Teachers’ Retirement System of the State of Illinois

Actuarial Valuation and Review of Pension Benefits as of June 30, 2021

January 10, 2022

Segal

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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 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, 2021, 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 on August 12, 2021, 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. 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, 2021, the actuarial experience of TRS was favorable, generating a net actuarial gain of $1.67 billion. This gain is the net result of a $1.44 billion gain due to favorable investment return experience and a $0.23 billion (0.2% of the actuarial accrued liability) net gain due to demographic experience for fiscal 2021.

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: 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, 2021, there were 991 employers, comprised of 851 local school districts, 130 special districts, and 10 state agencies. The membership totaled over 434,000 members as of June 30, 2020. Of the 434,000 members, 127,000 are retirees and survivors to whom TRS paid nearly $7.4 billion during the fiscal year ended June 30, 2021. As of June 30, 2021, the assets of TRS amounted to $64.2 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 (40 ILCS 5/16).

Purpose of the Annual Actuarial Valuation

An actuarial valuation is performed annually as of June 30. 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.

Significant Results of the Actuarial Valuation

1. The contribution made during fiscal 2021 by the State, as required by the Illinois Pension Code, was insufficient to reduce the unfunded actuarial accrued liability.
2. The following assumption changes were approved by the Board on August 12, 2021, and are reflected in this valuation:
   a. The inflation assumption was lowered from 2.50% to 2.25% in light of all sources of inflation expectations.
   b. The rates of individual salary increase were decreased based on plan experience.
   c. The new entrant pay increase assumption was changed to equal the inflation assumption.
   d. The average COLA and rate of increase in the pensionable salary cap applicable to Tier 2 members was decreased based on the change in the inflation assumption.
   e. The percent of retirees assumed to receive severance pay and the average severance payment amount were decreased.
   f. The healthy, disabled, and beneficiary post-retirement and pre-retirement mortality assumption was updated to use the recently published PubT-2010 Mortality Tables with adjusted rate multipliers at various ages for males and females to better reflect plan experience.
   g. The mortality improvement scale was updated from Scale MP-2017 to Scale MP-2020.
   h. The retirement rates for active Tier 1 members were adjusted based on plan experience. The previous service groups of 30 to 31 years of service and 32 to 33 years of service were updated to 30 to 33 years of service.
   i. The termination rates were decreased based on plan experience.
   j. The disability rates were decreased based on plan experience.
   k. The sick leave service credit rates were adjusted based on plan experience.
   l. The optional service purchase rates were adjusted based on plan experience.
   m. The future service accrual rates were increased based on plan experience.
   n. The Automatic Annual Increase buyout participation rate was increased for eligible retiring Tier 1 members based on plan experience.
   o. The Inactive Vested buyout participation rate was decreased for eligible inactive vested members based on plan experience.
   p. The period which buyouts are assumed to be paid was extended from fiscal year 2022 to fiscal year 2024.

Significant Results of the Actuarial Valuation *continued*

3. This actuarial valuation assumes that buyout provisions, introduced with Public Act 100-0587 (and amended by Public Act 101-0010), are effective through fiscal year 2024, 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, 2024. Based on current assumptions, the total amount of buyouts expected to be paid through June 30, 2024, is approximately $825 million, reflecting $515 million that has already been claimed as of June 30, 2021.
4. The total projected employer contribution for 2023, including State, Federal, and School Districts, is $6.21 billion. Of this amount, $1.23 billion, or about 20%, is for the employer portion of the normal cost and $4.98 billion, or about 80%, is for unfunded actuarial accrued liability. The required State contribution for 2023 is $5.89 billion, an increase from $5.69 billion for 2022.
5. The funded ratio based on the actuarial value of assets over the actuarial accrued liability as of June 30, 2021, was 42.5%, compared to 40.5% as of June 30, 2020. This ratio is a measure of funded status, and its history is a measure of funding progress.
6. For the year ended June 30, 2021, Segal has estimated that the asset return on a fair value basis was 25.21%. After gradual recognition of previous investment gains and losses under the actuarial smoothing method, the actuarial rate of return was 9.65%. This represents an experience gain when compared to the assumed rate of 7.00%. As of June 30, 2021, the actuarial value of assets ($59.0 billion) represented 91.9% of the fair value ($64.2 billion).
7. The investment gain on the actuarial value of assets for the year ended June 30, 2021, was $1.44 billion. The combined demographic and liability experience resulted in a $1.67 billion gain, largely due to favorable investment experience.
8. As page 31 of this report indicates, the total investment gain not yet recognized as of June 30, 2021, is $5.2 billion. These unrecognized gains 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 losses 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 gains on the actuarial value of assets in the next few years.
9. As mentioned above, the current method used to determine the actuarial value of assets yields an amount that is 91.9% of the fair value of assets as of June 30, 2021. 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.
10. The System's cash flow (contributions minus benefit payments, refunds, and expenses) as a percentage of the fair value of assets was -1.8% as of June 30, 2021, compared to -2.3% from the prior year. Negative cash flow drains the assets of the System without investment income and may cause suboptimal investment strategies.

Significant Results of the Actuarial Valuation *continued*

11. This actuarial valuation report as of June 30, 2021, is based on financial data as of that date. Changes in the value of assets subsequent to that date are not reflected.
12. 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 decreased from $86.2 billion as of June 30, 2020, to $78.0 billion as of June 30, 2020. This is largely due to favorable investment experience on a fair value of assets basis.

Summary of Key Valuation Results

	June 30, 2021		June 30, 2020
Present Value of Future Benefits:	**Before Assumption Changes**	**After Assumption Changes**	
1. Active members	$68,106,376,028	$68,846,793,724	$66,164,025,238
2. Retired members and beneficiaries receiving benefits	90,093,990,302	88,788,970,972	88,185,983,215
3. Inactive members with deferred benefits	3,547,928,629	3,917,568,923	3,493,651,653
4. Total: (1) + (2) + (3)	$161,748,294,959	$161,553,333,619	$157,843,660,106
Actuarial Accrued Liability:			
1. Active members	$45,789,065,871	$46,207,735,022	$43,918,912,145
2. Retired members and beneficiaries receiving benefits	90,093,990,302	88,788,970,972	88,185,983,215
3. Inactive members with deferred benefits	3,547,928,629	3,917,568,923	3,493,651,653
4. Total: (1) + (2) + (3)	$139,430,984,802	$138,914,274,917	$135,598,547,013
Funded Status:			
1. Actuarial accrued liability	$139,430,984,802	$138,914,274,917	$135,598,547,013
2. Actuarial value of assets (AVA)	58,979,922,966	58,979,922,966	54,890,975,828
3. Unfunded actuarial accrued liability (AVA basis): (1) – (2)	$80,451,061,836	$79,934,351,951	$80,707,571,185
4. Funded ratio (AVA basis): (2) / (1)	42.3%	42.5%	40.5%
5. Fair value of assets (FVA)	$64,212,505,020	$64,212,505,020	$52,316,477,771
6. Unfunded actuarial accrued liability (FVA basis): (1) – (5)	75,218,479,782	74,701,769,897	83,282,069,242
7. Funded ratio (FVA basis): (5) / (1)	46.1%	46.2%	38.6%
Summary of State Contributions for Fiscal Year:		**2023**	**2022**
1. Based on Statutory Funding Plan		$5,894,032,209	$5,694,106,973
2. Based on Board-Adopted Actuarial Funding Policy		9,101,633,224	8,850,455,308
3. Difference between Board-Adopted Actuarial Funding Policy and Statutory Funding: (2) – (1)		$3,207,601,015	$3,156,348,335
4. Normal cost rate based on Statutory Funding Plan			
(a) Total (including administrative expenses)		19.49%	19.31%
(b) Member rate		9.00%	9.00%
(c) Employer: (4a) – (4b)		10.49%	10.31%

Summary of Key Valuation Results *continued*

	June 30, 2021	June 30, 2020
Summary of State Contributions for Fiscal Year (continued):	**2023**	**2022**
5. Total normal cost based on Statutory Funding Plan		
(a) Total	$2,236,707,678	$2,174,576,470
(b) Administrative expenses	39,887,064	40,892,235
(c) Expected member contributions	1,051,430,802	1,032,339,073
(d) Total employer normal cost: (5a) + (5b) – (5c)	$1,225,163,940	$1,183,129,632
GASB Information:		
1. Long-term expected rate of return	7.00%	7.00%
2. Municipal bond index[1]	2.16%	2.21%
3. Single equivalent discount rate	7.00%	7.00%
4. Total pension liability	$142,223,798,748	$138,531,733,887
5. Plan fiduciary net position	64,212,505,020	52,316,477,771
6. Net pension liability: (4) – (5)	$78,011,293,728	$86,215,256,116
7. Plan fiduciary net position as a percentage of total pension liability: (5) / (4)	45.1%	37.8%
Demographic data used for valuation as of June 30[2]:	**2020**	**2019**
1. Number of active members		
(a) Full-time and regular part-time	137,394	135,752
(b) Substitute, part-time, and hourly paid	25,555	27,323
(c) Total	162,949	163,075
2. Number of inactive members		
(a) Eligible for deferred annuities	18,632	19,363
(b) Eligible for refunds or single sum benefits only	125,942	121,908
3. Number of annuitants	126,594	124,791
4. Total membership: (1c) + (2a) + (2b) + (3)	434,117	429,137
5. Annual salaries		
(a) Full-time and regular part-time	$10,450,326,107	$10,120,309,474
(b) Substitute, part-time, and hourly paid	148,633,764	163,335,209
(c) Total	$10,598,959,871	$10,283,644,683
6. Annual Annuities	$7,205,635,969	$6,927,481,534

[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 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

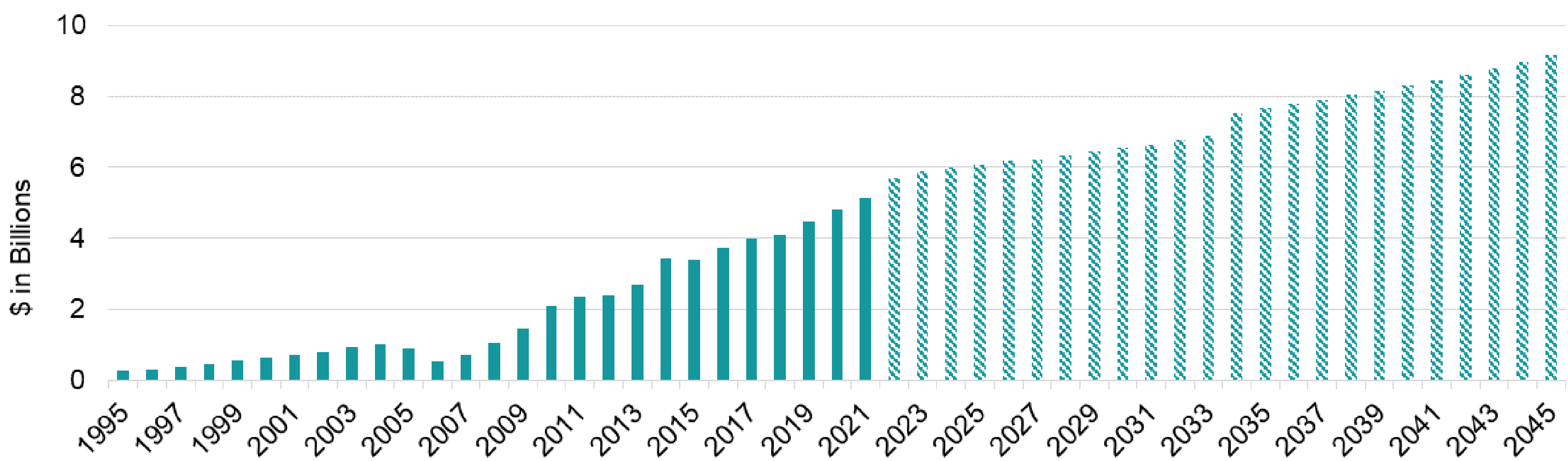
Significant Issues Facing TRS *continued*

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

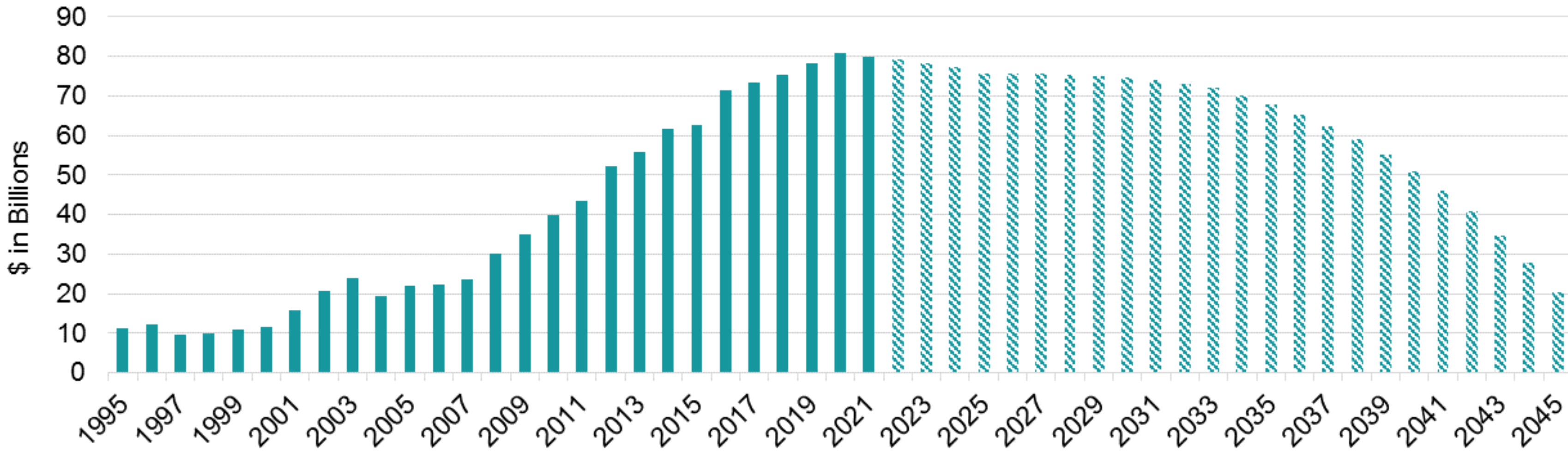


Significant Issues Facing TRS *continued*

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



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

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, 2021, 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.

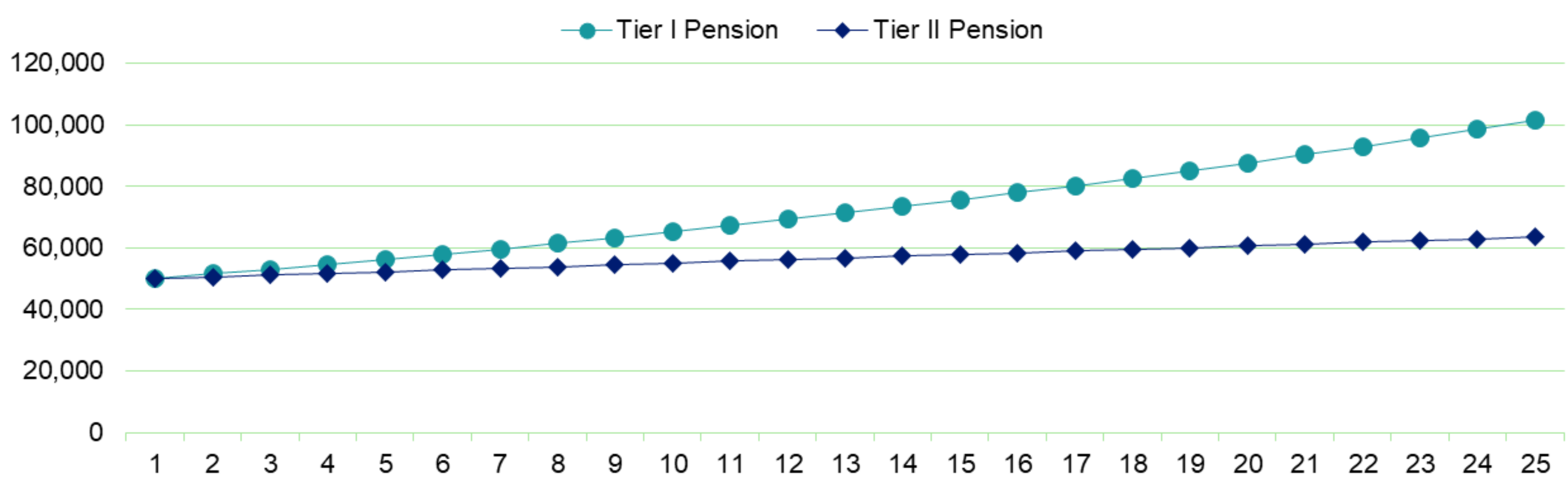
Significant Issues Facing TRS *continued*

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 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 2023 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 2023		
			Tier 1	Tier 2	Total
1.	Total normal cost rate, including administrative expenses		23.58%	7.66%	19.49%
2.	Less: member contribution rate		(9.00%)	(9.00%)	(9.00%)
3.	Employer normal cost rate		14.58%	(1.34%)	10.49%
4.	Allocation of member contribution rate				
	a.	Normal cost rate	9.00%	7.66%	9.00%
	b.	Unfunded actuarial accrued liability	0.00%	1.34%	0.00%
	c.	Total	9.00%	9.00%	9.00%

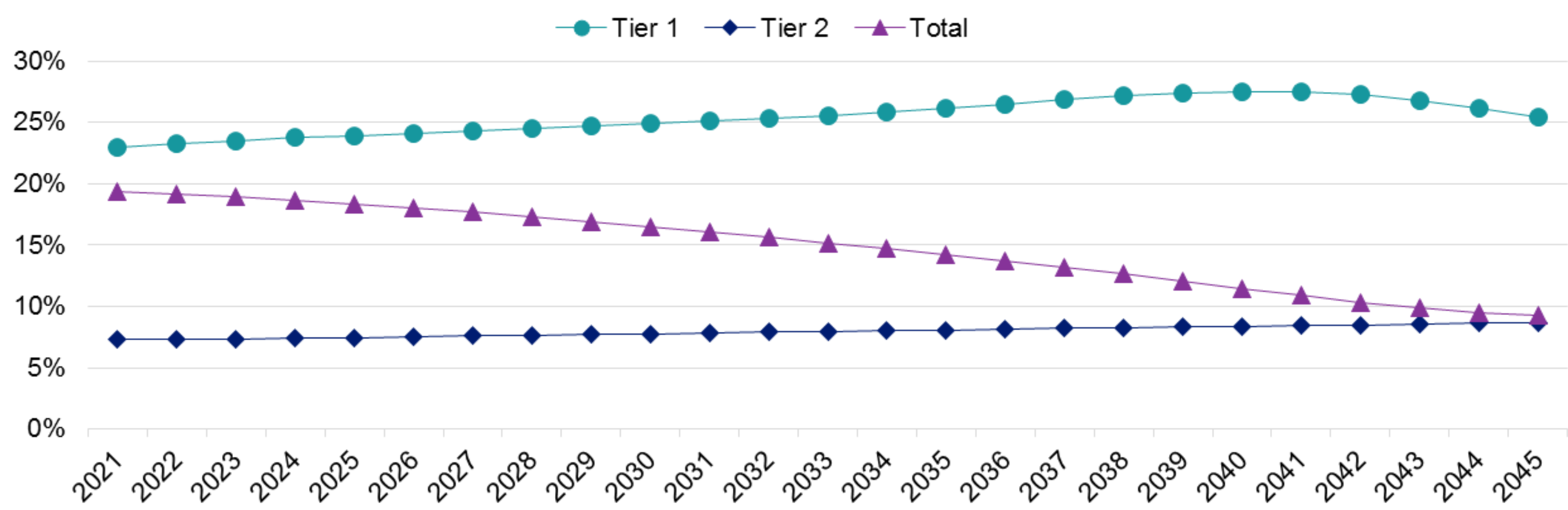
Significant Issues Facing TRS *continued*

