Financial Section

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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), as of and for the years ended June 30, 2022 and 2021, 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, 2022 and 2021, 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.

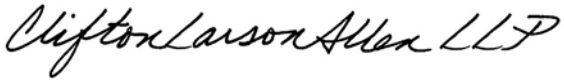
We have applied certain limited procedures to the required supplementary information in accordance with GAAS, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic 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 schedule of funding progress, fund balance accounts, 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 opinions 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 e 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 December 15, 2022, 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
December 15, 2022

MANAGEMENT'S DISCUSSION AND ANALYSIS
FOR THE YEARS ENDED JUNE 30, 2022 AND 2021

To help facilitate a better understanding of the Maryland State Retirement and Pension System's (the System) financial condition as of June 30, 2022 and 2021, 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 2022 Compared to 2021

The following condensed comparative Statement of Fiduciary Net Position for the fiscal years ended June 30, 2022 and 2021 reflects a decrease of $3.3 billion (-4.9%) in the System's net position. This decrease is primarily due to high inflation and rising interest rates generating negative performance returns in global and domestic stocks and bonds offset by positive performance in the real estate and private equity asset classes.

A schedule of the System's investments and changes (by type) for fiscal years 2022 and 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	2 76.9	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	2 85.2	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's investments experienced a negative return of -2.97% net of fees in fiscal year 2022 due to a rise in interest rates in the second half of the fiscal year in response to high inflation that negatively impacted the System's public equity and bond portfolios.

The System continues to pay out more benefits than contributions collected. An increase of $141.4 million in benefits paid to retirees correlates to a continued experience of an increase in retirements of the baby boomer generation in fiscal year 2022. As a result, the increase in benefits and refund payments outweighed the increase in contributions 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) for fiscal years 2022 and 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/(loss)	**(1,942.2)**	14,315.7	(16,257.9)	-113.6%
Total additions	**1,234.4**	17,385.0	(16,150.6)	-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	**4,528.0**	4,366.5	1 61.5	3.7%
Net increase(decrease) in Fiduciary Net Position	**$ (3,293.6)**	$ 13,018.5	$ (16,312.1)	-125.3%

	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	**$ 20,008.6**	$ 15,002.3	$ 5,006.3	33.4%
Ratio - Fiduciary Net Position/TPL	**76.3%**	81.8%		

The TPL increased by $1.7 Billion from 2021 to 2022, due to an increase in service cost. The Plan Fiduciary Net Position decreased by $3.3 Billion from 2021 to 2022 primarily due to an investment return of -2.97%. These two events when netted increased the Net Pension Liability by $5 Billion from 2021 to 2022.

Fiscal Year 2021 Compared to 2020

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 an global equity an 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	
	2021	**2020**	**Variance**	**%**
Cash & cash equivalents	**$ 2,407.2**	$ 1,539.7	$ 867.5	56.3%
U.S. Government obligations	**7,148.3**	6,578.0 5	70.3	8.7%
Domestic corporate obligations	**4,503.9**	4,264.7	239.2	5.6%
International obligations	**2,576.4**	2,184.8	391.6	17.9%
Domestic stocks	**10,664.3**	8,775.5	1,888.8	21.5%
International stocks	**13,465.8**	10,872.5	2,593.3	23.9%
Mortgages & mortgage-related securities	**1,235.1**	1,152.5	82.6	7.2%
Alternative investments	**26,241.2**	19,943.1	6,298.1	31.6%
Total managed investments	**68,242.2**	55,310.8	12,931.4	23.4%
Collateral for loaned securities	**4,745.2**	4,142.1	603.1	14.6%
Total investments and cash & cash equivalents	**72,987.4**	59,452.9	13,534.5	22.8%
Receivables	**1,028.8**	993.7 3	5.1	3.5%
Total Assets	**74,016.2**	60,446.6	13,569.6	22.4%
Liabilities	**6,411.7**	5,860.6	551.1	9.4%
Total Fiduciary Net Position, End of Year	**$ 67,604.5**	$ 54,586.0	$ 13,018.5	23.8%

As depicted in the following comparative Statement of Changes in Fiduciary Net Position for fiscal years 2021 and 2020, contributions to the System during fiscal year 2021 increased by approximately $74.8 million as a result of an increase in employer contribution rates due to the continued transition from a corridor funding method to actuarially determined contribution rates. Additionally, the System's investments experienced a historical positive investment return of 26.7%, net of fees, recognizing $14.3 billion in net investment income.

The System continued to pay out more benefits than contributions collected. An increase of $144.5 million in benefits paid to retirees reflected an increase in baby boomer retirements experienced in fiscal year 2021. The total fiscal year 2021 additions to the System exceeded benefits, refunds and administrative expenses resulting in a historic increase in fiduciary net position of $13.0 billion.

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	
	2021	**2020**	**Variance**	**%**
Employer contributions	**$ 1,436.9**	$ 1,359.9	$ 77.0	5.7%
Member contributions	**865.7**	850.3	15.4	1.8%
State contributions on behalf of	-	-		
local governments & contribution interest	**766.7**	784.4	(17.7)	-2.3%
Net investment income	**14,315.7**	1,866.6	12,449.1	666.9%
Total additions	**17,385.0**	4,861.2	12,523.8	257.6%
Benefit payments	**4,253.0**	4,108.5	144.5	3.5%
Refunds	**64.8**	68.8	(4.0)	-5.8%
Administrative expenses	**48.7**	41.3	7.4	17.9%
Total deductions	**4,366.5**	4,218.6	147.9	3.5%
Net increase in Fiduciary Net Position	**$ 13,018.5**	$ 642.6	$ 12,375.9	1925.9%

Analysis of Net Pension Liability *(expressed in millions)*

	June 30,		Change	
	2021	**2020**	**Variance**	**%**
Total Pension Liability (TPL)	$ 82,606.8	$ 77,187.4	$ 5,419.4	7.0%
Plan Fiduciary Net Position	67,604.5	54,586.0	13,018.5	23.8%
Net Pension Liability	$ 15,002.3	$ 22,601.4	$ (7,599.1)	-33.6%
Ratio - Fiduciary Net Position/TPL	81.8%	70.7%		

The System's net pension liability decreased by $7.6 billion from 2020 to 2021 due to a historical investment return of 26.69% that far exceeded the 6.80% investment return assumption.

