State Employees' Retirement System of Illinois

GASB Statement Nos. 67 and 68 Accounting and Financial Reporting for Pensions as of June 30, 2019

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December 3, 2019

The Board of Trustees
State Employees' Retirement System of Illinois
Springfield, Illinois

Dear Board Members:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 for the State Employees' Retirement System of Illinois ("SERS"). These calculations have been made on a basis that is consistent with our understanding of these Statements.

GASB Statement No. 67 is the accounting standard that applies to the stand-alone financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statement Nos. 67 and 68. The Net Pension Liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is not an appropriate measure for assessing the need for or amount of future employer contributions. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the State Employees' Retirement System of Illinois ("SERS") only in its entirety and only with the permission of SERS. GRS is not responsible for unauthorized use of this report.

Our actuarial valuation and projections assume the sponsor will make the contributions required by state statute. To the extent the sponsor does not make the statutory required contribution the results contained in this report could be significantly different.

This report is based upon information, furnished to us by SERS, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This information was checked for internal consistency, but it was not audited.

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This report complements the actuarial valuation report that was provided to SERS and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2019, for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the State Employees' Retirement System of Illinois. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

The signing actuaries are independent of the plan sponsor.

Alex Rivera, Heidi G. Barry, and Jeffrey T. Tebeau are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,

By Alex Rivera

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Senior Consultant

By

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By Heidi G Barry

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Auditor’s Note – This information is intended to assist in preparation of the financial statements of the State Employees' Retirement System of Illinois. Financial statements are the responsibility of management, subject to the auditor’s review. Please let us know if the auditor recommends any changes.

Contents

SECTION A

EXECUTIVE SUMMARY

Executive Summary as of June 30, 2019

		2019
Actuarial Valuation Date		June 30, 2019
Measurement Date of the Net Pension Liability		June 30, 2019
Plan's Fiscal Year Ending Date (Reporting Date) for GASB Statement No. 67		June 30, 2019
Employer's Fiscal Year Ending Date (Reporting Date) for GASB Statement No. 68		June 30, 2020
Membership		
Number of		
- Retirees and Beneficiaries		74,589
- Inactive, Nonretired Members		25,706
- Active Members		62,026
- Total		162,321
Covered Payroll [a]	$	4,621,647,466
Net Pension Liability		
Total Pension Liability	$	51,885,938,889
Plan Fiduciary Net Position		18,491,888,652
Net Pension Liability	$	33,394,050,237
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		35.64 %
Net Pension Liability as a Percentage of Covered Payroll		722.56 %
Development of the Single Discount Rate		
Single Discount Rate Beginning of Year		6.81 %
Single Discount Rate End of Year		6.47 %
Long-Term Expected Rate of Investment Return		6.75 %
Long-Term Municipal Bond Rate Beginning of Year [b]		3.62 %
Long-Term Municipal Bond Rate End of Year [b]		3.13 %
Last year ending June 30 in the 2019 to 2118 projection period for which projected benefit payments are fully funded		2073
Total Pension Expense for Fiscal Year End June 30, 2019	$	2,915,836,932

Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expenses as of June 30, 2019

	Deferred Outflows of Resources	Deferred (Inflows) of Resources
Difference between expected and actual non-investment experience	$ -	$ (417,564,048)
Changes in assumptions	930,777,164	(482,067,908)
Net difference between projected and actual earnings on pension plan investments	326,394,266	(375,137,774)
Total	$ 1,257,171,430	$ (1,274,769,730)

[a] *Covered payroll is based on the requirements of GASB Statement No. 82.*

[b] *Source: The rates at the beginning and end of the year are the rates for fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of June 29, 2018, and June 28, 2019, respectively. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax exempt securities.*

Discussion

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

Financial Statements

GASB Statement No. 68 requires state or local governments to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to SERS subsequent to the measurement date of June 30, 2019.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability and investment experience. The pension expense for fiscal year ending June 30, 2020, is based on the results of the actuarial valuation as of June 30, 2019.

Pension plans that prepare their own, stand-alone financial statements are required to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position in accordance with GASB Statement No. 67. The *statement of fiduciary net position* presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The *statement of changes in fiduciary net position* presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.

Discussion

Notes to Financial Statements

GASB Statement No. 68 requires the notes of the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows and inflows of resources related to pensions.

GASB Statement Nos. 67 and 68 require the notes of the financial statements for the employers and pension plans to include certain additional information. The list of disclosure items should include:

- A description of benefits provided by the plan;
- The type of employees and number of members covered by the pension plan;
- A description of the plan's funding policy, which includes member and employer contribution requirements;
- The pension plan's investment policies;
- The pension plan's fiduciary net position and the net pension liability;
- The net pension liability using a discount rate that is 1 percent higher and 1 percent lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- Significant assumptions and methods used to calculate the total pension liability;
- Inputs to the discount rates; and
- Certain information about mortality assumptions and the dates of experience studies.

Retirement systems that issue stand-alone financial statements are required to disclose additional information in accordance with GASB Statement No. 67. This information includes:

- The composition of the pension plan's Board and the authority under which benefit terms may be amended;
- A description of how fair value is determined;
- Information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5 percent, receivables, and insurance contracts excluded from plan assets; and
- Annual money-weighted rate of return.

Required Supplementary Information

GASB Statement No. 67 requires a 10-year fiscal history of:

- Sources of changes in the net pension liability;
- Information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and
- A comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

Discussion

General Implications of SERS Statutory Funding Policy on Future and Expected Plan Contributions and Funded Status

Given the plan's statutorily defined funding policy, if all actuarial assumptions are met (including the assumption of the plan earning 6.75 percent on the actuarial value of assets), then the following outcomes are expected:

1. The unfunded liability is not expected to be fully amortized during the lifetimes of the current members.
2. The funded status of the plan is expected to increase gradually towards a 90 percent funded ratio at 2045 and then remain level at 90 percent funded thereafter.

This statutory funding policy results in an expected crossover date in 2073 and a GASB Single Discount Rate of 6.47 percent to measure the total pension liability as of June 30, 2019. The projections in this report are strictly for the purpose of determining the GASB Single Discount Rate and are different from a funding projection for the ongoing plan.

Timing of the Actuarial Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The GASB Statement No. 68 pension expense provided in this report is based on a measurement date of June 30, 2019, but will be used for the employer's fiscal year ending June 30, 2020.

The GASB Statement No. 68 pension expense for fiscal year ended June 30, 2019, is based on the results of the actuarial valuation as of June 30, 2018, and is provided in the June 30, 2018, GASB Statement Nos. 67 and 68 actuarial valuation report.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2019, and a measurement date of June 30, 2019.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this actuarial valuation, the expected rate of return on pension plan investments is 6.75 percent; the municipal bond rate is 3.13 percent (based on the daily rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index"); and the resulting Single Discount Rate is 6.47 percent.

Recent Legislative Changes

The following recently passed Public Acts impact SERS as follows.

Public Act ("P.A.") 100-0023, effective July 6, 2017, modified the State's funding policy and created a new tier of benefits for certain current and future active members not covered by Social Security. The State's funding policy was amended to include smoothing State contribution rate increases or decreases due to changes in actuarial assumptions, including investment return assumptions, over a five-year period in equal annual amounts beginning in fiscal year 2018. In addition, changes in actuarial or investment assumptions that increased or decreased the State contribution rate in fiscal years 2014 through 2017 are to be smoothed over a five-year period in equal annual amounts, applying only to the portion of the five-year phase-in that is applicable to fiscal years on and after 2018. The fiscal year 2018 State contribution was recertified, pursuant to P.A. 100-0023.

P.A. 100-0023 created a Hybrid ("Tier 3") plan comprised of a defined benefit plan and a defined contribution plan to serve as an optional plan in lieu of the traditional Tier 2 defined benefit plan for current and future Tier 2 active members not covered by Social Security. The Tier 3 plan is expected to be available to applicable members beginning in fiscal year 2020. The election process for current Tier 2 members will be developed by the System.

Public Act 100-0587, effective June 4, 2018, created two voluntary buyout programs (Accelerated Pension Benefit Payment Program) for eligible members beginning on the implementation date and ending on June 1, 2021. The two accelerated pension benefit payment options offered include: (1) for vested inactive members, a payment equal to 60 percent of the present value of the member's pension benefit in lieu of receiving any pension benefit, and (2) for active Tier 1 members eligible for retirement, a payment equal to 70 percent of the difference between: (i) the present value of the Automatic Annual Increases (AAI) to a Tier 1 member's retirement annuity under the current AAI provisions and (ii) the present value of the AAI to the Tier 1 member's retirement annuity under revised AAI provisions. The fiscal year 2019 State contribution rate was recertified from 51.614% to 51.152% of payroll, pursuant to P.A. 100-0587.

P.A. 101-0010 extended the Accelerated Pension Benefit Program from June 1, 2021, to June 1, 2024.

A summary of the SERS plan provisions is included in Section F of this report.

Actuarial Assumptions and Methods

The actuarial valuation results summarized in this report involve actuarial calculations that require assumptions about future events. Most of the actuarial assumptions used for the June 30, 2019, actuarial valuation are based on a full experience review for the three-year period ended June 30, 2018.

As a result of the 2018 actuarial experience review, the Board approved the following changes to the assumptions which became effective for the June 30, 2019 actuarial valuation.

Economic Assumptions

- **Price inflation:** The rate of price inflation was decreased from 2.50 percent to 2.25 percent.
- **Investment return:** The investment return assumption, net of investment expenses, compounded annually, was lowered from 7.00 percent to 6.75 percent, which reflects an underlying price inflation assumption of 2.25 percent.
- **Payroll growth assumption:** The general payroll growth assumption was decreased from 3.00 percent to 2.75 percent, which reflects an underlying general price inflation assumption of 2.25 percent.
- **Salary increase:** The wage inflation component of the salary increase assumption was changed to 2.75 percent per year, compounded annually, and is consistent with the payroll growth assumption. The age-based component of the salary increase assumption was not changed since observed experience is not reflective of future expectation.

Mortality Assumptions

- The post-retirement mortality tables were updated to the Pub-2010 General Healthy Retiree Mortality tables for Regular Formula members and the Pub-2010 Public Safety Healthy Retiree Mortality tables for Alternative Formula members.
- The pre-retirement mortality tables were updated to the Pub-2010 General Employee Mortality tables for Regular Formula members and the Pub-2010 Public Safety Employee Mortality tables for Alternative Formula members.
- The mortality improvement factors were updated to projection scale MP-2018.
- Scaling factors are applied to the base mortality tables; i.e., Pub-2010 General Tables and Public Safety tables, to partially reflect observed mortality experience to the extent it is credible.

Other Demographic Assumptions

- **Normal retirement rates:** The overall rates were increased to better reflect observed experience, especially for Regular Formula members.
- **Early retirement rates:** The overall rates were decreased to better reflect observed experience.
- **Turnover rates:** The overall rates were increased to better reflect observed experience.
- **Load for inactive members eligible for deferred vested pension benefits:** The load was changed to 11 percent for Regular Formula members and 9 percent for Alternative Formula members.

Discussion

Under the Accelerated Pension Benefit Payment Program, 21 percent of eligible Regular formula members and 28 percent of eligible Alternative formula members are assumed to elect the "COLA Buyout" at retirement. Five percent of eligible inactive members are assumed to elect the "Total Buyout."

Pursuant to Public Act 99-0232, SERS is required to conduct an actuarial experience review once every three years. Under this schedule, an experience review for the period from July 1, 2018 through June 30, 2021, will be performed after completion of the June 30, 2021 actuarial valuation with expected implementation of the recommended assumptions beginning with the June 30, 2022 actuarial valuation.

A summary of the actuarial assumptions and methods used in this actuarial valuation are included in Section G of this report.

SECTION B

FINANCIAL STATEMENTS

Auditor's Note – This information is intended to assist in preparation of the financial statements of the State Employees' Retirement System of Illinois. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

Statement of Fiduciary Net Position Years Ended June 30, 2019 and 2018

	2019	2018
Assets		
Cash	$ 211,289,280	$ 204,856,059
Receivables		
Contributions:		
Participants	$ 34,265,932	$ 16,945,386
Employing state agencies	242,634,706	79,595,654
Other Accounts	16,358,140	5,274,892
Total Receivables	$ 293,258,778	$ 101,815,932
Investments		
Held in the Illinois State Board of Investment		
Commingled Fund at fair value	$ 18,025,048,500	$ 17,268,137,475
Securities lending collateral with State Treasurer	43,142,000	66,204,000
Total Investments	$ 18,068,190,500	$ 17,334,341,475
Property and equipment, net of accumulated		
depreciation	$ 10,710,395	$ 8,662,595
Total Assets	$ 18,583,448,953	$ 17,649,676,061
Liabilities		
Payables		
Benefits payable	$ 18,183,074	$ 6,102,668
Refunds payable	2,620,460	2,540,010
Administrative expenses payable	2,268,254	1,585,093
Participants' deferred service credit accounts	792,174	591,626
Due to State of Illinois	24,554,339	109,374,423
Securities lending collateral with State Treasurer	43,142,000	66,204,000
Total Liabilities	$ 91,560,301	$ 186,397,820
Net Position Restricted for Pensions	$ 18,491,888,652	$ 17,463,278,241

Statement of Changes in Fiduciary Net Position Years Ended June 30, 2019 and 2018

	2019	2018
Additions		
Contributions		
Participants	$ 275,675,175	$ 254,442,466
Employing state agencies and appropriations	2,274,925,279	1,929,175,044
Total Contributions	$ 2,550,600,454	$ 2,183,617,510
Investment Income		
Net investments income	$ 268,044,834	$ 352,866,811
Interest earned on cash balances	4,517,885	1,507,697
Net appreciation in fair value of investments	845,866,191	902,665,327
Net Investment Income	$ 1,118,428,910	$ 1,257,039,835
Total Additions	$ 3,669,029,364	$ 3,440,657,345
Deductions		
Benefits		
Retirement annuities	$ 2,368,679,904	$ 2,240,156,641
Survivors' annuities	153,161,557	144,671,705
Disability benefits	62,214,438	64,708,865
Lump-sum benefits	17,250,694	15,294,811
Total Benefits	$ 2,601,306,593	$ 2,464,832,022
Refunds	24,133,508	27,469,348
Administrative	14,978,852	15,257,526
Total Deductions	$ 2,640,418,953	$ 2,507,558,896
Net Increase in Net Position	$ 1,028,610,411	$ 933,098,449
Net Position Restricted for Pensions		
Beginning of Year	$ 17,463,278,241	$ 16,530,179,792
End of Year	$ 18,491,888,652	$ 17,463,278,241