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



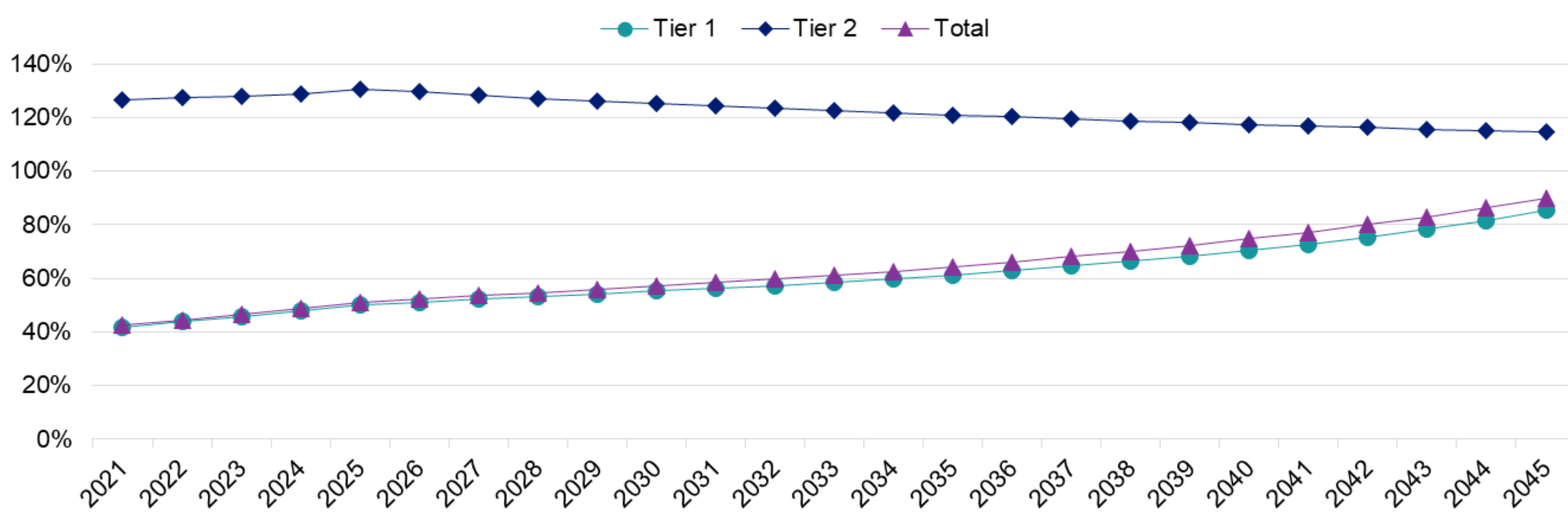
Significant Issues Facing TRS *continued*

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 127% as of June 30, 2021, ultimately reducing to a funded ratio of 115% as of June 30, 2045. In contrast, the Tier 1 funded ratio is 42% as of June 30, 2021, increasing to 86% as of June 30, 2045. For the total System, the funded ratio is 43% as of June 30, 2021, 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



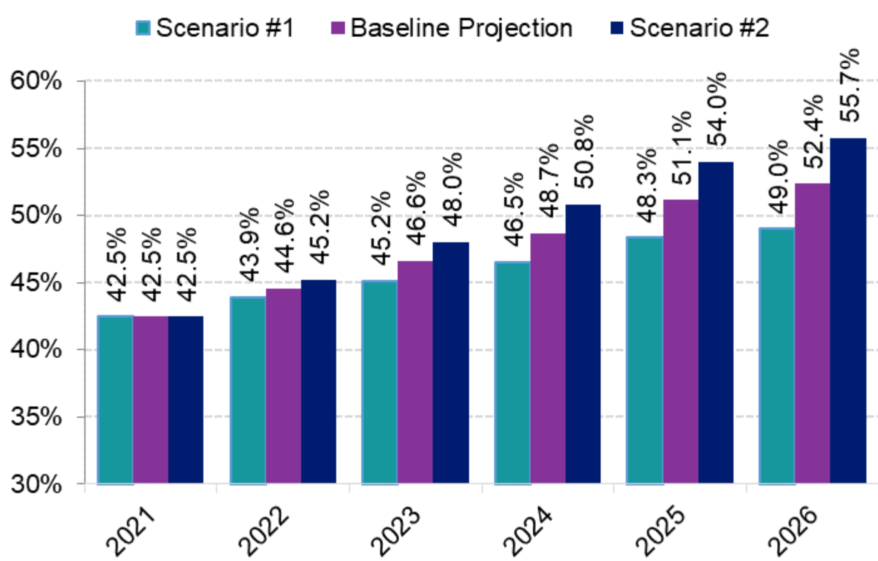
Sensitivity Projections

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, 2022:

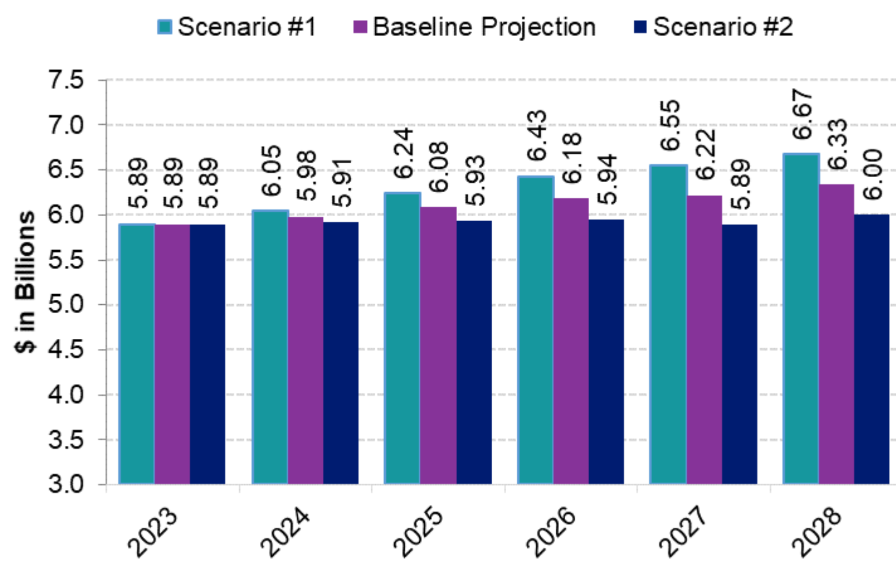
- Scenario 1 assumes a 0% investment return for the year ending June 30, 2022
- Scenario 2 assumes a 14% investment return for the year ending June 30, 2022

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

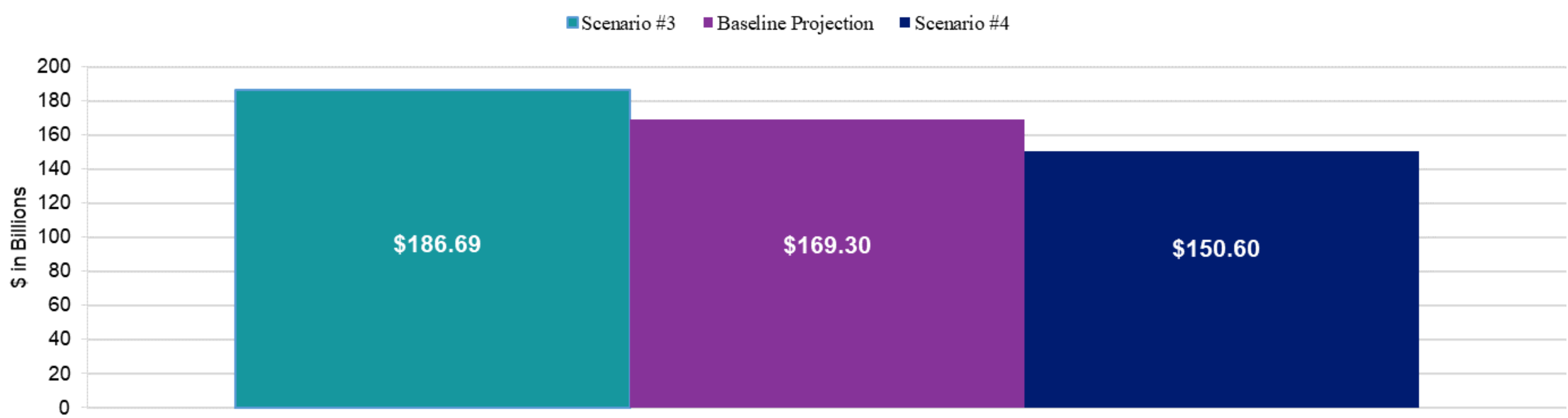


Sensitivity Projections *continued*

The following chart shows the total State contributions for the fiscal years June 30, 2023, 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, 2022, through June 30, 2045
- Scenario 4 assumes investment returns of 8.00% for each year beginning with the year ending June 30, 2022, through June 30, 2045

Total State Contribution from Year Ending June 30, 2023 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, 2023, through June 30, 2045, would be $158.81 billion, which would result in an overall savings of $10.49 billion compared to current Statutory Funding Policy (as shown in the baseline projection scenario above).

Important Information about Actuarial Valuations

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

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

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

Important Information about Actuarial Valuations *continued*

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 of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
Actuarial results in this report are not rounded, but that does not imply precision. 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. The **Error! Bookmark not defined.** should look to their other advisors for expertise in these areas.
The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

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

A.   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: 2011 – 2020[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
2011	133,752	32,120	16,811	104,970	105,499	1.27
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

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

A. Membership Data *continued*

Active Members

Plan costs are affected by the age, years of service, and compensation of active members. As of June 30, 2020 (the date as of which census data is collected for the June 30, 2021, valuation), there were 137,394 full-time and regular part-time active members with an average age of 42.3, average years of service of 13.4, and average compensation of $76,061. The 135,752 full-time and regular part-time active members in the prior valuation had an average age of 42.2, average years of service of 13.2, and average compensation of $74,550.

In addition, as of June 30, 2020, there were 25,555 active members who were substitutes, part-time, and hourly paid on either a flexible or limited work schedule.

Additional information is shown on the following page.

Inactive Members

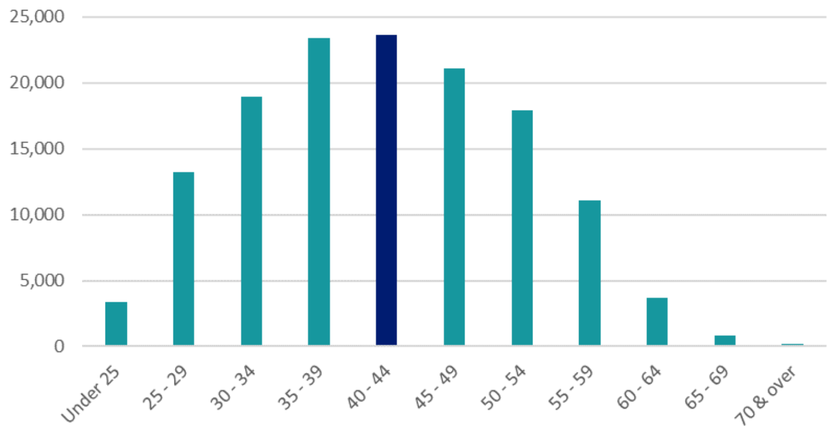
As of June 30, 2020 (the date at which census data is collected for the June 30, 2021, valuation), there were 18,600 participants and 32 survivors with a vested right to a deferred benefit. Inactive members may also be eligible for a refund of their retirement benefit contributions or a single sum benefit.

In addition, there were 125,942 participants entitled to a return of their employee contributions.

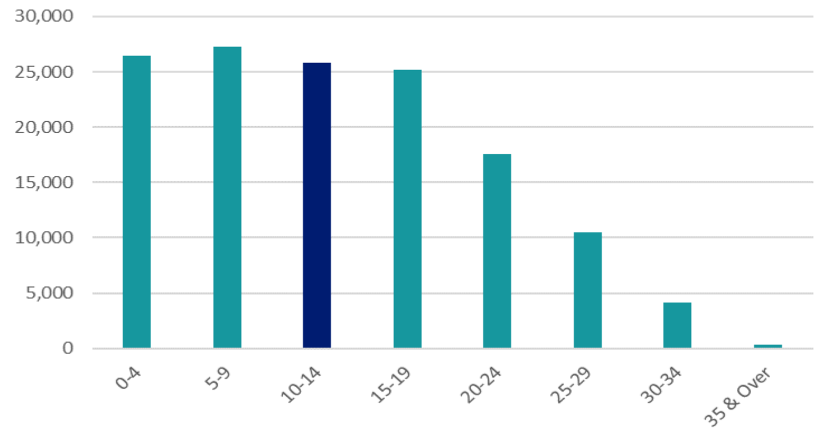
A. Membership Data *continued*

Full-Time and Regular Part-Time Active Participant Data as of June 30, 2020[1]

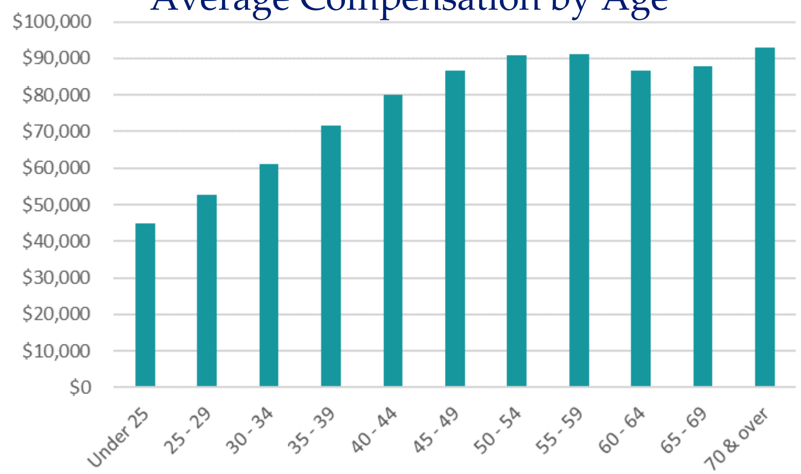
By Age



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*

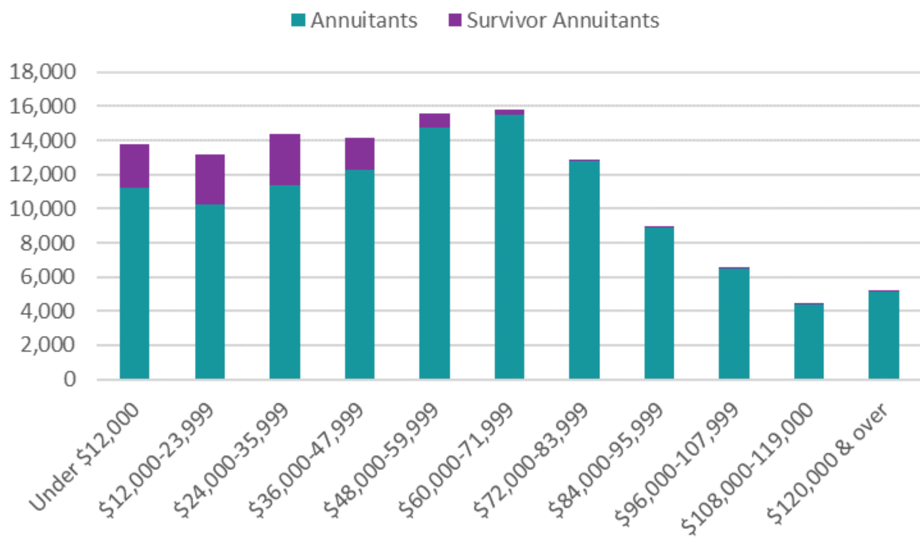
A. Membership Data *continued*

Annuitants and Survivor Annuitants

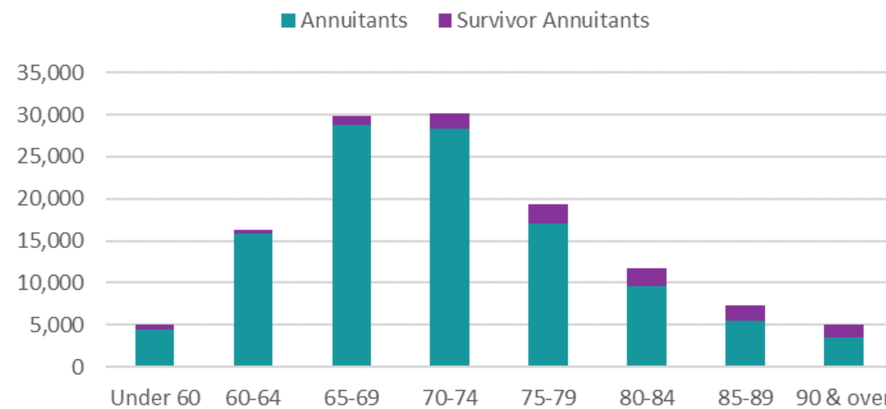
As of June 30, 2020 (the date as of which census data is collected for the June 30, 2021, valuation), 114,622 annuitants and 11,972 survivor annuitants were receiving total annual benefits of $7,205,635,969. For comparison, in the previous valuation, there were 113,116 annuitants and 11,675 survivor annuitants were receiving total annual benefits of $6,927,481,533.

Distribution of Annuitants and Survivor Annuitants

By Annual Benefit as of June 30, 2020[1]



By Age as of June 30, 2020[1]



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

B. Financial Information

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.

B. Financial Information *continued*

Determination of Actuarial Value of Assets and Projected Actuarial Value of Assets with POB for June 30, 2021 and June 30, 2020 Actuarial Valuations

			2021		2020	
1.	Fair value of assets with POB available for benefits			$64,212,505,020		$52,316,477,771
2.	Calculation of unrecognized return[1]	Original Amount[2]	% Not Recognized		% Not Recognized	
	(a) Year ended June 30, 2021	$9,424,254,666	80%	$7,539,403,733		
	(b) Year ended June 30, 2020	(3,409,956,524)	60%	(2,045,973,914)	80%	($2,727,965,219)
	(c) Year ended June 30, 2019	(974,076,334)	40%	(389,630,534)	60%	(584,445,800)
	(d) Year ended June 30, 2018	643,913,847	20%	128,782,769	40%	257,565,539
	(e) Year ended June 30, 2017	2,401,737,113		0	20%	480,347,423
	(f) Total unrecognized return			$5,232,582,054		($2,574,498,057)
3.	Actuarial value of assets with POB (Current Assets): (1) – (2f)			$58,979,922,966		$54,890,975,828
4.	Actuarial value as a percent of fair value: (3) ÷ (1)			91.9%		104.9%
5.	Projected actuarial value of assets					
	(a) Assumed contributions			$6,823,909,745		$6,247,115,602
	(b) Assumed distributions			7,775,424,455		7,476,643,962
	(c) Expected return at 7.00%			4,095,291,593		3,799,334,815
	(d) Projected actuarial value of assets: (3) + (5a) – (5b) + (5c)			$62,123,699,850		$57,460,782,283

[1] *Recognition at 20% per year over 5 years*

[2] *Total return minus expected return on fair value*

B. 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, 2021 and June 30, 2020 Actuarial Valuations

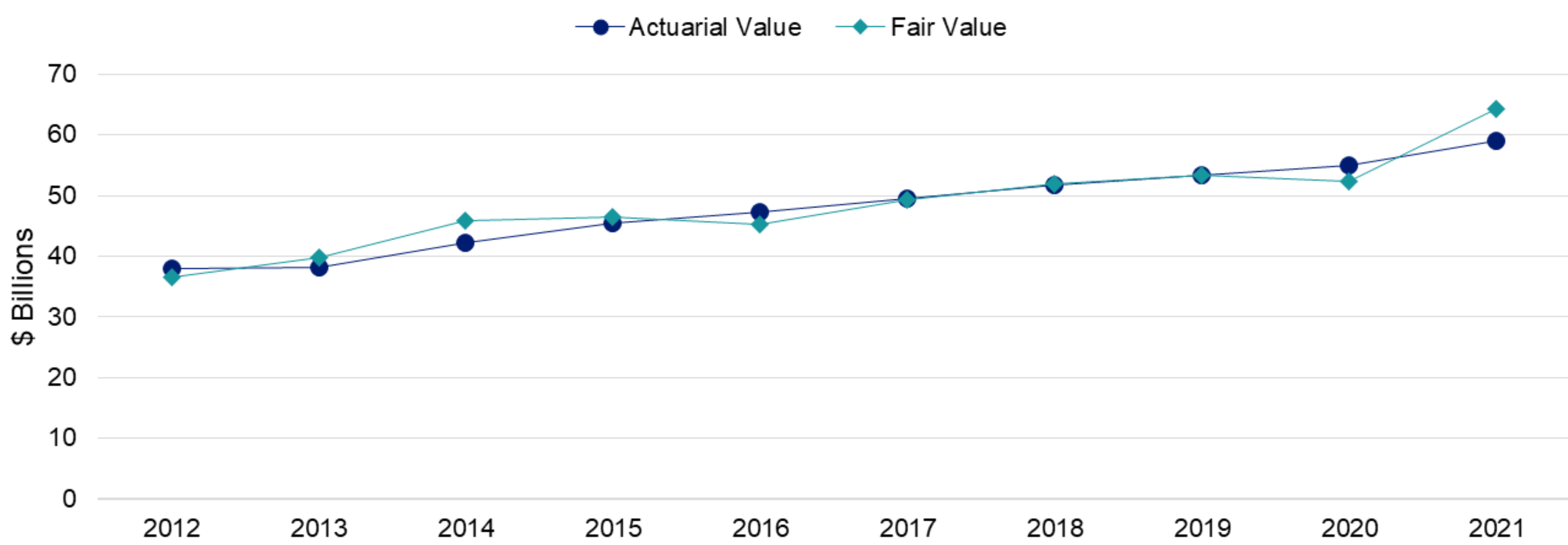
			2021		2020	
1.	Estimated fair value of assets without POB available for benefits			$58,969,267,642		$47,749,372,530
2.	Calculation of unrecognized return[1]	Original Amount [2]	% Not Recognized		% Not Recognized	
	(a) Year ended June 30, 2021	$8,630,845,465	80%	$6,904,676,372		
	(b) Year ended June 30, 2020	(3,102,850,180)	60%	(1,861,710,108)	80%	($2,482,281,744)
	(c) Year ended June 30, 2019	(881,437,935)	40%	(352,575,174)	60%	(528,862,761)
	(d) Year ended June 30, 2018	579,778,319	20%	115,955,664	40%	231,911,328
	(e) Year ended June 30, 2017	2,152,156,362		0	20%	430,431,272
	(f) Total unrecognized return			$4,806,346,754		($2,348,801,905)
3.	Actuarial value of assets without POB (Current Assets): (1) – (2f)			$54,162,920,888		$50,098,174,435
4.	Actuarial value as a percent of fair value: (3) ÷ (1)			91.8%		104.9%
5.	Projected actuarial value of assets					
	(a) Assumed contributions			$7,267,641,385		$6,669,313,120
	(b) Assumed distributions			7,775,424,455		7,476,643,962
	(c) Expected return at 7.00%			3,773,632,055		3,478,615,631
	(d) Projected actuarial value of assets: (3) + (5a) – (5b) + (5c)			$57,428,769,874		$52,769,459,224

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

B. 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, 2012 – 2021 (with POB)



C. 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 $1.67 billion, which includes $1.44 billion from investment gains and $0.23 billion in gains from all other sources. The net experience variation from individual sources other than investments was approximately 0.2% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

Actuarial Experience for Year Ended June 30, 2021

1.	Net gain from investments[1]	$1,436,959,691
2.	Net gain from other experience[2]	234,013,135
3.	Net experience gain: (1) + (2)	$1,670,972,826

[1] *Details on page 35*
[2] *Details on page 38*

C. 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, 2021, was 9.65%.

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, 2021, with regard to its investments.

