Teachers' Retirement System of the State of Illinois

Preliminary Actuarial Valuation and Review of Pension Benefits as of June 30, 2022

October 14, 2022

This report has been prepared at the request of the Board of Trustees to assist in administering the System. This valuation report may only be provided to other parties in its entirety, unless expressly authorized by Segal. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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Segal

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October 14, 2022

Board of Trustees
Teachers' Retirement System of the State of Illinois
2815 West Washington Street
Springfield, Illinois 62702

Dear Board Members:

This report presents the preliminary results of the annual valuation of the assets and liabilities of the Teachers' Retirement System of the State of Illinois (TRS or System) as of June 30, 2022, prepared in accordance with the funding policy specified under the Illinois Pension Code (40 ILCS 5/16). This valuation takes into account all of the pension benefits to which members are entitled.

Actuarial Assumptions and Methods

The valuation was based on the actuarial assumptions adopted by the Board of Trustees, reflecting the three-year demographic and economic experience review covering the period July 1, 2017, through June 30, 2020, presented at the August 2021 Board meeting, and the economic experience review presented at the August 2022 Board meeting. In our opinion, the actuarial assumptions as approved by the Board are reasonably related to the experience of and the expectations for the System. The actuarial assumptions and methods used for funding purposes meet the parameters set by Actuarial Standards of Practice. The methods mandated by the Illinois Pension Code as described in the Funding Adequacy section are inadequate to appropriately fund TRS.

Assets and Membership Data

TRS reported to the actuary the individual data for members of the System as of the prior valuation date. Valuation results are projected, based upon the actuarial assumptions, to account for the one-year difference between the date of the census data and the valuation date. The impact on the valuation due to the census data that lags one year behind the valuation date has been studied and deemed immaterial. The amount of assets in the trust fund as of the valuation date was based on statements prepared by TRS.

Funding Adequacy

The member and employer contribution rates are determined in accordance with the funding policy specified under the Illinois Pension Code (40 ILCS 5/16). The member contribution rate is 9.0%, which is comprised of 7.5% toward the cost of the retirement annuity, 0.5% toward the cost of the automatic annual increase in the retirement annuity, and 1.0% for survivor benefits. The employer contributions are determined such that, together with the member contributions, the plan is projected to achieve 90% funding by 2045. The 2045 funding objective of 90% was set in 1994 as a 50-year objective. TRS members have always contributed their share. **The State funding has been inadequate, resulting in TRS being among the worst funded public employee retirement systems in the United States. We strongly recommend an actuarial funding method that targets 100% funding. 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 adopted by the Board, referred to as the Board-Adopted Actuarial Funding Policy, meets this standard.

The valuation indicates that for the fiscal year ended June 30, 2022, the actuarial experience of TRS generated a net actuarial gain of $335 million. This gain is the net result of a $460 million gain due to investment return experience (on an actuarial value basis, TRS experienced an investment loss of $5.2 billion on a fair value basis) and a $125 million (0.1% of the actuarial accrued liability) net loss due to demographic experience for fiscal 2022.

Actuarial Certification

In preparing the results presented in this report, we have relied upon information TRS staff provided to us regarding the benefit provisions, System members, benefit payments and unaudited plan assets. While the scope of our engagement did not call for us to perform an audit or independent verification of this information, we have reviewed this information for reasonableness. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information.

In our opinion, the results presented comply with the Illinois Pension Code and, where applicable, the Internal Revenue Code, and the Statements of the Governmental Accounting Standards Board. While all calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board, this does not endorse the funding methodology required by the Illinois Pension Code. The undersigned are independent actuaries. They are Fellows or Associates of the Society of Actuaries, Enrolled Actuaries, and Members of the American Academy of Actuaries, and are experienced in performing valuations for large public retirement systems. They meet the Qualification Standards of the American Academy of Actuaries.

Respectfully submitted,

Segal

Matthew A. Strom, FSA, MAAA, EA Senior Vice President and Actuary	Tanya Dybal, FSA, MAAA, EA Vice President and Actuary	David K. Nickerson, ASA, MAAA, EA Actuary

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Section 1: Actuarial Valuation Summary

Overview of TRS

- The Teachers' Retirement System of the State of Illinois (TRS) was established by the State of Illinois on July 1, 1939, to provide retirement, disability, and death benefits to teachers employed by Illinois public elementary and secondary schools outside the City of Chicago. TRS is the administrator of a cost-sharing, multiple-employer defined benefit public employee retirement system. Membership is mandatory for all full-time, part-time, and substitute pubic school personnel employed outside of Chicago in positions requiring certification. Persons employed at certain state agencies are also members. TRS is governed by the Illinois Pension Code (40 ILCS 5/16).
- Members of TRS are employed by school districts, special districts, and certain state agencies. As of June 30, 2022, there were 992 employers, comprised of 851 local school districts, 132 special districts, and 9 state agencies. The membership totaled nearly 439,000 members as of June 30, 2021 (member data used in the valuation is as of the prior valuation date). Of the nearly 439,000 members, 128,000 are retirees and survivors to whom TRS paid nearly $7.4 billion and $7.7 billion during the fiscal year ended June 30, 2021, and June 30, 2022, respectively. As of June 30, 2022, the assets of TRS amounted to $62.8 billion on a fair value basis.
- The amount of the benefit paid to a member upon retirement, termination, disability, or death is defined by the Illinois Pension Code (40 ILCS 5/16). The contributions to fund these benefits are determined through an annual valuation based upon the funding provisions in the Illinois Pension Code.

Purpose and basis

This report was prepared by Segal to present a valuation of the Plan as of June 30, 2022. The purposes of the annual actuarial valuation are to:

- Calculate the annual contribution as required by the Illinois Pension Code. This contribution is not adequate to fund TRS.
- Calculate an actuarially determined contribution based upon the funding policy adopted by the Board. This contribution, if paid, would be expected to adequately fund TRS.
- Determine the funding progress under the Illinois Pension Code's inadequate funding standard.
- Determine the annual gain and loss amounts by source.
- Satisfy regulatory and accounting requirements.
- Provide information for required disclosures under Governmental Accounting Standards Board (GASB) Statements No. 67.

Purpose and basis *continued*

The calculation of Statutory and Board-Adopted contributions presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board;
- The characteristics of covered active members, inactive members, and annuitants and survivor annuitants as of June 30, 2021 (member data used in the valuation is as of the prior valuation date), provided by the TRS staff;
- The assets of the Plan as of June 30, 2022, provided by the TRS staff;
- Economic assumptions regarding future salary increases and investment earnings;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc.;
- The funding policy as required by the Illinois Pension Code. As noted throughout this report, this funding policy is not adequate to fund TRS; and
- The alternative funding policy adopted by the Board. This contribution, if paid, would be expected to adequately fund TRS.

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

Valuation highlights

1. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. The funding policy set in the Illinois Pension Code is to achieve 90% funded by 2045 and does not meet this standard.
2. In addition to the statutory State contribution made during fiscal 2022, there was an additional one-time contribution of $172,823,300 appropriated from the Pension Stabilization Fund to the Office of the State Comptroller for funding the unfunded liabilities of the Teachers' Retirement System of the State of Illinois, per Public Act 102-0696.
3. The following economic assumption changes were approved by the Board on August 12, 2022, and are reflected in this valuation:
    a. The inflation assumption was increased from 2.25% to 2.50% in light of all sources of inflation expectations.
    b. The rates of individual salary increase were updated based on the change in the inflation assumption.
    c. The new entrant pay increase assumption was updated to equal the new inflation assumption.
    d. The average COLA and rate of increase in the pensionable salary cap applicable to Tier 2 members was increased from 1.125% to 1.25% based on the change in the inflation assumption.

Valuation highlights *continued*

4. The following non-economic assumptions were also reflected in the June 30, 2022, actuarial valuation:
   a. The inactive vested buyout election assumption was changed from 5% of current inactive vested members to 10% of future inactive vested members are assumed to receive a lump sum buyout in lieu of an annuity at retirement, aligned to better reflect actual plan experience.
   b. The assumed buyout period was changed from fiscal 2024 to fiscal 2026 to reflect the extension of the buyout programs per Public Act 102-0718.
5. The net impact of the assumption changes noted in items 3 and 4 above increased the actuarial accrued liability by approximately $404 million and decreased the FY2024 State contribution by $14 million (after reflecting the phase-in of the effect of assumption changes).
6. This actuarial valuation assumes that buyout provisions, introduced with Public Act 100-0587 (and amended by Public Act 101-0010 and Public Act 102-0718), are effective through fiscal year 2026, such that the initial $650 million share apportioned to TRS is assumed to increase as needed to cover all expected buyout amounts through the program's effective end date of June 30, 2026. Based on current assumptions, the total amount of buyouts expected to be paid through June 30, 2026, is approximately $1.042 billion, reflecting $663 million that has already been claimed as of June 30, 2022.
7. The required State contribution for 2024 is $6.04 billion, an increase from $5.89 billion for 2023. The total projected employer contribution for 2024, including State, Federal, and School Districts, is $6.15 billion. Of this amount, $1.29 billion, or about 21%, is for the employer portion of the normal cost and $4.86 billion, or about 79%, is for the portion of the unfunded actuarial accrued liability.
8. The funded ratio based on the actuarial value of assets over the actuarial accrued liability as of June 30, 2022, was 43.8%, compared to 42.5% as of June 30, 2021. This ratio is a measure of funded status, and its history is a measure of funding progress. Using the fair value of assets, the funded ratio is 43.8%, compared to 46.2% as of the prior valuation date.
9. The unfunded actuarial accrued liability is $80.6 billion, which is an increase of $79.9 billion since the prior valuation.
10. For the year ended June 30, 2022, Segal has estimated that the asset return on a fair value basis was –1.16%. After gradual recognition of previous investment gains and losses under the actuarial smoothing method, the actuarial rate of return was 7.78%. This represents an experience gain when compared to the assumed rate of 7.00%. As of June 30, 2022, the actuarial value of assets ($62.9 billion) represented 100.1% of the fair value ($62.8 billion).
11. The investment gain on the actuarial value of assets for the year ended June 30, 2022, was $460.0 million. The combined demographic and liability experience resulted in a $335 million gain, largely due to investment experience.

Valuation highlights *continued*

12. The total investment loss not yet recognized as of June 30, 2022, is $77 million. These deferred losses will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent they are not offset by recognition of gains derived from future experience. This means that earning the assumed rate of investment return of 7.00% per year (net of investment expenses) on a fair value basis will result in investment losses on the actuarial value of assets in the next few years.
13. As mentioned above, the current method used to determine the actuarial value of assets yields an amount that is 100.1% of the fair value of assets as of June 30, 2022. Guidelines in Actuarial Standard of Practice No. 44 (Selection and Use of Asset Valuation Methods for Pension Valuations) recommend that asset values fall within a reasonable range around the corresponding fair value. The actuarial asset method complies with this guideline.
14. The System's cash flow (contributions minus benefit payments, refunds, and expenses) as a percentage of the fair value of assets was –1.0% as of June 30, 2022, compared to –1.8% from the prior year. Negative cash flow drains the assets of the System without investment income and may cause suboptimal investment strategies.
15. This actuarial valuation report as of June 30, 2022, is based on financial data as of that date. Changes in the value of assets subsequent to that date are not reflected.

Risk

16. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2022. The System's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the plan year. Moreover, this actuarial valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after June 30, 2022, due to COVID-19. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.
17. 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 not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the System's future financial condition but have included a brief discussion of some risks that may affect the System in *Section 2*. A more detailed assessment would provide the Board with a better understanding of the inherent risks and could be important for the System because:
    - Relatively small changes in investment performance can produce large swings in the unfunded liabilities.
    - Retired participants account for most of the System's liabilities, leaving limited options for reducing costs in the event of adverse experience.
    - The Board have not had a detailed risk assessment in several years.

GASB

18. This report constitutes an actuarial valuation for the purpose of determining the ADC under the Board-adopted funding policy. The information contained in *Section 7* provides the accounting information for Governmental Accounting Standards Board (GASB) Statement No. 67, for inclusion in the Plan and employer's financial statements as of June 30, 2022.
19. The GASB net pension liability (NPL) is equal to the difference between the total pension liability and the Plan's fiduciary net position. The NPL increased from $78.0 billion as of June 30, 2021, to $83.8 billion as of June 30, 2022. This is largely due to unfavorable investment experience on a fair value of assets basis.

Summary of key valuation results

		June 30, 2022		June 30, 2021
Present Value of Future Benefits:		**Before Assumption Changes**	**After Assumption Changes**	
1	Active members	$71,201,301,660	$72,292,007,156	$68,846,793,724
2	Retired members and beneficiaries receiving benefits	90,534,629,477	90,534,637,383	88,788,970,972
3	Inactive members with deferred benefits	4,129,144,531	4,250,767,299	3,917,568,923
4	Total: (1) + (2) + (3)	$165,865,075,668	$167,077,411,838	$161,553,333,619
Actuarial Accrued Liability:				
1	Active members	$48,456,132,274	$48,738,326,277	$46,207,735,022
2	Retired members and beneficiaries receiving benefits	90,534,629,477	90,534,637,383	88,788,970,972
3	Inactive members with deferred benefits	4,129,144,531	4,250,767,299	3,917,568,923
4	Total: (1) + (2) + (3)	$143,119,906,282	$143,523,730,959	$138,914,274,917
Funded Status:				
1	Actuarial accrued liability	$143,119,906,282	$143,523,730,959	$138,914,274,917
2	Actuarial value of assets (AVA)	62,910,402,178	62,910,402,178	58,979,922,966
3	Unfunded actuarial accrued liability (AVA basis): (1) – (2)	$80,209,504,104	$80,613,328,781	$79,934,351,951
4	Funded ratio (AVA basis): (2) ÷ (1)	44.0%	43.8%	42.5%
5	Fair value of assets (FVA)	$62,833,626,339	$62,833,626,339	$64,212,505,020
6	Unfunded actuarial accrued liability (FVA basis): (1) – (5)	80,286,279,943	80,690,104,620	74,701,769,897
7	Funded ratio (FVA basis): (5) ÷ (1)	43.9%	43.8%	46.2%
Summary of State Contributions for Fiscal Year:			**2024**	**2023**
1	Based on Statutory Funding Plan		$6,043,454,650	$5,894,032,209
2	Based on Board-Adopted Actuarial Funding Policy		9,590,116,087	9,101,633,224
3	Difference between Board-Adopted Actuarial Funding Policy and Statutory Funding: (2) – (1)		$3,546,661,437	$3,207,601,015
4	Normal cost rate based on Statutory Funding Plan			
	(a) Total (including administrative expenses)		19.60%	19.49%
	(b) Member rate		9.00%	9.00%
	(c) Employer: (4a) – (4b)		10.60%	10.49%

Summary of key valuation results *continued*

		June 30, 2022	June 30, 2021
Summary of State Contributions for Fiscal Year (continued):		**2024**	**2023**
5	Total normal cost based on Statutory Funding Plan		
	(a) Total	$2,333,351,793	$2,236,707,678
	(b) Administrative expenses	44,851,616	39,887,064
	(c) Expected member contributions	1,092,235,571	1,051,430,802
	(d) Total employer normal cost: **(5a) + (5b) – (5c)**	$1,285,967,838	$1,225,163,940
GASB Information:			
1	Long-term expected rate of return	7.00%	7.00%
2	Municipal bond index[1]	3.54%	2.16%
3	Single equivalent discount rate	7.00%	7.00%
4	Total pension liability	$146,673,960,220	$142,223,798,748
5	Plan fiduciary net position	62,833,626,339	64,212,505,020
6	Net pension liability: **(4) – (5)**	$83,840,333,881	$78,011,293,728
7	Plan fiduciary net position as a percentage of total pension liability: **(5) ÷ (4)**	42.8%	45.1%
Demographic data used for valuation as of June 30[2]:		**2021**	**2020**
1	Number of active members		
	(a) Full-time and regular part-time	139,144	137,394
	(b) Substitute, part-time, and hourly paid	19,761	25,555
	(c) Total	158,905	162,949
2	Number of inactive members		
	(a) Eligible for deferred annuities	19,308	18,632
	(b) Eligible for refunds or single sum benefits only	132,507	125,942
3	Number of annuitants	128,116	126,594
4	Total membership: **(1c) + (2a) + (2b) + (3)**	438,836	434,117
5	Annual salaries		
	(a) Full-time and regular part-time	$10,807,937,150	$10,450,326,107
	(b) Substitute, part-time, and hourly paid	136,562,053	148,633,764
	(c) Total	$10,944,499,203	$10,598,959,871
6	Annual Annuities	$7,477,612,124	$7,205,635,969

[1] *Bond Buyer's 20-Bond GO index.*
[2] *Member data used in the valuation is as of the prior valuation date.*

Significant issues facing TRS

Funding Policy

A funding policy (also know as a contribution allocation policy) outlines the parameters for calculating an actuarially determined contribution rate and ensures the systematic funding of future benefit payments. An actuarially determined contribution is comprised of the Normal Cost and an amortization of the Unfunded Actuarial Accrued Liability. These amounts are determined by the following three funding policy components:

- *Actuarial Cost Method*: The Actuarial Cost Method allocates the total present value of future benefits to each year (Normal Cost) including all past years (Actuarial Accrued Liability or AAL)
- *Asset Smoothing Method*: The techniques that spread the recognition of investment gains or losses over a period of time for the purposes of determining the Actuarial Value of Assets used in the actuarial valuation
- *Amortization Policy*: The method on how, in terms of duration and pattern, to fund the Unfunded Actuarial Accrued Liability, or UAAL

Historical Underfunding by the State

The Illinois Pension Code sets the parameters for funding TRS. The employer contributions are determined such that, together with the member contributions, the System is projected to achieve 90% funded by 2045. The 2045 funding objective of 90% was set in 1994 as a 50-year objective. TRS members have always contributed their share. **The State funding has been inadequate, resulting in TRS being among the worst funded public employee retirement systems in the United States.**

The State has historically underfunded TRS by the use of funding policies that do not provide for adequate funding of TRS, including:

- Establishing a 50-year period in 1994, over which to amortize the Unfunded Actuarial Accrued Liability
- Back loading the 50-year period by requiring a 15-year period to ramp up to full contributions as determined under the Illinois funding policy
- Setting a funding target of 90% of the actuarial accrued liability (as opposed to 100%)
- Requiring the use of the projected unit credit cost method, which further back loads the contributions to TRS as compared to the entry age normal cost method, which is a level cost funding method
- Imposing a maximum contribution based upon Pension Obligation Bond (POB) debt payments despite the fact that not all of the POB proceeds were contributed to TRS

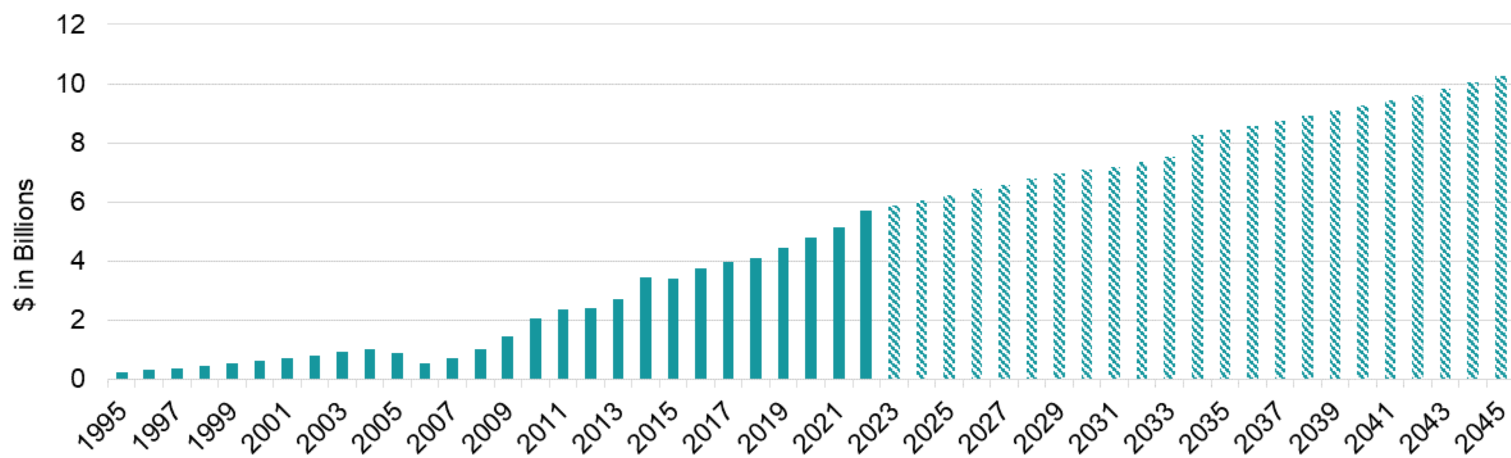
Significant issues facing TRS *continued*

Historical Underfunding by the State *continued*

- Reducing contributions for fiscal years ended June 30, 2006, and 2007
- Modifying the asset valuation method to reduce contributions for the fiscal year ended June 30, 2011; further reducing FY 2011 contributions by requiring TRS to recertify the 2009 valuation to assume that Tier 2 had been in effect in 2009
- Requiring Tier 2 benefit provisions for members to be hired in the future be reflected in the determination of the contribution, resulting in reduced and back-loaded contributions
- Reducing contributions by phasing in the effect of increased liabilities as a result of assumption changes

The graph below shows a history and projection of the State required contributions under the Illinois Pension Code. The graph illustrates the effect of inadequate State contributions on projected future contributions.

State Required Contribution for Fiscal Year Ending June 30[1]



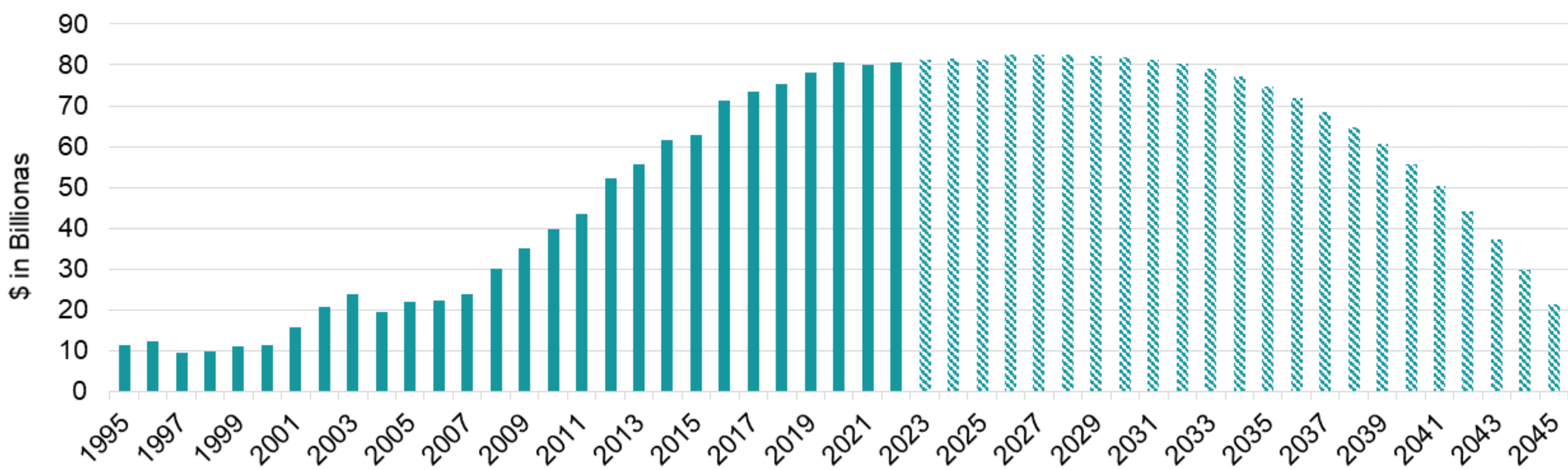
[1] *Assuming 7.00% returns and a level active headcount for all future years. Amounts beginning 2023 are projected amounts based on the June 30, 2022 actuarial valuation.*

Significant issues facing TRS *continued*

Historical Underfunding by the State *continued*

The insufficiency of the State contributions is the primary reason for the historical increases in UAAL as shown in the graph below.

Unfunded Actuarial Accrued Liability as of Fiscal Year Ending June 30[1]



Funding Policy Certified by the Board

Because State contributions under the Illinois Pension Code are inadequate, the Board of Trustees adopted a funding policy ("Board-Adopted Actuarial Funding Policy"), comprised of the following components:

- *Actuarial Cost Method*: The entry age normal method, which allocates costs evenly as a level percentage of salary
- *Asset Smoothing Method:* The actuarial value of assets is based on the fair value of assets with a five-year phase-in of investment returns in excess of (or less than) expected investment income

[1] *Assuming 7.00% returns and a level active headcount for all future years. Amounts beginning 2023 are projected amounts based on the June 30, 2022 actuarial valuation.*

Significant issues facing TRS *continued*

Funding Policy Certified by the Board *continued*

- *Amortization Policy:* The amortization policy is a layered amortization approach. Effective with the June 30, 2015, actuarial valuation, the UAAL is amortized over a closed 20-year period. Sources of UAAL that emerge in subsequent valuations are amortized over closed 20-year periods. The amortization payment increases at the expected rate of future State revenue growth (assumed to be 2.0%, which is conservative but reasonable compared to shorter-term projections of State revenue growth). The minimum contribution is the normal cost.

The Board of Trustees prepares an annual certification, which includes State contributions under the Illinois Pension Code and the Board-Adopted Actuarial Funding Policy. Unlike the current funding policy, the Board-Adopted Actuarial Funding Policy would bring TRS to full funding by decreasing the UAAL every year. **We strongly recommend an actuarial funding method that targets 100% funding where payments ultimately cover interest on the unfunded actuarial accrued liability and a portion of the principal balance.** The funding policy adopted by the Board, referred to as the Board-Adopted Actuarial Funding Policy, meets this standard.

Implications of Tier 2

Lower Benefit Structure/Same Contribution Rate as Tier 1

- Tier 2 members are those who first established membership with TRS or a reciprocal system after December 31, 2010. While Tier 2 member contribution rates are the same as Tier 1 member contribution rates, the value of Tier 2 benefits is lower than Tier 1 benefits. This is because Tier 2 members have to work longer to be eligible for retirement, the final average salary period is longer, pensionable salaries are capped, and the cost-of-living adjustments (COLAs) are smaller.
- The Tier 2 wage cap, which applies to benefits and contributions, was established in 2011 at $106,800. The wage cap increases each fiscal year by the lesser of 3% or one-half of the CPI-U as of the preceding September. For the fiscal year ended June 30, 2022, the limit is $116,740. Based upon the current actuarial assumptions, it is projected that the wage cap will affect the majority of full career Tier 2 members' final average salary.

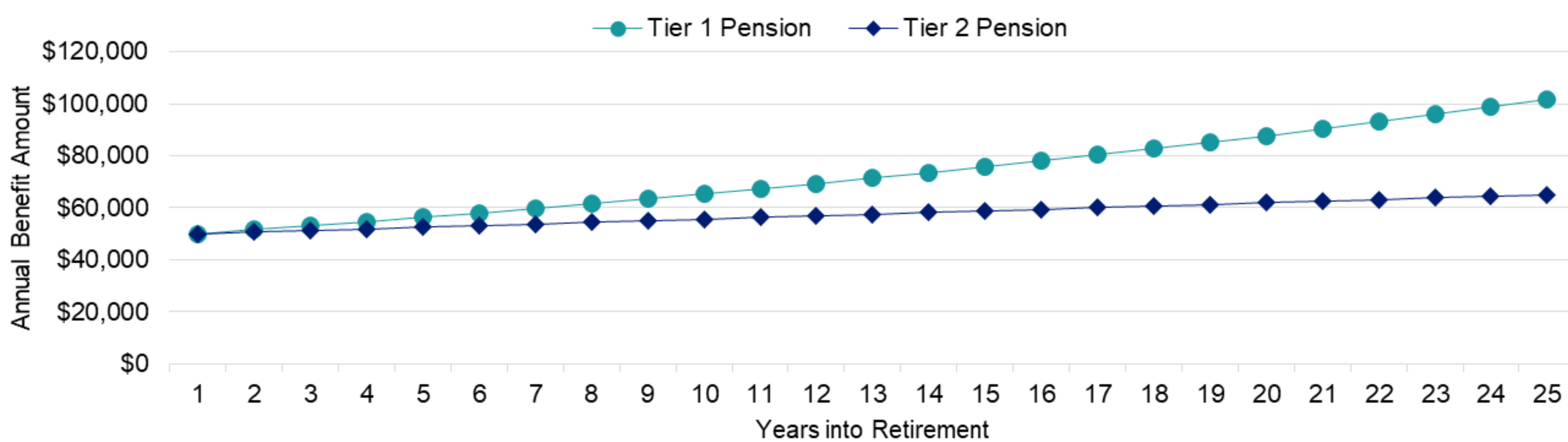
Significant issues facing TRS *continued*

Implications of Tier 2 *continued*

Cost-of-living Adjustment

- The Tier 2 cost-of-living adjustment (COLA) is calculated using the lesser of 3% or one-half of CPI-U, as of the preceding September, of the originally granted retirement annuity (currently, 1.25% annual increase based on assumed inflation of 2.50%) as compared to the Tier 1 COLA, which is a 3% compound COLA. The Tier 2 COLA will not keep pace with inflation, eroding the purchasing power of Tier 2 pensions during retirement. The chart below shows the comparison of a $50,000 pension under the Tier 1 and Tier 2 COLA provisions.

Illustration of Tier 1 and 2 COLA Based on Initial Annual Benefit of $50,000



Significant issues facing TRS *continued*

Implications of Tier 2 *continued*

Total Normal Cost Rate Compared to Member Contribution Rate

- The following chart compares the Tier 1 and Tier 2 member contribution rates to the normal cost rates for fiscal year 2024 using the projected unit credit cost method, as required by the Illinois Pension Code. The normal cost rate is the cost of benefits that accrue during the year expressed as a percentage of payroll, based on the actuarial assumptions. Currently, the total normal cost for Tier 1 is approximately three times the normal cost rate for Tier 2, reflecting the differences in the benefits, as well as the relative age composition of the older, closed Tier 1 population compared to the younger, ongoing Tier 2 group. The Tier 2 total normal cost rate is currently less than the member contribution rate. As a result, based upon the actuarial assumptions, Tier 2 members are funding their pension benefit and paying a portion of the interest on the UAAL.

Allocation of Member Contribution Rate

		For Fiscal Year 2024		
		Tier 1	**Tier 2**	**Total**
1	Total normal cost rate, including administrative expenses	24.13%	7.97%	19.60%
2	Less: member contribution rate	(9.00%)	(9.00%)	(9.00%)
3	Employer normal cost rate	15.13%	(1.03%)	10.60%
4	Allocation of member contribution rate			
	(a) Normal cost rate	9.00%	7.97%	9.00%
	(b) Unfunded actuarial accrued liability	0.00%	1.03%	0.00%
	(c) Total	9.00%	9.00%	9.00%

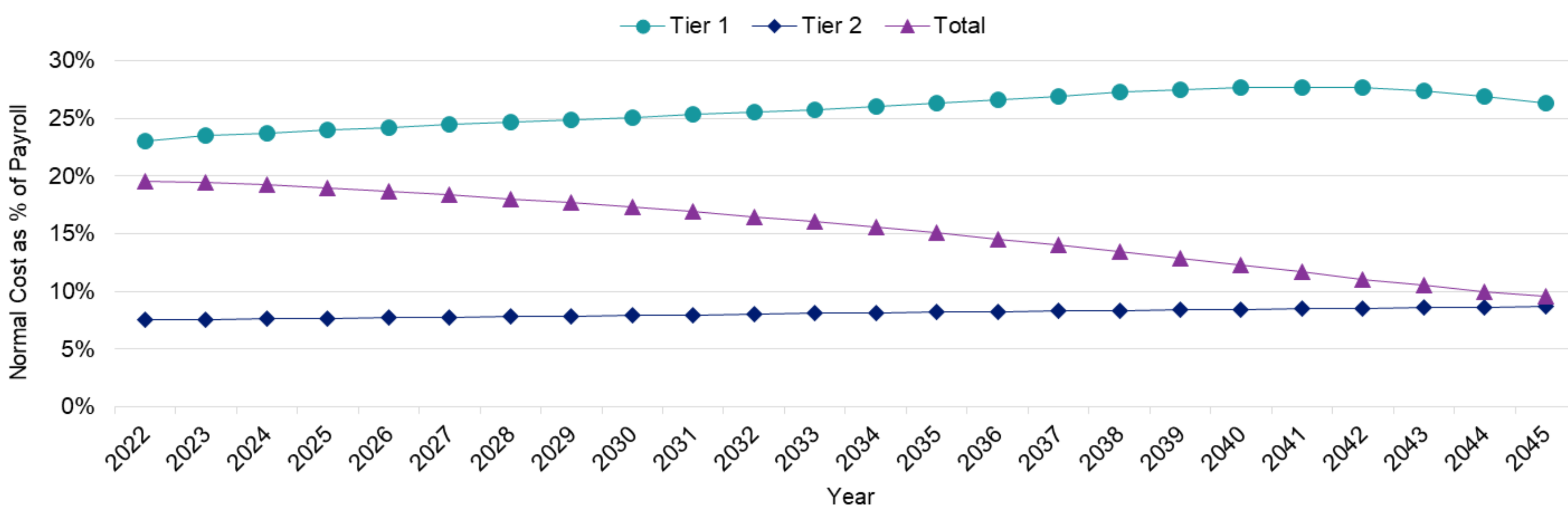
Significant issues facing TRS *continued*

Implications of Tier 2 *continued*

Projection of Total Normal Cost Rate by Tier

- The following graph shows a projection of the total normal cost rates for Tier 1, Tier 2, and in total. The chart shows that the total normal cost rate will decline over time as the Tier 1 members terminate and retire and are replaced by Tier 2 members. The funding policy under the Illinois Pension Code, which targets a 90% funded ratio by 2045, requires the funding and benefit provisions for future Tier 2 members to be reflected in the determination of the contribution. The contributions, as determined by the Illinois Pension Code, are based on a projection of normal cost and actuarial accrued liability for Tier 2 members who will be hired after the valuation date and through 2045. This results in a deferral of contributions to later years.

