

A large, semi-transparent graphic in the center of the page. It features the letters 'SRPS' in a large, serif font at the top. Below the letters is a stylized, abstract design consisting of several overlapping shapes, including circles and rectangles, arranged in a way that suggests a financial or architectural structure. The entire graphic is set against a light gray background.

SRPS  
*Financial Section*



## REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS

To the Board of Trustees  
Maryland State Retirement and Pension System

### **Report on the Financial Statements**

We have audited the accompanying financial statements of the Maryland State Retirement and Pension System (the System), which comprise the statement of fiduciary net position as of June 30, 2020, and the related statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements, as listed in the table of contents.

### ***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes 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.

### ***Auditor's Responsibility***

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements 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 entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### **Opinion**

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the System as of June 30, 2020, and the respective changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

### **Other Matters**

#### ***Required Supplementary Information***

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the schedules of changes in employers' net pension liability, employers' net pension liability, employers' contributions and investment returns and related notes, as listed in the table of contents, be

presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, 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 financial statements, and other knowledge we obtained during our audit of the 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.

#### *Other Supplementary Information*

Our audit was conducted for the purpose of forming an opinion on the System's financial statements. The other supplementary information, and the introductory, investment, actuarial, and statistical sections, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the financial statements.

The other supplementary information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. Such information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the other supplementary information is fairly stated, in all material respects, in relation to the financial statements as a whole. The introductory, investment, actuarial and statistical sections, as listed in the table of contents, have not been subjected to the auditing procedures applied in the audit of the financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

#### *Prior-Year Comparative Information*

The System's financial statements as of and for the year ended June 30, 2019 were audited by other auditors whose report dated December 4, 2019 expressed an unmodified opinion of those financial statements.

#### **Other Reporting Required by Government Auditing Standards**

In accordance with Government Auditing Standards, we have also issued our report dated December 14, 2020 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 14, 2020



## MANAGEMENT'S DISCUSSION AND ANALYSIS

To help facilitate a better understanding of the Maryland State Retirement and Pension System's (the System) financial condition as of June 30, 2020, the results of its operations for the fiscal year 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, plan 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 present 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 plan net position) and expenses incurred (deductions from plan 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 Funding Progress, while similar in scope to the Statements of Fiduciary Net Position in that it is primarily focused on reporting on the accumulation of assets, differs from such statements both in its method for valuing such assets and in its approach to explaining its relevance to the liability it is being accumulated to satisfy. In this regard, the Schedule of Funding Progress first takes a long-term, actuarial view toward valuing the System's investment portfolio, as opposed to the fair value approach reflected on the Statements of Fiduciary Net Position. Specifically, the System's assets are valued (for funding purposes) using a methodology that distributes investment gains and losses over a five-year period in order to minimize the effects of annual market volatility on employer contribution rates.

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 2020 Compared to 2019

The following condensed comparative Statement of Fiduciary Net Position for the fiscal years ended June 30, 2020 and 2019, present an increase in the System's net position of \$642.6 billion (4.1%). The increase is primarily due to positive net returns in rate sensitive, global equity, and private alternative investments.

A schedule of the System's investments and changes (by type) from fiscal year 2020 and 2019 is as follows (expressed in millions):

	June 30,		Change	
	2020	2019	Variance	%
Cash & cash equivalents	\$ 1,539.7	\$ 1,639.4	\$ (99.7)	-6.1%
U.S. Government obligations	6,578.0	6,441.4	136.6	2.1%
Domestic corporate obligations	4,264.7	4,765.4	(500.7)	-10.5%
International obligations	2,184.8	613.5	1,571.3	256.1%
Domestic stocks	8,775.5	9,779.0	(1,003.5)	-10.3%
International stocks	10,872.5	9,957.8	914.7	9.2%
Mortgages & mortgage-related securities	1,152.5	1,658.3	(505.8)	-30.5%
Alternative investments	19,943.1	19,297.5	645.6	3.3%
<b>Total managed investments</b>	<b>55,310.8</b>	<b>54,152.3</b>	<b>1,158.5</b>	<b>2.1%</b>
Collateral for loaned securities	4,142.1	3,335.7	806.4	24.2%
<b>Total investments and cash &amp; cash equivalents</b>	<b>59,452.9</b>	<b>57,488.0</b>	<b>1,964.9</b>	<b>3.4%</b>
Receivables	993.7	1,956.8	(963.1)	-49.2%
<b>Total Assets</b>	<b>60,446.6</b>	<b>59,444.8</b>	<b>1,001.8</b>	<b>1.7%</b>
Liabilities	5,860.6	5,501.4	359.2	6.5%
<b>Total Net Position, End of Year</b>	<b>\$54,586.0</b>	<b>\$53,943.4</b>	<b>\$ 642.6</b>	<b>1.2%</b>

