

A large, semi-transparent graphic in the background. It features the letters 'SRPS' in a large, serif font at the top. Below the letters is a stylized, symmetrical design consisting of a central vertical line with circular and rectangular shapes extending outwards, resembling a decorative architectural element or a stylized logo. The entire graphic is centered on the page.

SRPS
Financial Section



REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS

To the Board of Trustees
Maryland State Retirement and Pension System
Baltimore, Maryland

Report on the Financial Statements

Opinion

We have audited the accompanying financial statements of the Maryland State Retirement and Pension System (the System), a pension trust fund of the State of Maryland, as of and for the years ended June 30, 2023 and 2022, and the related notes to the financial statements, which collectively comprise the System's basic financial statements.

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the System, as of June 30, 2023 and 2022, and the changes in fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis of Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the System and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and Government Auditing Standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS and Government Auditing Standards, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that management's discussion and analysis, the schedules of changes in the employers' net pension liability, employers' net pension liability and related ratios, employers' contributions and investment returns be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context.

We have applied certain limited procedures to the required supplementary information in accordance with GAAS, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the System's financial statements. The schedules of funding progress, fund balances, administrative expenses, investment expenses, fiduciary net position by system, and changes in fiduciary net position by system (other supplementary information) are presented for purposes of additional analysis and are not required parts of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with GAAS. In our opinion, the other supplementary information is fairly stated, in all material respects, in relation to the financial statements as a whole.

Other Information

Management is responsible for the other information included in the annual report. The other information comprises the introductory, investment, plan summary, actuarial and statistical sections but does not include the basic financial statements and our auditors' report thereon. Our opinion on the basic financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Other Reporting Required by Government Auditing Standards

In accordance with Government Auditing Standards, we have also issued our report dated November 29, 2023, on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with Government Auditing Standards in considering the System's internal control over financial reporting and compliance.



CliftonLarsonAllen LLP

Baltimore, Maryland

November 29, 2023

MANAGEMENT'S DISCUSSION AND ANALYSIS FOR THE YEARS ENDED JUNE 30, 2023 AND 2022

To help facilitate a better understanding of the Maryland State Retirement and Pension System's (the System) financial condition as of June 30, 2023 and 2022, the results of its operations for the fiscal years then ended, and the fiscal policies that govern its significant business operations, management has prepared this narrative analysis. This narrative is intended to supplement the System's audited financial statements and, as such should be read in conjunction with these statements, which are presented beginning on page 24.

OVERVIEW OF THE FINANCIAL STATEMENTS

As required by accounting principles generally accepted in the United States of America, the System's basic financial statements are comprised of the comparative Statements of Fiduciary Net Position and Statements of Changes in Fiduciary Net Position, along with the related note disclosures. In addition, the System's financial statements include certain required supplementary information (e.g., schedule of changes in employers' net pension liability, schedule of employers' net pension liability and related ratios, schedule of employers' contributions, and schedule of investment returns) as well as other supplementary schedules considered relevant to the financial statement user (e.g., schedules of fund balance accounts, administrative and investment expenses, fiduciary net position by system, and related changes by system). To better understand the relevance of the information presented in the System's financial statements, related notes, and supplementary information, it is helpful to first consider what purpose each component is intended to serve.

The Statements of Fiduciary Net Position presents a comparative, summary-level snapshot, as of a specific point in time (i.e., June 30th – the last day of the System's fiscal year), of the fair value of the net position available to pay future pension benefits to retirees and beneficiaries. To assist the reader in understanding the composition of the System's accumulated net position the most significant components (e.g., cash and cash equivalent securities, investments) are separately disclosed. In this regard, cash and cash equivalents represent that portion of the System's assets that, as of the end of the fiscal year, reside in the form of actual cash or short-term, highly liquid, investment securities. This amount gives an indication of the System's liquidity at fiscal year-end. Conversely, the amounts shown as investments represent those funds invested in longer-term securities (e.g., stocks, bonds, real estate) held for the purpose of generating investment income. The sum of these assets, reduced by any liabilities owed by the System as of fiscal year-end, represents the net position held in trust to pay pension benefits.

By contrast, the Statements of Changes in Fiduciary Net Position are intended to show, on a comparative basis, the major categories of income earned (additions to fiduciary Net position) and expenses incurred (deductions from fiduciary Net position) by the System during the previous fiscal year. As such, the System's net income or loss accounts for the entire change in the net position held in trust to pay pension benefits during the fiscal year as a result of System operations. As with the System's assets and liabilities, significant categories of income and expense, as reported on the Statements of Changes in Fiduciary Net Position, are separately disclosed to help clarify the major sources and uses of the System's resources.

Finally, the note disclosures are provided as an integral component of the basic financial statements to help explain in narrative form some of the more complex or less obvious elements of the statements. Further, the notes to the financial statements provide additional information (e.g., significant accounting policies, various types of investment risk) that is essential for a comprehensive understanding of the System's financial condition and the results of its operations.

The Schedule of Changes in Employers' Net Pension Liability, Schedule of Employers' Net Pension Liability and Related Ratios, Schedule of Employers' Contributions, and Schedule of Investment Returns share common characteristics with data disclosed in the basic financial statements. In this regard, both the Statements of Changes in Fiduciary Net Position and the Schedule of Contributions from Employers and Other Contributing Entity disclose the amount of contributions received from participating employers. However, the Schedule of Employer Contributions differs from the Statements of Changes in Fiduciary Net Position in that the Schedule's primary focus is to disclose the contributions required to be made in accordance with the System's funding policy and the percentage of the required contributions actually made during the fiscal years presented.

Finally, the other supplementary schedules, presented immediately after the required supplementary information, summarize the changes in fund balances, disclose major categories of operating and investment expenses, and provide combining, plan-level detail related to asset, liability, income, and expense amounts summarized in the basic financial statements.

ANALYSIS OF FINANCIAL POSITION AND RESULTS OF OPERATIONS.

The System's overall funding objective is to accumulate sufficient assets over time to meet its long-term benefit obligations as they become due. Accordingly, collecting employer and member contributions as well as earning an adequate long-term rate of return on its investments are essential components of the System's plan for accumulating the funds needed to finance future retirement benefits.

Fiscal Year 2023 Compared to 2022

The following condensed comparative Statement of Fiduciary Net Position for the fiscal years ended June 30, 2023 and 2022 reflects an increase of \$582.2 million (0.9%) in the System's net position. This increase is primarily due to positive performance returns in domestic stocks and private equity asset classes.

A schedule of the System's investments and changes (by type) for fiscal years 2023 and 2022 is presented below (expressed in millions):

	June 30,		Change	
	2023	2022	Variance	%
Cash & cash equivalents	\$ 1,373.4	\$ 2,005.8	\$ (632.4)	-31.5%
U.S. Government obligations	6,238.7	6,705.8	(467.1)	-7.0%
Domestic corporate obligations	3,663.1	3,866.2	(203.1)	-5.3%
International obligations	1,585.7	1,453.2	1323.5	9.1%
Domestic stocks	10,370.1	8,004.0	2,3366.1	29.6%
International stocks	9,558.1	10,149.8	(591.7)	-5.8%
Mortgages & mortgage-related securities	1,656.8	1,512.0	144.8	9.6%
Alternative investments	30,753.3	30,323.4	429.9	1.4%
Total managed investments	65,199.2	64,020.2	1,179.0	1.8%
Collateral for loaned securities	5,687.0	4,414.8	1,272.2	28.8%
Total investments and cash & cash equivalents	70,886.2	68,435.0	2,451.2	3.6%
Receivables	716.8	1,314.0	(597.2)	-45.4%
Total Assets	71,603.0	69,749.0	1,854.0	2.7%
Liabilities	6,710.0	5,438.1	1,271.9	23.4%
Total Fiduciary Net Position, End of Year	\$64,893.0	\$ 64,310.9	582.1	0.9%

As depicted in the following comparative Statement of Changes in Fiduciary Net Position for fiscal years 2023 and 2022, contributions to the System during fiscal year 2023 increased by \$280.6 million from prior fiscal year due to an increase in covered payroll and the State's continued reinvestment contribution of savings. The System's investments experienced a positive return of 3.14% net of fees in fiscal year 2023 primarily attributable to the Sytem's public equity portfolio rendering the strongest return of 13.8%.

The System continues to pay out more benefits than contributions collected. An increase of \$258.8 million in benefits paid to retirees reflects a continuance of increasing retirements of the baby boomer generation in fiscal year 2023. However, the investment performance was a positive offset contributing to a \$0.6 billion increase in fiduciary net position.

A schedule of the System's additions to and deductions from fiduciary net position and related changes (by major category) for fiscal years 2023 and 2022, is as follows (expressed in millions):

	June 30,		Change	
	2023	2022	Variance	%
Employer contributions	\$ 1,700.3	\$ 1,489.1	\$ 211.2	14.2%
Member contributions	963.7	894.3	69.4	7.8%
State contributions on behalf of local governments & contribution interest	738.6	793.2	(54.6)	-6.9%
Net investment income (loss)	1,980.2	(1,942.2)	3,922.4	202.0%
Total additions	5,382.8	1,234.4	4,148.4	336.1%
Benefit payments	4,653.2	4,394.4	258.8	5.9%
Refunds	101.7	91.5	10.2	11.1%
Administrative expenses	46.0	42.1	3.9	9.3%
Total deductions	4,800.9	4,528.0	272.9	6.0%
Net increase(decrease) in plan net position	\$ 581.9	\$ (3,293.6)	\$ 3,875.5	117.7%

	June 30,		Change	
	2023	2022	Variance	%
Total Pension Liability (TPL)	\$ 87,923.3	\$ 84,319.5	\$ 3,603.8	4.3%
Plan Fiduciary Net Position	64,893.0	64,310.9	582.0	0.9%
Net Pension Liability	\$ 23,030.3	\$ 20,008.5	\$ 3,021.8	15.1%
Ratio - Fiduciary Net Position/TPL	73.8%	76.3%		

The TPL increased by \$3.6 billion from 2022 to 2023, due to an increase in service cost. The Plan Fiduciary Net Position increased by \$582 million from 2022 to 2023 primarily due to an investment return of 3.1%. These two events when netted increased the Net Pension Liability by \$3 billion from 2022 to 2023.

Fiscal Year 2022 Compared to 2021

The following condensed comparative Statement of Fiduciary Net Position for the fiscal years ended June 30, 2021 and 2020 reflects an increase in the System's net position of \$13 billion (23.8%) as a result of positive net returns across all investment categories but most notably in domestic and global equity and private alternative investments.

A schedule of the System's investments and changes (by type) from fiscal year 2020 to 2021 is presented below (expressed in millions):

	June 30,		Change	
	2022	2021	Variance	%
Cash & cash equivalents	\$ 2,005.8	\$ 2,407.2	\$ (401.4)	-16.7%
U.S. Government obligations	6,705.8	7,148.3	(442.5)	-6.2%
Domestic corporate obligations	3,866.2	4,503.9	(637.7)	-14.2%
International obligations	1,453.2	2,576.4	(1,123.2)	-43.6%
Domestic stocks	8,004.0	10,664.3	(2,660.3)	-24.9%
International stocks	10,149.8	13,465.8	(3,316.0)	-24.6%
Mortgages & mortgage-related securities	1,512.0	1,235.1	276.9	22.4%
Alternative investments	30,323.4	26,241.2	4,082.2	15.6%
Total managed investments	64,020.2	68,242.2	(4,222.0)	-6.2%
Collateral for loaned securities	4,414.8	4,745.2	(330.4)	-7.0%
Total investments and cash & cash equivalents	68,435.0	72,987.4	(4,552.4)	-6.2%
Receivables	1,314.0	1,028.8	285.2	27.7%
Total Assets	69,749.0	74,016.2	(4,267.2)	-5.8%
Liabilities	5,438.1	6,411.7	(973.6)	-15.2%
Total Fiduciary Net Position, End of Year	\$ 64,310.9	\$ 67,604.5	\$ (3,293.6)	-4.9%

As depicted in the following comparative Statement of Changes in Fiduciary Net Position for fiscal years 2022 and 2021, contributions to the System during fiscal year 2022 increased by \$107.3 million from prior fiscal year as a result of an increase in covered payroll and the State's reinvestment contribution of savings.

The System continued to pay out more benefits than contributions collected and experienced an increase in benefits paid to retirees in fiscal year 2022 resulting in a net decrease in fiduciary net position.

A schedule of the System's additions to and deductions from fiduciary net position and related changes (by major category) from fiscal year 2020 to 2021, is as follows (expressed in millions):

	June 30,		Change	
	2022	2021	Variance	%
Employer contributions	\$ 1,489.1	\$ 1,436.9	\$ 52.2	3.6%
Member contributions	894.3	865.7	28.6	3.3%
State contributions on behalf of local governments & contribution interest	793.2	766.7	26.5	3.5%
Net investment income	(1,942.2)	14,315.7	(16,257.9)	-113.6%
Total additions	<u>1,234.4</u>	<u>17,385.0</u>	<u>(16,150.6)</u>	-92.9%
Benefit payments	4,394.4	4,253.0	141.4	3.3%
Refunds	91.5	64.8	26.7	41.2%
Administrative expenses	42.1	48.7	(6.6)	-13.6%
Total deductions	<u>4,528.0</u>	<u>4,366.5</u>	<u>161.5</u>	3.7%
Net increase (decrease) in plan net position	<u>\$ (3,293.6)</u>	<u>\$ 13,018.5</u>	<u>\$ (16,312.1)</u>	-125.3%

Analysis of Net Pension Liability (expressed in millions)

	June 30,		Change	
	2022	2021	Variance	%
Total Pension Liability (TPL)	\$ 84,319.5	\$ 82,606.8	\$ 1,712.7	2.1%
Plan Fiduciary Net Position	64,310.9	67,604.5	(3,293.6)	-4.9%
Net Pension Liability	<u>\$ 20,008.6</u>	<u>\$ 15,002.3</u>	<u>\$ 5,006.3</u>	33.4%
Ratio - Fiduciary Net Position/TPL	<u>76.3%</u>	<u>81.8%</u>		

The TPL increased by \$1.7 billion from 2021 to 2022, due to an increase in service cost and a \$3.3 billion decrease in the Plan Fiduciary Net Position when netted resulted in a \$5 billion increased Net Pension Liability from 2021 to 2022.

Requests for Information

Members of the System's Board of Trustees and senior management are fiduciaries of the pension trust fund and, as such, are charged with the responsibility of ensuring that the System's assets are used exclusively for the benefit of plan participants and their beneficiaries. This financial report is designed to provide an overview of the System's finances and to demonstrate accountability for the resources entrusted to the System for the benefit of all of the System's stakeholders. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to:

State Retirement and Pension System of Maryland
 Attn: Melody Countess, CPA, CGMA
 120 E. Baltimore Street, Suite 1660
 Baltimore, Maryland 21202-1600

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

STATEMENTS OF FIDUCIARY NET POSITION

As of June 30, 2023 and 2022

(Expressed in Thousands)

	<u>2023</u>	<u>2022</u>
Assets:		
Cash & Cash Equivalents (Note 3)	<u>\$ 1,373,369</u>	<u>\$ 2,005,811</u>
Receivables		
Contributions:		
Employers	77,513	65,430
Members	10,694	9,380
Accrued investment income	195,671	253,424
Investment sales proceeds	<u>432,934</u>	<u>985,807</u>
Total receivables	<u>716,812</u>	<u>1,314,041</u>
Investments, at fair value (Notes 2 & 3)		
U.S. Government obligations	6,238,670	6,705,763
Domestic corporate obligations	3,663,113	3,866,242
International obligations	1,585,721	1,453,221
Domestic stocks	10,370,101	8,003,951
International stocks	9,558,092	10,149,793
Mortgages & mortgage-related securities	1,656,754	1,512,031
Alternative investments	30,753,252	30,323,411
Collateral for loaned securities	<u>5,686,982</u>	<u>4,414,793</u>
Total investments	<u>69,512,685</u>	<u>66,429,205</u>
Total Assets	<u>71,602,866</u>	<u>69,749,057</u>
Liabilities		
Accounts payable & accrued expenses (Note 7)	57,797	65,402
Investment commitments payable	965,114	957,871
Obligation for collateral for loaned securities	<u>5,686,982</u>	<u>4,414,793</u>
Total Liabilities	<u>6,709,893</u>	<u>5,438,066</u>
Fiduciary Net position restricted for pensions	<u>\$ 64,892,973</u>	<u>\$ 64,310,991</u>

The accompanying notes are an integral part of these financial statements.

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION

for the Fiscal Years Ended June 30, 2023 and 2022

(Expressed in Thousands)

	2023	2022
ADDITIONS:		
Contributions:		
Employers	\$ 1,700,314	\$ 1,489,076
Members	963,702	894,267
State contributions on behalf of local governments	738,603	793,227
Total contributions	<u>3,402,619</u>	<u>3,176,570</u>
Investment Income:		
Net depreciation in fair value of investments	(496,268)	(5,033,012)
Interest	576,551	545,863
Dividends	2,306,842	3,086,502
Income (loss) before securities lending activity	<u>2,387,125</u>	<u>(1,400,647)</u>
Gross income from securities lending activity	226,992	31,972
Securities lending borrower rebates	(202,127)	(7,256)
Securities lending agent fees	(1,243)	(1,242)
Net income from securities lending activity	23,622	23,474
Total investment income (loss)	2,410,747	(1,377,173)
Investment expenses	(430,470)	(564,960)
Net investment income (loss)	<u>1,980,277</u>	<u>(1,942,133)</u>
TOTAL ADDITIONS	<u>5,382,896</u>	<u>1,234,437</u>
DEDUCTIONS		
Benefit payments	4,653,163	4,394,350
Refunds (Note 6)	101,737	91,535
Administrative expenses (Note 2)	46,014	42,061
TOTAL DEDUCTIONS	<u>4,800,914</u>	<u>4,527,946</u>
Net increase (decrease) in fiduciary net position	581,982	(3,293,509)
Fiduciary Net position restricted for pensions		
Beginning of the fiscal year	<u>64,310,991</u>	<u>67,604,500</u>
END OF THE FISCAL YEAR	<u>\$ 64,892,973</u>	<u>\$64,310,991</u>

The accompanying notes are an integral part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS

1. GENERAL DESCRIPTION OF THE SYSTEM

A. Organization

The State Retirement Agency (the Agency) is the administrator of the Maryland State Retirement and Pension System (the System). The System was established by the State Personnel and Pensions Article of the Annotated Code of Maryland to provide retirement allowances and other benefits to State employees, teachers, police, judges, legislators, and employees of participating governmental units. Responsibility for the System's administration and operation is vested in a 15-member Board of Trustees. The System is a cost-sharing multiple-employer defined benefit plan made up of two cost-sharing employer pools: the "State Pool" and the "Municipal Pool." The "State Pool" consists of the State agencies, boards of education, community colleges, and libraries. The "Municipal Pool" consists of the participating governmental units that elected to join the System. Neither pool shares in each other's actuarial liabilities, thus participating governmental units that elect to join the System (the "Municipal Pool") share in the liabilities of the Municipal Pool only. Although separate valuations are performed for each pool, all assets accumulated in the plan may legally be used to pay benefits to any member.