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, 2022 and 2021
(Expressed in Thousands)

	2022	2021
Assets:		
Cash & Cash Equivalents (Note 3)	**$ 2,005,811**	$ 2,407,235
Receivables		
Contributions:		
Employers	**65,430**	29,583
Members	**9,380**	9,909
Accrued investment income	**253,424**	333,628
Investment sales proceeds	**985,807**	655,713
Total receivables	**1,314,041**	1,028,833
Investments, at fair value (Notes 3 & 4)		
U.S. Government obligations	**6,705,763**	7,148,338
Domestic corporate obligations	**3,866,242**	4,503,886
International obligations	**1,453,221**	2,576,397
Domestic stocks	**8,003,951**	10,664,316
International stocks	**10,149,793**	13,465,796
Mortgages & mortgage-related securities	**1,512,031**	1,235,094
Alternative investments	**30,323,411**	26,241,154
Collateral for loaned securities	**4,414,793**	4,745,195
Total investments	**66,429,205**	70,580,176
Total Assets	**69,749,057**	74,016,244
Liabilities:		
Accounts payable & accrued expenses (Note 7)	**65,402**	66,355
Investment commitments payable	**957,871**	1,600,194
Obligation for collateral for loaned securities	**4,414,793**	4,745,195
Total Liabilities	**5,438,066**	6,411,744
Fiduciary Net position restricted for pensions	**$ 64,310,991**	$ 67,604,500

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, 2022 and 2021

(Expressed in Thousands)

	2022	2021
ADDITIONS:		
Contributions:		
Employers	**$ 1,489,076**	$ 1,436,868
Members	**894,267**	865,738
State contributions on behalf of local governments	**793,227**	766,656
Total contributions	**3,176,570**	3,069,262
Investment (loss)/ Income:		
Net (depreciation)/ appreciation in fair value of investments	**(5,033,012)**	11,866,664
Interest	**545,863**	528,802
Dividends	**3,086,502**	2,439,299
(Loss)/ Income before securities lending activity	**(1,400,647)**	14,834,765
Gross income from securities lending activity	**31,972**	23,724
Securities lending borrower rebates	**(7,256)**	(1,178)
Securities lending agent fees	**(1,242)**	(1,127)
Net income from securities lending activity	**23,474**	21,419
Total investment (loss)/ income	**(1,377,173)**	14,856,184
Investment expenses	**(564,960)**	(540,422)
Net investment (loss)/ income	**(1,942,133)**	14,315,762
TOTAL ADDITIONS	**1,234,437**	17,385,024
DEDUCTIONS		
Benefit payments	**4,394,350**	4,253,047
Refunds	**91,535**	64,774
Administrative expenses	**42,061**	48,740
TOTAL DEDUCTIONS	**4,527,946**	4,366,561
Net decrease/ increase in fiduciary net position	**(3,293,509)**	13,018,463
Fiduciary Net position restricted for pensions		
Beginning of the fiscal year	**67,604,500**	54,586,037
END OF THE FISCAL YEAR	**$ 64,310,991**	$ 67,604,500

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 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 one 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 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, 2022 and 2021, with comparative prior year totals:

	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.

	Inactive & Deferred Vested	Retirees & Beneficiaries	Active Plan Participants		
			Vested	Non-vested	Total
Teachers' Retirement & Pension Systems	23,733	81,515	60,152	49,806	109,958
Employees' Retirement & Pension Systems*	23,932	82,588	39,682	40,306	79,988
Judges' Retirement System	7	442	204	111	315
State Police Retirement System	86	2,559	774	579	1,353
Law Enforcement Officers' Pension System	293	2,264	1,357	1,340	2,697
Total as of June 30, 2021	48,051	169,368	102,169	92,142	194,311
Total as of June 30, 2020	50,246	164,892	111,200	82,258	193,458

*Employees' Retirement and Pension Systems include 66 vested and 68 non-vested active members, 7 deferred vested members, and 51 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 2022, 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, 2022 and 2021, was $31,001,707 and $25,017,803, 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, 2022 and 2021, 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.

G. Adoption of New Accounting Standards

In June 2017, the Governmental Accounting Standards Board (GASB) issued GASB Statement No. 87, Leases. This standard requires the recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and as inflows of resources or outflows of resources recognized based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under this standard, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources.

The System adopted the requirements of the guidance effective July 1, 2020; however the implementation of the standard did not have a material impact on the System's financial statements.

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:

		As of June 30, 2021	
Type	**Description**	**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%	28.5%
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%	21.5%
Rate Sensitive	Investments in securities, know 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.	21.0%	17.6%
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.	8.0%	7.9%
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%	7.6%
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%	15.2%
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%	1.3%
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, 2022 and 2021, was $2,005,811 and $2,407,235 (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, 2022 and 2021, 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:

		As of June 30, 2022			
		Investment Maturities (in years)			
Investment Type:	**Fair Value (in thousands)**	**Less than 1**	**1 thru 5**	**5+ thru 10**	**More than 10**
Asset Backed Securities	$ 1 33,266	$ 8 3	$ 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

		As of June 30, 2021			
	Fair Value	**Investment Maturities (in years)**			
Investment Type:	**(in thousands)**	**Less than 1**	**1 thru 5**	**5+ thru 10**	**More than 10**
Asset backed securities	$ 178,423	$ 123	$ 20,534	$ 42,914	$ 114,852
Bank loans	921,570	3,483	430,089	487,998	-
Collateralized mortgage obligations	447,957	3,807	7,388	36,442	400,320
Credit/debt commingled funds	646,660	45,674	447,085	134,402	19,499
Domestic corporate obligations	3,488,429	34,115	928,353	1,861,928	664,033
International obligations	936,278	16,362	292,116	356,432	271,368
Mortgage pass-throughs	783,994	21,541	10,101	772,350	
Municipals	55,110	1,004	6,399	9,470	38,237
Options	(8,187)	(8,176)	(11)	-	-
Short-term	1,595,353	203,138	-	1,373,131	19,084
Swaps	(25,481)	(20,842)	3,981	(6,664)	(1,956)
U.S. government agency	68,307 871	2,303	24,042	41,091	
U.S. treasury inflation linked	2,627,223	-	1,139,560	977,609	510,054
U.S. treasury notes/bonds	4,123,771	4,119	150,710	235,090	3,733,852
U.S. treasury strips	86,331	-	4,417	-	81,914
Yankee bonds	1,474,674	22,992	436,472	586,435	428,775
Total	$ 17,400,412	$ 306,672	$ 3,870,937	$ 6,129,330	$ 7,093,473

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, 2022 and 2021.