As depicted in the following comparative Statement of Changes in Fiduciary Net Position for fiscal years 2020 and 2019, contributions to the System during fiscal year 2020 increased by approximately \$133.3 million as a result of an increase in covered payroll. Additionally, the System's investments experienced a positive money-weighted investment return of 3.56%, net of fees, recognizing \$1.87 million in net investment income;

The System continues to pay out more benefits than contributions collected. An increase of \$182.3 million in benefits paid to retiree's correlates to the increase in the number of retirees and beneficiaries experienced in fiscal year 2020. The total additions to the System in fiscal year 2020 exceeded benefits, refunds and administrative expenses resulting in an increase in fiduciary net position of \$2.1 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 2019, is as follows (expressed in millions):

	June 30,		Change	
	2020	2019	Variance	%
Employer contributions	\$1,359.9	\$1,301.6	\$58.3	4.5%
Member contributions	850.3	807.3	43.0	5.3%
State contributions on behalf of local governments & contribution interest	784.4	752.4	32.0	4.3%
Net investment income	1,866.6	3,288.2	(1,421.6)	-43.2%
<b>Total additions</b>	<u>4,861.2</u>	<u>6,149.5</u>	<u>(1,288.3)</u>	-20.9%
Benefit payments	4,108.5	3,926.2	182.3	4.6%
Refunds	68.8	67.4	1.4	2.1%
Administrative expenses	41.3	39.8	1.5	3.8%
Total deductions	<u>4,218.6</u>	<u>4,033.4</u>	<u>185.2</u>	4.6%
<b>Net increase in plan net position</b>	<u>\$642.6</u>	<u>\$2,116.1</u>	<u>\$(1,473.5)</u>	-69.6%

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

	June 30,		Change	
	2020	2019	Variance	%
Total Pension Liability (TPL)	\$77,187.4	\$74,569.0	\$2,618.4	3.5%
Plan Fiduciary Net Position	54,586.0	53,943.4	642.6	1.2%
Net Pension Liability	<u>\$22,601.4</u>	<u>\$20,625.6</u>	<u>\$1,975.8</u>	9.6%
Ratio - Fiduciary Net Position/TPL	<u>70.7%</u>	<u>72.3%</u>		

While the increase in the Total Pension Liability (TPL) was close to expectations, the increase in the Plan Fiduciary Net Position was lower than expected due to the FY2020 investment return being lower than the 7.4% investment return assumption resulting in a \$1.98 billion increase in Net Pension Liability.

## Fiscal Year 2019 Compared to 2018

The following condensed comparative Statement of Fiduciary Net Position for the fiscal years ended June 30, 2019 and 2018, presents an increase in the System's net position of \$2.1 billion (4.1%). The increase was primarily due to positive net returns in equities, real estate, rate sensitive, credit, and private alternative investments.

A schedule of the System's investments and changes (by type) from fiscal year 2018 to 2019 is as follows (expressed in millions):

