plan that is used to provide pensions to employees of only one employer.

Special Funding Situations:

Circumstances in which a nonemployer entity is legally responsible for making contributions directly to a pension plan that is used to provide pensions to the employees of another entity or entities and either of the following conditions exists:
The amount of contributions for which the nonemployer entity legally is responsible is *not* dependent upon one or more events or circumstances unrelated to the pensions.
The nonemployer entity is the only entity with a legal obligation to make contributions directly to a pension plan.

Termination Benefits:

Inducements offered by employers to active employees to hasten the termination of services, or payments made in consequence of the early termination of services. Termination benefits include early-retirement incentives, severance benefits, and other termination-related benefits.

Total Pension Liability (TPL):

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of Statement.

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