Projection of Total Normal Cost Rate for Fiscal Year Ending June 30



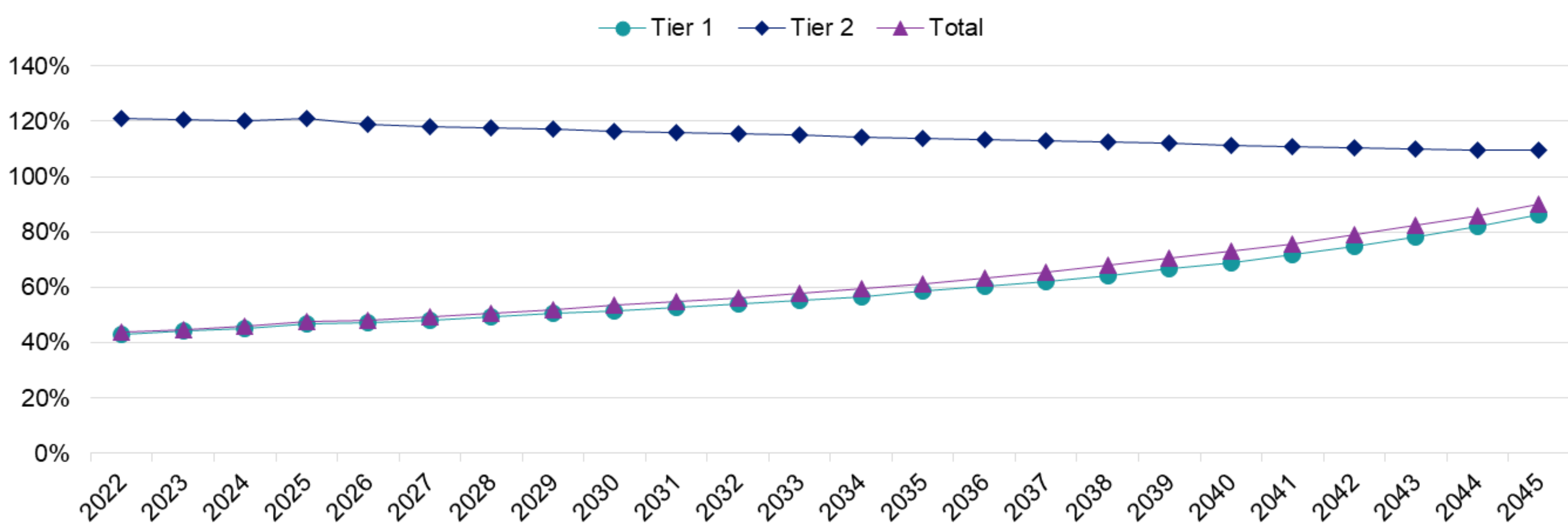
Significant issues facing TRS *continued*

Implications of Tier 2 *continued*

Tier 2 Contribution toward Unfunded Actuarial Accrued Liability

- As described above, Tier 2 members are funding a portion of the interest on the UAAL along with the normal cost of their benefits. Tier 1 and Tier 2 liabilities and assets are not allocated separately for purposes of determining the funded ratio and contribution requirements. However, if the assets and liabilities were allocated separately, a projection of the funded ratio for each tier would show that the Tier 2 funded ratio is 121% as of June 30, 2022, ultimately reducing to a funded ratio of 109% as of June 30, 2045. In contrast, the Tier 1 funded ratio is 43% as of June 30, 2022, increasing to 86% as of June 30, 2045. For the total System, the funded ratio is 44% as of June 30, 2022, increasing to 90% as of June 30, 2045. Tier 2 member contributions assist in increasing the total funded ratio to 90% as of 2045. The graph below illustrates this.

Projection of Funded Ratio for Fiscal Year Ending June 30



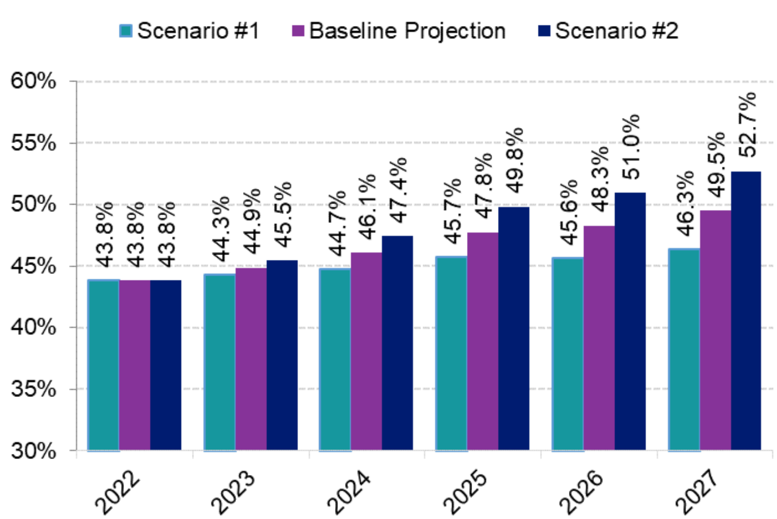
Sensitivity projections

The following charts show projections of valuation results under alternative investment return scenarios and their impact on the funded status and State contributions for the next five years. The projections are based on the current actuarial assumptions and assume that all actuarial assumptions are realized, with the exception of the investment return for the year ending June 30, 2023:

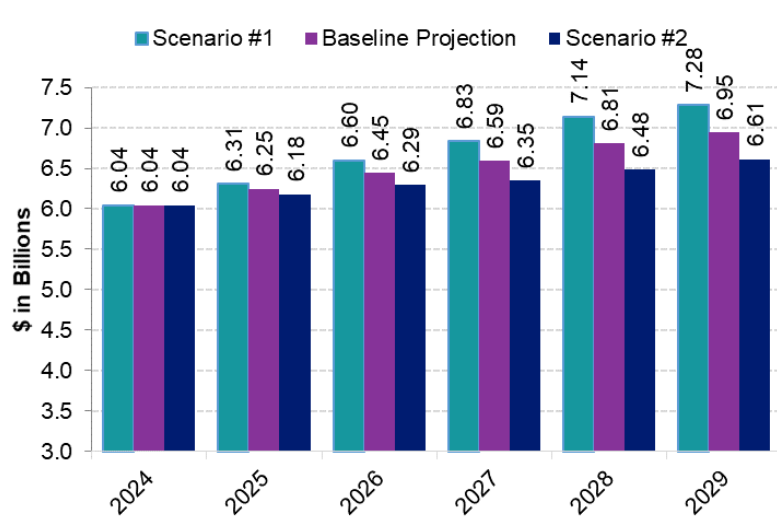
- Scenario 1 assumes a 0% investment return for the year ending June 30, 2023
- Scenario 2 assumes a 14% investment return for the year ending June 30, 2023

Because investment gains and losses are recognized in the actuarial value of assets over a five-year period, the effect on the funded status and State contribution in the first year is small. However, by the fifth year, the investment returns are fully reflected in the valuation. The charts show that investment gains and losses will have a significant effect on the valuation results.

Projection of Funded Ratio for Fiscal Year Ending June 30



Projection of State Contribution for Fiscal Year Ending June 30

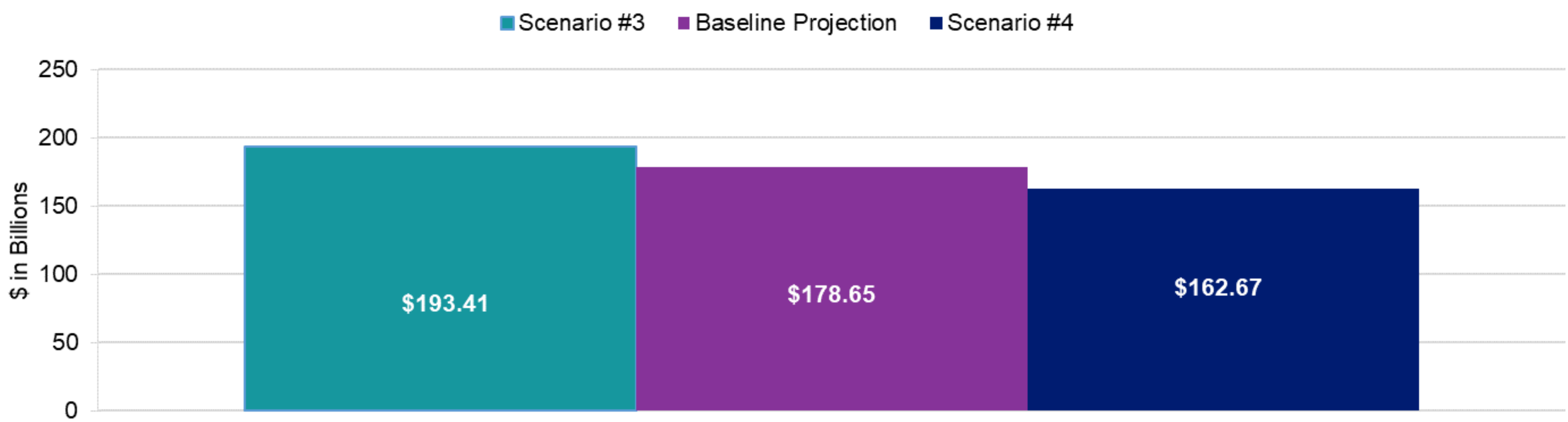


Sensitivity projections *continued*

The following chart shows the total State contributions for the fiscal years June 30, 2024, through June 30, 2045, based on the current actuarial assumptions and assuming that all actuarial assumptions are realized with the exception of the investment returns as follows:

- Scenario 3 assumes investment returns of 6.00% for each year beginning with the year ending June 30, 2023, through June 30, 2045
- Scenario 4 assumes investment returns of 8.00% for each year beginning with the year ending June 30, 2023, through June 30, 2045

Total State Contribution from Year Ending June 30, 2024, through June 30, 2045



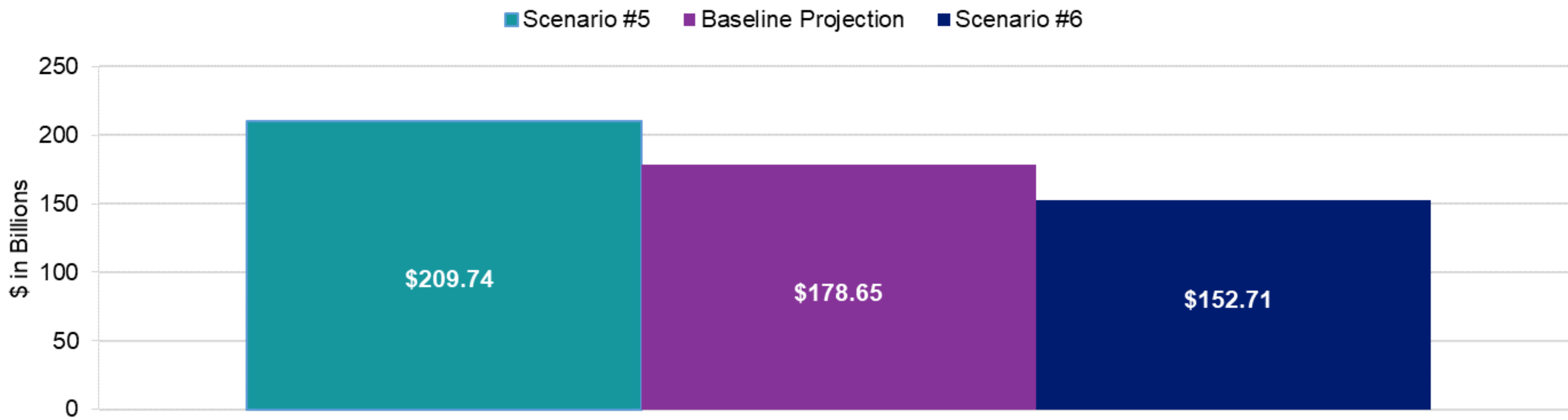
Note that, under the Board-Adopted Actuarial Funding Policy, the total contribution amounts paid by the System from fiscal year ending June 30, 2024, through June 30, 2045, would be $149.94 billion, which would result in an overall savings of $28.71 billion compared to current Statutory Funding Policy (as shown in the baseline projection scenario above).

Sensitivity projections *continued*

The following chart shows the total State contributions for the fiscal years June 30, 2024, through June 30, 2045, based on the current actuarial assumptions and assuming that all actuarial assumptions are realized with the exception of the following:

- Scenario 5 assumes investment returns of 6.00% for each year beginning with the year ending June 30, 2023, through June 30, 2045 and net investment return assumption of 6.00% effective June 30, 2022 (not reflecting 5-year assumption change phase-in)
- Scenario 6 assumes investment returns of 8.00% for each year beginning with the year ending June 30, 2023, through June 30, 2045 and net investment return assumption of 8.00% effective June 30, 2022 (not reflecting 5-year assumption change phase-in)

Total State Contribution from Year Ending June 30, 2024, through June 30, 2045



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 provisions	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 information	An actuarial valuation for a plan is based on data provided to the actuary by the TRS. 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.
Financial information	Part of the cost of a plan will be paid from existing assets — the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, as reported by TRS. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. Plan sponsors often use an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of participants in each year, as well as forecasts of the plan's benefits for each of those events. In addition, the benefits forecasted for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions the actuary selects within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Important information about actuarial valuations *continued*

Models	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. 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. The blended discount rate used for calculating total pension liability is based on a model developed by our Actuarial Technology and Systems unit, comprised of both actuaries and programmers. The model allows the client team, under the supervision of the responsible actuary, control over the entry of future expected contribution income, benefit payments and administrative expenses. The projection of fiduciary net position and the discounting of benefits is part of the model.

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 TRS Board. Segal is not responsible for the use or misuse of its report, particularly by any other party.
An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.
Actuarial results in this report are not rounded, but that does not imply precision. In addition, in some cases the underlying calculations involve more precision than what is presented in this report and the rounded numbers shown herein may appear not to add as a result.
If the TRS Board 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. TRS should look to their other advisors for expertise in these areas.
While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.
Segal's report shall be deemed to be final and accepted by the TRS Board upon delivery and review. Trustees should notify Segal immediately of any questions or concerns about the final content.

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

Section 2: Actuarial Valuation Results

Membership data

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active members, inactive members, retirees, and beneficiaries.

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

Data used for the valuation is as of the prior valuation date. Any changes in liabilities due to demographic experience during the most recent plan year are captured in the subsequent valuation.

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

Member Population: 2012 – 2021[1]

As of June 30	Full-Time and Regular Part-Time Active Members	Substitutes, Part-Time and Hourly Paid	Inactive Members Eligible for Deferred Annuities	Inactive Members Eligible for Refunds	Annuitants and Survivor Annuitants	Ratio of Full-Time Actives to Annuitants
2012	132,956	29,073	16,995	108,531	106,102	1.25
2013	132,886	28,104	17,250	110,403	109,448	1.21
2014	132,916	26,920	17,575	113,012	112,682	1.18
2015	133,478	26,206	18,362	115,360	115,273	1.16
2016	133,505	26,080	19,038	117,817	117,990	1.13
2017	133,761	26,664	19,531	119,738	120,453	1.11
2018	134,160	26,592	19,726	119,833	122,895	1.09
2019	135,752	27,323	19,363	121,908	124,791	1.09
2020	137,394	25,555	18,632	125,942	126,594	1.09
2021	139,144	19,761	19,308	132,507	128,116	1.09

[1] *Member data used in the valuation is as of the prior valuation date.*

Membership data *continued*

Full-Time and Regular Part-Time Active Members

Census Date as of June 30[1]	2021	2020	Change
Active participants	139,144	137,394	+1.3%
Average age	42.4	42.3	+0.1
Average years of service	13.5	13.4	+0.1
Average compensation	$77,674	$76,061	+2.1%

Additional information is shown on the following page.

Substitutes, Part-Time, and Hourly Paid Active Members

Census Date as of June 30[1]	2021	2020	Change
Active participants	19,761	25,555	–22.7%
Average age	44.8	46.5	–1.7
Average years of service	2.1	2.3	–0.2
Average compensation	6,911	5,816	+18.8%

Inactive Members

As of June 30, 2021 (the date at which census data is collected for the June 30, 2022, valuation), there were 19,275 participants and 33 survivors with a vested right to a deferred benefit. Inactive members may also be eligible for a refund of their retirement benefit contributions or a single sum benefit.

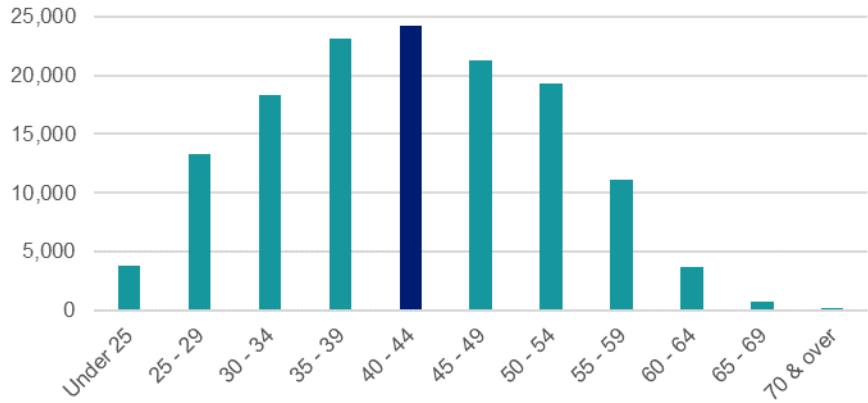
In addition, there were 132,507 participants entitled to a return of their employee contributions.

[1] *Member data used for the valuation is as of the prior valuation date.*

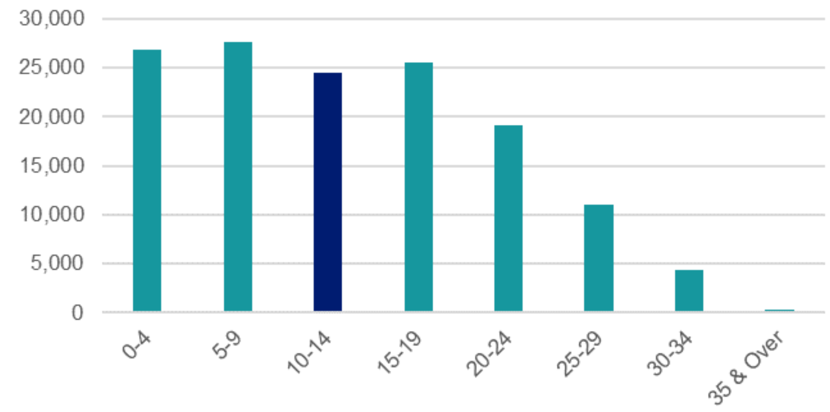
Membership data *continued*

Full-Time and Regular Part-Time Active Participant Data as of June 30, 2021[1]

By Age



By Years of Service



Average Compensation by Age

Note: The dark blue bar represents the average age and average service for active members.

[1] *Member data used for the valuation is as of the prior valuation date.*

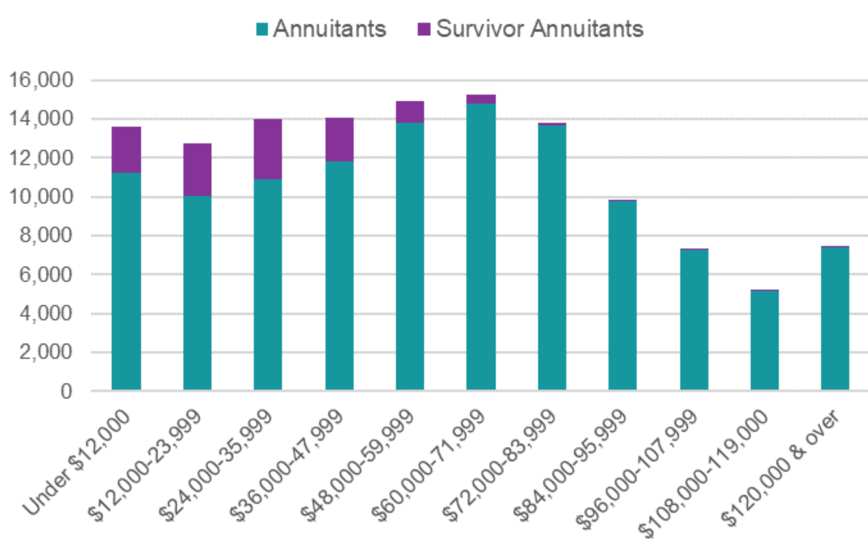
Membership data *continued*

Annuitants and Survivor Annuitants

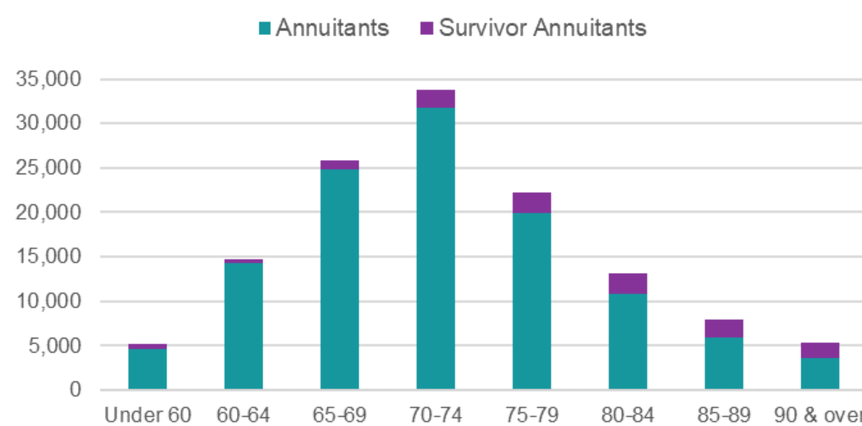
Census Date as of June 30	2021	2020	Change
Annuitants	115,745	114,622	+1.0%
Average age	72.8	72.5	+2.5%
Average amount	$5,120	$4,994	+0.1
Survivor Annuitants	12,371	11,972	+3.3%
Total annual benefits	$7,477,612,124	$7,205,635,969	+3.0%

Distribution of Annuitants and Survivor Annuitants

By Annual Benefit as of June 30, 2021[1]



By Age as of June 30, 2021[1]



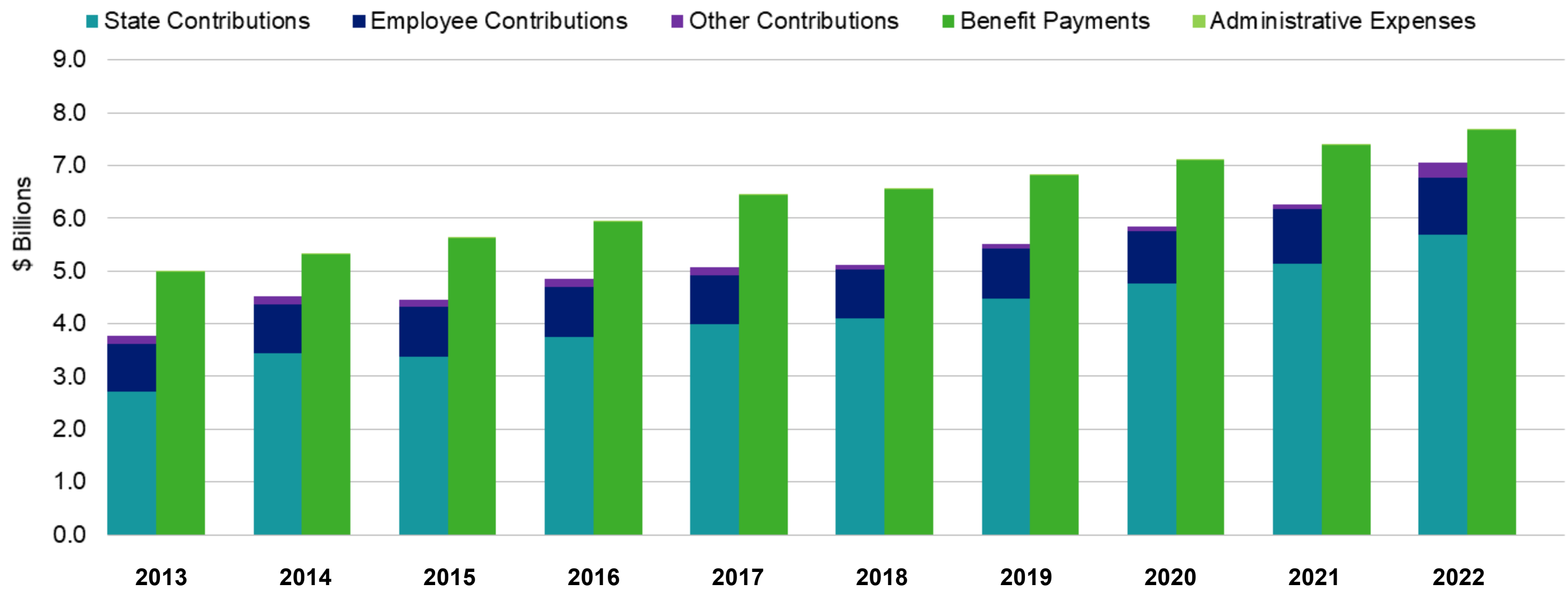
[1] *Member data used in the valuation is as of the prior valuation date.*

Financial information

Retirement plan funding anticipates that, over the long term, both contributions and investment earnings (less investment fees) will be needed to cover benefit payments and administrative expenses. Retirement plan assets change as a result of the net impact of these income and expense components.

Additional financial information, including a summary of transactions for the valuation year, is presented in *Section 3, Exhibits H, I* and *J*.

Comparison of Contributions with Benefits and Expenses for Years Ended June 30, 2013 – June 30, 2022



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
State Contributions	$2.70	$3.44	$3.38	$3.74	$3.99	$4.09	$4.47	$4.76	$5.14	$5.69
Employee Contributions	$0.92	$0.93	$0.94	$0.95	$0.93	$0.94	$0.96	$0.99	$1.02	$1.07
Other Contributions[1]	$0.16	$0.16	$0.14	$0.15	$0.15	$0.08	$0.09	$0.09	$0.10	$0.29[2]
Benefit Payments	$4.98	$5.32	$5.63	$5.93	$6.44	$6.55	$6.82	$7.10	$7.39	$7.67
Administrative Expense	$0.02	$0.02	$0.02	$0.02	$0.02	$0.02	$0.02	$0.02	$0.02	$0.03

[1] *Includes School District and Federal Funds contributions.*

[2] *Includes additional one-time contribution of $172,823,300 per Public Act 102-0696.*

Financial information *continued*

Two actuarial values of assets are used for determining the statutory contribution under the Illinois Pension Code, one that includes the Pension Obligation Bond (POB) and one that excludes the POB. The recommended contribution under the Board's funding policy (Board-Adopted Actuarial Funding Policy) includes the POB. The actuarial value of assets used in determining both contributions gradually adjusts to fair value. Under this asset valuation method, the full value of market fluctuations is recognized over a five-year period as opposed to in a single year. The amount of the adjustment to recognize fair 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.

To determine the employer contributions, the actuarial value of assets are projected one year from the valuation date to the beginning of the contribution fiscal year.

See charts on the following two pages for additional information.

Financial information *continued*

Determination of Actuarial Value of Assets and Projected Actuarial Value of Assets with POB for June 30, 2022 and June 30, 2021 Actuarial Valuations

				2022		2021
1	Fair value of assets with POB available for benefits			$62,833,626,339		$64,212,505,020
2	Calculation of unrecognized return[1]	Original Amount[2]	% Not Recognized		% Not Recognized	
	(a) Year ended June 30, 2022	($5,215,663,453)	80%	($4,172,530,762)		
	(b) Year ended June 30, 2021	9,424,254,666	60%	5,654,552,800	80%	$7,539,403,733
	(c) Year ended June 30, 2020	(3,409,956,524)	40%	(1,363,982,610)	60%	(2,045,973,914)
	(d) Year ended June 30, 2019	(974,076,334)	20%	(194,815,267)	40%	(389,630,534)
	(e) Year ended June 30, 2018	643,913,847		0	20%	128,782,769
	(f) Total unrecognized return			($76,775,839)		$5,232,582,054
3	Actuarial value of assets with POB (Current Assets): (1) – (2f)			$62,910,402,178		$58,979,922,966
4	Actuarial value as a percent of fair value: (3) ÷ (1)			100.1%		91.9%
5	Projected actuarial value of assets					
	(a) Assumed contributions			$7,045,478,259		$6,823,909,745
	(b) Assumed distributions			8,097,483,525		7,775,424,455
	(c) Expected return at 7.00%			4,366,907,968		4,095,291,593
	(d) Projected actuarial value of assets: (3) + (5a) – (5b) + (5c)			$66,225,304,880		$62,123,699,850

[1] *Recognition at 20% per year over 5 years.*
[2] *Total return minus expected return on fair value.*

Financial information *continued*

For determining the actuarial value of assets without the POB, the fair value of assets is estimated by adjusting for the POB. The fair value of assets without the POB as of the valuation date is equal to the fair value of assets without the POB as of the prior valuation date, increased by contributions excluding the POB debt service, decreased by disbursements, and credited with interest based upon the investment return of the fair value of assets with the POB.

Determination of Actuarial Value of Assets and Projected Actuarial Value of Assets without POB for June 30, 2022 and June 30, 2021 Actuarial Valuations

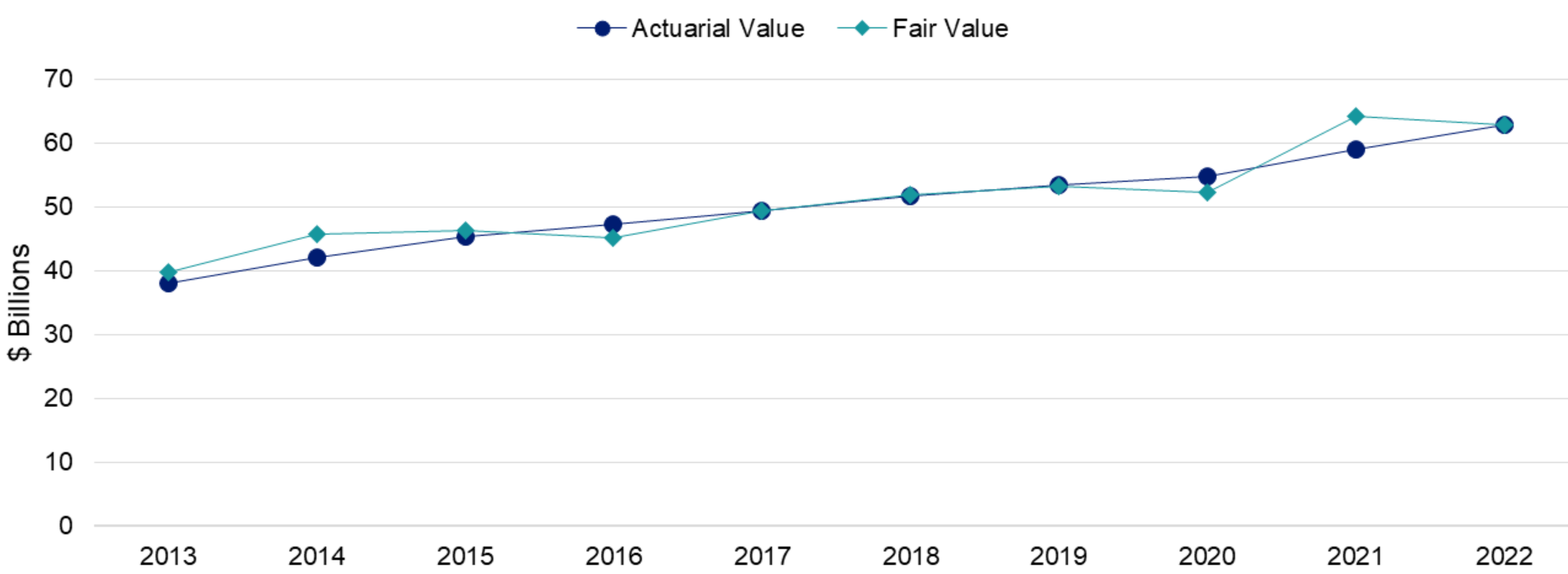
				2022		2021	
1	Estimated fair value of assets without POB available for benefits				$58,092,515,091		$58,969,267,642
2	Calculation of unrecognized return[1]		Original Amount [2]	% Not Recognized		% Not Recognized	
	(a)	Year ended June 30, 2022	($4,805,772,954)	80%	(3,844,618,363)		
	(b)	Year ended June 30, 2021	8,630,845,465	60%	5,178,507,279	80%	$6,904,676,372
	(c)	Year ended June 30, 2020	(3,102,850,180)	40%	(1,241,140,072)	60%	(1,861,710,108)
	(d)	Year ended June 30, 2019	(881,437,935)	20%	(176,287,587)	40%	(352,575,174)
	(e)	Year ended June 30, 2018	579,778,319		0	20%	115,955,664
	(f)	Total unrecognized return			($83,538,743)		$4,806,346,754
3	Actuarial value of assets without POB (Current Assets): **(1) – (2f)**				$58,176,053,834		$54,162,920,888
4	Actuarial value as a percent of fair value: **(3) ÷ (1)**				100.1%		91.8%
5	Projected actuarial value of assets						
	(a)	Assumed contributions			$7,509,279,317		$7,267,641,385
	(b)	Assumed distributions			8,097,483,525		7,775,424,455
	(c)	Expected return at 7.00%			4,051,736,621		3,773,632,055
	(d)	Projected actuarial value of assets: **(3) + (5a) – (5b) + (5c)**			$61,639,586,247		$57,428,769,874

[1] *Recognition at 20% per year over 5 years.*
[2] *Total return minus expected return on fair value.*

Financial information *continued*

Both the actuarial value and fair value of assets are a representation of the TRS financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the fair value of assets. The actuarial asset value is significant because TRS 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. Fair Value of Assets as of June 30, 2013 – 2022 (with POB)



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Actuarial Value	$38.16	$42.15	$45.44	$47.22	$49.47	$51.73	$53.39	$54.89	$58.98	$62.91
Fair Value	$39.86	$45.82	$46.41	$45.25	$49.38	$51.97	$53.26	$52.32	$64.21	$62.83

Actuarial experience

To calculate the actuarially determined contribution, 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. Overall favorable experience relative to the assumptions (an actuarial gain) causes a decrease in the contribution requirement. On the other hand, overall less favorable experience relative to the assumptions (an actuarial loss) causes an increase in the contribution requirement.

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 total gain is approximately $335 million, which includes $460 million from investment gains and $125 million in losses from all other sources. The net experience variation from individual sources other than investments was approximately 0.1% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

Actuarial Experience for Year Ended June 30, 2022

1	Net gain from investments[1]	$459,975,183
2	Net loss from other experience[2]	-125,083,617
3	Net experience gain: **(1) + (2)**	$334,891,566

[1] *Details on page 38.*
[2] *Details on page 41.*

Actuarial experience *continued*

Investment Rate of Return

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 TRS investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 7.0%. The actual rate of return on an actuarial basis for the year ended June 30, 2022, was 7.78%.