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Auditor's Note – This information is intended to assist in preparation of the financial statements of the State Employees' Retirement System of Illinois. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

Schedules of Required Supplementary Information
Schedule of Changes in Net Pension Liability and Related Ratios – Multiyear

Fiscal year ending June 30,	2019	2018	2017	2016	2015	2014	2013
Total Pension Liability							
Service Cost Including Pension Plan Administrative Expense	$ 801,415,244	$ 828,485,950	$ 893,147,418	$ 843,376,643	$ 847,997,030	$ 776,487,959	
Interest on the Total Pension Liability	3,378,803,879	3,295,855,347	3,217,531,841	2,989,387,125	2,912,736,360	2,754,121,665	
Changes of Benefit Terms[a]	(462,609,552)	-	-	-	-	-	
Difference between Expected and Actual Experience	(24,683,325)	(185,488,891)	(601,530,567)	(730,622,389)	(464,942,210)	150,997,067	
Changes of Assumptions[b]	313,744,264	(348,811,194)	(884,705,099)	5,048,087,579	360,713,498	3,142,466,514	
Benefit Payments, Including Refunds of Employee Contributions	(2,625,440,101)	(2,492,301,370)	(2,355,228,794)	(2,217,209,933)	(2,057,987,410)	(1,940,145,453)	
Pension Plan Administrative Expense	(14,978,852)	(15,257,526)	(15,957,439)	(16,126,997)	(16,547,823)	(16,615,105)	
Net Change in Total Pension Liability	1,366,251,557	1,082,482,316	253,257,361	5,916,892,028	1,581,969,445	4,867,312,648	
Total Pension Liability - Beginning	50,519,687,332	49,437,205,016	49,183,947,656	43,267,055,628	41,685,086,183	36,817,773,535	
Total Pension Liability - Ending (a)	$ 51,885,938,889	$ 50,519,687,332	$ 49,437,205,016	$ 49,183,947,656	$ 43,267,055,628	$ 41,685,086,183	
Plan Fiduciary Net Position							
Employer Contributions	$ 2,274,925,279	$ 1,929,175,044	$ 1,798,348,440	$ 1,882,243,268	$ 1,804,319,356	$ 1,699,447,826	
Employee Contributions	275,675,175	254,442,466	251,610,974	256,198,172	266,139,156	269,232,241	
Pension Plan Net Investment Income	1,118,428,910	1,257,039,835	1,812,878,460	(125,442,931)	681,377,052	2,169,346,258	
Benefit Payments, Including Refunds of Employee Contributions	(2,625,440,101)	(2,492,301,370)	(2,355,228,794)	(2,217,209,933)	(2,057,987,410)	(1,940,145,453)	
Pension Plan Administrative Expense	(14,978,852)	(15,257,526)	(15,957,439)	(16,126,997)	(16,547,823)	(16,615,105)	
Other	-	-	-	-	-	-	
Net Change in Plan Fiduciary Net Position	1,028,610,411	933,098,449	1,491,651,641	(220,338,421)	677,300,331	2,181,265,767	
Plan Fiduciary Net Position - Beginning	17,463,278,241	16,530,179,792	15,038,528,151	15,258,866,572	14,581,566,241	12,400,300,474	
Plan Fiduciary Net Position - Ending (b)	18,491,888,652	17,463,278,241	16,530,179,792	15,038,528,151	15,258,866,572	14,581,566,241	
Net Pension Liability - Ending (a) - (b)	$ 33,394,050,237	$ 33,056,409,091	$ 32,907,025,224	$ 34,145,419,505	$ 28,008,189,056	$ 27,103,519,942	
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	35.64 %	34.57 %	33.44 %	30.58 %	35.27 %	34.98 %	
Covered-Employee Payroll[c]	$ 4,621,647,466	$ 4,240,108,939	$ 4,192,582,495	$ 4,282,020,350	$ 4,452,369,221	$ 4,414,784,230	
Net Pension Liability as a Percentage of Covered-Employee Payroll	722.56 %	779.61 %	784.89 %	797.41 %	629.06 %	613.93 %	
Single Discount Rate, Beginning of Year	6.81 %	6.78 %	6.64 %	7.02 %	7.09 %	7.60 %	
Single Discount Rate, End of Year	6.47 %	6.81 %	6.78 %	6.64 %	7.02 %	7.09 %	7.60 %
Long-Term Municipal Bond Rate	3.13 %	3.62 %	3.56 %	2.85 %	3.80 %	4.29 %	4.63 %
Long-Term Municipal Bond Rate Date	June 28, 2019	June 29, 2018	June 30, 2017	June 30, 2016	June 25, 2015	June 26, 2014	June 27, 2013

[a] *Fiscal year end 2019 change in benefit terms due to extension of Buyout Program under PA 101-0010.*

[b] *Fiscal year end 2019 change of assumptions from updates due to Experience Study for three year period ending June 30, 2018, and change in GASB 67/68 discount rate.*

[c] *Covered payroll is based on the requirements of GASB Statement No. 82.*

Schedules of Required Supplementary Information
Schedule of the Net Liability - Multiyear

Last 10 Fiscal Years (which may be built prospectively)

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll [a]	Net Pension Liability as a % of Covered Payroll
2014	$ 41,685,086,183	$ 14,581,566,241	$ 27,103,519,942	34.98 %	$ 4,414,784,230	613.93 %
2015	43,267,055,628	15,258,866,572	28,008,189,056	35.27 %	4,452,369,221	629.06 %
2016	49,183,947,656	15,038,528,151	34,145,419,505	30.58 %	4,282,020,350	797.41 %
2017	49,437,205,016	16,530,179,792	32,907,025,224	33.44 %	4,192,582,495	784.89 %
2018	50,519,687,332	17,463,278,241	33,056,409,091	34.57 %	4,240,108,939	779.61 %
2019	51,885,938,889	18,491,888,652	33,394,050,237	35.64 %	4,621,647,466	722.56 %

[a] *Covered payroll is based on the requirements of GASB Statement No. 82.*

Schedules of Required Supplementary Information
Schedule of Contributions - Multiyear

Last 10 Fiscal Years

Fiscal Year	Actuarially Determined Contribution [a]	Actual Contribution [b]	Contribution Deficiency (Excess)	Covered Payroll [c]	Actual Contribution as a % of Covered Payroll	Statutory Contribution	Statutory Contribution Deficiency/(Excess)
7/1/09 - 6/30/10	$ 1,177,313,343	$ 1,095,545,856	$ 81,767,487	$ 4,119,360,892	26.60%	$1,168,951,040	$ 73,405,184
7/1/10 - 6/30/11	1,289,002,005	1,127,886,796	161,115,209	4,211,186,269	26.78%	1,102,783,348	(25,103,448)
7/1/11 - 6/30/12	1,614,834,808	1,391,416,375	223,418,433	4,328,767,884	32.14%	1,396,216,080	4,799,705
7/1/12 - 6/30/13	1,741,286,416	1,531,932,137	209,354,279	4,235,366,263	36.17%	1,529,942,834	(1,989,303)
7/1/13 - 6/30/14	1,956,841,419	1,699,447,826	257,393,593	4,414,784,230	38.49%	1,697,348,287	(2,099,539)
7/1/14 - 6/30/15	2,045,354,223	1,804,319,356	241,034,867	4,452,369,221	40.52%	1,802,494,852	(1,824,504)
7/1/15 - 6/30/16	2,019,691,233	1,882,243,268	137,447,965	4,282,020,350	43.96%	1,879,978,178	(2,265,090)
7/1/16 - 6/30/17	2,129,482,987	1,798,348,440	331,134,547	4,192,582,495	42.89%	1,796,002,586	(2,345,854)
7/1/17 - 6/30/18	2,739,377,709	1,929,175,044	810,202,665	4,240,108,939	45.50%	1,927,677,233	(1,497,811)
7/1/18 - 6/30/19 [d]	2,995,968,149	2,274,925,279	721,042,870	4,621,647,466	49.22%	2,272,999,647	(1,925,632)

[a] *The SERS statutory funding may not conform with the Actuarial Standards of Practice, therefore, the actuarially determined contribution is equal to the normal cost plus an amount to amortize the unfunded actuarial accrued liability as a level percentage of capped payroll. The amortization period for fiscal years 2009 through 2016 is an open 30-year period, and a closed 25-year period for fiscal years on and after 2017. The actuarially determined contribution (as a percent of payroll) for each fiscal year was determined as of the actuarial valuation two years prior and then applied to payroll in force as of the actuarial valuation date.*

[b] *The actual contributions for fiscal year ended June 30, 2009, through June 30, 2016, were obtained from the System's comprehensive annual financial reports. The actual contributions for fiscal years ended June 30, 2017 and later were provided by the System.*

[c] *Covered payroll for fiscal years on and after June 30, 2012, were restated to comply with the requirements of GASB Statement No. 82. For fiscal years prior to June 30, 2012, covered payroll was not restated to comply with the requirements of GASB Statement No. 82 due to system limitations.*

[d] *FY 2019 ADC was based on the actuarial valuation as June 30, 2017, and reflects the Buyout Program provisions under P.A. 100-0587.*

Notes to Schedule of Contributions

Actuarial Valuation Date:	June 30, 2017
Notes	Actuarially determined contribution rates and Statutory contribution rates are calculated as of June 30, which is 12 months prior to the beginning of the fiscal year in which the contributions will be made.

Methods and Assumptions Used to Determine Contribution Rates for Fiscal Year ended June 30, 2019:

Actuarial Cost Method	Projected Unit Credit
Amortization Method	**Statutory Contributions:** Equal to the level percentage of pay contributions determined so that the Plan attains a 90 percent funded ratio by the end of 2045. An amortization payment is not directly calculated. The amortization payment is the difference between the total statutory contribution and the employer normal cost contribution. **Actuarially Determined Contributions (ADC):** The ADC for fiscal years ending on and after June 30, 2017, is calculated as the employer's normal cost plus a 25-year level percent of capped payroll closed-period amortization of the unfunded accrued liability. As of June 30, 2017, the remaining amortization period was 23 years. The ADC is expressed as a percentage and applied to capped payroll for the fiscal year.
Asset Valuation Method	5-year smoothed market
Inflation	2.75 percent
Salary Increases	Salary increase rates based on age-related productivity and merit rates plus inflation.
Postretirement Benefit Increases	Postretirement benefit increases of 3.00 percent, compounded, for Tier 1 and 3.00 percent or one-half of the annual increase in the Consumer Price Index, whichever is less, simple, for Tier 2.
Investment Rate of Return	7.00 percent
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the June 30, 2014 actuarial valuation pursuant to an experience study of the period July 1, 2009 to June 30, 2013.
Mortality	Post-retirement: 105 percent of the RP-2014 Healthy Annuitant mortality tables, sex distinct, with generational mortality improvements using the MP-2014 two-dimensional mortality improvement scales. Pre-retirement: 75 percent for males and 90 percent for females of the RP-2014 Total Employee mortality tables, sex distinct, with generational mortality improvements using the MP-2014 two-dimensional mortality improvement scales.

SECTION D

NOTES TO FINANCIAL STATEMENTS

Auditor's Note – This information is intended to assist in preparation of the financial statements of the State Employees' Retirement System of Illinois. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

Single Discount Rate

A Single Discount Rate of 6.47 percent was used to measure the total pension liability. This Single Discount Rate was based on an expected rate of return on pension plan investments of 6.75 percent and a municipal bond rate of 3.13 percent. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between statutory contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position and future contributions were sufficient to finance the benefit payments through the year 2073. As a result, the long-term expected rate of return on pension plan investments was applied to projected benefit payments through the year 2073, and the municipal bond rate was applied to all benefit payments after that date.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 6.47 percent, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

1% Decrease 5.47%	Current Single Discount Rate Assumption 6.47%	1% Increase 7.47%
$ 40,386,118,764	$ 33,394,050,237	$ 27,645,296,483

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	74,589
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	25,706
Active Plan Members	62,026
Total Plan Members	162,321

Additional information about the member data used is included in the June 30, 2019 actuarial valuation report.