As of June 30, 2022, and 2021, the System had $1,056,455 and $783,994 (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, 2022 and 2021, 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 obligations of the U.S. government and obligations explicitly guaranteed by the U.S. government, 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, 2022 and June 30, 2021, 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)

	2022	**Percentage**	**2021**	**Percentage**
Rating	**Fair Value**	**Total Investments**	**Fair Value**	**Total Investments**
AAA	**$ 124,057**	**0.192%**	$ 112,756	0.167%
AA	**232,580**	**0.360%**	299,128	0.442%
A	**469,541**	**0.726%**	573,853	0.849%
BBB	**1,281,648**	**1.983%**	1,557,702	2.304%
BB	**1,154,697**	**1.787%**	1,651,650	2.443%
B	**776,733**	**1.202%**	939,415	1.390%
CCC	**106,189**	**0.164%**	159,633	0.236%
CC	**2,030**	**0.003%**	2,674	0.004%
C	**1,832**	**0.003%**	-	0.000%
D	**10,280**	**0.016%**	13,663	0.020%
NR	**4,811,091**	**7.444%**	5,252,611	7.770%
	$ 8,970,678		$ 10,563,085	

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. NR represents securities not rated; primarily made up of commingled short term and credit funds, mortgage securities, foreign sovereign bonds and bank loans which by nature do not have credit quality ratings.

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, 2022 and 2021, is shown below: The System's exposure to foreign currency risk as of June 30, 2022 and 2021, is shown below:

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	$ 1 97,174	$ -	$ 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	8 75	-	**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 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 foreign currency-denominated investments are in non-US stocks.
The Agency has an overlay program to help minimize its currency risk.

International Investment Securities – At Fair Value as of June 30, 2021
(U.S. Dollars in Thousands)

Currency	Equity	Fixed Income	Cash	Alternative Investments	Total
Australian Dollar	$226,815	$13,784	$4,121	$191,514	**$436,234**
Brazilian Real	84,305	71,410	1,400	-	**157,115**
Canadian Dollar	337,354	301	6,377	170,647	**514,679**
Chilean Peso	-	8,517	171	-	**8,688**
Colombian Peso	-	15,960	217	-	**16,177**
Czech Koruna	-	21,105	820	-	**21,925**
Danish Krone	155,602	-	550	-	**156,151**
Egyptian Pound	14,784	-	0	-	**14,784**
Euro Currency	1,797,838	111,231	10,968	1,219,711	**3,139,748**
Hong Kong Dollar	490,904	-	631	45,672	**537,207**
Hungarian Forint	237	15,149	268	-	**15,654**
Indonesian Rupiah	25,741	72,877	1,049	-	**99,667**
Japanese Yen	856,958	(1,421)	4,289	17,542	**877,369**
Malaysian Ringgit	1,365	49,218	728	-	**51,311**
Mexican Peso	76,469	49,052	4,556	-	**130,077**
New Israeli Sheqel	26,161	25,824	224	2,296	**54,506**
New Taiwan Dollar	162,338	-	2,930	-	**165,268**
New Zealand Dollar	8,418	26,369	294	3,997	**39,078**
Norwegian Krone	71,096	681	520	7,659	**79,957**
Philippine Peso	477	20,769	331	-	**21,577**
Polish Zloty	10,129	34,930	188	-	**45,247**
Pound Sterling	700,520	61,785	9,630	282,196	**1,054,131**
Qatari Rial	340	-	0	-	**340**
Romanian Leu	-	11,765	70	-	**11,835**
Russian Ruble	-	35,727	824	-	**36,551**
Singapore Dollar	29,371	-	1,057	4,672	**35,101**
Sol	-	20,726	509	-	21,234
South African Rand	112,666	44,618	666	-	**157,949**
South Korean Won	398,131	63,254	3,122	780	**465,288**
Swedish Krona	155,345	-	422	4,827	**160,594**
Swiss Franc	419,638	-	82	6,328	**426,048**
Thailand Baht	25,193	45,057	392	-	**70,643**
Turkish Lira	26,298	7,498	419	-	**34,215**
Uae Dirham	22,212	-	0	-	**22,212**
Yuan Renminbi	71,723	62,706	259	-	**134,687**
Total foreign currency risk	6,308,428	888,892	58,084	1,957,842	**9,213,245**
Other holdings with potential exposure to foreign currency risk	6,393,599	1,623,925	-	2,631,103	**10,648,626**
Total Holdings Subject to Foreign Currency Risk	$12,702,027	$2,512,817	$58,084	$4,588,943	**$19,861,871**

The majority 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, 2022 and 2021 (in thousands):

	2022	2021
Interest income	**$ 31,972**	$ 23,724
Less:		
Interest expense	**7,256**	1,178
Program fees	**1,242**	1,127
Expenses from securities lending	**8,498**	2,305
Net income from securities lending	**$ 23,474**	$ 21,419

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, 2022 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 counterpart). 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, 2022, such repos had average days to maturity of 6.28 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 collateral held and the fair value of securities on loan for the System as of June 30, 2022 (in thousands) was $4,268,464 and $4,414,793, respectively. The fair value of securities on loan and the fair value collateral held for the System as of June 30, 2021 (in thousands) was $4,665,115 and $4,745,195, respectively.

The following tables present the fair values of the underlying securities, and the value of the collateral pledged at June 30, 2022 and 2021 (in thousands):

	As of June 30, 2022		
Securities Lent	**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%**

	As of June 30, 2021		
Securities Lent	Fair Value Loaned Securities	Collateral Fair Value	Percent Collateralized
Lent for cash collateral			
U.S. government and agency	$2,677,648	$2,712,325	101.3%
Domestic bond & Equity	1,969,659	2,014,479	102.3%
International fixed	12,634	12,914	102.2%
International equity	5,174	5,477	105.9%
Total securities lent	$4,665,115	$4,745,195	101.7%

There were no significant under-collateralization events as of June 30, 2022.

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, 2022 and 2021:

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.