Investment Experience for Year Ended June 30, 2021

		Fair Value With POB	Fair Value Without POB	Actuarial Value With POB
1.	Value of assets as of June 30, 2020	$52,316,477,771	$47,749,372,530	$54,890,975,828
2.	Contributions during fiscal year ended June 30, 2021	6,261,774,388	6,683,971,906[1]	6,261,774,388
3.	Benefits and expenses during fiscal year ended June 30, 2021	7,411,900,824	7,411,900,824	7,411,900,824
4.	Value of assets as of June 30, 2021	64,212,505,020	58,969,267,642	58,979,922,966
5.	Total investment income: (4) – (1) – (2) + (3)	13,046,153,685	11,947,824,030	5,239,073,574
6.	Average value of assets: (1) + ((2) – (3)) ÷ 2	51,741,414,553	47,385,408,071	54,315,912,610
7.	Actual rate of return: (5) ÷ (6)	25.21%	25.21%	9.65%
8.	Assumed rate of return	7.00%	7.00%	7.00%
9.	Expected return: (6) x (8)	$3,621,899,019	$3.316.978.565	$3,802,113,883
10.	Actuarial gain: (5) – (9)	$9,424,254,666	$8,630,845,465	$1,436,959,691

[1] *Includes POB debt service*

C. 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 Comprehensive Annual Financial Report.

Investment Return
Fair Value vs. Actuarial: 2002 – 2021

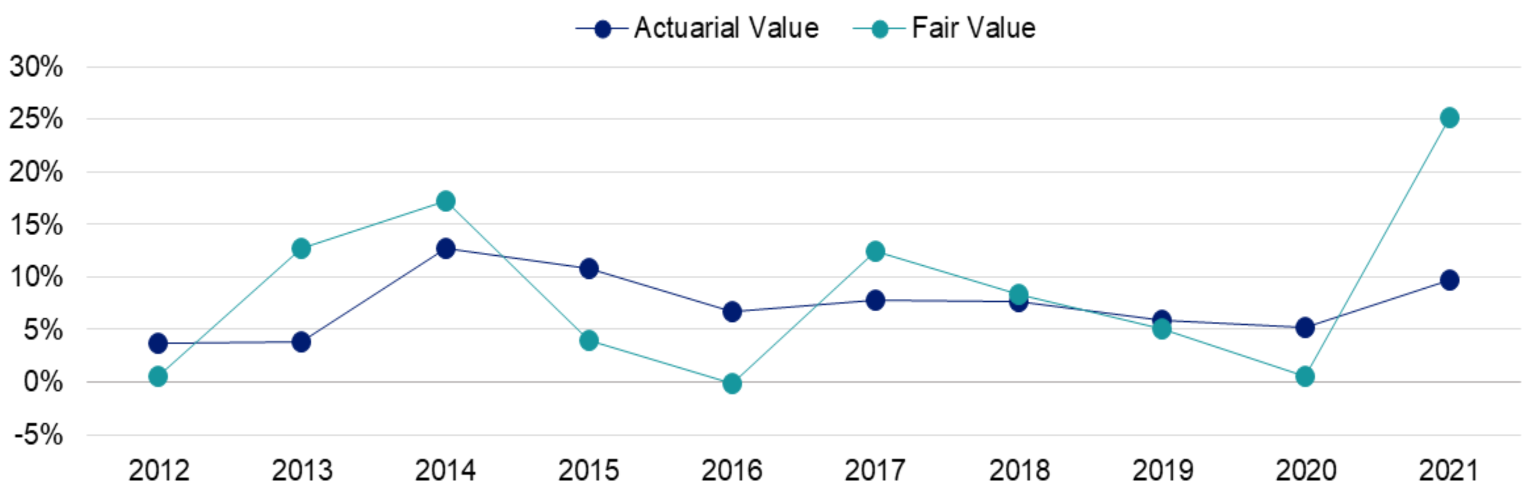
Year Ended June 30	Fair Value	Actuarial Value	Year Ended June 30	Fair Value	Actuarial Value
2002	(3.12%)	(3.12%)	2012	0.61%	3.64%
2003	4.78%	4.78%	2013	12.70%	3.83%
2004	16.46%	16.46%	2014	17.19%	12.75%
2005	10.69%	10.69%	2015	3.91%	10.76%
2006	11.98%	11.98%	2016	(0.10%)	6.46%
2007	19.07%	19.07%	2017	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%
	Most recent five-year average return			10.00%	7.21%
	Most recent ten-year average return			8.31%	7.35%
	Most recent fifteen-year average return			6.86%	6.18%
	Most recent twenty-year average return			7.13%	6.62%

C. 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, 2012 – 2021



C. 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 gain from this other experience for the year ended June 30, 2021, is $234 million, which is approximately 0.2% of the actuarial accrual liability. This is largely due to gains from buyout experience. 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, 2017 to June 30, 2021

	2021	2020	2019	2018	2017
1. Salary increases	$56,331,439	$41,780,212	$84,011,865	$40,293,935	($29,518,579)
2. Retirement experience	(107,023,064)	(178,155,930)	(324,388,173)	(341,957,544)	(365,965,251)
3. Disability experience	18,941,923	17,701,086	17,840,394	24,275,853	23,361,862
4. Termination experience	(49,242,128)	(49,417,489)	(60,351,523)	(19,458,838)	(25,597,354)
5. Mortality experience	68,231,169	(14,135,952)	(10,977,383)	(42,624,422)	(24,539,086)
6. Rehires	(41,159,834)	(41,266,774)	(39,508,399)	(36,264,543)	(32,789,033)
7. New entrants	4,382,406	10,456,950	10,851,490	16,845,581	16,627,360
8. Buyout experience	195,467,590	N/A	N/A	N/A	N/A
9. Other	88,083,634	166,176,905	(29,494,007)	(983,112,072)[1]	(165,896,422)
10. Total	$234,013,135	($46,860,992)	($352,015,736)	($1,342,002,050)	($604,316,503)

[1] *Primarily due to programming enhancements.*

D. 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. 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 2023, the School Districts' contributions are expected to equal 0.58% of total payroll under Sec. 16-158(e), approximately 0.04% of total payroll under Sec. 16-158(f), and approximately 0.03% 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.

D. Development of Employer Costs *continued*

Employer Contributions

	Fiscal Year Ending June 30	
	2023	2022
Based on Statutory Funding Plan		
1. Benefit Trust Reserve:		
a. Employer's cost as percentage of membership payroll	53.15%	50.29%
b. Total employer contribution: (1a) x (8)	$6,209,687,457	$5,768,670,673
c. School Districts contributions under Sec. 16-158	(75,805,228)	(74,211,665)
d. Federal Funds contribution	(24,510,020)	(23,652,035)
e. Phase-in of the effect of assumption changes	(215,640,000)	22,900,000
f. State Contribution: (1b) + (1c) + (1d) + (1e)	$5,893,732,209	$5,693,706,973
2. Guaranteed Minimum Annuity Reserve	300,000	400,000
3. Total State Contribution: (1f) + (2)	$5,894,032,209	$5,694,106,973
Based on Board-Adopted Actuarial Funding Policy (Actuarially Determined Contribution)		
4. Benefit Trust Reserve:		
a. Normal cost plus amortization of UAAL	$9,201,648,472	$8,947,919,008
b. School Districts contribution under Sec. 16-158	(75,805,228)	(74,211,665)
c. Federal Funds contribution	(24,510,020)	(23,652,035)
d. State contribution: (4a) + (4b) + (4c)	$9,101,333,224	$8,850,055,308
5. Guaranteed Minimum Annuity Reserve	300,000	400,000
6. Total State Contribution: (4d) + (5)	$9,101,633,224	$8,850,455,308
Difference Between Board-Adopted Actuarial Funding Policy and Statutory Fund		
7. Shortfall/(Excess): (6) – (3)	$3,207,601,015	$3,156,348,335
Expected Membership Payroll		
8. Total membership payroll	$11,682,564,466	$11,470,434,147

E. 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 actual return on the fair value of assets for the fiscal year ending June 30, 2021 was 1% different from the assumed (either higher or lower), the projected unfunded actuarial liability would change by 0.2%, or about $130 million.

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 $6.4 billion in the asset value. A 10% increase in assets would cause the unfunded liability (fair value basis) to decrease from $79.9 billion to $73.5 billion. Likewise, a 10% decrease in the asset value would cause the unfunded liability to increase from $79.9 billion to $86.3 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 fiscal year 2023 Board-Adopted Actuarial Funding Policy contribution would increase or decrease by approximately $650 million (5.6% of payroll) and the Statutory contribution requirement would increase or decrease by approximately $500 million (4.3% of payroll).

E. Risk *continued*

The fair value rate of return over the last 10 years has ranged from a low of -0.1% to a high of 25.2%, with an average of 8.3%. However, looking over a longer historical period of 20 years, the fair value rate of return has an average of 7.1%.

See 'Sensitivity Projections' section on pages 22 and 23 of this report for additional information regarding investment risk.

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 $4.2 billion. The unfunded accrued liability (fair value basis) would increase from $79.9 billion to $84.1 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.

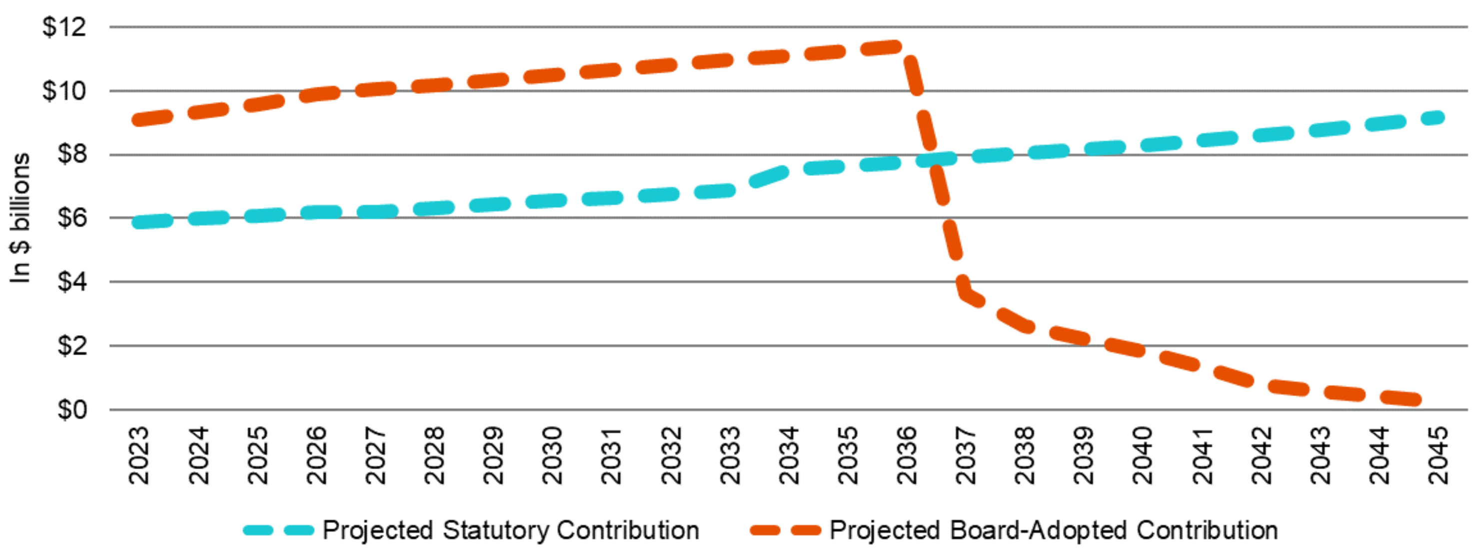
If contributions remain at current level and future experience matches the current assumptions, we project the unfunded actuarial accrued liability will not be paid off.

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, 2023, through June 30, 2045, assuming fair value returns for the upcoming year vary between -24% and +24%. 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.

E. Risk *continued*

FYE2022	Total State Contributions (FY23-FY45)		
Assumed Return	Statutory	Board-Adopted	Difference
+21%	$147.3B	$143.6B	$3.7B
+14%	$158.3B	$151.0B	$7.3B
+7%	$169.3B	$158.8B	$10.5B
0%	$180.3B	$166.6B	$13.7B
-7%	$191.3B	$174.4B	$16.9B
-14%	$202.4B	$182.2B	$20.2B
-21%	$213.4B	$190.1B	$23.3B

The following graph depicts the differences in contribution pattern from June 30, 2023, through June 30, 2045, under the Statutory Funding Policy and Board-Adopted Actuarial Funding Policy, assuming 7% future returns.



E. 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.

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 investment gain/(loss) for a year has ranged from a gain of $1,792 million to a loss of $1,806 million.
- The non-investment gain/(loss) for a year has ranged from a gain of $592 million to a loss of $1,342 million.

The funded percentage on the actuarial value of assets has ranged from a low of 39.8% to a high of 42.5% since 2011.

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 1.27 to a low of 1.09. Currently the System has an active to non-active participant ratio of 1.09. For the prior year, benefits paid were $1.1 billion more than contributions received. As the Plan matures, more cash will be needed from the investment portfolio to meet benefit payments.
- As of June 30, 2021, the retired life actuarial accrued liability represents 55% of the total actuarial accrued liability. In addition, the actuarial accrued liability for inactive vested participants represents 2% 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 $1.2 billion for the year ending June 30, 2021, 1.9% of the market value of assets. The Plan is dependent upon investment returns in order to pay benefits.

Section 3: Supplemental Information

Exhibit A – Summary of Membership Data

Category	Valuation as of June 30[1] 2021	Valuation as of June 30[1] 2020	Change From Prior Year
Active members:			
1. Number			
a. Full-time and regular part-time			
Tier 1	100,967	103,691	(2.63%)
Tier 2	36,427	32,061	13.62%
Total	137,394	135,752	1.21%
b. Substitutes, part-time, and hourly paid			
Tier 1	11,247	12,570	(10.53%)
Tier 2	14,308	14,753	(3.02%)
Total	25,555	27,323	(6.47%)
c. Total number of active members			
Tier 1	112,214	116,261	(3.48%)
Tier 2	50,735	46,814	8.38%
Total	162,949	163,075	(0.08%)
2. Annual salaries			
a. Full-time and regular part-time			
Tier 1	$8,434,601,216	$8,401,822,836	0.39%
Tier 2	2,015,724,891	1,718,486,638	17.30%
Total	$10,450,326,107	$10,120,309,474	3.26%
b. Substitutes, part-time, and hourly paid			
Tier 1	$71,674,642	$83,475,985	(14.14%)
Tier 2	76,959,122	79,859,224	(3.63%)
Total	$148,633,764	$163,335,209	(9.00%)
c. Total number of active members			
Tier 1	$8,506,275,858	$8,485,298,821	0.25%
Tier 2	2,092,684,013	1,798,345,862	16.37%
Total	$10,598,959,871	$10,283,644,683	3.07%

[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] 2021	2020	Change From Prior Year
Active members (continued):					
3.	Average age				
	a.	Full-time and regular part-time	42.3	42.2	N/A
	b.	Substitutes, part-time, and hourly paid	46.5	45.8	N/A
	c.	Total	43.0	42.8	N/A
4.	Average service				
	a.	Full-time and regular part-time	13.4	13.2	N/A
	b.	Substitutes, part-time, and hourly paid	2.3	2.3	N/A
	c.	Total	11.6	11.4	N/A
Inactive members:					
	Eligible for deferred annuities		18,632	19,363	(3.78%)
	Eligible for refunds or single sum benefits		125,942	121,908	3.31%
	Total		144,574	141,271	2.34%
Service retirees:					
1.	Number				
	a.	Regular	82,453	80,064	2.98%
	b.	ERI	7,991	8,368	(4.51%)
	c.	ERO	23,133	23,595	(1.96%)
	d.	Total	113,579	112,027	1.39%
2.	Annual annuities				
	a.	Regular	$4,553,375,674	$4,313,682,589	5.56%
	b.	ERI	520,923,041	529,261,885	(1.58%)
	c.	ERO	1,762,101,479	1,736,595,235	1.47%
	d.	Total	$6,836,438,065	$6,579,539,709	3.90%
3.	Average age		72.6	72.3	N/A
4.	Average monthly benefit		$5,016	$4,894	2.48%

[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] 2021	Valuation as of June 30[1] 2020	Change From Prior Year
Disability Annuitants:			
1. Number			
a. Retirement Allowance	820	825	(0.61%)
b. Occupational	5	7	(28.57%)
c. Temporary	218	257	(15.18%)
d. Total	1,043	1,089	(4.22%)
2. Annual annuities			
a. Retirement Allowance	$24,833,545	$24,253,789	2.39%
b. Occupational	215,559	283,635	(24.00%)
c. Temporary	7,111,849	8,181,739	(13.08%)
d. Total	$32,160,953	$32,719,163	(1.71%)
3. Average age	60.8	60.3	N/A
4. Average monthly benefit	$2,570	$2,504	2.63%
Survivor Annuitants:			
1. Number			
a. Children	76	73	4.11%
b. Survivors	11,686	11,392	2.58%
c. Reversionary	210	210	0.00%
d. Total	11,972	11,675	2.54%
2. Annual annuities			
a. Retirement Allowance	$939,482	$893,923	5.10%
b. Occupational	327,085,263	305,532,658	7.05%
c. Temporary	9,012,206	8,796,081	2.46%
d. Total	$337,036,951	$315,222,662	6.92%
3. Average age	78.7	78.4	N/A
4. Average monthly benefit	$2,346	$2,250	4.27%
Total number of participants	434,117	429,137	1.16%