The State of Maryland is the statutory guarantor for the payment of all pensions, annuities, retirement allowances, refunds, reserves, and other benefits of the System. The State is obligated to annually pay into the accumulation fund of each State system at least an amount that, when combined with the System's accumulation funds, is sufficient to provide benefits payable under each plan during that fiscal year. The System is accounted for as a cost-sharing multiple-employer defined benefit plan as defined in accordance with accounting principles generally accepted in the United States of America. Additionally, the System is fiscally dependent on the State by virtue of the legislative and executive controls exercised with respect to its operations, policies, and administrative budget. Accordingly, the System is included in the State's reporting entity as a fiduciary component unit and disclosed in its financial statements as a pension trust fund.

The System is comprised of the Teachers' Retirement and Pension Systems, Employees' Retirement and Pension Systems, State Police Retirement System, Judges' Retirement System, and the Law Enforcement Officers' Pension System.

B. Covered Members

The Teachers' Retirement System was established on August 1, 1927, to provide retirement allowances and other benefits to teachers in the State. Effective January 1, 1980, the Teachers' Retirement System was closed to new members and the Teachers' Pension System was established. As a result, teachers hired after December 31, 1979, became members of the Teachers' Pension System as a condition of employment. On or after January 1, 2005, an individual who is a member of the Teachers' Retirement System may not transfer membership to the Teachers' Pension System.

On October 1, 1941, the Employees' Retirement System was established to provide retirement allowances and other benefits to State employees, elected and appointed officials, and the employees of participating governmental units. Effective January 1, 1980, the Employees' Retirement System was essentially closed to new members and the Employees' Pension System was established. As a result, State employees (other than correctional officers) and employees of participating governmental units hired after December 31, 1979, became members of the Employees' Pension System as a condition of employment, while all State correctional officers and members of the Maryland General Assembly continue to be enrolled as members of the Employees' Retirement System. On or after January 1, 2005, an individual who is a member of the Employees' Retirement System may not transfer membership to the Employees' Pension System. Currently, more than 150 governmental units participate in the Employees' Retirement System.

The State Police Retirement System was established on July 1, 1949, to provide retirement allowances and other benefits to any police employee or cadet of the Maryland State Police. The Judges' Retirement System was established on June 30, 1969, to provide retirement allowances and other benefits for State and local, appointed, or elected judges.

The Law Enforcement Officers' Pension System (LEOPS) was established on July 2, 1990, to provide retirement allowances and other benefits for certain State and local law enforcement officers. This System includes both retirement plan and pension plan provisions which are applicable to separate portions of this System's membership. The retirement plan provisions are only applicable to those members who, on the date they elected to participate in LEOPS, were members of the Employees' Retirement System. This System's pension plan provisions are applicable to all other participating law enforcement officers.

The following tables present a summary of membership by system as of June 30, 2023 and 2022, with comparative prior year totals:

	Inactive & Deferred Vested	Retirees & Beneficiaries	Active Plan Participants		
			Vested	Non-vested	Total
Teachers' Retirement & Pension Systems	23,702	84,177	60,297	52,476	112,773
Employees' Retirement & Pension Systems	22,976	84,846	38,111	43,225	81,336
Judges' Retirement System	8	468	220	106	326
State Police Retirement System	88	2,606	809	526	1,335
Law Enforcement Officers' Pension System	313	2,512	1,398	1,479	2,877
Totals as of June 30, 2023	47,087	174,609	100,835	97,812	198,647
Totals as of June 30, 2022	47,503	172,235	100,984	93,226	194,210

*Employees' Retirement and Pension Systems include 75 vested and 80 non-vested active members, 8 deferred vested members, and 63 retired members from the Correctional Officers Retirement System.

	Inactive & Deferred Vested	Retirees & Beneficiaries	Active Plan Participants		
			Vested	Non-vested	Total
Teachers' Retirement & Pension Systems	23,612	82,884	60,229	50,751	110,980
Employees' Retirement & Pension Systems*	23,500	83,898	38,424	40,397	78,821
Judges' Retirement System	10	463	209	108	317
State Police Retirement System	86	2,597	765	591	1,356
Law Enforcement Officers' Pension System	295	2,393	1,357	1,379	2,736
Total as of June 30, 2022	47,503	172,235	100,984	93,226	194,210
Total as of June 30, 2021	48,051	169,368	102,169	92,142	194,311

*Employees' Retirement and Pension Systems include 66 vested and 59 non-vested active members, 8 deferred vested members, and 53 retired members from the Correctional Officers Retirement System.

C. Summary of Significant Plan Provisions

All plan benefits are specified by the State Personnel and Pensions Article of the Annotated Code of Maryland. For all individuals who are members of the Employees', Teachers', Correctional Officers', or State Police Retirement System on or before June 30, 2011, retirement allowances are computed using both the highest three years' Average Final Compensation (AFC) and the actual number of years of accumulated creditable service. For individuals who become members of the State Police Retirement System or the Correctional Officers' Retirement System on or after July 1, 2011, retirement allowances are computed using both the highest five years' AFC and the actual number of years of accumulated creditable service. For all individuals who are members of the pension systems of the State Retirement and Pension System on or before June 30, 2011, pension allowances are computed using both the highest three consecutive years' AFC and the actual number of years of accumulated creditable service. For any individual who becomes a member of one of the pension systems on or after July 1, 2011, pension allowances are computed using both the highest five consecutive years' AFC and the actual number of years of accumulated creditable service. Various retirement options are available under each system which ultimately determines how a retiree's benefit allowance will be computed. Some of these options require actuarial reductions based on the retiree's and/or designated beneficiary's attained age and similar actuarial factors.

The member contribution rate for members of the Teachers' Retirement Pension System and Employees' Retirement Pension System is 7% and 6%, respectively, and 7% for members of the Law Enforcement Officers' Pension System. The member contribution rate for members of the Judges' Retirement System is 8%.

In addition, the benefit attributable to service on or after July 1, 2011 in many of the pension systems now will be subject to different cost-of-living adjustments (COLA) that is based on the increase in the Consumer Price Index (CPI) and capped at 2.5% or 1.0% based on whether the fair value investment return for the preceding calendar year was higher or lower than the investment return assumption used in the valuation.

A brief summary of the retirement eligibility requirements of and the benefits available under the various systems in effect during fiscal year 2023, are as follows:

Service Retirement Allowances

A member of either the Teachers' or Employees' Retirement System is generally eligible for full retirement benefits upon the earlier of attaining age 60 or accumulating 30 years of creditable service regardless of age. The annual retirement allowance equals $1/55$ (1.81%) of the member's AFC multiplied by the number of years of accumulated creditable service.

An individual who is a member of either the Teachers' or Employees' Pension System on or before June 30, 2011, is eligible for full retirement benefits upon the earlier of attaining age 62, with specified years of eligibility service, or accumulating 30 years of eligibility service regardless of age. An individual who becomes a member of either the Teachers' or Employees' Pension System on or after July 1, 2011, is eligible for full retirement benefits if the member's combined age and eligibility service equals at least 90 years, or if the member is at least age 65 and has accrued at least 10 years of eligibility service.

For most individuals who retired from either the Teachers' or Employees' Pension System on or before June 30, 2006, the annual pension allowance equals 1.2% of the member's AFC, multiplied by the number of years of creditable service accumulated prior to July 1, 1998, plus 1.4% of the member's AFC, multiplied by the number of years of creditable service accumulated subsequent to June 30, 1998. With certain exceptions, for individuals who are members of the Teachers' or Employees' Pension System on or after July 1, 2006, the annual pension allowance equals 1.2% of the member's AFC, multiplied by the number of years of creditable service accumulated prior to July 1, 1998, plus 1.8% of the member's AFC, multiplied by the number of years of creditable service accumulated subsequent to June 30, 1998. Beginning July 1, 2011, any new member of the Teachers' or Employees' Pension System shall earn an annual pension allowance equal to 1.5% of the member's AFC multiplied by the number of years of creditable service accumulated as a member of the Teachers' or Employees' Pension System.

Exceptions to these benefit formulas apply to members of the Employees' Pension System, who are employed by a participating governmental unit that does not provide the 1998 or 2006 enhanced pension benefits or the 2011 reformed pension benefits. The pension allowance for these members equals 0.8% of the member's AFC up to the social security integration level (SSIL), plus 1.5% of the member's AFC in excess of the SSIL, multiplied by the number of years of accumulated creditable service. For the purpose of computing pension allowances, the SSIL is the average of the social security wage bases for the past 35 calendar years ending with the year the retiree separated from service.

An individual who is a member of the State Police Retirement System on or before June 30, 2011, is eligible for full retirement benefits upon the earlier of attaining age 50 or accumulating 22 years of eligibility service regardless of age. An individual who becomes a member of the State Police Retirement System on or after July 1, 2011 is eligible for full retirement benefits upon the earlier of attaining age 50 or accumulating 25 years of eligibility service regardless of age. The annual retirement allowance equals 2.55% of the member's AFC multiplied by the number of years of accumulated creditable service and may not exceed 71.4% of the member's AFC.

A member of the Judges' Retirement System is eligible for full retirement benefits upon attaining age 60. The annual retirement allowance for a member with at least 16 years of accumulated creditable service equals $2/3$ (66.7%) of the salary of an active judge holding a comparable position. The annual retirement allowance is prorated if the member retires with fewer than 16 years of accumulated creditable service.

A member of the Law Enforcement Officers' Pension System is eligible for full retirement benefits upon the earlier of attaining age 50 or accumulating 25 years of eligibility service regardless of age. The annual retirement allowance for a member who is covered under the retirement plan provisions equals $1/50$ (2.0%) of the member's AFC multiplied by the number of years of accumulated creditable service up to 30 years, plus $1/100$ (1.0%) of the member's AFC multiplied by the number of years of accumulated creditable service in excess of 30 years. For members subject to the pension provisions, full-service pension allowances equal 2.0% of AFC up to a maximum benefit of 60% (30 years of credit).

Vested Allowances

Any individual who is a member of the State Retirement and Pension System on or before June 30, 2011 (other than a judge or a legislator), and who terminates employment before attaining retirement age but after accumulating five years of eligibility service is eligible for a vested retirement allowance. Any individual who joins the State Retirement and Pension System on or after July 1, 2011 (other than a judge or a legislator), and who terminates employment before attaining retirement age, but after accumulating 10 years of eligibility service, is eligible for a vested retirement allowance. An individual who is a member of the Judges' Retirement System on or before June 30, 2014, has no minimum service requirements prior to vesting. However, individuals who join the Judges' Retirement System on or after July 1, 2013, and terminate employment before attaining retirement age, will have to accrue five years of eligibility service in order to receive a vested retirement allowance. Legislators become eligible for a vested retirement allowance upon accumulating

eight years of eligibility services. A member, who terminates employment prior to attaining retirement age and before vesting, receives a refund of all member contributions and interest.

Early Service Retirement

A member of either the Teachers' or Employees' Retirement System may retire with reduced benefits after completing 25 years of eligibility service. Benefits are reduced by 0.5% per month for each month remaining until the retiree either attains age 60 or would have accumulated 30 years of creditable service, whichever is less. The maximum reduction for a Teachers' or Employees' Retirement System member is 30%.

An individual who is a member of either the Teachers' or Employees' Pension System on or before June 30, 2011, may retire with reduced benefits upon attaining age 55 with at least 15 years of eligibility service. Benefits are reduced by 0.5% per month for each month remaining until the retiree attains age 62. The maximum reduction for these members of the Teachers' or Employees' Pension System is 42%. An individual who becomes a member of either the Teachers' or Employees' Pension System on or after July 1, 2011, may retire with reduced benefits upon attaining age 60 with at least 15 years of eligibility service. Benefits are reduced by 0.5% per month for each month remaining until the retiree attains age 65. The maximum reduction for these members of the Teachers' or Employees' Pension System is 30%.

Members of the State Police, Judges', Law Enforcement Officers' and Local Fire and Police Systems are not eligible for early service benefits.

Disability and Death Benefits

Generally, a member covered under retirement plan provisions who is permanently disabled after five years of service receives a service allowance based on a minimum percentage (usually 25%) of the member's AFC. A member covered under pension plan provisions who is permanently disabled after accumulating five years of eligibility service receives a service allowance computed as if service had continued with no change in salary until the retiree attained age 62. A member (other than a member of the Maryland General Assembly or a judge, both of which are ineligible for accidental disability benefits) who is permanently and totally disabled as the result of an accident occurring in the line of duty receives 2/3 (66.7%) of the member's AFC plus an annuity based on all member contributions and interest. Death benefits are equal to a member's annual salary as of the date of death plus all member contributions and interest.

Adjusted Retirement Allowances

Retirement and pension allowances are increased annually to provide for changes in the cost of living according to prescribed formulae. Such adjustments for retirees are based on the annual change in the CPI. For the Teachers' and Employees' Retirement Systems (TRS/ERS) the method by which the annual COLA's are computed depends upon elections made by members who were active on July 1, 1984 (or within 90 days of returning to service, for members who were inactive on July 1, 1984) enabling the member to receive either an unlimited COLA, a COLA limited to 5% or a two-part combination COLA depending upon the COLA election made by the member.

Members of the State Police Retirement System (SPRS) and Law Enforcement Officers' Pension System (LEOPS) are eligible to participate in a Deferred Retirement Option Program (DROP). For members who enter the DROP on or after July 1, 2011, the member is deemed retired and the retirement allowance is placed in an account earning 4% interest per year, compounded annually. At the end of the DROP period, the lump sum held in the DROP account is paid to the retiree. The SPRS and LEOPS members must end employment and fully retire at the end of the DROP period. The maximum period of participation is 5 years for SPRS and 5 years for LEOPS. The amount of funds held in the DROP as of June 30, 2023 and 2022, was \$34,051,372 and \$31,001,707, respectively.

However, beginning July 1, 2011, for benefits attributable to service earned on or after July 1, 2011, in all of the systems except the judges' and legislators' systems, the adjustment is capped at the lesser of 2.5% or the increase in CPI if the most recent calendar year fair value rate of return was greater than or equal to the assumed rate. The adjustment is capped at the lesser of 1% or the increase in CPI if the fair value return was less than the assumed rate of return. In years in which COLAs would be less than zero due to a decline in the CPI, retirement allowances will not be adjusted. COLAs in succeeding years are adjusted until the difference between the negative COLA that would have applied, and the zero COLA is fully recovered. Retirement allowances for legislators and judges are recalculated when the salary of an active member holding a comparable position is increased.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. Basis of Accounting

The System's financial statements are prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America. Accordingly, investment purchases and sales are recorded as of their respective trade dates. Employer and Member contributions are recognized in the period when due, pursuant to statutory or contractual requirements. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

B. Investment Limitations

The State Personnel and Pensions Article of the Annotated Code of Maryland authorizes the System to invest plan assets in stocks, bonds, notes, certificates of indebtedness, mortgage notes, real estate, debentures or other obligations, subject to the terms, conditions, limitations and restrictions imposed by the Board of Trustees of the Maryland State Retirement and Pension System.

C. Portfolio Valuation Method

The System's investments are reported at fair value. Fair value is the amount that the System can reasonably expect to receive for an investment in a current sale. See Note 3.H for the description of investments at fair value.

Investment amounts presented in the accompanying Statements of Fiduciary Net Position represent the fair value of the respective portfolios as of the fiscal year-end. Similarly, investment income amounts reported in the accompanying Statements of Changes in Fiduciary Net Position represent the income or loss derived for the years then ended. Accordingly, significant market fluctuations could periodically occur subsequent to the financial statement valuation date, which are not reflected in either the fair value of investments or the related investment income presented in these financial statements.

D. Derivatives

As permitted by guidelines established by the Board of Trustees, the System may invest in derivatives. Compliance with these guidelines is monitored by Agency staff. Pursuant to such authority, the System invests in foreign currency forward contracts, options, futures, and swaps. The Agency does not purchase rights and warrants; however, it can accrue ownership through corporate actions. No derivatives were purchased with borrowed funds.

Derivatives are generally used to hedge against foreign currency risk and changes in interest rates, improve yield, and adjust the duration of the System's fixed income portfolio. These securities are subject to changes in value due to changes in currency valuations or interest rates. Credit risk for derivatives results from the same considerations as other counterparty risk assumed by the System, which is the risk that the counterparty might be unable to meet its obligations.

The System enters into forward foreign currency exchange contracts for hedging purposes to minimize the short-term impact of foreign currency fluctuations. Foreign currency exchange contracts are reported at fair value based on published market prices and quotations from major investment firms. The System could be exposed to risk if the counterparties to the contracts are unable to meet the terms of the contracts. The System seeks to minimize risk from counterparties by establishing minimum credit quality standards.

E. Administrative and Investment Expenses

All of the System's administrative and investment expenses (e.g., salaries of Agency employees, investment advisory fees, etc.) are incurred centrally and charged to each individual retirement or pension system on the basis of its active membership and percentage ownership in the System's net position, respectively. The System's investment expenses are funded from investment income. The System's administrative expenses are funded from administrative fees assessed to each participating employer. See pages 69 and 70 for detailed Schedules of Administrative and Investment Expenses, respectively.

F. Federal Income Tax Status

During the fiscal years ended June 30, 2023 and 2022, the System qualified under Section 401(a) of the Internal Revenue Code (the Code) and was exempt from Federal income taxes under Section 501(a) of the Code.