SECTION E

GASB STATEMENT NO. 68 PENSION EXPENSE

Schedule of Changes in Net Pension Liability and Related Ratios

Fiscal Year End 6/30	2019	2018
A. Total Pension Liability		
1. Service Cost Including Pension Plan Administrative Expense	$ 801,415,244	$ 828,485,950
2. Interest on the Total Pension Liability	3,378,803,879	3,295,855,347
3. Changes of Benefit Terms	(462,609,552)	-
4. Difference Between Expected and Actual Experience of the Total Pension Liability	(24,683,325)	(185,488,891)
5. Changes of Assumptions	313,744,264	(348,811,194)
6. Benefit Payments, Including Refunds of Employee Contributions	(2,625,440,101)	(2,492,301,370)
7. Pension Plan Administrative Expense	(14,978,852)	(15,257,526)
8. Net Change in Total Pension Liability	**$ 1,366,251,557**	**$ 1,082,482,316**
9. Total Pension Liability – Beginning	**50,519,687,332**	**49,437,205,016**
10. Total Pension Liability – Ending	**$ 51,885,938,889**	**$ 50,519,687,332**
B. Plan Fiduciary Net Position		
1. Contributions – Employer	$ 2,274,925,279	$ 1,929,175,044
2. Contributions – Employee	275,675,175	254,442,466
3. Net Investment Income	1,118,428,910	1,257,039,835
4. Benefit Payments, Including Refunds of Employee Contributions	(2,625,440,101)	(2,492,301,370)
5. Pension Plan Administrative Expense	(14,978,852)	(15,257,526)
6. Other	-	-
7. Net Change in Plan Fiduciary Net Position	**$ 1,028,610,411**	**$ 933,098,449**
8. Plan Fiduciary Net Position – Beginning	**17,463,278,241**	**16,530,179,792**
9. Plan Fiduciary Net Position – Ending	**$ 18,491,888,652**	**$ 17,463,278,241**
C. Net Pension Liability	**$ 33,394,050,237**	**$ 33,056,409,091**
D. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	**35.64%**	**34.57%**
E. Covered-Employee Payroll[a]	**$ 4,621,647,466**	**$ 4,240,108,939**
F. Net Pension Liability as a Percentage of Covered-Employee Payroll	**722.56%**	**779.61%**

[a] *Covered payroll is based on the requirements of GASB Statement No. 82.*

Statement of Pension Expense under GASB Statement No. 68
Plan Year Ended June 30, 2019,
Applicable to Fiscal Year Ending June 30, 2020

A. Expense

1. Service Cost Including Pension Plan Administrative Expense	$	801,415,244
2. Interest on the Total Pension Liability		3,378,803,879
3. Current-Period Benefit Changes		(462,609,552)
4. Employee Contributions (made negative for addition here)		(275,675,175)
5. Projected Earnings on Plan Investments (made negative for addition here)		(1,219,338,998)
6. Other Changes in Plan Fiduciary Net Position		-
7. Recognition of Outflow (Inflow) of Resources due to Liabilities		(399,236,445)
8. Recognition of Outflow (Inflow) of Resources due to Assumption Changes		927,963,046
9. Recognition of Outflow (Inflow) of Resources due to Assets		164,514,933
10. Total Pension Expense	**$**	**2,915,836,932**

B. Reconciliation of Net Pension Liability

1. Net Pension Liability Beginning of Year	**$**	**33,056,409,091**
2. Total Pension Expense		2,915,836,932
3. Employer Contributions (made negative for addition here)		(2,274,925,279)
4. Change in Deferred Liability Experience (Inflows)/Outflows		374,553,120
5. Change in Deferred Assumption Changes Experience (Inflows)/Outflows		(614,218,782)
6. Change in Deferred Investment Experience (Inflows)/Outflows		(63,604,845)
7. Net Pension Liability End of Year	**$**	**33,394,050,237**

The pension expense is based on a measurement date of June 30, 2019, but will be used for fiscal year ending June 30, 2020. Our understanding is that SERS is a single employer defined benefit pension plan. If the sponsor has component units, a proportionate share allocation of the pension expense and net pension liability under paragraph 342 of GASB Statement No. 68 may be required.

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods for Plan Year Ended June 30, 2019*

A. Outflows and (Inflows) of Resources Recognized in Current and Future Pension Expenses as of Plan Year End June 30, 2019

Experience (Gain)/Loss	Original Balance	Date Established	Original Recognition Period/ Amortization Factor	Amount Recognized in Past Pension Expenses	Amount Recognized in Current Pension Expense	Deferred (Inflows) to be Recognized in Future Pension Expenses	Deferred Outflows to be Recognized in Future Pension Expenses
1. Differences Between Expected	$ (24,683,325)	June 30, 2019	4.6742	$ -	$ (5,280,759)	$ (19,402,566)	$ -
and Actual Non-Investment Experience	(185,488,891)	June 30, 2018	4.4840	(41,366,836)	(41,366,836)	(102,755,219)	-
	(601,530,567)	June 30, 2017	4.4542	(270,095,894)	(135,047,947)	(196,386,726)	-
	(730,622,389)	June 30, 2016	4.6271	(473,702,139)	(157,900,713)	(99,019,537)	-
	(464,942,210)	June 30, 2015	4.5886	(405,302,020)	(59,640,190)	-	-
	$ (2,007,267,382)		4.5656	$ (1,190,466,889)	$ (399,236,445)	$ (417,564,048)	$ -
2. Assumption Changes	$ 313,744,264	June 30, 2019	4.6742	$ -	$ 67,122,559	$ -	$ 246,621,705
	(348,811,194)	June 30, 2018	4.4840	(77,790,186)	(77,790,186)	(193,230,822)	-
	(884,705,099)	June 30, 2017	4.4542	(397,245,342)	(198,622,671)	(288,837,086)	-
	5,048,087,579	June 30, 2016	4.6271	3,272,949,090	1,090,983,030	-	684,155,459
	360,713,498	June 30, 2015	4.5886	314,443,184	46,270,314	-	-
	$ 4,489,029,048		4.5656	$ 3,112,356,746	$ 927,963,046	$ (482,067,908)	$ 930,777,164
3. Difference Between Expected	$ 100,910,088	June 30, 2019	5.0000	$ -	$ 20,182,018	$ -	$ 80,728,070
and Actual Investment Earnings	(111,073,439)	June 30, 2018	5.0000	(22,214,688)	(22,214,688)	(66,644,063)	-
	(771,234,276)	June 30, 2017	5.0000	(308,493,710)	(154,246,855)	(308,493,711)	-
	1,228,330,984	June 30, 2016	5.0000	736,998,591	245,666,197	-	245,666,196
	375,641,305	June 30, 2015	5.0000	300,513,044	75,128,261	-	-
	$ 822,574,662		5.0000	$ 706,803,237	$ 164,514,933	$ (375,137,774)	$ 326,394,266
4. Total	**$ 3,304,336,328**			**$ 2,628,693,094**	**$ 693,241,534**	**$ (1,274,769,730)**	**$ 1,257,171,430**

B. Deferred Outflows and Deferred (Inflows) of Resources by Year to be Recognized in Future Pension Expenses

Year Ending June 30	Differences Between Expected and Actual Non-Investment Experience	Assumption Changes	Differences Between Expected and Actual Investment Experience
2020	$ (280,715,079)	$ 474,865,161	$ 89,386,671
2021	(107,986,374)	(100,882,042)	(156,279,526)
2022	(25,302,306)	29,472,109	(2,032,669)
2023	(3,560,289)	45,254,028	20,182,015
2024	-	-	-
Thereafter	-	-	-
Total	**$ (417,564,048)**	**$ 448,709,256**	**$ (48,743,508)**

Year Ending June 30	Deferred Outflows of Resources	Deferred (Inflows) of Resources	Net Deferred Outflows/ (Inflows) of Resources
2020	$ 1,017,126,232	$ (733,589,479)	$ 283,536,753
2021	87,304,577	(452,452,519)	(365,147,942)
2022	87,304,577	(85,167,443)	2,137,134
2023	65,436,044	(3,560,289)	61,875,755
2024	-	-	-
Thereafter	-	-	-
Total	**$ 1,257,171,430**	**$ (1,274,769,730)**	**$ (17,598,300)**

**Based on a measurement date of June 30, 2019, but will be used for fiscal year ending June 30, 2020. Employer's proportionate share of calculations of the net pension liability, pension expense and deferred inflows and outflows are outside the scope of this report.*

Numbers may not add due to rounding.

SECTION F

SUMMARY OF RETIREMENT SYSTEM PLAN PROVISIONS

Summary of Retirement System Plan Provisions
(as of June 30, 2019)

Purpose

The State Employees' Retirement System of Illinois, a State Agency, provides an orderly means whereby aged or disabled employees may be retired from active service without prejudice or hardship and enables the employees to accumulate reserves for old age, disability, death and termination of employment.

Administration

Responsibility for the operation of the System and the direction of its policies is vested in a Board of Trustees of seven members. The administration of the detailed affairs of the System is the responsibility of the Executive Secretary who is appointed by the Board of Trustees. Administrative policies and procedures are designed to ensure an accurate accounting of funds of the System and prompt payment of claims for benefits within the applicable statute.

Membership

All persons entering State service on or after January 1, 1984, become members upon completion of six months of continuous service except that, beginning July 1, 1991, employees in police positions become members on their first day of employment. Persons entering State service from January 1, 1972, to January 1, 1984, became members on their first day of employment. Excluded from membership are: any employee whose position is subject to membership under another State-supported system, any person who becomes an employee after June 30, 1979, as a public service employment program participant under the federal CETA program, or any enrollee of the Young Adult Conservation Corps. Prior to January 1, 1984, emergency and temporary employees were excluded from membership. Persons appointed by the Governor with the advice and consent of the Senate may elect to become members of the System. Other exceptions are identified in State law.

Membership Service

Membership service includes all service rendered while a member of the System for which credit is allowable. Persons entering service on or after January 1, 1984, or after July 1, 1982, in the case of emergency or temporary employees, may also receive membership service credit for periods of employment prior to membership by making contributions for such periods.

Member Contributions

Members are required to contribute a percentage of salary as their share of meeting the cost of the various benefits. Contribution rates are as shown below:

- Members covered by Social Security – 4.0 percent of Salary.
- Members not covered by Social Security – 8.0 percent of Salary.
- Members covered by Social Security who are serving in a position in which service toward the Alternative Retirement Annuity may be earned – 8.5 percent of Salary.

- Members not covered by Social Security who are serving in a position in which service toward the Alternative Retirement Annuity may be earned – 12.5 percent of Salary.

Members covered by Social Security also pay the current Social Security tax rate.

Credit for regular interest each fiscal year on a member's individual contribution account is computed on the accumulated balance in the account at the beginning of each fiscal year.

Retirement Pension

Qualification of Member

Upon termination of State service, a member is eligible for a pension at age 60 with at least eight years of pension credit or at any age with 35 or more years of credit.

General formula members are eligible for a retirement annuity if the sum of the member's age plus years (and whole months) of pension credit equals or exceeds 85. General formula members between ages 55 and 60 with at least 25 years of pension credit are eligible for a retirement annuity reduced by one-half of 1 percent for each month the member is under age 60. Certain positions in the Department of Corrections were placed under the general formula effective July 1, 2005.

Members serving in a position in which service toward the Alternative Retirement Annuity may be earned are eligible to receive the alternative retirement annuity at age 50 with at least 25 years of pension credit or at age 55 with at least 20 years of pension credit in such a position. Security employees of the Department of Human Services were placed under the alternative formula effective January 1, 2001. Certain members of the Department of Transportation and the Toll Highway Authority were placed under the alternative formula effective August 1, 2001.

Amount of Pension

The pension is based on the member's final average compensation and the number of years of pension credit that has been established.

Final Average Compensation is the average of the highest 48 consecutive months in the last 10 years. All employees whose benefit is calculated under the alternative formula will have their benefit based on the greater of (i) the salary rate in effect on their last day of service, provided the last day salary does not exceed 115 percent of the average monthly compensation received by the member for the last 24 months of service, or (ii) the average monthly compensation for the last 48 months prior to retirement.

The general formula for members retiring on or after January 1, 1998, (regardless of termination date) is as follows:

- 1.67 percent of final average salary per year of credited service for members covered by Social Security.

- 2.20 percent of final average salary per year of credited service for members not covered by Social Security.

The alternative formula for members retiring on or after January 1, 2001 (regardless of termination date) is as follows:

- 2.50 percent of final average salary per year of credited service for members covered by Social Security.

- 3.00 percent of final average salary per year of credited service for members not covered by Social Security.

The maximum pension payable is 75 percent of final average compensation for general formula members and 80 percent of final average compensation for alternative formula members.

Optional Forms of Payment

Reversionary Annuity—A member may elect to receive a smaller pension during his lifetime in order to provide a spouse or a designated dependent with a lifetime income. That payment would be in addition to any other benefit payable by the System.

Level Income—A member who contributes to Social Security as a State employee may elect to have his pension payments increased before Social Security Normal Retirement Age and reduced thereafter. To be eligible for this election the member must have established eligibility for a Social Security pension.

Annual Increases in Pension

Postretirement increases of 3.0 percent of the current pension (i.e., increases are compounded) are granted to members effective each January 1 occurring on or after the first anniversary of the pension.

Survivors Annuity

Qualification of Survivor

If death occurs while in State employment, the member must have established at least 18 months of pension credit. If death occurs after termination of State service and the member was not receiving a retirement pension, the member must have established at least eight years of pension credit.

An eligible spouse qualifies at age 50 or at any age if there is, in the care of the spouse, any unmarried children of the member under age 18 (age 22 if full-time student); unmarried children under age 18 (age 22 if full-time student) qualify if no spouse survives; dependent parents at age 50 qualify if neither an eligible spouse nor children survive the member.

Amount of Payment

If the member's death occurs before retirement, the named beneficiary receives a lump sum refund of all of the member's pension contributions plus interest, excluding contributions for widows and survivors benefits. A single lump sum payment of $1,000 is also made immediately to the survivor beneficiary of the member.

An eligible spouse receives a monthly annuity equal to 30 percent of the member's final average compensation subject to a maximum of $400. If children of the member are under the care of the spouse, the annuity is increased for each child, subject to a monthly maximum of $600 or 80 percent of final average compensation. If only eligible children survive, the monthly annuity may not exceed the lesser of $600 or 80 percent of final average compensation. The maximum combined monthly payment to parents may not exceed $400. If the member's death occurs after retirement or after termination of State employment but before the member receives a pension, the monthly benefit is further limited to 80 percent of the pension received or earned by the member. Monthly benefits payable to survivors of a member who was covered by Social Security as a State employee are reduced by one-half of the Social Security benefits for which the survivors are eligible. For benefits granted on or after January 1, 1992, the reduction may not exceed 50 percent of the amount of survivors annuity otherwise payable. If death of the member occurs on or after January 1, 1984, the minimum total survivors annuity benefit payable (before any reduction for Social Security benefits) is equal to 50 percent of the member's earned pension without regard to the member's age at death. Any member who retires on or after July 1, 2009, will have the option at the time of retirement to remove the offset provision. In exchange for the removal, SERS will reduce the member’s retirement annuity by 3.825 percent.