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

Exhibit B – Active Membership Data as of June 30, 2020 used in June 30, 2021 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	3,410	3,410	--	--	--	--	--	--	--	--
	$44,921	$44,921	--	--	--	--	--	--	--	--
25 – 29	13,230	9,170	4,060	--	--	--	--	--	--	--
	$52,600	$50,561	$57,206	--	--	--	--	--	--	--
30 – 34	18,911	4,594	10,859	3,458	--	--	--	--	--	--
	$61,190	$54,141	$61,248	$70,373	--	--	--	--	--	--
35 – 39	23,377	3,015	4,868	10,976	4,518	--	--	--	--	--
	$71,732	$56,166	$64,093	$74,434	$83,785	--	--	--	--	--
40 – 44	23,670	2,516	2,817	4,630	10,151	3,556	--	--	--	--
	$80,047	$55,959	$63,345	$76,051	$87,002	$95,669	--	--	--	--
45 – 49	21,072	1,615	2,094	2,758	4,436	7,740	2,429	--	--	--
	$86,515	$56,944	$64,198	$74,644	$87,439	$97,456	$102,341	--	--	--
50 – 54	17,933	1,076	1,407	1,991	2,870	3,517	5,457	1,615	--	--
	$90,784	$58,323	$64,139	$73,882	$85,976	$96,205	$104,101	$108,200	--	--
55 – 59	11,118	628	785	1,362	2,045	1,898	2,025	2,239	136	--
	$91,286	$58,329	$62,699	$74,022	$83,893	$93,705	$105,474	$111,319	$117,747	--
60 – 64	3,657	302	324	528	910	701	484	271	115	22
	$86,552	$57,254	$64,844	$75,428	$85,347	$92,502	$102,982	$109,141	$121,489	$113,336
65 – 69	860	77	82	106	210	166	95	62	22	40
	$87,779	$57,204	$67,455	$73,607	$87,764	$95,237	$100,236	$108,778	$107,742	$121,860
70 & Older	156	21	13	21	19	31	23	10	4	14
	$92,922	$64,963	$57,987	$88,832	$104,337	$107,960	$92,616	$108,744	$96,794	$112,744
Total	137,394	26,424	27,309	25,830	25,159	17,609	10,513	4,197	277	76
	$76,061	$52,607	$61,847	$74,167	$86,091	$96,241	$103,847	$109,934	$118,203	$117,714

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
2011	133,752	N/A	$9,358,470,000	$69,969	N/A
2012	132,956	(0.6%)	8,874,281,176	66,746	(4.6%)
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%

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
2011	32,120	N/A	$153,261,000	$4,772	N/A
2012	29,073	(9.5%)	154,240,000	5,305	11.2%
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%)

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%

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%

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

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

Valuation as of June 30	Number	Percentage Change in Number of Recipients	Annual Allowances	Percent Change in Allowances	Average Annual Annuity
2011	105,499	N/A	$4,780,743,000	N/A	$45,316
2012	106,102	0.6%	4,811,370,000	0.6%	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

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
2022	$341,557	2047	$7,511
2023	304,004	2048	6,077
2024	268,261	2049	4,860
2025	235,062	2050	3,793
2026	205,231	2051	2,944
2027	178,797	2052	2,250
2028	155,484	2053	1,691
2029	135,142	2054	1,250
2030	117,334	2055	908
2031	101,752	2056	648
2032	88,206	2057	454
2033	76,409	2058	313
2034	66,092	2059	212
2035	57,066	2060	131
2036	49,160	2061	83
2037	42,261	2062	52
2038	36,241	2063	31
2039	31,004	2064	19
2040	26,438	2065	11
2041	22,468	2066	6
2042	19,017	2067	3
2043	16,002	2068	2
2044	13,400	2069	1
2045	11,146	2070	0
2046	9,188		

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
A.	Number as of June 30, 2019	163,075	19,337	121,908	112,027	1,089	11,675	26	429,137
B.	New members	11,064	N/A	N/A	N/A	N/A	N/A	N/A	11,064
C.	Participant movement								
1.	Retirements	(3,217)	(640)	(162)	4,019	0	0	0	0
2.	Disabilities	(80)	0	0	0	80	0	0	0
3.	Conversion from disability to service pension	N/A	N/A	N/A	54	(54)	N/A	N/A	0
4.	Died with beneficiary	(35)	(4)	0	(871)	(12)	1,006	1	85[1]
5.	Died without beneficiary	(60)	(30)	(297)	(1,668)	(21)	(699)	0	(2,775)
6.	Terminations – with vested rights	(2,070)	2,070	0	0	0	0	0	0
7.	Terminations – without vested rights	(9,218)	0	9,218	0	0	0	0	0
8.	Refunds	(573)	(161)	(1,705)	N/A	N/A	N/A	0	(2,439)
9.	IV Buyout	N/A	(1,025)	N/A	N/A	N/A	N/A	N/A	(1,025)
10.	Rehired as active	4,063	(960)	(3,070)	(2)	(31)	0	0	0
11.	Temporary annuity expired	N/A	N/A	NA	N/A	N/A	(9)	N/A	(9)
D.	Data adjustment	0	13	50	20	(8)	(1)	5	79
E.	Number as of June 30, 2020[2]	162,949	18,600	125,942	113,579	1,043	11,972	32	434,117

[1] *Includes multiple beneficiaries*

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

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

	Year Ended June 30, 2021		Year Ended June 30, 2020	
Net assets at fair value at the beginning of the year		$52,316,477,771		$53,262,789,367
Contribution income:				
Members	$1,023,531,951		$994,400,416	
State of Illinois	5,140,648,356		4,813,451,679	
Employers:				
Early retirement	0		2,715	
Federal funds	27,978,206		23,215,568	
2.2 Benefit formula	61,558,261		61,448,091	
Excess salary/sick leave	8,057,614		7,991,864	
Total contribution income		$6,261,774,388		$5,900,510,333
Investment income:				
Net appreciation (depreciation)	$12,183,214,170		($612,669,770)	
Alternative	942,481,173		889,779,706	
Interest and dividends	812,920,640		851,670,919	
Other	6,201,472		8,623,422	
Securities lending	8,937,961		9,370,679	
Less alternatives expense	(420,642,148)		(465,877,890)	
Less direct investment expense	(486,423,308)		(404,665,431)	
Less securities lending management fees	(536,275)		(562,237)	
Net investment income		13,046,153,685		275,669,398
Total income available for benefits		$19,307,928,073		$6,176,179,731
Less benefit payments and administrative expenses:				
Retirement benefits	($6,935,054,294)		($6,672,266,721)	
Survivor benefits	(375,078,075)		(329,872,581)	
Disability benefits	(31,816,332)		(33,168,197)	
Refund of contributions	(64,194,011)		(64,217,456)	
Administrative expenses	(23,758,112)		(22,966,372)	
Net benefit payments and administrative expenses		($7,411,900,824)		($7,122,491,327)
Net assets at fair value at the end of the year		$64,212,505,020		$52,316,477,771

Exhibit I – Summary Statement of System Assets

	Year Ended June 30, 2021		Year Ended June 30, 2020	
Cash equivalents		$16,263,026		$24,329,683
Accounts receivable and prepaid expenses:				
Member contributions	$99,098,234		$71,553,987	
Employer contributions	9,821,474		10,866,919	
State of Illinois	5,024,118		641,247,379	
Investment income	121,604,718		131,878,957	
Other receivables	285,804		0	
Investments sold	4,229,353,118		3,639,595,787	
Prepaid expenses	3,607,845		1,649,596	
Total accounts receivable and prepaid expenses		$4,468,795,311		$4,496,792,625
Investments at fair value:				
Fixed income	$10,220,741,948		$9,887,918,930	
Public equities	22,407,527,477		16,764,439,384	
Alternative investments	29,359,397,945		23,063,736,143	
Derivatives	(5,405,619)		6,184,038	
Short-term investments	1,756,658,884		1,652,527,489	
Foreign currency	112,911,645		79,352,928	
Total investments		$63,851,832,280		$51,454,158,912
Invested securities lending collateral		2,425,695,348		2,023,876,139
Capital assets, net of accumulated depreciation		8,453,925		6,130,809
Total assets		$70,771,039,890		$58,005,288,168
Less accounts payable:				
Benefits and refunds payable	($6,021,934)		($9,908,110)	
Administrative and investment expenses payable	(33,185,132)		(49,768,751)	
Pending investment purchases	(4,093,633,008)		(3,605,267,896)	
Securities lending collateral	(2,425,694,796)		(2,023,865,640)	
Total accounts payable		($6,558,534,870)		($5,688,810,397)
Net assets at fair value		$64,212,505,020		$52,316,477,771

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]
2012	$37,471,267,194	$917,661,328	$2,561,259,102	$224,106,719	$19,011,899	$4,638,457,105	$36,516,825,339	0.8%
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%

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

Exhibit K – Development of Unfunded Actuarial Accrued Liability

		Year Ended June 30			
		2021		2020	
1.	Unfunded actuarial accrued liability at beginning of year		$80,707,571,185		$78,065,776,220
2.	Total normal cost at beginning of year		2,098,147,390		2,067,036,527
3.	Total member and employer contributions[1]		6,260,950,930		5,849,516,439
4.	Interest on:				
	(a) Unfunded actuarial accrued liability and normal cost	$5,796,400,300		$5,609,296,892	
	(b) Total contributions	219,133,283		204,733,075	
	(c) Total interest: (4a) – (4b)		5,577,267,017		5,404,563,817
5.	Expected unfunded actuarial accrued liability: (1) + (2) – (3) + (4c)		$82,122,034,662[2]		$79,687,860,125
6.	Changes due to (gain)/loss from:				
	(a) Investments	($1,436,959,691)		$972,850,068	
	(b) Demographics	(234,013,135)		46,860,992	
	(c) Total changes due to (gain)/loss: (6a) + (6b)		(1,670,972,826)		1,019,711,060
7.	Change in plan provisions		0		0
8.	Change in actuarial assumptions		(516,709,885)		0
9.	Unfunded actuarial accrued liability at end of year: (5) + (6c) + (7) + (8)		$79,934,351,951		$80,707,571,185

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

[2] *The unfunded actuarial accrued liability increased $1,414,463,477 during the year ended June 30, 2021 due to total contributions being less than total normal cost plus interest on the unfunded actuarial accrued liability.*

Section 4: Reporting Information

Exhibit I – Derivation of Employer Contributions under Illinois Pension Code

			Fiscal Year Ending June 30, 2023	As Percentage of Total Payroll
1.	Assumed Payroll:			
	a.	Total payroll	$11,682,564,466	
	b.	Less Federal Funds payroll	(233,651,289)	
	c.	State payroll	$11,448,913,177	
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	$6,673,488,515	57.12%
	b.	Less School Districts' contributions under Sec. 16-158	(75,805,228)	(0.65%)
	c.	Less Federal Funds contribution	(24,510,020)	(0.21%)[1]
	d.	Less State debt service for TRS portion of all funds provided under Sec 7.2 of General Obligation Bond Act	(463,801,058)	(3.97%)
	e.	Maximum State contribution under PA 94-0004	$6,109,372,209	52.29%
3.	Employer contribution recognizing all system assets, before limiting State contribution			
	a.	Employer's cost	$6,334,516,902	54.22%
	b.	Less School Districts' contributions under Sec. 16-158	(75,805,228)	(0.65%)
	c.	Less Federal Funds contribution	(24,510,020)	(0.21%)
	d.	State contribution	$6,234,201,654	53.36%
4.	State contribution under PA 100-0023			
	a.	Lesser of amounts under (2) and (3)	$6,109,372,209	52.29%
	b.	Phase-in of the effect of assumption changes	(215,640,000)	(1.84%)
	c.	State contribution[2]	$5,893,732,209	50.45%
5.	Employer contributions			
	a.	State contribution	$5,893,732,209	50.45%
	b.	Plus School Districts' contributions under Sec. 16-158	75,805,228	0.65%
	c.	Plus Federal Funds contribution	24,510,020	(0.21%)[1]
	d.	Total employer contribution	$5,994,047,457	51.31%

[1] *Federal Funds contribution is equal to 10.49% of assumed Federal Funds payroll.*

[2] *The Benefit Trust Reserve State Contribution does not include the Guaranteed Minimum Annuity Reserve contribution. See page 40 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, 2023 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 2023, the expected School Districts' contributions under Sec. 16-158(e), 16-158(f), and 16-158(i-5) are $67,758,874, $4,106,777, and $3,939,577, 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, 2023
1.	Present value as of June 30, 2022 of future obligations to fund:	
	a. 90% of June 30, 2045 Actuarial Accrued Liability	$38,736,079,519
	b. Benefit disbursements and administrative expenses through June 30, 2045	125,592,567,806
	c. Total	$164,328,647,325
2.	Projected actuarial value of assets as of June 30, 2022	
	a. With POB proceeds	62,123,699,850
	b. Without POB proceeds	57,428,769,874
3.	Present value as of June 30, 2022 of future member contributions through June 30, 2045	14,562,853,638
4.	Present value as of June 30, 2022 of future School District contributions through June 30, 2045	
	a. 2.2% formula under §16-158(e)	$938,495,012
	b. 6% FAS cap increases under §16-158(f)	61,875,070
	c. Salaries above the Governor's salary under §16-158(i-5)	64,385,474
	d. Total	$1,064,755,556
5.	Present value as of June 30, 2022 of future Federal Funds contributions through June 30, 2045	230,461,177
6.	Present value as of June 30, 2022 of future State contributions through June 30, 2045	
	a. Including POB proceeds: (1c) – (2a) – (3) – (4d) – 5	86,346,877,104
	b. Excluding POB proceeds: (1c) – (2b) – (3) – (4d) – 5	91,041,807,080
7.	Present value as of June 30, 2022 of future covered payroll through June 30, 2045	161,809,484,864
8.	Determination of contribution rates for State and Federal Funds for year ended June 30, 2022	
	a. Including POB proceeds: (6a) / (7)	53.36%
	b. Excluding POB proceeds: (6b) / (7)	56.26%

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

			Fiscal Year Ending June 30, 2023
9.	Determination of State contribution for year ending June 30, 2023:		
	a.	Projected payroll:	$11,682,564,466
	b.	State contribution before maximum:	
		i) Gross contribution: (8a) x (9a)	$6,234,201,654
		ii) Phase-in of the effect of assumption changes	215,640,000
		iii) Net contribution: (i) – (ii)	$6,018,561,654
	c.	State contribution maximum:	
		i) Gross maximum: (8b) x (9a)	$6,573,173,267
		ii) State's debt service	463,801,058
		iii) Phase-in of the effect of assumption changes	215,640,000
		iv) Net contribution: (i) – (ii) – (iii)	$5,893,732,209
	d.	State contribution after maximum[1]: minimum of (9b)(iii) and (9c)(iv)	$5,893,732,209

[1] *The Benefit Trust Reserve State Contribution does not include the Guaranteed Minimum Annuity Reserve contribution. See page 40 for more details.*

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

			Fiscal Year Ending June 30, 2023
1.	Projected employer Normal Cost for year ending June 30, 2023		
	a.	Total	$2,134,956,983
	b.	Administrative expenses	39,887,064
	c.	Member contributions	1,051,430,802
	d.	Employer Normal Cost: (a) + (b) – (c)	$1,123,413,245
2.	Projected Unfunded Actuarial Accrued Liability as of June 30, 2022		
	a.	Actuarial Accrued Liability	$146,357,599,709
	b.	Actuarial Value of Assets	62,123,699,850
	c.	Unfunded Actuarial Accrued Liability: (a) – (b)	$84,233,899,859
3.	Payment toward projected Unfunded Actuarial Accrued Liability for year ending June 30, 2023 (see Exhibit IV)		8,078,235,227
4.	Total employer contribution for year ending June 30, 2023: (1d) + (3)		$9,201,648,472
5.	Projected School District contributions for year ending June 30, 2023		
	a.	2.2% formula under §16-158(e)	$67,758,874
	b.	6% FAS cap increases under §16-158(f)	4,106,777
	c.	Salaries above the Governor’s salary under §16-158(i-5)	3,939,577
	d.	Total	$75,805,228
6.	Estimated Federal Funds contribution for year ending June 30, 2023		24,510,020
7.	State contribution for year ending June 30, 2023: (4) – (5d) – (6)		$9,101,333,224

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

	Original Amount	Balance as of June 30, 2022	Remaining Amortization Period	2023 Amortization
June 30, 2015 valuation base:				
Projected UAAL as of June 30, 2016	$68,126,860,208	$60,916,268,738	14	$6,030,307,542
June 30, 2016 valuation base:				
Projected (gain)/loss as of June 30, 2017	8,625,889,107	7,918,767,435	15	747,308,718
June 30, 2017 valuation base:				
Projected (gain)/loss as of June 30, 2018	3,216,359,048	3,023,625,978	16	273,187,315
June 30, 2018 valuation base:				
Projected (gain)/loss as of June 30, 2019	3,150,844,586	3,021,906,881	17	262,375,221
June 30, 2019 valuation base:				
Projected (gain)/loss as of June 30, 2020	4,015,729,497	3,916,372,146	18	327,838,621
June 30, 2020 valuation base:				
Projected (gain)/loss as of June 30, 2021	4,329,096,839	4,280,747,573	19	346,491,665
June 30, 2021 valuation base:				
Projected (gain)/loss as of June 30, 2022	1,156,211,108	1,156,211,108	20	90,726,145
Total		$84,233,899,859		$8,078,235,227

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				
			2022	2023	2024	2025	2026
2018	2020	($70,000,000)	$28,000,000	$14,000,000			
2019	2021	8,500,000	(5,100,000)	(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)
Total			$22,900,000	($215,640,000)	($171,380,000)	($113,120,000)	($56,560,000)

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
2012	$90,024,945	$37,945,397	$36,516,825	$52,079,548	$53,508,120	42.1%	40.6%
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

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.

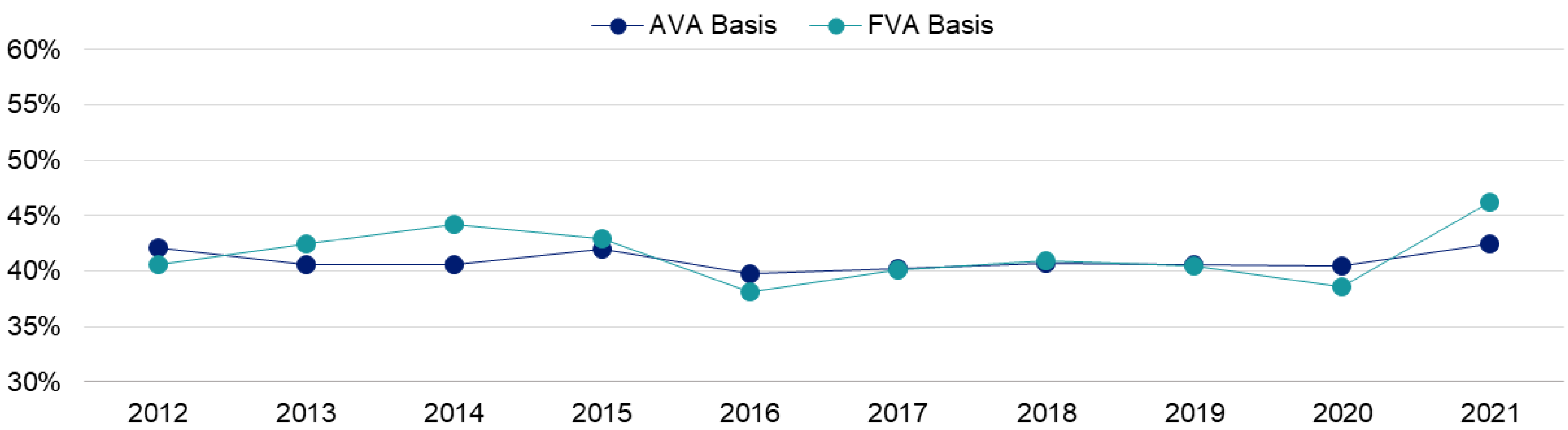


Exhibit VIII – Department of Insurance Information

	June 30, 2021	June 30, 2020
Actuarial Accrued Liabilities:		
Service Retirement	$85,571,711,895	$85,020,813,858
Disability Retirement	438,417,770	433,596,768
Survivor	2,778,841,307	2,731,572,589
Subtotal	$88,788,970,972	$88,185,983,215
Inactive	3,917,568,923	3,493,651,653
Active	46,207,735,022	43,918,912,145
Total	$138,914,274,917	$135,598,547,013
Headcounts and Salaries for Active Members:		
Male		
Count	37,599	37,797
Salaries	$2,815,324,737	$2,737,852,055
Female		
Count	125,350	125,278
Salaries	$7,783,635,134	$7,545,792,628
Total		
Count	162,949	163,075
Salaries	$10,598,959,871	$10,283,644,683

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

	Actuarial Accrued Liabilities Developed for June 30, 2021 Valuation	Amount
1.	Actuarial Accrued Liability measured as of June 30, 2020	$134,632,635,344
2.	Normal Cost measured for fiscal year ended June 30, 2021	2,099,359,439
3.	Expected benefit payments for fiscal year ended June 30, 2021	7,442,567,146
4.	Interest on (1), (2), and (3) to June 30, 2021	9,310,749,785
5.	Adjustment for future AAI and APB buyouts as of June 30, 2021	314,097,495
6.	Actuarial Accrued Liability as of June 30, 2021: (1) + (2) – (3) + (4) + (5)	$138,914,274,917
7.	Normal Cost measured for fiscal year ended June 30, 2022	2,129,963,891
8.	Expected benefit payments for fiscal year ended June 30, 2022[1]	7,844,654,918
9.	Interest on (6), (7), and (8) to June 30, 2022	9,598,533,794
10.	Actuarial Accrued Liability as of June 30, 2022 (6) + (7) – (8) + (9)	$142,798,117,684

Based on member census as of June 30, 2020, assumptions and methods as of June 30, 2021, including the Projected Unit Credit actuarial cost method.