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, 2022 and 2021, the System had the following recurring fair value measurements:

As of June 30, 2022 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	$ 6,707	$ 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	13,554	6,707	5,335	1,512
Equity Securities				
Domestic stocks (includes REITs)	5,490	5 ,490	-	-
International stocks (includes (REITs)	6,359	6,359	-	-
Total equity securities	11,849	11,849	-	-
Alternative Investment	386	386	-	-
Total investment by fair value level	25,789	$ 18,942	$ 5,335	$ 1,512
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			
Mult-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	36,174			
Investment derivative instruments and foreign currency holdings				
Forwards	72	$ -	$ 72	$ -
Options	(9)	-	(9)	-
Swaps	(7)	-	(7)	-
Rights/Warrants	68	-	68	-
Total investment derivative instruments	124	$ -	$ 124	$ -
***Total**	$ 62,087			

***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.**

As of June 30, 2021 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	$ 7,149	$ 7,149	$ -	$ -
Domestic corporate obligations	4,536	-	4,536	-
International obligations	1,269	-	1,269	-
Emerging markets debt	1,308	-	1,308	-
Mortgages & mortgage related securities	1,235	-	-	1,235
Total debt securities	15,497	7,149	7,113	1,235
Equity Securities				
Domestic stocks (includes REITs)	8,139	8,139	-	-
International stocks (includes (REITs)	8,434	8,434	-	-
Total equity securities	16,573	16,573	-	-
Alternative Investment	372	372	-	-
Total investment by fair value level	32,442	$ 24,094	$ 7,113	$ 1,235
Investment measured at the net asset value (NAV)				
Equity Open-End Fund	7,476			
Private funds (includes equity, real estate, credit, energy, infrastructure and timber)	15,851			
Real estate-open ended	3,266			
Mult-asset	286			
Hedge Funds				
Equity long/short	1,055			
Event-driven	1,340			
Global macro	1,342			
Relative Value	2,364			
Opportunistic	365			
Total investment measured at the NAV	33,345			
Investment derivative instruments and foreign currency holdings				
Forwards	$ 6		6	
Options	(8)		(8)	
Swaps	(25)		(25)	
Rights/Warrants	81		81	
Total investment derivative instruments	54	$ -	$ 54	$ -
***Total**	$ 65,841			

***Total Investments on the Statement of Fiduciary Net Position agrees to the total sum of $65,841 on this table, $4,745 of collateral for loaned securities, and ($6) 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, 2022				As of June 30, 2021			
	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice
Private funds (includes equity, credit, energy, infrastructure, real estate and timber) (1)	**$18,297**	**$ 9,965**			$15,851	$ 9,434		
Real estate open-end fund	**5 ,956**		**Quarterly**	**45-90 days**	3,266		Quarterly	45-90 days
Equity open-end fund (2)	**3,285**		**Daily**	**1 day**	4,298		Daily	1 day
	2 ,387		**Monthly**	**5-30 days**	2,330		Monthly	5-30 days
	566		**Triennially**	**150 days**	848		Triennially	150 days
Multi-asset (9)	**238**		**Monthly**	**5 days**	286		Monthly	5 days
Hedge Funds								
Equity long/short (5)	**775**		**Monthly**	**30-45 days**	720		Monthly	30-45 days
	397		**Quarterly**	**60 days**	335		Quarterly	60 days
Event-driven (6)	**12**		**Monthly**	**15 days**	268		Monthly	15 days
	336		**Quarterly**	**60-65 days**	558		Quarterly	60-65 days
	137		**Quarterly**	**90 days**	239		Quarterly	90 days
	141		**Quarterly**	**120 days +**	234		Quarterly	120 days +
	41	**N/A**		**Liquidating**	41		N/A	Liquidating
Global macro (4)	**-**		**Daily**	**2 days**	209		Daily	2 days
	515		**Monthly**	**5-30 days**	424		Monthly	5-30 days
	505		**Monthly**	**60 days**	359		Monthly	60 days
	226		**Quarterly**	**60-90 days**	350		Quarterly	60-90 days
Relative value (7)	**209**		**Monthly**	**30 days**	226		Monthly	30 days
	437		**Quarterly**	**30 days**	412		Quarterly	30 days
	1,511		**Quarterly**	**45-90 days**	1,726		Quarterly	45-90 days
Opportunistic (8)	**203**		**Quarterly**	**90 days**	341		Quarterly	90 days
	-		**Semi Annual**	**90-120 days**	24		Semi Annual	90-120 days
	$36,174	**$ 9,965**			**$33,345**	**$ 9,434**		

(1) Private funds (includes equity, real estate, credit, energy, infrastructure and timber): This type includes 344 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 5 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 one has a one-year soft lock-up and require a 30 day to 60 days notice.

(6) Event-driven: This type includes 6 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 4 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 8 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 1 hedge fund 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 Hedge fund of funds. 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 Boards 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, 2022
(in Thousands)

	Changes in Fair Value(4)		Fair Value at June 30,2022		
Currency	**Classifications**	**Amount(1)**	**Classification**	**Amount(2)**	**Notional(3)**
Commodity Futures Long	Investment Revenue	$ 1 8,151	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 Instrumen	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**	

DERIVATIVES *(continued)*

List of Derivatives Aggregated by Investment Type – At Fair Value as of June 30, 2021
(in Thousands)

	Changes in Fair Value(4)		Fair Value at June 30,2021		
Currency	**Classifications**	**Amount(1)**	**Classification**	**Amount(2)**	**Notional(3)**
Commodity Futures Long	Investment Revenue	$ 6,327	Futures	$ -	$ 5,620
Commodity Futures Short	Investment Revenue	-	Futures	(6)	300
Credit Default Swaps Bought	Investment Revenue	$ (1)	Swaps	$ 7,221	$ 247,916
Credit Default Swaps Written	Investment Revenue	6,360	Swaps	-	2,586,148
Fixed Income Futures Long	Investment Revenue	(247,229)	Futures	-	(893,600)
Fixed Income Futures Short	Investment Revenue	2,180	Futures	-	49,900
Fixed Income Options Bought	Investment Revenue	(6,803)	Options	461	(540,567)
Fixed Income Options Written	Investment Revenue	26,045	Options	(8,496)	(38,900)
Foreign Currency Futures Short	Investment Revenue	572	Futures	-	-
Foreign Currency Options Bought	Investment Revenue	(610)	Options	-	-
Foreign Options Written	Investment Revenue	603	Options	-	-
Future Options Bought	Investment Revenue	30	Options	-	-
Future Options Written	Investment Revenue	1,099	Options	(206)	(633)
FX Forwards	Investment Revenue	(7,359)	Long Term Instruments	5,885	9,409,539
Index Futures Long	Investment Revenue	572,906	Futures	-	724
Index Futures Short	Investment Revenue	(448,337)	Futures	-	(676)
Pay Fixed Interest Rate Swaps	Investment Revenue	(10,545)	Swaps	(28,088)	1,071,985
Received Fixed Interest Rate Swaps	Investment Revenue	(28,965)	Swaps	(4,776)	1,134,855
Rights	Investment Revenue	1,286	Common Stock	198	122
Total Return Swaps Equity	Investment Revenue	1,187	Swaps	-	-
Warrants	Investment Revenue	43,684	Common Stock	81,215	11,688
		$ (87,570)		$ 53,408	