Duration of Payment

The monthly annuity payable to a spouse continues for his/her lifetime without regard to remarriage. The monthly annuity to children terminates upon death, marriage or attainment of age 18 (age 22 if full-time student). However, the monthly annuity will continue for a child who, at age 18, is physically or mentally disabled and unable to accept gainful employment.

Annual Increases in Annuity

If the member's death occurs before retirement, increases of 3.0 percent of the current annuity are granted to survivors effective each January 1 occurring on or after the first anniversary of the annuity (i.e., increases are compounded). If the member's death occurs after retirement, the initial 3.0 percent increase applies on the January 1 on or after the survivor annuity begins.

Widow's Annuity Option

The widow of a male member who was a participant in the System prior to July 19, 1961, may have the option of taking a Widow's Annuity rather than the Survivor's Annuity.

Qualification of Widow

An eligible widow receives a Widow's Annuity if she is age 50 or over or has in her care any of the member's unmarried children under age 18. If she is not age 50 and has no such children in her care, she becomes eligible at age 50.

Amount of Payment

The Widow's Annuity consists of a lump sum payment of $500, plus a monthly annuity equal to 50 percent of the pension earned or received by the member at the date of death. If the widow has in her care eligible children of the member, the monthly annuity is increased because of each child, subject to a maximum payment equal to 66-2/3 percent of the earned pension. Monthly benefits payable to a widow of a member who was covered by Social Security as a State employee are reduced by one-half of the amount of benefits she is entitled to as a widow from Social Security (reduced by one-half of the amount of benefits she is entitled to based on her own Primary Insurance Amount). For benefits granted on or after January 1, 1992, the reduction may not exceed 50 percent of the amount of widow's annuity otherwise payable. Any member who retires on or after July 1, 2009, will have the option at the time of retirement to remove the offset provision. In exchange for the removal, SERS will reduce the member's retirement annuity by 3.825 percent.

Duration of Payment

The monthly payment to the widow continues for her lifetime whether or not she remarries. If the amount of benefit was increased because of eligible children, it is adjusted downward as these children's benefits are terminated (death, marriage or attainment of age 18 or 22).

Annual Increases in Annuity

If the member's death occurs before retirement, increases of 3.0 percent of the current annuity are granted to widows effective each January 1 occurring on or after the first anniversary of the annuity (i.e., increases are compounded). If the member's death occurs after retirement, the initial 3.0 percent increase applies on the January 1 on or after the widow's annuity begins.

Occupational Death Benefit

Qualification of Survivors

If a member's death results from an injury on the job or a job related cause, the spouse may be eligible for an Occupational Death benefit. If only unmarried children under age 18 (age 22 if full-time student) survive, they would be eligible for the benefit. If neither a spouse nor eligible children survive, a dependent father or mother would be eligible.

Amount and Duration of Payment

The nominated beneficiary receives a lump sum payment consisting of all contributions made by the member plus interest credited to his account.

A surviving spouse is entitled to a monthly benefit equal to 50 percent of the member's final average compensation. The benefit is payable for the remaining lifetime of the spouse without regard to remarriage. If children under age 18 (age 22 if full-time student) also survive, the annuity is increased by 15 percent of such average because of each child, subject to a maximum of 75 percent. If there is no spouse, or if the spouse dies before all children have attained age 18 (age 22 if full-time student), each child receives a monthly allowance of 15 percent of final average compensation.

The combined payment to children may not exceed 50 percent of the member's final average compensation. Payments to or on account of children terminate upon their death, marriage or attainment of age 18 (age 22 if full-time student).

If there is no spouse or eligible children, a benefit of 25 percent of final average compensation is payable to each surviving dependent parent for life.

Annual Increases in Annuity

Increases of 3.0 percent of the current annuity are granted effective each January 1 occurring on or after the first anniversary of the annuity (i.e., increases are compounded).

Reductions

The monthly benefit is reduced by any payments awarded under the Workmen's Compensation or Occupational Diseases Acts.

Other Death Benefits

If the survivor beneficiaries of the member do not qualify for any of the previously described death benefits, one of the following benefits is payable to the nominated beneficiary on file with the System at the date of death.

Before Retirement

If the member's death occurred while in State service the benefit consists of: (1) a refund of all contributions plus interest credited to the member's account; and (2) a payment equal to one month's salary for each full year of pension credit not to exceed six month's salary. The minimum payment is equal to one month's salary.

If the member had terminated State service but not yet qualified for a pension, the benefit consists of a refund of all of the member's contributions to the System plus the interest credited to the member's account.

After Retirement

The benefit consists of a lump sum payment equal to the excess of contributions plus interest credited to the member's account over the total amount of pension payments made to the member. The minimum payment is $500.00.

Non-Occupational Disability Benefits

Qualification and Amount of Payment

Available to any member who has established at least one and one-half years of creditable service and who has been granted a disability leave of absence by his employing agency. The benefit is 50 percent of the member's final average compensation plus a credit to the member's account of service and contributions. It begins on the 31st day of absence from service on account of disability.

If the member has Social Security coverage as a State employee, the benefit payable by the System is reduced by the amount of any disability payment to which he is entitled under Social Security.

Duration of Payment

The member is eligible for the monthly benefit until the occurrence of any of the following events: (1) disability ceases; (2) resumption of gainful employment; (3) payments are made for a period of time equal to one-half of the service credit established as of the date disability began; or (4) attainment of age 65 if the benefit commences prior to age 60, or payment for 5 years if benefit commences after age 60.

If termination of the benefit is due to the member receiving benefits for a period of time equal to one-half of the service credit established at the date of disability, he shall be eligible for a retirement annuity if he has attained age 55 and has 15 years of service, or if he has attained age 50 and has 20 years of service.

Annual Increases in Annuity

A one-time increase of 7.0 percent of the original annuity is granted to members on the January 1 following the fourth anniversary of the annuity. Increases of 3.0 percent of the current annuity are then granted to members each January 1 following the 7.0 percent increase (i.e., the 3.0 percent increases are compounded).

Occupational Disability Benefit

Qualification and Amount of Payment

Provided for any member who becomes disabled as the direct result of injury or diseases arising out of and in the course of State employment.

The benefit is 75 percent of final average compensation plus a credit to the member's account of service and contributions. The cash benefit is reduced by any payment received under the Workmen's Compensation or Occupational Diseases Acts.

Duration of Payment

Monthly benefits are payable until the occurrence of any of the following events: (1) disability ceases; (2) resumption of gainful employment; or (3) attainment of age 65 if the benefit commences prior to age 60, or payment for five years if the benefit commences after age 60.

If termination of the benefit is due to the member having attained age 65 or having received benefits for five years after age 60, the member is entitled to a retirement pension based upon service credit established as of that date.

Annual Increases in Annuity

A one-time increase of 7.0 percent of the original annuity is granted to members on the January 1 following the fourth anniversary of the annuity. Increases of 3.0 percent of the current annuity are then granted to members each January 1 following the 7.0 percent increase (i.e., the 3.0 percent increases are compounded).

Temporary Disability Benefit

A member who is initially denied Workers' Compensation benefits and is appealing the denial may receive payment at the non-occupational rate, 50 percent of pay, providing all eligibility requirements for the non-occupational benefit are met, until the determination is made.

Separation Benefits

Upon termination of State employment by resignation, discharge, dismissal or layoff, a member may obtain a refund of the contributions made to the System. By accepting a refund, a member forfeits all accrued rights and benefits in the System for himself and his beneficiaries.

Provisions Applicable to Members Hired after December 31, 2010, as a result of Public Act 96-0889 ("Tier 2")

Final Average Compensation

Based on last eight years of service and may not exceed $106,800, as automatically increased by the lesser of 3 percent or one-half of the annual increase in the consumer price index-u during the preceding 12-month calendar year.

Retirement Eligibility – All Members Except State policemen, fire fighters in the fire protection service of a department or security employees of the Department of Corrections or the Department of Juvenile Justice

Normal retirement – 67 years old with 10 years of service.

Early Retirement – 62 years old with 10 years of service with a 6.0 percent per year reduction in benefit for each year age is under 67.

Retirement Eligibility – State policemen, fire fighters in the fire protection service of a department or security employees of the Department of Corrections or the Department of Juvenile Justice

Normal retirement – 60 years old with 20 years of service.

Annual Increases in Annuity

Annual increases begin at the later of the first anniversary of retirement or age 67. The annual increases are equal to the lesser of 3.0 percent or one-half of the annual increase in the consumer price index-u during the preceding 12-month calendar year and are not compounded.

Survivor Benefits

Benefit equal to 66.67 percent of the earned retirement benefit at death. Survivor benefits are increased by the lesser of 3.0 percent or one-half of the annual increase in the consumer price index-u during the preceding 12-month calendar year and are not compounded.

Miscellaneous

State policeman, a fire fighter in the fire protection service of a department or a security employee of the Department of Corrections or the Department of Juvenile are still eligible for Alternate formula benefits as defined in section 14-110 of the Illinois Pension Code.

Salary and COLA Development for Members Hired on or After January 1, 2011

Year Ending	CPI-U	1/2 CPI-U	COLA	Maximum Annual Pensionable Earnings
2011			3.00%	$106,800.00
2012	3.90%	1.95%	1.95%	$108,882.60
2013	2.00%	1.00%	1.00%	$109,971.43
2014	1.20%	0.60%	0.60%	$110,631.26
2015	1.70%	0.85%	0.85%	$111,571.63
2016	0.00%	0.00%	0.00%	$111,571.63
2017	1.50%	0.75%	0.75%	$112,408.42
2018	2.20%	1.10%	1.10%	$113,644.91
2019	2.30%	1.15%	1.15%	$114,951.83

Provisions Applicable to Certain Current and Future Members not covered by Social Security, as a result of Public Act 100-0023 ("Tier 3")

Defined Benefit Provisions

Final Average Compensation

Based on last 10 years of service and may not exceed the federal Social Security Wage Base, currently $132,900 for calendar year 2019.

Retirement Eligibility

The greater of Normal Retirement Age under Social Security or age 67 years old with 10 years of service.

Benefit Formula

The member's benefit is equal to 1.25 percent for each year of service.

Annual Increases in Annuity

Annual increases begin on the first anniversary of retirement. The annual increases are equal to the one-half of the annual increase in the consumer price index-w during the preceding 12-month calendar year and are not compounded.

Survivor Benefits

Benefit equal to 66.67 percent of the earned retirement benefit at death. Survivor benefits are increased by one-half of the annual increase in the consumer price index-w during the preceding 12-month calendar year and are not compounded.

Member Contributions

Members contribute the lesser of 6.2 percent of pensionable compensation and the total normal cost rate for the Tier 3 plan.

Defined Contribution Provisions

Plan consists of employee and employer contributions and investment income earned on such contributions.

Administrative fees will be deducted as a uniform percentage of each participating member's employee contributions.

Employer Contributions

Employer contributions are at a rate between 2.0 percent and 6.0 percent of salary.

Employer contributions vest immediately.

Member Contributions

Member contribution rate equals 4.0 percent of salary.

Provisions Applicable to the Accelerated Pension Benefit Payment Program, as a result of Public Act 100-0587 and Public Act 101-0010

Vested Inactive Accelerated Pension Benefit Payment Option – Tiers 1 and 2

Eligibility requirements for an accelerated pension benefit payment:

- Member must have terminated service;
- Member must have enough service credit to qualify for a retirement annuity; and
- Member cannot have received a retirement annuity.

Members who elect this option will forfeit all rights to future benefit payments, but retain access to state retiree healthcare. The payment will equal 60 percent of the present value of the retirement benefits which the member is entitled to at the date they elect this payment, including automatic annual increases (AAI), survivor benefits and disability benefits. The System will calculate the present value of the benefit using actuarial factors.

Members forfeit all service credit for all purposes under the Illinois Pension Code, including benefits provided under the Illinois Reciprocal Act. However, the years of service credit may be considered when determining eligibility for retiree healthcare benefits and the member's share of retiree healthcare premiums.

This election is irrevocable and any member who elects this option and later returns to service will be eligible for a benefit based solely on future service and will not have the option to repay the amount received under this program to reestablish the previous service credit.

Accelerated Pension Benefit Payment at Retirement Option – Tier 1 Only

Eligibility requirements for this payment option:

- Member must have terminated service;
- Member must be eligible for a retirement annuity; and
- Member cannot have received a retirement annuity.

At retirement, Tier 1 members could elect to forfeit the Tier 1, 3 percent compounded AAI and instead receive 1.5 percent non-compounded AAIs, beginning the January 1st following the 1st anniversary of retirement or the 67th birthdate, whichever is later. Survivors of members that elect this option will also receive 1.5 percent non-compounded AAIs beginning on the January 1st following the anniversary of the start of the survivor annuity.

Members who elect to forego the Tier 1 AAIs will receive a lump sum payment equal to 70 percent of the difference in the present value of the Tier 1 AAI and the 1.5 percent non-compounded AAI, as calculated by the System. In the calculation, the System will use current actuarial assumptions and all relevant member information. Buyout payments are subject to applicable withholding and taxation provisions and must be transferred to a qualified retirement plan authorized by the IRS.

Accelerated Pension Benefit Program expires June 1, 2024, or earlier, if funds are no longer available. The State finances the program by issuing bonds up to certain limits. Lump sum payments will be made directly from the bond proceeds.

SECTION G

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Actuarial Valuation Methods — Calculation of the Total Pension Liability

Actuarial Cost Method – Normal cost and the allocation of benefit values between service rendered before and after the actuarial valuation date were determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

(i) The annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and

(ii) Each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial Valuation Methods — Calculation of the Statutory Contributions, Actuarial Cost Method Adopted June 30, 1989, by Statute

The projected unit credit normal cost method is used. Under this method, the projected pension at retirement age is first calculated and the present value at the individual member's current or attained age is determined. The normal cost for the member for the current year is equal to the present value divided by the member's projected service at retirement. The normal cost for the plan for the year is the sum of the individual normal costs.

The actuarial liability at any point in time is the value of the projected pensions at that time less the value of future normal costs.