[1] *Includes $110,122,698 of projected buyout payments expected to be paid via additional state funds not included in the FY2022 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 2023
1.	Employer normal cost plus interest on UAAL		
	a.	Employer normal cost	$1,225,163,940
	b.	Interest on the projected June 30, 2022 UAAL	5,354,581,350
	c.	Total employer normal cost plus interest on UAAL	$6,579,745,290
2.	Contributions from sources other than State and Federal Funds		
	a.	School District contributions under §16-158(e)	($67,758,874)
	b.	School District contributions under §16-158(f)	(4,106,777)
	c.	School District contributions under §16-158(i-5)	(3,939,577)
	d.	Federal Funds contribution	(23,652,035)
	e.	Total contributions from sources other than State and Federal Funds	($99,457,263)
3.	State share of normal cost plus interest on UAAL: (1c) + (2e)		$6,480,288,027
4.	State contribution requirement		
	a.	State's share of normal cost plus interest on UAAL	$6,480,288,027
	b.	Guaranteed Minimum Annuity Reserve contribution	300,000
	c.	Total State contribution requirement	$6,480,588,027

Exhibit XI – Development of Actuarial Determined Contribution (ADC)

		Fiscal Year Ended June 30, 2021
Development of the ADC:		
1.	Employer Normal Cost	$1,096,950,170
2.	Amortization of Unfunded Actuarial Accrued Liability	7,344,307,397
3.	Actuarially Determined Contribution: (1) + (2)	$8,441,257,567

The ADC for fiscal year ended June 30, 2021, is based on the valuation date of June 30, 2019, 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, 2021, actuarial valuation, we have projected valuation results to June 30, 2046 commencing with Fiscal Year 2022.

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 2022 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, 2021 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	142,798,117,684	63,626,807,724	(79,171,309,960)	43.9%	127.4%	44.6%
2023	146,693,717,852	68,332,428,764	(78,361,289,089)	45.8%	128.0%	46.6%
2024	150,589,134,250	73,314,877,175	(77,274,257,075)	47.8%	128.9%	48.7%
2025	154,603,731,794	79,076,613,161	(75,527,118,632)	50.1%	130.7%	51.1%
2026	158,601,036,026	83,042,823,173	(75,558,212,853)	51.2%	129.5%	52.4%
2027	162,566,545,775	87,027,056,344	(75,539,489,431)	52.2%	128.3%	53.5%
2028	166,475,461,935	91,098,756,962	(75,376,704,973)	53.2%	127.2%	54.7%
2029	170,305,176,071	95,244,637,052	(75,060,539,019)	54.2%	126.1%	55.9%
2030	174,039,022,938	99,452,308,532	(74,586,714,406)	55.2%	125.1%	57.1%
2031	177,656,372,727	103,717,748,142	(73,938,624,585)	56.3%	124.2%	58.4%
2032	181,139,936,078	108,061,308,847	(73,078,627,231)	57.3%	123.3%	59.7%
2033	184,457,769,813	112,485,398,891	(71,972,370,922)	58.4%	122.5%	61.0%
2034	187,582,817,427	117,509,936,534	(70,072,880,893)	59.8%	121.7%	62.6%
2035	190,487,807,951	122,631,918,855	(67,855,889,096)	61.3%	120.9%	64.4%
2036	193,156,319,733	127,862,181,098	(65,294,138,635)	62.9%	120.2%	66.2%
2037	195,572,198,848	133,213,247,404	(62,358,951,444)	64.6%	119.5%	68.1%
2038	197,712,235,594	138,698,340,742	(59,013,894,852)	66.3%	118.8%	70.2%
2039	199,551,958,918	144,332,730,682	(55,219,228,236)	68.3%	118.1%	72.3%
2040	201,065,441,289	150,132,107,983	(50,933,333,305)	70.4%	117.5%	74.7%
2041	202,247,449,979	156,139,921,474	(46,107,528,505)	72.7%	116.9%	77.2%
2042	203,119,291,636	162,426,769,461	(40,692,522,175)	75.4%	116.3%	80.0%
2043	203,681,665,921	169,043,339,540	(34,638,326,381)	78.3%	115.7%	83.0%
2044	203,973,378,443	176,080,859,697	(27,892,518,745)	81.7%	115.2%	86.3%
2045	204,032,824,147	183,629,541,732	(20,403,282,415)	85.5%	114.6%	90.0%
2046	203,924,558,325	183,532,102,492	(20,392,455,832)	85.0%	114.1%	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	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	$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	1,078,354,353	69,493,947	4,289,040	4,269,616	78,052,603	24,562,516	5,979,518,948	7,160,488,420
2025	1,104,531,769	71,180,936	4,524,240	4,583,818	80,288,995	24,520,605	6,084,043,295	7,293,384,664
2026	1,130,572,613	72,859,124	4,809,280	4,899,335	82,567,739	24,319,873	6,184,066,641	7,421,526,865
2027	1,155,201,076	74,446,292	4,876,480	5,222,537	84,545,308	24,028,182	6,218,847,592	7,482,622,159
2028	1,179,196,326	75,992,652	5,208,000	5,487,526	86,688,178	23,610,131	6,334,008,031	7,623,502,666
2029	1,201,811,959	77,450,104	5,296,480	5,825,984	88,572,568	23,074,790	6,443,343,548	7,756,802,865
2030	1,224,711,666	78,925,863	5,546,240	6,118,441	90,590,544	22,453,047	6,541,813,202	7,879,568,460
2031	1,247,391,691	80,387,465	5,781,440	6,375,402	92,544,306	21,760,055	6,642,013,059	8,003,709,112
2032	1,270,429,486	81,872,122	5,858,160	6,759,277	94,489,559	20,976,202	6,762,123,664	8,148,018,912
2033	1,292,714,086	83,308,241	6,049,120	7,042,262	96,399,623	20,051,432	6,894,876,994	8,304,042,136
2034	1,314,168,555	84,690,862	6,084,960	7,078,387	97,854,209	19,011,638	7,534,218,096	8,965,252,498
2035	1,335,327,626	86,054,447	6,169,520	7,184,727	99,408,694	17,893,390	7,655,524,497	9,108,154,207
2036	1,356,865,563	87,442,447	6,101,200	7,191,926	100,735,574	16,704,523	7,779,002,962	9,253,308,622
2037	1,378,809,493	88,856,612	6,097,280	7,080,408	102,034,300	15,442,666	7,904,809,013	9,401,095,473
2038	1,401,726,939	90,333,514	6,333,600	6,910,430	103,577,544	14,141,867	8,036,196,296	9,555,642,647
2039	1,424,965,376	91,831,102	6,191,920	6,594,643	104,617,665	12,634,693	8,169,423,839	9,711,641,572
2040	1,448,573,194	93,352,495	6,240,640	6,045,074	105,638,208	10,944,775	8,304,769,072	9,869,925,249
2041	1,473,902,136	94,984,804	6,030,080	5,395,572	106,410,456	9,203,700	8,449,981,627	10,039,497,918
2042	1,501,013,450	96,731,978	5,823,440	4,622,135	107,177,553	7,438,356	8,605,412,646	10,221,042,004
2043	1,530,326,539	98,621,044	5,453,280	3,831,426	107,905,750	5,747,226	8,773,466,587	10,417,446,103
2044	1,562,294,384	100,681,194	5,043,920	3,066,888	108,792,002	4,235,554	8,956,740,424	10,632,062,363
2045	1,597,077,782	102,922,790	4,495,680	2,361,227	109,779,698	2,981,212	9,156,156,022	10,865,994,714
2046	1,635,825,600	105,419,872	3,706,080	-	109,125,952	-	1,384,285,125	3,129,236,677

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 – 2020 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%, 2.00%, 2.00%, and 2.00%, respectively, of total payrolls for those years. For 2021 – 2023, the estimate is 2.00% of payroll. All payrolls are assumed to increase at the same rate for years subsequent to 2023.
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 – 2023 are based on the June 30, 1993 – June 30, 2021 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 2022 are based on the June 30, 2021 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%	49.63%	59.49%
2023	11,682,564,466	9.00%	0.58%	0.04%	0.03%	0.65%	0.21%	50.45%	60.31%
2024	11,981,715,028	9.00%	0.58%	0.04%	0.04%	0.65%	0.21%	49.91%	59.76%
2025	12,272,575,213	9.00%	0.58%	0.04%	0.04%	0.65%	0.20%	49.57%	59.43%
2026	12,561,917,921	9.00%	0.58%	0.04%	0.04%	0.66%	0.19%	49.23%	59.08%
2027	12,835,567,514	9.00%	0.58%	0.04%	0.04%	0.66%	0.19%	48.45%	58.30%
2028	13,102,181,397	9.00%	0.58%	0.04%	0.04%	0.66%	0.18%	48.34%	58.18%
2029	13,353,466,208	9.00%	0.58%	0.04%	0.04%	0.66%	0.17%	48.25%	58.09%
2030	13,607,907,403	9.00%	0.58%	0.04%	0.04%	0.67%	0.17%	48.07%	57.90%
2031	13,859,907,683	9.00%	0.58%	0.04%	0.05%	0.67%	0.16%	47.92%	57.75%
2032	14,115,883,180	9.00%	0.58%	0.04%	0.05%	0.67%	0.15%	47.90%	57.72%
2033	14,363,489,842	9.00%	0.58%	0.04%	0.05%	0.67%	0.14%	48.00%	57.81%
2034	14,601,872,829	9.00%	0.58%	0.04%	0.05%	0.67%	0.13%	51.60%	61.40%
2035	14,836,973,621	9.00%	0.58%	0.04%	0.05%	0.67%	0.12%	51.60%	61.39%
2036	15,076,284,034	9.00%	0.58%	0.04%	0.05%	0.67%	0.11%	51.60%	61.38%
2037	15,320,105,482	9.00%	0.58%	0.04%	0.05%	0.67%	0.10%	51.60%	61.36%
2038	15,574,743,770	9.00%	0.58%	0.04%	0.04%	0.67%	0.09%	51.60%	61.35%
2039	15,832,948,617	9.00%	0.58%	0.04%	0.04%	0.66%	0.08%	51.60%	61.34%
2040	16,095,257,706	9.00%	0.58%	0.04%	0.04%	0.66%	0.07%	51.60%	61.32%
2041	16,376,690,395	9.00%	0.58%	0.04%	0.03%	0.65%	0.06%	51.60%	61.30%
2042	16,677,927,224	9.00%	0.58%	0.03%	0.03%	0.64%	0.04%	51.60%	61.28%
2043	17,003,628,213	9.00%	0.58%	0.03%	0.02%	0.63%	0.03%	51.60%	61.27%
2044	17,358,826,486	9.00%	0.58%	0.03%	0.02%	0.63%	0.02%	51.60%	61.25%
2045	17,745,308,689	9.00%	0.58%	0.03%	0.01%	0.62%	0.02%	51.60%	61.23%
2046	18,175,840,004	9.00%	0.58%	0.02%	0.00%	0.60%	0.00%	7.62%	17.22%

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 79 and 80 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 Employer Normal Cost and Amortization Amount 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: Amortization	Amount of Employer Contribution: Total	Amount of Employer Contribution: Normal Cost	Amount of Employer Contribution: Amortization
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 Employer Normal Cost and Amortization Amount to 2046 *continued*

Year Ended June 30	Amortization Year	Employer Rate: Total	Employer Rate: Normal Cost	Employer Rate: Amortization	Amount of Employer Contribution: Total	Amount of Employer Contribution: Normal Cost	Amount of Employer Contribution: Amortization
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	50.76%	10.25%	40.51%	6,082,134,067	1,228,519,063	4,853,615,004
2025	30	50.43%	9.99%	40.44%	6,188,852,895	1,225,724,876	4,963,128,019
2026	31	50.08%	9.68%	40.40%	6,290,954,252	1,215,516,500	5,075,437,753
2027	32	49.30%	9.36%	39.93%	6,327,421,083	1,201,758,713	5,125,662,370
2028	33	49.18%	9.01%	40.17%	6,444,306,340	1,180,723,227	5,263,583,113
2029	34	49.09%	8.64%	40.44%	6,554,990,906	1,154,217,257	5,400,773,650
2030	35	48.90%	8.25%	40.65%	6,654,856,793	1,123,128,785	5,531,728,008
2031	36	48.75%	7.85%	40.90%	6,756,317,421	1,088,248,403	5,668,069,017
2032	37	48.72%	7.43%	41.29%	6,877,589,426	1,048,590,988	5,828,998,438
2033	38	48.81%	6.98%	41.83%	7,011,328,050	1,002,534,176	6,008,793,874
2034	39	52.40%	6.51%	45.89%	7,651,083,943	950,664,232	6,700,419,711
2035	40	52.39%	6.03%	46.36%	7,772,826,581	894,068,360	6,878,758,221
2036	41	52.38%	5.54%	46.84%	7,896,443,059	834,481,709	7,061,961,349
2037	42	52.36%	5.04%	47.32%	8,022,285,979	772,728,203	7,249,557,777
2038	43	52.35%	4.54%	47.82%	8,153,915,708	706,813,761	7,447,101,947
2039	44	52.34%	3.99%	48.35%	8,286,676,197	631,343,404	7,655,332,793
2040	45	52.32%	3.40%	48.92%	8,421,352,056	547,977,291	7,873,374,765
2041	46	52.30%	2.81%	49.49%	8,565,595,783	460,363,937	8,105,231,846
2042	47	52.28%	2.23%	50.06%	8,720,028,554	371,831,386	8,348,197,168
2043	48	52.27%	1.69%	50.58%	8,887,119,564	287,516,177	8,599,603,386
2044	49	52.25%	1.22%	51.03%	9,069,767,980	211,351,180	8,858,416,799
2045	50	52.23%	0.84%	51.40%	9,268,916,932	148,416,034	9,120,500,898
2046	51	8.22%	0.58%	7.64%	1,493,411,077	104,938,153	1,388,472,923

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

Notes

1) 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 2023 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 – 2023 are based on the June 30, 1993 – June 30, 2021 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 2022 are based on the June 30, 2021 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	6,823,909,746	7,775,424,455	4,461,572,336	63,626,807,724	67,722,562,647	142,798,117,684	79,171,309,960	44.6%
2023	7,045,478,259	8,053,210,344	4,705,308,762	68,332,428,764	71,420,139,325	146,693,717,852	78,361,289,089	46.6%
2024	7,160,488,420	8,339,059,405	4,958,159,768	73,314,877,175	75,199,728,108	150,589,134,250	77,274,257,075	48.7%
2025	7,293,384,664	8,633,573,953	5,217,074,342	79,076,613,161	79,076,613,161	154,603,731,794	75,527,118,632	51.1%
2026	7,421,526,865	8,937,616,634	5,482,299,779	83,042,823,173	83,042,823,173	158,601,036,026	75,558,212,853	52.4%
2027	7,482,622,159	9,249,544,334	5,751,155,346	87,027,056,344	87,027,056,344	162,566,545,775	75,539,489,431	53.5%
2028	7,623,502,666	9,575,380,276	6,023,578,228	91,098,756,962	91,098,756,962	166,475,461,935	75,376,704,973	54.7%
2029	7,756,802,865	9,912,390,205	6,301,467,430	95,244,637,052	95,244,637,052	170,305,176,071	75,060,539,019	55.9%
2030	7,879,568,460	10,255,851,662	6,583,954,682	99,452,308,532	99,452,308,532	174,039,022,938	74,586,714,406	57.1%
2031	8,003,709,112	10,608,754,510	6,870,485,008	103,717,748,142	103,717,748,142	177,656,372,727	73,938,624,585	58.4%
2032	8,148,018,912	10,966,068,830	7,161,610,623	108,061,308,847	108,061,308,847	181,139,936,078	73,078,627,231	59.7%
2033	8,304,042,136	11,338,053,320	7,458,101,228	112,485,398,891	112,485,398,891	184,457,769,813	71,972,370,922	61.0%
2034	8,965,252,498	11,718,334,893	7,777,620,039	117,509,936,534	117,509,936,534	187,582,817,427	70,072,880,893	62.6%
2035	9,108,154,207	12,106,910,957	8,120,739,071	122,631,918,855	122,631,918,855	190,487,807,951	67,855,889,096	64.4%
2036	9,253,308,622	12,493,861,353	8,470,814,974	127,862,181,098	127,862,181,098	193,156,319,733	65,294,138,635	66.2%
2037	9,401,095,473	12,878,666,845	8,828,637,679	133,213,247,404	133,213,247,404	195,572,198,848	62,358,951,444	68.1%
2038	9,555,642,647	13,265,627,169	9,195,077,860	138,698,340,742	138,698,340,742	197,712,235,594	59,013,894,852	70.2%
2039	9,711,641,572	13,648,350,667	9,571,099,034	144,332,730,682	144,332,730,682	199,551,958,918	55,219,228,236	72.3%
2040	9,869,925,249	14,028,296,115	9,957,748,167	150,132,107,983	150,132,107,983	201,065,441,289	50,933,333,305	74.7%
2041	10,039,497,918	14,388,709,579	10,357,025,151	156,139,921,474	156,139,921,474	202,247,449,979	46,107,528,505	77.2%
2042	10,221,042,004	14,706,980,667	10,772,786,650	162,426,769,461	162,426,769,461	203,119,291,636	40,692,522,175	80.0%
2043	10,417,446,103	15,010,010,145	11,209,134,121	169,043,339,540	169,043,339,540	203,681,665,921	34,638,326,381	83.0%
2044	10,632,062,363	15,265,408,847	11,670,866,641	176,080,859,697	176,080,859,697	203,973,378,443	27,892,518,745	86.3%
2045	10,865,994,714	15,481,432,534	12,164,119,855	183,629,541,732	183,629,541,732	204,032,824,147	20,403,282,415	90.0%
2046	3,129,236,677	15,642,770,166	12,416,094,249	183,532,102,492	183,532,102,492	203,924,558,325	20,392,455,832	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	6,589,026,263	7,730,321,132	4,371,245,899	62,240,455,166	66,246,968,455	141,710,081,739	79,469,626,573	43.9%
2023	6,775,055,657	8,003,459,224	4,594,293,667	66,603,282,256	69,612,858,555	145,343,076,744	78,739,794,488	45.8%
2024	6,853,544,708	8,283,669,377	4,822,845,735	71,175,724,137	73,005,579,621	148,929,261,651	77,753,537,514	47.8%
2025	6,948,473,602	8,572,622,241	5,053,545,371	76,434,976,354	76,434,976,354	152,582,884,245	76,147,907,891	50.1%
2026	7,037,184,036	8,866,890,538	5,286,408,617	79,891,678,469	79,891,678,469	156,167,048,211	76,275,369,742	51.2%
2027	7,057,877,614	9,172,451,164	5,518,407,419	83,295,512,337	83,295,512,337	159,657,884,213	76,362,371,875	52.2%
2028	7,156,215,324	9,491,449,637	5,748,952,663	86,709,230,687	86,709,230,687	163,024,177,147	76,314,946,461	53.2%
2029	7,243,971,354	9,820,948,502	5,979,451,948	90,111,705,487	90,111,705,487	166,235,860,661	76,124,155,174	54.2%
2030	7,319,211,358	10,156,163,005	6,208,526,076	93,483,279,917	93,483,279,917	169,269,486,672	75,786,206,755	55.2%
2031	7,393,482,876	10,497,780,236	6,435,179,187	96,814,161,743	96,814,161,743	172,098,840,172	75,284,678,428	56.3%
2032	7,485,409,148	10,844,517,750	6,659,422,521	100,114,475,662	100,114,475,662	174,696,871,846	74,582,396,183	57.3%
2033	7,586,797,790	11,205,153,210	6,881,370,857	103,377,491,100	103,377,491,100	177,022,540,333	73,645,049,234	58.4%
2034	8,190,673,312	11,573,011,851	7,118,042,528	107,113,195,090	107,113,195,090	179,039,023,917	71,925,828,828	59.8%
2035	8,273,543,610	11,947,068,809	7,369,350,274	110,809,020,164	110,809,020,164	180,710,108,859	69,901,088,695	61.3%
2036	8,356,643,105	12,318,652,641	7,617,961,078	114,464,971,706	114,464,971,706	182,008,346,546	67,543,374,840	62.9%
2037	8,440,360,044	12,686,357,418	7,863,938,111	118,082,912,443	118,082,912,443	182,906,931,413	64,824,018,970	64.6%
2038	8,529,182,034	13,054,200,415	8,107,428,228	121,665,322,290	121,665,322,290	183,372,040,245	61,706,717,955	66.3%
2039	8,617,265,026	13,416,122,395	8,348,612,552	125,215,077,472	125,215,077,472	183,366,694,127	58,151,616,654	68.3%
2040	8,705,286,199	13,772,674,724	8,587,696,825	128,735,385,771	128,735,385,771	182,852,981,330	54,117,595,558	70.4%
2041	8,803,462,263	14,108,208,739	8,825,810,877	132,256,450,173	132,256,450,173	181,811,783,639	49,555,333,466	72.7%
2042	8,912,707,793	14,398,396,690	9,065,952,401	135,836,713,677	135,836,713,677	180,252,127,611	44,415,413,934	75.4%
2043	9,037,328,122	14,670,354,780	9,311,414,024	139,515,101,043	139,515,101,043	178,162,705,255	38,647,604,211	78.3%
2044	9,181,748,853	14,891,417,076	9,566,218,685	143,371,651,506	143,371,651,506	175,570,229,582	32,198,578,076	81.7%
2045	9,347,109,911	15,066,558,203	9,835,834,915	147,488,038,129	147,488,038,129	172,504,361,610	25,016,323,481	85.5%
2046	1,544,991,309	15,182,897,598	9,846,835,949	143,696,967,788	143,696,967,788	169,018,342,432	25,321,374,644	85.0%