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.
3. Notional may be a dollar amount or size of underlying 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 creditworthiness 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 in asset positions at June 30, 2022 and 2021, was $429,537 and $122,233 (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 tables list the fair value of credit exposure per ratings of Standard & Poor's (S&P), Moody's and Fitch (in thousands) as of June 30, 2022 and 2021:

As of June 30, 2022

Fair Value	S&P Rating	Fair Value	Moody's Rating	Fair Value	Fitch 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
$ 429,537	(1)	$ 429,537	(1)	$ 429,537	(1)

As of June 30, 2021

Fair Value	S&P Rating	Fair Value	Moody's Rating	Fair Value	Fitch Rating
$39,043	AA-	$26,807	Aa2	$33,506	AA
30,540	A+	36,390	Aa3	27,656	AA-
36,260	A	39,949	A1	56,441	A+
6,557	A-	12,538	A2	4,630	A
9,833	BBB+	6,549	A3	-	NR
$122,233	(1)	$122,233	(1)	$122,233	(1)

(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, 2022:

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 2022, 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, 2022 and 2021, was $31,001,707 and $26,677,378 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, 2022 and 2021 refunds to members and withdrawing employers were $91,535 and $64,744 (expressed in thousands), respectively.

8. ACCOUNTS PAYABLE AND ACCRUED EXPENSES

For the fiscal years ended June 30, 2022 and 2021 accounts payable and accrued expenses consisted of the following components (expressed in thousands):

	2022	2021
Administrative expenses	**$ 6,900**	4,731
Investment management fees	**15,278**	19,703
Tax and other withholdings	**43,224**	41,921
Total	**$ 65,402**	66,355

9. NET PENSION LIABILITY

The components of the net pension liability of the participating employers as of June 30, 2022 and 2021, were as follows:

(expressed in thousands)	**2022**	2021
Total Pension Liability (TPL)	**$84,319,523**	82,606,805
Plan Fiduciary Net Position	**64,310,991**	67,604,497
Net Pension Liability	**$20,008,532**	15,002,308
Ratio - Fiduciary Net Position/TPL	**76.27%**	81.84%

A. Actuarial Assumptions

Inflation	In the 2022 actuarial valuation, 2.25% general, 2.75% wage. In the 2021 actuarial valuation, 2.25% general, 2.75% wage.
Salary Increases	In the 2022 actuarial valuation, 2.75% to 11.25%. In the 2021 actuarial valuation, 2.75% to 9.25%
Investment Rate of Return	In the 2022 actuarial valuation, 6.80%. In the 2021 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 2019 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, 2022 and 2021, these best estimates are summarized in the following table:

2022

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Public Equity	37.0%	6.0%
Private Equity	16.0%	8.4%
Rate Sensitive	21.0%	1.2%
Credit Opportunity	8.0%	4.9%
Real Assets	15.0 %	5.2%
Absolute Return	6.0%	3.5%
Total	**100.0%**	

2021

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Public Equity	37.0%	4.7%
Private Equity	13.0%	6.5%
Rate Sensitive	19.0%	-0.4%
Credit Opportunity	9.0%	2.6%
Real Assets	14.0 %	4.2%
Absolute Return	8.0%	2.0%
Total	**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, 2022.

For the years ended June 30, 2022 and 2021, the annual money-weighted rate of return on pension plan investments, net of the pension plan investment expense, was (2.97)% and 26.69%, 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, 2022 and 2021, respectively. This single discount rate was based on the expected rate of return on pension plan investments of 6.80% as of June 30, 2022 and 2021, 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, 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	11,999,140	8,431,973	5,451,353
State Police	1,139,705	782,804	493,996
Judges	130,464	62,959	5,507
LEOPS	890,475	615,131	390,832
CORS	13,031	6,447	1,049
Total System Net Pension Liability	**$ 30,699,454**	**$ 20,008,532**	**$ 11,137,544**

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, 2021:

(Expressed in thousands)

System	1% Decrease to 5.80%	Discount Rate 6.80%	1% Increase to 7.80%
Teachers	$ 13,340,491	$ 7,028,984	$ 1,803,499
Employees	10,383,190	6,832,640	3,867,600
State Police	975,816	626,229	343,562
Judges	80,177	14,120	(42,093)
LEOPS	762,785	498,017	282,444
CORS	8,569	2,315	(2,804)
Total System Net Pension Liability	**$ 25,551,028**	**$ 15,002,305**	**$ 6,252,208**

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	1,085,633	454,711	70,111
Total pension liability, beginning of year	48,149,763	29,412,444	2,533,456
Total pension liability, end of year (a)	$ 49,235,396	$ 29,867,155	$ 2,603,567
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	2,431	(4,643)	36
Net Change in Plan Fiduciary Net Position	(1,994,601)	(1,148,754)	(86,464)
Plan fiduciary net position - beginning of year	41,120,779	22,577,488	1,907,227
Plan fiduciary net position - end of year (b)	$ 39,126,178	$ 21,428,734	$ 1,820,763
Employer net pension liability (a) - (b)	$ 10,109,218	$ 8,438,421	$ 782,804

**This schedule is presented to illustrate the requirement to present information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years for which the information is available.*

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)
17,721	84,542	1,712,718
627,781	1,883,361	82,606,805
$ 645,502	$ 1,967,903	$ 84,319,523
$ 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	-
(31,118)	(32,572)	(3,293,509)
613,661	1,385,345	67,604,500
$ 582,543	$ 1,352,773	$ 64,310,991
$ 62,959	$ 615,130	$ 20,008,532