For ancillary benefits for active members, in particular death and survivor benefits, termination benefits, and the postretirement increases, the same procedure as outlined above is followed.

Estimated annual administrative expenses are added to the normal cost.

For actuarial valuation purposes, as well as projection purposes, an actuarial value of assets is used.

Appropriation Requirements Under P.A. 88-0593

The law governing the System under P.A. 88-0593 provides that:

For fiscal years 2011 through 2045, the minimum contribution to the System for each fiscal year shall be an amount determined to be sufficient to cause the total assets of the System to equal 90 percent of the total actuarial liabilities of the System by the end of fiscal year 2045. In making these determinations, the required contribution shall be calculated each year as a level-percentage-of-payroll over the years remaining to and including fiscal year 2045 and shall be determined under the projected unit credit actuarial cost method. For fiscal years 1997 through 2010, the minimum contribution to the System, as a percentage of the payroll, shall be increased in equal annual increments so that by fiscal year 2010, the contribution rate is at the same level as the contribution rate for fiscal years 2011 through 2045.

Actuarial Assumptions as of June 30, 2019

Actuarial assumptions are set by the Board of Trustees. The actuarial assumptions used for the June 30, 2019 actuarial valuation are based on a full experience review for the three-year period ended June 30, 2018. All actuarial assumptions are expectations of future experience, not market measures.

Mortality

Mortality assumptions for general employees and retirees covered under the Regular Benefit Formula are shown in the following table.

General Employees and Retirees	Proposed Mortality Table	Male Set Back Years	Female Set Back Years	Male Scaling Factor	Female Scaling Factor
Pre-retirement	Pub-2010 General Employee, sex distinct	2	1	89%	95%
Post-retirement	Pub-2010 General Healthy Retiree sex distinct	0	-1	111%	111%

Mortality assumptions for Public Safety employees and retirees covered under the Alternative Benefit Formula are shown in the following table.

Public Safety Employees and Retirees	Proposed Mortality Table	Male Set Back Years	Female Set Back Years	Male Scaling Factor	Female Scaling Factor
Pre-retirement	Pub-2010 Public Safety Employee, sex distinct	0	0	96%	108%
Post-retirement	Pub-2010 Public Safety Healthy Retiree, sex distinct	0	0	110%	105%

Interest

6.75 percent per year, compounded annually, net of investment expenses.

General Inflation

2.25 percent per year, compounded annually.

This assumption serves as the basis for the determination of Tier Two annual increases that are equal to the lesser of 3.0 percent or one-half of the annual increase in the consumer price index-u during the preceding 12-month calendar year and are not compounded.

Marriage Assumption

85.0 percent of active male participants and 65.0 percent of active female participants are assumed to be married. Actual marital status at benefit commencement is used for retirees.

Social Security Offset for Survivor Benefits

No offset assumption for male surviving spouses because it is assumed their own PIA is as great as their spouses' PIA. Sixty percent of married male members are assumed to have a dual income household. For the dual income household, it is assumed the offset at age 60 is 45.0 percent of the original survivor benefit. It is assumed the offset at age 62 is 10.0 percent of the original survivor benefit. Furthermore, it is assumed that 50 percent of retirees on or after July 1, 2009, will elect to remove the offset provision. In exchange for the removal, the member's retirement annuity is reduced by 3.825 percent monthly as mandated by Statutes.

Termination

Illustrative rates of withdrawal from the plan are as follows for Tier One members:

Service Based Withdrawal				
	Regular Formula Employees		Alternate Formula Employees	
Service (Beginning of Year)	Males	Females	Males	Females
0	0.2400	0.2200	0.0525	0.0700
1	0.0900	0.0900	0.0425	0.0700
2	0.0750	0.0650	0.0425	0.0650
3	0.0650	0.0550	0.0425	0.0600
4	0.0600	0.0450	0.0425	0.0600
5	0.0460	0.0450	0.0300	0.0500
6	0.0450	0.0400	0.0300	0.0400
7	0.0400	0.0400	0.0300	0.0300
8	0.0300	0.0350	0.0200	0.0200
9	0.0300	0.0350	0.0200	0.0200
10	0.0300	0.0300	0.0150	0.0200
11	0.0250	0.0300	0.0150	0.0175
12	0.0250	0.0250	0.0150	0.0175
13	0.0250	0.0250	0.0150	0.0175
14	0.0200	0.0250	0.0150	0.0175
15	0.0200	0.0250	0.0150	0.0175
16	0.0200	0.0200	0.0150	0.0150
17	0.0200	0.0200	0.0150	0.0150
18	0.0200	0.0200	0.0150	0.0150
19	0.0200	0.0200	0.0125	0.0125
20	0.0200	0.0150	0.0125	0.0125
21	0.0200	0.0150	0.0125	0.0125
22	0.0200	0.0150	0.0125	0.0125
23	0.0200	0.0150	0.0125	0.0125
24	0.0150	0.0150	0.0100	0.0100
25	0.0150	0.0100	0.0100	0.0100
26	0.0150	0.0100	0.0100	0.0100
27	0.0150	0.0100	0.0100	0.0100
28	0.0150	0.0100	0.0100	0.0100
29	0.0150	0.0100	0.0100	0.0100
30+	0.0150	0.0100	0.0100	0.0100

It is assumed that terminated employees will not be rehired. The rates apply only to employees who have not fulfilled the service requirement necessary for retirement at any given age.

Salary Increases

Illustrative rates of increase per individual employee per year, compounded annually:

Age	Annual Increase
25	7.17%
30	5.70%
35	4.80%
40	4.47%
45	4.08%
50	3.76%
55	3.55%
60	3.35%
65	2.97%
70	2.75%

The underlying salary increase assumption is based on a wage inflation assumption of 2.75 percent per year, comprised of 2.25 percent for general inflation plus 0.50 percent for productivity increases. The rates shown above include wage inflation plus an age-based component for merit, promotion and longevity.

Disability

Because members who receive disability benefits typically spend less than one year on disability, they are considered active members. Therefore, a load of 1.65 percent of pay on the normal cost is applied to reflect the near-term cash flow. This assumption is based on 110 percent of the most recent disability benefit payment information as a percent of payroll and will be updated at each actuarial valuation date as experience emerges.

415(b) and 401(a)(17) Limits

No explicit assumption is made with respect to these items.

Accelerated Pension Benefit Payment Program Election Assumption

In accordance with Public Act 100-0587 and Public Act 101-0010,

- Eligible Tier 1 active members may elect the "COLA Buyout", through June 1, 2024, in which the member receives reduced and delayed COLA benefits at retirement and an accelerated pension benefit payment.
- Eligible inactive Tier 1 and Tier 2 members may elect the "Total Buyout", through May 31, 2024, in which the member receives an accelerated pension benefit payment in lieu of an annuity at retirement.

With respect to the COLA Buyout, 21 percent of Regular Formula members and 28 percent of Alternative Formula members are assumed to elect the COLA Buyout. The election percentages are based on experience through March 2019, as provided by SERS. With respect to the Total Buyout, 5 percent are assumed to elect the Total Buyout. The election percentages apply until the end of each Buyout Program; i.e., June 1, 2024, for the COLA Buyout and May 31, 2024, for the Total Buyout.

For purposes of determining annual appropriation as a percent of total covered payroll, the size of the active group is assumed to remain level at the number of actives as of the actuarial valuation date. New entrants are assumed to enter with an average age and an average pay as disclosed below. New entrants are assumed to have the same demographic profile as new entrants in the 15 years prior to the actuarial valuation date. The average increase in uncapped payroll for the projection period is 2.75 percent per year. New entrants not covered by Social Security are assumed to participate in the Tier 2 defined benefit plan.

New Entrant Benefit Groups														
Age Group	New Entrants Eligible for Regular Formula Benefits who are Covered by Social Security		New Entrants Eligible for Regular Formula Benefits who are not Covered by Social Security		New Entrants in Positions Formerly Eligible for Alternate Formula Benefits who are Covered by Social Security and are now Eligible for Regular Formula Benefits		New Entrants Eligible for Alternate Formula Benefits who are Covered by Social Security		New Entrants in Positions Formerly Eligible for Alternate Formula Benefits who are not Covered by Social Security and are now Eligible for Regular Formula Benefits		New Entrants Eligible for Alternate Formula Benefits who are not Covered by Social Security		Total	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
Under 20	107	$ 3,467,106			70	$ 3,087,903	20	$ 899,602					197	$ 7,454,611
20-24	2,340	89,896,000	14	$ 573,273	1,665	76,696,614	390	19,035,748	299	$ 19,059,814	5	$ 155,406	4,713	205,416,855
25-29	4,264	189,630,010	29	1,488,543	1,908	91,779,003	494	25,848,452	444	29,167,700	6	169,233	7,145	338,082,941
30-34	3,767	182,629,462	20	1,164,670	1,035	52,685,593	370	21,123,541	190	13,126,925			5,382	270,730,191
35-39	3,238	165,836,007	6	295,704	674	36,678,476	309	18,070,299	72	5,116,806			4,299	225,997,292
40-44	3,085	161,170,605	8	496,889	553	31,869,496	231	14,091,502	32	2,282,806			3,909	209,911,298
45-49	2,682	144,162,169	7	454,181	423	24,318,375	194	11,870,774	10	736,763			3,316	181,542,262
50-54	2,219	119,995,100	9	642,834	272	16,011,951	111	7,113,127	11	826,979			2,622	144,589,991
55-59	1,439	74,742,248	7	497,474	142	8,279,311	61	3,514,353	11	787,657			1,660	87,821,043
60-64	503	25,911,618			44	2,615,363	19	1,347,230	3	255,428			569	30,129,639
65-69	31	1,795,974			4	214,472	1	56,274					36	2,066,720
70 & Over														
Total	23,675	$ 1,159,236,299	100	$ 5,613,568	6,790	$ 344,236,557	2,200	$ 122,970,902	1,072	$ 71,360,878	11	$ 324,639	33,848	$ 1,703,742,843
Avg. Salary		$ 48,965		$ 56,136		$ 50,698		$ 55,896		$ 66,568		$ 29,513		$ 50,335
Avg. Age		37.80		34.83		31.79		33.97		33.07		27.14		36.04
Percent Male		42%		93%		72%		68%		89%		100%		52%

Retirement – Tier 1

Employees are assumed to retire in accordance with the rates shown below. The rates apply only to employees who have fulfilled the service requirement necessary for retirement at any given age.

Retirement Rates for Regular Formula Employees		
Age	Males	Females
50	15.00%	27.50%
51	25.00%	27.50%
52	25.00%	35.00%
53	25.00%	27.50%
54	25.00%	22.50%
55	25.00%	25.00%
56	18.00%	24.00%
57	18.00%	19.00%
58	18.00%	19.00%
59	18.00%	19.00%
60	13.00%	17.00%
61	12.00%	13.50%
62	20.00%	23.00%
63	17.50%	19.00%
64	17.50%	20.00%
65	25.00%	25.00%
66	25.00%	29.00%
67	25.00%	27.00%
68	25.00%	27.00%
69	25.00%	22.00%
70	25.00%	22.00%
71	20.00%	22.00%
72	20.00%	22.00%
73	20.00%	22.00%
74	20.00%	22.00%
75	100.00%	100.00%

Early Retirement Rates for Regular Formula Employees		
Age	Males	Females
55	3.50%	2.00%
56	3.50%	3.00%
57	5.00%	4.00%
58	6.00%	5.00%
59	6.50%	6.00%

Retirement Rates for Alternate Formula Employees				
	Eligible for Alternate Formula Benefits Only		Eligible for Regular Formula Benefits Only	
Age	Males	Females	Males	Females
50	65.00%	42.50%	N/A	N/A
51	50.00%	30.00%	N/A	N/A
52	40.00%	25.00%	N/A	N/A
53	40.00%	25.00%	N/A	N/A
54	35.00%	25.00%	N/A	N/A
55	42.00%	45.00%	N/A	N/A
56	30.00%	30.00%	N/A	N/A
57	30.00%	30.00%	N/A	N/A
58	30.00%	30.00%	N/A	N/A
59	30.00%	20.00%	N/A	N/A
60	30.00%	30.00%	4.00%	5.00%
61	30.00%	25.00%	4.00%	5.00%
62	30.00%	40.00%	10.00%	18.00%
63	35.00%	30.00%	11.00%	18.00%
64	35.00%	40.00%	12.00%	15.00%
65	35.00%	50.00%	14.00%	25.00%
66	35.00%	50.00%	20.00%	15.00%
67	35.00%	50.00%	20.00%	20.00%
68	35.00%	50.00%	20.00%	30.00%
69	45.00%	50.00%	20.00%	30.00%
70	50.00%	50.00%	20.00%	30.00%
71	50.00%	50.00%	20.00%	30.00%
72	100.00%	100.00%	100.00%	100.00%

Assets

The Fiduciary Net Position is used for GASB reporting purposes. The asset method used to project contributions is prescribed by statute. A description of this method can be found in the June 30, 2018, actuarial valuation.

Expenses

As estimated and advised by SERS staff, based on current expenses and are expected to increase in relation to the projected capped payroll.

Spouse's Age

The female spouse is assumed to be three years younger than the male spouse.

Children

It is assumed that married members have 2.2 children, one year apart in age.

The age of the youngest child of a deceased employee at his date of death is assumed to be as follows:

Age at Death of Employee	Age of Youngest Child	Age at Death of Employee	Age of Youngest Child
20	2	40	6
25	3	45	8
30	4	50	10
35	5	55	12
		60	14

Overtime and Shift Differentials

Reported earnings include base pay alone. It is assumed that overtime and shift differentials will increase total payroll by 3.5 percent over reported earnings.

Load for Inactive Members Eligible for Deferred Vested Pension Benefits

Load of 11 percent for Regular Formula members and 9 percent for Alternative Formula members. The load reflects a liability attributable to inactive members eligible for deferred vested pension benefits for potential increases in final average salary due to participation in a reciprocal system after termination.