3. CASH, CASH EQUIVALENTS, AND INVESTMENTS

A. Legal Provisions

The Board of Trustees is required by Section 21-116 (c), State Personnel and Pensions Article, Annotated Code of Maryland (SPP), to establish and maintain an Investment Policy Manual (IPM), which is available on the Agency's web site. The IPM authorizes investing in all major sectors of the capital market in order to diversify and minimize total investment program risk. Such sectors include, but are not limited to:

Type	Description	As of June 30, 2023	
		Strategic Target	Actual
Public Equity	Investments in securities, known as shares or stocks, that represent an ownership interest in corporations and are generally traded on a stock exchange.	34.0%	30.2%
Private Equity	Investments in companies that are not registered with the SEC and are not traded in the public markets. Private equity may also be referred to as venture capital or buy-outs.	16.0%	21.9%
Rate Sensitive	Investments in securities, known as bonds, that represent an ownership interest in the debt of governments and corporations that are generally not traded on an exchange. They generally pay interest on a regular schedule and repay principal or face value at maturity. Short term investments such as money market funds U.S. treasury bills and currency are also included.	20.0%	17.1%
Credit/Debt Related Strategies	Debt issued by corporations and other non-government sectors of the fixed income market such as distressed debt, convertibles, corporate and mortgage related credit strategies, mezzanine debt, bank loans, high yield, emerging markets and preferred securities.	9.0%	8.7%
Absolute Return	Investments whose performance is expected to exceed the three month U.S. Treasury bill by 4-5% over a full market cycle and exhibit low correlation to public stocks. The System's program may include strategies such as hedge fund of funds, multi- strategy, global tactical asset allocation, event driven, relative value, macro, insurance and equity hedged.	6.0%	5.9%
Real Assets	Investments whose performance is expected to exceed the rate of inflation over an economic cycle. The System's Real Return program may include the following investment vehicles in both public and private investments: energy related, infrastructure, timber and other natural resources, multi-asset class portfolios with a real return mandate, and real estate including direct investments, REITs and private partnerships.	15.0%	15.4%
Cash/Cash Equivalents	Investments that provide daily liquidity and either have very low risk or principal loss such as treasury bills or high quality commercial paper.	0.0%	0.4%
Multi Assets	Investments that act as a proxy for all overall Asset allocation through a combination of Exchange Traded Funds and fully funded Futures contracts.	0.0%	0.4%

The above listed strategic targets were implemented in stages throughout the fiscal year. All asset classes are within the transitional target ranges.

The System is authorized by its Board of Trustees to operate a securities lending program and has contracted with Deutsche Bank to lend securities and reinvest cash collateral received from the transfer of securities in investment instruments authorized by the investment policy. Currently, the initial required collateral for foreign securities is equal to 105 percent of the aggregate market value of the transferred securities not denominated in the same currency as the collateral provided by the counterparty and 102 percent for domestic securities and foreign securities that are denominated in the same currency as the collateral provided by the counterparty. See section G of this note for additional information.

B. Cash and Cash Equivalents

The Cash and Cash Equivalents category reported on the Statement of Fiduciary Net Position consists of short-term investments that are used to meet the liquidity requirements of the System.

Cash and Cash Equivalents held by the System can include cash on deposit, foreign currencies, cash posted as collateral to counterparties, repurchase agreements, certificate of deposit, U.S. Treasury Bills, short-term investment funds, and other U.S. or foreign liquid financial instruments with original maturities that are generally less than three months. Cash and Cash Equivalents are reported at fair value or cost, which approximates fair value.

For cash deposits and cash equivalents, custodial credit risk is the risk that, in the event of a bank failure, the System's deposits may not be returned to it.

The System does not have any funds or deposits that are not covered by depository insurance, which are either uncollateralized, collateralized with securities held by the pledging financial institution, or collateralized with securities held by the pledging financial institution's trust department or agent, but not in the System's name and there are no legal or contractual provisions for deposits and investments. Nor does the System have any investments that are not registered in its name and are either held by the counterparty or the counterparty's trust department or agent, but not in the System's name.

The amount of the System's total Cash and Cash Equivalents as of June 30, 2023 and 2022, was \$1,373,369 and \$2,005,811 (in thousands), respectively.

C. Investments

These investments are accounted for as the System and are allocated to Teachers' Retirement and Pension, Employees' Retirement and Pension, Judges' Retirement, State Police Retirement and Law Enforcement Officers' Pension.

All investments are governed by the Prudent Person Rule as described in SPP Section 21-203 which states: A fiduciary shall discharge the fiduciary's duties with respect to the several systems solely in the interest of the participants and as follows: (1) for the exclusive purposes of providing benefits to the participants and for reasonable expenses of administering the several systems; (2) with the care, skill, prudence, and diligence under the circumstances then prevailing, that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims; (3) by diversifying the investments of the several systems so as to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so; (4) in accordance with the laws governing the several systems; and (5) in accordance with the documents and instruments governing the several systems to the extent that the documents and instruments are consistent with this subtitle.

D. Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. As of June 30, 2023 and 2022, the System had the following fixed income investments allocated by year of maturity except for the Commingled Funds, which are based on their average maturity:

Type:	Fair Value (in thousands)	As of June 30, 2023			
		Investment Maturities (in years)	Investment	Investment	Investment
		Less than 1	1 thru 5	5+ thru 10	More than 10
Asset Backed Securities	\$ 142,906	\$ 106	\$ 31,366	\$ 30,585	\$ 80,849
Bank Loans	487,715	18,858	326,514	142,343	-
Collateralized mortgage obligations	436,705	21	8,838	29,404	398,442
Credit/debt commingled funds	1,211,885	29,249	883,780	298,856	-
Domestic Corporate Obligations	2,915,025	30,242	1,116,456	1,276,481	491,846
International Obligations	336,270	630	98,784	111,915	124,941
Mortgage Pass-throughs	1,225,998	15	3,854	14,268	1,207,861
Municipals	48,040	743	3,104	12,140	32,053
Options	(5,212)	(5,212)	-	-	-
Short term	713,578	67,577	(3,772)	621,584	28,189
Swaps	(997)	(4,128)	202	(5,163)	8,092
U.S. Government Agency	31,078	-	621	10,345	20,112
U.S. Treasury Inflation Linked	2,272,403	-	1,095,244	821,459	355,700
U.S. Treasury Notes/Bonds	3,916,788	3,383	44,323	157,128	3,711,954
U.S. Treasury Strips	18,745	-	-	-	18,745
Yankee Bonds	1,171,089	34,892	452,683	339,807	343,707
Total	\$ 14,922,016	\$ 176,376	\$ 4,061,997	\$ 3,861,152	\$ 6,822,491

Type:	Fair Value (in thousands)	As of June 30, 2022			
		Investment Maturities (in years)			Investment
		Less than 1	1 thru 5	5+ thru 10	More than 10
Asset Backed Securities	\$ 1,332,266	\$ 83	\$ 20,489	\$ 31,524	\$ 81,170
Bank Loans	867,759	5,895	410,326	451,538	-
Collateralized mortgage obligations	465,519	236	10,428	36,743	418,112
Credit/debt commingled funds	743,998	34,130	566,201	127,131	16,536
Domestic Corporate Obligations	2,899,627	45,970	860,156	1,486,961	506,540
International Obligations	256,411	-	59,630	111,693	85,088
Mortgage Pass-throughs	1,056,455	11,352	16,054	1,039,048	-
Municipals	53,094	852	5,026	11,728	35,488
Options	(9,350)	(8,067)	(1,283)	-	-
Short term	1,396,368	139,752	-	1,256,616	-
Swaps	(6,560)	(502)	(11,420)	(2,171)	7,533
U.S. Government Agency	35,706	-	2,156	10,062	23,488
U.S. Treasury Inflation Linked	2,763,633	-	976,325	1,373,852	413,456
U.S. Treasury Notes/Bonds	3,840,547	1,529	63,176	125,236	3,650,606
U.S. Treasury Strips	66,437	-	-	-	66,437
Yankee Bonds	1,078,384	19,753	330,924	419,976	307,731
Total	\$ 15,641,294	\$ 239,633	\$ 3,293,486	\$ 5,456,943	\$ 6,651,232

Markets or interest rate risk is the greatest risk faced by an investor in the fixed income market. The price of a fixed income security typically moves in the opposite direction of the change in interest rates. Derivative securities, variable rate investments with coupon multipliers greater than one, and securities with long terms to maturity are examples of investments whose fair values may be highly sensitive to interest rate changes. These securities are reported at fair value in the Statements of Fiduciary Net Position.

Securities that would qualify as "highly interest rate sensitive" include interest only, principal only and inverse floaters, of which the System had no significant holdings as of June 30, 2023 and 2022.

As of June 30, 2023, and 2022, the System had \$1,225,998 and \$1,056,455 (in thousands), respectively, invested in mortgage pass-through securities issued by the Federal National Mortgage Association, Federal Home Loan Mortgage Corporation, and Government National Mortgage Association. These investments are moderately sensitive to changes in interest rates because they are backed by mortgage loans in which the borrowers have the option of prepaying.

Investment guidelines developed for each mandate determines the amount of interest rate risk allowable for each manager. Derivatives held as of June 30, 2023 and 2022, are identified in greater detail in Note 4.

E. Credit Risk

Credit risk is the risk that an issuer or other counterparty to a debt instrument will not fulfill its obligations. This is measured by the assignment of ratings by nationally recognized statistical rating organizations. The ratings used to determine the quality of the individual securities in the table below are the ratings provided by Moody's and Standard & Poor's Global Inc. The listed ratings are based on the most conservative rating when multiple ratings were offered. Obligations issued or guaranteed by the U.S. government or government-sponsored agencies are eligible without limit. The System may invest in an unrated security if the security is comparable in quality to other rated securities that are eligible for purchase. The notation NR represents those securities that are not rated for which the rating disclosure requirements are not applicable, such as commingled short term and credit funds, mortgage securities, foreign sovereign bonds and bank loans which by nature do not have credit quality ratings. The current policy regarding credit risk is determined by each investment manager's mandate.

As of June 30, 2023 and June 30, 2022, the credit ratings of fixed income securities are shown below as a percentage of total investments:

Credit Quality Distribution for Securities with Credit Exposure as a Percentage of Total Investments (Expressed in Thousands)

Rating	2023		2022	
	Fair Value	Percentage Total Investments	Fair Value	Percentage Total Investments
AAA	\$ 97,721	0.141%	\$ 124,057	0.193%
AA	256,513	0.369%	232,580	0.362%
A	598,895	0.862%	469,541	0.730%
BBB	1,231,213	1.771%	1,281,648	1.993%
BB	1,207,899	1.738%	1,154,697	1.795%
B	825,537	1.188%	776,733	1.208%
CCC	90,121	0.130%	106,189	0.165%
CC	1,643	0.002%	2,030	0.003%
C	9	0.000%	1,832	0.003%
D	12,090	0.017%	10,280	0.016%
NR*	4,392,439	6.319%	4,811,091	7.481%
Total Exposed to Credit Risk	\$ 8,714,080		\$ 8,970,678	
U.S. Government Guaranteed**	6,207,936		6,670,616	
Total Fixed Income and Short-Term Investments	\$ 14,922,014		\$ 15,641,294	

*NR represents securities not rated.

**Comprised of U.S. government and agency obligations explicitly guaranteed by the U.S. Government.

The current policy regarding credit risk is determined by each investment manager's mandate. The above listed ratings are based on the most conservative rating when multiple ratings were offered.

F. Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The Systems investment exposure in foreign currency risk as of June 30, 2023 and 2022, is shown below:

International Investment Securities – At Fair Value as of June 30, 2023

(U.S. Dollars in Thousands)

Currency	Equity	Fixed Income	Cash	Alternative Investments	Total
Australian Dollar	\$ 241,969	\$ -	\$ 10,064	\$ 140,659	\$ 392,692
Brazilian Real	1,858	695	652	-	3,205
Canadian Dollar	368,081	(1,901)	3,555	236,642	606,377
Chilean Peso	-	-	11	-	11
Czech Koruna	-	-	44	-	44
Danish Krone	169,623	-	1,101	-	170,724
Egyptian Pound	24,452	-	245	-	24,697
Euro Currency	1,547,288	84,016	23,383	1,645,887	3,300,574
Hong Kong Dollar	208,309	-	1,693	60,721	270,723
Hungarian Forint	466	-	26	-	492
Indonesian Rupiah	60,460	9,368	1,592	-	71,420
Japanese Yen	963,441	(412)	6,124	20,397	989,550
Malaysian Ringgit	179	-	-	-	179
Mexican Peso	65,367	12,967	1,708	-	80,042
New Israeli Sheqel	34,124	-	72	-	34,196
New Taiwan Dollar	62,734	-	59	-	62,793
New Zealand Dollar	13,551	10,346	1,687	8,797	34,381
Norwegian Krone	6 1,411	-	892	-	62,303
Philippine Peso	702	-	24	-	726
Polish Zloty	416	(1,765)	2,794	-	1,445
Pound Sterling	596,593	37,063	6,514	273,861	914,031
Qatari Rial	156	-	-	-	156
Singapore Dollar	56,055	-	116	-	56,171
Sol	-	-	573	-	573
South African Rand	106,772	1,675	1,017	-	109,464
South Korean Won	194,790	-	78	-	194,868
Swedish Krona	106,541	-	2,674	-	109,215
Swiss Franc	387,168	-	1,968	5,479	394,615
Thailand Baht	20,514	-	8	-	20,522
Turkish Lira	2,663	-	21	-	2,684
Uae Dirham	34,401	-	-	-	34,401
Yuan Renminbi	(13,514)	-	25,684	-	12,170
Total foreign currency risk	\$ 5,316,570	\$ 152,052	\$ 94,379	\$ 2,392,443	\$ 7,955,444
Other holdings with potential exposure to foreign currency risk	5,574,733	1,288,714	-	2,449,601	9,313,048
Total investments subject to foreign currency risk *	\$ 10,891,303	\$ 1,440,766	\$ 94,379	\$ 4,842,044	\$ 17,268,492

* Includes Derivatives

International Investment Securities – At Fair Value as of June 30, 2022
(U.S. Dollars in Thousands)

Currency	Equity	Fixed Income	Cash	Alternative Investments	Total
Australian Dollar	\$ 197,174	\$ -	\$ 21,772	\$ 150,064	\$ 369,010
Brazilian Real	75,066	(2,004)	1,628	-	74,690
Canadian Dollar	372,460	(4,211)	6,772	193,381	568,402
Chilean Peso	-	-	-	-	-
Colombian Peso	-	-	-	-	-
Czech Koruna	-	-	16	-	16
Danish Krone	104,830	17,555	1,085	-	123,470
Egyptian Pound	11,753	-	-	-	11,753
Euro Currency	1,310,886	74,026	5,895	1,407,968	2,798,775
Hong Kong Dollar	321,890	-	832	51,860	374,582
Hungarian Forint	545	-	22	-	567
Indonesian Rupiah	37,400	9,020	1,219	-	47,639
Japanese Yen	717,050	(673)	4,658	14,476	735,511
Malaysian Ringgit	5,712	-	-	-	5,712
Mexican Peso	67,955	10,552	3,006	-	81,513
New Israeli Shekel	34,694	-	7	-	34,701
New Taiwan Dollar	101,065	-	450	-	101,515
New Zealand Dollar	9,657	10,105	2,125	3,927	25,814
Norwegian Krone	50,986	-	531	-	51,517
Philippine Peso	89	-	17	-	106
Polish Zloty	3,243	-	26	-	3,269
Pound Sterling	585,340	45,830	2,536	299,646	933,352
Qatari Rial	10,566	-	855	-	11,421
Romanian Leu	-	-	-	-	-
Russian Ruble	-	-	-	-	-
Singapore Dollar	37,182	-	613	-	37,795
Sol	-	5,097	504	-	5,601
South African Rand	87,544	1,971	875	-	90,390
South Korean Won	221,047	(288)	53	-	220,812
Swedish Krona	102,974	-	(27)	-	102,947
Swiss Franc	311,258	-	187	2,853	314,298
Thailand Baht	14,389	528	163	-	15,080
Turkish Lira	18,899	-	142	-	19,041
UAE Dirham	36,262	-	-	-	36,262
Yuan Renminbi	71,592	-	754	-	72,346
Total foreign currency risk	\$ 4,919,508	\$ 167,508	\$ 5 6,715	\$ 2,124,175	\$ 7,267,907
Other holdings with potential of exposure to foreign currency risk	5,532,758	1,559,219	-	2,459,314	9,551,291
Total Exposure	\$ 10,452,266	\$ 1,726,727	\$ 56,715	\$ 4,583,489	\$ 16,819,198

The majority of foreign currency-denominated investments are in non-US stocks.

The Agency has an overlay program to help minimize its currency risk.

Note: These schedules do not agree with the total international obligations and international equities as listed on the Statement of Fiduciary Net Position due to private and public partnerships or funds and American Depository Receipts which are valued in U.S. dollars but classified as International.

G. Security Lending Transactions

The System accounts for securities lending transactions in accordance with GASB Statement No. 28, *Accounting and Financial Reporting for Securities Lending Transactions*.

The following table details the net income from securities lending for the years ended June 30, 2023 and 2022 (in thousands):

	<u>2023</u>	<u>2022</u>
Interest income	\$ 226,992	\$ 31,972
Less:		
Interest expense	202,127	7,256
Program fees	<u>1,243</u>	<u>1,242</u>
Expenses from securities lending	<u>203,370</u>	<u>8,498</u>
Net income from securities lending	<u>\$23,622</u>	<u>\$ 23,474</u>

The Board of Trustees has authorized the System to lend its securities to broker-dealers with a simultaneous agreement to return the collateral for the same securities in the future. Deutsche Bank, pursuant to a written agreement, is permitted to lend long-term securities to authorized broker-dealers subject to the receipt of acceptable collateral. The System lends securities for collateral in the form of either cash or other securities. The types of securities on loan as of June 30, 2023 included long-term U.S. government obligations, domestic and international equities, as well as domestic and international debt obligations. At the initiation of a loan, borrowers are required to provide collateral amounts of 102 percent (domestic securities and foreign securities that are denominated in the same currency as the collateral provided by the counterparty) and 105 percent (foreign securities that are not denominated in the same currency as the collateral provided by the counterparty). In the event the collateral fair value falls below 100 percent for domestic securities and foreign securities that are denominated in the same currency as the collateral or 103 percent on foreign securities not denominated in the same currency as the collateral provided by the counterparty, the borrower is required to provide additional collateral to the original levels by the end of the next business day. Deutsche Bank is obligated to indemnify the client if there are any losses of securities, collateral or investments of the client in the Bank's custody arising out of or related to the negligence or dishonesty of the Bank.

The System maintains the right to terminate the securities lending transactions upon notice. The lending agent reinvests the cash collateral received on each loan utilizing indemnified repurchase agreements (repos). As of June 30, 2023, such repos had average days to maturity of 47.69 days. The System cannot pledge or sell collateral securities received unless (and until) a borrower defaults. At year-end, the System had no credit risk exposure to borrowers because the amount the System owed the borrowers exceeded the amount the borrowers owed the System. The fair value of securities on loan and the fair value collateral held for the System as of June 30, 2023 (in thousands) was \$5,579,021 and \$5,686,982, respectively. The fair value of securities on loan and the fair value collateral held for the System as of June 30, 2022 (in thousands) was \$4,268,464 and \$4,414,793, respectively.