	June 30,		Change	
	2019	2018	Variance	%
Cash & cash equivalents	\$1,639.4	\$1,252.5	\$386.9	30.9%
U.S. Government obligations	6,441.4	6,585.1	(143.7)	-2.2%
Domestic corporate obligations	4,765.4	3,472.3	1,293.1	37.2%
International obligations	613.5	90.5	523.0	577.9%
Domestic stocks	9,779.0	9,466.3	312.7	3.3%
International stocks	9,957.8	10,186.0	(228.2)	-2.2%
Mortgages & mortgage-related securities	1,658.3	1,528.4	129.9	8.5%
Alternative investments	19,297.5	19,245.0	52.5	0.3%
<b>Total managed investments</b>	<b>54,152.3</b>	<b>51,826.1</b>	<b>2,326.2</b>	<b>4.5%</b>
Collateral for loaned securities	3,335.7	2,043.4	1,292.3	63.2%
<b>Total investments and cash &amp; cash equivalents</b>	<b>57,488.0</b>	<b>53,869.5</b>	<b>3,618.5</b>	<b>6.7%</b>
Receivables	1,956.8	1,195.0	761.8	63.7%
<b>Total Assets</b>	<b>59,444.8</b>	<b>55,064.5</b>	<b>4,380.3</b>	<b>8.0%</b>
Liabilities	5,501.4	3,237.3	2,264.1	69.9%
<b>Total Net Position, End of Year</b>	<b>53,943.4</b>	<b>51,827.2</b>	<b>2,116.2</b>	<b>4.1%</b>

As depicted in the following comparative Statement of Changes in Fiduciary Net Position for fiscal years 2019 and 2018, contributions to the System during fiscal year 2019 increased by approximately \$74.9 million. Additionally, the System's investments experienced a positive money-weighted investment return of 6.44% (time-weighted of 6.46%), net of fees, recognizing \$3,288 million in net investment income.

The System continued to pay out more benefits than contributions collected. An increase of \$182.1 million in benefits paid to retirees correlates to the increase in the number of retirees and beneficiaries experienced in fiscal year 2019. The total fiscal year 2019 additions to the System exceeded in benefits, refunds and administrative expenses resulting in an increase in net position of \$2.1 billion.



A schedule of the System's additions to and deductions from plan net position and related changes (by major category) from fiscal year 2019 to 2018, is as follows (expressed in millions):

	June 30,		Change	
	2019	2018	Variance	%
Employer contributions	\$1,301.6	\$1,247.7	\$ 53.9	4.3%
Member contributions	807.3	791.6	15.7	2.0%
State contributions on behalf of local governments & contribution interest	752.4	-	5.2	0.7%
Net investment income	3,288.2	3,899.4	(611.2)	-15.7%
<b>Total additions</b>	<b>6,149.5</b>	<b>6,685.9</b>	<b>(536.4)</b>	<b>-8.0%</b>
Benefit payments	3,926.2	3,744.1	182.1	4.9%
Refunds	67.4	68.6	(1.2)	-1.7%
Administrative expenses	39.8	33.2	6.6	19.9%
<b>Total deductions</b>	<b>4,033.4</b>	<b>3,845.9</b>	<b>187.5</b>	<b>4.9%</b>
<b>Net increase (decrease) in plan net position</b>	<b>\$2,116.1</b>	<b>\$2,840.0</b>	<b>\$ (723.9)</b>	<b>-25.5%</b>

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

	June 30,		Change	
	2019	2018	Variance	%
Total Pension Liability (TPL)	\$74,569.0	\$72,808.8	\$1,760.2	2.4%
Plan Fiduciary Net Position	53,943.4	51,827.2	2,116.2	4.1%
Net Pension Liability	\$20,625.6	\$20,981.6	\$(356.0)	-1.7%
Ratio - Fiduciary Net Position/TPL	72.3%	71.2%		

The System's net pension liability decreased by \$356.0 million as a result of the pay down of unfunded liabilities during the fiscal year and will continue over the next 20 years according to the current funding policy. Additionally, favorable investment and liability experience also helped to accelerate the decrease in the net pension liability.

#### 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, 2020 and 2019

(Expressed in Thousands)