Since the actual return for the year was more than the assumed return, TRS experienced an actuarial gain during the fiscal year ended June 30, 2022, with regard to its investments.

Investment Experience for Year Ended June 30, 2022

		Fair Value With POB	Fair Value Without POB	Actuarial Value With POB
1	Value of assets as of June 30, 2021	$64,212,505,020	$58,969,267,642	$58,979,922,966
2	Contributions during fiscal year ended June 30, 2022[1]	7,060,315,736	7,504,047,376[2]	7,060,315,736
3	Benefits and expenses during fiscal year ended June 30, 2022	7,696,152,044	7,696,152,044	7,696,152,044
4	Value of assets as of June 30, 2022	62,833,626,339	58,092,515,091	62,910,402,178
5	Total investment income: **(4) – (1) – (2) + (3)**	(743,042,373)	(684,647,883)	4,566,315,520
6	Average value of assets: **(1) + [(2) – (3)] ÷** 2	63,894,586,866	58,873,215,308	58,662,004,812
7	Actual rate of return: **(5) ÷ (6)**	-1.16%	-1.16%	7.78%
8	Assumed rate of return	7.00%	7.00%	7.00%
9	Expected return: **(6) x (8)**	$4,472,621,080	$4,121,125,071	$4,106,340,337
10	Actuarial gain: **(5) – (9)**	($5,215,663,453)	($4,805,772,954)	$459,975,183

[1] *Includes additional one-time contribution of $172,823,300 per Public Act 102-0696.*
[2] *Includes POB debt service.*

Actuarial experience *continued*

Investment Rate of Return *continued*

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 market value investment return for the last twenty years, including five-year, ten-year, fifteen-year, and twenty-year averages.

Note that the actuarial value of assets was equal to the fair value of assets prior to June 30, 2009. Effective June 30, 2009, the actuarial value of assets was changed to a method under which market fluctuations in excess of or below the assumed investment return are recognized over a five-year period. The returns were determined by the actuary and may be different from the returns reported in the Annual Comprehensive Financial Report.

Investment Return
Fair Value vs. Actuarial: 2003 – 2022

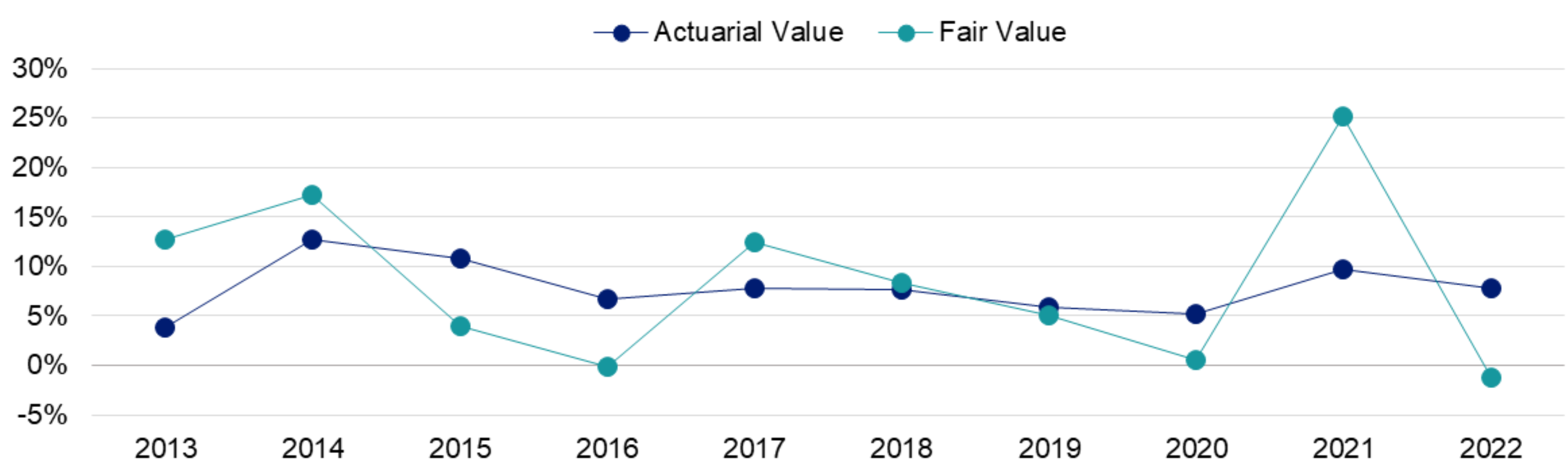
Year Ended June 30	Fair Value	Actuarial Value	Year Ended June 30	Fair Value	Actuarial Value
2003	4.78%	4.78%	2013	12.70%	3.83%
2004	16.46%	16.46%	2014	17.19%	12.75%
2005	10.69%	10.69%	2015	3.91%	10.76%
2006	11.98%	11.98%	2016	(0.10%)	6.46%
2007	19.07%	19.07%	2017	12.39%	7.83%
2008	(4.89%)	(4.89%)	2018	8.32%	7.63%
2009	(22.89%)	2.22%	2019	5.10%	5.84%
2010	12.97%	0.71%	2020	0.52%	5.16%
2011	23.50%	3.84%	2021	25.21%	9.65%
2012	0.61%	3.64%	2022	(1.16%)	7.78%
	Most recent five-year average return			7.21%	7.20%
	Most recent ten-year average return			8.12%	7.77%
	Most recent fifteen-year average return			5.54%	5.48%
	Most recent twenty-year average return			7.24%	7.19%

Actuarial experience *continued*

Investment Rate of Return *continued*

The actuarial asset valuation method gradually takes into account fluctuations in the fair value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs. The chart below illustrates the effect that the asset returns on a fair value basis are more volatile than asset returns on an actuarial basis.

Fair Value and Actuarial Rates of Return for Years Ended June 30, 2013 – 2022



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Actuarial Value	3.83%	12.75%	10.76%	6.76%	7.83%	7.63%	5.84%	5.16%	9.65%	7.78%
Fair Value	12.70%	17.19%	3.91%	-0.10%	12.39%	8.32%	5.10%	0.52%	25.21%	(1.16%)
Assumed Rate	8.00%	8.00%	7.50%	7.50%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%

Actuarial experience *continued*

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 but are not limited to:

- salary increases different than assumed,
- retirement experience (earlier or later than expected),
- disability experience different than assumed,
- the extent of turnover among participants,
- mortality (more or fewer deaths than expected),
- buyout experience different than assumed, and
- new entrants.

The loss from this other experience for the year ended June 30, 2022, is $125 million, which is approximately 0.1% of the actuarial accrual liability. This is largely due to losses from benefit payments being different than assumed. A five-year history of the demographic gain/(loss) experience is shown in the chart below.

Experience Due to Changes in Demographics for Years Ended June 30, 2018, to June 30, 2022

		2022	2021	2020	2019	2018
1	Salary increases	($32,828,461)	$56,331,439	$41,780,212	$84,011,865	$40,293,935
2	Retirement experience	(12,528,909)	(107,023,064)	(178,155,930)	(324,388,173)	(341,957,544)
3	Disability experience	18,105,257	18,941,923	17,701,086	17,840,394	24,275,853
4	Termination experience	(54,266,505)	(49,242,128)	(49,417,489)	(60,351,523)	(19,458,838)
5	Mortality experience	146,302,767	68,231,169	(14,135,952)	(10,977,383)	(42,624,422)
6	Rehires	(35,416,877)	(41,159,834)	(41,266,774)	(39,508,399)	(36,264,543)
7	New entrants	3,326,783	4,382,406	10,456,950	10,851,490	16,845,581
8	Buyout experience	65,234,112	195,467,590	N/A	N/A	N/A
9	Other	(223,011,784)	88,083,634	166,176,905	(29,494,007)	(983,112,072)[1]
10	Total	($125,083,617)	$234,013,135	($46,860,992)	($352,015,736)	($1,342,002,050)

[1] *Primarily due to programming enhancements.*

Development of employer costs

Statutory Funding under Illinois Pension Code

The amount of the employer contribution as determined by the Illinois Pension Code is the amount, which, as a level percentage of member payroll, will result in the System being 90% funded by June 30, 2045, if all assumptions are met and the active population remains level. The employer contributions include contributions from the State, School Districts, and Federal Funds. Federal Funds contributions are based on the assumption that 2.00% of total payroll is attributable to Federal Funds payroll. For fiscal 2024, the School Districts' contributions are expected to equal 0.58% of total payroll under Sec. 16-158(e), approximately 0.03% of total payroll under Sec. 16-158(f), and approximately 0.04% of total payroll under Sec. 16-158(i-5). The actuarial cost method is the projected unit credit method.

The methodology for calculating the Federal Funds contribution and, therefore, the State contribution has been changed effective for fiscal years 2021 and thereafter. Based on the modified approach, the Federal Funds contributions are treated in a similar manner as some School District contributions (i.e., a stream of projected contributions estimated as of the valuation date) resulting in the State contribution being the level percent of payroll required to attain 90% funded by fiscal year 2045.

Recommended Funding under Board-Adopted Actuarial Funding Policy

The actuarially determined contribution under the Board's funding policy, called the Board-Adopted Actuarial Funding Policy, is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability. The amortization of the unfunded accrued liability is a closed 20-year period effective June 30, 2015, and will decline by one year in each subsequent valuation. Sources of unfunded actuarial accrued liability that emerge in subsequent valuations are amortized over closed 20-year periods. Contributions toward the unfunded actuarial accrued liability increase by 2% each year, the estimated increase in future State revenue growth. The actuarial cost method is the entry age normal method. The minimum contribution is the normal cost.

The chart on the following page shows the development of employer contributions under Statutory Funding and the Board-Adopted Actuarial Funding Policy.

Development of employer costs *continued*

Employer Contributions

		Fiscal Year Ending June 30	
		2024	**2023**
Based on Statutory Funding Plan			
1	Benefit Trust Reserve:		
	(a) Employer's cost as percentage of membership payroll	51.62%	53.15%
	(b) Total employer contribution: **(1a) x (8)**	$6,264,059,062	$6,209,687,457
	(c) School Districts contributions under Sec. 16-158	(79,236,196)	(75,805,228)
	(d) Federal Funds contribution	(25,728,216)	(24,510,020)
	(e) Phase-in of the effect of assumption changes	(115,940,000)	(215,640,000)
	(f) State Contribution: **(1b) + (1c) + (1d) + (1e)**	$6,043,154,650	$5,893,732,209
2	Guaranteed Minimum Annuity Reserve	300,000	300,000
3	Total State Contribution: **(1f) + (2)**	$6,043,454,650	$5,894,032,209
Based on Board-Adopted Actuarial Funding Policy (Actuarially Determined Contribution)			
4	Benefit Trust Reserve:		
	(a) Normal cost plus amortization of UAAL	$9,694,780,499	$9,201,648,472
	(b) School Districts contribution under Sec. 16-158	(79,236,196)	(75,805,228)
	(c) Federal Funds contribution	(25,728,216)	(24,510,020)
	(d) State contribution: **(4a) + (4b) + (4c)**	$9,589,816,087	$9,101,333,224
5	Guaranteed Minimum Annuity Reserve	300,000	300,000
6	Total State Contribution: **(4d) + (5)**	$9,590,116,087	$9,101,633,224
Difference Between Board-Adopted Actuarial Funding Policy and Statutory Fund			
7	Shortfall/(Excess): **(6) – (3)**	$3,546,661,437	$3,207,601,015
Expected Membership Payroll			
8	Total membership payroll	$12,135,950,790	$11,682,564,466

Risk

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

This report does not contain a detailed analysis of the potential range of future measurements, but does include a brief discussion of some 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 Plan accounting purposes as well.

A detailed risk assessment is important for TRS because:

- The negative cash flow position of the System could be exacerbated by relatively small deviations from assumed future experience.
- Retired and inactive participants account for more than half of the System's liabilities limiting options for reducing plan liabilities in the event of adverse experience.
- The statutory employer contribution has been less than the actuarially determined contribution determined under the board-adopted funding policy, which may indicate additional funding challenges in the future.
- 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 fair value of assets that is 10% different than the current value, it would result in a change of $6.3 billion in the asset value. A 10% increase in assets would cause the unfunded liability (fair value basis) to decrease from $80.6 billion to $74.3 billion. Likewise, a 10% decrease in the asset value would cause the unfunded liability to increase from $80.6 billion to $85.9 billion.

Since the Plan's assets are much larger than contributions, investment performance may create significant volatility in contribution requirements. For example, if future returns were 1% different than the current 7.0% return assumption, the average annual State contribution from fiscal year 2024 through fiscal year 2045 under Statutory requirements would increase or decrease by approximately $700 million.

The fair value rate of return over the last 10 years has ranged from a low of –1.2% to a high of 25.2%, with an average of 7.7%. However, looking over a longer historical period of 20 years, the fair value rate of return has an average of 7.3%.

See 'Sensitivity Projections' section on pages 23 through 25 of this report for additional information regarding investment risk.

Risk *continued*

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 Board adopted funding policy and statutorily required contribution requirement.

A 10% reduction in the assumed mortality rates results in an increase in the liabilities of roughly 3% for most plans. For TRS, a 3% liability increase would result in an increase in the unfunded actuarially liability of $4.3 billion. The unfunded accrued liability (fair value basis) would increase from $80.6 billion to $84.9 billion.

Contribution Risk (the risk that actual contributions will be different from the actuarially determined contribution)

The Board-Adopted funding policy contribution requires payment of the System's normal cost and an amortization payment according to a schedule sufficient to pay down unfunded actuarial liability over time. If the TRS funding policy contribution were adhered to, contribution risk would be negligible.

However, Plan contributions are set by statute. The statutorily-required amount systematically underfunds TRS. Among other things, it: a) is based on a funding target of 90% of the actuarial accrued liability (as opposed to 100%); b) requires the use of the projected unit credit cost method, which further back loads the contributions to TRS as compared to the entry age normal cost method, which is a level cost funding method; c) imposes a maximum contribution based upon Pension Obligation Bond (POB) debt payments despite the fact that not all of the POB proceeds were contributed to TRS; and d) requires Tier 2 benefit provisions for members to be hired in the future be reflected in the determination of the contribution, resulting in reduced and back-loaded contributions.

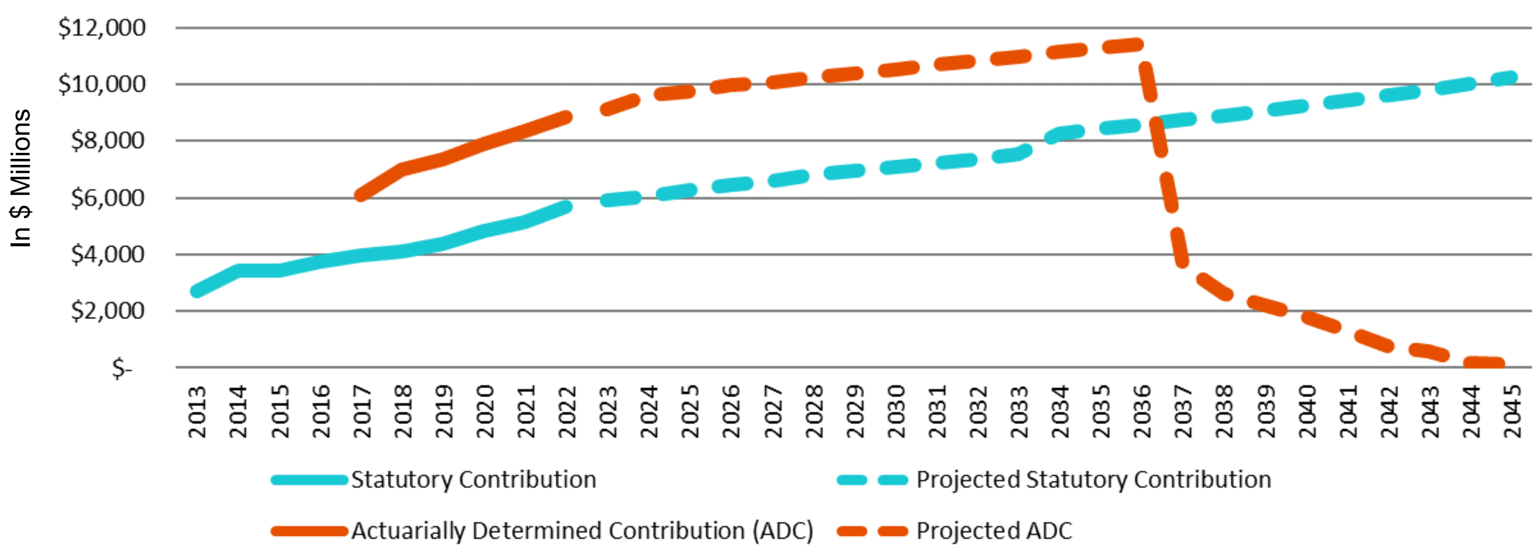
If contributions remain at current level and future experience matches the current assumptions, we project the unfunded actuarial accrued liability will not be paid off.

The following chart illustrates the impact on projected total State contributions (under the Statutory Funding Policy and Board-Adopted Actuarial Funding Policy) from fiscal year ending June 30, 2024, through June 30, 2045, assuming fair value returns for the upcoming year vary between –21% and +21%. Statutory and Board-Adopted contributions are determined such that the System is projected, by June 30, 2045, to attain 90% funded and 100% funded, respectively.

Risk *continued*

FYE2023	Total State Contributions (FY24-FY45)		
Assumed Return	**Statutory**	**Board-Adopted**	**Difference**
+21%	$157.9B	$134.5B	$23.4B
+14%	$168.3B	$141.8B	$26.5B
+7%	$178.7B	$149.9B	$28.7B
0%	$189.0B	$158.3B	$30.7B
-7%	$199.4B	$166.6B	$32.8B
-14%	$209.7B	$174.9B	$34.8B
-21%	$220.1B	$183.3B	$36.8B

The following graph depicts the differences in contribution pattern from June 30, 2024, through June 30, 2045, under the Statutory Funding Policy and Board-Adopted Actuarial Funding Policy, assuming 7% future returns.



Risk *continued*

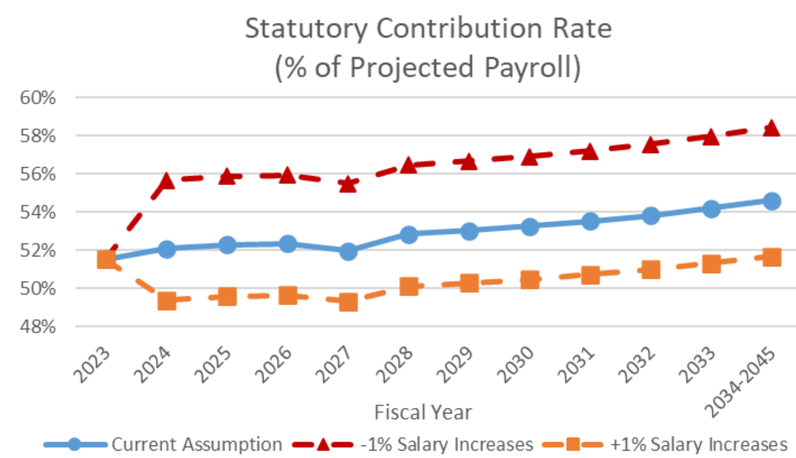
Demographic Risk (the risk that participant experience will be different than assumed)

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 participant turnover than assumed.
- Individual salary increases higher or lower than assumed.

The following chart and graph illustrate the impact on projected total State contributions from fiscal year ending June 30, 2024, through June 30, 2045, assuming increases in individual salaries (for both current and future employees) differ by 1% compared to the current assumption. Statutory contributions are determined such that the System is projected, by June 30, 2045, to attain 90% funded.

Assumed Salary Increases	Total State Contributions (FY24-FY45)	Difference from Current Assumption
Current	$178.7B	N/A
–1%	$168.4B	($10.3B)
+1%	$189.6B	$10.9B

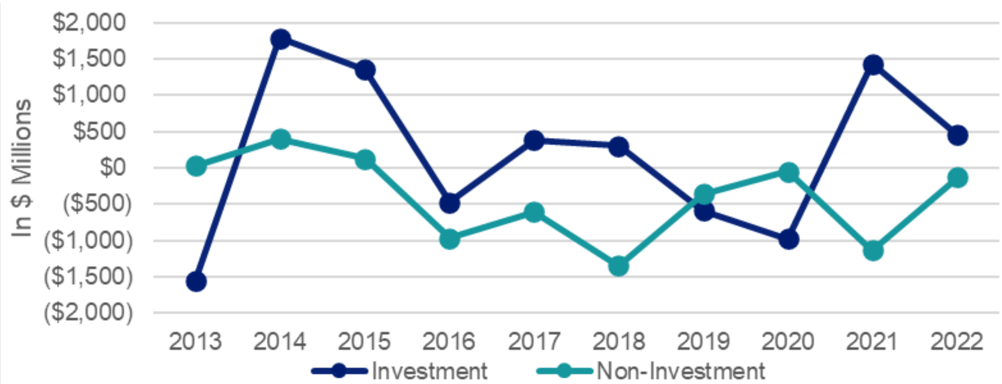


Risk *continued*

Actual Experience Over the Last 10 years and Implications for the Future

Past experience can help demonstrate the sensitivity of key results to the Plan's actual experience. Over the past ten years:

- The funded percentage on the actuarial value of assets has ranged from a low of 39.8% to a high of 43.8% since 2013. See page 73 for additional details
- The investment gain/(loss) for a year has ranged from a gain of $1,792 million to a loss of ($1,557) million.
- The non-investment gain/(loss) for a year has ranged from a gain of $402 million to a loss of ($1,342) million.



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 participants or of the assets of the plan can results in large swings in the contribution requirements.

- Over the past ten years, the ratio of full-time actives to non-active participants (excluding inactive members eligible for refunds) has decreased from a high of 1.25 to a low of 1.09. Currently the System has an active to non-active participant ratio of 1.09. See page 28 for more details.
- As of June 30, 2022, the retired life actuarial accrued liability represents 63% of the total actuarial accrued liability. In addition, the actuarial accrued liability for inactive vested participants represents 3% of the total. The higher the non-active actuarial accrued liability as a percent of the total liability, the greater the danger of volatility in results.
- Benefits and administrative expenses less contributions totaled $0.6 billion for the year ending June 30, 2022, 1.0% of the market value of assets. The Plan is dependent upon investment returns in order to pay benefits. See page 32 for additional details.

Section 3: Supplemental Information

Exhibit A – Summary of Membership Data

Category	Valuation as of June 30[1] 2022	Valuation as of June 30[1] 2021	Change From Prior Year
Active members:			
1 Number			
(a) Full-time and regular part-time			
Tier 1	98,045	100,967	(2.89%)
Tier 2	41,099	36,427	12.83%
Total	139,144	137,394	1.27%
(b) Substitutes, part-time, and hourly paid			
Tier 1	7,545	11,247	(32.92%)
Tier 2	12,216	14,308	(14.62%)
Total	19,761	25,555	(22.67%)
(c) Total number of active members			
Tier 1	105,590	112,214	(5.90%)
Tier 2	53,315	50,735	5.09%
Total	158,905	162,949	(2.48%)
2 Annual salaries			
(a) Full-time and regular part-time			
Tier 1	$8,455,234,760	$8,434,601,216	0.24%
Tier 2	2,352,702,390	2,015,724,891	16.72%
Total	$10,807,937,150	$10,450,326,107	3.42%
(b) Substitutes, part-time, and hourly paid			
Tier 1	$55,077,433	$71,674,642	(23.16%)
Tier 2	81,484,620	76,959,122	5.88%
Total	$136,562,053	$148,633,764	(8.12%)
(c) Total number of active members			
Tier 1	$8,510,312,193	$8,506,275,858	0.05%
Tier 2	2,434,187,010	2,092,684,013	16.32%
Total	$10,944,499,203	$10,598,959,871	3.26%

[1] *Member data used in the valuation is as of the prior valuation date.*

Exhibit A – Summary of Membership Data *continued*

Category		Valuation as of June 30[1] 2022	Valuation as of June 30[1] 2021	Change From Prior Year
Active members (continued):				
3	Average age			
	(a) Full-time and regular part-time	42.4	42.3	N/A
	(b) Substitutes, part-time, and hourly paid	44.8	46.5	N/A
	(c) Total	42.7	43.0	N/A
4	Average service			
	(a) Full-time and regular part-time	13.5	13.4	N/A
	(b) Substitutes, part-time, and hourly paid	2.1	2.3	N/A
	(c) Total	12.1	11.6	N/A
Inactive members:				
	Eligible for deferred annuities	19,308	18,632	3.63%
	Eligible for refunds or single sum benefits	132,507	125,942	5.21%
	Total	151,815	144,574	5.01%
Service retirees:				
1	Number			
	(a) Regular	84,637	82,453	2.65%
	(b) ERI	7,535	7,991	(5.71%)
	(c) ERO	22,587	23,133	(2.36%)
	(d) Total	114,759	113,579	1.04%
2	Annual annuities			
	(a) Regular	$4,795,543,168	$4,553,375,675	5.32%
	(b) ERI	505,540,370	520,923,041	(2.95%)
	(c) ERO	1,780,185,918	1,762,101,479	1.03%
	(d) Total	$7,081,269,456	$6,836,438,065	3.58%
3	Average age	72.9	72.6	N/A
4	Average monthly benefit	$5,142	$5,016	2.52%

[1] *Member data used in the valuation is as of the prior valuation date.*

Exhibit A – Summary of Membership Data *continued*

Category			Valuation as of June 30[1] 2022	2021	Change From Prior Year
Disability Annuitants:					
1	Number				
	(a)	Retirement Allowance	802	820	(2.20%)
	(b)	Occupational	4	5	(20.00%)
	(c)	Temporary	180	218	(17.43%)
	(d)	Total	986	1,043	(5.47%)
2	Annual annuities				
	(a)	Retirement Allowance	$24,753,047	$24,833,545	(0.32%)
	(b)	Occupational	190,502	215,559	(11.62%)
	(c)	Temporary	5,989,428	7,111,849	(15.78%)
	(d)	Total	$30,932,977	$32,160,953	(3.82%)
3	Average age		61.2	60.8	N/A
4	Average monthly benefit		$2,614	$2,570	1.74%
Survivor Annuitants:					
1	Number				
	(a)	Children	75	76	(1.32%)
	(b)	Survivors	12,083	11,686	3.40%
	(c)	Reversionary	213	210	1.43%
	(d)	Total	12,371	11,972	3.33%
2	Annual annuities				
	(a)	Retirement Allowance	$965,942	$939,482	2.82%
	(b)	Occupational	355,002,899	327,085,263	8.54%
	(c)	Temporary	9,440,850	9,012,206	4.76%
	(d)	Total	$365,409,691	$337,036,951	8.42%
3	Average age		78.9	78.7	N/A
4	Average monthly benefit		$2,461	$2,346	4.92%
Total number of participants			438,836	434,117	1.09%

[1] *Member data used in the valuation is as of the prior valuation date.*

Exhibit B – Active Membership Data as of June 30, 2021, used in June 30, 2022 Actuarial Valuation (Number and Average Annual Salary)

	Full-Time and Regular Part-Time Years of Service									
Age	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 - 39	40 & over
Under 25	3,752	3,747	5	--	--	--	--	--	--	--
	$46,094	$46,071	$63,548	--	--	--	--	--	--	--
25 – 29	13,313	9,356	3,957	--	--	--	--	--	--	--
	$53,295	$51,288	$58,041	--	--	--	--	--	--	--
30 – 34	18,339	4,448	10,572	3,318	1	--	--	--	--	--
	$62,238	$55,102	$62,554	$70,797	$66,038	--	--	--	--	--
35 – 39	23,103	2,963	5,097	10,483	4,560	--	--	--	--	--
	$72,754	$56,956	$65,688	$75,462	$84,695	--	--	--	--	--
40 – 44	24,248	2,416	2,974	4,344	10,620	3,894	--	--	--	--
	$81,714	$57,224	$65,648	$76,450	$88,477	$96,609	--	--	--	--
45 – 49	21,324	1,666	2,147	2,562	4,341	8,321	2,287	--	--	--
	$88,306	$58,111	$65,942	$75,439	$88,763	$99,145	$105,405	--	--	--
50 – 54	19,296	1,167	1,555	1,930	2,968	3,909	5,998	1,769	--	--
	$92,744	$59,461	$66,431	$74,896	$86,938	$98,268	$105,719	$110,840	--	--
55 – 59	11,140	622	808	1,241	1,942	1,997	2,090	2,304	136	--
	$93,437	$59,375	$64,628	$74,385	$84,334	$95,690	$107,111	$114,667	$121,363	--
60 – 64	3,666	298	354	471	885	786	486	259	112	15
	$87,786	$59,362	$64,548	$75,586	$84,755	$95,224	$104,180	$113,559	$124,305	$124,147
65 – 69	791	84	92	85	175	160	99	48	20	28
	$89,417	$59,659	$70,994	$76,369	$91,365	$98,514	$105,665	$102,903	$105,553	$122,598
70 & Older	172	19	19	19	24	34	20	15	7	15
	$91,672	$57,479	$63,131	$71,039	$109,501	$104,955	$94,721	$107,932	$106,360	$111,451
Total	139,144	26,786	27,580	24,453	25,516	19,101	10,980	4,395	275	58
	$77,674	$53,443	$63,417	$74,905	$87,265	$97,931	$105,830	$112,910	$121,029	$120,116

Exhibit C – 10-Year History of Active Membership Data

Full-Time and Regular Part-Time					
Census Date June 30	Number	Percentage Change in Membership	Total Salaries	Average Annual Salary	Percent Change in Average Salary
2012	132,956	N/A	$8,874,281,176	$66,746	N/A
2013	132,886	(0.1%)	8,984,821,118	67,613	1.3%
2014	132,916	0.0%	9,115,480,030	68,581	1.4%
2015	133,478	0.4%	9,286,852,068	69,576	1.5%
2016	133,505	0.0%	9,450,737,426	70,789	1.7%
2017	133,761	0.2%	9,610,001,605	71,845	1.5%
2018	134,160	0.3%	9,807,965,387	73,106	1.8%
2019	135,752	1.2%	10,120,309,474	74,550	2.0%
2020	137,394	1.2%	10,450,326,107	76,061	2.0%
2021	139,144	1.3%	10,807,937,150	77,674	2.1%

Substitutes, Part-Time and Hourly Paid					
Census Date June 30	Number	Percentage Change in Membership	Total Salaries	Average Annual Salary	Percent Change in Average Salary
2012	29,073	N/A	$154,240,000	$5,305	N/A
2013	28,104	(3.3%)	143,217,984	5,096	(3.9%)
2014	26,920	(4.2%)	143,897,458	5,345	4.9%
2015	26,206	(2.7%)	148,630,024	5,672	6.1%
2016	26,080	(0.5%)	154,723,494	5,933	4.6%
2017	26,664	2.2%	152,390,955	5,715	(3.7%)
2018	26,592	(0.3%)	154,944,377	5,827	2.0%
2019	27,323	2.7%	163,335,209	5,978	2.6%
2020	25,555	(6.5%)	148,633,764	5,816	(2.7%)
2021	19,761	(22.7%)	136,562,053	6,911	18.8%

Exhibit D – History of Active Membership Data

Tier 1					
Census Date June 30	Number	Percentage Change in Membership	Total Salaries	Average Annual Salary	Percent Change in Average Salary
2013	144,987	N/A	$8,975,899,676	$61,908	N/A
2014	138,700	(4.3%)	8,705,746,049	62,767	1.4%
2015	133,498	(3.8%)	8,649,528,420	64,791	3.2%
2016	128,262	(3.9%)	8,587,965,096	66,956	3.3%
2017	123,933	(3.4%)	8,508,107,682	68,651	2.5%
2018	119,572	(3.5%)	8,455,296,068	70,713	3.0%
2019	116,261	(2.8%)	8,485,298,821	72,985	3.2%
2020	112,214	(3.5%)	8,506,275,858	75,804	3.9%
2021	105,590	(5.9%)	8,510,312,193	80,598	6.3%

Tier 2					
Census Date June 30	Number	Percentage Change in Membership	Total Salaries	Average Annual Salary	Percent Change in Average Salary
2013	16,003	N/A	$360,008,829	$22,496	N/A
2014	21,136	32.1%	553,631,439	26,194	16.4%
2015	26,186	23.9%	785,878,433	30,011	14.6%
2016	31,323	19.6%	1,017,495,824	32,484	8.2%
2017	36,492	16.5%	1,254,284,878	34,372	5.8%
2018	41,180	12.8%	1,507,613,696	36,610	6.5%
2019	46,814	13.7%	1,798,345,863	38,415	4.9%
2020	50,735	8.4%	2,092,684,013	41,247	7.4%
2021	53,315	5.1%	2,434,187,010	45,657	10.7%

Note: Membership data by Tier includes substitutes, part-time, and hourly paid members.