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	234,883,483	45,103,323	90,326,437	1,386,352,558	1,475,594,192	1,088,035,945	(298,316,613)	127.4%
2023	270,422,603	49,751,120	111,015,095	1,729,146,508	1,807,280,770	1,350,641,108	(378,505,399)	128.0%
2024	306,943,712	55,390,028	135,314,033	2,139,153,037	2,194,148,487	1,659,872,598	(479,280,439)	128.9%
2025	344,911,062	60,951,712	163,528,971	2,641,636,807	2,641,636,807	2,020,847,549	(620,789,259)	130.7%
2026	384,342,829	70,726,095	195,891,162	3,151,144,704	3,151,144,704	2,433,987,815	(717,156,889)	129.5%
2027	424,744,545	77,093,169	232,747,927	3,731,544,007	3,731,544,007	2,908,661,562	(822,882,445)	128.3%
2028	467,287,342	83,930,639	274,625,565	4,389,526,275	4,389,526,275	3,451,284,788	(938,241,487)	127.2%
2029	512,831,510	91,441,703	322,015,483	5,132,931,565	5,132,931,565	4,069,315,410	(1,063,616,155)	126.1%
2030	560,357,102	99,688,657	375,428,605	5,969,028,615	5,969,028,615	4,769,536,266	(1,199,492,348)	125.1%
2031	610,226,236	110,974,274	435,305,822	6,903,586,399	6,903,586,399	5,557,532,555	(1,346,053,843)	124.2%
2032	662,609,764	121,551,080	502,188,102	7,946,833,185	7,946,833,185	6,443,064,232	(1,503,768,953)	123.3%
2033	717,244,345	132,900,110	576,730,371	9,107,907,791	9,107,907,791	7,435,229,480	(1,672,678,311)	122.5%
2034	774,579,186	145,323,042	659,577,510	10,396,741,445	10,396,741,445	8,543,793,510	(1,852,947,935)	121.7%
2035	834,610,597	159,842,148	751,388,797	11,822,898,691	11,822,898,691	9,777,699,092	(2,045,199,599)	120.9%
2036	896,665,516	175,208,712	852,853,896	13,397,209,391	13,397,209,391	11,147,973,187	(2,249,236,204)	120.2%
2037	960,735,429	192,309,427	964,699,567	15,130,334,961	15,130,334,961	12,665,267,435	(2,465,067,526)	119.5%
2038	1,026,460,613	211,426,754	1,087,649,632	17,033,018,453	17,033,018,453	14,340,195,349	(2,692,823,104)	118.8%
2039	1,094,376,547	232,228,271	1,222,486,481	19,117,653,209	19,117,653,209	16,185,264,791	(2,932,388,418)	118.1%
2040	1,164,639,051	255,621,391	1,370,051,343	21,396,722,212	21,396,722,212	18,212,459,959	(3,184,262,253)	117.5%
2041	1,236,035,656	280,500,840	1,531,214,273	23,883,471,301	23,883,471,301	20,435,666,340	(3,447,804,961)	116.9%
2042	1,308,334,211	308,583,977	1,706,834,249	26,590,055,784	26,590,055,784	22,867,164,025	(3,722,891,758)	116.3%
2043	1,380,117,980	339,655,364	1,897,720,096	29,528,238,496	29,528,238,496	25,518,960,666	(4,009,277,830)	115.7%
2044	1,450,313,510	373,991,771	2,104,647,956	32,709,208,191	32,709,208,191	28,403,148,861	(4,306,059,330)	115.2%
2045	1,518,884,803	414,874,331	2,328,284,940	36,141,503,604	36,141,503,604	31,528,462,537	(4,613,041,066)	114.6%
2046	1,584,245,368	459,872,568	2,569,258,300	39,835,134,704	39,835,134,704	34,906,215,892	(4,928,918,812)	114.1%

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
2021	$45,446,503,343	$867,936,782	-	$92,599,834,792	$138,914,274,917
2022	50,649,635,329	1,060,194,168	$27,841,776	91,060,446,411	142,798,117,684
2023	55,959,092,880	1,267,974,250	82,666,858	89,383,983,863	146,693,717,852
2024	61,361,819,608	1,495,932,500	163,940,098	87,567,442,043	150,589,134,250
2025	66,835,724,628	1,749,335,217	271,512,331	85,747,159,618	154,603,731,794
2026	72,431,547,882	2,028,898,803	405,089,012	83,735,500,329	158,601,036,026
2027	78,122,271,009	2,335,468,173	573,193,390	81,535,613,204	162,566,545,775
2028	83,870,412,283	2,671,930,757	779,354,031	79,153,764,864	166,475,461,935
2029	89,640,712,147	3,040,989,858	1,028,325,552	76,595,148,515	170,305,176,071
2030	95,402,401,168	3,445,059,998	1,324,476,268	73,867,085,504	174,039,022,938
2031	101,119,083,992	3,884,548,035	1,672,984,520	70,979,756,180	177,656,372,727
2032	106,750,350,506	4,361,485,441	2,081,578,791	67,946,521,340	181,139,936,078
2033	112,246,036,440	4,878,045,680	2,557,183,800	64,776,503,894	184,457,769,813
2034	117,552,937,545	5,436,329,350	3,107,464,159	61,486,086,373	187,582,817,427
2035	122,620,026,537	6,038,115,347	3,739,583,745	58,090,082,322	190,487,807,951
2036	127,401,530,447	6,685,467,013	4,462,506,174	54,606,816,099	193,156,319,733
2037	131,851,712,598	7,380,189,351	5,285,078,084	51,055,218,815	195,572,198,848
2038	135,916,751,911	8,123,378,961	6,216,816,388	47,455,288,334	197,712,235,594
2039	139,537,742,610	8,916,568,926	7,268,695,865	43,828,951,517	199,551,958,918
2040	142,659,842,222	9,761,180,760	8,451,279,198	40,193,139,108	201,065,441,289
2041	145,241,758,761	10,658,309,383	9,777,356,957	36,570,024,878	202,247,449,979
2042	147,253,890,562	11,609,651,633	11,257,512,392	32,998,237,048	203,119,291,636
2043	148,686,885,893	12,614,487,450	12,904,473,216	29,475,819,362	203,681,665,921
2044	149,551,830,568	13,671,701,003	14,731,447,858	26,018,399,014	203,973,378,443
2045	149,869,522,128	14,776,942,348	16,751,520,189	22,634,839,482	204,032,824,147
2046	149,685,106,947	15,925,884,778	18,980,331,115	19,333,235,486	203,924,558,325

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
2021	$2,011,850,046	$160,986,973	-	$2,172,837,019
2022	2,014,612,691	161,916,750	$27,983,186	2,204,512,627
2023	2,016,826,037	164,245,992	55,635,649	2,236,707,678
2024	2,014,504,928	168,273,873	83,186,179	2,265,964,980
2025	2,003,656,252	173,783,809	110,915,083	2,288,355,143
2026	1,984,195,598	180,389,575	138,614,554	2,303,199,726
2027	1,957,745,179	187,364,099	168,026,819	2,313,136,098
2028	1,920,978,573	194,857,798	199,349,207	2,315,185,578
2029	1,874,240,739	202,813,120	233,383,435	2,310,437,294
2030	1,821,077,108	210,968,823	269,333,876	2,301,379,807
2031	1,761,119,703	219,490,204	307,709,155	2,288,319,061
2032	1,694,037,173	228,548,258	348,240,047	2,270,825,479
2033	1,616,946,580	238,032,924	391,228,375	2,246,207,879
2034	1,530,046,039	247,828,150	437,104,317	2,214,978,507
2035	1,435,370,364	257,855,903	485,512,749	2,178,739,016
2036	1,335,117,473	268,154,231	536,601,535	2,139,873,239
2037	1,230,359,038	278,646,593	590,225,568	2,099,231,199
2038	1,120,108,632	289,011,725	646,244,450	2,055,364,807
2039	997,582,900	299,326,758	705,341,654	2,002,251,313
2040	864,939,475	309,627,690	767,030,268	1,941,597,432
2041	727,160,174	319,763,251	831,428,717	1,878,352,142
2042	588,396,903	329,808,522	897,696,986	1,815,902,411
2043	455,446,583	339,231,607	965,110,080	1,759,788,270
2044	333,090,900	347,698,665	1,033,588,821	1,714,378,386
2045	227,345,535	354,737,243	1,102,824,317	1,684,907,096
2046	146,011,698	359,991,718	1,172,703,681	1,678,707,097

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
2021	$117,161,471	$35,479,517	-	$7,289,926,158	$7,442,567,146	$23,758,112	$7,466,325,258
2022	279,567,779	34,676,699	$1,050,919	7,419,236,824	7,734,532,221	40,892,235	7,775,424,456
2023	455,603,758	35,008,420	4,483,952	7,518,227,149	8,013,323,279	39,887,064	8,053,210,343
2024	649,559,349	33,588,639	10,157,177	7,604,845,804	8,298,150,969	40,908,436	8,339,059,405
2025	862,642,605	29,925,714	17,941,457	7,681,162,675	8,591,672,451	41,901,502	8,633,573,952
2026	1,095,624,608	28,386,072	27,759,599	7,742,956,969	8,894,727,248	42,889,387	8,937,616,634
2027	1,355,975,215	28,167,758	32,812,308	7,788,765,361	9,205,720,642	43,823,692	9,249,544,333
2028	1,648,654,007	27,504,715	38,698,918	7,815,788,661	9,530,646,301	44,733,975	9,575,380,276
2029	1,969,323,533	26,712,644	45,274,290	7,825,487,816	9,866,798,283	45,591,922	9,912,390,204
2030	2,314,802,178	25,992,449	52,438,509	7,816,157,881	10,209,391,017	46,460,645	10,255,851,661
2031	2,688,077,037	27,612,310	60,212,430	7,785,531,699	10,561,433,476	47,321,034	10,608,754,510
2032	3,090,234,608	30,200,869	66,213,456	7,731,224,901	10,917,873,834	48,194,995	10,966,068,830
2033	3,525,086,507	33,648,395	72,042,344	7,658,235,690	11,289,012,936	49,040,383	11,338,053,320
2034	3,992,375,046	38,056,366	77,882,251	7,560,166,950	11,668,480,613	49,854,280	11,718,334,893
2035	4,488,431,009	43,799,735	84,380,637	7,439,642,607	12,056,253,988	50,656,970	12,106,910,958
2036	5,006,922,049	50,761,988	90,430,834	7,294,272,449	12,442,387,320	51,474,033	12,493,861,353
2037	5,545,787,791	59,255,823	96,607,158	7,124,709,575	12,826,360,347	52,306,498	12,878,666,845
2038	6,108,760,647	69,766,873	102,720,086	6,931,203,670	13,212,451,276	53,175,893	13,265,627,169
2039	6,690,337,703	82,024,619	108,687,399	6,713,243,479	13,594,293,200	54,057,466	13,648,350,666
2040	7,284,764,258	96,276,504	115,163,156	6,477,139,144	13,973,343,062	54,953,052	14,028,296,115
2041	7,880,215,022	112,783,122	120,827,487	6,218,970,017	14,332,795,648	55,913,931	14,388,709,579
2042	8,466,749,463	131,111,956	127,839,073	5,924,337,750	14,650,038,242	56,942,425	14,706,980,667
2043	9,029,589,534	153,181,647	134,117,581	5,635,066,937	14,951,955,699	58,054,446	15,010,010,145
2044	9,553,132,542	178,992,425	139,980,273	5,334,036,429	15,206,141,669	59,267,178	15,265,408,847
2045	10,034,753,747	211,121,656	146,132,282	5,028,838,129	15,420,845,814	60,586,720	15,481,432,534
2046	10,460,126,591	248,897,474	150,875,184	4,720,814,261	15,580,713,510	62,056,657	15,642,770,166

Note: The projected benefit payments shown above do not include projected buyout amounts of $110,122,698, $114,805,422, and $122,849,675 for the years ending June 30, 2022, 2023, and 2024, 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
2021	$8,865,178,292	$2,223,077,392	-	$11,088,255,684
2022	8,772,925,037	2,222,748,809	$387,067,672	11,382,741,518
2023	8,677,868,881	2,230,898,360	773,797,225	11,682,564,466
2024	8,571,229,340	2,248,443,476	1,162,042,212	11,981,715,028
2025	8,440,230,082	2,277,037,542	1,555,307,589	12,272,575,213
2026	8,291,442,038	2,319,648,380	1,950,827,503	12,561,917,921
2027	8,116,183,682	2,369,655,582	2,349,728,250	12,835,567,514
2028	7,910,099,821	2,420,097,476	2,771,984,100	13,102,181,397
2029	7,655,338,314	2,470,805,262	3,227,322,632	13,353,466,208
2030	7,381,717,384	2,521,298,215	3,704,891,804	13,607,907,403
2031	7,079,616,169	2,569,299,176	4,210,992,338	13,859,907,683
2032	6,753,552,471	2,615,134,980	4,747,195,729	14,115,883,180
2033	6,394,108,229	2,660,110,022	5,309,271,591	14,363,489,842
2034	5,995,437,434	2,702,303,879	5,904,131,516	14,601,872,829
2035	5,563,522,541	2,741,300,948	6,532,150,132	14,836,973,621
2036	5,113,333,852	2,775,687,325	7,187,262,857	15,076,284,034
2037	4,645,267,380	2,804,822,718	7,870,015,384	15,320,105,482
2038	4,169,625,843	2,828,638,760	8,576,479,167	15,574,743,770
2039	3,673,209,211	2,846,210,666	9,313,528,740	15,832,948,617
2040	3,154,823,808	2,858,912,935	10,081,520,963	16,095,257,706
2041	2,642,960,885	2,866,944,262	10,866,785,248	16,376,690,395
2042	2,140,880,437	2,868,671,021	11,668,375,766	16,677,927,224
2043	1,668,983,986	2,863,170,990	12,471,473,237	17,003,628,213
2044	1,244,231,927	2,846,279,152	13,268,315,407	17,358,826,486
2045	868,810,882	2,820,115,188	14,056,382,619	17,745,308,689
2046	573,113,692	2,781,388,688	14,821,337,624	18,175,840,004

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
2021	105,979	232,464	338,443	56,970	28,739	85,709	162,949	261,203	424,152
2022	100,416	229,260	329,676	62,533	27,336	89,869	162,949	256,595	419,544
2023	95,231	225,901	321,132	67,718	26,010	93,728	162,949	251,911	414,860
2024	90,237	222,523	312,760	72,712	24,764	97,476	162,949	247,287	410,236
2025	85,451	219,050	304,501	77,498	23,622	101,120	162,949	242,672	405,621
2026	80,823	215,597	296,420	82,126	22,541	104,667	162,949	238,138	401,087
2027	76,276	211,927	288,203	86,673	21,529	108,202	162,949	233,456	396,405
2028	71,574	208,271	279,845	91,375	20,589	111,964	162,949	228,859	391,808
2029	66,953	204,390	271,343	95,996	19,714	115,710	162,949	224,104	387,053
2030	62,328	200,371	262,699	100,621	18,964	119,585	162,949	219,334	382,283
2031	57,713	196,200	253,913	105,236	18,493	123,729	162,949	214,693	377,642
2032	53,107	191,877	244,984	109,842	18,026	127,868	162,949	209,903	372,852
2033	48,461	187,453	235,914	114,488	17,647	132,135	162,949	205,100	368,049
2034	43,804	182,911	226,715	119,145	17,354	136,499	162,949	200,265	363,214
2035	39,230	178,164	217,394	123,719	17,149	140,868	162,949	195,313	358,262
2036	34,764	173,200	207,964	128,185	17,015	145,200	162,949	190,215	353,164
2037	30,448	167,990	198,438	132,501	16,982	149,483	162,949	184,972	347,921
2038	26,093	162,741	188,834	136,856	17,042	153,898	162,949	179,782	342,731
2039	21,946	157,219	179,165	141,003	17,172	158,175	162,949	174,391	337,340
2040	18,034	151,419	169,453	144,915	17,392	162,307	162,949	168,810	331,759
2041	14,339	145,380	159,719	148,610	17,698	166,308	162,949	163,078	326,027
2042	10,998	143,847	154,845	151,951	19,566	171,517	162,949	163,413	326,362
2043	8,089	141,905	149,994	154,860	21,553	176,413	162,949	163,458	326,407
2044	5,575	139,606	145,181	157,374	23,641	181,015	162,949	163,247	326,196
2045	3,662	136,768	140,430	159,287	25,882	185,169	162,949	162,650	325,599
2046	2,340	133,411	135,751	160,609	28,233	188,842	162,949	161,644	324,593