The following tables present the fair values of the underlying securities, and the value of the collateral pledged at June 30, 2023 and 2022 (in thousands):

Securities Lent	As of June 30, 2023		
	Fair Value Loaned Securities	Collateral Fair Value	Percent Collateralized
Lent for cash collateral			
U.S. government and agency	\$ 3,433,594	\$3,505,835	102.1%
Domestic bond & equity	2,121,779	2,156,481	101.6%
International fixed	3,225	3,279	101.7%
International equity	<u>20,423</u>	<u>21,387</u>	104.7%
Total securities lent	<u>\$ 5,579,021</u>	<u>\$ 5,686,982</u>	101.9%

Securities Lent	As of June 30, 2022		
	Fair Value Loaned Securities	Collateral Fair Value	Percent Collateralized
Lent for cash collateral			
U.S. government and agency	\$ 2,863,595	\$ 2,961,969	103.4%
Domestic bond & equity	1,367,546	1,413,222	103.3%
International fixed	6,655	6,820	102.5%
International equity	30,668	32,782	106.9%
Total securities lent	\$ 4,268,464	\$ 4,414,793	103.4%

There were no significant under-collateralization events as of June 30, 2023.

H. Investments at Fair Value

The System follows the fair value measurement and disclosure guidance under U.S. GAAP, which establishes a hierarchical disclosure framework. This framework prioritizes and ranks the level of market price observability used in measuring investments at fair value. U.S. GAAP also allows investments to be valued at cost or net asset value (NAV).

Assets and liabilities measured at fair value are classified into one of the following categories:

Level 1 – Fair value is determined using unadjusted quoted prices in active markets for identical assets or liabilities accessible on the measurement date.

Level 2 – Fair value is determined using quoted prices in inactive markets or significant observable inputs (including, but not limited to, quoted prices for similar investments, interest rates, foreign exchange rates, volatility and credit spreads), either directly or indirectly. These inputs may be derived principally from, or corroborated by, observable market data through correlation or by other means.

Level 3 – Fair value is determined using unobservable inputs, including situations where there is little market activity, if any, for the asset or liability.

The System had the following recurring fair value measurements as of June 30, 2023 and 2022:

Debt and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities.

Debt securities classified in Level 2 of the fair value hierarchy are valued using a combination of prevailing market prices and interest payments that are discounted at prevailing interest rates for similar instruments.

Derivative instruments classified in Level 2 of the fair value hierarchy are valued using a market approach that considers benchmark interest rates and foreign exchange rates.

Commercial and residential mortgage-backed securities classified in Level 3 are valued using discounted cash flow techniques. Collateralized debt obligations classified in Level 3 are valued using consensus pricing.

As of June 30, 2023 and 2022, the System had the following recurring fair value measurements:

As of June 30, 2023 Investments by fair value level (expressed in millions)	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Debt Securities				
U.S. Government obligations	\$ 6,239	\$ 6,239	\$ -	\$ -
Domestic corporate obligations	3,659	-	3,659	-
International obligations	932	-	932	-
Emerging markets debt	660	-	660	-
Mortgages & mortgage related securities	1,657	-	-	1,657
Total debt securities	<u>13,147</u>	<u>6,239</u>	<u>5,251</u>	<u>1,657</u>
Equity Securities				
Domestic stocks (includes REITs)	7,324	7,324	-	-
International stocks (includes REITs)	5,845	5,845	-	-
Total equity securities	<u>13,169</u>	<u>13,169</u>	<u>-</u>	<u>-</u>
Alternative Investments	433	433	-	-
Total investment by fair value level	<u>26,749</u>	<u>\$ 19,841</u>	<u>\$ 5,251</u>	<u>\$ 1,657</u>
Investment measured at the net asset value (NAV)				
Equity Open-End Fund	6,759			
Real Estate Open-End Fund	5,372			
Private Funds (includes equity, real estate, credit, energy, infrastructure, timber)	20,036			
Multi-asset	234			
Hedge Funds				
Equity long/short	1,196			
Event-driven	407			
Global Macro	1,114			
Relative Value	1,766			
Opportunistic	195			
Total investment measured at the NAV	<u>37,079</u>			
Investment derivative instruments (Liabilities)				
Forwards	(18)	\$ -	\$ (18)	\$ -
Options	(1)	-	(1)	-
Swaps	(1)	-	(1)	-
Rights/Warrants	0	-	0	-
Total investment derivative instruments	<u>(20)</u>	<u>\$ -</u>	<u>\$ (20)</u>	<u>\$ -</u>
Total*	<u>\$ 63,808</u>			

*Total Investments on the Statement of Fiduciary Net Position agrees to the total sum of \$63,808 on this table, \$5,687 of collateral for loaned securities, and \$18 of forward contracts.

As of June 30, 2022	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by fair value level (expressed in millions)				
Debt Securities				
U.S. Government obligations	\$ 6,707	\$ 6,707	\$ -	\$ -
Domestic corporate obligations	3,872	-	3,872	-
International obligations	951	-	951	-
Emerging markets debt	512	-	512	-
Mortgages & mortgage related securities	1,512	-	-	1,512
Total debt securities	<u>13,554</u>	<u>6,707</u>	<u>5,335</u>	<u>1,512</u>
Equity Securities				
Domestic stocks (includes REITs)	5,490	5,490	-	-
International stocks (includes REITs)	6,359	6,359	-	-
Total equity securities	<u>11,849</u>	<u>11,849</u>	<u>-</u>	<u>-</u>
Alternative Investment	386	386	-	-
Total investment by fair value level	<u>25,789</u>	<u>\$ 18,942</u>	<u>\$ 5,335</u>	<u>\$ 1,512</u>
Investment measured at the net asset value (NAV)				
Equity Open-End Fund	6,237			
Private funds (includes equity, real estate, credit, energy, infrastructure and timber)	18,297			
Real estate-open ended	5,956			
Multi-asset	238			
Hedge Funds				
Equity long/short	1,172			
Event-driven	667			
Global macro	1,247			
Relative Value	2,157			
Opportunistic	203			
Total investment measured at the NAV	<u>36,174</u>			
Investment derivative instruments and foreign currency holdings				
Forwards	72	\$ -	\$ 72	\$ -
Options	(9)	-	(9)	-
Swaps	(7)	-	(7)	-
Rights/Warrants	68	-	68	-
Total investment derivative instruments	<u>124</u>	<u>\$ -</u>	<u>\$ 124</u>	<u>\$ -</u>
*Total	<u>\$ 62,087</u>			

*Total Investments on the Statement of Fiduciary Net Position agrees to the total sum of \$62,087 on this table, \$4,414 of collateral for loaned securities, and (\$72) of forwards contracts.

The valuation method for investments measured at net asset value (NAV) per share (or its equivalent) is presented in the following table (in millions):

	As of June 30, 2023				As of June 30, 2022			
	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice
Private funds (includes equity, energy, credit, infrastructure, timber, commodity and real estate (1))	\$ 20,036	\$ 9,817			\$ 18,297	\$ 9,965		
Real estate open-end fund (3)	5,372		Quarterly	45 - 90 days	5,956		Quarterly	45 - 90 days
Equity open-end fund (2)	3,633		Daily	1 day	3,285		Daily	1 day
	2,465		Monthly	5 - 30 days	2,387		Monthly	5 - 30 days
	662		Triennially	150 days	566		Triennially	150 days
Multi-asset (9)	234		Monthly	5 days	238		Monthly	5 days
Hedge Funds								
Equity long/short (5)	808		Monthly	30 - 45 days	775		Monthly	30 - 45 days
	388		Quarterly	60 days	397		Quarterly	60 days
Event-driven (6)	104		Quarterly	15 days	12		Quarterly	15 days
	172		Quarterly	60 - 65 days	336		Quarterly	60 - 65 days
	17		Quarterly	90 days	137		Quarterly	90 days
	81		Quarterly	120 days +	141		Quarterly	120 days +
	33		N/A	Liquidating	41		N/A	Liquidating
Global macro (4)	275		Monthly	5 - 30 days	515		Monthly	5 - 30 days
	755		Monthly	60 - 90 days	505		Monthly	60 - 90 days
	84		Quarterly	60 - 90 days	226		Quarterly	60 - 90 days
Relative value (7)	134		Monthly	30 days	209		Monthly	30 days
	495		Quarterly	30 days	437		Quarterly	30 days
	1,136		Quarterly	45 - 90 days	1,511		Quarterly	45 - 90 days
Opportunistic (8)	191		Quarterly	90 days	203		Quarterly	90 days
	4		Semi Annual	90 - 120 days	-		Semi Annual	90 - 120 days
	<u>\$ 37,079</u>	<u>\$ 9,817</u>			<u>\$ 36,174</u>	<u>\$ 9,965</u>		

- (1) Private funds (includes equity, real estate, credit, energy, infrastructure, commodities, and timber): This type includes 398 Global private funds, which cannot be redeemed. Instead, distributions are received through the liquidation of the underlying assets of the fund. These funds are valued-based on individual audited financial statements and assumptions used by fund managers.
- (2) Equity Open-End Fund: This type includes investments in institutional investment funds, which invest in 3 domestic and 8 emerging market equities. The fair values of the funds within this type have been determined using the NAV per share, which has been valued by the fund based on the characteristics of the underlying assets. The five funds have a 5 to 30 days liquidity structures and one fund is redeemable in five months with triennial redemption restrictions.
- (3) Real estate-open ended: This type includes 9 domestic open-ended real estate funds, which can be liquidated. The fair values of the funds within this type have been determined using the NAV per share, which has been valued by the fund based on the characteristics of the underlying assets.

- (4) Global macro: This category includes 6 hedge fund that invest in over 100 financial markets. The funds are diversified and take long, short and spread positions. The fair values of the funds within this type have been determined using the NAV per share, which has been valued by the fund based on the characteristics of the underlying assets. These assets have a liquidity structure which ranges from 5 to 90 days.
- (5) Equity long/short: This type includes investments in 4 hedge funds that invest both long and short primarily in U.S. and Asian common stocks. Management of each hedge fund has the ability to shift investment from value to growth strategies, from small to large capitalization stocks, and from a net long position to a net short position. The fair values of the funds within this type have been determined using the NAV per share, which has been valued by the fund based on the characteristics of the underlying assets. Two funds have a two-year hard lockup and the other two have a one-year soft lock-up and require a 30 day to 60-day notice.
- (6) Event-driven: This type includes 5 investments of which 2 are credit hedge funds. These funds invest in equities and bonds of companies and governments at risk of or in the process of reorganizing to profit from economic, political, corporate and government-driven events. The other 3 funds are focused on merger arbitrage and assets across the capital structure. The fair values of the funds within this type have been determined using the NAV per share, which has been valued by the fund based on the characteristics of the underlying assets. The funds have a 15 to 90 days liquidity structure.
- (7) Relative value: This category includes 7 hedge funds with a liquidity structure between 30 and 90 days. These funds invest in a wide range of strategies. The fair values of the funds within this type have been determined using the NAV per share, which has been valued by the fund based on the characteristics of the underlying assets.
- (8) Opportunistic: Currently there are 3 hedge funds in this category, which invests in re-insurance for catastrophe risk (mostly hurricane and earthquake). The fund has a quarterly redemption with a 90-day. The fair value of these funds has been determined using the NAV per share, which has been valued by the fund based on the characteristics of the underlying assets.
- (9) Multi-asset: This category includes 1 diversified fund. The fair value of the fund within this type has been determined using the NAV per share, which has been valued by the fund based on the characteristics of the underlying assets.

4. DERIVATIVES

In conjunction with the responsibility for implementing the Board's asset allocation strategy the Chief Investment Officer hires external investment managers or assigns responsibility to managers employed by the agency. These managers may use derivatives to manage the asset allocation, rebalance the portfolio, equitize cash balances, hedge or manage exposures, or to implement tactical positions. The System invested in swaps, futures, options, forwards, and rights and warrants that are either exchange traded or over-the-counter instruments. Each investment manager's guidelines outline the permissible use of derivatives, which is monitored by internal staff to ensure compliance. The use of derivatives is permitted to the extent that it does not materially alter total portfolio volatility relative to its benchmark and with reference to variance permitted by guideline. The manager is responsible for collateral management and derivatives must be collateralized with cash, cash equivalents, or current portfolio security holdings.

In addition, the System has exposure to derivatives through the ownership interests in commingled funds. These funds may hold derivatives in the fund and the System does not have control over the investment policy or guidelines of such funds. However, the risk associated with derivative instruments is limited to the capital contributed to the fund.

List of Derivatives Aggregated by Investment Type – At Fair Value as of June 30, 2023
(in Thousands)

Currency	Changes in Fair Value(4)		Fair Value at June 30, 2023		
	Classifications	Amount(1)	Classification	Amount(2)	Notional(3)
Commodity Futures Long	Investment Revenue	\$ (3,745)	Futures	\$ -	\$ 30,449.00
Credit Default Swaps Bought	Investment Revenue	6	Swaps	-	-
Credit Default Swaps Written	Investment Revenue	5,994	Swaps	2,036	96,573
Fixed Income Futures Long	Investment Revenue	(259,370)	Futures	-	2,954,515
Fixed Income Futures Short	Investment Revenue	9,363	Futures	-	(208,892)
Fixed Income Options Bought	Investment Revenue	491	Options	3,277	13,200
Fixed Income Options Written	Investment Revenue	5,324	Options	(6,479)	(128,809)
Foreign Currency Futures Short	Investment Revenue	293	Futures	-	(18,000)
Foreign Currency Options Written	Investment Revenue	35	Options	-	-
Futures Options Bought	Investment Revenue	(1)	Futures	-	-
Futures Options Written	Investment Revenue	1,870	Futures	(2,049)	(1,026)
FX Forwards	Investment Revenue	5,633	Long Term Instruments	(18,321)	7,774,463
Index Futures Long	Investment Revenue	240,684	Futures	-	792
Index Futures Short	Investment Revenue	(105,355)	Futures	-	(624)
Pay Fixed Interest Rate Swaps	Investment Revenue	13,390	Swaps	11,582	326,838
Receive Fixed Interest Rate Swaps	Investment Revenue	(23,879)	Swaps	(14,622)	1,022,204
Rights	Investment Revenue	2,207	Common Stock	26	263
Warrants	Investment Revenue	(7,578)	Common Stock	-	13
		<u>\$ (114,638)</u>		<u>\$ (24,550)</u>	

DERIVATIVES (continued)

List of Derivatives Aggregated by Investment Type – At Fair Value as of June 30, 2022
(in Thousands)

Currency	Classifications	Changes in Fair Value(4)		Fair Value at June 30,2022	
		Amount(1)	Classification	Amount(2)	Notional(3)
Commodity Futures Long	Investment Revenue	\$ 18,151	Futures	\$ -	\$ -
Commodity Futures Short	Investment Revenue	785	Futures	-	-
Credit Default Swaps Bought	Investment Revenue	5	Swaps	-	300
Credit Default Swaps Written	Investment Revenue	(9,428)	Swaps	(467)	359,175
Fixed Income Futures Long	Investment Revenue	(557,552)	Futures	-	1,749,818
Fixed Income Futures Short	Investment Revenue	28,571	Futures	-	(272,300)
Fixed Income Options Bought	Investment Revenue	1,901	Options	3,257	31,100
Fixed Income Options Written	Investment Revenue	(1,334)	Options	(12,244)	(818,049)
Foreign Currency Futures Short	Investment Revenue	2,640	Futures	-	(35,000)
Foreign Currency Options Bought	Investment Revenue	(156)	Options	-	-
Foreign Currency Options Written	Investment Revenue	201	Options	-	-
Futures Options Bought	Investment Revenue	(3)	Options	-	-
Futures Options Written	Investment Revenue	1,312	Options	(429)	(983)
FX Forwards	Investment Revenue	122,738	Long Term Instruments	72,598	11,610,431
Index Futures Long	Investment Revenue	(271,809)	Futures	-	734
Index Futures Short	Investment Revenue	362,283	Futures	-	(587)
Pay Fixed Interest Rate Swaps	Investment Revenue	30,727	Swaps	20,699	242,794
Receive Fixed Interest Rate Swap	Investment Revenue	(35,023)	Swaps	(26,839)	577,120
Rights	Investment Revenue	(1,687)	Common Stock	83	139
Warrants	Investment Revenue	(20,650)	Common Stock	68,080	18,450
		\$ (328,328)		\$ 124,738	

Note: Includes assets invested on behalf of the Mass Transit Administration.

1. Negative values (in brackets) refer to unrealized losses

2. Negative values (in brackets) refer to liabilities included in accounts payable and accrued expenses on the Statement of Fiduciary Net Position

3. Notional may be a dollar amount or size or underlying for futures and options, negative values (in brackets) refer to short positions

4. Changes in fair value excludes futures margin payments

A. Credit Risk

The use of derivatives exposes the System to credit and counterparty risk due to the risk of counterparties failing to meet the terms of the derivative contracts. To minimize its exposure to losses related to credit and counterparty risk, the external investment managers use counterparty collateral in their non-exchange-traded derivative instruments and monitor the credit-worthiness of the counterparties. Netting arrangements are also used when entering into more than one derivative instrument transaction with a counterparty.

The aggregate fair value of derivative instruments with credit exposure at June 30, 2023 and 2022, was \$171,260 and \$429,537 (in thousands), respectively. This represents the maximum loss that would be recognized at the reporting date if all counterparties failed to perform. The maximum loss would, however, be reduced by the counterparty collateral and the liabilities included in netting arrangements with counterparties.