Exhibit E – 10-Year History of Annuitant and Survivor Annuitant Membership

Census Date as of June 30	Number	Percentage Change in Number of Recipients	Annual Allowances	Percent Change in Allowances	Average Annual Annuity
2012	106,102	N/A	$4,811,370,000	N/A	$45,347
2013	109,448	3.2%	5,204,460,272	8.2%	47,552
2014	112,682	3.0%	5,505,783,524	5.8%	48,861
2015	115,273	2.3%	5,728,198,887	4.0%	49,692
2016	117,990	2.4%	6,033,050,890	5.3%	51,132
2017	120,453	2.1%	6,336,471,817	5.0%	52,605
2018	122,895	2.0%	6,639,967,327	4.8%	54,030
2019	124,791	1.5%	6,927,481,533	4.3%	55,513
2020	126,594	1.4%	7,205,635,969	4.0%	56,919
2021	128,116	1.2%	7,477,612,124	3.8%	58,366

Exhibit F – Benefit Stream for Guaranteed Minimum Annuity Reserve

Fiscal Year	Projected Benefit Stream for Guaranteed Minimum Annuity Reserve	Fiscal Year	Projected Benefit Stream for Guaranteed Minimum Annuity Reserve
2023	$287,433	2048	$6,494
2024	256,108	2049	5,229
2025	226,641	2050	4,163
2026	199,423	2051	3,275
2027	175,080	2052	2,545
2028	153,389	2053	1,953
2029	134,261	2054	1,479
2030	117,382	2055	1,106
2031	102,452	2056	817
2032	89,213	2057	596
2033	77,658	2058	431
2034	67,457	2059	308
2035	58,473	2060	208
2036	50,558	2061	144
2037	43,589	2062	100
2038	37,486	2063	69
2039	32,153	2064	48
2040	27,487	2065	35
2041	23,401	2066	26
2042	19,837	2067	20
2043	16,752	2068	17
2044	14,071	2069	2
2045	11,746	2070	1
2046	9,734	2071	1
2047	7,981	2072	0

Exhibit G – Reconciliation of Membership Data

		Active Members	Inactive Members Eligible for Allowance	Inactive Members Eligible for Refund	Service Retirees	Disabled Retirees	Beneficiaries	Deferred Beneficiaries	Total
1	Number as of June 30, 2020[1]	162,949	18,600	125,942	113,579	1,043	11,972	32	434,117
2	New members	10,656	N/A	N/A	N/A	N/A	N/A	N/A	10,656
3	Participant movement								
	(a) Retirements	(3,228)	(578)	(182)	3,988	0	0	0	0
	(b) Disabilities	(75)	0	0	0	75	0	0	0
	(c) Conversion from disability to service pension	N/A	N/A	N/A	45	(45)	N/A	N/A	0
	(d) Died with beneficiary	(52)	(2)	0	(1,017)	(18)	1,198	7	116[2]
	(e) Died without beneficiary	(91)	(18)	(334)	(1,835)	(30)	(793)	0	(3,101)
	(f) Terminations – with vested rights	(2,349)	2,349	0	0	0	0	0	0
	(g) Terminations – without vested rights	(11,909)	0	11,909	0	0	0	0	0
	(h) Refunds	(506)	(137)	(2,181)	N/A	N/A	N/A	0	(2,824)
	(i) IV Buyout	N/A	(167)	N/A	N/A	N/A	N/A	N/A	(167)
	(j) Rehired as active	3,510	(780)	(2,693)	(3)	(34)	0	0	0
	(k) Temporary annuity expired	N/A	N/A	NA	N/A	N/A	(6)	N/A	(6)
4	Data adjustment	0	8	46	2	(5)	0	(6)	45
5	Number as of June 30, 2021[1]	158,905	19,275	132,507	114,759	986	12,371	33	438,836

[1] *Member data used in the valuation is as of the prior valuation date.*

[2] *Includes multiple beneficiaries.*

Exhibit H – Summary Statement of Income and Expenses on a Fair Value Basis

	Year Ended June 30, 2022		Year Ended June 30, 2021	
Net assets at fair value at the beginning of the year		$64,212,505,020		$52,316,477,771
Contribution income:				
Members	$1,072,639,330		$1,023,531,951	
State of Illinois	5,866,799,836		5,140,648,356	
Employers:				
Federal funds	44,470,352		27,978,206	
2.2 Benefit formula	67,679,341		61,558,261	
Excess salary/sick leave	8,726,877		8,057,614	
Total contribution income		$7,060,315,736		$6,261,774,388
Investment income:				
Net appreciation (depreciation)	($1,822,405,587)		$12,183,214,170	
Alternative	1,100,265,053		942,481,173	
Interest and dividends	913,528,907		812,920,640	
Other	4,644,932		6,201,472	
Securities lending	8,460,584		8,937,961	
Less alternatives expense	(476,452,397)		(420,642,148)	
Less direct investment expense	(470,576,250)		(486,423,308)	
Less securities lending management fees	(507,615)		(536,275)	
Net investment income		(743,042,373)		13,046,153,685
Total income available for benefits		$6,317,273,363		$19,307,928,073
Less benefit payments and administrative expenses:				
Retirement benefits	($7,188,187,839)		($6,935,054,294)	
Survivor benefits	(386,984,571)		(357,078,075)	
Disability benefits	(31,847,092)		(31,816,332)	
Refund of contributions	(62,556,744)		(64,194,011)	
Administrative expenses	(26,575,798)		(23,758,112)	
Net benefit payments and administrative expenses		($7,696,152,044)		($7,411,900,824)
Net assets at fair value at the end of the year		$62,833,626,339		$64,212,505,020

Exhibit I – Summary Statement of System Assets

	Year Ended June 30, 2022		Year Ended June 30, 2021	
Cash equivalents		$19,555,845		$16,263,026
Accounts receivable and prepaid expenses:				
Member contributions	$111,156,404		$99,098,234	
Employer contributions	14,122,831		9,821,474	
State of Illinois	379,510		5,024,118	
Investment income	208,865,252		121,604,718	
Other receivables	1,796,573		285,804	
Investments sold	4,954,586,143		4,229,353,118	
Prepaid expenses	0		3,607,845	
Total accounts receivable and prepaid expenses		$5,290,906,713		$4,468,795,311
Investments at fair value:				
Fixed income	$8,729,837,455		$10,220,741,948	
Public equities	20,060,816,480		22,407,527,477	
Alternative investments	32,685,826,413		29,359,397,945	
Derivatives	(4,884,136)		(5,405,619)	
Short-term investments	959,097,903		1,756,658,884	
Foreign currency	97,615,510		112,911,645	
Total investments		$62,528,309,625		$63,851,832,280
Invested securities lending collateral		2,183,903,100		2,425,695,348
Capital assets, net of accumulated depreciation		8,238,075		8,453,925
Total assets		$70,030,913,358		$70,771,039,890
Less accounts payable:				
Benefits and refunds payable	($7,896,219)		($6,021,934)	
Administrative and investment expenses payable	(99,067,234)		(33,185,132)	
Pending investment purchases	(4,906,430,051)		(4,093,633,008)	
Securities lending collateral	(2,183,893,515)		(2,425,694,796)	
Total accounts payable		($7,197,287,019)		($6,558,534,870)
Net assets at fair value		$62,833,626,339		$64,212,505,020

Exhibit J – History of System Revenue and Expenses

Year Ending June 30	Fair Value of Assets Beginning of Year	Member Contributions	Employer Contributions	Net Investment Return	Admin Expenses	Benefit Payments	Fair Value of Assets End of Year	Investment Return[1]
2013	$36,516,825,339	$921,422,657	$2,860,491,456	$4,561,768,383	$20,257,553	$4,981,481,783	$39,858,768,499	12.7%
2014	39,858,768,499	928,745,853	3,596,717,490	6,782,031,720	21,218,069	5,320,662,979	45,824,382,514	17.2%
2015	45,824,382,514	935,451,049	3,523,256,530	1,770,549,533	21,686,860	5,625,037,173	46,406,915,593	3.9%
2016	46,406,915,593	951,809,398	3,890,510,012	(44,103,178)	22,967,917	5,931,207,177	45,250,956,731	(0.1%)
2017	45,250,956,731	929,130,165	4,135,859,276	5,520,453,001	22,728,735	6,438,005,920	49,375,664,518	12.4%
2018	49,375,664,518	938,037,245	4,179,758,475	4,049,271,728	21,550,896	6,551,634,376	51,969,546,694	8.3%
2019	51,969,546,694	963,972,120	4,554,535,473	2,617,831,332	24,335,680	6,818,760,572	53,262,789,367	5.1%
2020	53,262,789,367	994,400,416	4,906,109,917	275,669,398	22,966,372	7,099,524,955	52,316,477,771	0.5%
2021	52,316,477,771	1,023,531,951	5,238,242,437	13,046,153,685	23,758,112	7,388,142,712	64,212,505,020	25.2%
2022	64,212,505,020	1,072,639,330	5,987,676,406	(743,042,373)	26,575,798	7,669,576,246	62,833,626,339	(1.2%)

[1] *Calculated by the actuary and may not match the investment return reported in the Annual Comprehensive Financial Report.*

Exhibit K – Development of Unfunded Actuarial Accrued Liability

		Year Ended June 30			
		2022		2021	
1	Unfunded actuarial accrued liability at beginning of year		$79,934,351,951		$80,707,571,185
2	Total normal cost at beginning of year		2,169,473,297		2,098,147,390
3	Total member and employer contributions[1]		7,059,610,961		6,260,950,930
4	Interest on:				
	(a) Unfunded actuarial accrued liability and normal cost	$5,747,267,767		$5,796,400,300	
	(b) Total contributions	247,086,384		219,133,283	
	(c) Total interest: (4a) – (4b)		5,500,181,383		5,577,267,017
5	Expected unfunded actuarial accrued liability: (1) + (2) – (3) + (4c)		$80,544,395,670[2]		$82,122,034,662
6	Changes due to (gain)/loss from:				
	(a) Investments	($459,975,183)		($1,436,959,691)	
	(b) Demographics	125,083,617		(234,013,135)	
	(c) Total changes due to (gain)/loss: (6a) + (6b)		(334,891,566)		(1,670,972,826)
7	Change in plan provisions		0		0
8	Change in actuarial assumptions		403,824,677		(516,709,885)
9	Unfunded actuarial accrued liability at end of year: (5) + (6c) + (7) + (8)		$80,613,328,781		$79,934,351,951

[1] *Excludes guaranteed minimum annuity contributions, excess sick leave contributions, and penalty contributions.*

[2] *The unfunded actuarial accrued liability increased $610,043,719 during the year ended June 30, 2022 due to total contributions being less than total normal cost plus interest on the unfunded actuarial accrued liability.*

Exhibit L – Schedule of Funding Progress

($ in thousands)

(1) Valuation Date	(2) Actuarial Value of Assets (AVA)	(3) Actuarial Accrued Liability (AAL)	(4) Unfunded Actuarial Accrued Liability (UAAL) (3) – (2)	(5) Funded Ratio (2) / (3)	(6) Covered Payroll	(7) UAAL as a % of Payroll (4) / (6)
6/30/2013	$38,155,191	$93,886,989	$55,731,798	40.6%	$9,394,741	593.2%
6/30/2014	42,150,765	103,740,377	61,589,612	40.6%	9,512,810	647.4%
6/30/2015	45,435,193	108,121,825	62,686,632	42.0%	9,641,171	650.2%
6/30/2016	47,222,098	118,629,890	71,407,792	39.8%	9,811,614	727.8%
6/30/2017	49,467,525	122,904,034	73,436,509	40.2%	9,965,570	736.9%
6/30/2018	51,730,890	127,019,330	75,288,440	40.7%	10,163,980	740.7%
6/30/2019	53,391,193	131,456,969	78,065,776	40.6%	10,450,452	747.0%
6/30/2020	54,890,976	135,598,547	80,707,571	40.5%	10,827,439	745.4%
6/30/2021	58,979,923	138,914,275	79,934,352	42.5%	11,120,776	718.8%
6/30/2022	62,910,402	143,523,731	80,613,329	43.8%	11,647,248	692.1%

Exhibit M – Solvency Test

($ in thousands)

Valuation as of June 30	Actuarial Accrued Liability for: (1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Member (Employer Financed Portion)	Valuation Assets	Portion of Actuarial Accrued Liability Covered by Valuation Assets (1)	(2)	(3)
2013	$8,569,939	$61,254,334	$24,062,715	$38,155,191	100%	48%	0%
2014	8,890,558	65,614,627	29,235,192	42,150,765	100%	51%	0%
2015	9,281,893	70,545,782	28,294,150	45,435,193	100%	51%	0%
2016	9,629,934	77,688,075	31,311,881	47,222,098	100%	48%	0%
2017	9,683,095	80,882,353	32,338,586	49,467,525	100%	49%	0%
2018	10,057,427	82,968,465	33,993,438	51,730,890	100%	50%	0%
2019	10,474,097	85,788,806	35,194,066	53,391,193	100%	50%	0%
2020	10,902,747	88,185,983	36,509,817	54,890,976	100%	50%	0%
2021	11,320,352	88,788,971	38,804,952	58,979,923	100%	54%	0%
2022	11,804,784	90,534,637	41,184,310	62,910,402	100%	56%	0%

Section 4: Reporting Information

Exhibit I – Derivation of Employer Contributions under Illinois Pension Code

			Fiscal Year Ending June 30, 2024	As Percentage of Total Payroll
1	Assumed Payroll:			
	(a)	Total payroll	$12,135,950,790	
	(b)	Less Federal Funds payroll	(242,719,016)	
	(c)	State payroll	$11,893,231,774	
2	Employer contribution that would have been required without funds provided by Sec. 7.2(d) of General Obligation Bond Act			
	(a)	Employer's cost	$6,761,259,832	55.71%
	(b)	Less School Districts' contributions under Sec. 16-158	(79,236,196)	(0.65%)
	(c)	Less Federal Funds contribution	(25,728,216)	(0.21%)[1]
	(d)	Less State debt service for TRS portion of all funds provided under Sec 7.2 of General Obligation Bond Act	(497,200,770)	(4.10%)
	(e)	Maximum State contribution under PA 94-0004	$6,159,094,650	50.75%
3	Employer contribution recognizing all system assets, before limiting State contribution			
	(a)	Employer's cost	$6,427,015,894	52.95%
	(b)	Less School Districts' contributions under Sec. 16-158	(79,236,196)	(0.65%)
	(c)	Less Federal Funds contribution	(25,728,216)	(0.21%)
	(d)	State contribution	$6,322,051,482	52.09%
4	State contribution under PA 100-0023			
	(a)	Lesser of amounts under **(2)** and **(3)**	$6,159,094,650	50.75%
	(b)	Phase-in of the effect of assumption changes	(115,940,000)	(0.95%)
	(c)	State contribution[2]	$6,043,154,650	49.80%
5	Employer contributions			
	(a)	State contribution	$6,043,154,650	49.80%
	(b)	Plus School Districts' contributions under Sec. 16-158	79,236,196	0.65%
	(c)	Plus Federal Funds contribution	25,728,216	0.21%[1]
	(d)	Total employer contribution	$6,148,119,062	50.66%

[1] *Federal Funds contribution is equal to 10.60% of assumed Federal Funds payroll.*

[2] *The Benefit Trust Reserve State Contribution does not include the Guaranteed Minimum Annuity Reserve contribution.* *See page 43 for more details.*

Exhibit I – Derivation of Employer Contributions under Illinois Pension Code *continued*

Notes about employer contributions

1) **Assumed Payrolls**

   TRS staff estimated that Federal Funds payroll for the fiscal year ending June 30, 2024 would be 2.00% of total payroll.

2) **Determination of Maximum State Contribution under Public Act 94-0004**

   Under Section 7.2(d) of the General Obligation Bond Act (GOBA), TRS received $4.33 billion on July 2, 2003. Commencing with fiscal year 2005, the maximum State contribution under the Act equals the State contribution that would have been required had the $4.33 billion contribution not been made, reduced, but not below zero, by the State's debt service on the TRS portion of the full $10 billion of Pension Obligation Bonds issued under Section 7.2 of the GOBA.

3) **Employer Contribution Recognizing $4.33 Billion Received July 2, 2003**

   A gross employer contribution is determined that recognizes all System assets, and that meets the cost of maintaining and administering the System on a 90% funded basis by June 30, 2045, with a level percentage of payroll contribution after a 15-year phase-in beginning in fiscal year 1996.

4) **State and Federal Funds Contribution under Public Act 100-0023**

   The State contribution is the lesser of the maximum contribution determined under (2) or the contribution determined under (3), adjusted to reflect the phase-in of the effect of assumption changes. In accordance with Public Act 100-0340, the Federal Funds contribution rate is equal to the employer normal cost rate.

5) **Employer Contributions**

   The required employer contribution equals the sum of the State, Federal, and School Districts' contributions. For fiscal year 2024, the expected School Districts' contributions under Sec. 16-158(e), 16-158(f), and 16-158(i-5) are $70,388,515, $4,164,720, and $4,682,961, respectively.

6) **State Contribution Amount for FY 2006 and FY 2007 under Public Act 94-0004**

   PA 94-0004 specified actual contribution amounts for fiscal years 2006 and 2007 made by the State to the Benefit Trust Reserve.

Exhibit I – Derivation of Employer Contributions under Illinois Pension Code *continued*

Notes about employer contributions *continued*

Additional information:

The following contributions made to the Benefit Trust Reserve are not shown on Exhibit I:

a) **From Members:**
   i) Sec. 16-128 payments for the purchase of optional service credit
   ii) Sec. 16-152 career contributions of 9.0% of salary

b) **From School Districts:**
   i) Sec. 16-128(d-10) payments for excess sick leave service credit

Although these types of contributions are not shown in the exhibits, they are all, with the exception of Sec. 16-128(d-10) payments and Sec. 16-128 member payments for the purchase of optional service credit, taken into account in the actuarial projection of the assets and funded status of the system. The actuarial projection is performed after the above contributions have been taken into account.

Payments under Sec. 16-158(f) have been included since the recertified June 30, 2004, valuation. There are no current assumptions for excess sick leave service credit, and therefore the actuarial projections do not currently include projected payments under Sec. 16-128(d-10).

The methodology for calculating the Federal Funds contribution and, therefore, the State contribution has been changed effective for fiscal years 2021 and thereafter. Based on the modified approach, the Federal Funds contributions are treated in a similar manner as some School District contributions (i.e., a stream of projected contributions estimated as of the valuation date) resulting in the State contribution being the level percent of payroll required to attain 90% funded by fiscal year 2045.

Exhibit II – Development of Statutory State Contribution under Illinois Pension Code

		Fiscal Year Ending June 30, 2024
1	Present value as of June 30, 2023, of future obligations to fund:	
	(a) 90% of June 30, 2045, Actuarial Accrued Liability	$43,187,014,530
	(b) Benefit disbursements and administrative expenses through June 30, 2045	126,107,918,413
	(c) Total	$169,294,932,943
2	Projected actuarial value of assets as of June 30, 2023	
	(a) With POB proceeds	66,225,304,880
	(b) Without POB proceeds	61,639,586,247
3	Present value as of June 30, 2023, of future member contributions through June 30, 2045	14,985,118,491
4	Present value as of June 30, 2023, of future School District contributions through June 30, 2045	
	(a) 2.2% formula under §16-158(e)	$965,707,636
	(b) 6% FAS cap increases under §16-158(f)	60,834,558
	(c) Salaries above the Governor's salary under §16-158(i-5)	82,156,000
	(d) Total	$1,108,698,194
5	Present value as of June 30, 2023, of future Federal Funds contributions through June 30, 2045	239,311,409
6	Present value as of June 30, 2023, of future State contributions through June 30, 2045	
	(a) Including POB proceeds: **(1c) – (2a) – (3) – (4d) – (5)**	86,736,499,969
	(b) Excluding POB proceeds: **(1c) – (2b) – (3) – (4d) – (5)**	91,322,218,602
7	Present value as of June 30, 2023, of future covered payroll through June 30, 2045	166,501,316,570
8	Determination of preliminary contribution rates for State and Federal Funds for year ended June 30, 2023	
	(a) Including POB proceeds: **(6a) ÷ (7)**	52.09%
	(b) Excluding POB proceeds: **(6b) ÷ (7)**	54.85%

Exhibit II – Development of Statutory State Contribution under Illinois Pension Code *continued*

		Fiscal Year Ending June 30, 2024
9	Determination of State contribution for year ending June 30, 2024:	
	(a) Projected payroll:	$12,135,950,790
	(b) State contribution before maximum:	
	(i) Gross contribution: **(8a) x (9a)**	$6,322,051,483
	(ii) Phase-in of the effect of assumption changes	115,940,000
	(iii) Net contribution: **(i) – (ii)**	$6,206,111,483
	(c) State contribution maximum:	
	(i) Gross maximum: **(8b) x (9a)**	$6,656,295,420
	(ii) State's debt service	497,200,770
	(iii) Phase-in of the effect of assumption changes	115,940,000
	(iv) Net contribution: **(i) – (ii) – (iii)**	$6,043,154,650
	(d) State contribution after maximum[1]: minimum of **(9b)(iii)** and **(9c)(iv)**	$6,043,154,650

[1] *The Benefit Trust Reserve State Contribution does not include the Guaranteed Minimum Annuity Reserve contribution.* *See page 43 for more details.*

Exhibit III – Development of State Contribution Based on Board-Adopted Actuarial Funding Policy

		Fiscal Year Ending June 30, 2024
1	Projected employer Normal Cost for year ending June 30, 2024	
	(a) Total	$2,272,944,623
	(b) Administrative expenses	44,851,616
	(c) Member contributions	1,092,235,571
	(d) Employer Normal Cost: **(a) + (b) – (c)**	$1,225,560,668
2	Projected Unfunded Actuarial Accrued Liability as of June 30, 2023	
	(a) Actuarial Accrued Liability	$150,923,106,144
	(b) Actuarial Value of Assets	66,225,304,880
	(c) Unfunded Actuarial Accrued Liability: **(a) – (b)**	$84,697,801,264
3	Payment toward projected Unfunded Actuarial Accrued Liability for year ending June 30, 2024 (see Exhibit IV)	8,469,219,831
4	Total employer contribution for year ending June 30, 2024: **(1d) + (3)**	$9,694,780,499
5	Projected School District contributions for year ending June 30, 2024	
	(a) 2.2% formula under §16-158(e)	$70,388,515
	(b) 6% FAS cap increases under §16-158(f)	4,164,720
	(c) Salaries above the Governor's salary under §16-158(i-5)	4,682,961
	(d) Total	$79,236,196
6	Estimated Federal Funds contribution for year ending June 30, 2024	25,728,216
7	State contribution for year ending June 30, 2024: **(4) – (5d) – (6)**	$9,589,816,087

Exhibit IV – Components of Unfunded Liability Bases and Amortization Payment under Board-Adopted Actuarial Funding Policy

	Original Amount	Balance as of June 30, 2023	Remaining Amortization Period	2024 Amortization
June 30, 2015 valuation base:				
Projected UAAL as of June 30, 2016	$68,126,860,208	$58,942,608,925	13	$6,150,913,693
June 30, 2016 valuation base:				
Projected (gain)/loss as of June 30, 2017	8,625,889,107	7,700,059,007	14	762,254,893
June 30, 2017 valuation base:				
Projected (gain)/loss as of June 30, 2018	3,216,359,048	2,952,692,641	15	278,651,062
June 30, 2018 valuation base:				
Projected (gain)/loss as of June 30, 2019	3,150,844,586	2,962,037,324	16	267,622,725
June 30, 2019 valuation base:				
Projected (gain)/loss as of June 30, 2020	4,015,729,497	3,851,399,290	17	334,395,393
June 30, 2020 valuation base:				
Projected (gain)/loss as of June 30, 2021	4,329,096,839	4,221,986,138	18	353,421,498
June 30, 2021 valuation base:				
Projected (gain)/loss as of June 30, 2022	1,156,211,108	1,143,298,031	19	92,540,668
June 30, 2022 valuation base:				
Projected (gain)/loss as of June 30, 2023	2,923,719,908	2,923,719,908	20	229,419,899
Total		$84,697,801,264		$8,469,219,831

Exhibit V – Components of Phase-in of the Effect of Assumption Changes

Valuation Date June 30	Fiscal Year State Contribution First Affected	Effect on State Contribution	Phase in of the Effect of Assumption Changes for Fiscal Year 2023	2024	2025	2026	2027
2018	2020	($70,000,000)	$14,000,000				
2019	2021	8,500,000	(3,400,000)	($1,700,000)			
2020	2022	-	-	-	-	-	-
2021	2023	282,800,000	(226,240,000)	(169,680,000)	($113,120,000)	($56,560,000)	-
2022	2024	(69,300,000)	-	55,440,000	41,580,000	27,720,000	$13,860,000
Total			($215,640,000)	($115,940,00)	($71,540,000)	($28,840,000)	$13,860,000

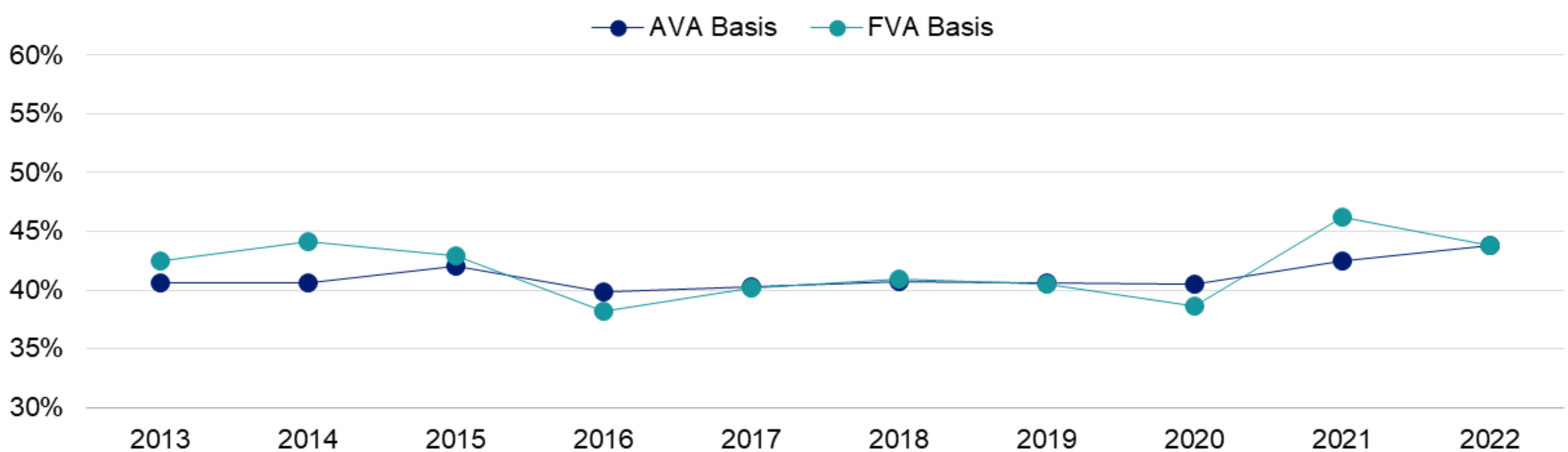
Exhibit VI – 10-Year History of Unfunded Actuarial Liability and Funded Ratio ($ in thousands)

		Assets		Unfunded Liability Using Assets Based on		Funded Ratio Using Assets Based on	
As of June 30	Actuarial Accrued Liability	Actuarial Value of Assets	Fair Value of Assets	Actuarial Value of Assets	Fair Value of Assets	Actuarial Value of Assets	Fair Value of Assets
2013	$93,886,989	$38,155,191	$39,858,768	$55,731,798	$54,028,220	40.6%	42.5%
2014	103,740,377	42,150,765	45,824,383	61,589,612	57,915,994	40.6	44.2
2015	108,121,825	45,435,193	46,406,916	62,686,632	61,714,909	42.0	42.9
2016	118,629,890	47,222,098	45,250,957	71,407,792	73,378,934	39.8	38.1
2017	122,904,034	49,467,525	49,375,665	73,436,509	73,528,370	40.2	40.2
2018	127,019,330	51,730,890	51,969,547	75,288,440	75,049,783	40.7	40.9
2019	131,456,969	53,391,193	53,262,789	78,065,776	78,194,180	40.6	40.5
2020	135,598,547	54,890,976	52,316,478	80,707,571	83,282,069	40.5	38.6
2021	138,914,275	58,979,923	64,212,505	79,934,352	74,701,770	42.5	46.2
2022	143,523,731	62,910,402	62,833,626	80,613,329	80,690,105	43.8	43.8

Exhibit VII – Funded Ratio

A critical piece of information regarding the System's financial status is the funded ratio. This ratio compares the actuarial value and fair value of assets to the actuarial accrued liabilities of the System as calculated. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

The chart below depicts a history of the funded ratios for this System.



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
AVA Basis	40.6%	40.6%	42.0%	39.8%	40.2%	40.7%	40.6%	40.5%	42.5%	43.8%
FVA Basis	42.5%	44.2%	42.9%	38.1%	40.2%	40.9%	40.5%	38.6%	46.2%	43.8%

Exhibit VIII – Department of Insurance Information

	June 30, 2022	June 30, 2021
Actuarial Accrued Liabilities:		
Service Retirement	$87,153,225,989	$85,571,711,895
Disability Retirement	420,593,188	438,417,770
Survivor	2,960,818,206	2,778,841,307
Subtotal	$90,534,637,383	$88,788,970,972
Inactive	4,250,767,299	3,917,568,923
Active	48,738,326,277	46,207,735,022
Total	$143,523,730,959	$138,914,274,917
Headcounts and Salaries for Active Members:		
Male		
Count	36,537	37,599
Salaries	$2,882,967,710	$2,815,324,737
Female		
Count	122,368	125,350
Salaries	$8,061,531,493	$7,783,635,134
Total		
Count	158,905	162,949
Salaries	$10,944,499,203	$10,598,959,871

Exhibit IX – Roll Forward of Actuarial Accrued Liability and Normal Cost

	Actuarial Accrued Liabilities Developed for June 30, 2022 Valuation	Amount
1	Actuarial Accrued Liability measured as of June 30, 2021	$139,118,579,964
2	Normal Cost measured for fiscal year ended June 30, 2022	2,165,431,495
3	Expected benefit payments for fiscal year ended June 30, 2022	7,783,969,778
4	Interest on (1), (2), and (3) to June 30, 2022	9,617,441,860
5	Adjustment for future AAI and APB buyouts as of June 30, 2022	406,247,418
6	Actuarial Accrued Liability as of June 30, 2022: **(1) + (2) – (3) + (4) + (5)**	$143,523,730,959
7	Normal Cost measured for fiscal year ended June 30, 2023	2,220,715,729
8	Expected benefit payments for fiscal year ended June 30, 2023[1]	8,165,365,780
9	Interest on **(6)**, **(7)**, and **(8)** to June 30, 2023	9,916,323,466
10	Actuarial Accrued Liability as of June 30, 2023: **(6) + (7) – (8) + (9)**	$147,495,404,374

Based on member census as of June 30, 2021, assumptions and methods as of June 30, 2022, including the Projected Unit Credit actuarial cost method.

[1] *Includes $107,769,319 of projected buyout payments expected to be paid via additional state funds not included in the FY2023 State contribution amount.*

Exhibit X – State's Share of the Contribution to TRS Necessary to Fund Normal Cost Plus Interest on the Unfunded Actuarial Accrued Liability (UAAL)

			Fiscal Year 2024
1	Employer normal cost plus interest on UAAL		
	(a)	Employer normal cost	$1,285,967,839
	(b)	Interest on the projected June 30, 2023 UAAL	5,499,265,072
	(c)	Total employer normal cost plus interest on UAAL	$6,785,2322,910
2	Contributions from sources other than State and Federal Funds		
	(a)	School District contributions under §16-158(e)	($70,388,515)
	(b)	School District contributions under §16-158(f)	(4,164,720)
	(c)	School District contributions under §16-158(i-5)	(4,682,961)
	(d)	Federal Funds contribution	(25,728,216)
	(e)	Total contributions from sources other than State and Federal Funds	($104,964,411)
3	State share of normal cost plus interest on UAAL: **(1c) + (2e)**		$6,680,268,499
4	State contribution requirement		
	(a)	State's share of normal cost plus interest on UAAL	$6,680,268,499
	(b)	Guaranteed Minimum Annuity Reserve contribution	300,000
	(c)	Total State contribution requirement	$6,680,568,499

Exhibit XI – Development of Actuarial Determined Contribution (ADC)

		Fiscal Year Ended June 30, 2022
Development of the ADC:		
1	Employer Normal Cost	$1,117,027,752
2	Amortization of Unfunded Actuarial Accrued Liability	7,830,891,256
3	Actuarially Determined Contribution: (1) + (2)	$8,947,919,008

The ADC for fiscal year ended June 30, 2022, is based on the valuation date of June 30, 2020, prepared by Segal.

Actuarial Cost Method:	Entry Age Normal
Amortization Method:	Layered
Amortization Period:	20 years
Payroll Growth Assumption:	2% (assumed rate of future State revenue growth)
Asset Valuation Method:	5-Year Smoothing
Investment Rate of Return:	7.00%
Projected Salary Increases:	4.00% – 9.50%; composite approximately 4.94%
Includes Inflation at:	2.50%
Post-retirement Increase:	Tier 1: 3% compounded Tier 2: 1.25% not compounded (lesser of 3% or 1/2 CPI increase, but not less than zero)

Section 5: Projections

Overview

Based on the results of the June 30, 2022, actuarial valuation, we have projected valuation results to June 30, 2046, commencing with Fiscal Year 2023.

Our projections of contributions, liabilities, and assets are based on the actuarial assumptions, membership data and benefit provisions that were used for the regular actuarial valuation.

In order to determine projected contributions, liabilities, and assets, certain calculations needed to be made that are not normally required in a regular actuarial valuation. Benefit payout requirements, actuarial liabilities, and payroll were estimated over the period from 2023 through 2046 by projecting the membership of TRS over the period, taking into account the impact of new entrants into the System.

To make the required projections, assumptions needed to be made regarding the age and salary distribution of new entrants as well as the size of the active membership of TRS. The characteristics regarding the profile of new entrants to TRS were revised for the June 30, 2022, valuation, to reflect the attributes of new hires over the past five years. The size of the active membership of the System was assumed to remain constant over the projection period. The results of our projections are shown on the following pages.

The assets haven been allocated by Tier for illustration purposes. Estimated Tier 2 assets were initially based on the June 30, 2013, accumulated member contributions of $70,783,523, and have been rolled forward each year with expected member contributions, expected benefit payments, and the proportionate share of investment earnings.

Table 1 – Projection of Funded Ratio to 2046

Amounts above the black line are based on prior valuations and amounts below the line are based on the current valuation.