[1] Assuming members eligible for refunds only will be paid over 20 years

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

Year Ended June 30	Payroll Tier 1	Payroll Tier 2	Payroll Total	Employer Normal Cost ($) Tier 1	Employer Normal Cost ($) Tier 2	Employer Normal Cost ($) Admin. Expenses	Employer Normal Cost ($) Total	Employer Normal Cost (% of Pay) Tier 1 (% of pay)	Tier 2 (% of pay)	Admin. Expenses (% of pay)	Total (% of pay)
2023	$8,677,868,881	$3,004,695,585	$11,682,564,466	$1,235,817,837	($50,540,962)	$39,887,064	$1,225,163,940	14.24%	-1.68%	0.34%	10.49%
2024	8,571,229,340	3,410,485,688	11,981,715,028	1,243,094,287	(55,483,660)	40,908,436	1,228,519,063	14.50%	-1.63%	0.34%	10.25%
2025	8,440,230,082	3,832,345,131	12,272,575,213	1,244,035,544	(60,212,170)	41,901,502	1,225,724,876	14.74%	-1.57%	0.34%	9.99%
2026	8,291,442,038	4,270,475,883	12,561,917,921	1,237,965,814	(65,338,701)	42,889,387	1,215,516,500	14.93%	-1.53%	0.34%	9.68%
2027	8,116,183,682	4,719,383,832	12,835,567,514	1,227,288,648	(69,353,627)	43,823,692	1,201,758,713	15.12%	-1.47%	0.34%	9.36%
2028	7,910,099,821	5,192,081,576	13,102,181,397	1,209,069,589	(73,080,337)	44,733,975	1,180,723,227	15.29%	-1.41%	0.34%	9.01%
2029	7,655,338,314	5,698,127,894	13,353,466,208	1,185,260,290	(76,634,955)	45,591,922	1,154,217,257	15.48%	-1.34%	0.34%	8.64%
2030	7,381,717,384	6,226,190,019	13,607,907,403	1,156,722,543	(80,054,402)	46,460,645	1,123,128,785	15.67%	-1.29%	0.34%	8.25%
2031	7,079,616,169	6,780,291,514	13,859,907,683	1,123,954,247	(83,026,878)	47,321,034	1,088,248,403	15.88%	-1.22%	0.34%	7.85%
2032	6,753,552,471	7,362,330,709	14,115,883,180	1,086,217,451	(85,821,458)	48,194,995	1,048,590,988	16.08%	-1.17%	0.34%	7.43%
2033	6,394,108,229	7,969,381,613	14,363,489,842	1,041,476,839	(87,983,047)	49,040,383	1,002,534,176	16.29%	-1.10%	0.34%	6.98%
2034	5,995,437,434	8,606,435,395	14,601,872,829	990,456,670	(89,646,718)	49,854,280	950,664,232	16.52%	-1.04%	0.34%	6.51%
2035	5,563,522,541	9,273,451,080	14,836,973,621	934,653,336	(91,241,946)	50,656,970	894,068,360	16.80%	-0.98%	0.34%	6.03%
2036	5,113,333,852	9,962,950,182	15,076,284,034	874,917,426	(91,909,750)	51,474,033	834,481,709	17.11%	-0.92%	0.34%	5.54%
2037	4,645,267,380	10,674,838,102	15,320,105,482	812,284,974	(91,863,269)	52,306,498	772,728,203	17.49%	-0.86%	0.34%	5.04%
2038	4,169,625,843	11,405,117,927	15,574,743,770	744,842,306	(91,204,438)	53,175,893	706,813,761	17.86%	-0.80%	0.34%	4.54%
2039	3,673,209,211	12,159,739,406	15,832,948,617	666,994,071	(89,708,134)	54,057,466	631,343,404	18.16%	-0.74%	0.34%	3.99%
2040	3,154,823,808	12,940,433,898	16,095,257,706	581,005,332	(87,981,094)	54,953,052	547,977,291	18.42%	-0.68%	0.34%	3.40%
2041	2,642,960,885	13,733,729,510	16,376,690,395	489,293,694	(84,843,688)	55,913,931	460,363,937	18.51%	-0.62%	0.34%	2.81%
2042	2,140,880,437	14,537,046,787	16,677,927,224	395,717,663	(80,828,703)	56,942,425	371,831,386	18.48%	-0.56%	0.34%	2.23%
2043	1,668,983,986	15,334,644,227	17,003,628,213	305,238,025	(75,776,293)	58,054,446	287,516,177	18.29%	-0.49%	0.34%	1.69%
2044	1,244,231,927	16,114,594,559	17,358,826,486	221,110,027	(69,026,024)	59,267,178	211,351,180	17.77%	-0.43%	0.34%	1.22%
2045	868,810,882	16,876,497,807	17,745,308,689	149,152,556	(61,323,242)	60,586,720	148,416,034	17.17%	-0.36%	0.34%	0.84%
2046	573,113,692	17,602,726,312	18,175,840,004	94,431,465	(51,549,969)	62,056,657	104,938,153	16.48%	-0.29%	0.34%	0.58%

Table 12 – Projection of Debt Service to 2033

Fiscal Year	Debt Service
2021	$422,197,518
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: GASB Information

Exhibit 1 – Schedule of Employer Contributions

($ in thousands)

Fiscal Year Ended June 30	Actuarially Determined Contribution (ADC)*	Percentage Contributed
2012	$3,429,945	74.6%
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%

** 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.*

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, 2019, was contributed in the fiscal year ended June 30, 2021).

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
2012	$3,429,945	$2,405,172	$153,409	$2,558,581	$871,364	$9,321,098	27.4%
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%

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

Exhibit 2 – 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)
6/30/2012	$37,945,397	$90,024,945	$52,079,548	42.1%	$9,321,098	558.7%
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%

Exhibit 3 – Solvency Test

($ in thousands)

	Actuarial Accrued Liability for:				Portion of Actuarial Accrued Liability Covered by Valuation Assets		
Valuation as of June 30	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Member (Employer Financed Portion)	Valuation Assets	(1)	(2)	(3)
2012	$8,270,073	$58,734,636	$23,020,236	$37,945,397	100%	51%	0%
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%

Exhibit 4 – Net Pension Liability

	June 30, 2021	June 30, 2020
The components of the net pension liability:		
Total pension liability	$142,223,798,748	$138,531,733,887
Plan fiduciary net position	(64,212,505,020)	(52,316,477,771)
Net pension liability	$78,011,293,728	$86,215,256,116
Plan fiduciary net position as a percentage of the total pension liability	45.1%	37.8%

Plan provisions: The plan provisions used in the measurement of the net pension liability are the same as those used in the actuarial valuation as of June 30, 2021.

Actuarial assumptions: The total pension liability was determined by an actuarial valuation as of June 30, 2021, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.25%
Salary increases	8.50% at one year of service to 3.50% at 20 and more years of service
Investment rate of return	7.00%
Cost-of-living adjustments	Tier 1: 3% compounded Tier 2: 1.125% 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.

Exhibit 4 – Net Pension Liability *continued*

Discount rate: The discount rate used to measure the total pension liability was 7.00% as of June 30, 2021. 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, 2021, 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, 2021. 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, 2021.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability as of June 30, 2021, 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, 2021	$96,615,373,673	$78,011,293,728	$62,558,129,092

Exhibit 5 – Schedules of Changes in Net Pension Liability

Fiscal Year Ended June 30	2021	2020	2019	2018	2017
Total pension liability					
Service cost	$2,032,149,463	$1,991,622,987	$1,947,627,286	$1,838,002,948	$1,877,570,053
Interest	9,580,886,840	9,296,897,060	8,991,684,121	8,703,519,454	8,390,352,464
Change of benefit terms	0	0	0	(374,603,419)	0
Differences between expected and actual experience	(370,469,646)	(28,215,833)	258,778,925	1,191,346,970	482,486,212
Changes of assumptions	(162,359,084)	0	77,241,572	(666,054,719)	(2,725,599,755)
Benefit payments, including refunds of employee contributions	(7,388,142,712)	(7,099,524,955)	(6,818,760,572)	(6,551,634,376)	(6,438,005,920)
Net change in total pension liability	$3,692,064,861	$4,160,779,259	$4,456,571,332	$4,140,576,858	$1,586,803,054
Total pension liability – beginning	138,531,733,887	134,370,954,628	129,914,383,296	125,773,806,438	124,187,003,384
Total pension liability – ending (a)	$142,223,798,748	$138,531,733,887	$134,370,954,628	$129,914,383,296	$125,773,806,438
Plan fiduciary net position					
Contributions – employer	$97,594,081	$92,658,238	$88,514,781	$84,633,117	$149,495,577
Contributions – nonemployer contributing entity	5,140,648,356	4,813,451,679	4,466,020,692	4,095,125,358	3,986,363,699
Contributions – member	1,023,531,951	994,400,416	963,972,120	938,037,245	929,130,165
Net investment income	13,046,153,685	275,669,398	2,617,831,332	4,049,271,728	5,520,453,001
Benefit payments, including refunds of employee contributions	(7,388,142,712)	(7,099,524,955)	(6,818,760,572)	(6,551,634,376)	(6,438,005,920)
Administrative expense	(23,758,112)	(22,966,372)	(24,335,680)	(21,550,896)	(22,728,735)
Net change in plan fiduciary net position	$11,896,027,249	($946,311,596)	$1,293,242,673	$2,593,882,176	$4,124,707,787
Plan fiduciary net position – beginning	52,316,477,771	53,262,789,367	51,969,546,694	49,375,664,518	45,250,956,731
Plan fiduciary net position – ending (b)	$64,212,505,020	$52,316,477,771	$53,262,789,367	$51,969,546,694	$49,375,664,518
Net pension liability – ending (a) – (b)	$78,011,293,728	$86,215,256,116	$81,108,165,261	$77,944,836,602	$76,398,141,920
Plan fiduciary net position as a percentage of the total pension liability	45.1%	37.8%	39.6%	40.0%	39.3%
Actual covered employee payroll	$11,120,776,122	$10,827,438,800	$10,450,452,444	$10,163,980,000	$9,965,569,893
Plan net pension liability as percentage of covered employee payroll	701.5%	796.3%	776.1%	766.9%	766.6%

Exhibit 6 – 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, 2021		
	Total Pension Liability (a)	**Plan Fiduciary Net Position (b)**	**Net Pension Liability (a) – (b)**
Balances at beginning of year	$138,531,733,887	$52,316,477,771	$86,215,256,116
Changes for the year			
Service cost	2,032,149,463		2,032,149,463
Interest	9,580,886,840		9,580,886,840
Differences between expected and actual experience	(370,469,646)		(370,469,646)
Contributions – employer		97,594,081	(97,594,081)
Contributions – nonemployer contributing entity		5,140,648,356	(5,140,648,356)
Contributions – member		1,023,531,951	(1,023,531,951)
Net investment income		13,046,153,685	(13,046,153,685)
Benefit payments, including refunds of employee contributions	(7,388,142,712)	(7,388,142,712)	0
Administrative expense		(23,758,112)	23,758,112
Change of assumptions	(162,359,084)		(162,359,084)
Change of benefit terms	0		0
Net changes	3,692,064,861	11,896,027,249	(8,203,962,388)
Balances at end of year	$142,223,798,748	$ 64,212,505,020	$78,011,293,728

Exhibit 7 – 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, 2021	Outstanding Balance at June 30, 2021
Outflows					
Demographic	2016	$701,827,169	5.21	$28,288,619	$0
Assumption	2016	7,553,894,504	5.21	304,475,594	0
Demographic	2017	482,486,212	5.14	93,868,913	13,141,647
Demographic	2018	1,191,346,970	5.46	218,195,416	318,565,306
Demographic	2019	258,778,925	5.43	47,657,261	115,807,142
Investment	2019	973,676,334	5.00	194,735,267	389,470,533
Assumption	2019	77,241,572	5.43	14,224,967	34,566,671
Investment	2020	3,409,956,524	5.00	681,991,305	2,045,973,914
Total outflows				**$1,583,437,342**	**$2,917,525,213**
Inflows					
Investment	2017	$2,401,737,113	5.00	$480,347,421	$0
Assumption	2017	2,725,599,755	5.14	530,272,326	74,238,125
Investment	2018	643,913,847	5.00	128,782,769	128,782,771
Assumption	2018	666,054,719	5.46	121,988,044	178,102,543
Demographic	2020	28,215,833	5.42	5,205,873	17,804,087
Demographic	2021	370,469,646	5.56[1]	66,631,231	303,838,415
Investment	2021	9,424,254,666	5.00	1,884,850,933	7,539,403,733
Assumption	2021	162,359,084	5.56[1]	29,201,274	133,157,810
Total inflows				**$3,247,279,871**	**$8,375,327,484**

	Expected Remaining Service	Counts	Average of the Expected Remaining Service
Actives Members	2,411,450	162,949	14.80
Inactive Members	-	144,574	-
Retirees and Beneficiaries	-	126,518	-
Total Employees	2,411,450	434,041	5.56

[1] *Equal to the total expected remaining service lives of 2,411,450 years, divided by total employees that are provided with pensions through the plan of 434,041 (as shown in the table below), rounded to two decimal places*

Exhibit 7 – Collective Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions *continued*

Fiscal Year Ended June 30	2021	2020
Deferred Outflows of Resources		
Difference between expected and actual experience in the Total Pension Liability	$447,514,095	$835,524,304
Changes of assumptions or other inputs	34,566,671	353,267,232
Net difference between projected and actual earnings on pension plan investments	-	2,574,258,058
Total Deferred Outflows of Resources	$482,080,766	$3,763,049,594
Deferred Inflows of Resources		
Difference between expected and actual experience in the Total Pension Liability	$321,642,502	$23,009,960
Changes of assumptions or other inputs	385,498,478	904,601,038
Net difference between projected and actual earnings on pension plan investments	5,232,742,057	-
Total Deferred Inflows of Resources	$5,939,883,037	$927,610,998
Net Deferred Outflows/(Inflows) of Resources	**($5,457,802,271)**	**$2,835,438,596**
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Year Ended June 30:		
2021	N/A	$316,840,909
2022	($1,140,952,388)	839,731,050
2023	(1,003,025,121)	977,658,317
2024	(1,277,288,650)	703,394,788
2025	(1,982,869,907)	(2,186,468)
2026	(53,666,205)	-
Thereafter	-	-

Exhibit 8 – Collective Pension Expense

	Fiscal Year Ended June 30, 2021	Fiscal Year Ended June 30, 2020
Components of pension expense		
Service cost	$2,032,149,463	$1,991,622,987
Interest on the total pension liability	9,580,886,840	9,296,897,060
Projected earnings on plan investments	(3,621,899,019)	(3,685,625,922)
Contributions – member	(1,023,531,951)	(994,400,416)
Administrative expense	23,758,112	22,966,372
Current year recognition of:		
Changes of assumptions	(362,761,083)	811,848,379
Difference between expected and actual experience	316,173,105	489,223,427
Difference between projected and actual earnings on pension plan investments	(1,617,254,551)	964,181,831
Change of benefit terms	-	-
Total pension expense	$5,327,520,916	$8,896,713,718

Exhibit 9 – 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
2022	$64,212,505,020	$6,909,655,146	$7,734,532,221	$39,680,925	$4,464,615,821	$67,812,562,841
2023	67,812,562,841	7,015,236,954	8,011,729,249	37,656,789	4,710,684,181	71,489,097,939
2024	71,489,097,939	7,100,076,352	8,292,479,260	37,499,148	4,961,190,284	75,220,386,167
2025	75,220,386,167	7,202,843,854	8,579,822,529	37,404,698	5,215,923,614	79,021,926,409
2026	79,021,926,409	7,299,717,277	8,874,620,000	37,312,882	5,475,107,302	82,884,818,106
2027	82,884,818,106	7,329,776,180	9,175,836,759	37,254,109	5,736,021,253	86,737,524,671
2028	86,737,524,671	7,438,129,315	9,495,844,175	37,244,179	5,998,303,161	90,640,868,793
2029	90,640,868,793	7,537,118,594	9,825,581,075	37,240,116	6,263,461,225	94,578,627,420
2030	94,578,627,420	7,620,914,631	10,161,022,949	37,198,497	6,530,298,181	98,531,618,787
2031	98,531,618,787	7,704,076,605	10,505,054,302	37,162,586	6,797,878,405	102,491,356,909
2032	102,491,356,909	7,804,010,940	10,852,700,186	37,081,166	7,066,393,019	106,471,979,516
2033	106,471,979,516	7,913,398,589	11,213,075,459	36,945,052	7,336,256,799	110,471,614,393
2034	110,471,614,393	8,525,113,062	11,577,751,507	36,784,553	7,624,883,203	115,007,074,597
2035	115,007,074,597	8,614,756,845	11,947,059,393	36,600,131	7,932,583,628	119,570,755,547
2036	119,570,755,547	8,702,210,139	12,311,230,405	36,391,770	8,242,363,467	124,167,706,978
2037	124,167,706,978	8,789,092,775	12,670,493,878	36,181,400	8,554,624,101	128,804,748,576
2038	128,804,748,576	8,879,050,085	13,029,608,417	35,954,747	8,869,804,443	133,488,039,939
2039	133,488,039,939	8,968,037,743	13,381,838,620	35,712,630	9,188,429,823	138,226,956,255
2040	138,226,956,255	9,056,008,915	13,728,805,912	35,467,855	9,511,097,668	143,029,789,071
2041	143,029,789,071	9,149,877,871	14,052,402,166	35,246,461	9,839,263,259	147,931,281,575
2042	147,931,281,575	9,253,163,716	14,331,176,881	35,055,049	10,176,232,323	152,994,445,684
2043	152,994,445,684	9,368,414,667	14,592,079,052	34,899,575	10,525,561,459	158,261,443,183
2044	158,261,443,183	9,499,768,324	14,801,261,887	34,790,076	10,891,531,096	163,816,690,641
2045	163,816,690,641	9,649,892,991	14,967,456,669	34,756,365	11,279,837,143	169,744,207,741
2046	169,744,207,741	1,823,511,128	15,074,262,165	34,784,108	11,417,100,812	167,875,773,408
2047	167,875,773,408	1,767,124,274	15,136,580,000	34,858,990	11,282,153,123	165,753,611,815
2048	165,753,611,815	1,725,800,134	15,156,352,514	34,969,041	11,131,459,577	163,419,549,970
2049	163,419,549,970	1,698,530,173	15,149,266,460	35,078,234	10,967,364,990	160,901,100,439
2050	160,901,100,439	1,687,989,557	15,133,045,863	35,149,063	10,791,269,843	158,212,164,913
2051	158,212,164,913	1,690,892,394	15,129,894,986	35,194,704	10,603,254,639	155,341,222,256
2052	155,341,222,256	1,693,588,720	15,159,857,062	35,197,782	10,401,334,244	152,241,090,377
2053	152,241,090,377	1,694,313,794	15,192,651,083	35,039,457	10,183,208,140	148,890,921,771
2054	148,890,921,771	1,693,016,350	15,226,172,438	34,851,025	9,947,484,275	145,270,398,933
2055	145,270,398,933	1,690,463,205	15,258,458,017	34,632,979	9,692,835,953	141,360,607,095
2056	141,360,607,095	1,687,463,765	15,281,074,461	34,385,889	9,418,262,616	137,150,873,125

Exhibit 9 – 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
2057	$137,150,873,125	$1,684,290,046	$15,333,823,317	$34,110,397	$9,121,633,590	$132,588,863,048
2058	132,588,863,048	1,680,827,902	15,334,094,277	33,807,215	8,802,172,838	127,703,962,296
2059	127,703,962,296	1,677,994,035	15,293,854,570	33,477,124	8,461,550,543	122,516,175,180
2060	122,516,175,180	1,677,220,960	15,202,824,025	33,120,965	8,101,576,922	117,059,028,071
2061	117,059,028,071	1,679,192,138	15,050,242,126	32,739,643	7,724,999,328	111,380,237,768
2062	111,380,237,768	1,684,617,255	14,896,481,645	32,334,117	7,333,069,696	105,469,108,957
2063	105,469,108,957	1,693,791,994	14,656,768,364	31,905,400	6,928,016,765	99,402,243,952
2064	99,402,243,952	1,705,992,057	14,359,782,963	31,454,550	6,514,173,486	93,231,171,982
2065	93,231,171,982	1,720,610,875	14,014,146,353	30,982,673	6,094,823,903	87,001,477,734
2066	87,001,477,734	1,737,289,753	13,610,766,842	30,490,910	5,673,464,561	80,770,974,296
2067	80,770,974,296	1,756,207,656	13,172,545,693	29,980,440	5,253,347,054	74,578,002,872
2068	74,578,002,872	1,776,975,423	12,688,258,571	29,452,471	4,837,534,454	68,474,801,707
2069	68,474,801,707	1,798,543,769	12,157,505,180	28,908,235	4,429,660,682	62,516,592,743
2070	62,516,592,743	1,820,772,621	11,596,033,730	28,348,986	4,033,035,139	56,746,017,787
2071	56,746,017,787	1,843,521,614	10,998,365,335	27,775,993	3,650,829,555	51,214,227,628
2072	51,214,227,628	1,866,613,672	10,375,214,356	27,190,536	3,286,243,241	45,964,679,649
2073	45,964,679,649	1,890,045,601	9,730,171,834	26,593,901	2,942,192,371	41,040,151,886
2074	41,040,151,886	1,913,822,259	9,068,700,675	25,987,377	2,621,480,329	36,480,766,423
2075	36,480,766,423	1,937,949,226	8,396,988,539	25,372,248	2,326,699,245	32,323,054,106
2076	32,323,054,106	1,962,432,394	7,714,514,685	24,749,792	2,060,424,665	28,606,646,688
2077	28,606,646,688	1,987,277,686	7,027,780,419	24,121,276	1,825,203,428	25,367,226,108
2078	25,367,226,108	2,012,491,057	6,352,069,266	23,487,950	1,622,998,512	22,627,158,461
2079	22,627,158,461	2,038,078,487	5,698,374,115	22,851,045	1,454,990,959	20,399,002,748
2080	20,399,002,748	2,064,045,982	5,072,013,711	22,216,325	1,321,873,750	18,690,692,443
2081	18,690,692,443	2,090,374,987	4,475,659,772	21,590,131	1,224,107,849	17,507,925,376
2082	17,507,925,376	2,117,039,590	3,921,210,423	20,972,744	1,161,674,751	16,844,456,550
2083	16,844,456,550	2,144,044,068	3,411,489,011	20,364,425	1,134,038,631	16,690,685,814
2084	16,690,685,814	2,171,392,749	2,943,716,481	19,765,415	1,140,624,887	17,039,221,553
2085	17,039,221,553	2,199,090,017	2,518,994,083	19,175,939	1,180,877,709	17,881,019,256
2086	17,881,019,256	2,227,140,312	2,137,040,241	18,596,202	1,254,173,983	19,206,697,108
2087	19,206,697,108	2,255,548,133	1,797,096,915	18,026,391	1,359,883,667	21,007,005,602
2088	21,007,005,602	2,284,318,031	1,497,588,449	17,466,674	1,497,414,594	23,273,683,104
2089	23,273,683,104	2,313,454,620	1,236,382,846	16,917,203	1,666,263,227	26,000,100,902
2090	26,000,100,902	2,342,962,569	1,010,833,061	16,378,111	1,866,058,362	29,181,910,662
2091	29,181,910,662	2,372,846,610	818,069,249	15,849,515	2,096,596,221	32,817,434,729