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	3,168,613	1,878,765	154,629
Total pension liability, beginning of year	44,981,150	27,533,679	2,378,827
Total pension liability, end of year (a)	$ 48,149,763	$ 29,412,444	$ 2,533,456
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	6,907	(7,126)	-
Net Change in Plan Fiduciary Net Position	7,905,769	4,326,655	371,105
Plan fiduciary net position - beginning of year	33,215,011	18,250,832	1,536,121
Plan fiduciary net position - end of year (b)	$ 41,120,780	$ 22,577,487	$ 1,907,226
Employer net pension liability (a) - (b)	$ 7,028,983	$ 6,834,957	$ 626,230

**This schedule is presented to illustrate the requirement to present information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years for which the information is available.*

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)
43,556	173,845	5,419,408
584,225	1,709,516	77,187,397
$ 627,781	$1,883,361	$ 82,606,805
$ 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	-
116,812	298,119	13,018,460
496,848	1,087,225	54,586,037
$ 613,660	$1,385,344	$ 67,604,497
$ 14,121	$ 498,017	$15,002,308

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	1,491,921	913,878	94,722
Total pension liability, beginning of year	43,489,231	26,619,801	2,284,105
Total pension liability, end of year (a)	$ 44,981,152	$ 27,533,679	$ 2,378,827
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	24,743	(25,535)	62
Net Change in Plan Fiduciary Net Position	412,086	155,432	25,793
Plan fiduciary net position - beginning of year	32,802,925	18,095,400	1,510,328
Plan fiduciary net position - end of year (b)	$ 33,215,011	$ 18,250,832	$ 1,536,121
Employer net pension liability (a) - (b)	$ 11,766,141	$ 9,282,847	$ 842,706

**This schedule is presented to illustrate the requirement to present information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years for which the information is available.*

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)
20,967	96,881	2,618,369
563,258	1,612,635	74,569,030
$ 584,225	$1,709,516	$77,187,399
$ 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)
6,831	42,476	642,618
490,017	1,044,749	53,943,419
$ 496,848	$1,087,225	$54,586,037
$ 87,377	$ 622,291	$22,601,362

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	573,026	1,089,749	14,813
Total pension liability, beginning of year	42,916,205	25,530,054	2,269,293
Total pension liability, end of year (a)	$ 43,489,231	$ 26,619,803	$ 2,284,106
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	1,322,474	642,461	63,780
Plan fiduciary net position - beginning of year	31,480,452	17,452,939	1,446,548
Plan fiduciary net position - end of year (b)	$ 32,802,926	$ 18,095,400	$ 1,510,328
Employer net pension liability (a) - (b)	$ 10,686,305	$ 8,524,403	$ 773,778

**This schedule is presented to illustrate the requirement to present information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years for which the information is available.*

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)
1,328	81,281	1,760,197
561,930	1,531,351	72,808,833
$ 563,258	$1,612,632	$74,569,030
$ 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
$ 490,017	$1,044,749	$53,943,420
$ 73,241	$ 567,883	$ 20,625,610

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	1,282,929	735,759	72,364
Total pension liability, beginning of year	41,633,276	24,794,295	2,196,929
Total pension liability, end of year (a)	$ 42,916,205	$ 25,530,54	$ 2,269,293
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	1,749,260	912,274	74,767
Plan fiduciary net position - beginning of year	29,731,192	16,540,665	1,371,781
Plan fiduciary net position - end of year (b)	$ 31,480,452	$ 17,452,939	$ 1,446,548
Employer net pension liability (a) - (b)	$ 11,435,753	$ 8,077,115	$ 822,745

**This schedule is presented to illustrate the requirement to present information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years for which the information is available.*

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)
12,092	94,804	2,197,948
549,838	1,436,547	70,610,885
$ 561,930	$ 1,531,351	$ 72,808,833
$ 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
$ 470,019	$ 977,275	$ 51,827,233
$ 91,911	$ 554,076	$ 20,981,600

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	1,099,855	447,490	30,011
Total pension liability, beginning of year	40,533,421	24,346,805	2,166,918
Total pension liability, end of year (a)	$ 41,633,276	$ 24,794,295	$ 2,196,929
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	(157)	(1,117)	56
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)	$ 29,731,192	$ 16,540,665	$ 1,371,781
Employer net pension liability (a) - (b)	$ 11,902,084	$ 8,253,630	$ 825,148

**This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years for which the information is available.*

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)
13,520	60,056	1,650,932
536,318	1,376,491	68,959,953
$ 549,838	$ 1,436,547	$ 70,610,885
$ 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	-
33,689	91,729	3,621,258
407,662	810,466	45,365,926
$ 441,351	$ 902,195	$ 48,987,184
$ 108,487	$ 534,352	$ 21,623,701

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	1,294,382	938,326	55,812
Total pension liability, beginning of year	39,239,039	23,408,479	2,111,106
Total pension liability, end of year (a)	$ 40,533,421	$ 24,346,805	$ 2,166,918
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	(221,715)	(179,338)	(28,705)
Plan fiduciary net position - beginning of year	27,763,928	15,510,791	1,302,837
Plan fiduciary net position - end of year (b)	$ 27,542,213	$ 15,331,453	$ 1,274,132
Employer net pension liability (a) - (b)	$ 12,991,208	$ 9,015,352	$ 892,786

**This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years for which the information is available.*

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)
27,717	72,164	2,388,401
508,601	1,304,327	66,571,552
$ 536,318	$ 1,376,491	$68,959,953
$ 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	-
(4,870)	10,714	(423,914)
412,532	799,752	45,789,840
$ 407,662	$ 810,466	$45,365,926
$ 128,656	$ 566,025	$23,594,027

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	1,914,103	1,310,831	134,768
Total pension liability, beginning of year	37,324,936	22,097,648	1,976,338
Total pension liability, end of year (a)	$ 39,239,039	$ 23,408,479	$ 2,111,106
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	272,873	145,777	(3,710)
Plan fiduciary net position - beginning of year	27,491,055	15,365,014	1,306,547
Plan fiduciary net position - end of year (b)	$ 27,763,928	$ 15,510,791	$ 1,302,837
Employer net pension liability (a) - (b)	$ 11,475,111	$ 7,897,688	$ 808,269

**This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years for which the information is available.*

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)
48,371	76,760	3,484,833
460,230	1,227,567	63,086,719
$ 508,601	$ 1,304,327	$ 66,571,552
$ 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	-
3,649	31,031	449,852
408,883	768,489	45,339,988
$ 412,532	$ 799,752	$ 45,789,840
$ 96,069	$ 504,575	$ 20,781,712