Year Ended June 30	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Tier 1 Funded Ratio	Tier 2 Funded Ratio	Total Funded Ratio
1995	$23,980,566,000	$12,641,865,000	($11,338,701,000)			52.7%
1996	26,141,794,000	13,829,711,000	(12,312,083,000)			52.9%
1997	26,951,585,000	17,393,108,000	(9,558,477,000)			64.5%
1998	29,908,241,000	19,965,887,000	(9,942,354,000)			66.8%
1999	33,205,513,000	22,237,709,000	(10,967,804,000)			67.0%
2000	35,886,404,000	24,481,413,000	(11,404,991,000)			68.2%
2001	39,166,697,000	23,315,646,000	(15,851,051,000)			59.5%
2002	43,047,674,000	22,366,285,000	(20,681,389,000)			52.0%
2003	46,933,432,000	23,124,823,000	(23,808,609,000)			49.3%
2004	50,947,451,000	31,544,729,000	(19,402,722,000)			61.9%
2005	56,075,029,000	34,085,218,000	(21,989,811,000)			60.8%
2006	58,996,913,000	36,584,889,000	(22,412,024,000)			62.0%
2007	65,648,395,000	41,909,318,000	(23,739,077,000)			63.8%
2008	68,632,367,000	38,430,723,000	(30,201,644,000)			56.0%
2009	73,027,198,000	38,026,043,512	(35,001,154,488)			52.1%
2010	77,293,198,000	37,439,091,771	(39,854,106,229)			48.4%
2011	81,299,745,000	37,769,752,971	(43,529,992,029)			46.5%
2012	90,024,945,000	37,945,397,211	(52,079,547,789)			42.1%
2013	93,886,988,785	38,155,191,497	(55,731,797,288)			40.6%
2014	103,740,377,267	42,150,765,261	(61,589,612,006)	40.6%	120.5%	40.6%
2015	108,121,825,171	45,435,192,645	(62,686,632,526)	41.9%	162.8%	42.0%
2016	118,629,890,305	47,222,097,809	(71,407,792,496)	39.6%	153.9%	39.8%
2017	122,904,034,268	49,467,525,209	(73,436,509,059)	40.0%	144.0%	40.2%
2018	127,019,330,164	51,730,889,960	(75,288,440,204)	40.4%	130.9%	40.7%
2019	131,456,968,953	53,391,192,733	(78,065,776,220)	40.3%	124.7%	40.6%

Table 1 – Projection of Funded Ratio to 2046 *continued*

Year Ended June 30	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Tier 1 Funded Ratio	Tier 2 Funded Ratio	Total Funded Ratio
2020	$135,598,547,013	$54,890,975,829	($80,707,571,184)	40.1%	121.0%	40.5%
2021	138,914,274,917	58,979,922,966	(79,934,351,951)	41.9%	126.5%	42.5%
2022	143,523,730,959	62,910,402,178	(80,613,328,781)	43.2%	121.2%	43.8%
2023	147,495,404,374	66,184,842,243	(81,310,562,131)	44.1%	120.7%	44.9%
2024	151,477,249,312	69,786,657,096	(81,690,592,216)	45.2%	120.4%	46.1%
2025	155,459,824,749	74,248,458,840	(81,211,365,909)	46.8%	121.2%	47.8%
2026	159,434,909,969	77,007,111,516	(82,427,798,452)	47.2%	118.8%	48.3%
2027	163,572,857,363	80,993,873,445	(82,578,983,919)	48.2%	118.3%	49.5%
2028	167,674,001,020	85,176,555,608	(82,497,445,412)	49.3%	117.7%	50.8%
2029	171,716,794,798	89,473,636,851	(82,243,157,947)	50.4%	117.1%	52.1%
2030	175,685,837,150	93,875,228,299	(81,810,608,851)	51.6%	116.6%	53.4%
2031	179,562,975,819	98,383,457,821	(81,179,517,998)	52.7%	116.0%	54.8%
2032	183,325,739,638	103,014,248,718	(80,311,490,920)	53.9%	115.5%	56.2%
2033	186,946,682,998	107,779,627,094	(79,167,055,904)	55.2%	114.9%	57.7%
2034	190,401,331,888	113,306,331,072	(77,095,000,816)	56.8%	114.4%	59.5%
2035	193,665,572,873	119,006,190,812	(74,659,382,061)	58.5%	113.9%	61.4%
2036	196,723,589,703	124,895,443,983	(71,828,145,719)	60.3%	113.4%	63.5%
2037	199,562,388,592	130,995,512,478	(68,566,876,114)	62.3%	112.9%	65.6%
2038	202,158,099,107	137,326,248,238	(64,831,850,869)	64.3%	112.4%	67.9%
2039	204,486,034,661	143,907,802,229	(60,578,232,432)	66.6%	111.9%	70.4%
2040	206,523,212,262	150,762,777,253	(55,760,435,009)	69.0%	111.5%	73.0%
2041	208,263,369,334	157,941,213,639	(50,322,155,695)	71.8%	111.0%	75.8%
2042	209,711,693,974	165,500,662,621	(44,211,031,353)	74.8%	110.6%	78.9%
2043	210,888,198,273	173,518,366,221	(37,369,832,052)	78.2%	110.2%	82.3%
2044	211,834,044,762	182,095,000,117	(29,739,044,646)	82.0%	109.8%	86.0%
2045	212,595,360,409	191,335,824,368	(21,259,536,041)	86.4%	109.4%	90.0%
2046	213,243,142,235	191,918,828,011	(21,324,314,223)	86.0%	109.0%	90.0%

Table 2 – Projection of Contributions to Trust to 2046 (Dollars)

Amounts above the black line are based on prior valuations and amounts below the line are based on the current valuation. See Notes.

Year Ended June 30	Contributions							
		School District						
	Member	§16-158(e) (2.2 Formula)	§16-158(f) (6% FAS Cap)	§16-158(i-5) (Payroll above Gov.)	Total	Federal Funds	State	Total
1995	$421,726,521	-	-	-	-	$16,500,000	$262,864,800	$701,091,321
1996	422,238,847	-	-	-	-	17,000,000	324,276,242	763,515,089
1997	420,762,625	-	-	-	-	17,300,000	377,968,984	816,031,609
1998	440,967,595	-	-	-	-	18,000,000	460,439,267	919,406,862
1999	866,369,000	$16,675,000	-	-	$16,675,000	18,500,000	567,067,600	1,468,611,600
2000	619,622,000	34,145,066	-	-	34,145,066	18,200,000	634,038,560	1,306,005,626
2001	643,563,000	36,375,498	-	-	36,375,498	20,000,000	719,356,841	1,419,295,339
2002	681,151,770	38,664,380	-	-	38,664,380	23,000,000	810,618,724	1,553,434,874
2003	732,020,451	12,808,373	-	-	12,808,373	25,000,000	926,049,918	1,695,878,742
2004	768,661,300	42,604,912	-	-	42,604,912	29,400,000	1,027,258,994	1,867,925,206
2005	761,790,009	44,481,074	-	-	44,481,074	37,860,000	902,243,532	1,746,374,615
2006	799,034,336	45,656,648	$14,974,781	-	60,631,429	24,070,387	531,827,700	1,415,563,852
2007	826,249,007	46,047,720	19,353,893	-	225,741,253	41,328,022	735,514,500	1,828,832,782
2008	865,400,168	48,102,405	-	-	131,239,475	47,829,058	1,039,194,988	2,083,663,689
2009	876,182,122	51,141,422	3,000,000	-	148,460,852	55,707,046	1,449,888,800	2,530,238,820
2010	909,642,774	53,666,271	3,000,000	-	145,878,411	75,718,545	2,087,668,469	3,218,908,199
2011	948,286,581	56,171,181	5,000,000	-	147,747,541	75,405,839	2,357,040,597	3,528,480,558
2012	976,364,866	57,976,440	5,000,000	-	147,745,130	84,654,093	2,405,172,175	3,613,936,264
2013	967,910,390	57,610,031	5,000,000	-	133,102,941	83,575,603	2,702,277,829	3,886,866,763
2014	1,004,368,089	57,896,194	5,000,000	-	124,446,854	97,203,752	3,437,478,152	4,663,496,847
2015	1,045,996,125	60,413,797	5,782,580	-	124,562,387	25,074,310	3,411,877,643	4,607,510,465
2016	1,041,807,455	61,478,785	5,027,434	-	124,554,918	80,263,377	3,741,802,194	4,988,427,944
2017	1,034,264,612	61,138,899	2,190,130	-	63,329,029	77,196,619	3,985,783,351	5,160,573,611
2018	939,719,161	60,559,679	4,295,624	$2,477,050	67,332,353	21,091,475	4,094,616,146	5,122,759,135
2019	958,472,559	61,768,232	4,150,160	2,385,898	68,304,290	20,979,899	4,465,578,109	5,513,334,857

Table 2 – Projection of Contributions to Trust to 2046 (Dollars) *continued*

Year Ended June 30	Member	School District §16-158(e) (2.2 Formula)	School District §16-158(f) (6% FAS Cap)	School District §16-158(i-5) (Payroll above Gov.)	School District Total	Federal Funds	State	Total
2020	$985,912,521	$63,536,585	$4,188,240	$3,113,849	$70,838,674	$23,355,172	$4,813,077,696	$5,893,184,063
2021	1,009,317,615	65,044,913	4,119,231	4,948,241	74,112,385	23,348,881	5,140,336,721	6,247,115,602
2022	1,032,339,073	66,528,518	4,063,578	3,619,569	74,211,665	23,652,035	5,693,706,973	6,823,909,746
2023	1,051,430,802	67,758,874	4,106,777	3,939,577	75,805,228	24,510,020	5,893,732,209	7,045,478,259
2024	1,092,235,571	70,388,515	4,164,720	4,682,961	79,236,196	25,728,216	6,043,154,650	7,240,354,633
2025	1,121,492,657	72,273,971	4,380,880	5,110,213	81,765,064	25,769,409	6,247,114,384	7,476,141,515
2026	1,150,571,777	74,147,959	4,541,040	5,536,117	84,225,116	25,747,240	6,447,632,782	7,708,176,914
2027	1,179,504,201	76,012,493	4,838,960	5,979,396	86,830,849	25,582,136	6,592,176,023	7,884,093,208
2028	1,206,952,055	77,781,355	5,101,600	6,451,060	89,334,015	25,265,530	6,809,586,949	8,131,138,549
2029	1,233,314,825	79,480,289	5,210,800	6,926,984	91,618,072	24,830,738	6,947,724,969	8,297,488,605
2030	1,259,870,829	81,191,676	5,433,680	7,415,485	94,040,841	24,301,508	7,074,514,619	8,452,727,797
2031	1,286,384,430	82,900,330	5,564,160	7,935,575	96,400,065	23,669,474	7,204,062,858	8,610,516,827
2032	1,312,893,717	84,608,706	5,813,360	8,494,206	98,916,272	22,931,877	7,351,397,864	8,786,139,731
2033	1,339,092,395	86,297,065	5,987,520	8,988,938	101,273,524	22,050,388	7,513,889,922	8,976,306,230
2034	1,364,440,625	87,930,618	6,018,880	9,298,437	103,247,936	21,012,386	8,280,233,094	9,768,934,040
2035	1,389,629,351	89,553,892	6,099,520	9,563,451	105,216,862	19,856,259	8,433,093,188	9,947,795,660
2036	1,415,158,543	91,199,106	6,033,440	9,732,233	106,964,779	18,617,197	8,588,019,428	10,128,759,946
2037	1,441,163,459	92,874,978	6,040,720	9,748,460	108,664,159	17,293,962	8,745,832,650	10,312,954,229
2038	1,468,263,940	94,621,454	6,186,320	9,629,687	110,437,460	15,857,251	8,910,294,401	10,504,853,052
2039	1,495,637,840	96,385,550	6,226,080	9,338,804	111,950,433	14,225,178	9,076,415,424	10,698,228,875
2040	1,523,251,013	98,165,065	6,230,560	8,763,977	113,159,602	12,389,108	9,243,988,501	10,892,788,224
2041	1,552,714,935	100,063,851	6,027,840	7,927,094	114,018,786	10,489,452	9,422,793,013	11,100,016,186
2042	1,583,663,072	102,058,287	5,738,880	7,005,521	114,802,688	8,551,781	9,610,604,621	11,317,622,162
2043	1,616,901,906	104,200,345	5,435,360	5,982,746	115,618,451	6,719,126	9,812,317,536	11,551,557,019
2044	1,652,806,913	106,514,223	4,983,440	4,923,786	116,421,449	5,068,608	10,030,210,364	11,804,507,334
2045	1,691,554,020	109,011,259	4,458,720	3,927,763	117,397,742	3,683,829	10,265,350,735	12,077,986,326
2046	1,733,843,035	111,736,551	3,694,880	-	115,431,431	-	1,392,939,137	3,242,213,603

Table 2 – Projection of Contributions to Trust to 2046 (Dollars) *continued*

Notes

1) The administrative staff of the System estimated the Federal Funds contribution for fiscal years prior to 2006. Commencing with the contribution for fiscal 2006, total payroll for the valuation is split into State and Federal Funds payrolls. Federal Funds payrolls for 2006 – 2017 were estimated to be 4.33%, 5.32%, 4.40%, 3.70%, 3.50%, 3.10%, 3.40%, 3.00%, 2.75%, 3.00%, 2.10%, 1.90%, respectively, of total payrolls for those years. For 2018 – 2024, the estimate is 2.00% of payroll. All payrolls are assumed to increase at the same rate for years subsequent to 2024.
2) School District contributions under Sec. 16-158(e) for years subsequent to 2005 are expected to equal 0.58% of total payroll. Sec. 16-158(f) contributions for 2008 – 2014 were estimated by the administrative staff of the System.
3) School District contributions under Sec. 16-133.2 are included in the total School District contributions for years 2007 – 2016, which can be found in the June 30, 2016, valuation report. These contributions no longer apply because the ERO was discontinued at the end of fiscal year 2016.
4) Employer Rates, Contribution Amounts, and Assumed Payroll shown for fiscal years 1995 – 2024 are based on the June 30, 1993 – June 30, 2022, actuarial valuations and are certified amounts, with the following exceptions. The 2006 amount is the recertified amount and 2007 is the certified amount required by per PA 94-0004. The 2011 amount is the originally certified amount, not the recertified amount per PA 96-1511. The 2015 amount is the certified amount; however, PA 98-0674 subsequently lowered state contributions and increased federal contributions. The 2017 Sec. 133.2 contribution was removed because ERO was discontinued at the end of fiscal 2016. The 2018 and 2019 amounts are the recertified amounts. Items subsequent to 2023 are based on the June 30, 2022, valuation.
5) Schedule excludes State ERI contributions of $1,000,000 for 2004, and $1,684,000 for 2005 (under Public Act 92-0056, as amended).
6) Effective for fiscal years 2021 and thereafter, the “FAS Cap” threshold reverted back to 6% to reflect the repeal of the 3% “FAS Cap” threshold per PA 101-001 (SB 1814).
7) The methodology for calculating the Federal Funds contribution and, therefore, the State contribution has been changed effective for fiscal years 2021 and thereafter. Based on the modified approach, the Federal Funds contributions are treated in a similar manner as some School District contributions (i.e., a stream of projected contributions estimated as of the valuation date) resulting in the State contribution being the level percent of payroll required to attain 90% funded by fiscal year 2045.

Table 3 – Projection of Contributions to Trust to 2046 (Percent of Payroll)

Amounts above the black line are based on prior valuations and amounts below the line are based on the current valuation. See Notes.

Year Ended June 30	Assumed Payroll	Contributions: Member	School District: §16-158(e) (2.2 Formula)	School District: §16-158(f) (6% FAS Cap)	School District: §16-158(i-5) (Payroll above Gov.)	School District: Total	Federal Funds	State	Total
1995	$4,633,650,000	9.10%	-	-	-	-	0.36%	5.67%	15.13%
1996	4,863,544,432	8.68%	-	-	-	-	0.35%	6.67%	15.70%
1997	4,903,151,093	8.58%	-	-	-	-	0.35%	7.71%	16.64%
1998	5,264,732,966	8.38%	-	-	-	-	0.34%	8.75%	17.46%
1999	5,558,349,721	15.59%	0.30%	-	-	0.30%	0.33%	10.20%	26.42%
2000	5,887,080,405	10.53%	0.58%	-	-	0.58%	0.31%	10.77%	22.18%
2001	6,271,637,672	10.26%	0.58%	-	-	0.58%	0.32%	11.47%	22.63%
2002	6,666,272,399	10.22%	0.58%	-	-	0.58%	0.35%	12.16%	23.30%
2003	7,115,762,553	10.29%	0.18%	-	-	0.18%	0.35%	13.01%	23.83%
2004	7,345,674,585	10.46%	0.58%	-	-	0.58%	0.40%	13.98%	25.43%
2005	7,669,150,690	9.93%	0.58%	-	-	0.58%	0.49%	11.76%	22.77%
2006	7,871,835,902	10.15%	0.58%	0.19%	-	0.77%	0.31%	6.76%	17.98%
2007	7,939,262,146	10.41%	0.58%	0.24%	-	2.84%	0.52%	9.26%	23.04%
2008	8,293,518,065	10.43%	0.58%	-	-	1.58%	0.58%	12.53%	25.12%
2009	8,817,486,572	9.94%	0.58%	0.03%	-	1.68%	0.63%	16.44%	28.70%
2010	9,252,805,323	9.83%	0.58%	0.03%	-	1.58%	0.82%	22.56%	34.79%
2011	9,684,686,327	9.79%	0.58%	0.05%	-	1.53%	0.78%	24.34%	36.43%
2012	9,995,937,994	9.77%	0.58%	0.05%	-	1.48%	0.85%	24.06%	36.15%
2013	9,932,764,038	9.74%	0.58%	0.05%	-	1.34%	0.84%	27.21%	39.13%
2014	9,982,102,443	10.06%	0.58%	0.05%	-	1.25%	0.97%	34.44%	46.72%
2015	10,416,171,908	10.04%	0.58%	0.06%	-	1.20%	0.24%	32.76%	44.23%
2016	10,599,790,566	9.83%	0.58%	0.05%	-	1.18%	0.76%	35.30%	47.06%
2017	10,541,189,447	9.81%	0.58%	0.02%	-	0.60%	0.73%	37.81%	48.96%
2018	10,441,324,011	9.00%	0.58%	0.04%	0.02%	0.64%	0.20%	39.22%	49.06%
2019	10,649,695,100	9.00%	0.58%	0.04%	0.02%	0.64%	0.20%	41.93%	51.77%

Table 3 – Projection of Contributions to Trust to 2046 (Percent of Payroll) *continued*

Year Ended June 30	Assumed Payroll	Contributions: Member	School District: §16-158(e) (2.2 Formula)	School District: §16-158(f) (6% FAS Cap)	School District: §16-158(i-5) (Payroll above Gov.)	School District: Total	Federal Funds	State	Total
2020	$10,954,583,571	9.00%	0.58%	0.04%	0.03%	0.65%	0.21%	43.94%	53.80%
2021	11,214,640,162	9.00%	0.58%	0.04%	0.04%	0.66%	0.21%	45.84%	55.71%
2022	11,470,434,147	9.00%	0.58%	0.04%	0.03%	0.65%	0.21%	49.64%	59.49%
2023	11,682,564,466	9.00%	0.58%	0.04%	0.03%	0.65%	0.21%	50.45%	60.31%
2024	12,135,950,790	9.00%	0.58%	0.03%	0.04%	0.65%	0.21%	49.80%	59.66%
2025	12,461,029,521	9.00%	0.58%	0.04%	0.04%	0.66%	0.21%	50.13%	60.00%
2026	12,784,130,850	9.00%	0.58%	0.04%	0.04%	0.66%	0.20%	50.43%	60.29%
2027	13,105,602,230	9.00%	0.58%	0.04%	0.05%	0.66%	0.20%	50.30%	60.16%
2028	13,410,578,387	9.00%	0.58%	0.04%	0.05%	0.67%	0.19%	50.78%	60.63%
2029	13,703,498,057	9.00%	0.58%	0.04%	0.05%	0.67%	0.18%	50.70%	60.55%
2030	13,998,564,765	9.00%	0.58%	0.04%	0.05%	0.67%	0.17%	50.54%	60.38%
2031	14,293,160,338	9.00%	0.58%	0.04%	0.06%	0.67%	0.17%	50.40%	60.24%
2032	14,587,707,972	9.00%	0.58%	0.04%	0.06%	0.68%	0.16%	50.39%	60.23%
2033	14,878,804,394	9.00%	0.58%	0.04%	0.06%	0.68%	0.15%	50.50%	60.33%
2034	15,160,451,392	9.00%	0.58%	0.04%	0.06%	0.68%	0.14%	54.62%	64.44%
2035	15,440,326,124	9.00%	0.58%	0.04%	0.06%	0.68%	0.13%	54.62%	64.43%
2036	15,723,983,807	9.00%	0.58%	0.04%	0.06%	0.68%	0.12%	54.62%	64.42%
2037	16,012,927,325	9.00%	0.58%	0.04%	0.06%	0.68%	0.11%	54.62%	64.40%
2038	16,314,043,774	9.00%	0.58%	0.04%	0.06%	0.68%	0.10%	54.62%	64.39%
2039	16,618,198,219	9.00%	0.58%	0.04%	0.06%	0.67%	0.09%	54.62%	64.38%
2040	16,925,011,258	9.00%	0.58%	0.04%	0.05%	0.67%	0.07%	54.62%	64.36%
2041	17,252,388,167	9.00%	0.58%	0.03%	0.05%	0.66%	0.06%	54.62%	64.34%
2042	17,596,256,356	9.00%	0.58%	0.03%	0.04%	0.65%	0.05%	54.62%	64.32%
2043	17,965,576,736	9.00%	0.58%	0.03%	0.03%	0.64%	0.04%	54.62%	64.30%
2044	18,364,521,258	9.00%	0.58%	0.03%	0.03%	0.63%	0.03%	54.62%	64.28%
2045	18,795,044,666	9.00%	0.58%	0.02%	0.02%	0.62%	0.02%	54.62%	64.26%
2046	19,264,922,610	9.00%	0.58%	0.02%	0.00%	0.60%	0.00%	7.23%	16.83%

Table 3 – Projection of Contributions to Trust to 2046 (Percent of Payroll) *continued*

Notes

1) Effective with the 2016 valuation, the member contribution rate is equal to the statutory 9% rate because of the elimination of ERO and the assumption for the members' cost of optional service.
2) The table on pages 84 and 85 shows historical contribution rates as reported in prior valuation reports. The amounts are based on the assumptions used for each valuation and are not adjusted retrospectively to reflect actual experience.

Table 4 – Projection of Total Employer Contribution to 2046

Amounts above the black line are based on prior valuations and amounts below the line are based on the current valuation. See Notes.

Year Ended June 30	Amortization Year	Employer Rate: Total	Employer Rate: Normal Cost	Employer Rate: Portion of UAAL	Amount of Employer Contribution: Total	Amount of Employer Contribution: Normal Cost	Amount of Employer Contribution: Portion of UAAL
1995	0	6.03%	8.12%	(2.09%)	$279,364,800	$376,122,700	($96,757,900)
1996	1	7.02%	8.23%	(1.21%)	341,276,242	400,134,055	(58,857,813)
1997	2	8.06%	8.21%	(0.15%)	395,268,984	402,771,457	(7,502,473)
1998	3	9.09%	8.38%	0.71%	478,439,267	441,403,004	37,036,263
1999	4	10.83%	7.84%	2.99%	602,242,600	435,910,961	166,331,639
2000	5	11.66%	8.15%	3.51%	686,383,626	479,928,856	206,454,770
2001	6	12.37%	8.65%	3.72%	775,732,339	542,794,806	232,937,533
2002	7	13.09%	8.84%	4.25%	872,283,104	588,971,933	283,311,171
2003	8	13.55%	8.83%	4.72%	963,858,291	628,536,783	335,321,508
2004	9	14.96%	8.15%	6.81%	1,099,263,906	598,462,925	500,800,981
2005	10	12.84%	8.32%	4.52%	984,584,606	637,971,250	346,613,356
2006	11	7.64%	8.20%	(0.56%)	601,554,735	645,705,698	(44,150,963)
2007	12	10.36%	8.20%	2.16%	822,890,242	650,835,074	172,055,168
2008	13	13.69%	8.22%	5.47%	1,135,126,451	681,651,502	453,474,949
2009	14	17.66%	9.27%	8.39%	1,556,737,268	817,320,366	739,416,902
2010	15	23.96%	9.15%	14.81%	2,217,053,286	846,936,893	1,370,116,393
2011	16	25.70%	8.77%	16.93%	2,488,617,617	849,716,122	1,638,901,495
2012	17	25.49%	8.43%	17.06%	2,547,802,708	842,532,254	1,705,270,454
2013	18	28.63%	8.23%	20.40%	2,843,463,463	817,433,027	2,026,030,436
2014	19	35.99%	7.89%	28.10%	3,592,578,098	787,230,469	2,805,347,629
2015	20	33.58%	8.02%	25.56%	3,497,365,750	835,810,326	2,661,555,424
2016	21	36.64%	9.36%	27.27%	3,883,544,356	992,489,371	2,891,054,985
2017	22	39.12%	8.27%	30.86%	4,124,118,869	871,335,169	3,252,783,700
2018	23	40.02%	10.10%	29.92%	4,178,744,350	1,054,630,171	3,124,114,179
2019	24	42.77%	9.85%	32.92%	4,554,862,299	1,049,301,284	3,505,561,015

Table 4 – Projection of Total Employer Contribution to 2046 *continued*

Year Ended June 30	Amortization Year	Employer Rate Total	Employer Rate Normal Cost	Employer Rate Portion of UAAL	Amount of Employer Contribution Total	Amount of Employer Contribution Normal Cost	Amount of Employer Contribution Portion of UAAL
2020	25	44.94%	10.66%	34.28%	$4,923,519,270	$1,167,213,754	$3,756,305,516
2021	26	46.71%	10.41%	36.30%	5,237,797,987	1,167,182,742	4,070,615,245
2022	27	50.49%	10.31%	40.18%	5,791,570,673	1,183,129,632	4,608,441,041
2023	28	51.31%	10.49%	40.82%	5,994,047,457	1,225,163,940	4,768,883,517
2024	29	50.66%	10.60%	40.06%	6,148,119,062	1,285,967,839	4,862,151,223
2025	30	51.00%	10.34%	40.66%	6,354,648,858	1,288,102,022	5,066,546,835
2026	31	51.29%	10.07%	41.23%	6,557,605,138	1,287,171,839	5,270,433,299
2027	32	51.16%	9.76%	41.40%	6,704,589,008	1,278,590,541	5,425,998,467
2028	33	51.63%	9.42%	42.21%	6,924,186,494	1,263,121,253	5,661,065,241
2029	34	51.55%	9.06%	42.49%	7,064,173,780	1,241,720,449	5,822,453,330
2030	35	51.38%	8.68%	42.70%	7,192,856,968	1,215,367,350	5,977,489,619
2031	36	51.24%	8.28%	42.96%	7,324,132,397	1,184,062,798	6,140,069,599
2032	37	51.23%	7.86%	43.37%	7,473,246,013	1,146,921,597	6,326,324,417
2033	38	51.33%	7.41%	43.92%	7,637,213,834	1,102,513,698	6,534,700,136
2034	39	55.44%	6.93%	48.51%	8,404,493,415	1,050,912,193	7,353,581,222
2035	40	55.43%	6.43%	48.99%	8,558,166,309	993,416,707	7,564,749,602
2036	41	55.42%	5.92%	49.49%	8,713,601,404	931,297,384	7,782,304,019
2037	42	55.40%	5.40%	50.00%	8,871,790,770	865,433,456	8,006,357,314
2038	43	55.39%	4.86%	50.53%	9,036,589,112	793,012,741	8,243,576,371
2039	44	55.38%	4.28%	51.10%	9,202,591,036	710,504,510	8,492,086,526
2040	45	55.36%	3.66%	51.70%	9,369,537,211	619,961,293	8,749,575,918
2041	46	55.34%	3.04%	52.30%	9,547,301,251	523,989,855	9,023,311,396
2042	47	55.32%	2.43%	52.88%	9,733,959,090	428,286,706	9,305,672,384
2043	48	55.30%	1.87%	53.42%	9,934,655,112	336,840,929	9,597,814,184
2044	49	55.28%	1.38%	53.90%	10,151,700,421	253,633,208	9,898,067,213
2045	50	55.26%	0.98%	54.28%	10,386,432,306	184,399,831	10,202,032,475
2046	51	7.83%	0.70%	7.13%	1,508,370,569	135,171,060	1,373,199,508

Table 4 – Projection of Total Employer Contribution to 2046 *continued*

Notes

1) The total employer contributions to the Benefit Trust Reserve represent the sum of State and Federal Funds contributions, as well as School District contributions for the 2.2% formula (commencing in 1999). Starting in fiscal year 2019, School District contributions under Sec. 16-158(f) and 16-158(i-5) are included. Sec. 16-158 requires calculations of State contribution amounts.
2) The following employer contributions to the Benefit Trust Reserve were taken into account when determining the above schedule, but are not included in this schedule:
   a) State ERI contributions of $1,000,000 for fiscal year 2004 and $1,684,000 for fiscal year 2005, which were made under a separate funding plan. (Beginning in fiscal year 2007, the cost of ERI is part of the 50-year funding plan, and included in this schedule);
   b) For fiscal years prior to 2019, School District contributions to the Benefit Trust Reserve under Sec. 16-133.2, 16-158(f) and 16-158(i-5), which are shown in Table 2; and
   c) for FY 1999, additional State funding due to PA 90-0582, and $9,695,600 in additional State Pensions Fund appropriations. No School District contributions are anticipated under Sec. 16-128(d-10).
3) The amortization rate in fiscal years 1995-1997 and 2006 is negative because contributions do not cover normal cost. A negative employer normal cost after 2024 means member contributions are projected to exceed the cost of benefits accruing.
4) Employer Rates, Contribution Amounts, and Assumed Payroll shown for fiscal years 1995 – 2024 are based on the June 30, 1993 – June 30, 2022, actuarial valuations and are certified amounts, with the following exceptions. The 2006 amount is the recertified amount and 2007 is the certified amount required per PA 94-0004. The 2011 amount is the originally certified amount, not the recertified amount per PA 96-1511. The 2015 amount is the certified amount; however, PA 98-0674 subsequently lowered state contributions and increased federal contributions. The 2018 and 2019 amounts are the recertified amounts. Items subsequent to 2023 are based on the June 30, 2022, valuation.
5) Modified ERO retirements are recognized commencing with the June 30, 2005 actuarial liability, while FY 2006 and FY 2007 Pipeline ERO retirements are first recognized in the June 30, 2006 and 2007 accrued liabilities. ERO was discontinued effective June 30, 2016.
6) For calculation purposes, Employer Rates include 15 decimal places. For ease of presentation, only 2 decimal places are shown.

Table 4 – Projection of Employer Normal Cost and Amortization Amount to 2046 *continued*

Notes *continued*

7) Assumptions and methodology:
   - Payroll Growth based on valuation assumptions
   - Valuation Interest Rate = 8.00% prior to 1997, 8.50% for 1997 – 2011, 8.0% for 2012 – 2013 and 7.50% for 2013 – 2015 and 7.00% after 2015
   - Return on investment equals valuation interest rate
   - Assets at cost value prior to 1997, fair value 1997-2008 and 5-year smoothing actuarial value after 2008

Table 5 – Projection of Funded Ratio to 2046 by Tier (Total)

Amounts above the black line are based on prior valuations and amounts below the line are based on the current valuation. See Notes.