DERIVATIVES (continued)

Counterparty Ratings

The following table lists the counterparty credit ratings of non-exchange traded investment derivative instruments outstanding and maybe subject to loss per the ratings issued by S&P Global (S&P), Moody's and Fitch. The aggregate fair value (in thousands) of investment derivative instruments subject to counterparty credit risk as of June 30, 2023 and 2022:

As of June 30, 2023					
S&P		Moody's		Fitch	
Fair Value	Rating	Fair Value	Rating	Fair Value	Rating
\$ 68,203	AA-	\$ 25	Aa2	\$ 21,677	AA
39,465	A+	21,435	Aa2	32,986	AA-
14,063	A	67,278	Aa3	115,804	A+
41,361	A-	40,456	A1	774	A
8,168	BBB+	774	A2	19	A-
-	NR	41,292	A3	-	BBB+
-		-	NR	-	NR
<u>\$ 171,260</u>	<u>(1)</u>	<u>\$ 171,260</u>	<u>(1)</u>	<u>\$ 171,260</u>	<u>(1)</u>
As of June 30, 2022					
S&P		Moody's		Fitch	
Fair Value	Rating	Fair Value	Rating	Fair Value	Rating
\$ 173,240	AA-	\$ 98,309	Aa2	\$ 98,308	AA
129,262	A+	95,191	Aa3	107,327	AA-
43,619	A	168,777	A1	216,059	A+
69,025	A-	1,653	A2	3,167	A
14,391	BBB+	62,451	A3	1,266	A-
-	NR	3,156	NR	254	BBB+
-		-		3,156	NR
<u>\$ 429,537</u>	<u>(1)</u>	<u>\$ 429,537</u>	<u>(1)</u>	<u>\$ 429,537</u>	<u>(1)</u>

(1) Total Aggregate Fair Value

Risk Concentrations

The following tables list the counterparty risk concentration and credit ratings per ratings of Standard & Poor's (S&P), Moody's and Fitch as of June 30, 2023 and 2022:

Counterparty Name	Percentage of Net Exposure	S&P Rating	Fitch Rating	Moody's Rating
WESTPAC BANKING CORPORATION	24.2%	AA-	A+	Aa3
HSBC BANKPLC	24.1%	A-	A+	A3
ROYAL BANK OF CANADA (UK)	8.6%	AA-	AA-	A1
STATE STREET BANK LONDON	8.2%	A	AA-	A1
JPMORGAN CHASE BANK NA LONDON	8.1%	A+	AA	Aa2
BNP PARIBAS SA	8.0%	A+	A+	Aa3
THE BANK OF NEW YORK MELLON	4.4%	AA-	AA	Aa2
UBS AG	3.7%	A+	A+	Aa3
WELLS FARGO LCH	3.6%	BBB+	A+	A1
CITIBANK N.A.	3.2%	A+	A+	Aa3
TORONTO DOMINION BANK	2.4%	AA-	AA-	A1
WELLS FARGO ICE	0.7%	BBB+	A+	A1
GOLDMAN SACHS ICE	0.5%	BBB+	A	A2
STATE STREET BANK AND TRUST COMPANY	0.1%	AA-	AA	Aa3
MORGAN STANLEY AND CO. INTERNATIONAL PLC	0.0%	A-	A+	A1
JPMORGAN CHASE BANK, N.A.	0.0%	A+	AA	Aa2
BANK OF AMERICA, N.A.	0.0%	A+	AA	Aa1
DEUTSCHE BANK AG	0.0%	A-	A-	A1
JPMORGAN CHASE BANK N.A	0.0%	A+	AA	Aa2
WELLS FARGO CME	0.0%	BBB+	A+	A1

Risk Concentrations (continued)

Counterparty Name	Percentage of Net Exposure	S&P Rating	Fitch Rating	Moody's Rating
THE BANK OF NEW YORK MELLON	19.5%	AA-	AA	Aa2
HSBC BANK PLC	14.5%	A-	A+	A3
STANDARD CHARTERED BANK	13.6%	A+	A+	A1
STATE STREET BANK LONDON	9.9%	A	AA-	A1
BNP PARIBAS SA	9.1%	A+	A+	Aa3
WESTPAC BANKING CORPORATION	9.0%	AA-	A+	Aa3
ROYAL BANK OF CANADA (UK)	6.6%	AA-	AA-	A1
TORONTO DOMINION BANK	4.8%	AA-	AA-	A1
UBS AG	3.4%	A+	AA-	Aa3
JPMORGAN CHASE BANK NA LONDON	3.0%	A+	AA	Aa2
WELLS FARGO LCH	2.2%	BBB+	A+	A1
WELLS FARGO CME	1.0%	BBB+	A+	A1
NOMURA GLOBAL FINANCIAL PRODUCTS INC	0.7%	A-	NR	NR
CITIBANK N.A.	0.7%	A+	A+	Aa3
NORTHERN TRUST COMPANY, THE	0.3%	AA-	AA-	A2
BANK OF AMERICA, N.A.	0.3%	A+	AA	Aa2
CREDIT SUISSE FOB LCH	0.3%	A	A-	A1
MORGAN STANLEY CME	0.3%	A-	A	A1
MORGAN STANLEY AND CO. INTERNATIONAL PLC	0.2%	A-	A	A1
MORGAN STANLEY LCH	0.2%	A-	A	A1
WELLS FARGO ICE	0.2%	BBB+	A+	A1
DEUTSCHE BANK AG	0.1%	A-	BBB+	A2
JPMORGAN CHASE BANK, N.A.	0.1%	A+	AA	Aa2

B. Interest Rate Risk

During fiscal year 2023, the Agency was exposed to interest rate risk. For more details, refer to the Interest Rate Risk Note 3.D. (GASB Statement No. 40).

C. Foreign Currency Risk

The System's derivatives exposed it to foreign currency risk. For more details refer to the Foreign Currency Risk Note 3.F. (GASB Statement No. 40).

5. CONTRIBUTIONS

The State Personnel and Pensions Article requires both active members and their respective employers to make contributions to the System. Rates for required contributions by active members are established by law. Members of the Teachers' and Employees' Retirement Systems are required to contribute 7% or 5% of earnable compensation depending upon the retirement option selected. Members of the State Police and Judges' Retirement Systems are required to contribute 8% and 6% of earnable compensation, respectively, and beginning July 1, 2014, members of the Judges Retirement System are required to make contributions of 8% of earnable compensation. Members of the Teachers' and Employees' Pension System, Alternate Contributory Pension Selection (ACPS), are required to contribute 7% of earnable compensation.

However, members of the Employees' Pension System who are employed by a participating governmental unit that elected to remain in the Contributory Pension System are required to contribute 2% of earnable compensation. The members of the Employees' Pension System who are employed by participating governmental units who elected to remain in the Non-Contributory Pension System are only required to contribute 5% of earnable compensation in excess of the social security taxable wage base.

Contribution rates for employer and other "non-employer" contributing entities are established by annual actuarial valuations using the Individual Entry Age Normal Cost method with projection and other actuarial assumptions adopted by the Board of Trustees. These contribution rates have been established as the rates necessary to fully fund normal costs and amortize the unfunded actuarial accrued liability.

The unfunded actuarial liability was being amortized in distinct layers. The unfunded actuarial accrued liability which existed as of the June 30, 2000, actuarial valuation was being amortized over a 40-year period (as provided by law) from July 1, 1980 and as provided by law, any new unfunded liabilities or surpluses arising during the fiscal year ended June 30, 2001, or any fiscal year thereafter, was being amortized over a 25-year period from the end of the fiscal year in which the liability or surplus arose. However, in the 2014 legislative session, the Legislature changed the method used to fund the System. The unfunded liability for each System is being amortized over a single closed 25-year period.

Members of the State Police Retirement System (SPRS) and Law Enforcement Officers' Pension System (LEOPS) are eligible to participate in a Deferred Retirement Option Program (DROP). For members who enter the DROP on or after July 1, 2011, the member is deemed retired and the retirement allowance is placed in an account earning 4% interest per year, compounded annually. At the end of the DROP period, the lump sum held in the DROP account is paid to the retiree. The SPRS and LEOPS members must end employment and fully retire at the end of the DROP period. The maximum period of participation is 5 years for SPRS and 5 years for LEOPS. The amount of funds held in the DROP as of June 30, 2023 and 2022, was \$34,051,372 and \$31,001,707 respectively.

The State of Maryland (which is also a non-employer contributor to the Teachers' Retirement and Pension Systems and the Judges' Retirement System), the Maryland Automobile Insurance Fund, the Injured Workers' Insurance Fund, and more than 150 participating governmental units make all of the employer and other (non-employer) contributions to the System.

6. REFUNDS

Member contributions plus interest may be refunded to a member who withdraws from the System, or to the designated beneficiary following a member's death. Employer contributions may also be refunded with interest to any participating governmental unit electing to withdraw from the System. For the fiscal years ended June 30, 2023 and 2022 refunds to members and withdrawing employers were \$101,737 and \$91,535 (expressed in thousands), respectively.

7. ACCOUNTS PAYABLE AND ACCRUED EXPENSES

For the fiscal years ended June 30, 2023 and 2022 accounts payable and accrued expenses consisted of the following components (expressed in thousands):

	2023	2022
Administrative expenses	\$ 477	\$ 6,900
Investment management fees	12,906	15,278
Tax and other withholdings	44,414	43,224
Total	\$ 57,797	\$ 65,402

8. NET PENSION LIABILITY

The components of the net pension liability of the participating employers as of June 30, 2023 and 2022, were as follows:
(expressed in thousands)

	2023	2022
Total Pension Liability (TPL)	\$ 87,923,284	\$ 84,319,523
Plan Fiduciary Net Position	64,892,973	64,310,991
Net Pension Liability	<u>\$ 23,030,311</u>	<u>\$ 20,008,532</u>
Ratio - Fiduciary Net Position/TPL	<u>73.81%</u>	<u>76.27%</u>

A. Actuarial Assumptions

Inflation	In the 2023 actuarial valuation, 2.25% general, 2.75% wage. In the 2022 actuarial valuation, 2.25% general, 2.75% wage.
Salary Increases	In the 2023 actuarial valuation, 2.75% to 11.25%. In the 2022 actuarial valuation, 2.75% to 11.25%
Investment Rate of Return	In the 2023 actuarial valuation, 6.80%. In the 2022 actuarial valuation, 6.80%.
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2019 valuation pursuant to the 2018 experience study for the period July 1, 2014 to June 30, 2018.
Mortality	Various versions of the Pub-2010 Mortality Tables for males and females with projected generational mortality improvements based on the MP-2018 fully generational mortality Improvements scale for males and females.

B. Investments

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of geometric real rates of return were adopted by the Board after considering input from the System's investment consultant(s) and actuary(s).

For each major asset class that is included in the System's target asset allocation as of June 30, 2023 and 2022, these best estimates are summarized in the following table:

Asset Class	2023		2022	
	Target Allocation	Long-Term Expected Real Rate of Return	Target Allocation	Long-Term Expected Real Rate of Return
Public Equity	34.0%	6.9%	34.0%	6.0%
Private Equity	16.0%	8.6%	16.0%	8.4%
Rate Sensitive	20.0%	2.6%	21.0%	1.2%
Credit Opportunity	9.0%	5.6%	8.0%	4.9%
Real Assets	15.0%	5.4%	15.0%	5.2%
Absolute Return	6.0%	4.4%	6.0%	3.5%
Total	100.0%		100.0%	

The above was the Board of Trustees' adopted asset allocation policy and best estimate of geometric real rates of return for each major asset class as of June 30, 2023.

For the years ended June 30, 2023 and 2022, the annual money-weighted rate of return on pension plan investments, net of the pension plan investment expense, was 3.11% and (2.97)%, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

C. Discount Rate

A single discount rate of 6.80% was used to measure the total pension liability as of June 30, 2023 and 2022, respectively. This single discount rate was based on the expected rate of return on pension plan investments of 6.80% as of June 30, 2023 and 2022, respectively. 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 actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

D. Sensitivity of the Net Pension Liability

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 6.80%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher as of June 30, 2023:

(Expressed in thousands)

System	1% Decrease to 5.80%	Discount Rate 6.80%	1% Increase to 7.80%
Teachers	\$ 18,552,312	\$ 11,886,492	\$ 6,366,145
Employees	13,163,272	9,453,027	6,352,447
State Police	1,263,348	888,533	585,112
Judges	177,583	105,462	44,070
LEOPS	992,774	696,797	455,710
Total System Net Pension Liability	\$ 34,149,289	\$ 23,030,311	\$ 13,803,484

The following presents the plan's net pension liability, calculated using a single discount rate of 6.80%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher as of June 30, 2022:

(Expressed in thousands)

System	1% Decrease to 5.80%	Discount Rate 6.80%	1% Increase to 7.80%
Teachers	\$ 16,526,639	\$ 10,109,218	\$ 4,794,807
Employees	12,012,171	8,438,421	5,452,402
State Police	1,139,705	782,804	493,996
Judges	130,464	62,959	5,507
LEOPS	890,475	615,130	390,832
Total System Net Pension Liability	\$ 30,699,454	\$ 20,008,532	\$ 11,137,544



This page intentionally left blank

REQUIRED SUPPLEMENTARY INFORMATION

MARYLAND STATE RETIREMENT
SCHEDULE OF CHANGES IN
for the Fiscal Year Ended
(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Total pension liability			
Service cost	\$ 1,019,621	\$ 586,870	\$ 48,894
Interest	3,291,757	1,991,421	173,872
Changes of benefit terms	-	-	(2,475)
Difference between expected and actual experience	462,643	399,337	59,413
Changes in assumptions	-	-	-
Benefit payments, including refunds of employee contributions	(2,701,693)	(1,769,402)	(143,691)
Net change in total pension liability	<u>2,072,328</u>	<u>1,208,226</u>	<u>136,013</u>
Total pension liability, beginning of year	<u>49,235,396</u>	<u>29,867,155</u>	<u>2,603,567</u>
Total pension liability, end of year (a)	<u>\$ 51,307,724</u>	<u>\$ 31,075,381</u>	<u>\$ 2,739,580</u>
Plan fiduciary net position			
Contributions - employer	\$ 1,228,568	\$ 985,126	\$ 106,966
Contributions - members	588,395	343,720	10,776
Net investment income	1,204,663	658,279	56,353
Benefit payments, including refunds and administrative expenses	(2,727,551)	(1,788,454)	(144,017)
Net Transfer	<u>979</u>	<u>(5,051)</u>	<u>206</u>
Net Change in Plan Fiduciary Net Position	<u>295,054</u>	<u>193,620</u>	<u>30,284</u>
Plan fiduciary net position - beginning of year	<u>39,126,178</u>	<u>21,428,734</u>	<u>1,820,763</u>
Plan fiduciary net position - end of year (b)	<u>\$ 39,421,232</u>	<u>\$ 21,622,354</u>	<u>\$ 1,851,047</u>
Employer net pension liability (a) - (b)	<u>\$ 11,886,492</u>	<u>\$ 9,453,027</u>	<u>\$ 888,533</u>

AND PENSION SYSTEM
EMPLOYERS' NET PENSION LIABILITY

June 30, 2023

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
\$ 23,026	\$ 60,798	\$ 1,739,209
43,224	132,606	5,632,880
-	(2,634)	(5,109)
21,695	48,593	991,681
-	-	-
<u>(43,076)</u>	<u>(97,038)</u>	<u>(4,754,900)</u>
44,869	142,325	3,603,761
<u>645,502</u>	<u>1,967,903</u>	<u>84,319,523</u>
<u>\$ 690,371</u>	<u>\$ 2,110,228</u>	<u>\$ 87,923,284</u>
\$ 23,675	\$ 94,582	\$ 2,438,917
3,947	16,864	963,702
17,901	43,081	1,980,277
(43,152)	(97,740)	(4,800,914)
<u>(5)</u>	<u>3,871</u>	<u>-</u>
2,366	60,658	581,982
<u>582,543</u>	<u>1,352,773</u>	<u>64,310,991</u>
<u>\$ 584,909</u>	<u>\$ 1,413,431</u>	<u>\$ 64,892,973</u>
<u>\$ 105,462</u>	<u>\$ 696,797</u>	<u>\$ 23,030,311</u>

REQUIRED SUPPLEMENTARY INFORMATION

MARYLAND STATE RETIREMENT
SCHEDULE OF CHANGES IN
for the Fiscal Year Ended
(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Total pension liability			
Service cost	\$ 964,482	\$ 521,702	\$ 43,951
Interest	3,221,143	1,961,621	169,184
Changes of benefit terms	-	-	-
Difference between expected and actual experience	(549,388)	(357,873)	(6,649)
Changes in assumptions	-	-	-
Benefit payments, including refunds of employee contributions	(2,550,604)	(1,670,739)	(136,375)
Net change in total pension liability	<u>1,085,633</u>	<u>454,711</u>	<u>70,111</u>
Total pension liability, beginning of year	<u>48,149,763</u>	<u>29,412,444</u>	<u>2,533,456</u>
Total pension liability, end of year (a)	<u>\$ 49,235,396</u>	<u>\$ 29,867,155</u>	<u>\$ 2,603,567</u>
Plan fiduciary net position			
Contributions - employer	\$ 1,202,102	\$ 880,672	\$ 95,453
Contributions - members	554,537	311,851	9,843
Net investment income	(1,179,567)	(648,324)	(55,120)
Benefit payments, including refunds and administrative expenses	(2,574,104)	(1,688,310)	(136,676)
Net Transfer	<u>2,431</u>	<u>(4,643)</u>	<u>36</u>
Net Change in Plan Fiduciary Net Position	<u>(1,994,601)</u>	<u>(1,148,754)</u>	<u>(86,464)</u>
Plan fiduciary net position - beginning of year	<u>41,120,779</u>	<u>22,577,488</u>	<u>1,907,227</u>
Plan fiduciary net position - end of year (b)	<u>\$ 39,126,178</u>	<u>\$ 21,428,734</u>	<u>\$ 1,820,763</u>
Employer net pension liability (a) - (b)	<u>\$ 10,109,218</u>	<u>\$ 8,438,421</u>	<u>\$ 782,804</u>

AND PENSION SYSTEM
EMPLOYERS' NET PENSION LIABILITY

June 30, 2022

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
\$ 21,094	\$ 53,741	\$ 1,604,970
42,059	126,915	5,520,922
-	-	-
(5,498)	(7,880)	(927,288)
-	-	-
(39,934)	(88,234)	(4,485,886)
<u>17,721</u>	<u>84,542</u>	<u>1,712,718</u>
627,781	1,883,361	82,606,805
<u>\$ 645,502</u>	<u>\$ 1,967,903</u>	<u>\$ 84,319,523</u>
\$ 22,816	\$ 81,260	\$ 2,282,303
3,643	14,393	894,267
(17,502)	(41,620)	(1,942,133)
(40,004)	(88,852)	(4,527,946)
(71)	2,247	-
<u>(31,118)</u>	<u>(32,572)</u>	<u>(3,293,509)</u>
613,661	1,385,345	67,604,500
<u>\$ 582,543</u>	<u>\$ 1,352,773</u>	<u>\$ 64,310,991</u>
<u>\$ 62,959</u>	<u>\$ 615,130</u>	<u>\$ 20,008,532</u>