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	1,794,495	1,032,489	93,837
Total pension liability, beginning of year	35,530,441	21,065,159	1,882,501
Total pension liability, end of year (a)	$ 37,324,936	$ 22,097,648	$ 1,976,338
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	3,021,430	1,678,140	117,984
Plan fiduciary net position - beginning of year	24,469,625	13,686,874	1,188,563
Plan fiduciary net position - end of year (b)	$ 27,491,055	$ 15,365,014	$ 1,306,547
Employer net pension liability (a) - (b)	$ 9,833,881	$ 6,732,634	$ 669,791

**This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years for which the information is available.*

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)
21,394	84,413	3,026,628
438,836	1,143,154	60,060,091
$ 460,230	$ 1,227,567	$ 63,086,719
$ 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	-
46,551	112,666	4,976,771
362,332	655,823	40,363,217
$ 408,883	$ 768,489	$ 45,339,988
$ 51,347	$ 459,078	$ 17,746,731

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, 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%

**These schedules are presented to illustrate the requirement to present information for 10 years. However, until a full 10-year trend is compiled, pension plans should present information for those years for which the information is available.*

***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 (16 years remaining as of the June 30, 2022 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 2023 are equal to the budgeted contributions developed in the valuation as of June 30, 2021, plus the proportionate share of reinvested savings allocated to each System for fiscal year 2023 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. For the 2021 valuation 40% of the investment gain from FY 2021 is recognized in the determination of the actuarial asset valuation rather than the 20% normally recognized. The remaining 60% with be recognized equally over the next four valuations (15% per year). For the Employees' Retirement and Pension System and for LEOPS, assets must be allocated between State and Municipal Corporation members. Beginning July 1, 1984, this allocation is based upon actual cash flows and shared investment results.

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

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 following significant assumptions were used in the actuarial valuation as of June 30, 2022:

The following significant assumptions were used in the actuarial valuation as of June 30, 2021:

- A rate of return on investments of 6.80% compounded annually (effective June 30, 2021);
- projected salary increases of 2.75% compounded annually, attributable to wage inflation (effective June 30, 2021);
- additional projected salary increases ranging from 2.75% to 11.25% per year attributable to seniority and merit (effective June 30, 2020);
- post-retirement benefit increases ranging from 1.96% to 2.75% per year depending on the system for service earned prior to July 1, 2011, and 1.30% to 2.75% per year depending on the system for service earned on or after July 1, 2011 (effective June 30, 2021);
- rates of mortality, termination of service, disablement and retirement based on actual experience during the period from June 30, 2014 through June 30, 2018 (effective June 30, 2019); and
- an increase in the aggregate active member payroll of 2.75% annually (effective June 30, 2021).

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]
2013	$ 39,350,969	$ 60,060,091	$ 20,709,122	65.52%	$ 10,478,800	198%
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%

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, 2022 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, 2022 the System's funded ratio increased from 76.85%.to 77.19%.

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, 2022 the System's ratio of the unfunded actuarial accrued liability to its covered payroll decreased from 148% to 147%.

OTHER SUPPLEMENTARY INFORMATION

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 into the Expense Fund from each participating employer 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, 2022 (with Comparative 2021 Totals)

(Expressed in Thousands)

	Annuity Savings Fund	Accumulation Fund	Expense Fund	Totals 2022	Totals 2021
Fund Balances, Beginning of Year	**$ 10,672,667**	**$ 56,928,673**	**$ 3,160**	**$ 67,604,500**	**$ 54,586,037**
Additions					
Net investment income (loss)	-	**(1,377,173)**	**(564,960)**	**(1,942,133)**	14,315,762
Contributions (Note 5):					
Employers	-	**1,459,789**	**29,287**	**1,489,076**	1,436,868
Members	**894,267**	-	-	**894,267**	865,738
State contributions on behalf of local governments	-	**793,227**	-	**793,227**	766,656
Contribution interest	-	-	-	-	-
Deductions					
Benefit payments		**(4,394,350)**	-	**(4,394,350)**	(4,253,047)
Refunds (Note 7)	**(91,535)**	-	-	**(91,535)**	(64,774)
Administrative expenses (Note 2)	-	**(12,442)**	**(29,619)**	**(42,061)**	(48,740)
Transfers					
From the Accumulation Fund to the Annuity Savings Fund for interest credited to members' accounts	**517,171**	**(517,171)**	-	-	-
To the Accumulation Fund from the Annuity Savings Fund for contributions of retiring members	**(586,335)**	**586,335**	-	-	-
From the Accumulation Fund to the Expense Fund for administrative and investment expenses	-	**(564,960)**	**564,960**	-	-
Net changes in fund balances	**733,568**	**(4,026,745)**	**(332)**	**(3,293,509)**	13,018,463
Fund Balances, End of Year	**$ 11,406,235**	**$ 52,901,928**	**$ 2,828**	**$ 64,310,991**	$ 67,604,500

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

SCHEDULE OF ADMINISTRATIVE EXPENSES

for the Fiscal Years Ended June 30, 2022 and 2021

(Expressed in Thousands)

	2022	2021
Personnel services		
Staff salaries	**$18,173**	$16,043
Fringe benefits	**8,227**	7,667
Total personnel services	**26,400**	23,710
Professional and contractual services		
Actuarial services	**364**	475
Legal and financial services	**522**	525
Consulting services	**814**	1,109
Data processing services	**3,829**	5,920
Other contractual services	**5,362**	5,621
Total professional and contractual services	**10,891**	13,650
Miscellaneous		
Communications	**565**	941
Rent	**2,017**	1,846
Equipment and supplies	**219**	440
Other	**1,969**	8,153
Total miscellaneous	**4,770**	11,380
Total Administrative Expenses	**$42,061**	$48,740

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

SCHEDULE OF INVESTMENT EXPENSES

for the Fiscal Years Ended June 30, 2022 and 2021

(Expressed in Thousands)