Unused Sick Leave and Optional Service Purchases

Current and future active member's service is increased 4.5 months to account for increases of service at retirement due to converting unused sick leave and vacation days and purchasing applicable optional service.

Missing Data

If year-to-date earnings were not available, then the monthly pay rate is used. If both year-to-date earnings and the monthly pay rate are not available, the annual rate of pay is assumed to be the rate of pay for the population as a whole on the actuarial valuation date. For members with less than a year of service, the annual rate of pay is based on the greater of year-to-date earnings or annualized pay rate. If a birth date was not available, the member was assumed to be age 35.

Decrement Timing

All decrements are assumed to occur mid-year.

Decrement Relativity

Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

Decrement Operation

Disability and turnover decrements do not operate after a member reaches retirement eligibility.

Eligibility Testing

Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.

Assumptions as a Result of Public Act 96-0889 Adopted June 30, 2016

Members hired after December 31, 2010, are assumed to make contributions on salary up to the final average compensation cap in a given year until this plan provision or administrative procedure is clarified.

State contributions, expressed as a percentage of pay, are calculated based upon capped pay.

Members hired after December 31, 2010, eligible for the regular formula benefits will retire according to the following age-based retirement rates:

Retirement Rates for Regular Formula Employees - Tier 2 Members			
Age	Employees Eligible For Normal Retirement	Age	Employees Eligible For Early Retirement
67	50.00%	62	30.00%
68	35.00%	63	15.00%
69	35.00%	64	15.00%
70	35.00%	65	15.00%
71	20.00%	66	15.00%
72	20.00%		
73	20.00%		
74	20.00%		
75	100.00%		

Members hired after December 31, 2010, eligible for the alternate formula benefits will retire according to the following age-based retirement rates:

Retirement Rates for Alternate Formula Employees		
Age	Males	Females
60	50.00%	50.00%
61	30.00%	25.00%
62	30.00%	40.00%
63	35.00%	30.00%
64	35.00%	40.00%
65	35.00%	50.00%
66	35.00%	50.00%
67	35.00%	50.00%
68	35.00%	50.00%
69	45.00%	50.00%
70	50.00%	50.00%
71	50.00%	50.00%
72	100.00%	100.00%

Illustrative rates of withdrawal from the plan are as follows for members hired after December 31, 2010:

Service Based Withdrawal				
	Regular Formula Employees		Alternate Formula Employees	
Service (Beginning of Year)	Males	Females	Males	Females
0	0.3000	0.2700	0.0800	0.1100
1	0.1650	0.1600	0.0700	0.0800
2	0.0700	0.0900	0.0575	0.0700
3	0.0700	0.0800	0.0550	0.0600
4	0.0650	0.0750	0.0325	0.0500
5	0.0550	0.0650	0.0300	0.0500
6	0.0500	0.0600	0.0300	0.0500
7	0.0500	0.0500	0.0300	0.0325
8	0.0300	0.0350	0.0200	0.0200
9	0.0300	0.0350	0.0200	0.0200
10	0.0300	0.0300	0.0150	0.0200
11	0.0250	0.0300	0.0150	0.0175
12	0.0250	0.0250	0.0150	0.0175
13	0.0250	0.0250	0.0150	0.0175
14	0.0200	0.0250	0.0150	0.0175
15	0.0200	0.0250	0.0150	0.0175
16	0.0200	0.0200	0.0150	0.0150
17	0.0200	0.0200	0.0150	0.0150
18	0.0200	0.0200	0.0150	0.0150
19	0.0200	0.0200	0.0125	0.0125
20	0.0200	0.0150	0.0125	0.0125
21	0.0200	0.0150	0.0125	0.0125
22	0.0200	0.0150	0.0125	0.0125
23	0.0200	0.0150	0.0125	0.0125
24	0.0150	0.0150	0.0100	0.0100
25	0.0150	0.0100	0.0100	0.0100
26	0.0150	0.0100	0.0100	0.0100
27	0.0150	0.0100	0.0100	0.0100
28	0.0150	0.0100	0.0100	0.0100
29	0.0150	0.0100	0.0100	0.0100
30+	0.0150	0.0100	0.0100	0.0100

State Contributions under P.A. 93-0002

In general, for each year during the life of the GOB program, the state contributions to the System are to be calculated as follows:

1. Calculation of the contribution maximum

   a. A projection of contributions will be made from the actuarial valuation date to June 30, 2045. Such projection will be based on hypothetical asset values determined using the following assumptions:

      i) That the System had received no portion of the general obligation bond proceeds in excess of the scheduled contributions for the remainder of fiscal 2003 and for the entirety of 2004,

      ii) That hypothetical state contributions had been made each fiscal year from 2005 through the actuarial valuation date, based on the funding process in place prior to P.A. 93-0002 (without regard to prior state minimum requirements),

      iii) That the actual amounts of member contributions and the actual cash outflows (benefit payments, refunds and administrative expenses) for each year prior to the actuarial valuation date were realized, and

      iv) That the hypothetical fund earned returns in each prior fiscal year equal to the rate of total return actually earned by the retirement fund in that year.

   b. The hypothetical asset values developed in a., above, will not exceed the actual assets of the fund.

   c. A projection of maximum contributions for each year of the GOB program will be performed each year, by reducing the contributions produced in a., above, by the respective amount of debt service allocated to the System for each year.

2. Calculation of the contribution with GOB proceeds

   a. The basic projection of state contributions from the actuarial valuation date through June 30, 2045, will be made, taking into account all assets of the System, including the GOB proceeds.

   b. State contribution rates (expressed as a percentage of covered pay), in the pattern required by the funding sections of the statutes, are calculated.

   c. In those projections, the dollars of state contributions which are added to assets each year during the GOB program are limited by the contribution maximum. Because the bonds are to be liquidated by the end of fiscal 2033, there is no contribution maximum thereafter.

State Contributions under P.A. 94-0004

The following is an excerpt from the Illinois Compiled statutes 40 ILCS 5/14-108.3 (f)-(g):

(f) The System shall determine the amount of the increase in the present value of future benefits resulting from the granting of early retirement incentives under this Section and shall report that amount to the Governor and the Commission on Government Forecasting and Accountability on or after the effective date of this amendatory Act of the 93rd General Assembly and on or before November 15, 2004. Beginning with State fiscal year 2008, the increase reported under this subsection (f) shall be included in the calculation of the required State contribution under Section 14-131.

(g) In addition to the contributions otherwise required under this Article, the State shall appropriate and pay to the System an amount equal to $70,000,000 in State fiscal years 2004 and 2005.

State Contributions under P.A. 96-0043

The following is an excerpt from the Illinois Compiled statutes 40 ILCS 5/14-131:

(g) For purposes of determining the required State contribution to the System, the value of the System's assets shall be equal to the actuarial value of the System's assets, which shall be calculated as follows:

As of June 30, 2008, the actuarial value of the System's assets shall be equal to the market value of the assets as of that date. In determining the actuarial value of the System's assets for fiscal years after June 30, 2008, any actuarial gains or losses from investment return incurred in a fiscal year shall be recognized in equal annual amounts over the five-year period following that fiscal year.

(h) For purposes of determining the required State contribution to the System for a particular year, the actuarial value of assets shall be assumed to earn a rate of return equal to the System's actuarially assumed rate of return.

State Contributions under P.A. 100-0023

Public Act ("P.A.") 100-0023, effective July 6, 2017, modified the State's funding policy to include smoothing State contribution rate increases or decreases due to changes in actuarial assumptions, including investment return assumptions, over a five-year period in equal annual amounts beginning in fiscal year 2018. In addition, changes in actuarial or investment assumptions that increased or decreased the State contribution rate in fiscal years 2014 through 2017 are to be smoothed over a five-year period in equal annual amounts, applying only to the portion of the five-year phase-in that is applicable to fiscal years on and after 2018.

Following the preceding legislation we have calculated the required contribution and the results are shown in the summary section of this report.

Phase-In of the Financial Impact of Assumption Changes

Following is a table with the recognition schedule for the phase-in of actuarial assumption changes required under Public Act 100-0023. The following actuarial assumption changes were made:

1. Beginning with the June 30, 2014 actuarial valuation, there were changes to the economic and demographic assumptions.
2. Beginning with the June 30, 2016 actuarial valuation, there were changes to the economic and demographic assumptions.
3. Beginning with the June 30, 2018 actuarial valuation, there were changes to the economic assumptions.
4. Beginning with the June 30, 2019 actuarial valuation, there were changes to the economic and demographic assumptions.

Valuation Year Ending June 30,	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Applicable Fiscal Year Ending June 30,	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	$ in Millions After Impact of GOB Proceeds									
Contribution Before Assumption Change										
(1) Contribution Dollar	$ 1,822.047	$ -	$ 2,018.671	$ -	$ 2,291.303	$ 2,393.439				
(2) Contribution Rate	38.830%	0.000%	45.027%	0.000%	52.026%	53.337%				
Contribution After Assumption Change										
(3) Contribution Dollar	$ 2,044.868	$ -	$ 2,327.633	$ -	$ 2,302.720	$ 2,377.901				
(4) Contribution Rate	43.880%	0.000%	52.095%	0.000%	52.411%	53.263%				
(5) Assumption Change Impact as a Percentage of Capped Payroll [(4) - (2)]	5.050%	0.000%	7.068%	0.000%	0.385%	-0.074%				
(6) Assumption Change Impact Recognized This Year (5-year Recognition)										
(6a) From This Year	1.010%	0.000%	1.414%	0.000%	0.077%	-0.015%				
(6b) From One Year Ago	0.000%	1.010%	0.000%	1.414%	0.000%	0.077%	-0.015%			
(6c) From Two Years Ago	0.000%	0.000%	1.010%	0.000%	1.414%	0.000%	0.077%	-0.015%		
(6d) From Three Years Ago	0.000%	0.000%	0.000%	1.010%	0.000%	1.414%	0.000%	0.077%	-0.015%	
(6e) From Four Years Ago	0.000%	0.000%	0.000%	0.000%	1.010%	0.000%	1.412%	0.000%	0.077%	-0.014%
(6f) Total Recognized Assumption Change Impact	1.010%	1.010%	2.424%	2.424%	2.501%	1.476%	1.474%	0.062%	0.062%	-0.014%

SECTION H

CALCULATION OF THE SINGLE DISCOUNT RATE

Calculation of the Single Discount Rate

GASB Statement Nos. 67 and 68 include a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the Fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed actuarial valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph.

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this actuarial valuation, the expected rate of return on pension plan investments is 6.75 percent; the municipal bond rate is 3.13 percent; and the resulting Single Discount Rate is 6.47 percent.

The sponsor finances benefit using a funding policy defined in state statute. Sponsor contributions are calculated as a level percentage of capped payroll contributions needed to attain a funded status of 90 percent in 2045 under the Projected Unit Credit cost method. After 2045, the sponsor makes a contribution such that the funded status remains at 90 percent. The statutory contribution does not explicitly separate projected employer contributions between current and future plan members.

For purposes of developing the Single Discount Rate, we have projected actuarial liabilities on an Entry Age Normal basis, and compared against projected market value of assets. We have assumed the actuarial liability for future members will be fully financed, to the extent that assets are available, and any remaining asset will be assigned to current plan members. Based on this assignment of assets and employer contributions, plan assets assigned to current plan members are projected to be depleted by 2073.

The tables in this section provide background for the development of the Single Discount Rate.

The following tables show the assignment of assets and employer contributions and the projection of assets for current members as of the actuarial valuation date. Our projections assume the sponsor will make the required statutory contributions. The projections are based on the statutory funding projections performed during the June 30, 2019, actuarial valuation.

Total administrative expenses are assumed to increase at the same rate of projected capped payroll increases. Total administrative expenses are allocated between current and future hires by total payroll.

The projections in this report are strictly for the purpose of determining the GASB Single Discount Rate and are different from a funding projection for the ongoing plan.