REQUIRED SUPPLEMENTARY INFORMATION

MARYLAND STATE RETIREMENT
SCHEDULE OF CHANGES IN
for the Fiscal Year Ended
(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Total pension liability			
Service cost	\$ 858,844	\$ 467,800	\$ 38,774
Interest	3,270,336	1,996,318	172,521
Changes of benefit terms	-	-	-
Difference between expected and actual experience	(563,443)	(183,991)	(17,273)
Changes in assumptions	2,065,188	1,199,460	96,021
Benefit payments, including refunds of employee contributions	(2,462,312)	(1,600,822)	(135,414)
Net change in total pension liability	<u>3,168,613</u>	<u>1,878,765</u>	<u>154,629</u>
Total pension liability, beginning of year	<u>44,981,150</u>	<u>27,533,679</u>	<u>2,378,827</u>
Total pension liability, end of year (a)	<u>\$ 48,149,763</u>	<u>\$ 29,412,444</u>	<u>\$ 2,533,456</u>
Plan fiduciary net position			
Contributions - employer	\$ 1,153,208	\$ 856,219	\$ 93,651
Contributions - members	531,931	307,067	9,431
Net investment income	8,699,680	4,795,405	403,734
Benefit payments, including refunds and administrative expenses	(2,485,957)	(1,624,910)	(135,711)
Net Transfer	<u>6,907</u>	<u>(7,126)</u>	<u>-</u>
Net Change in Plan Fiduciary Net Position	<u>7,905,769</u>	<u>4,326,655</u>	<u>371,105</u>
Plan fiduciary net position - beginning of year	<u>33,215,011</u>	<u>18,250,832</u>	<u>1,536,121</u>
Plan fiduciary net position - end of year (b)	<u>\$ 41,120,780</u>	<u>\$ 22,577,487</u>	<u>\$ 1,907,226</u>
Employer net pension liability (a) - (b)	<u>\$ 7,028,983</u>	<u>\$ 6,834,957</u>	<u>\$ 626,230</u>

AND PENSION SYSTEM
EMPLOYERS' NET PENSION LIABILITY

June 30, 2021

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
\$ 19,538	\$ 46,320	\$ 1,431,276
42,566	125,229	5,606,970
-	-	-
5,450	(10,113)	(769,370)
13,876	93,808	3,468,353
(37,874)	(81,399)	(4,317,821)
<u>43,556</u>	<u>173,845</u>	<u>5,419,408</u>
584,225	1,709,516	77,187,397
<u>\$ 627,781</u>	<u>\$ 1,883,361</u>	<u>\$ 82,606,805</u>
\$ 21,277	\$ 79,168	\$ 2,203,523
3,595	13,713	865,737
129,884	287,059	14,315,762
(37,944)	(82,040)	(4,366,562)
-	219	-
<u>116,812</u>	<u>298,119</u>	<u>13,018,460</u>
496,848	1,087,225	54,586,037
<u>\$ 613,660</u>	<u>\$ 1,385,344</u>	<u>\$ 67,604,497</u>
<u>\$ 14,121</u>	<u>\$ 498,017</u>	<u>\$ 15,002,308</u>

REQUIRED SUPPLEMENTARY INFORMATION

MARYLAND STATE RETIREMENT
SCHEDULE OF CHANGES IN
for the Fiscal Year Ended
(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Total pension liability			
Service cost	\$ 848,896	\$ 469,984	\$ 38,359
Interest	3,162,069	1,930,920	165,786
Changes of benefit terms	-	-	(50)
Difference between expected and actual experience	(125,435)	54,646	18,073
Changes in assumptions	-	-	-
Benefit payments, including refunds of employee contributions	(2,393,609)	(1,541,672)	(127,446)
Net change in total pension liability	<u>1,491,921</u>	<u>913,878</u>	<u>94,722</u>
Total pension liability, beginning of year	<u>43,489,231</u>	<u>26,619,801</u>	<u>2,284,105</u>
Total pension liability, end of year (a)	<u>\$ 44,981,152</u>	<u>\$ 27,533,679</u>	<u>\$ 2,378,827</u>
Plan fiduciary net position			
Contributions - employer	\$ 1,170,248	\$ 788,853	\$ 91,390
Contributions - members	499,884	324,162	9,277
Net investment income	1,133,679	627,106	52,800
Benefit payments, including refunds and administrative expenses	(2,416,468)	(1,559,154)	(127,736)
Net Transfer	<u>24,743</u>	<u>(25,535)</u>	<u>62</u>
Net Change in Plan Fiduciary Net Position	<u>412,086</u>	<u>155,432</u>	<u>25,793</u>
Plan fiduciary net position - beginning of year	<u>32,802,925</u>	<u>18,095,400</u>	<u>1,510,328</u>
Plan fiduciary net position - end of year (b)	<u>\$ 33,215,011</u>	<u>\$ 18,250,832</u>	<u>\$ 1,536,121</u>
Employer net pension liability (a) - (b)	<u>\$ 11,766,141</u>	<u>\$ 9,282,847</u>	<u>\$ 842,706</u>

AND PENSION SYSTEM
EMPLOYERS' NET PENSION LIABILITY

June 30, 2020

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
\$ 19,399	\$ 45,684	\$ 1,422,322
41,066	118,154	5,417,995
-	(45)	(95)
(3,166)	11,274	(44,608)
-	-	-
(36,332)	(78,186)	(4,177,245)
<u>20,967</u>	<u>96,881</u>	<u>2,618,369</u>
563,258	1,612,635	74,569,030
<u>\$ 584,225</u>	<u>\$ 1,709,516</u>	<u>\$ 77,187,399</u>
\$ 22,708	\$ 71,070	\$ 2,144,269
3,453	13,522	850,298
17,071	35,985	1,866,641
(36,401)	(78,830)	(4,218,589)
-	729	(1)
<u>6,831</u>	<u>42,476</u>	<u>642,618</u>
490,017	1,044,749	53,943,419
<u>\$ 496,848</u>	<u>\$ 1,087,225</u>	<u>\$ 54,586,037</u>
\$ 87,377	\$ 622,291	\$ 22,601,362
<u>87,377</u>	<u>622,291</u>	<u>22,601,362</u>

REQUIRED SUPPLEMENTARY INFORMATION

MARYLAND STATE RETIREMENT
SCHEDULE OF CHANGES IN
for the Fiscal Year Ended
(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Total pension liability			
Service cost	\$ 814,019	\$ 451,990	\$ 34,276
Interest	3,143,018	1,864,909	165,837
Changes of benefit terms	-	-	-
Difference between expected and actual experience	(189,803)	(44,635)	(19,980)
Changes in assumptions	(897,464)	283,109	(42,874)
Benefit payments, including refunds of employee contributions	(2,296,744)	(1,465,624)	(122,446)
Net change in total pension liability	<u>573,026</u>	<u>1,089,749</u>	<u>14,813</u>
Total pension liability, beginning of year	<u>42,916,205</u>	<u>25,530,054</u>	<u>2,269,293</u>
Total pension liability, end of year (a)	<u>\$ 43,489,231</u>	<u>\$ 26,619,803</u>	<u>\$ 2,284,106</u>
Plan fiduciary net position			
Contributions - employer	\$ 1,143,584	\$ 737,284	\$ 86,172
Contributions - members	494,698	288,350	8,579
Net investment income	1,999,261	1,103,927	91,778
Benefit payments, including refunds and administrative expenses	(2,318,939)	(1,482,270)	(122,721)
Net Transfer	3,870	(4,830)	(28)
Net Change in Plan Fiduciary Net Position	<u>1,322,474</u>	<u>642,461</u>	<u>63,780</u>
Plan fiduciary net position - beginning of year	<u>31,480,452</u>	<u>17,452,939</u>	<u>1,446,548</u>
Plan fiduciary net position - end of year (b)	<u>\$ 32,802,926</u>	<u>\$ 18,095,400</u>	<u>\$ 1,510,328</u>
Employer net pension liability (a) - (b)	<u>\$ 10,686,305</u>	<u>\$ 8,524,403</u>	<u>\$ 773,778</u>

AND PENSION SYSTEM
EMPLOYERS' NET PENSION LIABILITY

June 30, 2019

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
\$ 19,173	\$ 39,299	\$ 1,358,757
41,302	112,806	5,327,872
-	-	-
(5,570)	8,400	(251,588)
(19,037)	(4,959)	(681,225)
(34,540)	(74,265)	(3,993,619)
<u>1,328</u>	<u>81,281</u>	<u>1,760,197</u>
561,930	1,531,351	72,808,833
<u>\$ 563,258</u>	<u>\$ 1,612,632</u>	<u>\$ 74,569,030</u>
\$ 21,737	\$ 65,314	\$ 2,054,091
3,176	12,488	807,291
29,689	63,554	3,288,209
(34,604)	(74,870)	(4,033,404)
-	988	-
19,998	67,474	2,116,187
470,019	977,275	51,827,233
<u>\$ 490,017</u>	<u>\$ 1,044,749</u>	<u>\$ 53,943,420</u>
<u>\$ 73,241</u>	<u>\$ 567,883</u>	<u>\$ 20,625,610</u>

REQUIRED SUPPLEMENTARY INFORMATION

MARYLAND STATE RETIREMENT
SCHEDULE OF CHANGES IN
for the Fiscal Year Ended
(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Total pension liability			
Service cost	\$ 791,979	\$ 441,284	\$ 32,285
Interest	3,070,454	1,824,968	161,440
Changes of benefit terms	-	-	(2,167)
Difference between expected and actual experience	(466,863)	(204,581)	1,513
Changes in assumptions	92,669	55,131	2,013
Benefit payments, including refunds of employee contributions	(2,205,310)	(1,381,043)	(122,720)
Net change in total pension liability	<u>1,282,929</u>	<u>735,759</u>	<u>72,364</u>
Total pension liability, beginning of year	<u>41,633,276</u>	<u>24,794,295</u>	<u>2,196,929</u>
Total pension liability, end of year (a)	<u>\$ 42,916,205</u>	<u>\$ 25,530,54</u>	<u>\$ 2,269,293</u>
Plan fiduciary net position			
Contributions - employer	\$ 1,122,986	\$ 707,194	\$ 80,241
Contributions - members	484,923	283,670	8,063
Net investment income	2,364,521	1,318,438	109,405
Benefit payments, including refunds and administrative expenses	(2,223,399)	(1,395,375)	(122,963)
Net Transfer	229	(1,653)	21
Net Change in Plan Fiduciary Net Position	<u>1,749,260</u>	<u>912,274</u>	<u>74,767</u>
Plan fiduciary net position - beginning of year	<u>29,731,192</u>	<u>16,540,665</u>	<u>1,371,781</u>
Plan fiduciary net position - end of year (b)	<u>\$ 31,480,452</u>	<u>\$ 17,452,939</u>	<u>\$ 1,446,548</u>
Employer net pension liability (a) - (b)	<u>\$ 11,435,753</u>	<u>\$ 8,077,115</u>	<u>\$ 822,745</u>

AND PENSION SYSTEM
EMPLOYERS' NET PENSION LIABILITY
 June 30, 2018

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
\$ 18,482	\$ 36,988	\$ 1,321,018
40,740	106,465	5,204,067
-	4,566	2,399
(14,982)	13,780	(671,133)
(139)	4,655	154,329
(32,009)	(71,650)	(3,812,732)
<u>12,092</u>	<u>94,804</u>	<u>2,197,948</u>
549,838	1,436,547	70,610,885
<u>\$ 561,930</u>	<u>\$ 1,531,351</u>	<u>\$ 72,808,833</u>
\$ 22,465	\$ 62,131	\$ 1,995,017
3,071	11,855	791,582
35,195	71,834	3,899,393
(32,063)	(72,143)	(3,845,943)
-	1,403	-
28,668	75,080	2,840,049
441,351	902,195	48,987,184
<u>\$ 470,019</u>	<u>\$ 977,275</u>	<u>\$ 51,827,233</u>
<u>\$ 91,911</u>	<u>\$ 554,076</u>	<u>\$ 20,981,600</u>

REQUIRED SUPPLEMENTARY INFORMATION

MARYLAND STATE RETIREMENT
SCHEDULE OF CHANGES IN
for the Fiscal Year Ended
(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Total pension liability			
Service cost	\$ 777,084	\$ 444,566	\$ 32,324
Interest	3,010,496	1,806,261	160,396
Difference between expected and actual experience	(644,543)	(545,442)	(45,314)
Changes in assumptions	76,937	47,996	1,438
Benefit payments, including refunds of employee contributions	(2,120,119)	(1,305,891)	(118,833)
Net change in total pension liability	<u>1,099,855</u>	<u>447,490</u>	<u>30,011</u>
Total pension liability, beginning of year	40,533,421	24,346,805	2,166,918
Total pension liability, end of year (a)	<u>\$ 41,633,276</u>	<u>\$ 24,794,295</u>	<u>\$ 2,196,929</u>
Plan fiduciary net position			
Contributions - employer	\$ 1,137,472	\$ 730,506	\$ 83,000
Contributions - members	477,194	282,742	7,996
Net investment income	2,710,602	1,516,095	125,128
Benefit payments, including refunds and administrative expenses	(2,136,132)	(1,319,014)	(118,531)
Net Transfer	<u>(157)</u>	<u>(1,117)</u>	<u>56</u>
Net Change in Plan Fiduciary Net Position	2,188,979	1,209,212	97,649
Plan fiduciary net position - beginning of year	27,542,213	15,331,453	1,274,132
Plan fiduciary net position - end of year (b)	<u>\$ 29,731,192</u>	<u>\$ 16,540,665</u>	<u>\$ 1,371,781</u>
Employer net pension liability (a) - (b)	<u>\$ 11,902,084</u>	<u>\$ 8,253,630</u>	<u>\$ 825,148</u>

AND PENSION SYSTEM
EMPLOYERS' NET PENSION LIABILITY

June 30, 2017

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
\$ 18,225	\$ 36,059	\$ 1,308,258
40,009	102,873	5,120,035
(13,325)	(18,348)	(1,266,972)
(136)	3,940	130,175
(31,253)	(64,468)	(3,640,564)
<u>13,520</u>	<u>60,056</u>	<u>1,650,932</u>
536,318	1,376,491	68,959,953
<u>\$ 549,838</u>	<u>\$ 1,436,547</u>	<u>\$ 70,610,885</u>
\$ 21,861	\$ 60,473	\$ 2,033,312
3,004	11,753	782,689
40,128	81,490	4,473,443
(31,302)	(63,207)	(3,668,186)
(2)	1,220	-
<u>33,689</u>	<u>91,729</u>	<u>3,621,258</u>
407,662	810,466	45,365,926
<u>\$ 441,351</u>	<u>\$ 902,195</u>	<u>\$ 48,987,184</u>
<u>\$ 108,487</u>	<u>\$ 534,352</u>	<u>\$ 21,623,701</u>

REQUIRED SUPPLEMENTARY INFORMATION

MARYLAND STATE RETIREMENT
SCHEDULE OF CHANGES IN
for the Fiscal Year Ended
(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Total pension liability			
Service cost	\$ 763,578	\$ 439,705	\$ 30,309
Interest	2,914,637	1,737,109	155,993
Changes of benefit terms	-	-	-
Difference between expected and actual experience	(327,577)	16,870	(8,573)
Changes in assumptions	-	-	-
Benefit payments, including refunds of employee contributions	(2,056,256)	(1,255,358)	(121,917)
Net change in total pension liability	<u>1,294,382</u>	<u>938,326</u>	<u>55,812</u>
Total pension liability, beginning of year	<u>39,239,039</u>	<u>23,408,479</u>	<u>2,111,106</u>
Total pension liability, end of year (a)	<u><u>\$ 40,533,421</u></u>	<u><u>\$ 24,346,805</u></u>	<u><u>\$ 2,166,918</u></u>
Plan fiduciary net position			
Contributions - employer	\$ 1,084,049	\$ 640,943	\$ 72,320
Contributions - members	464,470	278,944	7,251
Net investment income	301,774	168,775	13,806
Benefit payments, including refunds and administrative expenses	(2,071,845)	(1,267,809)	(122,123)
Net Transfer	(163)	(191)	41
Net Change in Plan Fiduciary Net Position	<u>(221,715)</u>	<u>(179,338)</u>	<u>(28,705)</u>
Plan fiduciary net position - beginning of year	<u>27,763,928</u>	<u>15,510,791</u>	<u>1,302,837</u>
Plan fiduciary net position - end of year (b)	<u><u>\$ 27,542,213</u></u>	<u><u>\$ 15,331,453</u></u>	<u><u>\$ 1,274,132</u></u>
Employer net pension liability (a) - (b)	<u><u>\$ 12,991,208</u></u>	<u><u>\$ 9,015,352</u></u>	<u><u>\$ 892,786</u></u>

AND PENSION SYSTEM
EMPLOYERS' NET PENSION LIABILITY

June 30, 2016

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
\$ 17,295	\$ 34,001	\$ 1,284,888
37,910	97,371	4,943,020
-	-	-
2,999	4,629	(311,652)
-	-	-
(30,487)	(63,837)	(3,527,855)
<u>27,717</u>	<u>72,164</u>	<u>2,388,401</u>
508,601	1,304,327	66,571,552
<u>\$ 536,318</u>	<u>\$ 1,376,491</u>	<u>\$ 68,959,953</u>
\$ 18,384	\$ 54,959	\$ 1,870,655
2,863	10,886	764,414
4,415	8,761	497,531
(30,532)	(64,205)	(3,556,514)
-	313	-
<u>(4,870)</u>	<u>10,714</u>	<u>(423,914)</u>
412,532	799,752	45,789,840
<u>\$ 407,662</u>	<u>\$ 810,466</u>	<u>\$ 45,365,926</u>
\$ 128,656	\$ 566,025	\$ 23,594,027
<u><u>128,656</u></u>	<u><u>566,025</u></u>	<u><u>23,594,027</u></u>

REQUIRED SUPPLEMENTARY INFORMATION

MARYLAND STATE RETIREMENT
SCHEDULE OF CHANGES IN
for the Fiscal Year Ended
(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Total pension liability			
Service cost	\$ 783,603	\$ 461,524	\$ 30,556
Interest	2,811,261	1,663,866	147,839
Changes of benefit terms	-	-	-
Difference between expected and actual experience	(476,190)	(19,591)	(10,512)
Changes in assumptions	753,521	375,148	86,689
Benefit payments, including refunds of employee contributions	(1,958,092)	(1,170,116)	(119,804)
Net change in total pension liability	<u>1,914,103</u>	<u>1,310,831</u>	<u>134,768</u>
Total pension liability, beginning of year	<u>37,324,936</u>	<u>22,097,648</u>	<u>1,976,338</u>
Total pension liability, end of year (a)	<u>\$ 39,239,039</u>	<u>\$ 23,408,479</u>	<u>\$ 2,111,106</u>
Plan fiduciary net position			
Contributions - employer	\$ 1,063,763	\$ 643,219	\$ 76,056
Contributions - members	454,770	280,133	7,205
Net investment income	727,858	405,846	33,035
Benefit payments, including refunds and administrative expenses	(1,973,827)	(1,182,886)	(120,006)
Net Transfer	309	(535)	-
Net Change in Plan Fiduciary Net Position	<u>272,873</u>	<u>145,777</u>	<u>(3,710)</u>
Plan fiduciary net position - beginning of year	<u>27,491,055</u>	<u>15,365,014</u>	<u>1,306,547</u>
Plan fiduciary net position - end of year (b)	<u>\$ 27,763,928</u>	<u>\$ 15,510,791</u>	<u>\$ 1,302,837</u>
Employer net pension liability (a) - (b)	<u>\$ 11,475,111</u>	<u>\$ 7,897,688</u>	<u>\$ 808,269</u>