	Management Fees for 2022	**Incentive Fees for 2022**	**Total**	Management Fees for 2021	Incentive Fees for 2021	Total
Investment advisors						
Public equity	**$ 88,940**	**$ 84,688**	**$ 173,628**	$ 90,758	$ 57,310	$148,068
Fixed income	**14,210**	**8 ,586**	**22,796**	13,898	19,927	33,825
Credit opportunity	**25,102**	**49**	**25,151**	28,842	6	28,848
Real return	**14,931**	**118**	**15,049**	14,675	-	14,675
Absolute return	**60,164**	**70,211**	**130,375**	51,747	91,515	143,262
Multi Asset	**1,272**	**-**	**1,272**	1,069	-	1,069
Private equity	**133,844**	**-**	**133,844**	124,508	-	124,508
Real estate	**45,273**	**8,387**	**53,660**	37,817	400	38,217
Total investment advisory fees	**383,736**	**172,039**	**555,775**	363,314	169,158	532,472
Other investment service fees						
Currency overlay	**4,271**	**-**	**4,271**	3,925	-	3,925
Other investment expenses	**4,914**	**-**	**4,914**	4,025	-	4,025
Total other investment service fees	**9,185**	**-**	**9,185**	7,950	0	7,950
Total Investment Expenses	**$ 392,921**	**$ 172,039**	**$ 564,960**	$ 371,264	$169,158	$540,422

MARYLAND STATE RETIREMENT

SCHEDULE OF FIDUCIARY NET

as of June 30, 2022

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Assets:			
Cash & cash equivalents (note 3)	$ 1,191,191	$ 692,518	$ 60,574
Receivables:			
Contributions:			
Employers	13,167	48,821	4,229
Members	68	8,646	372
Accrued investment income	153,464	85,818	7,129
Investment sales proceeds	598,742	332,970	27,703
Due from other systems	81,561	47,622	138
Total receivables	847,002	518,877	39,571
Investments, at fair value (Notes 2 & 3)			
U.S. Government obligations	4,081,508	2,234,660	189,153
Domestic corporate obligations	2,353,215	1,288,405	109,056
International obligations	884,5123	484,278	40,992
Domestic stocks	4,871,659	2,667,275	225,771
International stocks	6,177,740	3,382,365	286,300
Mortgages & mortgage related securities	920,308	503,876	42,651
Alternative investments	18,456,550	10,105,118	855,346
Collateral for loaned securities	2,682,322	1,485,883	123,442
Total investments	40,427,815	22,151,860	1,972,856
Total assets	42,466,008	23,363,255	1,972,856
Liabilities:			
Accounts payable & accrued expenses	35,634	26,052	1,765
Investment commitments payable	577,598	33,415	26,913
Obligation for collateral for loaned securities	2,682,322	1,485,883	123,442
Due to other systems	44,276	92,169	(27)
Total liabilities	3,339,830	1,934,519	152,093
Net position restricted for pensions	$39,126,178	$21,428,736	$1,820,763

** 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
$ 22,496	$ 39,032	$ 2,005,811	$ -	$ 2,005,811
357	3,856	65,430	-	65,430
4	290	9,380	-	9,380
2,286	4,727	253,424	-	253,424
8,877	17,515	985,807	-	985,807
-	7,172	136,493	(136,493)	-
11,524	33,560	1,450,534	(136,493)	1,314,041
60,325	140,117	6,705,763	-	6,705,763
34,781	80,785	3,866,242	-	3,866,242
13,073	30,365	1,453,221	-	1,453,221
72,003	167,243	8,003,951	-	8,003,951
91,307	212,081	10,149,793	-	10,149,793
13,602	31,594	1,512,031	-	1,512,031
272,789	633,608	30,323,411	-	30,323,411
39,787	83,359	4,414,793	-	4,414,793
597,667	1,379,152	66,429,205	-	66,429,205
631,687	1,451,744	69,885,550	(136,493)	69,749,057
749	1,202	65,402	-	65,402
8,535	14,410	957,871	-	957,871
39,787	83,359	4,414,793	-	4,414,793
75	-	136,493	(136,493)	-
49,146	98,971	5,574,559	(136,493)	5,438,066
$ 582,541	$ 1,352,773	$ 64,310,991	$ -	$ 64,310,991

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	$ 408,875	$ 880,672	$ 95,453
Members	554,537	311,852	9,842
State contributions on behalf of local governments	793,227	-	-
Contribution interest	-	-	-
Total Contributions	1,756,639	1,192,524	105,295
Investment Loss			
Net depreciation in fair value of investments	(3,056,766)	(1,683,016)	(142,493)
Interest	331,523	182,691	15,433
Dividends	1,874,594	1,033,156	87,257
Loss Before Securities Lending Activity	(850,649)	(467,169)	(39,803)
Gross income from securities lending activity:	19,422	10,696	904
Securities lending borrower rebates	(4,409)	(2,424)	(206)
Securities lending agent fees	(754)	(416)	(35)
Net income from securities lending activity	14,259	7,856	663
Total Investment loss	(836,390)	(459,313)	(39,140)
Less investment expenses:			
Investment advisory fees	(343,177)	(189,010)	(15,980)
Net investment loss	(1,179,567)	(648,323)	(55,120)
Transfers from other systems	-	-	-
Total Additions	577,072	544,201	50,175
Deductions:			
Benefit payments	2,508,296	1,622,772	136,182
Refunds (Note 6)	42,308	47,967	193
Administrative expenses (Note 2)	23,500	17,571	301
Transfers to other systems	(2,428)	4,645	(37)
Total Deductions	2,571,676	1,692,955	136,639
Net (decrease) increase in fiduciary net position	(1,994,604)	(1,148,754)	(86,464)
Fiduciary net position restricted for pensions			
Beginning of the fiscal year	41,120,782	22,577,490	1,907,227
End of the Fiscal Year	$ 39,126,178	$ 21,428,736	$ 1,820,763

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

AND PENSION SYSTEM

FIDUCIARY NET POSITION BY SYSTEM

June 30, 2022

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
$ 22,816	$ 81,260	$ 1,489,076
3,643	14,393	894,267
-	-	793,227
-	-	-
26,459	95,653	3,176,570
(45,464)	(105,273)	(5,033,012)
4,944	11,272	545,863
27,912	63,583	3,086,502
(12,608)	(30,418)	(1,400,647)
289	661	31,972
(66)	(151)	(7,256)
(11)	(26)	(1,242)
212	484	23,474
(12,396)	(29,934)	(1,377,173)
(5,106)	(11,687)	(564,960)
(17,502)	(41,621)	(1,942,133)
-	-	-
8,957	54,032	1,234,437
39,921	87,179	4,394,350
13	1,054	91,535
70	619	42,061
72	(2,252)	-
40,076	86,600	4,527,946
(31,119)	(32,568)	(3,293,509)
613,660	1,385,341	67,604,500
$ 582,541	$ 1,352,773	$ 64,310,991

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