	2020	2019
<b>Assets:</b>		
<b>Cash &amp; Cash Equivalents (Note 3)</b>	<u>\$ 1,539,742</u>	<u>\$ 1,639,447</u>
<b>Receivables</b>		
Contributions:		
Employers	40,079	18,968
Employers - long term (Note 5)	6,773	12,741
Members	10,424	3,837
Accrued investment income	208,963	250,325
Investment sales proceeds	<u>727,468</u>	<u>1,670,973</u>
Total receivables	<u>993,707</u>	<u>1,956,844</u>
<b>Investments, at fair value (Notes 2 &amp; 3)</b>		
U.S. Government obligations	6,578,005	6,441,406
Domestic corporate obligations	4,264,696	4,765,438
International obligations	2,184,755	613,496
Domestic stocks	8,775,452	9,779,000
International stocks	10,872,505	9,957,602
Mortgages & mortgage-related securities	1,152,454	1,658,341
Alternative investments	19,943,124	19,297,504
Collateral for loaned securities	<u>4,142,148</u>	<u>3,335,710</u>
Total investments	<u>57,913,139</u>	<u>55,848,497</u>
<b>Total Assets</b>	<u>60,446,588</u>	<u>59,444,788</u>
<b>Liabilities</b>		
Accounts payable & accrued expenses (Note 8)	64,565	63,403
Investment commitments payable	1,653,838	2,102,255
Obligation for collateral for loaned securities	<u>4,142,148</u>	<u>3,335,710</u>
<b>Total Liabilities</b>	<u>5,860,551</u>	<u>5,501,368</u>
<b>Fiduciary Net position restricted for pensions</b>	<u>\$54,586,037</u>	<u>\$53,943,420</u>

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

**MARYLAND STATE RETIREMENT AND PENSION SYSTEM**  
**STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION**  
**for the Fiscal Years Ended June 30, 2020 and 2019**  
*(Expressed in Thousands)*

	<b>2020</b>	<b>2019</b>
<b>ADDITIONS:</b>		
Contributions:		
Employers	\$ 1,359,914	\$1,301,554
Members	850,298	807,291
State contributions on behalf of local governments	784,149	751,945
Contribution interest	207	592
<b>Total contributions</b>	<b>2,994,568</b>	<b>2,861,382</b>
Investment Income:		
Net appreciation in fair value of investments	392,259	1,424,075
Interest	437,074	444,525
Dividends	1,379,334	1,776,675
<b>Income before securities lending activity</b>	<b>2,208,667</b>	<b>3,645,275</b>
Gross income from securities lending activity	77,320	74,284
Securities lending borrower rebates	(56,542)	(60,278)
Securities lending agent fees	(1,039)	(946)
Net income from securities lending activity	19,739	13,060
Total investment income	2,228,406	3,658,335
Investment expenses	(361,767)	(370,126)
Net investment income	1,866,639	3,288,209
<b>TOTAL ADDITIONS</b>	<b>4,861,207</b>	<b>6,149,591</b>
<b>DEDUCTIONS</b>		
Benefit payments	4,108,492	3,926,220
Refunds	68,752	67,400
Administrative expenses	41,346	39,784
<b>TOTAL DEDUCTIONS</b>	<b>4,218,590</b>	<b>4,033,404</b>
<b>Net increase in fiduciary plan position</b>	<b>642,617</b>	<b>2,116,187</b>
<b>Fiduciary Net position restricted for pensions</b>		
Beginning of the fiscal year	53,943,420	51,827,233
<b>END OF THE FISCAL YEAR</b>	<b>\$54,586,037</b>	<b>\$53,943,420</b>

*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. Currently, the System has 153 participating employers in addition to the State.

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.

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, 2020 and 2019, with comparative prior year totals:

	Inactive & Deferred Vested	Retirees & Beneficiaries	Active Plan Participants		
			Vested	Non-vested	Total
Teachers' Retirement & Pension Systems	24,026	80,439	60,737	48,860	109,597
Employees' Retirement & Pension Systems*	24,475	82,094	40,998	40,793	81,791
Judges' Retirement System	8	441	208	116	324
State Police Retirement System	87	2,517	843	548	1,391
Law Enforcement Officers' Pension System	306	2,153	1,394	1,354	2,748
<b>Total as of June 30, 2020</b>	<b>48,902</b>	<b>167,644</b>	<b>104,180</b>	<b>91,671</b>	<b>195,851</b>
Total as of June 30, 2019	50,246	164,892	111,200	82,258	193,458

\*Employees' Retirement and Pension Systems include 70 vested and 65 non-vested active members, 6 deferred vested members, and 47 retired members from the Correctional Officers Retirement System.