Year Ended June 30	Contributions	Benefits and Expenses	Fair Value Asset Return	Actuarial Value of Assets	Fair Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	AVA Funded Ratio
1995	$701,091,321	$1,108,283,000		$12,641,865,000	$12,641,865,000	$23,980,566,000	$11,338,701,000	52.7%
1996	763,515,089	1,148,919,000	$1,573,249,911	13,829,711,000	13,829,711,000	26,141,794,000	12,312,083,000	52.9%
1997	816,031,609	1,186,203,042	3,933,568,433	17,393,108,000	17,393,108,000	26,951,585,000	9,558,477,000	64.5%
1998	919,406,862	1,237,762,773	2,891,134,911	19,965,887,000	19,965,887,000	29,908,241,000	9,942,354,000	66.8%
1999	1,468,611,600	1,314,929,000	2,118,139,400	22,237,709,000	22,237,709,000	33,205,513,000	10,967,804,000	67.0%
2000	1,306,005,626	1,437,474,000	2,375,172,374	24,481,413,000	24,481,413,000	35,886,404,000	11,404,991,000	68.2%
2001	1,419,295,339	1,611,050,000	(974,012,339)	23,315,646,000	23,315,646,000	39,166,697,000	15,851,051,000	59.5%
2002	1,553,434,874	1,809,763,000	(693,032,874)	22,366,285,000	22,366,285,000	43,047,674,000	20,681,389,000	52.0%
2003	1,695,878,742	2,051,953,000	1,114,612,258	23,124,823,000	23,124,823,000	46,933,432,000	23,808,609,000	49.3%
2004	1,867,925,206	2,320,690,844	8,872,671,638	31,544,729,000	31,544,729,000	50,947,451,000	19,402,722,000	61.9%
2005	1,746,374,615	2,604,081,011	3,398,195,396	34,085,218,000	34,085,218,000	56,075,029,000	21,989,811,000	60.8%
2006	1,415,563,852	2,948,023,574	4,032,130,722	36,584,889,000	36,584,889,000	58,996,913,000	22,412,024,000	62.0%
2007	1,828,832,782	3,184,574,659	6,680,170,877	41,909,318,000	41,909,318,000	65,648,395,000	23,739,077,000	63.8%
2008	2,083,663,689	3,498,960,895	(2,063,297,794)	38,430,723,000	38,430,723,000	68,632,367,000	30,201,644,000	56.0%
2009	2,530,238,820	3,723,108,308	(8,706,541,270)	38,026,043,512	28,531,312,242	73,027,198,000	35,001,154,488	52.1%
2010	3,218,908,199	4,003,538,821	3,577,102,594	37,439,091,771	31,323,784,214	77,293,198,000	39,854,106,229	48.4%
2011	3,528,480,558	4,329,807,307	6,948,809,729	37,769,752,971	37,471,267,194	81,299,745,000	43,529,992,029	46.5%
2012	3,613,936,264	4,641,424,675	73,046,556	37,945,397,211	36,516,825,339	90,024,945,000	52,079,547,789	42.1%
2013	3,886,866,763	4,969,794,354	4,424,870,751	38,155,191,497	39,858,768,499	93,886,988,785	55,731,797,288	40.6%
2014	4,524,563,343	5,340,981,048	6,782,031,720	42,150,765,261	45,824,382,514	103,740,377,267	61,589,612,006	40.6%
2015	4,457,907,579	5,645,924,033	1,770,549,533	45,435,192,645	46,406,915,593	108,121,825,171	62,686,632,526	42.0%
2016	4,842,319,410	5,954,175,094	(44,103,178)	47,222,097,809	45,250,956,731	118,629,890,305	71,407,792,496	39.8%
2017	5,064,989,441	6,460,734,655	5,520,453,001	49,467,525,209	49,375,664,518	122,904,034,268	73,436,509,059	40.2%
2018	5,117,795,720	6,573,185,272	4,049,271,728	51,730,889,960	51,969,546,694	127,019,330,164	75,288,440,204	40.7%
2019	5,518,507,593	6,843,096,252	2,617,531,332	53,391,192,733	53,262,489,367	131,456,968,953	78,065,776,220	40.6%

Table 5 – Projection of Funded Ratio to 2046 by Tier (Total) *continued*

Year Ended June 30	Contributions	Benefits and Expenses	Fair Value Asset Return	Actuarial Value of Assets	Fair Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	AVA Funded Ratio
2020	$5,900,510,333	$7,122,491,327	$275,969,398	$54,890,975,829	$52,316,477,771	$135,598,547,013	$80,707,571,184	40.5%
2021	6,261,774,388	7,411,900,824	13,046,153,685	58,979,922,966	64,212,505,020	138,914,274,917	79,934,351,951	42.5%
2022	7,060,315,736	7,696,152,044	(743,042,373)	62,910,402,178	62,833,626,339	143,523,730,959	80,613,328,781	43.8%
2023	7,045,478,259	8,097,483,525	4,361,533,660	66,184,842,243	66,143,154,733	147,495,404,374	81,310,562,131	44.9%
2024	7,240,354,633	8,388,115,904	4,589,849,187	69,786,657,096	69,585,242,648	151,477,249,312	81,690,592,216	46.1%
2025	7,476,141,515	8,684,724,591	4,828,666,578	74,248,458,840	73,205,326,149	155,459,824,749	81,211,365,909	47.8%
2026	7,708,176,914	8,986,039,197	5,079,647,651	77,007,111,516	77,007,111,516	159,434,909,969	82,427,798,452	48.3%
2027	7,884,093,208	9,240,359,757	5,343,028,477	80,993,873,445	80,993,873,445	163,572,857,363	82,578,983,919	49.5%
2028	8,131,138,549	9,567,746,257	5,619,289,871	85,176,555,608	85,176,555,608	167,674,001,020	82,497,445,412	50.8%
2029	8,297,488,605	9,906,452,517	5,906,045,156	89,473,636,851	89,473,636,851	171,716,794,798	82,243,157,947	52.1%
2030	8,452,727,797	10,251,339,519	6,200,203,169	93,875,228,299	93,875,228,299	175,685,837,150	81,810,608,851	53.4%
2031	8,610,516,827	10,603,788,768	6,501,501,463	98,383,457,821	98,383,457,821	179,562,975,819	81,179,517,998	54.8%
2032	8,786,139,731	10,965,899,297	6,810,550,463	103,014,248,718	103,014,248,718	183,325,739,638	80,311,490,920	56.2%
2033	8,976,306,230	11,339,223,171	7,128,295,317	107,779,627,094	107,779,627,094	186,946,682,998	79,167,055,904	57.7%
2034	9,768,934,040	11,718,566,813	7,476,336,750	113,306,331,072	113,306,331,072	190,401,331,888	77,095,000,816	59.5%
2035	9,947,795,660	12,103,914,921	7,855,979,001	119,006,190,812	119,006,190,812	193,665,572,873	74,659,382,061	61.4%
2036	10,128,759,946	12,487,388,145	8,247,881,370	124,895,443,983	124,895,443,983	196,723,589,703	71,828,145,719	63.5%
2037	10,312,954,229	12,866,203,103	8,653,317,368	130,995,512,478	130,995,512,478	199,562,388,592	68,566,876,114	65.6%
2038	10,504,853,052	13,247,800,021	9,073,682,730	137,326,248,238	137,326,248,238	202,158,099,107	64,831,850,869	67.9%
2039	10,698,228,875	13,627,005,094	9,510,330,209	143,907,802,229	143,907,802,229	204,486,034,661	60,578,232,432	70.4%
2040	10,892,788,224	14,002,518,786	9,964,705,586	150,762,777,253	150,762,777,253	206,523,212,262	55,760,435,009	73.0%
2041	11,100,016,186	14,360,845,192	10,439,265,392	157,941,213,639	157,941,213,639	208,263,369,334	50,322,155,695	75.8%
2042	11,317,622,162	14,695,821,169	10,937,647,989	165,500,662,621	165,500,662,621	209,711,693,974	44,211,031,353	78.9%
2043	11,551,557,019	14,998,265,022	11,464,411,603	173,518,366,221	173,518,366,221	210,888,198,273	37,369,832,052	82.3%
2044	11,804,507,334	15,253,446,213	12,025,572,775	182,095,000,117	182,095,000,117	211,834,044,762	29,739,044,646	86.0%
2045	12,077,986,326	15,465,257,588	12,628,095,514	191,335,824,368	191,335,824,368	212,595,360,409	21,259,536,041	90.0%
2046	3,242,213,603	15,619,512,215	12,960,302,254	191,918,828,011	191,918,828,011	213,243,142,235	21,324,314,223	90.0%

Table 5 – Projection of Funded Ratio to 2046 by Tier (Tier 1 Only)

Year Ended June 30	Contributions	Benefits and Expenses	Fair Value Asset Return	Actuarial Value of Assets	Fair Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	AVA Funded Ratio
2014				$42,060,460,784	$45,726,207,620	$103,665,420,423	$61,604,959,639	40.6%
2015	$4,357,376,533	$5,636,978,805	$1,759,751,948	45,238,833,875	46,206,357,296	108,001,248,291	62,762,414,416	41.9%
2016	4,761,135,081	5,938,766,822	(43,878,630)	46,944,396,204	44,984,846,925	118,449,453,398	71,505,057,193	39.6%
2017	4,964,338,090	6,438,142,918	5,482,643,972	49,084,836,109	48,993,686,068	122,638,280,909	73,553,444,799	40.0%
2018	4,994,858,498	6,547,670,601	4,013,422,755	51,218,006,139	51,454,296,720	126,627,563,072	75,409,556,933	40.4%
2019	5,369,865,536	6,811,987,553	2,588,547,964	52,727,529,954	52,600,722,667	130,924,874,572	78,197,344,618	40.3%
2020	5,723,556,341	7,086,035,686	271,835,206	54,044,893,615	51,510,078,528	134,899,448,680	80,854,555,065	40.1%
2021	6,056,567,112	7,371,658,058	12,822,029,843	57,881,853,887	63,017,017,425	138,046,338,135	80,164,484,248	41.9%
2022	6,818,158,613	7,650,969,140	(727,994,494)	61,531,305,194	61,456,212,405	142,385,623,844	80,854,318,650	43.2%
2023	6,776,272,314	8,047,746,438	4,257,433,275	64,482,787,000	64,442,171,555	146,084,991,592	81,602,204,591	44.1%
2024	6,933,987,681	8,332,471,938	4,462,005,060	67,701,087,550	67,505,692,359	149,745,097,422	82,044,009,872	45.2%
2025	7,130,578,314	8,623,429,322	4,673,148,680	71,693,223,669	70,685,990,031	153,350,955,402	81,657,731,733	46.8%
2026	7,321,722,141	8,918,713,419	4,892,124,607	73,981,123,360	73,981,123,360	156,888,762,121	82,907,638,761	47.2%
2027	7,454,729,394	9,162,330,432	5,118,912,599	77,392,434,921	77,392,434,921	160,528,421,630	83,135,986,709	48.2%
2028	7,657,228,436	9,482,692,363	5,353,579,207	80,920,550,201	80,920,550,201	164,058,753,951	83,138,203,750	49.3%
2029	7,775,876,305	9,813,467,948	5,593,122,807	84,476,081,364	84,476,081,364	167,450,783,153	82,974,701,789	50.4%
2030	7,881,139,381	10,149,699,843	5,833,926,079	88,041,446,982	88,041,446,982	170,681,497,560	82,640,050,578	51.6%
2031	7,986,353,862	10,492,400,142	6,075,189,669	91,610,590,371	91,610,590,371	173,724,779,189	82,114,188,818	52.7%
2032	8,106,811,204	10,841,405,898	6,317,030,512	95,193,026,188	95,193,026,188	176,551,642,768	81,358,616,579	53.9%
2033	8,238,701,825	11,202,201,214	6,559,789,355	98,789,316,154	98,789,316,154	179,123,380,551	80,334,064,397	55.2%
2034	8,970,248,318	11,567,897,790	6,824,334,399	103,016,001,081	103,016,001,081	181,405,308,405	78,389,307,324	56.8%
2035	9,085,027,097	11,937,956,177	7,111,267,558	107,274,339,559	107,274,339,559	183,362,615,039	76,088,275,479	58.5%
2036	9,199,408,908	12,303,960,221	7,400,544,473	111,570,332,719	111,570,332,719	184,969,433,109	73,399,100,389	60.3%
2037	9,314,800,046	12,663,880,550	7,692,705,473	115,913,957,688	115,913,957,688	186,200,902,548	70,286,944,860	62.3%
2038	9,435,737,582	13,024,104,095	7,988,384,210	120,313,975,385	120,313,975,385	187,022,187,895	66,708,212,510	64.3%
2039	9,555,589,887	13,379,948,551	8,288,125,724	124,777,742,445	124,777,742,445	187,395,563,003	62,617,820,558	66.6%
2040	9,674,024,663	13,729,763,952	8,592,491,096	129,314,494,252	129,314,494,252	187,284,296,890	57,969,802,637	69.0%
2041	9,803,626,894	14,059,054,812	8,903,074,621	133,962,140,954	133,962,140,954	186,670,185,542	52,708,044,587	71.8%
2042	9,942,636,532	14,363,698,102	9,222,612,712	138,763,692,096	138,763,692,096	185,542,402,491	46,778,710,395	74.8%
2043	10,098,253,940	14,630,266,832	9,554,837,995	143,786,517,199	143,786,517,199	183,910,547,292	40,124,030,093	78.2%
2044	10,274,358,723	14,846,380,483	9,905,035,442	149,119,530,882	149,119,530,882	181,803,069,762	32,683,538,879	82.0%
2045	10,472,851,220	15,013,181,577	10,279,455,599	154,858,656,125	154,858,656,125	179,255,815,997	24,397,159,872	86.4%
2046	1,565,910,683	15,116,217,436	10,365,845,192	151,674,194,565	151,674,194,565	176,330,567,408	24,656,372,844	86.0%

Table 5 – Projection of Funded Ratio to 2046 by Tier (Tier 2 Only)

Year Ended June 30	Contributions	Benefits and Expenses	Fair Value Asset Return	Actuarial Value of Assets	Fair Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	AVA Funded Ratio
2014				$90,304,477	$98,174,894	$74,956,844	($15,347,633)	120.5%
2015	$100,531,046	$8,945,228	$10,797,585	196,358,770	200,558,297	120,576,880	(75,781,890)	162.8%
2016	81,184,329	15,408,272	(224,548)	277,701,605	266,109,806	180,436,907	(97,264,698)	153.9%
2017	100,651,351	22,591,737	37,809,030	382,689,100	381,978,450	265,753,359	(116,935,740)	144.0%
2018	122,937,222	25,514,671	35,848,973	512,883,821	515,249,974	391,767,092	(121,116,729)	130.9%
2019	148,642,057	31,108,699	29,283,368	663,662,779	662,066,700	532,094,381	(131,568,398)	124.7%
2020	176,953,992	36,455,641	3,834,192	846,082,214	806,399,243	699,098,333	(146,983,881)	121.0%
2021	205,207,276	40,242,766	224,123,842	1,098,069,079	1,195,487,595	867,936,782	(230,132,297)	126.5%
2022	242,157,123	45,182,904	(15,047,879)	1,379,096,984	1,377,413,934	1,138,107,115	(240,989,869)	121.2%
2023	269,205,945	49,737,087	104,100,385	1,702,055,243	1,700,983,178	1,410,412,782	(291,642,460)	120.7%
2024	306,366,951	55,643,967	127,844,127	2,085,569,546	2,079,550,289	1,732,151,890	(353,417,657)	120.4%
2025	345,563,200	61,295,269	155,517,898	2,555,235,171	2,519,336,118	2,108,869,347	(446,365,824)	121.2%
2026	386,454,773	67,325,778	187,523,043	3,025,988,157	3,025,988,157	2,546,147,848	(479,840,309)	118.8%
2027	429,363,814	78,029,325	224,115,878	3,601,438,524	3,601,438,524	3,044,435,733	(557,002,791)	118.3%
2028	473,910,113	85,053,894	265,710,664	4,256,005,407	4,256,005,407	3,615,247,069	(640,758,338)	117.7%
2029	521,612,299	92,984,569	312,922,349	4,997,555,487	4,997,555,487	4,266,011,645	(731,543,842)	117.1%
2030	571,588,416	101,639,677	366,277,090	5,833,781,317	5,833,781,317	5,004,339,590	(829,441,727)	116.6%
2031	624,162,966	111,388,626	426,311,794	6,772,867,450	6,772,867,450	5,838,196,630	(934,670,820)	116.0%
2032	679,328,527	124,493,399	493,519,951	7,821,222,529	7,821,222,529	6,774,096,871	(1,047,125,659)	115.5%
2033	737,604,405	137,021,956	568,505,963	8,990,310,940	8,990,310,940	7,823,302,447	(1,167,008,494)	114.9%
2034	798,685,722	150,669,023	652,002,350	10,290,329,990	10,290,329,990	8,996,023,483	(1,294,306,508)	114.4%
2035	862,768,563	165,958,744	744,711,443	11,731,851,253	11,731,851,253	10,302,957,834	(1,428,893,418)	113.9%
2036	929,351,039	183,427,924	847,336,897	13,325,111,264	13,325,111,264	11,754,156,594	(1,570,954,670)	113.4%
2037	998,154,184	202,322,553	960,611,896	15,081,554,790	15,081,554,790	13,361,486,044	(1,720,068,747)	112.9%
2038	1,069,115,470	223,695,926	1,085,298,519	17,012,272,853	17,012,272,853	15,135,911,211	(1,876,361,642)	112.4%
2039	1,142,638,988	247,056,543	1,222,204,485	19,130,059,783	19,130,059,783	17,090,471,658	(2,039,588,126)	111.9%
2040	1,218,763,561	272,754,834	1,372,214,490	21,448,283,001	21,448,283,001	19,238,915,372	(2,209,367,628)	111.5%
2041	1,296,389,292	301,790,380	1,536,190,772	23,979,072,685	23,979,072,685	21,593,183,792	(2,385,888,892)	111.0%
2042	1,374,985,630	332,123,067	1,715,035,278	26,736,970,525	26,736,970,525	24,169,291,483	(2,567,679,042)	110.6%
2043	1,453,303,079	367,998,190	1,909,573,608	29,731,849,022	29,731,849,022	26,977,650,981	(2,754,198,041)	110.2%
2044	1,530,148,611	407,065,731	2,120,537,332	32,975,469,235	32,975,469,235	30,030,975,001	(2,944,494,234)	109.8%
2045	1,605,135,106	452,076,012	2,348,639,915	36,477,168,243	36,477,168,243	33,339,544,412	(3,137,623,831)	109.4%
2046	1,676,302,920	503,294,779	2,594,457,062	40,244,633,447	40,244,633,447	36,912,574,826	(3,332,058,620)	109.0%

Table 5 – Projection of Funded Ratio to 2046 by Tier *continued*

Notes

1) The projection of assets is based upon the assumption that the Employer maintains the funding policy under Public Act 94-0004 that begins with fiscal year 2006, as revised by Public Act 100-0023 effective with fiscal year 2018.
2) Projected amounts may not add to the dollar due to rounding.
3) Projected buyout amounts are excluded from both the contributions and benefit payments.
4) For 2001 to 2008, actuarial value of assets are equal to the fair value; for 2009 and after, assets are 5-year smoothed value.

Table 6 – Projection of Actuarial Accrued Liability to 2046 by Member Group

Year Ended June 30	Tier 1 Current Active	Tier 2 Current Active	New Entrants	Inactive	Total Actuarial Accrued Liability
2022	$47,612,623,858	$1,138,107,115	-	$94,772,999,986	$143,523,730,959
2023	53,122,047,173	1,381,685,158	28,727,624	92,962,944,418	147,495,404,374
2024	58,744,461,938	1,646,433,516	85,718,373	91,000,635,484	151,477,249,312
2025	64,456,381,841	1,937,672,191	171,197,156	88,894,573,560	155,459,824,749
2026	70,241,278,898	2,261,070,317	285,077,531	86,647,483,222	159,434,909,969
2027	76,071,678,944	2,616,970,926	427,464,807	84,456,742,686	163,572,857,363
2028	81,984,613,852	3,007,515,154	607,731,915	82,074,140,099	167,674,001,020
2029	87,945,347,588	3,435,779,846	830,231,800	79,505,435,565	171,716,794,798
2030	93,923,653,563	3,904,931,494	1,099,408,095	76,757,843,997	175,685,837,150
2031	99,884,063,620	4,417,861,654	1,420,334,976	73,840,715,568	179,562,975,819
2032	105,784,969,117	4,975,477,176	1,798,619,694	70,766,673,651	183,325,739,638
2033	111,574,669,968	5,580,172,551	2,243,129,895	67,548,710,583	186,946,682,998
2034	117,198,614,529	6,234,308,311	2,761,715,171	64,206,693,876	190,401,331,888
2035	122,604,187,753	6,940,372,350	3,362,585,484	60,758,427,286	193,665,572,873
2036	127,743,946,820	7,700,892,740	4,053,263,854	57,225,486,288	196,723,589,703
2037	132,570,252,641	8,518,086,191	4,843,399,852	53,630,649,907	199,562,388,592
2038	137,026,320,145	9,393,343,228	5,742,567,983	49,995,867,750	202,158,099,107
2039	141,050,178,043	10,328,541,053	6,761,930,604	46,345,384,960	204,486,034,661
2040	144,583,380,550	11,325,477,038	7,913,438,334	42,700,916,340	206,523,212,262
2041	147,582,212,418	12,385,582,677	9,207,601,115	39,087,973,124	208,263,369,334
2042	150,013,864,744	13,510,918,769	10,658,372,714	35,528,537,748	209,711,693,974
2043	151,866,307,311	14,700,987,382	12,276,663,599	32,044,239,981	210,888,198,273
2044	153,148,401,219	15,954,874,772	14,076,100,228	28,654,668,543	211,834,044,762
2045	153,881,693,047	17,268,514,217	16,071,030,195	25,374,122,950	212,595,360,409
2046	154,113,225,984	18,637,887,997	18,274,686,829	22,217,341,424	213,243,142,235

Table 7 – Projection of Total Normal Cost to 2046 by Member Group

Year Ended June 30	Tier 1 Current Active	Tier 2 Current Active	New Entrants	Total Normal Cost
2022	$2,046,448,921	$194,772,677	-	$2,241,221,597
2023	2,072,429,695	197,178,365	$28,832,720	2,298,440,780
2024	2,074,523,707	201,169,293	57,658,793	2,333,351,793
2025	2,069,272,242	207,185,758	87,083,649	2,363,541,648
2026	2,058,798,324	215,005,120	116,693,034	2,390,496,478
2027	2,039,604,102	223,433,216	146,622,204	2,409,659,522
2028	2,008,842,307	232,620,165	179,048,495	2,420,510,968
2029	1,968,054,894	242,259,291	214,076,187	2,424,390,372
2030	1,919,921,161	252,333,359	251,248,259	2,423,502,779
2031	1,864,030,820	262,693,768	290,898,486	2,417,623,074
2032	1,799,213,821	273,537,000	333,151,758	2,405,902,580
2033	1,723,552,641	284,978,519	378,086,377	2,386,617,536
2034	1,636,673,661	296,733,564	425,916,134	2,359,323,360
2035	1,540,241,947	308,890,573	476,849,728	2,325,982,249
2036	1,436,798,994	321,393,700	530,151,092	2,288,343,785
2037	1,327,021,888	334,139,702	586,255,316	2,247,416,907
2038	1,209,311,006	346,737,782	644,935,028	2,200,983,816
2039	1,078,591,683	359,282,815	706,850,904	2,144,725,402
2040	936,732,125	371,821,196	772,108,130	2,080,661,450
2041	789,516,794	384,140,972	839,286,260	2,012,944,026
2042	641,180,020	396,424,771	909,313,367	1,946,918,158
2043	498,685,863	408,016,370	980,644,060	1,887,346,294
2044	367,158,824	418,605,533	1,052,804,818	1,838,569,175
2045	252,947,585	427,622,334	1,125,921,873	1,806,491,791
2046	164,133,404	434,770,714	1,198,911,359	1,797,815,477

Note: The normal cost in this table does not include administrative expenses.

Table 8 – Projection of Benefit Payments to 2046 by Member Group

Year Ended June 30	Tier 1 Current Active	Tier 2 Current Active	New Entrants	Inactive	Total Benefit Payments	Administrative Expenses	Total Benefits and Expenses
2022	$117,792,055	$39,183,200	-	$7,566,290,425	$7,723,265,680	$26,575,798	$7,749,841,478
2023	284,068,604	38,585,206	1,043,589	7,733,899,062	8,057,596,461	39,887,064	8,097,483,525
2024	470,791,899	38,591,036	4,472,263	7,829,409,090	8,343,264,288	44,851,616	8,388,115,904
2025	678,074,450	36,911,798	10,193,246	7,913,492,066	8,638,671,560	46,053,031	8,684,724,591
2026	904,091,941	33,347,586	18,108,794	7,983,243,739	8,938,792,060	47,247,137	8,986,039,197
2027	1,154,652,849	32,235,016	28,162,892	7,976,873,780	9,191,924,537	48,435,220	9,240,359,757
2028	1,438,508,977	32,009,936	33,583,289	8,014,081,715	9,518,183,917	49,562,340	9,567,746,257
2029	1,751,494,405	31,606,767	39,958,288	8,032,748,156	9,855,807,616	50,644,902	9,906,452,518
2030	2,089,579,118	31,129,770	47,038,171	8,031,857,061	10,199,604,120	51,735,399	10,251,339,519
2031	2,455,373,305	30,910,316	54,847,651	8,009,833,340	10,550,964,612	52,824,155	10,603,788,767
2032	2,851,242,278	33,257,814	63,339,604	7,964,146,868	10,911,986,564	53,912,734	10,965,899,298
2033	3,282,206,779	36,911,595	69,821,337	7,895,294,901	11,284,234,612	54,988,558	11,339,223,170
2034	3,747,152,126	41,781,982	76,089,770	7,797,513,475	11,662,537,353	56,029,459	11,718,566,812
2035	4,242,180,886	47,993,904	82,536,068	7,674,140,252	12,046,851,110	57,063,810	12,103,914,920
2036	4,761,275,821	55,621,025	89,643,981	7,522,735,176	12,429,276,003	58,112,142	12,487,388,145
2037	5,302,094,185	65,032,032	96,302,267	7,343,594,610	12,807,023,094	59,180,009	12,866,203,103
2038	5,868,652,910	76,784,745	103,008,970	7,139,060,532	13,187,507,157	60,292,864	13,247,800,021
2039	6,457,053,440	90,597,755	109,537,403	6,908,399,548	13,565,588,146	61,416,948	13,627,005,094
2040	7,061,564,263	106,721,496	115,985,970	6,655,696,201	13,939,967,930	62,550,856	14,002,518,786
2041	7,669,777,971	125,419,324	123,136,061	6,378,751,072	14,297,084,428	63,760,764	14,360,845,192
2042	8,272,429,932	146,362,449	129,298,139	6,082,699,029	14,630,789,549	65,031,620	14,695,821,169
2043	8,854,181,257	171,506,981	136,812,698	5,769,367,545	14,931,868,481	66,396,541	14,998,265,022
2044	9,399,152,103	200,911,113	143,320,518	5,442,191,533	15,185,575,267	67,870,946	15,253,446,213
2045	9,902,026,691	236,990,127	149,172,536	5,107,606,175	15,395,795,529	69,462,059	15,465,257,588
2046	10,347,699,889	279,125,914	155,333,077	4,766,154,717	15,548,313,597	71,198,618	15,619,512,215

Note: The projected benefit payments shown above do not include projected buyout amounts of $107,769,319, $115,760,618, $119,106,403, and $122,499,762 for the years ending June 30, 2023, 2024, 2025, and 2026, respectively.

Table 9 – Projection of Payroll to 2046 by Member Group

Year Ended June 30	Tier 1 Current Active	Tier 2 Current Active	New Entrants	Total Normal Cost
2022	$8,886,217,969	$2,591,098,232	-	$11,477,316,201
2023	8,811,931,939	2,605,167,416	$386,009,750	11,803,109,105
2024	8,731,873,552	2,627,471,733	776,605,505	12,135,950,790
2025	8,621,438,409	2,661,089,255	1,178,501,857	12,461,029,521
2026	8,490,188,923	2,707,862,018	1,586,079,909	12,784,130,850
2027	8,334,893,182	2,769,644,360	2,001,064,688	13,105,602,230
2028	8,144,910,464	2,834,946,328	2,430,721,595	13,410,578,387
2029	7,907,805,842	2,901,900,049	2,893,792,166	13,703,498,057
2030	7,647,582,360	2,968,008,881	3,382,973,524	13,998,564,765
2031	7,358,016,274	3,032,654,329	3,902,489,735	14,293,160,338
2032	7,039,613,228	3,094,522,096	4,453,572,648	14,587,707,972
2033	6,683,199,899	3,153,737,846	5,041,866,649	14,878,804,394
2034	6,286,165,588	3,210,662,556	5,663,623,248	15,160,451,392
2035	5,854,008,756	3,263,429,891	6,322,887,477	15,440,326,124
2036	5,397,861,157	3,311,500,411	7,014,622,239	15,723,983,807
2037	4,922,325,286	3,354,088,461	7,736,513,578	16,012,927,325
2038	4,434,982,999	3,390,226,306	8,488,834,469	16,314,043,774
2039	3,922,209,462	3,418,454,472	9,277,534,285	16,618,198,219
2040	3,383,193,913	3,439,496,889	10,102,320,456	16,925,011,258
2041	2,848,062,698	3,453,009,537	10,951,315,932	17,252,388,167
2042	2,318,638,242	3,459,018,263	11,818,599,851	17,596,256,356
2043	1,817,764,749	3,456,600,389	12,691,211,598	17,965,576,736
2044	1,362,870,027	3,442,538,949	13,559,112,282	18,364,521,258
2045	960,210,160	3,417,167,224	14,417,667,282	18,795,044,666
2046	639,334,609	3,376,754,812	15,248,833,189	19,264,922,610

Table 10 – Projection of Member Count to 2046 by Member Group

Year Ended June 30	Tier 1 Number Active	Tier 1 Number Retired and Inactive[1]	Tier 1 Subtotal	Tier 2 Number Active	Tier 2 Number Retired and Inactive[1]	Tier 2 Subtotal	Total Number Active	Total Number Retired and Inactive[1]	Grand Total
2022	100,063	234,175	334,238	58,842	34,981	93,823	158,905	269,156	428,061
2023	95,035	230,664	325,699	63,870	33,353	97,223	158,905	264,018	422,923
2024	90,135	227,161	317,296	68,770	31,800	100,570	158,905	258,961	417,866
2025	85,407	223,578	308,985	73,498	30,323	103,821	158,905	253,901	412,806
2026	80,801	219,916	300,717	78,104	28,921	107,025	158,905	248,837	407,742
2027	76,244	216,263	292,507	82,661	27,601	110,262	158,905	243,864	402,769
2028	71,604	212,553	284,157	87,301	26,343	113,644	158,905	238,896	397,801
2029	67,015	208,650	275,665	91,890	25,164	117,054	158,905	233,815	392,720
2030	62,433	204,597	267,030	96,472	24,068	120,540	158,905	228,664	387,569
2031	57,865	200,387	258,252	101,040	23,080	124,120	158,905	223,467	382,372
2032	53,257	196,076	249,333	105,648	22,277	127,925	158,905	218,353	377,258
2033	48,630	191,642	240,272	110,275	21,518	131,793	158,905	213,160	372,065
2034	43,990	187,091	231,081	114,915	20,851	135,766	158,905	207,943	366,848
2035	39,427	182,344	221,771	119,478	20,260	139,738	158,905	202,603	361,508
2036	34,979	177,371	212,350	123,926	19,742	143,668	158,905	197,113	356,018
2037	30,670	172,163	202,833	128,235	19,312	147,547	158,905	191,475	350,380
2038	26,417	166,818	193,235	132,488	18,988	151,476	158,905	185,806	344,711
2039	22,225	161,350	183,575	136,680	18,747	155,427	158,905	180,097	339,002
2040	18,261	155,610	173,871	140,644	18,584	159,228	158,905	174,194	333,099
2041	14,531	149,613	164,144	144,374	18,519	162,893	158,905	168,131	327,036
2042	11,151	143,265	154,416	147,754	18,533	166,287	158,905	161,798	320,703
2043	8,204	141,383	149,587	150,701	20,441	171,142	158,905	161,824	320,729
2044	5,697	139,102	144,799	153,208	22,463	175,671	158,905	161,565	320,470
2045	3,752	136,317	140,069	155,153	24,616	179,769	158,905	160,933	319,838
2046	2,391	133,019	135,410	156,514	26,905	183,419	158,905	159,924	318,829

[1] Assuming members eligible for refunds only will be paid over 5 years.

Table 11 – Projection of Employer Normal Cost to 2046 by Member Group

Year Ended June 30	Payroll			Employer Normal Cost ($)				Employer Normal Cost (% of Pay)			
	Tier 1	Tier 2	Total	Tier 1	Tier 2	Admin. Expenses	Total	Tier 1 (% of pay)	Tier 2 (% of pay)	Admin. Expenses (% of pay)	Total (% of pay)
2024	$8,731,873,552	$3,404,077,238	$12,135,950,790	$1,288,655,087	(47,538,865)	$44,851,616	$1,285,967,839	14.76%	-1.40%	0.37%	10.60%
2025	8,621,438,409	3,839,591,112	12,461,029,521	1,293,342,785	(51,293,794)	46,053,031	1,288,102,022	15.00%	-1.34%	0.37%	10.34%
2026	8,490,188,923	4,293,941,927	12,784,130,850	1,294,681,321	(54,756,620)	47,247,137	1,287,171,839	15.25%	-1.28%	0.37%	10.07%
2027	8,334,893,182	4,770,709,048	13,105,602,230	1,289,463,716	(59,308,395)	48,435,220	1,278,590,541	15.47%	-1.24%	0.37%	9.76%
2028	8,144,910,464	5,265,667,923	13,410,578,387	1,275,800,366	(62,241,453)	49,562,340	1,263,121,253	15.66%	-1.18%	0.37%	9.42%
2029	7,907,805,842	5,795,692,215	13,703,498,057	1,256,352,368	(65,276,821)	50,644,902	1,241,720,449	15.89%	-1.13%	0.37%	9.06%
2030	7,647,582,360	6,350,982,405	13,998,564,765	1,231,638,749	(68,006,798)	51,735,399	1,215,367,350	16.10%	-1.07%	0.37%	8.68%
2031	7,358,016,274	6,935,144,064	14,293,160,338	1,201,809,355	(70,570,712)	52,824,155	1,184,062,798	16.33%	-1.02%	0.37%	8.28%
2032	7,039,613,228	7,548,094,744	14,587,707,972	1,165,648,631	(72,639,768)	53,912,734	1,146,921,597	16.56%	-0.96%	0.37%	7.86%
2033	6,683,199,899	8,195,604,495	14,878,804,394	1,122,064,650	(74,539,509)	54,988,558	1,102,513,698	16.79%	-0.91%	0.37%	7.41%
2034	6,286,165,588	8,874,285,804	15,160,451,392	1,070,918,758	(76,036,024)	56,029,459	1,050,912,193	17.04%	-0.86%	0.37%	6.93%
2035	5,854,008,756	9,586,317,368	15,440,326,124	1,013,381,159	(77,028,262)	57,063,810	993,416,707	17.31%	-0.80%	0.37%	6.43%
2036	5,397,861,157	10,326,122,650	15,723,983,807	950,991,489	(77,806,247)	58,112,142	931,297,384	17.62%	-0.75%	0.37%	5.92%
2037	4,922,325,286	11,090,602,039	16,012,927,325	884,012,613	(77,759,165)	59,180,009	865,433,456	17.96%	-0.70%	0.37%	5.40%
2038	4,434,982,999	11,879,060,775	16,314,043,774	810,162,536	(77,442,659)	60,292,864	793,012,741	18.27%	-0.65%	0.37%	4.86%
2039	3,922,209,462	12,695,988,757	16,618,198,219	725,592,831	(76,505,269)	61,416,948	710,504,510	18.50%	-0.60%	0.37%	4.28%
2040	3,383,193,913	13,541,817,345	16,925,011,258	632,244,673	(74,834,236)	62,550,856	619,961,293	18.69%	-0.55%	0.37%	3.66%
2041	2,848,062,698	14,404,325,469	17,252,388,167	533,191,151	(72,962,060)	63,760,764	523,989,855	18.72%	-0.51%	0.37%	3.04%
2042	2,318,638,242	15,277,618,114	17,596,256,356	432,502,578	(69,247,492)	65,031,620	428,286,706	18.65%	-0.45%	0.37%	2.43%
2043	1,817,764,749	16,147,811,987	17,965,576,736	335,087,036	(64,642,648)	66,396,541	336,840,929	18.43%	-0.40%	0.37%	1.87%
2044	1,362,870,027	17,001,651,231	18,364,521,258	244,500,521	(58,738,260)	67,870,946	253,633,208	17.94%	-0.35%	0.37%	1.38%
2045	960,210,160	17,834,834,506	18,795,044,666	166,528,671	(51,590,899)	69,462,059	184,399,831	17.34%	-0.29%	0.37%	0.98%
2046	639,334,609	18,625,588,001	19,264,922,610	106,593,289	(42,620,847)	71,198,618	135,171,060	16.67%	-0.23%	0.37%	0.70%

Table 12 – Projection of Debt Service to 2033

Fiscal Year	Debt Service
2022	$443,731,640
2023	463,801,058
2024	497,200,770
2025	528,003,960
2026	541,748,515
2027	553,983,980
2028	579,505,355
2029	602,763,095
2030	638,552,200
2031	671,323,125
2032	686,280,870
2033	684,179,980

Section 6: Actuarial Valuation Basis

Summary of Assumptions and Methods

Rationale for Assumptions:	The information and analysis used in supporting each assumption that has a significant effect on this actuarial valuation is shown in the demographic and economic experience review dated September 30, 2021, and the economic experience review dated August 12, 2022. Current data is reviewed in conjunction with each annual valuation. All assumptions were adopted by the Board on August 12, 2021, effective June 30, 2021, unless otherwise noted.
Net Investment Return:	7.00% per annum, compounded annually and net of investment expenses. The interest rate assumption is composed of an inflation assumption of 2.50% and real return of 4.50% (adopted effective June 30, 2022).
Mortality Rates:	
Healthy Post-Retirement:	PubT-2010 Retiree Mortality Table projected generationally with Scale MP-2020, with female rates multiplied by 91% for ages under 75 and 109% for ages 75 and older and male rates multiplied by 105% for ages under 85 and 115% for ages 85 and older.
Disabled Post-Retirement:	PubNS-2010 Non-Safety Disabled Retiree Mortality Table projected generationally with Scale MP-2020, with no adjustments to female or male rates.
Beneficiary Post-Retirement:	Pub-2010 Contingent Survivor Mortality Table projected generationally with Scale MP-2020, with female rates multiplied by 98% for all ages and male rates multiplied by 110% for all ages.
Pre-retirement:	PubT-2010 Employee Mortality Table projected generationally with Scale MP-2020, with female and male rates multiplied by 90% for all ages.