AND PENSION SYSTEM
EMPLOYERS' NET PENSION LIABILITY

June 30, 2015

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
\$ 16,306	\$ 33,934	\$ 1,325,923
34,735	93,085	4,750,786
-	-	-
(843)	(5,846)	(512,982)
27,072	11,471	1,253,901
(28,899)	(55,884)	(3,332,795)
<u>48,371</u>	<u>76,760</u>	<u>3,484,833</u>
460,230	1,227,567	63,086,719
<u>\$ 508,601</u>	<u>\$ 1,304,327</u>	<u>\$ 66,571,552</u>
\$ 19,028	\$ 56,546	\$ 1,858,612
2,813	10,523	755,444
10,759	20,173	1,197,671
(28,945)	(56,211)	(3,361,875)
(6)	232	-
<u>3,649</u>	<u>31,031</u>	<u>449,852</u>
408,883	768,489	45,339,988
<u>\$ 412,532</u>	<u>\$ 799,752</u>	<u>\$ 45,789,840</u>
<u>\$ 96,069</u>	<u>\$ 504,575</u>	<u>\$ 20,781,712</u>

REQUIRED SUPPLEMENTARY INFORMATION

MARYLAND STATE RETIREMENT
SCHEDULE OF CHANGES IN
for the Fiscal Year Ended
(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Total pension liability			
Service cost	\$ 796,354	\$ 469,747	\$ 28,508
Interest	2,694,942	1,597,397	141,875
Changes of benefit terms	-	-	-
Difference between expected and actual experience	-	-	-
Changes in assumptions	182,000	86,638	33,418
Benefit payments, including refunds of employee contributions	(1,878,801)	(1,121,293)	(109,964)
Net change in total pension liability	<u>1,794,495</u>	<u>1,032,489</u>	<u>93,837</u>
Total pension liability, beginning of year	<u>35,530,441</u>	<u>21,065,159</u>	<u>1,882,501</u>
Total pension liability, end of year (a)	<u>\$ 37,324,936</u>	<u>\$ 22,097,648</u>	<u>\$ 1,976,338</u>
Plan fiduciary net position			
Contributions - employer	\$ 1,000,193	\$ 592,185	\$ 56,243
Contributions - members	441,559	267,139	6,592
Net investment income	3,458,512	1,940,319	165,097
Benefit payments, including refunds and administrative expenses	(1,878,801)	(1,121,293)	(109,964)
Net Transfer	(33)	(210)	16
Net Change in Plan Fiduciary Net Position	<u>3,021,430</u>	<u>1,678,140</u>	<u>117,984</u>
Plan fiduciary net position - beginning of year	<u>24,469,625</u>	<u>13,686,874</u>	<u>1,188,563</u>
Plan fiduciary net position - end of year (b)	<u>\$ 27,491,055</u>	<u>\$ 15,365,014</u>	<u>\$ 1,306,547</u>
Employer net pension liability (a) - (b)	<u>\$ 9,833,881</u>	<u>\$ 6,732,634</u>	<u>\$ 669,791</u>

AND PENSION SYSTEM
EMPLOYERS' NET PENSION LIABILITY

June 30, 2014

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
\$ 15,309	\$ 31,927	\$ 1,341,845
33,337	87,207	4,554,758
-	-	-
-	-	-
46	18,798	320,900
(27,298)	(53,519)	(3,190,875)
<u>21,394</u>	<u>84,413</u>	<u>3,026,628</u>
438,836	1,143,154	60,060,091
<u>\$ 460,230</u>	<u>\$ 1,227,567</u>	<u>\$ 63,086,719</u>
\$ 21,110	\$ 63,922	\$ 1,733,653
2,566	9,870	727,726
50,173	92,166	5,706,267
(27,298)	(53,519)	(3,190,875)
-	227	-
<u>46,551</u>	<u>112,666</u>	<u>4,976,771</u>
362,332	655,823	40,363,217
<u>\$ 408,883</u>	<u>\$ 768,489</u>	<u>\$ 45,339,988</u>
<u>\$ 51,347</u>	<u>\$ 459,078</u>	<u>\$ 17,746,731</u>

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2023

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$ 51,307,724	\$ 31,075,381	\$ 2,739,580	\$ 690,371	\$ 2,110,228	\$ 87,923,284
Plan fiduciary net position	(39,421,232)	(21,622,354)	(1,851,047)	(584,909)	(1,413,431)	(64,892,973)
Employer net pension liability	\$ 11,886,492	\$ 9,453,027	\$ 888,533	\$ 105,462	\$ 696,797	\$ 23,030,311
Plan fiduciary net position as a percentage of the total pension liability	76.83%	69.58%	67.57%	84.72%	66.98%	73.81%
Covered payroll	\$ 8,468,612	\$ 5,475,886	\$ 139,458	\$ 58,696	\$ 241,937	\$ 14,384,589
Employer net pension liability as a percent of covered-employee payroll	140.36%	172.63%	637.13%	179.67%	288.01%	160.10%

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2022

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$ 49,235,396	\$ 29,867,155	\$ 2,603,567	\$ 645,502	\$ 1,967,903	\$ 84,319,523
Plan fiduciary net position	(39,126,178)	(21,428,734)	(1,820,763)	(582,543)	(1,352,773)	(64,310,991)
Employer net pension liability	\$ 10,109,218	\$ 8,438,421	\$ 782,804	\$ 62,959	\$ 615,130	\$ 20,008,532
Plan fiduciary net position as a percentage of the total pension liability	79.47%	71.75%	69.93%	90.25%	68.74%	76.27%
Covered payroll	\$ 7,957,775	\$ 4,852,737	\$ 124,367	\$ 53,934	\$ 213,003	\$ 13,201,816
Employer net pension liability as a percent of covered-employee payroll	127.04%	173.89%	629.43%	116.73%	288.79%	151.56%

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2021

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$ 48,149,763	\$ 29,412,444	\$ 2,533,456	\$ 627,781	\$ 1,883,361	\$ 82,606,805
Plan fiduciary net position	(41,120,780)	(22,577,487)	(1,907,226)	(613,660)	(1,385,344)	(67,604,497)
Employer net pension liability	\$ 7,028,983	\$ 6,834,957	\$ 626,230	\$ 14,121	\$ 498,017	\$ 15,002,308
Plan fiduciary net position as a percentage of the total pension liability	85.40%	76.76%	75.28%	97.75%	73.56%	81.84%
Covered payroll	\$ 7,688,846	\$ 4,689,819	\$ 119,048	\$ 52,073	\$ 199,460	\$ 12,749,246
Employer net pension liability as a percent of covered-employee payroll	91.42%	145.74%	526.03%	27.12%	249.68%	117.67%

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2020

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$ 44,981,152	\$ 27,533,679	\$ 2,378,827	\$ 584,225	\$ 1,709,516	\$ 77,187,399
Plan fiduciary net position	(33,215,011)	(18,250,832)	(1,536,121)	(496,848)	(1,087,225)	(54,586,037)
Employer net pension liability	\$ 11,766,141	\$ 9,282,847	\$ 842,706	\$ 87,377	\$ 622,291	\$ 22,601,362
Plan fiduciary net position as a percentage of the total pension liability	73.84%	66.29%	64.57%	85.04%	63.60%	70.72%
Covered payroll	\$ 7,492,465	\$ 4,646,134	\$ 116,274	\$ 51,882	\$ 194,667	\$ 12,501,422
Employer net pension liability as a percent of covered payroll	157.04%	199.80%	724.76%	168.41%	319.67%	180.79%

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2019

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$ 43,489,231	\$ 26,619,803	\$ 2,284,106	\$ 563,258	\$ 1,612,632	\$ 74,569,030
Plan fiduciary net position	(32,802,926)	(18,095,400)	(1,510,328)	(490,017)	(1,044,749)	(53,943,420)
Employer net pension liability	\$ 10,686,305	\$ 8,524,403	\$ 773,778	\$ 73,241	\$ 567,883	\$ 20,625,610
Plan fiduciary net position as a percentage of the total pension liability	75.43%	67.98%	66.12%	87.00%	64.79%	72.34%
Covered payroll	\$ 7,153,063	\$ 4,415,523	\$ 106,978	\$ 48,935	\$ 180,964	\$ 11,905,463
Employer net pension liability as a percent of covered payroll	149.39%	193.06%	723.31%	149.67%	313.81%	173.24%

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2018

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$ 42,916,205	\$ 25,530,054	\$ 2,269,293	\$ 561,930	\$ 1,531,351	\$ 72,808,833
Plan fiduciary net position	(31,480,452)	(17,452,939)	(1,446,548)	(470,019)	(977,275)	(51,827,233)
Employer net pension liability	\$ 11,435,753	\$ 8,077,115	\$ 822,745	\$ 91,911	\$ 554,076	\$ 20,981,600
Plan fiduciary net position as a percentage of the total pension liability	73.35%	68.36%	63.74%	83.64%	63.82%	71.18%
Covered payroll	\$ 6,941,097	\$ 4,306,746	\$ 100,325	\$ 47,498	\$ 170,556	\$ 11,566,222
Employer net pension liability as a percent of covered payroll	164.75%	187.55%	820.08%	193.50%	324.86%	181.40%

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2017

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$ 41,633,276	\$ 24,794,295	\$ 2,196,929	\$ 549,838	\$ 1,436,547	\$ 70,610,885
Plan fiduciary net position	(29,731,192)	(16,540,665)	(1,371,781)	(441,351)	(902,195)	(48,987,184)
Employer net pension liability	\$ 11,902,084	\$ 8,253,630	\$ 825,148	\$ 108,487	\$ 534,352	\$ 21,623,701
Plan fiduciary net position as a percentage of the total pension liability	71.41%	66.71%	62.44%	80.27%	62.80%	69.38%
Covered payroll	\$ 6,780,838	\$ 4,324,315	\$ 100,384	\$ 46,876	\$ 166,561	\$ 11,418,974
Employer net pension liability as a percent of covered payroll	175.53%	190.87%	821.99%	231.43%	320.81%	189.37%

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2016

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$ 40,533,421	\$ 24,346,805	\$ 2,166,918	\$ 536,318	\$ 1,376,491	\$ 68,959,953
Plan fiduciary net position	(27,542,213)	(15,331,453)	(1,274,132)	(407,662)	(810,466)	(45,365,926)
Employer net pension liability	\$ 12,991,208	\$ 9,015,352	\$ 892,786	\$ 128,656	\$ 566,025	\$ 23,594,027
Plan fiduciary net position as a percentage of the total pension liability	67.95%	62.97%	58.80%	76.01%	58.88%	65.79%
Covered payroll	\$ 6,611,038	\$ 4,250,288	\$ 93,491	\$ 44,711	\$ 156,396	\$ 11,155,924
Employer net pension liability as a percent of covered payroll	196.51%	212.11%	954.94%	287.75%	361.92%	211.49%

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2015

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$ 39,239,039	\$ 23,408,479	\$ 2,111,106	\$ 508,601	\$ 1,304,327	\$ 66,571,552
Plan fiduciary net position	(27,763,928)	(15,510,791)	(1,302,837)	(412,532)	(799,752)	(45,789,840)
Employer net pension liability	\$ 11,475,111	\$ 7,897,688	\$ 808,269	\$ 96,069	\$ 504,575	\$ 20,781,712
Plan fiduciary net position as a percentage of the total pension liability	70.76%	66.26%	61.71%	81.11%	61.32%	68.78%
Covered payroll	\$ 6,470,706	\$ 4,305,637	\$ 91,050	\$ 44,613	\$ 151,955	\$ 11,063,961
Employer net pension liability as a percent of covered payroll	177.34%	183.43%	887.72%	215.34%	332.06%	187.83%

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2014

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$ 37,324,936	\$ 22,097,648	\$ 1,976,338	\$ 460,230	\$ 1,227,567	\$ 63,086,719
Plan fiduciary net position	(27,491,055)	(15,365,014)	(1,306,547)	(408,883)	(768,489)	(45,339,988)
Employer net pension liability	\$ 9,833,881	\$ 6,732,634	\$ 669,791	\$ 51,347	\$ 459,078	\$ 17,746,731
Plan fiduciary net position as a percentage of the total pension liability	73.65%	69.53%	66.11%	88.84%	62.60%	71.87%
Covered payroll	\$ 6,310,253	\$ 4,219,732	\$ 85,660	\$ 42,313	\$ 145,673	\$ 10,803,631
Employer net pension liability as a percent of covered payroll	155.84%	159.55%	781.92%	121.35%	315.14%	164.27%

SCHEDULE OF EMPLOYERS' CONTRIBUTIONS AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2023

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Actuarially determined contribution	\$ 1,228,568	\$ 985,126	\$ 106,966	\$ 23,675	\$ 94,582	\$ 2,438,917
Actual contribution	(1,228,568)	(985,126)	(106,966)	(23,675)	(94,582)	(2,438,917)
Contribution deficiency	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered payroll	\$ 8,468,612	\$ 5,475,886	\$ 139,458	\$ 58,696	\$ 241,937	\$ 14,384,589
Actual contribution as a percent of covered payroll	14.51%	17.99%	76.70%	40.33%	39.09%	16.96%

SCHEDULE OF EMPLOYERS' CONTRIBUTIONS AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2022

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Actuarially determined contribution	\$ 1,202,102	\$ 880,672	\$ 95,453	\$ 22,816	\$ 81,260	\$ 2,282,303
Actual contribution	(1,202,102)	(880,672)	(95,453)	(22,816)	(81,260)	(2,282,303)
Contribution deficiency	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered payroll	\$ 7,957,775	\$ 4,852,737	\$ 124,367	\$ 53,934	\$ 213,003	\$ 13,201,816
Actual contribution as a percent of covered payroll	15.11%	18.15%	76.75%	42.30%	38.15%	17.29%

SCHEDULE OF EMPLOYERS' CONTRIBUTIONS AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2021

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Actuarially determined contribution	\$1,153,208	\$856,219	\$93,651	\$21,277	\$79,168	\$2,203,523
Actual contribution	(1,153,208)	(856,219)	(93,651)	(21,277)	(79,168)	(2,203,523)
Contribution deficiency	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered payroll	\$ 7,688,846	\$ 4,689,819	\$ 119,048	\$ 52,073	\$ 199,460	\$ 12,749,246
Actual contribution as a percent of covered payroll	15.00%	18.26%	78.67%	40.86%	39.69%	17.28%

SCHEDULE OF EMPLOYERS' CONTRIBUTIONS AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2020

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Actuarially determined contribution	\$ 1,170,248	\$ 788,853	\$ 91,390	\$ 22,708	\$ 71,070	\$ 2,144,269
Actual contribution	(1,170,248)	(788,853)	(91,390)	(22,708)	(71,070)	(2,144,269)
Contribution deficiency	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered payroll	\$ 7,492,465	\$ 4,646,134	\$ 116,274	\$ 51,882	\$ 194,667	\$ 12,501,422
Actual contribution as a percent of covered payroll	15.62%	16.98%	78.60%	43.77%	36.51%	17.15%

SCHEDULE OF EMPLOYERS' CONTRIBUTIONS AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2019

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Actuarially determined contribution	\$ 1,143,584	\$ 737,284	\$ 86,172	\$ 21,737	\$ 65,314	\$ 2,054,091
Actual contribution	(1,143,584)	(737,284)	(86,172)	(21,737)	(65,314)	(2,054,091)
Contribution deficiency	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered payroll	\$ 7,153,063	\$ 4,415,523	\$ 106,978	\$ 48,935	\$ 180,964	\$ 11,905,463
Actual contribution as a percent of covered payroll	15.99%	16.70%	80.55%	44.42%	36.09%	17.25%

SCHEDULE OF EMPLOYERS' CONTRIBUTIONS AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2018

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Actuarially determined contribution	\$ 1,122,986	\$ 707,194	\$ 80,241	\$ 22,465	\$ 62,131	\$ 1,995,017
Actual contribution	(1,122,986)	(707,194)	(80,241)	(22,465)	(62,131)	(1,995,017)
Contribution deficiency	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered payroll	\$ 6,941,097	\$ 4,306,746	\$ 100,325	\$ 47,498	\$ 170,556	\$ 11,566,222
Actual contribution as a percent of covered payroll	16.18%	16.42%	79.98%	47.30%	36.43%	17.25%

SCHEDULE OF EMPLOYERS' CONTRIBUTIONS AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2017

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Actuarially determined contribution	\$ 1,137,472	\$ 730,506	\$ 83,000	\$ 21,861	\$ 60,473	\$ 2,033,312
Actual contribution	(1,137,472)	(730,506)	(83,000)	(21,861)	(60,473)	(2,033,312)
Contribution deficiency	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered payroll	\$ 6,780,838	\$ 4,324,315	\$ 100,384	\$ 46,876	\$ 166,561	\$ 11,418,974
Actual contribution as a percent of covered payroll	16.77%	16.89%	82.68%	46.64%	36.31%	17.81%

SCHEDULE OF EMPLOYERS' CONTRIBUTIONS AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2016

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Actuarially determined contribution	\$ 1,112,989	\$ 689,431	\$ 72,320	\$ 18,384	\$ 54,959	\$ 1,948,083
Actual contribution	(1,084,049)	(640,943)	(72,320)	(18,384)	(54,959)	(1,870,655)
Contribution deficiency	\$ 28,940	\$ 48,488	\$ -	\$ -	\$ -	\$ 77,428
Covered payroll	\$ 6,611,038	\$ 4,250,288	\$ 93,491	\$ 44,711	\$ 156,396	\$ 11,155,924
Actual contribution as a percent of covered payroll	16.40%	15.08%	77.36%	41.12%	35.14%	16.77%

SCHEDULE OF EMPLOYERS' CONTRIBUTIONS AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2015

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Actuarially determined contribution	\$ 1,189,318	\$ 766,782	\$ 76,056	\$ 19,028	\$ 56,546	\$ 2,107,730
Actual contribution	(1,063,763)	(643,219)	(76,056)	(19,028)	(56,546)	(1,858,612)
Contribution deficiency (excess)	\$ 125,555	\$ 123,563	\$ -	\$ -	\$ -	\$ 249,118
Covered payroll	\$ 6,470,706	\$ 4,305,637	\$ 91,050	\$ 44,613	\$ 151,955	\$ 11,063,961
Actual contribution as a percent of covered payroll	16.44%	14.94%	83.53%	42.65%	37.21%	16.80%

SCHEDULE OF EMPLOYERS' CONTRIBUTIONS AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2014

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Actuarially determined contribution	\$ 1,358,991	\$ 812,643	\$ 64,325	\$ 21,110	\$ 63,922	\$ 2,320,991
Actual contribution	(1,000,193)	(592,185)	(56,243)	(21,110)	(63,922)	(1,733,653)
Contribution deficiency (excess)	\$ 358,798	\$ 220,458	\$ 8,082	\$ -	\$ -	\$ 587,338
Covered payroll	\$ 6,310,253	\$ 4,219,732	\$ 85,660	\$ 42,313	\$ 145,673	\$ 10,803,631
Actual contribution as a percent of covered payroll	15.85%	14.03%	65.66%	49.89%	43.88%	16.05%

SCHEDULE OF INVESTMENT RETURNS

Fiscal Year Ended	Annual money-weighted rate of return, net of investment expenses
2014	14.38%
2015	2.68%
2016	1.16%
2017	10.02%
2018	8.08%
2019	6.44%
2020	3.50%
2021	26.69%
2022	-2.97%
2023	3.11%

*This disclosure is intended to capture performance net of pension plan investment expense, which has been adjusted for changing amounts actually invested, taking into consideration benefit payments and contributions. Currently, the Agency is experiencing net outflows resulting in contributions being used to pay benefits rather than flowing through invested funds; therefore, there is minimal variation between this schedule and the time-weighted rates of return presented in the Investment Section of this report.