Projection of Funded Status and Assignment of Assets

PYE 6/30	Open Group EAN Actuarial Liability	Closed Group EAN Actuarial Liability	Future Member EAN Actuarial Liability	Open Group Assets	Future Member Assigned Assets	Closed Group Assigned Assets	Funded Ratio Current Members	Funded Ratio Future Members
	(a)	(b)	(c)=(a)-(b)	(d)	(e)=min[(c),(d)]	(f)=(d)-(e)	(g)=(f)/(b)	(h)=(e)/(c)
2019	$50,163,885,302	$50,163,885,302	$ -	18,491,888,652	$ -	$18,491,888,652	36.86%	0.00%
2020	51,528,660,787	51,528,660,787	-	19,546,239,739	-	19,546,239,739	37.93%	0.00%
2021	52,835,024,055	$52,812,973,138	22,050,917	20,588,752,013	22,050,917	20,566,701,096	38.94%	100.00%
2022	54,081,898,673	$54,016,337,442	65,561,231	21,671,894,783	65,561,231	21,606,333,552	40.00%	100.00%
2023	55,264,850,253	$55,132,398,562	132,451,690	22,716,511,404	132,451,690	22,584,059,714	40.96%	100.00%
2024	56,377,122,884	$56,153,225,960	223,896,924	23,727,773,275	223,896,924	23,503,876,351	41.86%	100.00%
2025	57,410,860,893	$57,068,947,379	341,913,514	24,699,519,745	341,913,514	24,357,606,231	42.68%	100.00%
2026	58,361,154,181	$57,873,180,022	487,974,159	25,637,702,791	487,974,159	25,149,728,632	43.46%	100.00%
2027	59,225,607,511	$58,561,641,715	663,965,796	26,546,280,528	663,965,796	25,882,314,732	44.20%	100.00%
2028	60,009,511,160	$59,135,156,501	874,354,659	27,430,676,110	874,354,659	26,556,321,451	44.91%	100.00%
2029	60,714,986,628	$59,593,754,526	1,121,232,102	28,301,892,972	1,121,232,102	27,180,660,870	45.61%	100.00%
2030	61,350,082,096	$59,942,908,225	1,407,173,871	29,169,999,644	1,407,173,871	27,762,825,773	46.32%	100.00%
2031	61,909,575,834	$60,175,727,836	1,733,847,998	30,038,664,420	1,733,847,998	28,304,816,422	47.04%	100.00%
2032	62,392,944,660	$60,289,374,300	2,103,570,360	30,920,468,628	2,103,570,360	28,816,898,268	47.80%	100.00%
2033	62,803,740,711	$60,285,280,239	2,518,460,472	31,832,200,442	2,518,460,472	29,313,739,970	48.63%	100.00%
2034	63,146,978,816	$60,166,448,561	2,980,530,255	33,038,917,160	2,980,530,255	30,058,386,904	49.96%	100.00%
2035	63,423,866,604	$59,931,522,748	3,492,343,856	34,319,643,322	3,492,343,856	30,827,299,466	51.44%	100.00%
2036	63,636,541,873	$59,579,730,465	4,056,811,408	35,687,076,541	4,056,811,408	31,630,265,134	53.09%	100.00%
2037	63,792,025,294	$59,115,465,294	4,676,560,000	37,160,333,378	4,676,560,000	32,483,773,379	54.95%	100.00%
2038	63,896,468,409	$58,542,469,639	5,353,998,770	38,759,739,367	5,353,998,770	33,405,740,598	57.06%	100.00%
2039	63,958,423,747	$57,866,298,162	6,092,125,585	40,506,977,873	6,092,125,585	34,414,852,287	59.47%	100.00%
2040	63,988,725,613	$57,096,884,035	6,891,841,578	42,429,117,907	6,891,841,578	35,537,276,329	62.24%	100.00%
2041	63,996,940,224	$56,243,415,344	7,753,524,881	44,552,161,371	7,753,524,881	36,798,636,490	65.43%	100.00%
2042	63,991,964,314	$55,313,915,482	8,678,048,831	46,901,981,758	8,678,048,831	38,223,932,927	69.10%	100.00%
2043	63,982,683,208	$54,316,187,198	9,666,496,010	49,506,178,123	9,666,496,010	39,839,682,113	73.35%	100.00%
2044	63,977,090,312	$53,257,372,547	10,719,717,765	52,392,849,981	10,719,717,765	41,673,132,216	78.25%	100.00%
2045	63,980,938,318	$52,142,313,544	11,838,624,774	55,588,900,860	11,838,624,774	43,750,276,086	83.91%	100.00%
2046	63,998,340,852	$50,974,047,330	13,024,293,522	55,560,464,213	13,024,293,522	42,536,170,691	83.45%	100.00%
2047	64,032,208,526	$49,754,525,019	14,277,683,507	55,547,434,365	14,277,683,507	41,269,750,859	82.95%	100.00%
2048	64,083,716,127	$48,483,754,445	15,599,961,682	55,552,384,130	15,599,961,682	39,952,422,449	82.40%	100.00%
2049	64,153,978,206	$47,161,819,611	16,992,158,595	55,575,552,018	16,992,158,595	38,583,393,423	81.81%	100.00%
2050	64,244,399,633	$45,789,389,056	18,455,010,577	55,617,486,155	18,455,010,577	37,162,475,578	81.16%	100.00%
2051	64,355,530,647	$44,366,521,043	19,989,009,604	55,677,820,113	19,989,009,604	35,688,810,509	80.44%	100.00%
2052	64,488,112,606	$42,893,795,951	21,594,316,655	55,756,359,319	21,594,316,655	34,162,042,664	79.64%	100.00%
2053	64,644,991,894	$41,374,308,384	23,270,683,510	55,855,179,991	23,270,683,510	32,584,496,481	78.76%	100.00%
2054	64,830,085,579	$39,813,082,024	25,017,003,555	55,977,646,910	25,017,003,555	30,960,643,355	77.77%	100.00%
2055	65,046,815,006	$38,215,469,063	26,831,345,943	56,126,601,676	26,831,345,943	29,295,255,733	76.66%	100.00%
2056	65,300,185,193	$36,589,078,180	28,711,107,013	56,306,529,232	28,711,107,013	27,595,422,219	75.42%	100.00%
2057	65,595,788,346	$34,942,922,277	30,652,866,069	56,522,713,032	30,652,866,069	25,869,846,962	74.03%	100.00%
2058	65,938,203,257	$33,285,576,403	32,652,626,854	56,779,336,135	32,652,626,854	24,126,709,281	72.48%	100.00%
2059	66,331,664,492	$31,625,632,654	34,706,031,839	57,080,202,883	34,706,031,839	22,374,171,045	70.75%	100.00%
2060	66,779,690,772	$29,971,324,503	36,808,366,269	57,428,417,372	36,808,366,269	20,620,051,103	68.80%	100.00%
2061	67,285,320,769	$28,330,548,917	38,954,771,852	57,826,530,939	38,954,771,852	18,871,759,087	66.61%	100.00%
2062	67,850,653,413	$26,709,908,316	41,140,745,097	58,276,161,001	41,140,745,097	17,135,415,904	64.15%	100.00%
2063	68,477,261,004	$25,115,117,427	43,362,143,577	58,778,444,141	43,362,143,577	15,416,300,563	61.38%	100.00%
2064	69,167,040,138	$23,551,929,504	45,615,110,634	59,334,894,553	45,615,110,634	13,719,783,919	58.25%	100.00%
2065	69,921,662,256	$22,025,243,042	47,896,419,214	59,946,863,262	47,896,419,214	12,050,444,049	54.71%	100.00%
2066	70,742,544,558	$20,538,869,398	50,203,675,160	60,615,509,946	50,203,675,160	10,411,834,786	50.69%	100.00%
2067	71,631,490,042	$19,096,158,855	52,535,331,187	61,342,420,723	52,535,331,187	8,807,089,536	46.12%	100.00%
2068	72,591,024,072	$17,700,381,580	54,890,642,493	62,129,948,655	54,890,642,493	7,239,306,162	40.90%	100.00%
2069	73,623,957,343	$16,354,461,208	57,269,496,135	62,980,787,555	57,269,496,135	5,711,291,420	34.92%	100.00%
2070	74,733,048,982	$15,060,773,549	59,672,275,433	63,897,624,810	59,672,275,433	4,225,349,377	28.06%	100.00%
2071	75,920,961,319	$13,821,248,721	62,099,712,599	64,883,078,175	62,099,712,599	2,783,365,576	20.14%	100.00%
2072	77,190,291,652	$12,637,548,637	64,552,743,015	65,939,729,886	64,552,743,015	1,386,986,871	10.98%	100.00%
2073	78,543,511,146	$11,511,001,005	67,032,510,141	67,070,060,520	67,032,510,141	37,550,379	0.33%	100.00%
2074	79,982,938,653	$10,442,638,359	69,540,300,294	68,276,424,810	68,276,424,810	-	0.00%	98.18%

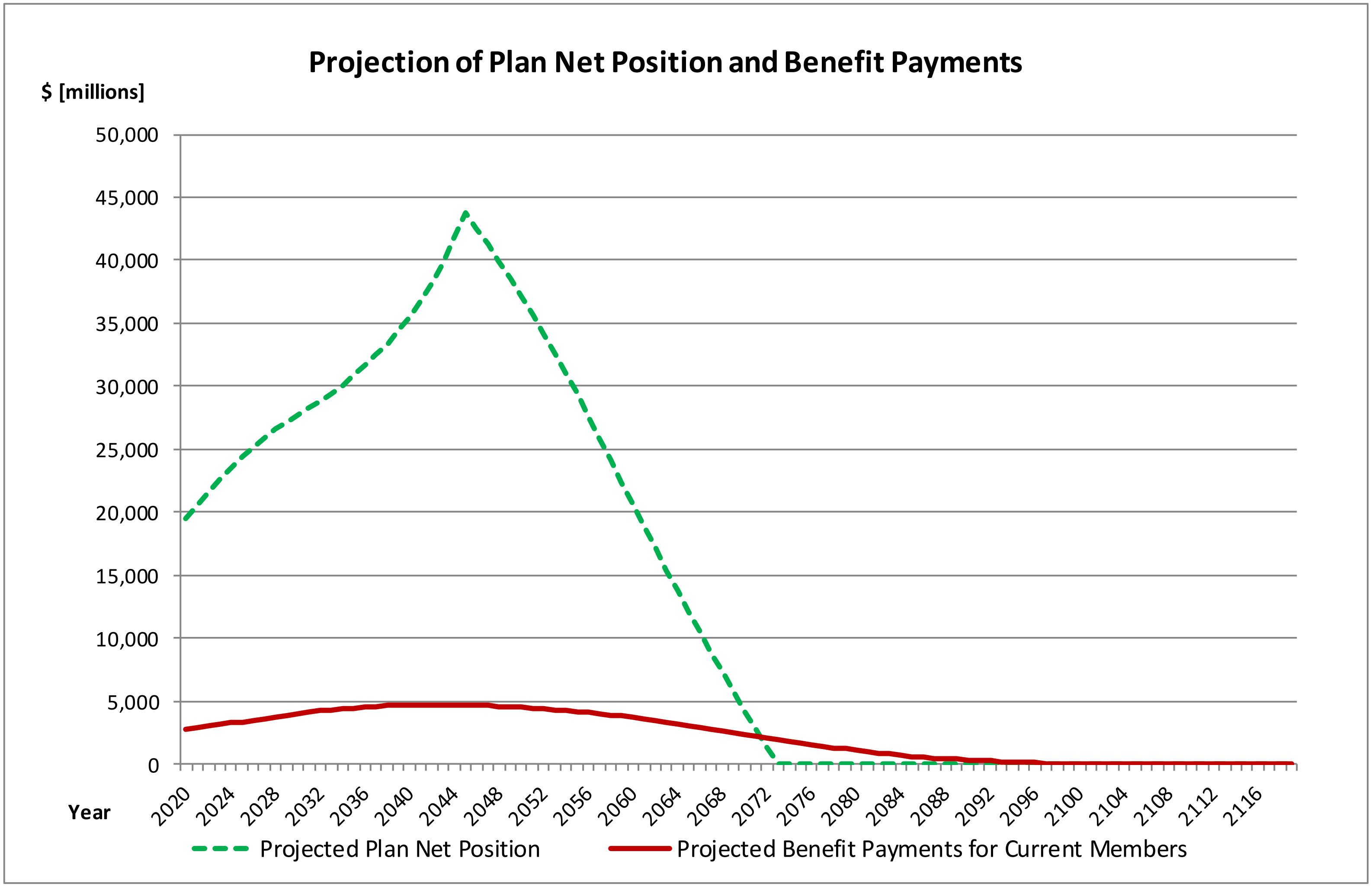
Current Member Projection of Assets and Assignment of Employer Contributions