Exhibit 9 – 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
2092	$32,817,434,729	$2,403,111,532	$655,089,812	$15,331,514	$2,357,864,588	$36,907,989,523
2093	36,907,989,523	2,433,762,186	518,723,122	14,824,192	2,650,066,787	41,458,271,182
2094	41,458,271,253	2,464,803,485	405,915,320	14,327,615	2,973,638,607	46,476,470,410
2095	46,476,470,410	2,496,240,406	313,666,544	13,841,836	3,329,258,550	51,974,460,986
2096	51,974,460,986	2,528,077,987	239,184,021	13,366,891	3,717,855,717	57,967,843,778
2097	57,967,843,778	2,560,321,331	179,896,322	12,902,802	4,140,612,342	64,475,978,327
2098	64,475,978,327	2,592,975,606	133,364,757	12,449,576	4,598,969,127	71,522,108,727
2099	71,522,108,727	2,626,046,046	97,407,292	12,007,207	5,094,629,715	79,133,369,990
2100	79,133,369,990	2,659,537,951	70,071,120	11,575,675	5,629,562,090	87,340,823,234
2101	87,340,823,234	2,693,456,689	49,684,211	11,154,949	6,205,999,240	96,179,440,003
2102	96,179,440,003	2,727,807,696	34,749,999	10,744,984	6,826,441,745	105,688,194,462
2103	105,688,194,462	2,762,596,478	24,025,792	10,345,723	7,493,661,486	115,910,080,913
2104	115,910,080,913	2,797,828,611	16,474,181	9,957,099	8,210,704,570	126,892,182,814
2105	126,892,182,814	2,833,509,740	11,242,669	9,579,034	8,980,896,878	138,685,767,729
2106	138,685,767,729	2,869,645,584	7,731,268	9,211,440	9,807,848,342	151,346,318,947
2107	151,346,318,947	2,906,241,934	5,401,774	8,854,218	10,695,461,834	164,933,766,724
2108	164,933,766,724	2,943,304,656	3,869,886	8,507,263	11,647,946,133	179,512,640,364
2109	179,512,640,364	2,980,839,687	2,855,976	8,170,457	12,669,828,289	195,152,281,907
2110	195,152,281,907	3,018,853,044	2,118,970	7,843,679	13,765,970,897	211,927,143,199
2111	211,927,143,199	3,057,350,818	1,638,906	7,526,796	14,941,586,503	229,916,914,818
2112	229,916,914,818	3,096,339,179	1,287,526	7,219,671	16,202,258,157	249,207,004,957
2113	249,207,004,957	3,135,824,373	1,016,455	6,922,159	17,553,966,349	269,888,857,065
2114	269,888,857,065	3,175,812,729	795,122	6,634,110	19,003,113,417	292,060,353,979
2115	292,060,353,979	3,216,310,654	476,832	6,355,367	20,556,556,524	315,826,388,958
2116	315,826,388,958	3,257,324,637	339,292	6,085,770	22,221,628,712	341,298,917,243
2117	341,298,917,243	3,298,861,250	214,107	5,825,153	24,006,172,977	368,597,912,209
2118	368,597,912,209	3,340,927,148	149,893	5,573,347	25,918,585,991	397,851,702,109
2119	397,851,702,109	3,383,529,073	142,078	5,330,178	27,967,851,136	429,197,610,062
2120	429,197,610,062	3,426,673,850	1,598	5,095,470	30,163,587,892	462,782,774,736
2121	462,782,774,736	3,470,368,391	721	4,869,044	32,516,086,683	498,764,360,045
2122	498,764,360,045	3,514,619,698	372	4,650,718	35,036,354,104	537,310,682,757
2123	537,310,682,757	3,559,434,861	157	4,440,310	37,736,172,597	578,601,849,749
2124	578,601,849,749	3,604,821,061	39	4,237,634	40,628,149,901	622,830,583,037
2125	622,830,583,037	3,650,785,567	20	4,042,505	43,725,776,819	670,203,102,899

Exhibit 9 – 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 2.16%[1]	Present Value of Benefit Payments at 7.00%
2022	$64,212,505,020	$7,734,532,221	$7,734,532,221	$0	$7,477,254,523	$0	$7,477,254,523
2023	67,812,562,841	8,011,729,249	8,011,729,249	0	7,238,533,650	0	7,238,533,650
2024	71,489,097,939	8,292,479,260	8,292,479,260	0	7,002,045,843	0	7,002,045,843
2025	75,220,386,167	8,579,822,529	8,579,822,529	0	6,770,723,565	0	6,770,723,565
2026	79,021,926,409	8,874,620,000	8,874,620,000	0	6,545,197,662	0	6,545,197,662
2027	82,884,818,106	9,175,836,759	9,175,836,759	0	6,324,626,763	0	6,324,626,763
2028	86,737,524,671	9,495,844,175	9,495,844,175	0	6,117,007,660	0	6,117,007,660
2029	90,640,868,793	9,825,581,075	9,825,581,075	0	5,915,342,711	0	5,915,342,711
2030	94,578,627,420	10,161,022,949	10,161,022,949	0	5,717,093,855	0	5,717,093,855
2031	98,531,618,787	10,505,054,302	10,505,054,302	0	5,523,984,021	0	5,523,984,021
2032	102,491,356,909	10,852,700,186	10,852,700,186	0	5,333,448,916	0	5,333,448,916
2033	106,471,979,516	11,213,075,459	11,213,075,459	0	5,150,048,292	0	5,150,048,292
2034	110,471,614,393	11,577,751,507	11,577,751,507	0	4,969,663,726	0	4,969,663,726
2035	115,007,074,597	11,947,059,393	11,947,059,393	0	4,792,697,560	0	4,792,697,560
2036	119,570,755,547	12,311,230,405	12,311,230,405	0	4,615,690,530	0	4,615,690,530
2037	124,167,706,978	12,670,493,878	12,670,493,878	0	4,439,611,721	0	4,439,611,721
2038	128,804,748,576	13,029,608,417	13,029,608,417	0	4,266,768,028	0	4,266,768,028
2039	133,488,039,939	13,381,838,620	13,381,838,620	0	4,095,431,616	0	4,095,431,616
2040	138,226,956,255	13,728,805,912	13,728,805,912	0	3,926,746,616	0	3,926,746,616
2041	143,029,789,071	14,052,402,166	14,052,402,166	0	3,756,357,390	0	3,756,357,390
2042	147,931,281,575	14,331,176,881	14,331,176,881	0	3,580,258,741	0	3,580,258,741
2043	152,994,445,684	14,592,079,052	14,592,079,052	0	3,406,951,519	0	3,406,951,519
2044	158,261,443,183	14,801,261,887	14,801,261,887	0	3,229,711,612	0	3,229,711,612
2045	163,816,690,641	14,967,456,669	14,967,456,669	0	3,052,314,178	0	3,052,314,178
2046	169,744,207,741	15,074,262,165	15,074,262,165	0	2,872,986,007	0	2,872,986,007
2047	167,875,773,408	15,136,580,000	15,136,580,000	0	2,696,133,730	0	2,696,133,730
2048	165,753,611,815	15,156,352,514	15,156,352,514	0	2,523,042,633	0	2,523,042,633
2049	163,419,549,970	15,149,266,460	15,149,266,460	0	2,356,881,341	0	2,356,881,341
2050	160,901,100,439	15,133,045,863	15,133,045,863	0	2,200,334,378	0	2,200,334,378
2051	158,212,164,913	15,129,894,986	15,129,894,986	0	2,055,959,105	0	2,055,959,105
2052	155,341,222,256	15,159,857,062	15,159,857,062	0	1,925,262,213	0	1,925,262,213
2053	152,241,090,377	15,192,651,083	15,192,651,083	0	1,803,202,774	0	1,803,202,774
2054	148,890,921,771	15,226,172,438	15,226,172,438	0	1,688,954,575	0	1,688,954,575
2055	145,270,398,933	15,258,458,017	15,258,458,017	0	1,581,809,191	0	1,581,809,191
2056	141,360,607,095	15,281,074,461	15,281,074,461	0	1,480,517,557	0	1,480,517,557

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

Exhibit 9 – 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 2.16%[1]	Present Value of Benefit Payments at 7.00%
2057	$137,150,873,125	$15,333,823,317	$15,333,823,317	$0	$1,388,437,539	$0	$1,388,437,539
2058	132,588,863,048	15,334,094,277	15,334,094,277	0	1,297,628,106	0	1,297,628,106
2059	127,703,962,296	15,293,854,570	15,293,854,570	0	1,209,554,086	0	1,209,554,086
2060	122,516,175,180	15,202,824,025	15,202,824,025	0	1,123,695,981	0	1,123,695,981
2061	117,059,028,071	15,050,242,126	15,050,242,126	0	1,039,643,083	0	1,039,643,083
2062	111,380,237,768	14,896,481,645	14,896,481,645	0	961,702,422	0	961,702,422
2063	105,469,108,957	14,656,768,364	14,656,768,364	0	884,324,079	0	884,324,079
2064	99,402,243,952	14,359,782,963	14,359,782,963	0	809,724,583	0	809,724,583
2065	93,231,171,982	14,014,146,353	14,014,146,353	0	738,537,104	0	738,537,104
2066	87,001,477,734	13,610,766,842	13,610,766,842	0	670,354,436	0	670,354,436
2067	80,770,974,296	13,172,545,693	13,172,545,693	0	606,328,286	0	606,328,286
2068	74,578,002,872	12,688,258,571	12,688,258,571	0	545,828,688	0	545,828,688
2069	68,474,801,707	12,157,505,180	12,157,505,180	0	488,781,796	0	488,781,796
2070	62,516,592,743	11,596,033,730	11,596,033,730	0	435,708,720	0	435,708,720
2071	56,746,017,787	10,998,365,335	10,998,365,335	0	386,216,787	0	386,216,787
2072	51,214,227,628	10,375,214,356	10,375,214,356	0	340,499,364	0	340,499,364
2073	45,964,679,649	9,730,171,834	9,730,171,834	0	298,439,263	0	298,439,263
2074	41,040,151,886	9,068,700,675	9,068,700,675	0	259,954,140	0	259,954,140
2075	36,480,766,423	8,396,988,539	8,396,988,539	0	224,952,826	0	224,952,826
2076	32,323,054,106	7,714,514,685	7,714,514,685	0	193,149,117	0	193,149,117
2077	28,606,646,688	7,027,780,419	7,027,780,419	0	164,444,185	0	164,444,185
2078	25,367,226,108	6,352,069,266	6,352,069,266	0	138,909,448	0	138,909,448
2079	22,627,158,461	5,698,374,115	5,698,374,115	0	116,461,865	0	116,461,865
2080	20,399,002,748	5,072,013,711	5,072,013,711	0	96,878,950	0	96,878,950
2081	18,690,692,443	4,475,659,772	4,475,659,772	0	79,895,495	0	79,895,495
2082	17,507,925,376	3,921,210,423	3,921,210,423	0	65,418,653	0	65,418,653
2083	16,844,456,550	3,411,489,011	3,411,489,011	0	53,191,428	0	53,191,428
2084	16,690,685,814	2,943,716,481	2,943,716,481	0	42,895,316	0	42,895,316
2085	17,039,221,553	2,518,994,083	2,518,994,083	0	34,304,987	0	34,304,987
2086	17,881,019,256	2,137,040,241	2,137,040,241	0	27,199,382	0	27,199,382
2087	19,206,697,108	1,797,096,915	1,797,096,915	0	21,376,375	0	21,376,375
2088	21,007,005,602	1,497,588,449	1,497,588,449	0	16,648,353	0	16,648,353
2089	23,273,683,104	1,236,382,846	1,236,382,846	0	12,845,410	0	12,845,410
2090	26,000,100,902	1,010,833,061	1,010,833,061	0	9,815,008	0	9,815,008
2091	29,181,910,662	818,069,249	818,069,249	0	7,423,651	0	7,423,651

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

Exhibit 9 – 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 2.16%[1]	Present Value of Benefit Payments at 7.00%
2092	$32,817,434,729	$655,089,812	$655,089,812	$0	$5,555,773	$0	$5,555,773
2093	36,907,989,523	518,723,122	518,723,122	0	4,111,455	0	4,111,455
2094	41,458,271,182	405,915,320	405,915,320	0	3,006,849	0	3,006,849
2095	46,476,470,334	313,666,544	313,666,544	0	2,171,504	0	2,171,504
2096	51,974,460,905	239,184,021	239,184,021	0	1,547,536	0	1,547,536
2097	57,967,843,690	179,896,322	179,896,322	0	1,087,795	0	1,087,795
2098	64,475,978,233	133,364,757	133,364,757	0	753,671	0	753,671
2099	71,522,108,628	97,407,292	97,407,292	0	514,457	0	514,457
2100	79,133,369,883	70,071,120	70,071,120	0	345,870	0	345,870
2101	87,340,823,120	49,684,211	49,684,211	0	229,197	0	229,197
2102	96,179,439,881	34,749,999	34,749,999	0	149,817	0	149,817
2103	105,688,194,332	24,025,792	24,025,792	0	96,805	0	96,805
2104	115,910,080,773	16,474,181	16,474,181	0	62,036	0	62,036
2105	126,892,182,665	11,242,669	11,242,669	0	39,566	0	39,566
2106	138,685,767,570	7,731,268	7,731,268	0	25,429	0	25,429
2107	151,346,318,778	5,401,774	5,401,774	0	16,604	0	16,604
2108	164,933,766,542	3,869,886	3,869,886	0	11,117	0	11,117
2109	179,512,640,170	2,855,976	2,855,976	0	7,668	0	7,668
2110	195,152,281,700	2,118,970	2,118,970	0	5,317	0	5,317
2111	211,927,142,978	1,638,906	1,638,906	0	3,843	0	3,843
2112	229,916,914,582	1,287,526	1,287,526	0	2,822	0	2,822
2113	249,207,004,704	1,016,455	1,016,455	0	2,082	0	2,082
2114	269,888,856,795	795,122	795,122	0	1,522	0	1,522
2115	292,060,353,689	476,832	476,832	0	853	0	853
2116	315,826,388,648	339,292	339,292	0	567	0	567
2117	341,298,916,912	214,107	214,107	0	335	0	335
2118	368,597,911,854	149,893	149,893	0	219	0	219
2119	397,851,701,729	142,078	142,078	0	194	0	194
2120	429,197,609,656	1,598	1,598	0	2	0	2
2121	462,782,774,301	721	721	0	1	0	1
2122	498,764,359,580	372	372	0	0	0	0
2123	537,310,682,260	157	157	0	0	0	0
2124	578,601,849,217	39	39	0	0	0	0
2125	622,830,582,468	20	20	0	0	0	0
Total					**$161,243,514,019**	**$0**	**$161,243,514,019**

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

Exhibit 10 – 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, 2021 are summarized in the following table:

Asset Classes	Expected Arithmetic Returns Over 20 Years[1]	Target Allocation[2]
US Equities Large Cap	6.20%	16.70%
US Equities Small/Mid Cap	7.38	2.20
International Equities Developed	6.93	10.60
Emerging Markets Equities	9.17	4.50
US Bonds Core	1.58	3.00
International Debt Developed	0.37	1.00
International Debt Emerging	4.38	4.00
Cash Equivalents	0.12	2.00
TIPS	0.78	1.00
Real Estate	5.75	16.00
Hedge Funds (Absolute Return)	3.94	10.00
Infrastructure	6.29	4.00
Private Equity	10.38	15.00
Private Debt	6.47	10.00
Total		100.0%

[1] *Based on the 2020 Horizon Survey of Capital Market Assumptions*
[2] *Breakout determined with assistance from TRS staff*

Section 7: Assumptions, Benefit Provisions, and Definitions

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. All assumptions were adopted by the Board on August 12, 2021, effective June 30, 2021, unless otherwise noted.
Interest Rate:	7.00% per annum, compounded annually and net of investment expenses. The interest rate assumption is composed of an inflation assumption of 2.25% and real return of 4.75% (adopted effective June 30, 2016; inflation assumption adopted effective June 30, 2021).
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 2.25% inflation, plus merit and seniority increases. Salary increase rates are shown below for selected years of service.

Service	Rate
1	8.50%
2	6.75%
3	6.25%
4	6.25%
5	6.00%
10	5.00%
15	4.50%
20 and above	3.50%

For a member who works 34 years, the assumed average salary increase over their career is 4.48% per year.

The actual average salary increase for teachers who were in full-time or regular part-time status at both June 30, 2019 and June 30, 2020 is 4.36%.

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:	5% of eligible inactive vested members are assumed to receive a lump sum buyout now in lieu of an annuity at retirement. This is consistent with recent plan experience and may be revised in the future as experience continues to emerges.
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 2024, corresponding with the current buyout program ending date (June 30, 2024). This valuation assumes that additional funds will be allocated to TRS to pay for all assumed buyout payments, as needed.
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 2.25% per annum:

Full-Time and regular part-time:

	Male		Female	
Age	**Salary**	**Proportion**	**Salary**	**Proportion**
22	$44,398	5.2%	$43,940	28.7%
27	47,899	6.7	48,574	27.2
32	52,583	3.2	51,924	11.1
37	56,212	1.8	52,836	5.3
42	58,325	1.1	52,759	3.3
47	59,689	0.6	53,410	2.2
52	61,471	0.4	56,053	1.4
57	59,303	0.3	55,834	0.7
62	58,273	0.2	56,487	0.4
67	61,114	0.1	59,508	0.1

Substitutes, part-time, and hourly-paid:

	Male		Female	
Age	**Salary**	**Proportion**	**Salary**	**Proportion**
22	$19,406	6.3%	$20,104	17.4%
27	20,263	7.2	19,576	14.3
32	20,031	3.4	18,053	8.4
37	22,185	1.7	16,289	8.1
42	20,410	1.3	16,057	8.4
47	19,337	1.3	15,791	6.8
52	17,819	1.2	16,125	4.4
57	16,620	1.2	16,296	2.7
62	16,637	1.3	16,997	1.7
67	16,382	1.1	15,818	1.0
70	15,878	0.5	15,678	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 $49,710 (in 2021 dollars) and for substitutes, part-time, and hourly-paid new entrants is 35 and $18,784 (in 2021 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:	1.125% per annum
Tier 2 COLA Increase:	1.125% per annum
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:	$40,892,235 of administrative expenses is expected to be paid for the year beginning July 1, 2021. $39,887,064 of administrative expenses is expected to be paid for the year beginning July 1, 2022 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 actuarial 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. 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, 2024 by PA 101-0010 (SB 1814) – Budget Implementation Bill.
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, 2024 by PA 101-0010 (SB 1814) – Budget Implementation Bill.

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 Pensioners:	The single-sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial Cost Method:	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the Actuarially Determined Contribution.
Actuarial Gain or Loss:	A measure of the difference between actual experience and 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: a. Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) b. 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 c. Discounted according to an assumed rate (or rates) of return to reflect the time value of money.
Actuarial Present Value of Future Plan Benefits(APV):	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active 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 ADC.
Actuarially Determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.
Actuarially Determined Contribution (ADC):	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the 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:	That portion of the Actuarial Present Value of plan benefits and expenses 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. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount, or in relation to covered payroll, if the actuarial assumptions are realized.
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 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.
- 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.

History of Legislative Changes *continued*

- 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).

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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