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

1 ACTUARIAL METHODS AND ASSUMPTIONS

A. Funding Method

All six Systems use the individual entry age normal method to determine costs. Under this funding method, a total contribution rate is determined which consists of two elements, the normal cost rate and the Unfunded Actuarial Liability (UAL) rate.

The individual Entry Age Normal cost rate is determined as the value, as of age at entry into the plan, of the member's projected future benefits, and divided by the value, also as of the member's entry age, of the member's expected future salary. For purposes of calculating the normal cost rate, the same benefit accrual rates used to calculate the present value of future benefits are used to calculate the normal cost. The benefit provisions applicable to each member are used in developing his/her individual normal cost rate.

In addition to contributions required to meet the System's normal cost, contributions will be required to fund the System's unfunded actuarial liability. Actuarial liability is defined as the present value of future benefits less the present value of future normal costs. The unfunded actuarial liability for all members is the actuarial liability less the actuarial value of the System's assets. The System's unfunded actuarial liability is funded over a 25-year closed amortization period ending June 30, 2039 (15 years remaining as of the June 30, 2023 valuation date) as a level percentage of payroll.

There is an additional component in the Unfunded Actuarial Accrued Liability amortization contribution rate that accounts for the effects of the lag between the valuation date and when the contribution is made. This calculation assumes the contributions that would be received in fiscal year 2024 are equal to the budgeted contributions developed in the valuation as of June 30, 2022, plus the proportionate share of reinvested savings allocated to each System for fiscal year 2024 under the pension reforms.

A portion of the savings from the 2011 pension reforms passed by the General Assembly are to be reinvested as additional contributions into the Systems. Beginning in fiscal year 2016, \$75 million of additional contributions are to be reinvested each year until the combined System reaches 85% funded.

B. Asset Valuation Method

All six Systems use a method based on the principle that the difference between actual and expected investment returns should be subject to partial recognition to smooth out fluctuations in the total return achieved by the fund from year to year. Under this method, the actuarial value of assets reflects annually one-fifth of the market value gains or losses for the five prior years. The resulting value is restricted to be not less than 80% of market value nor greater than 120% of market value.

C. Actuarial Assumptions

The assumptions used for the actuarial valuation were recommended by the System's independent actuary, based upon periodic analyses of the System's experience, and adopted by the Board of Trustees. The most recent analysis of the System's experience was performed in 2019 and new assumptions were adopted for the June 30, 2019 valuation. A subsequent analysis of the System's economic assumptions was performed in 2021 and the Board adopted new assumptions effective for the June 30, 2021 valuation. Differences between assumed and actual experience (i.e., actuarial gains and losses) are part of the unfunded actuarial liability. The actuarial assumptions used in the actuarial valuation as of June 30, 2023 can be found in Note 8.

OTHER SUPPLEMENTARY INFORMATION

SCHEDULE OF FUNDING PROGRESS

(Expressed in Thousands)

Actuarial Valuation Date June 30,	Actuarial Value of Assets a	Actuarial Accrued Liability (AAL) b	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll c	UAAL as a Percentage of Covered Payroll [(b - a) / c]
2014	\$ 42,996,957	\$ 62,610,194	\$ 19,613,237	68.67%	\$ 10,803,632	182%
2015	46,170,624	66,281,781	20,111,157	69.66%	11,063,961	182%
2016	47,803,679	67,781,924	19,978,245	70.53%	11,155,924	179%
2017	50,250,465	69,986,576	19,736,111	71.80%	11,418,974	173%
2018	52,586,528	72,574,689	19,988,161	72.46%	11,566,220	173%
2019	54,361,969	74,526,000	20,164,031	72.94%	11,905,463	169%
2020	56,246,776	76,471,035	20,224,259	73.55%	12,501,422	162%
2021	62,817,938	81,738,557	18,920,619	76.85%	12,749,247	148%
2022	65,798,923	85,248,064	19,449,141	77.19%	13,201,815	147%
2023	67,985,366	90,319,369	22,334,003	75.27%	14,384,589	155%

DESCRIPTION OF SCHEDULE OF FUNDING PROGRESS

The Schedule of Funding Progress summarizes the actuarial value of the System's assets and actuarial accrued liability as of the June 30, 2023 actuarial valuation date and each of the 10 preceding years. The data presented in the schedule was obtained from the System's independent actuary's annual valuation report for each year presented.

The schedule is presented to provide a consistent basis for measuring the System's annual progress toward funding its actuarial accrued liability in accordance with its actuarial funding method. The primary measure of funding progress is the System's funded ratio (i.e., actuarial value of assets expressed as a percentage of the actuarial accrued liability). An increase in the funded ratio indicates improvement in the System's ability to pay all projected benefits as they become due. The System is fully funded if the funded ratio is greater than or equal to 100 percent. During the year ended June 30, 2023 the System's funded ratio decreased from 77.19% to 75.27%.

The Schedule of Funding Progress also discloses the relationship between the System's covered payroll (i.e., all elements included in compensation paid to active members on which contributions are based) and the unfunded actuarial accrued liability. This relationship, expressed as a ratio, is a measure of the significance of the unfunded actuarial accrued liability relative to the capacity to contribute based on the active participants covered payroll. During the year ended June 30, 2023 the System's ratio of the unfunded actuarial accrued liability to its covered payroll increased from 147% to 155%.

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

SCHEDULE OF ADMINISTRATIVE EXPENSES

for the Fiscal Years Ended June 30, 2023 and 2022

(Expressed in Thousands)

	2023	2022
Personnel services		
Staff salaries	\$13,045	\$18,173
Fringe benefits	6,643	8,227
Total personnel services	<u>19,688</u>	<u>26,400</u>
Professional and contractual services		
Actuarial services	358	364
Legal and financial services	827	522
Consulting services	146	814
Data processing services	4,004	3,829
Other contractual services	16,147	5,362
Total professional and contractual services	<u>21,482</u>	<u>10,891</u>
Miscellaneous		
Communications	800	565
Rent	2,020	2,017
Equipment and supplies	446	219
Other	1,578	1,969
Total miscellaneous	<u>4,844</u>	<u>4,770</u>
Total Administrative Expenses	<u>\$46,014</u>	<u>\$42,061</u>

SCHEDULE OF INVESTMENT EXPENSES

for the Fiscal Years Ended June 30, 2023 and 2022

(Expressed in Thousands)

	Management Fees for 2023	Incentive Fees for 2023	Total	Management Fees for 2022	Incentive Fees for 2022	Total
Investment advisors						
Public equity	\$ 72,314	\$ (2,194)	\$ 70,120	\$ 88,940	\$ 84,688	\$ 173,628
Rate Sensitive	15,528	13,994	29,522	14,210	8,586	22,796
Credit opportunity	24,252	152	24,404	25,102	49	25,151
Real return	17,957	157	18,114	14,931	118	15,049
Absolute return	49,807	43,337	93,144	60,164	70,211	130,375
Commodity	-	537	537	1,272	-	1,272
Multi Asset	1,113	-	1,113	133,844	-	133,844
Private equity	125,807	-	125,807	45,273	8,387	53,660
Real estate	55,067	4,549	59,616	383,736	172,039	555,775
Total investment advisory fees	<u>361,845</u>	<u>60,532</u>	<u>422,377</u>			
Other investment service fees				4,271	-	4,271
Currency overlay	3,195	-	3,195	4,914	-	4,914
Other investment expenses	4,898	-	4,898	9,185	-	9,185
Total other investment service fees	<u>8,093</u>	<u>-</u>	<u>8,093</u>			
Total Investment Expenses	<u>\$ 369,938</u>	<u>\$ 60,532</u>	<u>\$ 430,470</u>	<u>\$ 392,921</u>	<u>\$ 172,039</u>	<u>\$ 564,960</u>

Fund Balance Accounts

As provided by law, all System assets must be credited, according to the purpose for which they are held, to either the Annuity Savings Fund, the Accumulation Fund, or the Expense Fund. These funds are classified as accounts for financial reporting purposes and are further explained as follows:

Annuity Savings Fund

Members' contributions together with interest thereon, at statutory interest rates, are credited to the Annuity Savings Fund. Upon retirement, members' accumulated contributions and interest are transferred from the Annuity Savings Fund to the Accumulation Fund.

Accumulation Fund

Contributions made by employers, other contributions and investment income are credited to the Accumulation Fund. All retirement, disability, and death benefits are paid from this Fund.

Expense Fund

All of the System's administrative and investment management expenses are recorded in the Expense Fund. During the year, the System's investment expenses are covered by funds transferred from the Accumulation Fund, and the System's administrative expenses are covered by administrative fees assessed and collected from each participating employer into the Accumulation Fund and transferred to the Expense Fund to cover annual operating and administrative expenses of the System.

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

SCHEDULE OF FUND BALANCES

for the Fiscal Year Ended June 30, 2023 (with Comparative 2022 Totals)

(Expressed in Thousands)

	Annuity Savings Fund	Accumulation Fund	Expense Fund	Totals	
				2023	2022
Fund Balances, Beginning of Year	<u>\$ 11,406,235</u>	<u>\$ 52,901,928</u>	<u>\$ 2,828</u>	<u>\$ 64,310,991</u>	<u>\$ 67,604,500</u>
Additions					
Net investment income (loss)	-	2,410,747	(430,470)	1,980,277	(1,942,133)
Contributions (Note 5):					
Employers	-	1,669,856	30,458	1,700,314	1,489,076
Members	963,702	-	-	963,702	894,267
State contributions on behalf of local governments	-	738,603	-	738,603	793,227
Contribution interest	-	-	-	-	-
Deductions					
Benefit payments		(4,653,163)	-	(4,653,163)	(4,394,350)
Refunds (Note 6)	(101,737)	-	-	(101,737)	(91,535)
Administrative expenses (Note 2)	-	(14,951)	(31,063)	(46,014)	(42,061)
Transfers					
From the Accumulation Fund to the Annuity Savings Fund for interest credited to members' accounts	556,493	(556,493)	-	-	-
To the Accumulation Fund from the Annuity Savings Fund for contributions of retiring members	(594,452)	594,452	-	-	-
From the Accumulation Fund to the Expense Fund for administrative and investment expenses	-	(430,468)	430,468	-	-
Net changes in fund balances	<u>824,006</u>	<u>(241,417)</u>	<u>(607)</u>	<u>581,982</u>	<u>(3,293,509)</u>
Fund Balances, End of Year	<u>\$ 12,230,241</u>	<u>\$ 52,660,511</u>	<u>\$ 2,221</u>	<u>\$ 64,892,973</u>	<u>\$ 64,310,991</u>

MARYLAND STATE RETIREMENT SCHEDULE OF FIDUCIARY NET

as of June 30, 2023

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
ASSETS			
Cash & cash equivalents (note 3)	\$ 823,956	\$ 461,229	\$ 41,065
Receivables:			
Contributions:			
Employers	17,648	50,592	5,006
Members	300	9,662	420
Accrued investment income	118,789	65,327	5,571
Investment sales proceeds	262,829	144,539	12,327
Due from other systems	82,539	50,790	345
Total receivables	<u>482,105</u>	<u>320,910</u>	<u>23,669</u>
Investments, at fair value (Notes 2 & 3)			
U.S. Government obligations	3,790,449	2,080,389	177,446
Domestic corporate obligations	2,225,610	1,221,527	104,189
International obligations	963,442	528,785	45,102
Domestic stocks	6,300,597	3,458,083	294,957
International stocks	5,807,242	3,187,306	271,860
Mortgages & mortgage related securities	1,006,599	552,472	47,123
Alternative investments	18,684,857	10,255,186	874,711
Collateral for loaned securities	3,452,497	1,898,656	161,923
Total investments	<u>42,231,293</u>	<u>23,182,404</u>	<u>1,977,311</u>
Total assets	<u>43,537,354</u>	<u>23,964,543</u>	<u>2,042,045</u>
LIABILITIES			
Accounts payable & accrued expenses	33,444	20,930	1,620
Investment commitments payable	585,909	322,213	27,479
Obligation for collateral for loaned securities	3,452,497	1,898,656	161,923
Due to other systems	44,273	100,389	(25)
Total liabilities	<u>4,116,123</u>	<u>2,342,188</u>	<u>190,997</u>
Net position restricted for pensions	<u>\$ 39,421,231</u>	<u>\$ 21,622,355</u>	<u>\$ 1,851,048</u>

* Intersystem due from/to have been eliminated in the financial statements

AND PENSION SYSTEM

POSITION BY SYSTEM

Judges' Retirement System	Law Enforcement Officers' Pension System	Subtotal	Eliminations*	Combined Total
\$ 16,136	\$ 30,983	\$ 1,373,369	\$ -	\$ 1,373,369
527	3,740	77,513	-	77,513
5	307	10,694	-	10,694
1,757	4,227	195,671	-	195,671
3,887	9,352	432,934	-	432,934
-	11,042	144,716	(144,716)	-
6,176	28,668	861,528	(144,716)	716,812
55,918	134,468	6,238,670	-	6,238,670
32,833	78,954	3,663,113	-	3,663,113
14,213	34,179	1,585,721	-	1,585,721
92,948	223,516	10,370,101	-	10,370,101
85,670	206,014	9,558,092	-	9,558,092
14,850	35,710	1,656,754	-	1,656,754
275,642	662,856	30,753,252	-	30,753,252
51,062	122,844	5,686,982	-	5,686,982
623,136	1,498,541	69,512,685	-	69,512,685
645,448	1,558,192	71,747,582	(144,716)	71,602,866
734	1,069	57,797	-	57,797
8,666	20,847	965,114	-	965,114
51,062	122,844	5,686,982	-	5,686,982
79	-	144,716	(144,716)	-
60,541	144,760	6,854,609	(144,716)	6,709,893
\$ 584,907	\$ 1,413,432	\$ 64,892,973	\$ -	\$ 64,892,973

**MARYLAND STATE RETIREMENT
SCHEDULE OF CHANGES IN**
for the Fiscal Year Ended

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
ADDITIONS			
Contributions			
Employers	\$ 489,965	\$ 985,126	\$ 106,966
Members	588,395	343,720	10,776
State contributions on behalf of local governments	738,603	-	-
Total Contributions	<u>1,816,963</u>	<u>1,328,846</u>	<u>117,742</u>
Investment Income			
Net depreciation in fair value of investments	(298,490)	(169,758)	(13,968)
Interest	349,356	193,189	16,398
Dividends	1,400,806	770,722	65,493
Income Before Securities Lending Activity	<u>1,451,672</u>	<u>794,153</u>	<u>67,923</u>
Gross income from securities lending activity:	137,816	75,836	6,448
Securities lending borrower rebates	(122,717)	(67,529)	(5,742)
Securities lending agent fees	(756)	(415)	(35)
Net income from securities lending activity	<u>14,343</u>	<u>7,892</u>	<u>671</u>
Total Investment Income	<u>1,466,015</u>	<u>802,045</u>	<u>68,594</u>
Less investment expenses:			
Investment advisory fees	(261,351)	(143,768)	(12,241)
Net investment income	<u>1,204,664</u>	<u>658,277</u>	<u>56,353</u>
Transfers from other systems	-	-	-
Total Additions	<u>3,021,627</u>	<u>1,987,123</u>	<u>174,095</u>
DEDUCTIONS			
Benefit payments	2,651,536	1,718,723	143,509
Refunds (Note 6)	50,158	50,678	182
Administrative expenses (Note 2)	25,858	19,052	326
Transfers to other systems	(978)	5,051	(207)
Total Deductions	<u>2,726,574</u>	<u>1,793,504</u>	<u>143,810</u>
Net (decrease) increase in plan assets	<u>295,053</u>	<u>193,619</u>	<u>30,285</u>
Net position restricted for pensions			
Beginning of the fiscal year	39,126,178	21,428,736	1,820,763
End of the Fiscal Year	<u>\$ 39,421,231</u>	<u>\$ 21,622,355</u>	<u>\$ 1,851,048</u>

* Intersystem due from/due to have been eliminated in the financial statements

AND PENSION SYSTEM FIDUCIARY NET POSITION BY SYSTEM

June 30, 2023

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
\$ 23,675	\$ 94,582	\$ 1,700,314
3,947	16,864	963,702
-	-	738,603
<u>27,622</u>	<u>111,446</u>	<u>3,402,619</u>
(4,572)	(9,480)	(496,268)
5,353	12,255	576,551
20,784	49,037	2,306,842
<u>21,565</u>	<u>51,812</u>	<u>2,387,125</u>
2,044	4,848	226,992
(1,820)	(4,319)	(202,127)
(11)	(26)	(1,243)
<u>213</u>	<u>503</u>	<u>23,622</u>
<u>21,778</u>	<u>52,315</u>	<u>2,410,747</u>
(3,878)	(9,232)	(430,470)
<u>17,900</u>	<u>43,083</u>	<u>1,980,277</u>
-	-	-
<u>45,522</u>	<u>154,529</u>	<u>5,382,896</u>
43,076	96,319	4,653,163
-	719	101,737
76	702	46,014
4	(3,870)	-
<u>43,156</u>	<u>93,870</u>	<u>4,800,914</u>
<u>2,366</u>	<u>60,659</u>	<u>581,982</u>
582,541	1,352,773	64,310,991
<u>\$ 584,907</u>	<u>\$ 1,413,432</u>	<u>\$ 64,892,973</u>



This page intentionally left blank