PYE 6/30	Assets (boy)	Member Contributions	Administrative Expenses	Benefit Payments	Assigned Employer Contribution	Income on Cash Flow	Income on Assigned Contribution	Total Investment Income	Assets (eoy)
2020	$ 18,491,888,652	$ 249,024,508	$ 19,047,135	$ 2,710,676,260	$ 2,293,076,355	$ 1,165,845,970	$ 76,127,649	$ 1,241,973,619	$ 19,546,239,739
2021	19,546,239,739	238,507,978	18,136,095	2,842,690,686	2,333,013,596	1,232,313,041	77,453,522	1,309,766,563	20,566,701,096
2022	20,566,701,096	229,186,822	17,376,163	2,971,508,612	2,422,279,996	1,296,633,343	80,417,070	1,377,050,414	21,606,333,552
2023	21,606,333,552	219,867,983	16,642,952	3,101,045,172	2,432,564,762	1,362,223,027	80,758,513	1,442,981,541	22,584,059,714
2024	22,584,059,714	210,663,837	15,932,093	3,231,817,520	2,451,905,726	1,423,596,075	81,400,612	1,504,996,687	23,503,876,351
2025	23,503,876,351	200,964,012	15,210,983	3,365,633,347	2,470,644,408	1,480,943,074	82,022,716	1,562,965,790	24,357,606,231
2026	24,357,606,231	191,714,578	14,522,492	3,499,543,904	2,497,712,916	1,533,839,942	82,921,361	1,616,761,303	25,149,728,632
2027	25,149,728,632	182,554,572	13,850,445	3,630,662,897	2,527,946,386	1,582,673,404	83,925,080	1,666,598,484	25,882,314,732
2028	25,882,314,732	173,600,164	13,190,122	3,755,325,628	2,556,345,463	1,627,708,944	84,867,898	1,712,576,842	26,556,321,451
2029	26,556,321,451	165,623,479	12,580,336	3,874,580,557	2,590,862,322	1,669,000,690	86,013,821	1,755,014,511	27,180,660,870
2030	27,180,660,870	157,818,331	11,975,270	3,982,512,866	2,624,386,588	1,707,321,330	87,126,790	1,794,448,120	27,762,825,773
2031	27,762,825,773	150,769,427	11,409,947	4,091,242,654	2,662,683,128	1,742,792,502	88,398,193	1,831,190,696	28,304,816,422
2032	28,304,816,422	143,544,982	10,847,301	4,195,139,290	2,708,884,960	1,775,706,451	89,932,044	1,865,638,495	28,816,898,268
2033	28,816,898,268	136,242,260	10,292,161	4,290,900,941	2,763,188,887	1,806,868,780	91,734,876	1,898,603,656	29,313,739,970
2034	29,313,739,970	129,480,838	9,766,291	4,377,438,256	3,063,345,264	1,837,325,636	101,699,742	1,939,025,378	30,058,386,904
2035	30,058,386,904	122,818,527	9,253,035	4,457,618,437	3,124,511,834	1,884,723,267	103,730,406	1,988,453,673	30,827,299,466
2036	30,827,299,466	115,759,982	8,728,270	4,530,830,859	3,186,983,054	1,933,977,378	105,804,383	2,039,781,760	31,630,265,134
2037	31,630,265,134	108,901,008	8,219,287	4,593,619,274	3,252,581,381	1,985,882,240	107,982,176	2,093,864,416	32,483,773,379
2038	32,483,773,379	102,559,903	7,735,429	4,646,712,367	3,322,030,346	2,041,536,959	110,287,806	2,151,824,766	33,405,740,598
2039	33,405,740,598	96,046,873	7,249,114	4,688,729,075	3,394,184,986	2,102,174,757	112,683,262	2,214,858,019	34,414,852,287
2040	34,414,852,287	90,323,298	6,807,583	4,716,958,517	3,471,441,498	2,169,177,251	115,248,095	2,284,425,346	35,537,276,329
2041	35,537,276,329	85,358,585	6,409,680	4,732,388,762	3,552,581,181	2,244,276,993	117,941,844	2,362,218,837	36,798,636,490
2042	36,798,636,490	80,794,543	6,036,098	4,736,315,114	3,636,960,622	2,329,149,335	120,743,150	2,449,892,485	38,223,932,927
2043	38,223,932,927	76,556,605	5,684,508	4,729,208,481	3,724,957,273	2,425,463,754	123,664,544	2,549,128,298	39,839,682,113
2044	39,839,682,113	72,559,995	5,357,000	4,711,891,638	3,816,456,609	2,534,979,915	126,702,222	2,661,682,137	41,673,132,216
2045	41,673,132,216	68,680,348	5,042,689	4,686,528,406	3,910,740,800	2,659,461,463	129,832,355	2,789,293,818	43,750,276,086
2046	43,750,276,086	64,603,368	4,726,995	4,654,839,134	561,616,455	2,800,595,853	18,645,057	2,819,240,911	42,536,170,691
2047	42,536,170,691	60,384,571	4,407,438	4,617,942,034	557,303,950	2,719,739,232	18,501,887	2,738,241,119	41,269,750,859
2048	41,269,750,859	55,877,121	4,075,108	4,577,546,900	554,547,735	2,635,458,359	18,410,384	2,653,868,742	39,952,422,449
2049	39,952,422,449	50,912,669	3,722,639	4,533,648,406	551,284,347	2,547,842,961	18,302,043	2,566,145,003	38,583,393,423
2050	38,583,393,423	45,790,523	3,363,081	4,485,865,515	547,482,668	2,456,861,729	18,175,831	2,475,037,560	37,162,475,578
2051	37,162,475,578	40,464,287	2,994,497	4,434,827,092	543,179,652	2,362,479,606	18,032,976	2,380,512,581	35,688,810,509
2052	35,688,810,509	35,022,425	2,619,752	4,380,168,996	538,468,332	2,264,653,580	17,876,565	2,282,530,145	34,162,042,664
2053	34,162,042,664	29,564,552	2,244,361	4,319,809,422	533,789,911	2,163,431,890	17,721,246	2,181,153,137	32,584,496,481
2054	32,584,496,481	24,499,667	1,890,845	4,252,412,477	529,348,128	2,059,028,616	17,573,784	2,076,602,400	30,960,643,355
2055	30,960,643,355	19,816,800	1,561,797	4,177,985,292	525,162,937	1,951,744,890	17,434,840	1,969,179,730	29,295,255,733
2056	29,295,255,733	15,561,408	1,259,121	4,094,851,214	521,444,074	1,841,959,961	17,311,378	1,859,271,339	27,595,422,219
2057	27,595,422,219	12,033,019	1,003,100	4,002,290,507	518,293,087	1,730,185,475	17,206,769	1,747,392,244	25,869,846,962
2058	25,869,846,962	9,150,188	784,238	3,901,137,004	515,539,142	1,616,978,891	17,115,341	1,634,094,231	24,126,709,281
2059	24,126,709,281	6,837,871	603,434	3,791,849,488	513,165,709	1,502,874,560	17,036,545	1,519,911,106	22,374,171,045
2060	22,374,171,045	5,043,746	458,669	3,675,223,830	511,153,743	1,388,395,318	16,969,750	1,405,365,068	20,620,051,103
2061	20,620,051,103	3,701,654	345,117	3,551,968,334	509,365,998	1,274,043,385	16,910,399	1,290,953,783	18,871,759,087
2062	18,871,759,087	2,690,817	256,563	3,423,695,654	507,798,296	1,160,261,569	16,858,353	1,177,119,922	17,135,415,904
2063	17,135,415,904	1,916,793	186,305	3,291,585,526	506,503,383	1,047,420,952	16,815,363	1,064,236,316	15,416,300,563
2064	15,416,300,563	1,352,189	133,778	3,155,925,061	505,539,205	935,867,447	16,783,354	952,650,801	13,719,783,919
2065	13,719,783,919	950,024	95,686	3,017,834,217	504,951,222	825,924,953	16,763,833	842,688,786	12,050,444,049
2066	12,050,444,049	657,293	67,210	2,878,601,177	504,785,380	717,858,125	16,758,327	734,616,452	10,411,834,786
2067	10,411,834,786	439,415	45,506	2,738,882,398	505,090,774	611,883,999	16,768,466	628,652,465	8,807,089,536
2068	8,807,089,536	284,418	29,783	2,598,954,494	505,916,093	508,204,525	16,795,866	525,000,391	7,239,306,162
2069	7,239,306,162	179,268	18,954	2,459,347,285	507,318,965	407,010,824	16,842,440	423,853,264	5,711,291,420
2070	5,711,291,420	115,577	12,323	2,320,758,606	509,335,010	308,468,929	16,909,370	325,378,299	4,225,349,377
2071	4,225,349,377	70,968	7,623	2,183,748,091	511,988,370	212,715,117	16,997,459	229,712,575	2,783,365,576
2072	2,783,365,576	44,386	4,790	2,048,695,208	515,305,298	119,864,031	17,107,577	136,971,608	1,386,986,871
2073	1,386,986,871	28,156	3,049	1,916,020,297	519,305,662	30,012,650	17,240,385	47,253,035	37,550,379
2074	37,550,379	17,690	1,916	1,786,087,682	1,747,274,897	(56,761,001)	58,007,633	1,246,632	0

Development of Single Discount Rate

PYE 6/30	Benefit Payments	Discount Rate	Discounted Benefit Payment	Single Discount Rate	Discounted Benefit Payment
2020	$ 2,710,676,260	6.75%	$ 2,623,576,369	6.47%	$ 2,627,083,643
2021	2,842,690,686	6.75%	2,577,376,006	6.47%	2,587,726,367
2022	2,971,508,612	6.75%	2,523,813,645	6.47%	2,540,728,351
2023	3,101,045,172	6.75%	2,467,291,710	6.47%	2,490,472,951
2024	3,231,817,520	6.75%	2,408,747,929	6.47%	2,437,884,150
2025	3,365,633,347	6.75%	2,349,867,863	6.47%	2,384,654,861
2026	3,499,543,904	6.75%	2,288,865,127	6.47%	2,328,963,443
2027	3,630,662,897	6.75%	2,224,471,261	6.47%	2,269,497,185
2028	3,755,325,628	6.75%	2,155,363,826	6.47%	2,204,874,215
2029	3,874,580,557	6.75%	2,083,194,401	6.47%	2,136,748,504
2030	3,982,512,866	6.75%	2,005,831,322	6.47%	2,062,901,053
2031	4,091,242,654	6.75%	1,930,298,957	6.47%	1,990,530,996
2032	4,195,139,290	6.75%	1,854,162,695	6.47%	1,917,134,521
2033	4,290,900,941	6.75%	1,776,568,914	6.47%	1,841,820,011
2034	4,377,438,256	6.75%	1,697,796,819	6.47%	1,764,863,916
2035	4,457,618,437	6.75%	1,619,573,618	6.47%	1,688,054,958
2036	4,530,830,859	6.75%	1,542,083,068	6.47%	1,611,588,044
2037	4,593,619,274	6.75%	1,464,593,265	6.47%	1,534,700,663
2038	4,646,712,367	6.75%	1,387,841,730	6.47%	1,458,166,007
2039	4,688,729,075	6.75%	1,311,841,625	6.47%	1,382,002,455
2040	4,716,958,517	6.75%	1,236,290,241	6.47%	1,305,894,909
2041	4,732,388,762	6.75%	1,161,905,787	6.47%	1,230,606,154
2042	4,736,315,114	6.75%	1,089,339,385	6.47%	1,156,835,888
2043	4,729,208,481	6.75%	1,018,927,287	6.47%	1,084,955,986
2044	4,711,891,638	6.75%	951,003,562	6.47%	1,015,339,895
2045	4,686,528,406	6.75%	886,074,462	6.47%	948,549,297
2046	4,654,839,134	6.75%	824,433,744	6.47%	884,923,699
2047	4,617,942,034	6.75%	766,181,525	6.47%	824,597,706
2048	4,577,546,900	6.75%	711,456,116	6.47%	767,748,442
2049	4,533,648,406	6.75%	660,078,014	6.47%	714,210,900
2050	4,485,865,515	6.75%	611,822,996	6.47%	663,769,638
2051	4,434,827,092	6.75%	566,615,376	6.47%	616,368,338
2052	4,380,168,996	6.75%	524,245,422	6.47%	571,803,742
2053	4,319,809,422	6.75%	484,329,011	6.47%	529,679,555
2054	4,252,412,477	6.75%	446,625,377	6.47%	489,752,320
2055	4,177,985,292	6.75%	411,061,720	6.47%	451,960,543
2056	4,094,851,214	6.75%	377,407,365	6.47%	416,067,925
2057	4,002,290,507	6.75%	345,551,649	6.47%	381,968,207
2058	3,901,137,004	6.75%	315,520,572	6.47%	349,705,374
2059	3,791,849,488	6.75%	287,289,454	6.47%	319,267,484
2060	3,675,223,830	6.75%	260,846,194	6.47%	290,656,399
2061	3,551,968,334	6.75%	236,157,592	6.47%	263,850,351
2062	3,423,695,654	6.75%	213,235,788	6.47%	238,878,047
2063	3,291,585,526	6.75%	192,044,646	6.47%	215,714,197
2064	3,155,925,061	6.75%	172,486,797	6.47%	194,264,195
2065	3,017,834,217	6.75%	154,510,028	6.47%	174,483,336
2066	2,878,601,177	6.75%	138,062,237	6.47%	156,326,488
2067	2,738,882,398	6.75%	123,054,899	6.47%	139,706,610
2068	2,598,954,494	6.75%	109,384,634	6.47%	124,518,747
2069	2,459,347,285	6.75%	96,963,798	6.47%	110,674,717
2070	2,320,758,606	6.75%	85,714,016	6.47%	98,095,939
2071	2,183,748,091	6.75%	75,553,838	6.47%	86,699,400
2072	2,048,695,208	6.75%	66,399,293	6.47%	76,398,248
2073	1,916,020,297	6.75%	59,742,990	6.47%	67,111,764
2074	1,786,087,682	3.13%	332,980,889	6.47%	58,761,628
2075	1,659,208,285	3.13%	299,938,643	6.47%	51,272,494
2076	1,535,664,936	3.13%	269,180,109	6.47%	44,573,065
2077	1,415,759,417	3.13%	240,630,647	6.47%	38,597,395
2078	1,299,796,478	3.13%	214,215,957	6.47%	33,284,067
2088	411,809,535	3.13%	49,868,084	6.47%	5,636,148
2098	58,120,905	3.13%	5,171,404	6.47%	425,151
2108	2,639,515	3.13%	172,564	6.47%	10,320
2118	69,343	3.13%	3,331	6.47%	146
Total Present Value			**$ 58,618,262,659**		**$ 58,618,262,659**

Projection of Plan Net Position and Benefit Payments



SECTION I

GLOSSARY OF TERMS

Glossary of Terms

Accrued Service	Service credited under the system that was rendered before the date of the actuarial valuation.
Actuarial Accrued Liability (AAL)	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."
Actuarial Assumptions	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.
Actuarial Cost Method	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.
Actuarial Equivalent	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
Actuarial Gain (Loss)	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
Actuarial Present Value (APV)	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.
Actuarial Valuation	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions.
Actuarial Valuation Date	The date as of which an actuarial valuation is performed.
Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

Glossary of Terms

Amortization Method	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be "open" (meaning, reset each year) or "closed" (the number of years remaining will decline each year).
Amortization Payment	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
Cost-of-Living Adjustments	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered-Employee Payroll	The payroll of employees that are provided with pensions through the pension plan.
Deferred Inflows and Outflows	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
Deferred Retirement Option Program (DROP)	A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the actuarial valuation report.
Discount Rate	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: 1. The benefit payments to be made while the pension plans' fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and 2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

Glossary of Terms

Entry Age Actuarial Cost Method (EAN)	The EAN is a cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit age(s). The portion of the actuarial present value allocated to an actuarial valuation year is the normal cost. The portion of this actuarial present value not provided for at an actuarial valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.
Fiduciary Net Position	The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.
GASB	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
Long-Term Expected Rate of Return	The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.
Money-Weighted Rate of Return	The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.
Multiple-Employer Defined Benefit Pension Plan	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Municipal Bond Rate	The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.
Net Pension Liability (NPL)	The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.
Non-Employer Contributing Entities	Non-employer contributing entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB accounting statements, plan members are not considered non-employer contributing entities.
Normal Cost	The portion of the actuarial present value allocated to an actuarial valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.

Glossary of Terms

Other Postemployment Benefits (OPEB)	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
Real Rate of Return	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
Service Cost	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to an actuarial valuation year.
Total Pension Expense	The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year: 1. Service Cost 2. Interest on the Total Pension Liability 3. Current-Period Benefit Changes 4. Employee Contributions (made negative for addition here) 5. Projected Earnings on Plan Investments (made negative for addition here) 6. Pension Plan Administrative Expense 7. Other Changes in Plan Fiduciary Net Position 8. Recognition of Outflow (Inflow) of Resources due to Liabilities 9. Recognition of Outflow (Inflow) of Resources due to Assets
Total Pension Liability (TPL)	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
Unfunded Actuarial Accrued Liability (UAAL)	The UAAL is the difference between actuarial accrued liability and actuarial valuation assets.
Valuation Assets	The actuarial valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the actuarial valuation assets are equal to the market value of assets.