Summary of Assumptions and Methods *continued*

Salary Increase Rates:

The components include 2.50% inflation (adopted effective June 30, 2022), plus merit and seniority increases. Salary increase rates are shown below for selected years of service.

Service	Rate
1	8.75%
2	7.00%
3	6.75%
4	6.50%
5	6.25%
10	5.25%
15	4.75%
20 and above	3.75%

For a member who works 34 years, the assumed average salary increase over their career is 4.73% per year.

The actual average salary increase for teachers who were in full-time or regular part-time status at both June 30, 2020 and June 30, 2021 is 4.44%.

Disability Rates:

Shown below for selected ages

Age	Male	Female
25	0.01%	0.02%
30	0.01%	0.03%
35	0.02%	0.05%
40	0.02%	0.06%
45	0.04%	0.09%
50	0.08%	0.15%
55	0.11%	0.17%
60	0.14%	0.23%
65	0.19%	0.26%

Summary of Assumptions and Methods *continued*

Termination: Rates:

Termination rates based on service, for causes other than death, disability, or retirement

	Under 5 Years of Service		5 or More Years of Service	
Age	Male	Female	Male	Female
25	6.50%	6.25%	4.50%	4.50%
30	6.75%	6.75%	3.00%	4.25%
35	7.00%	7.25%	1.50%	2.50%
40	9.50%	7.25%	1.50%	1.25%
45	11.25%	7.25%	1.00%	1.00%
50	11.75%	8.50%	1.00%	1.25%
55	11.25%	10.25%	1.75%	2.00%
60	12.25%	13.00%	3.50%	2.25%
65	29.25%	32.50%	3.50%	2.50%

Retirement Rates:

The following rates of retirement are assumed for active members hired before January 1, 2011:

	Service			
Age	5 – 18	19 – 29	30 – 33	34+
54	0%	7%	8%	45%
55	0%	6%	8%	44%
56	0%	6%	7%	46%
57	0%	7%	8%	46%
58	0%	8%	12%	45%
59	0%	33%	40%	48%
60	21%	33%	46%	44%
61	17%	28%	35%	41%
62	17%	28%	43%	41%
63	16%	29%	35%	44%
64	26%	40%	50%	40%
65	27%	40%	52%	43%
66	23%	42%	42%	38%
67	25%	39%	43%	38%
68	23%	39%	40%	35%
69	28%	38%	32%	44%
70	100%	100%	100%	31%
71				39%
72				24%
73				36%
74				36%
75				100%

Summary of Assumptions and Methods *continued*

Retirement Rates (continued):

The following rates of retirement are assumed for active members hired on or after January 1, 2011 (adopted effective June 30, 2012):

	Service				
Age	**9 – 18**	**19 – 30**	**31**	**32 – 33**	**34+**
61 and younger	0%	0%	0%	0%	0%
62	13%	15%	20%	25%	25%
63	8%	10%	15%	20%	20%
64	8%	10%	15%	20%	20%
65	8%	10%	15%	20%	20%
66	20%	10%	15%	20%	20%
67	20%	40%	70%	70%	70%
68	20%	40%	40%	40%	40%
69	20%	40%	40%	40%	40%
70	100%	100%	100%	100%	100%

Inactive members with deferred vested benefits are assumed to retire upon reaching Normal Retirement age.

Percent Married:

For valuation purposes, 85% of members are assumed to be married. Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses. (adopted effective June 30, 1993)

Inactive Vested Buyout:

10% of future inactive vested members are assumed to elect to receive a lump sum buyout now in lieu of an annuity at retirement. (adopted effective June 30, 2022). This is consistent with recent plan experience and was changed to better align the assumption with actual administrative practice.

Automatic Annual Increase Buyout:

20% of eligible retiring Tier 1 members are assumed to receive a lump sum buyout and a retirement annuity with automatic annual increases of 1.5% of the originally granted retirement benefit starting at the later of January 1 following age 67 and the first anniversary of retirement.

Buyout Period:

Buyouts are assumed to be paid through fiscal year 2026, corresponding with the current buyout program ending date (June 30, 2026). This valuation assumes that additional funds will be allocated to TRS to pay for all assumed buyout payments, as needed. (adopted effective June 30, 2022)

Severance Pay:

18% of retirees are assumed to receive severance pay and the average severance payment will be 8.0% of other pensionable earnings in the last year of employment. Other pensionable earnings may include payment for unused vacation days, unused sick or personal leave, retirement incentives, 403(b) or 457(b) contributions, and bonuses for performance, good attendance, longevity, etc.

Summary of Assumptions and Methods *continued*

Optional Service Purchases:

The liability for retirement benefits for active members who have not previously purchased optional service is increased to cover the employer cost of out-of-system service purchased in the last two years prior to retirement. The amount purchased varies by the amount of regular service at retirement. Representative amounts purchased at retirement, and other assumptions used, are as follows:

Service	Maximum Service Purchase
10 years	0.158 years
20 years	0.531 years
25 years	0.712 years
30 years	0.673 years
34 or more	None

a. Actual optional service credit for each current member is provided by TRS;
b. No additional service purchases will be assumed for members who currently have optional service credit;
c. Members will not purchase service if it does not improve their pension benefit; and
d. When optional service is purchased within the last two years prior to retirement, 25% of the cost is covered by member payments and the remaining cost is the responsibility of the employer.

Sick Leave Service Credit:

The assumed unused and uncompensated sick leave service credit at retirement varies by the amount of regular service at retirement. Representative assumed amounts of unused and uncompensated sick leave service are as follows:

Service	Sick Leave Service Credit
20 years	0.963 years
25 years	1.154 years
30 years	1.369 years
34 years	1.612 years
35 or more	None

Future Service Accrual Rate:

0.98 years of service per year for Full-Time and Regular Part-Time members.

0.275 years of service per year for Substitute, Part-Time, and Hourly-Paid members.

Summary of Assumptions and Methods *continued*

Future Normal Costs:

Projected Normal Cost is based on an open group forecast with the number of active participants assumed to remain level for both full-time and substitute/hourly groups. The new entrants are assumed to enter the plan with the following demographic mix, based on previous plan experience, with new entrant salaries assumed to increase by 2.50% per annum (adopted effective June 30, 2022):

Full-Time and regular part-time:

	Male		Female	
Age	**Salary**	**Proportion**	**Salary**	**Proportion**
22	$45,861	5.4%	$45,636	28.7%
27	49,318	6.2	50,266	26.7
32	55,092	3.1	53,616	10.9
37	59,184	1.8	54,914	5.6
42	60,670	1.2	54,938	3.6
47	63,995	0.6	55,444	2.3
52	61,616	0.5	58,002	1.5
57	64,329	0.3	56,531	0.8
62	61,667	0.2	58,589	0.4
67	57,518	0.1	60,554	0.1

Substitutes, part-time, and hourly-paid:

	Male		Female	
Age	**Salary**	**Proportion**	**Salary**	**Proportion**
22	$20,591	6.5%	$21,306	18.7%
27	21,072	6.8	21,063	13.8
32	21,292	3.2	19,268	8.2
37	22,169	1.7	17,409	8.0
42	21,960	1.3	17,045	8.6
47	20,172	1.2	17,006	6.7
52	19,034	1.2	17,074	4.5
57	17,984	1.2	17,222	2.7
62	17,898	1.2	17,639	1.7
67	17,401	1.0	16,170	1.0
70	16,512	0.5	16,068	0.3

Summary of Assumptions and Methods *continued*

Future Normal Costs (continued):	Based on the demographic mix shown on the prior page, the average age and salary at hire for full-time and regular part time new entrants is 29 and $51,701 (in 2022 dollars) and for substitutes, part-time, and hourly-paid new entrants is 35 and $19,999 (in 2022 dollars). The average ages are assumed to remain constant throughout the projection period.
2.2 Updated Assumption:	For those active members who have already made a payment to upgrade past service prior to June 30, 1998, their benefits are based on their upgrading at the valuation date. For all other active members, they are assumed to upgrade at retirement.
Tier 2 Pay Cap Increase:	1.25% per annum (adopted effective June 30, 2022)
Tier 2 COLA Increase:	1.25% per annum (adopted effective June 30, 2022)
Census and Assets:	The current actuarial valuation was based on the latest membership data available, which was submitted by the System for active, inactive and retired members as of the prior valuation date. The valuation assumptions were used to project results to account for the one-year difference in the census date and the valuation date. Any change in liability due to changes in census between the collection date of the census information and the valuation date is captured in the next actuarial valuation.
Administrative Expenses:	$39,887,064 of administrative expenses is expected to be paid for the year beginning July 1, 2022. $44,854,616 of administrative expenses is expected to be paid for the year beginning July 1, 2023 and each year thereafter, increased by the rate at which payroll is expected to increase.
Asset Valuation Method:	The actuarial value of assets for funding and to determine the Actuarially Determined Contribution is based on the fair value of assets with a five-year phase-in of actual investment return in excess of (or less than) expected investment income. Expected investment income is determined using the assumed investment return rate and the fair value of assets (adjusted for receipts and disbursements during the year). The actual investment return for this purpose is determined net of all investment and administrative expenses. For GASB 67 and 68, the fair value of assets is used.
Actuarial Cost Method:	Projected Unit Credit (adopted by statute June 30, 1989) is used for funding purposes. Under this method, the projected benefits of each individual included in the valuation are allocated by a consistent formula to valuation years. The actuarial present value of benefits allocated to a valuation year is called the normal cost. The actuarial present value of benefits allocated to all periods prior to a valuation year is called the accrued liability. Entry Age Normal is used for GASB 67 and 68 purposes and to determine the Actuarially Determined Contribution ("Board-Adopted Actuarial Funding Policy"), based upon the funding policy adopted by the Board. Under this method, a normal cost is calculated for each employee that is the level annual contribution as a percent of pay required to be made from the employee's date of hire for as long as he/she remains active so that sufficient assets will be accumulated to provide his/her benefit. The accrued liability is the difference between the present value of all future benefits and the present value of all future normal costs.

Summary of Assumptions and Methods *continued*

Amortization Period and Method:	For funding purposes under the Illinois Pension Code, the unfunded liability is not explicitly amortized. The employer contribution is the amount which, as a level percentage of member payroll, will result in the System being 90% funded by June 30, 2045, if all assumptions are met and the active population remains level. For the Board-Adopted Actuarial Funding Policy, the amortization of the unfunded accrued liability is a closed 20-year period effective June 30, 2015, and declines by one year in each subsequent valuation. Sources of unfunded actuarial accrued liability that emerge in subsequent valuations are amortized over 20-year closed periods. Contributions toward the unfunded actuarial accrued liability increase by 2% each year, the estimate of increase in future State revenue growth.

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.

Membership:	Employers of the System include: • The Illinois public common school districts outside of Chicago, • Certain state agencies employing certified teachers, and • The State Board of Education, Illinois School Board Association, statewide and national teacher organizations, educational cooperatives and the retirement system. Employees covered under the System include: • Any educational, administrative, professional or other staff employed in the public common schools outside the City of Chicago in a position requiring certification under the teacher certification law, including substitute teachers, part-time teachers, and hourly paid teachers who are on a flexible work schedule; • Any position requiring teacher certification in certain state agencies; • Any regional superintendent of schools, assistant regional superintendent of schools, State Superintendent of Education; any person employed by the State Board of Education as an executive; any executive of the boards engaged in the service of public common school education in school districts covered under this system of which the State Superintendent of Education is an ex-officio member; • Any employee of a school board association who is certificated under the teacher certification law; • Any person employed by the retirement system who was an employee of and a member in the system on August 17, 2001 or becomes an employee of the system on or after August 17, 2001; • Any educational, administrative, professional or other staff employed by and under the supervision and control of a regional superintendent of schools, provided such employment position requires the person to be certificated under the teacher certification law; • Any educational, administrative, professional or other staff in a certificated position employed by a program serving two or more school districts in accordance with a joint agreement authorized by the School Code or by federal legislation; • Any officer or employee of a statewide teacher organization or officer of a national teacher organization who is certified under the teacher certification law, provided the member had previously established creditable service under TRS and files an irrevocable election for TRS membership before January 5, 2012, and does not receive credit under any other article of the pension code; and

Summary of Plan Provisions *continued*

Membership (continued):	• Any educational, administrative, professional, or other staff employed in a charter school that is certificated under the teacher certification law. Employment on a full-time basis covers only teachers whose normal employment schedule consist of working at least four clock hours daily, five days per week. Employment on a part-time basis covers teachers who are employed less than four clock hours daily or less than five days per week. A substitute teacher is employed on temporary basis to replace another teacher. Creditable service rendered as an employee for a regular school year in any district, in accordance with the provisions of the Pension Code, is equal to one year of service, and time less than a legal year is counted as such portion of a year as the number of days taught bears to 170 days. Additionally, members may purchase various types of optional service credit. "Tier 2" means a member, or a benefit provision, that applies to a member who first contributed to TRS on or after January 1, 2011, and has no preexisting creditable service with a reciprocal pension system prior to January 1, 2011. "Tier 1" means all other members and applicable benefit provisions. For determining both member benefits and contribution amounts, salary for Tier 2 is capped at a limit that is tied to the Consumer Price Index. The initial limit was $106,800 as of January 1, 2011. The limit increases in each subsequent year by an amount equal to the then current limit times the lesser of 3% or one-half the percentage increase in CPI-U as of the preceding September. "Final average salary" means for Tier 1 the average salary for the highest four consecutive years within the last 10 years of creditable service, as determined under the rules of the Board. For Tier 2, final average salary is for the highest eight consecutive years within the last 10 years.
Normal Retirement:	All members of the Fund are required to contribute 9% of salary to the Fund as follows: 7% for the retirement pension, 1% for the spouse's pension, and 1% for the automatic increases in the retirement pension. In addition, employees are required to contribute $3.60 per month toward the cost of the single sum death benefit.
Tiers:	Tier 1: First hired before January 1, 2011. Tier 2: First hired on or after January 1, 2011.

Summary of Plan Provisions *continued*

Retirement Pension:	
Eligibility:	*Tier 1:* Age 60 with 10 years of service, or age 62 with 5 years of service *Tier 2:* Age 67 with 10 years of service
Amount:	*Tier 1:* For members who first became a teacher before July 1, 2005, the annual benefit amount is the greatest of (i), (ii) and (iii) below. For members who first became a teacher on or after July 1, 2005, the annual benefit amount is the greater of (i) and (ii) below. *Tier 2:* The annual benefit is the amount under (i) below. (i) For service earned before July 1, 1998, 1.67% of final average salary for each of the first 10 years of creditable service, plus 1.90% of final average salary for each year in excess of 10 but not exceeding 20, plus 2.10% of final average salary for each year in excess of 20 but not exceeding 30, and 2.30% of final average salary for each year in excess of 30. For all other service, 2.2% of final average salary.[1] (ii) 1½% of final average salary for each year of creditable service, plus $7.50 per year for each of the first 20 years of creditable service. (iii) An actuarially equivalent life annuity, resulting from the member's contributions and State-matching contributions (1.4 times member contributions) plus compound interest on both. Maximum amount under (i) and (ii) above is 75% of final average salary.
Early Retirement:	
Eligibility:	*Tier 1:* Age 55 with 20 years of service *Tier 2:* Age 62 with 10 years of service
Amount:	*Tier 1:* Equal to the amount computed under normal retirement, reduced by 6% for each year the member is under age 60. There is no reduction for a member who retires prior to age 60 with 35 years of credited service. *Tier 2:* Equal to the amount computed under normal retirement, reduced by 6% for each year the member is under age 67.

[1] Service earned before July 1, 1998 can be upgraded to 2.2% through additional member contributions of 1% of the member's highest salary within the last four years for each year of prior service. Maximum payment is 20% of salary, but all years are upgraded. The number of years to be upgraded is reduced by one for each three full years worked under the 2.2% formula. The 2.2% formula upgrade cost is reduced on a sliding scale for members who have more than 34 years of service credit.

Summary of Plan Provisions *continued*

Rule of 85 for State Employees:	A Tier 1 employee of a state agency retiring on or after January 1, 2001 is entitled to a non-discounted annuity if his or her attained age at retirement and total creditable service equal at least 85, provided he or she has (i) earned during the period immediately preceding the last day of service at least one year of contributing creditable service as a state employee and (ii) has earned at least 5 years of contributing creditable service as a state employee.
Single Sum Benefit:	
Eligibility:	Age 65 with fewer than 5 years of creditable service after July 1, 1947
Amount:	Lump sum payment actuarially equivalent to a life annuity consisting of 1.67% of final average salary for each year of service.
Temporary Disability Benefit:	
Eligibility:	3 years of credited service
Amount:	Equal to 40% of the member's most recent annual contract salary at time of disablement. The benefit is payable beginning with the 31st day after disablement and ending at the earlier of (1) cessation of disability, (2) when the member requests termination of the benefit, (3) when the period for which payments have been made equals one-fourth the period of creditable service, or (4) the member is gainfully employed or able to be gainfully employed.
Disability Retirement Benefit:	
Eligibility:	Termination of temporary disability benefit, provided member remains disabled
Amount:	The greater of: (a) 35% of the member's most recent annual contract salary, or (b) the benefit payable for normal retirement, but reduced by 1/2% for each month by which the member is less than age 60, or age 55 if the member has 20 years of service. Other formulas may be applicable if disability retirement occurred prior to July 1, 1971.
Occupational Disability:	
Eligibility:	Totally and immediately incapacitated for the performance of duty
Amount:	Equal to 60% of salary, if disability is duty-connected or occupational adjudicated by the Illinois Industrial Commission as compensable under either the Workers' Compensation or Occupational Diseases Act. Any amounts payable under these Acts shall be applied as an offset to any occupational disability benefits payable by the Teachers' Retirement System. In general, benefits are payable throughout the period of disability.

Summary of Plan Provisions *continued*

Deferred Vested Benefits:	
Eligibility:	*Tier 1:* 5 years of service *Tier 2:* 10 years of service
Amount:	*Tier 1:* Equal to the amount computed under normal retirement deferred to age 62, if the member has less than 10 years of service. With 10 or more years of service, the annuity is payable at age 60. *Tier 2:* Equal to the amount computed under normal retirement, payable at age 67, or in a reduced amount as early as age 62. The reduction is 6% for each year the member is under age 67.
Reversionary Retirement Annuity:	Any member entitled to a retirement annuity for age may elect to receive a reduced annuity with the remainder determined on an actuarial basis to become, upon the member's death, an annuity for life to any designated person dependent upon the member at the time of the member's retirement, provided such payment shall not be less than $10 nor more than the amount of reduced age retirement monthly annuity to which the member is entitled.
Refund of Contributions:	A member who ceases to be a member for any reason other than death or retirement, shall be entitled to a refund of all retirement contributions and payments made into the System by the member which have not previously been refunded, without interest thereon.
Death Benefit:	Refund of the deceased member's accumulated contributions are paid to survivors or to the member's estate. Additional lump sum death benefits are also payable:

	Types of Beneficiaries	
Time of Death	**Dependents**	**Non-dependents**
While employed	Lump sum up to last salary **or** $1,000 and a monthly benefit generally not less than $400[1] or $600 with minor children[2]	Lump sum up to last salary
Inactive within 12 months of last day of credit	Lump sum up to last salary **or** $1,000 and a monthly benefit generally not less than $400[1] or $600 with minor children[2]	Lump sum up to last salary
Inactive with 20 or more years of service	Lump sum of $3,000 or 1/6 of last salary[3] **or** $1,000 and a monthly benefit generally ½ for Tier 1 and 2/3 for Tier 2 of member's earned benefit at time of death	Lump sum of $3,000 or 1/6 of last salary[3]
Annuitant	Lump sum of $3,000 or 1/6 of last salary[3] **or** $1,000 and a monthly benefit generally ½ for Tier 1 and 2/3 for Tier 2 of annuitant's earned benefit at time of death	Lump sum of $3,000 or 1/6 of last salary[3]

[1] *Certain circumstances might provide a monthly annuity less than $400 per month for an active member.*
[2] *TRS will pay 50 percent of the member's earned retirement annuity at death if it is greater than the above amounts.*
[3] *Certain lump sums may be greater if the annuitant or inactive member has been in retirement or out of service for less than five years.*

Summary of Plan Provisions *continued*

Automatic Postretirement Benefit Cost-of-Living Adjustment:	
Eligibility:	Member contributed for at least an equivalent period of one full year of creditable service after July 1, 1969
Amount:	For Tier 1, initial increase of 1½% of base annuity for periods prior to January 1, 1972, 2% for periods from and after January 1, 1972 and prior to January 1, 1978, and 3% for periods thereafter (such periods to exclude any period of retirement that precedes attainment of age 55). Initial increase payable effective with the later of: January 1 following first anniversary of retirement; or January 1 following attainment of age 61. Following the initial increase, automatic annual increases payable on each January 1 thereafter. Prior to January 1, 1990, annual increases were determined as a percentage of the original retirement annuity. Effective on and after January 1, 1990, automatic annual increases granted to eligible annuitants equal 3% of the total annuity being received, including previous increases granted. For Tier 2 retirement and deferred vested benefits, the annual increase is equal to the original granted annuity benefit times the lesser of 3% or one-half the increase in the CPI-U as of the preceding September. The initial increase is effective January 1 after the later of attaining age 67 or the first anniversary of the annuity starting date. For Tier 1 and Tier 2 disability benefits, the initial increase is generally 7% effective January 1 following the fourth anniversary of the initial payment and 3% annually thereafter of the then current benefit amount. For Tier 1 and Tier 2 survivor benefits, the initial increase is effective January 1 following the first anniversary of the initial survivor payment, or after the survivor benefit has been granted benefits for survivors of annuitants, and annually thereafter. The Tier 1 increase is 3% of the then current benefit. The increase for Tier 2 is the lesser of 3% or one-half the percentage increase in CPI-U as of the preceding September of the original benefit amount.

Summary of Plan Provisions *continued*

Member Contributions:	Beginning July 1, 1998, contributions for creditable service are made at the rate of 8% (exclusive of the 1% Survivor Benefit Contribution) of salary which is comprised of a rate of 7½% of salary towards the cost of the retirement annuity plus ½% of salary toward the cost of the automatic annual increase in retirement annuity. Beginning July 24, 1959, each member contributes an additional 1% of salary toward Survivor's Benefits. These contributions are subject to refund if there is no dependent beneficiary at retirement, provided the member elects such refund. Beginning July 1, 1995, each member not employed by a State agency contributes to the Teachers' Health Insurance Security Fund, administered by the Department of Central Management Services. These contributions are not refundable and do not become part of the System's assets. Additional contributions as are necessary to receive credit for service during which contributions were not made, such as military service or service outside the System.
Net Benefit Increases:	The term "new benefit increase" means an increase in the amount of any benefit provided by the statute, or the expansion of the eligibility requirements for any benefit provided by the statute, resulting from an amendment that takes place on or after June 1, 2005. Every new benefit increase must have an identified funding source whose adequacy is verified and periodically confirmed by the Commission on Government Forecasting and Accountability (CoGFA). Every new benefit increase will automatically expire at the earlier of (i) five years after its effective date; (ii) at an earlier time specified in the amendment creating the benefit; or (iii) at the end of the fiscal year in which CoGFA certifies that the identified funding source is inadequate; except that any new benefit increase will continue to apply to persons who applied for and qualified for the increase while it was in effect, and except that any new benefit increase may be extended or recreated by the General Assembly (subject to the adequacy of the funding source).
Sick Leave Service Accruals:	Any unused and uncompensated accumulated sick leave is counted as creditable service provided that each former employer certifies to the System the number of unused and uncompensated accumulated sick leave days upon termination of the member. The service granted is the ratio of the number of unused and uncompensated accumulated sick leave days to 170 days, subject to a maximum of two years of service credit. The period of sick leave shall not be considered in determining the effective date of retirement.

Summary of Plan Provisions *continued*

Guaranteed Minimum Benefit:	For members who make a small qualifying contribution, a minimum benefit of $25 per month per year of service, up to a maximum of $750 per month with 30 years of service, is paid. An alternate minimum retirement annuity of $200 per month, applicable to members with at least 10 years of service, is described under 40 ILCS 5/16-136.3. The minimum benefit is payable to the extent that funds are available under the Minimum Retirement Annuity Reserve established under 40 ILCS 5/16-186.3. The Minimum Retirement Annuity Reserve is credited with qualifying contributions made by annuitants, amounts contributed by the state that are sufficient to assure payment, and interest. The reserve is charged with the minimum benefit payments. The portion of the retiree's benefit that is below the minimum is paid from the Benefit Trust Reserve. Only the difference between that amount and the minimum is paid from the Minimum Retirement Annuity Reserve.
Inactive Vested Buyout:	Provides inactive vested members an option to receive an immediate lump sum in exchange for their annuity at retirement. The lump sum would be equal to 60% of the present value of future benefits. Effective for fiscal year ended June 30, 2019 to fiscal year ending June 30, 2021, subsequently extended to fiscal year ending June 30, 2026 by PA 102-0718.
Automatic Annual Increase Buyout:	The automatic annual increase buyout provision gives Tier 1 members the option to receive a lump sum at retirement in exchange for having their automatic annual increase based on 1.5% of the originally granted annuity effective at the later of January 1 following age 67 or the first anniversary of retirement. The lump sum would be equal to 70% of the difference between the present value of benefits based on the Tier 1 automatic annual increase and the 1.5% automatic annual increase of the originally granted annuity. Effective for fiscal year ended June 30, 2019 to fiscal year ending June 30, 2021, subsequently extended to fiscal year ending June 30, 2026 by PA 102-0718.

Section 7: GASB Information

Exhibit 1 – Schedule of Employer Contributions

($ in thousands)

Fiscal Year Ended June 30	Actuarially Determined Contribution (ADC)[1]	Percentage Contributed[2]
2013	$3,582,033	79.8%
2014	4,091,978	87.8%
2015	4,119,526	85.5%
2016	4,582,530	84.9%
2017	6,248,879	66.2%
2018	7,080,756	59.0%
2019	7,429,037	61.3%
2020	7,988,612	60.8%
2021	8,441,258	62.0%
2022	8,947,919	66.9%

The information presented above was determined as part of the actuarial valuation as of two years prior to the dates indicated (e.g., the contribution determined by the valuation completed as of June 30, 2020, was contributed in the fiscal year ended June 30, 2022).

[1] *Prior to 2017, the ADC is the same as the GASB ARC determined under GASB 25. Beginning in FY 2017, the ADC is based on the Board's funding policy.*
[2] *Equal to the total non-member contributions divided by the ADC for the applicable fiscal year, see the following page for more information.*

Exhibit 1 – Schedule of Employer Contributions *continued*

($ in thousands)

Fiscal Year	Actuarially Determined Contributions	State Contributions	Federal and Employer Contributions	Total Non-Member Contributions	Contribution Deficiency	Covered Payroll	Total Non-Member Contributions as a Percentage of Covered Payroll
2013	$3,582,033	$2,702,278	$155,787	$2,858,065	$723,968	$9,394,741	30.4%
2014	4,091,978	3,437,478	157,228	3,594,706	497,272	9,512,810	37.8%
2015	4,119,526	3,376,878	144,780	3,521,658	597,868	9,641,171	36.5%
2016	4,582,530	3,741,802	147,408	3,889,210	693,320	9,811,614	39.6%
2017	6,248,879[1]	3,985,783	148,749	4,134,532	2,114,347	9,965,570	41.5%
2018	7,080,756	4,094,616	84,034	4,178,650	2,902,106	10,163,980	41.1%
2019	7,429,037	4,465,578	87,707	4,553,285	2,875,752	10,450,452	43.6%
2020	7,988,612	4,763,078	92,038	4,855,116	3,133,496	10,827,439	44.8%
2021	8,441,258	5,140,337	97,082	5,237,419	3,203,839	11,120,776	47.1%
2022	8,947,919	5,866,530	120,441[2]	5,986,971	2,960,948	11,647,248	51.4%

[1] *Reflects implementation of the Board-Adopted Funding Policy.*

[2] *Reflects temporary increase in federal funds payroll resulting from the Elementary and Secondary School Emergency Relief Fund (ESSER).*

Exhibit 2 – Net Pension Liability

	June 30, 2022	June 30, 2021
The components of the net pension liability:		
Total pension liability	$146,673,960,220	$142,223,798,748
Plan fiduciary net position	(62,833,626,339)	(64,212,505,020)
Net pension liability	$83,840,333,881	$78,011,293,728
Plan fiduciary net position as a percentage of the total pension liability	42.8%	45.1%

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, 2022.

Actuarial Assumptions

The total pension liability was determined by an actuarial valuation as of June 30, 2022, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.50%
Salary increases	8.75% at one year of service to 3.75% at 20 and more years of service
Investment rate of return	7.00%
Cost-of-living adjustments	Tier 1: 3% compounded Tier 2: 1.25% not compounded

The assumed mortality rates are based on the Society of Actuaries PubT-2010 mortality tables, with adjustments for TRS experience, with generational improvement based on Scale MP-2020.

The actuarial assumptions used were based on the results of an experience study dated August 12, 2021, and the economic experience review presented at the August 2022 Board meeting.

Exhibit 2 – Net Pension Liability *continued*

Discount Rate

The discount rate used to measure the total pension liability was 7.00% as of June 30, 2022. The projection of cash flows used to determine the discount rate assumes that member and employer contributions will be made at rates equal to those based on this June 30, 2022, Actuarial Valuation Report. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected member and employer contributions for future plan members are included, to the extent that they exceed the service costs of future plan members.

Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments for current plan members as of June 30, 2022. Therefore, the long-term expected rate of return was applied to all periods of projected benefit payments to determine the total pension liability as of June 30, 2022.

Discount Rate Sensitivity

The following presents the net pension liability as of June 30, 2022, which is allocated to employers 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	$102,537,471,806	$83,840,333,881	$68,336,030,930

Exhibit 3 – Schedules of Changes in Net Pension Liability

Fiscal Year Ended June 30	2022	2021	2020	2019	2018
Total pension liability					
Service cost	$2,097,274,410	$2,032,149,463	$1,991,622,987	$1,947,627,286	$1,838,002,948
Interest	9,834,039,952	9,580,886,840	9,296,897,060	8,991,684,121	8,703,519,454
Change of benefit terms	0	0	0	0	(374,603,419)
Differences between expected and actual experience	(260,304,587)	(370,469,646)	(28,215,833)	258,778,925	1,191,346,970
Changes of assumptions	448,727,943	(162,359,084)	0	77,241,572	(666,054,719)
Benefit payments, including refunds of employee contributions	(7,669,576,246)	(7,388,142,712)	(7,099,524,955)	(6,818,760,572)	(6,551,634,376)
Net change in total pension liability	$4,450,161,472	$3,692,064,861	$4,160,779,259	$4,456,571,332	$4,140,576,858
Total pension liability – beginning	142,223,798,748	138,531,733,887	134,370,954,628	129,914,383,296	125,773,806,438
Total pension liability – ending (a)	$146,673,960,220	$142,223,798,748	$138,531,733,887	$134,370,954,628	$129,914,383,296
Plan fiduciary net position					
Contributions – employer	$120,876,570	$97,594,081	$92,658,238	$88,514,781	$84,633,117
Contributions – nonemployer contributing entity	5,866,799,836[1]	5,140,648,356	4,813,451,679	4,466,020,692	4,095,125,358
Contributions – member	1,072,639,330	1,023,531,951	994,400,416	963,972,120	938,037,245
Net investment income	(743,042,373)	13,046,153,685	275,669,398	2,617,831,332	4,049,271,728
Benefit payments, including refunds of employee contributions	(7,669,576,246)	(7,388,142,712)	(7,099,524,955)	(6,818,760,572)	(6,551,634,376)
Administrative expense	(26,575,798)	(23,758,112)	(22,966,372)	(24,335,680)	(21,550,896)
Net change in plan fiduciary net position	($1,378,878,681)	$11,896,027,249	($946,311,596)	$1,293,242,673	$2,593,882,176
Plan fiduciary net position – beginning	64,212,505,020	52,316,477,771	53,262,789,367	51,969,546,694	49,375,664,518
Plan fiduciary net position – ending (b)	$ 62,833,626,339	$64,212,505,020	$52,316,477,771	$53,262,789,367	$51,969,546,694
Net pension liability – ending (a) – (b)	$ 83,840,333,881	$78,011,293,728	$86,215,256,116	$81,108,165,261	$77,944,836,602
Plan fiduciary net position as a percentage of the total pension liability	42.8%	45.1%	37.8%	39.6%	40.0%
Actual covered employee payroll	$11,647,247,711	$11,120,776,122	$10,827,438,800	$10,450,452,444	$10,163,980,000
Plan net pension liability as percentage of covered employee payroll	719.8%	701.5%	796.3%	776.1%	766.9%

[1] *Includes the additional one-time contribution of $172,823,300 for fiscal 2022, per Public Act 102-0696.*

Exhibit 4 – Reconciliation of Collective Net Pension Liability

Changes in the collective net pension liability from the beginning of the year to the end of the year 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.

	Increase/(Decrease) For Fiscal Year Ended June 30, 2022		
	Total Pension Liability (a)	**Plan Fiduciary Net Position (b)**	**Net Pension Liability (a) – (b)**
Balances at beginning of year	$142,223,798,748	$64,212,505,020	$78,011,293,728
Changes for the year			
Service cost	2,097,274,410		2,097,274,410
Interest	9,834,039,952		9,834,039,952
Differences between expected and actual experience	(260,304,587)		(260,304,587)
Contributions – employer		120,876,570	(120,876,570)
Contributions – nonemployer contributing entity[1]		5,866,799,836	(5,866,799,836)
Contributions – member		1,072,639,330	(1,072,639,330)
Net investment income		(743,042,373)	743,042,373
Benefit payments, including refunds of employee contributions	(7,669,576,246)	(7,669,576,246)	-
Administrative expense		(26,575,798)	26,575,798
Change of assumptions	448,727,943		448,727,943
Change of benefit terms	-		-
Net changes	4,450,161,472	(1,378,878,681)	5,829,040,153
Balances at end of year	$146,673,960,220	$62,833,626,339	$83,840,333,881

[1] *Includes the additional one-time contribution of $172,823,300 for fiscal 2022, per Public Act 102-0696.*

Exhibit 5 – Collective Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

	Year Established	Original Balance	Original Amortization Period	Amortization Amount at June 30, 2022	Outstanding Balance at June 30, 2022
Outflows					
Demographic	2017	482,486,212	5.14	$13,141,647	$0
Demographic	2018	1,191,346,970	5.46	218,195,416	100,369,890
Demographic	2019	258,778,925	5.43	47,657,261	68,149,881
Investment	2019	973,676,334	5.00	194,735,267	194,735,266
Assumption	2019	77,241,572	5.43	14,224,967	20,341,704
Investment	2020	3,409,956,524	5.00	681,991,305	1,363,982,609
Assumption	2022	448,727,943	5.44[1]	82,486,754	366,241,189
Investment	2022	5,215,663,453	5.00	1,043,132,691	4,172,530,762
Total outflows				**$2,295,565,308**	**$6,286,351,301**
Inflows					
Assumption	2017	2,725,599,755	5.14	$74,238,125	$0
Investment	2018	643,913,847	5.00	128,782,771	0
Assumption	2018	666,054,719	5.46	121,988,044	56,114,499
Demographic	2020	28,215,833	5.42	5,205,873	12,598,214
Demographic	2021	370,469,646	5.56	66,631,231	237,207,184
Investment	2021	9,424,254,666	5.00	1,884,850,933	5,654,552,800
Assumption	2021	162,359,084	5.56	29,201,274	103,956,536
Demographic	2022	260,304,587	5.44[1]	47,850,108	212,454,479
Total inflows				**$2,358,748,359**	**$6,276,883,712**

	Expected Remaining Service	Counts	Average of the Expected Remaining Service
Actives Members	2,385,994	158,905	15.02
Inactive Members	-	151,815	-
Retirees and Beneficiaries	-	128,041	-
Total Employees	2,385,994	438,761	5.44

[1] *Equal to the total expected remaining service lives of 2,385,994 years, divided by total employees that are provided with pensions through the plan of 438,761 (as shown in the table above), rounded to two decimals*

Exhibit 5 – Collective Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions *continued*

Fiscal Year Ended June 30	2022	2021
Deferred Outflows of Resources		
Difference between expected and actual experience in the Total Pension Liability	$168,519,771	$447,514,095
Changes of assumptions or other inputs	386,582,893	34,566,671
Net difference between projected and actual earnings on pension plan investments	76,695,837	-
Total Deferred Outflows of Resources	631,798,501	$482,080,766
Deferred Inflows of Resources		
Difference between expected and actual experience in the Total Pension Liability	$462,259,877	$321,642,502
Changes of assumptions or other inputs	160,071,035	385,498,478
Net difference between projected and actual earnings on pension plan investments	-	5,232,742,057
Total Deferred Inflows of Resources	$622,330,912	$5,939,883,037
Net Deferred Outflows/(Inflows) of Resources	**$9,467,589**	**($5,457,802,271)**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Year Ended June 30:		
2022	N/A	($1,140,952,388)
2023	$74,744,216	(1,003,025,121)
2024	(199,519,313)	(1,277,288,650)
2025	(905,100,570)	(1,982,869,907)
2026	1,024,103,130	(53,666,205)
2027	15,240,126	-
Thereafter	-	-

Exhibit 6 – Collective Pension Expense

	Fiscal Year Ended June 30, 2022	Fiscal Year Ended June 30, 2021
Components of pension expense		
Service cost	$2,097,274,410	$2,032,149,463
Interest on the total pension liability	9,834,039,952	9,580,886,840
Projected earnings on plan investments	(4,472,621,080)	(3,621,899,019)
Contributions – member	(1,072,639,330)	(1,023,531,951)
Administrative expense	26,575,798	23,758,112
Current year recognition of:		
Changes of assumptions	(128,715,722)	(362,761,083)
Difference between expected and actual experience	159,307,112	316,173,105
Difference between projected and actual earnings on pension plan investments	(93,774,441)	(1,617,254,551)
Change of benefit terms	-	-
Total pension expense	$6,349,446,699	$5,327,520,916

Exhibit 7 – Development of Blended Discount Rate

Fiscal Year	Projected Beginning Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expense	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2023	$62,833,626,339	$6,980,711,636	$8,057,192,157	$40,200,610	$4,359,270,004	$66,076,215,212
2024	66,076,215,212	7,208,882,821	8,341,758,584	42,381,780	4,584,201,051	69,485,158,720
2025	69,485,158,720	7,413,550,871	8,633,833,805	42,364,463	4,819,768,451	73,042,279,774
2026	73,042,279,774	7,612,582,474	8,928,309,346	42,383,692	5,065,425,714	76,749,594,924
2027	76,749,594,924	7,754,965,126	9,173,699,836	42,401,874	5,321,331,864	80,609,790,205
2028	80,609,790,205	7,968,221,107	9,491,542,916	42,430,911	5,587,883,969	84,631,921,454
2029	84,631,921,454	8,098,771,471	9,822,050,686	42,523,027	5,862,431,423	88,728,550,634
2030	88,728,550,634	8,213,694,210	10,159,320,884	42,588,311	6,141,411,020	92,881,746,669
2031	92,881,746,669	8,328,716,761	10,503,237,674	42,641,840	6,424,121,570	97,088,705,486
2032	97,088,705,486	8,458,312,496	10,855,964,415	42,666,315	6,710,798,246	101,359,185,499
2033	101,359,185,499	8,599,524,207	11,219,188,259	42,641,905	7,001,962,276	105,698,841,818
2034	105,698,841,818	9,339,855,938	11,589,637,384	42,574,118	7,318,686,483	110,725,172,737
2035	110,725,172,737	9,462,136,192	11,966,285,542	42,477,745	7,661,630,143	115,840,175,785
2036	115,840,175,785	9,582,238,828	12,340,449,190	42,350,324	8,010,792,681	121,050,407,779
2037	121,050,407,779	9,701,722,408	12,709,323,928	42,220,472	8,366,784,775	126,367,370,562
2038	126,367,370,562	9,825,141,201	13,080,634,016	42,066,630	8,730,301,359	131,800,112,477
2039	131,800,112,477	9,947,350,498	13,448,644,451	41,887,639	9,101,996,518	137,358,927,403
2040	137,358,927,403	10,066,640,265	13,812,083,445	41,713,068	9,482,574,450	143,054,345,605
2041	143,054,345,605	10,193,308,487	14,157,619,908	41,533,282	9,873,599,628	148,922,100,530
2042	148,922,100,530	10,326,926,163	14,478,230,696	41,387,008	10,277,802,833	155,007,211,822
2043	155,007,211,822	10,473,504,150	14,765,229,411	41,277,821	10,698,849,720	161,373,058,460
2044	161,373,058,460	10,637,054,811	15,002,654,841	41,223,506	11,141,875,268	168,108,110,192
2045	168,108,110,192	10,820,243,892	15,194,237,520	41,238,807	11,613,034,578	175,305,912,334
2046	175,305,912,334	1,889,102,130	15,326,214,567	41,327,932	11,799,668,450	173,627,140,414
2047	173,627,140,414	1,824,498,233	15,405,253,644	41,479,425	11,677,121,610	171,682,027,189
2048	171,682,027,189	1,776,729,644	15,448,040,638	41,659,178	11,537,787,947	169,506,844,964
2049	169,506,844,964	1,741,780,155	15,462,933,925	41,830,698	11,383,774,691	167,127,635,187
2050	167,127,635,187	1,841,673,636	15,465,456,740	41,953,134	11,220,633,695	164,682,532,644
2051	164,682,532,644	1,840,542,521	15,485,273,808	41,997,709	11,048,741,770	162,044,545,418
2052	162,044,545,418	1,849,812,481	15,526,092,134	41,991,078	10,862,978,704	159,189,253,392
2053	159,189,253,392	1,857,262,162	15,592,451,460	41,916,964	10,661,049,018	156,073,196,148
2054	156,073,196,148	1,862,102,414	15,661,044,715	41,685,136	10,440,701,770	152,673,270,481
2055	152,673,270,481	1,865,763,687	15,726,909,344	41,418,449	10,200,539,190	148,971,245,565
2056	148,971,245,565	1,869,133,925	15,791,162,989	41,117,589	9,939,277,057	144,947,375,969
2057	144,947,375,969	1,872,506,313	15,841,738,887	40,783,328	9,655,965,761	140,593,325,827

Exhibit 7 – Development of Blended Discount Rate continued

Fiscal Year	Projected Beginning Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expense	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2058	$140,593,325,827	$1,875,700,056	$15,911,609,219	$40,416,518	$9,348,861,409	$135,865,861,555
2059	135,865,861,555	1,879,484,794	15,939,257,341	40,018,087	9,017,117,637	130,783,188,558
2060	130,783,188,558	1,885,509,427	15,907,708,482	39,589,040	8,662,660,616	125,384,061,079
2061	125,384,061,079	1,894,214,228	15,817,158,009	39,130,447	8,288,211,678	119,710,198,528
2062	119,710,198,528	1,906,069,747	15,657,233,089	38,643,448	7,897,070,659	113,817,462,398
2063	113,817,462,398	1,921,859,656	15,492,397,235	38,129,238	7,490,919,029	107,699,714,610
2064	107,699,714,610	1,942,184,079	15,258,320,183	37,589,071	7,071,599,642	101,417,589,077
2065	101,417,589,077	1,965,995,850	14,948,980,366	37,024,250	6,643,530,929	95,041,111,240
2066	95,041,111,240	1,992,635,026	14,581,573,161	36,436,122	6,210,989,688	88,626,726,671
2067	88,626,726,671	2,022,117,316	14,152,741,562	35,826,075	5,778,045,106	82,238,321,457
2068	82,238,321,457	2,054,370,283	13,682,835,882	35,195,531	5,348,454,362	75,923,114,689
2069	75,923,114,689	2,089,278,311	13,169,384,825	34,545,941	4,925,605,192	69,734,067,425
2070	69,734,067,425	2,125,554,450	12,606,053,802	33,878,778	4,513,381,485	63,733,070,780
2071	63,733,070,780	2,162,962,998	12,007,953,743	33,204,862	4,115,578,108	57,970,453,282
2072	57,970,453,282	2,201,346,711	11,374,860,053	32,534,230	3,735,720,065	52,500,125,775
2073	52,500,125,775	2,240,427,743	10,715,221,651	31,867,230	3,377,275,664	47,370,740,302
2074	47,370,740,302	2,280,201,412	10,035,945,277	31,204,196	3,043,408,639	42,627,200,881
2075	42,627,200,881	2,320,678,013	9,343,034,711	30,545,456	2,737,052,486	38,311,351,213
2076	38,311,351,213	2,361,869,114	8,643,227,491	29,891,323	2,460,900,845	34,461,002,358
2077	34,461,002,358	2,403,787,267	7,936,959,439	29,242,101	2,217,585,666	31,116,173,752
2078	31,116,173,752	2,446,445,256	7,231,254,120	28,598,084	2,009,662,919	28,312,429,723
2079	28,312,429,723	2,489,856,086	6,541,063,927	27,959,552	1,839,099,222	26,072,361,552
2080	26,072,361,552	2,534,032,994	5,876,961,162	27,326,776	1,707,106,386	24,409,212,994
2081	24,409,212,994	2,578,989,446	5,243,948,473	26,700,015	1,614,436,843	23,331,990,794
2082	23,331,990,794	2,624,739,146	4,644,687,817	26,079,516	1,561,628,369	22,847,590,976
2083	22,847,590,976	2,671,296,037	4,089,118,416	25,465,516	1,548,816,292	22,953,119,373
2084	22,953,119,373	2,718,674,308	3,579,019,580	24,858,237	1,575,736,233	23,643,652,096
2085	23,643,652,096	2,766,888,394	3,111,544,477	24,257,895	1,642,143,658	24,916,881,777
2086	24,916,881,777	2,815,952,987	2,686,896,865	23,664,689	1,747,870,425	26,770,143,635
2087	26,770,143,635	2,865,883,033	2,304,081,955	23,078,810	1,892,765,334	29,201,631,238
2088	29,201,631,238	2,916,693,742	1,961,757,240	22,500,436	2,076,749,449	32,210,816,753
2089	32,210,816,753	2,968,400,590	1,657,946,560	21,929,734	2,299,855,523	35,799,196,571
2090	35,799,196,571	3,021,019,323	1,390,302,067	21,366,861	2,562,271,024	39,970,817,990
2091	39,970,817,990	3,074,565,966	1,156,195,652	20,811,961	2,864,371,802	44,732,748,145
2092	44,732,748,145	3,129,056,821	952,985,116	20,265,167	3,206,745,599	50,095,300,283

Exhibit 7 – Development of Blended Discount Rate *continued*

Fiscal Year	Projected Beginning Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expense	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2093	$50,095,300,283	$3,184,508,480	$778,041,622	$19,726,603	$3,590,206,929	$56,072,247,466
2094	56,072,247,466	3,240,937,821	628,702,301	19,196,380	4,015,813,693	62,681,100,299
2095	62,681,100,299	3,298,362,022	502,401,109	18,674,598	4,484,882,042	69,943,268,656
2096	69,943,268,656	3,356,798,560	396,659,606	18,161,350	4,998,998,022	77,884,244,283
2097	77,884,244,283	3,416,265,219	309,137,007	17,656,715	5,560,028,602	86,533,744,382
2098	86,533,744,382	3,476,780,093	237,650,823	17,160,763	6,170,131,005	95,925,843,895
2099	95,925,843,895	3,538,361,596	180,074,919	16,673,555	6,831,765,532	106,099,222,549
2100	106,099,222,549	3,601,028,461	134,422,746	16,195,141	7,547,709,949	117,097,343,073
2101	117,097,343,073	3,664,799,753	98,789,297	15,725,562	8,321,073,986	128,968,701,953
2102	128,968,701,953	3,729,694,868	71,495,153	15,264,850	9,155,311,857	141,766,948,675
2103	141,766,948,675	3,795,733,543	50,971,277	14,813,027	10,054,234,631	155,551,132,546
2104	155,551,132,546	3,862,935,861	35,833,640	14,370,107	11,022,024,902	170,385,889,562
2105	170,385,889,562	3,931,322,257	24,898,130	13,936,095	12,063,249,350	186,341,626,944
2106	186,341,626,944	4,000,913,524	17,134,575	13,510,989	13,182,873,265	203,494,768,169
2107	203,494,768,169	4,071,730,818	11,766,480	13,094,776	14,386,274,207	221,927,911,938
2108	221,927,911,938	4,143,795,667	8,125,263	12,687,438	15,679,258,239	241,730,153,143
2109	241,730,153,143	4,217,129,975	5,686,375	12,288,948	17,068,081,133	262,997,388,928
2110	262,997,388,928	4,291,756,032	4,064,580	11,899,272	18,559,469,951	285,832,651,059
2111	285,832,651,059	4,367,696,515	2,934,858	11,518,369	20,160,649,089	310,346,543,436
2112	310,346,543,436	4,444,974,501	2,196,411	11,146,192	21,879,365,157	336,657,540,490
2113	336,657,540,490	4,523,613,469	1,694,748	10,782,686	23,723,917,596	364,892,594,121
2114	364,892,594,121	4,603,637,312	1,331,652	10,427,791	25,703,197,314	395,187,669,305
2115	395,187,669,305	4,685,070,339	1,052,968	10,081,441	27,826,724,609	427,688,329,845
2116	427,688,329,845	4,767,937,286	695,213	9,743,563	30,104,695,537	462,550,523,892
2117	462,550,523,892	4,852,263,322	462,022	9,414,080	32,548,020,225	499,940,931,336
2118	499,940,931,336	4,938,074,056	316,030	9,092,911	35,168,368,473	540,037,964,925
2119	540,037,964,925	5,025,395,546	232,062	8,779,966	37,978,230,968	583,032,579,411
2120	583,032,579,411	5,114,254,307	219,706	8,475,156	40,990,975,139	629,129,113,994
2121	629,129,113,994	5,204,677,318	1,555	8,178,384	44,220,915,388	678,546,526,761
2122	678,546,526,761	5,296,692,029	656	7,889,549	47,683,364,937	731,518,693,522
2123	731,518,693,522	5,390,326,373	336	7,608,548	51,394,703,659	788,296,114,671
2124	788,296,114,671	5,485,608,771	132	7,335,274	55,372,467,595	849,146,855,631
2125	849,146,855,631	5,582,568,141	19	7,069,615	59,635,422,342	914,357,776,480
2126	914,357,776,480	5,681,233,908	9	6,811,458	64,203,649,139	984,235,848,060

Exhibit 7 – Development of Blended Discount Rate *continued*

Fiscal Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	"Funded" Portion of Benefit	"Unfunded" Portion of Benefit	Present Value of "Funded" Benefit Payments at 7.00%	Present Value of "Unfunded" Benefit Payments at 3.54%[1]	Present Value of Benefit Payments at 7.00%
2023	$62,833,626,339	$8,057,192,157	$8,057,192,157	$0	$7,789,181,657	$0	$7,789,181,657
2024	66,076,215,212	8,341,758,584	8,341,758,584	0	7,536,712,529	0	7,536,712,529
2025	69,485,158,720	8,633,833,805	8,633,833,805	0	7,290,280,531	0	7,290,280,531
2026	73,042,279,774	8,928,309,346	8,928,309,346	0	7,045,730,174	0	7,045,730,174
2027	76,749,594,924	9,173,699,836	9,173,699,836	0	6,765,774,616	0	6,765,774,616
2028	80,609,790,205	9,491,542,916	9,491,542,916	0	6,542,233,469	0	6,542,233,469
2029	84,631,921,454	9,822,050,686	9,822,050,686	0	6,327,142,504	0	6,327,142,504
2030	88,728,550,634	10,159,320,884	10,159,320,884	0	6,116,265,722	0	6,116,265,722
2031	92,881,746,669	10,503,237,674	10,503,237,674	0	5,909,640,778	0	5,909,640,778
2032	97,088,705,486	10,855,964,415	10,855,964,415	0	5,708,506,804	0	5,708,506,804
2033	101,359,185,499	11,219,188,259	11,219,188,259	0	5,513,555,745	0	5,513,555,745
2034	105,698,841,818	11,589,637,384	11,589,637,384	0	5,322,999,246	0	5,322,999,246
2035	110,725,172,737	11,966,285,542	11,966,285,542	0	5,136,439,070	0	5,136,439,070
2036	115,840,175,785	12,340,449,190	12,340,449,190	0	4,950,510,312	0	4,950,510,312
2037	121,050,407,779	12,709,323,928	12,709,323,928	0	4,764,942,590	0	4,764,942,590
2038	126,367,370,562	13,080,634,016	13,080,634,016	0	4,583,320,638	0	4,583,320,638
2039	131,800,112,477	13,448,644,451	13,448,644,451	0	4,403,988,541	0	4,403,988,541
2040	137,358,927,403	13,812,083,445	13,812,083,445	0	4,227,105,470	0	4,227,105,470
2041	143,054,345,605	14,157,619,908	14,157,619,908	0	4,049,397,043	0	4,049,397,043
2042	148,922,100,530	14,478,230,696	14,478,230,696	0	3,870,185,910	0	3,870,185,910
2043	155,007,211,822	14,765,229,411	14,765,229,411	0	3,688,695,081	0	3,688,695,081
2044	161,373,058,460	15,002,654,841	15,002,654,841	0	3,502,812,554	0	3,502,812,554
2045	168,108,110,192	15,194,237,520	15,194,237,520	0	3,315,460,920	0	3,315,460,920
2046	175,305,912,334	15,326,214,567	15,326,214,567	0	3,125,475,694	0	3,125,475,694
2047	173,627,140,414	15,405,253,644	15,405,253,644	0	2,936,069,286	0	2,936,069,286
2048	171,682,027,189	15,448,040,638	15,448,040,638	0	2,751,611,224	0	2,751,611,224
2049	169,506,844,964	15,462,933,925	15,462,933,925	0	2,574,078,525	0	2,574,078,525
2050	167,127,635,187	15,465,456,740	15,465,456,740	0	2,406,073,357	0	2,406,073,357
2051	164,682,532,644	15,485,273,808	15,485,273,808	0	2,251,548,077	0	2,251,548,077
2052	162,044,545,418	15,526,092,134	15,526,092,134	0	2,109,797,227	0	2,109,797,227
2053	159,189,253,392	15,592,451,460	15,592,451,460	0	1,980,200,571	0	1,980,200,571
2054	156,073,196,148	15,661,044,715	15,661,044,715	0	1,858,796,014	0	1,858,796,014
2055	152,673,270,481	15,726,909,344	15,726,909,344	0	1,744,498,533	0	1,744,498,533
2056	148,971,245,565	15,791,162,989	15,791,162,989	0	1,637,033,488	0	1,637,033,488
2057	144,947,375,969	15,841,738,887	15,841,738,887	0	1,534,837,921	0	1,534,837,921

[1] *Bond Buyer's 20-Bond GO index.*

Exhibit 7 – Development of Blended Discount Rate *continued*

Fiscal Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	"Funded" Portion of Benefit	"Unfunded" Portion of Benefit	Present Value of "Funded" Benefit Payments at 7.00%	Present Value of "Unfunded" Benefit Payments at 3.54%[1]	Present Value of Benefit Payments at 7.00%
2058	$140,593,325,827	$15,911,609,219	$15,911,609,219	$0	$1,440,754,539	$0	$1,440,754,539
2059	135,865,861,555	15,939,257,341	15,939,257,341	0	1,348,839,256	0	1,348,839,256
2060	130,783,188,558	15,907,708,482	15,907,708,482	0	1,258,102,312	0	1,258,102,312
2061	125,384,061,079	15,817,158,009	15,817,158,009	0	1,169,103,639	0	1,169,103,639
2062	119,710,198,528	15,657,233,089	15,657,233,089	0	1,081,572,903	0	1,081,572,903
2063	113,817,462,398	15,492,397,235	15,492,397,235	0	1,000,174,155	0	1,000,174,155
2064	107,699,714,610	15,258,320,183	15,258,320,183	0	920,619,034	0	920,619,034
2065	101,417,589,077	14,948,980,366	14,948,980,366	0	842,948,457	0	842,948,457
2066	95,041,111,240	14,581,573,161	14,581,573,161	0	768,440,157	0	768,440,157
2067	88,626,726,671	14,152,741,562	14,152,741,562	0	697,047,653	0	697,047,653
2068	82,238,321,457	13,682,835,882	13,682,835,882	0	629,816,789	0	629,816,789
2069	75,923,114,689	13,169,384,825	13,169,384,825	0	566,525,974	0	566,525,974
2070	69,734,067,425	12,606,053,802	12,606,053,802	0	506,815,299	0	506,815,299
2071	63,733,070,780	12,007,953,743	12,007,953,743	0	451,186,180	0	451,186,180
2072	57,970,453,282	11,374,860,053	11,374,860,053	0	399,437,713	0	399,437,713
2073	52,500,125,775	10,715,221,651	10,715,221,651	0	351,657,906	0	351,657,906
2074	47,370,740,302	10,035,945,277	10,035,945,277	0	307,817,803	0	307,817,803
2075	42,627,200,881	9,343,034,711	9,343,034,711	0	267,817,921	0	267,817,921
2076	38,311,351,213	8,643,227,491	8,643,227,491	0	231,549,495	0	231,549,495
2077	34,461,002,358	7,936,959,439	7,936,959,439	0	198,718,489	0	198,718,489
2078	31,116,173,752	7,231,254,120	7,231,254,120	0	169,205,300	0	169,205,300
2079	28,312,429,723	6,541,063,927	6,541,063,927	0	143,042,455	0	143,042,455
2080	26,072,361,552	5,876,961,162	5,876,961,162	0	120,111,780	0	120,111,780
2081	24,409,212,994	5,243,948,473	5,243,948,473	0	100,163,022	0	100,163,022
2082	23,331,990,794	4,644,687,817	4,644,687,817	0	82,912,833	0	82,912,833
2083	22,847,590,976	4,089,118,416	4,089,118,416	0	68,219,909	0	68,219,909
2084	22,953,119,373	3,579,019,580	3,579,019,580	0	55,803,540	0	55,803,540
2085	23,643,652,096	3,111,544,477	3,111,544,477	0	45,340,876	0	45,340,876
2086	24,916,881,777	2,686,896,865	2,686,896,865	0	36,591,576	0	36,591,576
2087	26,770,143,635	2,304,081,955	2,304,081,955	0	29,325,421	0	29,325,421
2088	29,201,631,238	1,961,757,240	1,961,757,240	0	23,335,001	0	23,335,001
2089	32,210,816,753	1,657,946,560	1,657,946,560	0	18,431,018	0	18,431,018
2090	35,799,196,571	1,390,302,067	1,390,302,067	0	14,444,555	0	14,444,555
2091	39,970,817,990	1,156,195,652	1,156,195,652	0	11,226,453	0	11,226,453
2092	44,732,748,145	952,985,116	952,985,116	0	8,647,958	0	8,647,958

[1] *Bond Buyer's 20-Bond GO index.*

Exhibit 7 – Development of Blended Discount Rate *continued*

Fiscal Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	"Funded" Portion of Benefit	"Unfunded" Portion of Benefit	Present Value of "Funded" Benefit Payments at 7.00%	Present Value of "Unfunded" Benefit Payments at 3.54%[1]	Present Value of Benefit Payments at 7.00%
2093	$50,095,300,283	$778,041,622	$778,041,622	$0	$6,598,519	$0	$6,598,519
2094	56,072,247,466	628,702,301	628,702,301	0	4,983,161	0	4,983,161
2095	62,681,100,299	502,401,109	502,401,109	0	3,721,574	0	3,721,574
2096	69,943,268,656	396,659,606	396,659,606	0	2,746,062	0	2,746,062
2097	77,884,244,283	309,137,007	309,137,007	0	2,000,136	0	2,000,136
2098	86,533,744,382	237,650,823	237,650,823	0	1,437,024	0	1,437,024
2099	95,925,843,895	180,074,919	180,074,919	0	1,017,640	0	1,017,640
2100	106,099,222,549	134,422,746	134,422,746	0	709,954	0	709,954
2101	117,097,343,073	98,789,297	98,789,297	0	487,622	0	487,622
2102	128,968,701,953	71,495,153	71,495,153	0	329,812	0	329,812
2103	141,766,948,675	50,971,277	50,971,277	0	219,751	0	219,751
2104	155,551,132,546	35,833,640	35,833,640	0	144,382	0	144,382
2105	170,385,889,562	24,898,130	24,898,130	0	93,757	0	93,757
2106	186,341,626,944	17,134,575	17,134,575	0	60,301	0	60,301
2107	203,494,768,169	11,766,480	11,766,480	0	38,701	0	38,701
2108	221,927,911,938	8,125,263	8,125,263	0	24,976	0	24,976
2109	241,730,153,143	5,686,375	5,686,375	0	16,336	0	16,336
2110	262,997,388,928	4,064,580	4,064,580	0	10,913	0	10,913
2111	285,832,651,059	2,934,858	2,934,858	0	7,364	0	7,364
2112	310,346,543,436	2,196,411	2,196,411	0	5,151	0	5,151
2113	336,657,540,490	1,694,748	1,694,748	0	3,714	0	3,714
2114	364,892,594,121	1,331,652	1,331,652	0	2,728	0	2,728
2115	395,187,669,305	1,052,968	1,052,968	0	2,016	0	2,016
2116	427,688,329,845	695,213	695,213	0	1,244	0	1,244
2117	462,550,523,892	462,022	462,022	0	772	0	772
2118	499,940,931,336	316,030	316,030	0	494	0	494
2119	540,037,964,925	232,062	232,062	0	339	0	339
2120	583,032,579,411	219,706	219,706	0	300	0	300
2121	629,129,113,994	1,555	1,555	0	2	0	2
2122	678,546,526,761	656	656	0	1	0	1
2123	731,518,693,522	336	336	0	0	0	0
2124	788,296,114,671	132	132	0	0	0	0
2125	849,146,855,631	19	19	0	0	0	0
2126	914,357,776,480	9	9	0	0	0	0
Total					**$166,661,313,939**	**$0**	**$166,661,313,939**

[1] *Bond Buyer's 20-Bond GO index.*

Exhibit 8 – Assumed Rate of Investment Return

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 Classes	Expected Arithmetic Returns Over 20 Years[1]	Target Allocation[2]
US Equities Large Cap	5.73%	16.3%
US Equities Small/Mid Cap	6.78	1.9
International Equities Developed	6.56	14.1
Emerging Markets Equities	8.55	4.7
US Bonds Core	1.15	6.9
International Debt Developed	0.30	1.2
International Debt Emerging	3.76	3.7
Cash Equivalents	(0.32)	1.2
TIPS	0.33	0.5
Real Estate	5.42	16.0
Hedge Funds (Absolute Return)	3.48	4.0
Infrastructure	5.86	2.0
Private Equity	10.04	15.0
Private Debt	5.29	12.5
Total		100.0%

[1] *Based on the 2021 Horizon Survey of Capital Market Assumptions.*
[2] *Breakout determined with assistance from TRS staff.*

Appendix

Definitions of 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 Retirees and Beneficiaries:	Actuarial Present Value of lifetime benefits to existing retirees and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants 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 that 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 which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., TRS's assets earn more than projected, salary increases are less than assumed, participants 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 in actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding of 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.
Board-Adopted Actuarial Funding Policy:	The term given to the Board's funding policy. The contribution determined under the Board-Adopted Actuarial Funding Policy is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability. The amortization of the unfunded accrued liability is a closed 20-year period effective June 30, 2015, and will decline by one year in each subsequent valuation. Sources of unfunded actuarial accrued liability that emerge in subsequent valuations are amortized over 20-year closed periods. Contributions toward the unfunded actuarial accrued liability increase by 2% each year, the estimate of increase in future State revenue growth. The actuarial cost method is the entry age method. The minimum contribution is the normal cost.

Definitions of Terms *continued*

Actuarial Present Value (APV):	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: • 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, termination of employment, etc.) on which the payment is conditioned, and • Discounted according to an assumed rate (or rates) of return to reflect the time value of money.
Actuarial Present Value of Future Plan Benefits:	The Actuarial Present Value of future plan benefits 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 participant, retired participants, beneficiaries receiving benefits, and inactive participants 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 be 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:	The value of the System'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 ratio and the Actuarially Determined Contribution.
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 Board's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Definitions of Terms *continued*

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 participants 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 on which the cost of the System is calculated including: (a) Investment return — the rate of investment yield that the System will earn over the long-term future; (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates; (c) Retirement rates — the rate or probability of retirement at a given age; (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; (e) Salary increase rates — the rates of salary increase due to inflation and productivity growth.
Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Open Amortization Period.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.
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 employers. This is equal to the Normal Cost less expected member contributions.

Definitions of Terms *continued*

Experience Study:	A periodic review and analysis of the actual experience of the System that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
Funded Ratio:	The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the fair value of assets (FVA), rather than the AVA, as another measure of the Plan's health.
GASB 25 and GASB 27:	Governmental Accounting Standards Board Statements No. 25 and No. 27. 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. 27 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 25 sets the rules for the systems themselves.
GASB 67 and GASB 68:	Governmental Accounting Standards Board Statements No. 67 and No. 68 are the successor statements to GASB Statements No. 25 and No. 27.
Investment Return:	The rate of earnings of the System from its investments, including interest, dividends, and capital gain and loss adjustments, computed as a percentage of the average value of the System. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Net Pension Liability (NPL):	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.
Normal Cost:	The portion of the Actuarial Present Value of plan benefits and expenses, if applicable, allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of 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 which 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.
Plan Fiduciary Net Position:	Fair value of assets.

Definitions of Terms *continued*

Total Pension Liability (TPL):	The actuarially 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.

History of Legislative Changes

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

The actuarial cost method utilized is the projected unit credit cost method, which became effective with the June 30, 1989 valuation. Administrative expenses have been a component of the normal cost rate since the June 30, 1994 valuation. The financing objective under Article 16 of the Illinois Pension Code is to meet the cost of maintaining and administering the system on a 90% funded basis by June 30, 2045. Following is a brief summary of the changes in funding requirements.

- Public Act 88-0593, enacted in 1994, established a fifty-year funding plan for fiscal years 1996 through 2045. It required a fifteen-year ramp period of gradually increasing State contributions followed by a 35-year period of State contributions at a level percent of pay.
- Public Act 90-0448, enacted in 1997, required the System's assets to be valued at fair value instead of book value.
- Public Act 90-0582, enacted in 1998, changed the defined benefit formula and added minimum state contribution rates in fiscal year 1999 that remained in effect through fiscal year 2004.
- Public Act 93-0002, enacted in 2003, provided pension obligation bond proceeds and placed upper limits on State contributions beginning with the State contribution due for fiscal year 2005.
- Public Act 94-0004, enacted in 2005, removed the money purchase formula for new hires, added new employer contributions for excess salary increases and sick leave, specified the level of state contributions for fiscal years 2006 and 2007, and required a return to the statutory funding plan in fiscal year 2008.
- Public Act 94-1057, enacted in 2006, contained exemptions from some of the new employer contribution requirements enacted in 2005.
- Public Act 96-0043, enacted in 2009, required the use of a smoothed actuarial value of assets beginning with the June 30, 2009 valuation.
- Public Act 96-0889, enacted in 2010, established Tier 2 provisions.
- Public Act 96-1511, enacted in 2011, required the state retirement systems to recertify their fiscal year 2011 state funding requirements and assume the Tier 2 benefits of Public Act 96-0889 were in effect on June 30, 2009.
- Public Act 97-0694, enacted in 2012, required the auditor general to hire an actuary to serve as the State Actuary.
- Public Act 98-0042, enacted in 2013, provided that the Early Retirement Option (ERO) terminate on June 30, 2016. Due to the expiration of the program, active members become eligible for refunds of their early retirement contributions during fiscal year 2017.

History of Legislative Changes *continued*

- Public Act 98-0674, enacted in 2014 as part of the budget implementation bill, requires the state and federal contribution rates to TRS to be the same.
- Public Act 99-0232, enacted in 2015, requires the actuaries of the state-funded retirement systems to conduct experience analyses every three years instead of every five years.
- Public Act 100-0023, enacted in 2017 as part of the budget implementation bill, creates a Tier 2I hybrid benefit plan.
- Public Act 100-0340, enacted in 2017, requires employer contributions from Federal funds to be based on the total employer normal cost rate instead of the State contribution rate, beginning July 1, 2017.
- Public Act 100-0587, enacted in 2018, creates two new buyout provisions for TRS members, an inactive vested buyout and an automatic annual increase buyout, which will exist until June 30, 2021.
- Public Act 101-0010, enacted in 2019, extends the Automatic Annual Increase and Inactive Vested buyouts through fiscal year ending June 30, 2024, in addition to repealing the 3% “FAS Cap” threshold (reverting back to 6% threshold).
- Public Act 102-0718, enacted in 2022, extends the Automatic Annual Increase and Inactive Vested buyouts through fiscal year ending June 30, 2026.

A more complete history of legislative changes can be found at the following link:
https://www.trsil.org/sites/default/files/documents/history.pdf

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