	Inactive & Deferred Vested	Retirees & Beneficiaries	Active Plan Participants		
			Vested	Non-vested	Total
Teachers' Retirement & Pension Systems	24,474	79,151	64,042	43,740	107,782
Employees' Retirement & Pension Systems*	25,364	80,752	44,567	36,747	81,314
Judges' Retirement System	8	431	207	108	315
State Police Retirement System	89	2,505	882	482	1,364
Law Enforcement Officers' Pension System	311	2,053	1,502	1,181	2,683
Total as of June 30, 2019	50,246	164,892	111,200	82,258	193,458
Total as of June 30, 2018	52,301	160,374	118,835	73,596	192,431

\*Employees' Retirement and Pension Systems include 42 vested and 55 non-vested active members, and 40 retired members, and 3 deferred 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 and Pension Systems and Employees' Retirement and Pension System is 7%, respectively. The member contribution rate for members of the State Police Retirement System is 8% up until 28 years of service. The member contribution rate for members of the Judges' Retirement System is 8% until 16 years of service and 7% for members of the Law Enforcement Officers' Pension system up to 32 years and six months of service.

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 (currently 7.40%).

A brief summary of the retirement eligibility requirements of and the benefits available under the various systems in effect during fiscal year 2020, 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  $\frac{2}{3}$  (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, 2020 and 2019, was \$25,017,803 and \$21,724,997, respectively.

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. Interest and dividend income is recognized when earned. Capital gains and losses are recognized on trade date basis.

## **B. Investment Limitations**

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.

## **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**

The System's administrative and investment expenses are charged to each individual retirement or pension system on the basis of its active membership and percentage ownership in the System's net position. Investment expenses include management fees and services charged directly to the fund, as well as fees generated inside private investment vehicles that are netted against cash flows. The System's investment expenses are funded from investment income. The System's administrative expenses are funded from administrative assessments charged to each participating employer. See pages 72 and 73 for detailed Schedules of Administrative and Investment Expenses, respectively.

## **F. Federal Income Tax Status**

During the fiscal years ended June 30, 2020 and 2019, 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**

As of the year ended June 30, 2020, Governmental Accounting Standards Board (GASB) issued GASB Statement No. 95, *Postponement of the Effective Dates of Certain Authoritative Guidance*. As a result, the System will analyze the effect of GASB Statement No. 84, *Fiduciary Activities* on the financial statements and plans to adopt them by the respective postponed effective date.



### 3. CASH, CASH EQUIVALENTS, AND INVESTMENTS

#### A. Legal Provisions

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

Type	Description	As of June 30, 2020	
		Strategic Target	Actual
<b>Public Equity</b>	Investments in securities, known as shares or stocks, that represent an ownership interest in corporations and are generally traded on a stock exchange.	37.0%	36.2%
<b>Private Equity</b>	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.	13.0%	14.2%
<b>Rate Sensitive</b>	Investments in securities, known as bonds, that represent an ownership interest in the debt of governments and corporations that are generally not traded on an exchange. They generally pay interest on a regular schedule and repay principal or face value at maturity. Short term investments such as money market funds U.S. treasury bills and currency are also included.	19.0%	18.6%
<b>Credit/Debt Related Strategies</b>	Debt issued by corporations and other non-government sectors of the fixed income market such as distressed debt, convertibles, corporate and mortgage related credit strategies, mezzanine debt, bank loans, high yield, emerging markets and preferred securities.	9.0%	9.4%
<b>Absolute Return</b>	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.	8.0%	7.8%
<b>Real Assets</b>	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.	14.0%	11.8%
<b>Cash/Cash Equivalents</b>	Investments that provide daily liquidity and either have very low risk or principal loss such as treasury bills or high quality commercial paper or act as a proxy for the overall System asset allocation through a combination of Exchange Traded Funds and fully funded futures contracts.	0.0%	0.5%
<b>Multi Assets</b>	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%	1.5%

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

The System is also 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

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, that are 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, 2020 and 2019 was \$1,539,742 and \$1,639,447 (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

As of June 30, 2020 and 2019, 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:

Investment Type:	Fair Value (in thousands)	As of June 30, 2020 Investment Maturities (in years)			
		Less than 1	1 thru 5	5+ thru 10	More than 10
Asset Backed Securities	\$171,194	\$229	\$31,479	\$26,416	\$113,070
Bank Loans	451,708	15,415	238,465	197,828	-
Collateralized mortgage obligations	463,668	747	6,686	38,560	417,675
Credit/debt commingled funds	362,971	28,080	249,206	39,976	45,710
Domestic Corporate Obligations	3,628,981	62,199	1,295,277	1,669,305	602,201
International Obligations	766,078	12,259	291,432	255,046	207,342
Mortgage Pass-throughs	678,917	189	1,530	11,374	665,824
Municipals	55,772	-	3,456	8,172	44,144
Options	(27,492)	(19,593)	(7,899)	-	-
Short term	1,283,333	235,839	-	-	1,047,494
Swaps	(25,613)	(8,715)	3,230	(19,686)	(441)
U.S. Government Agency	169,106	5,083	23,000	20,639	120,384
U.S. Treasury Inflation Linked	2,498,796	-	948,733	1,045,179	504,884
U.S. Treasury Notes/Bonds	3,691,137	1,960	213,260	150,950	3,324,967
U.S. Treasury Strips	78,763	-	-	-	78,763
Yankee Bonds	1,294,072	22,062	376,073	582,969	312,968
<b>Total</b>	<b>\$15,541,394</b>	<b>\$355,755</b>	<b>\$3,673,926</b>	<b>\$4,026,728</b>	<b>\$7,484,986</b>

Investment Type:	Fair Value (in thousands)	As of June 30, 2019 Investment Maturities (in years)			
		Less than 1	1 thru 5	5+ thru 10	More than 10
Asset backed securities	\$ 200,847	\$ -	\$ 45,564	\$ 32,540	\$ 122,743
Bank loans	545,822	1,487	235,193	309,142	
Collateralized mortgage obligations	488,840	21	7,359	53,968	427,492
Credit/debt commingled funds	569,945	27,167	452,582	86,484	3,712
Domestic corporate obligations	2,881,011	66,021	942,300	1,495,578	377,112
International obligations	613,495	8,253	240,827	194,915	169,500
Mortgage pass-throughs	1,169,502	6,891	19,407	1,143,204	
Municipals	49,492	606	3,876	5,381	39,629
Options	14,239	14,239	-	-	-
Short-term	1,478,631	1,478,631	-	-	-
Swaps	(1,778)	(9,970)	14,979	(3,775)	(3,012)
U.S. government agency	154,444	348	18,799	13,950	121,347
U.S. treasury inflation linked	2,233,715	7	836,028	1,011,773	385,907
U.S. treasury notes/bonds	4,022,859	116,723	196,987	323,886	3,385,263
U.S. treasury strips	30,389	-	-	-	30,389
Yankee bonds	1,075,804	14,454	325,005	474,857	261,488
<b>Total</b>	<b>\$15,527,257</b>	<b>\$ 1,724,878</b>	<b>\$ 3,338,906</b>	<b>\$ 5,141,903</b>	<b>\$ 5,321,570</b>

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 Plan 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, 2020 and 2019.

As of June 30, 2020 and 2019, the System had \$678,917 and \$1,169,502 (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, 2020 and 2019 are identified in greater detail in Note 4.

### E. Credit Risk

The System’s exposure to credit risk (in thousands) as of June 30, 2020 and 2019, is shown below:

Credit Quality Distribution for Securities with Credit Exposure as a Percentage of Total Investments (Expressed in Thousands)				
Rating	2020 Fair Value	Percentage Total Investments	2019 Fair Value	Percentage Total Investments
AAA	\$ 68,035	0.125%	\$ 207,343	0.384%
AA	382,321	0.700%	391,386	0.726%
A	703,929	1.290%	2,138,617	3.965%
BAA	-	0.000%	137,682	0.255%
BA	-	0.000%	38,598	0.072%
BBB	1,514,063	2.774%	1,171,375	2.171%
BB	1,475,713	2.703%	1,196,634	2.218%
B	881,862	1.616%	836,615	1.551%
CAA	-	0.000%	4,860	0.009%
CCC	255,277	0.468%	77,462	0.144%
CC	\$8,884	0.016%	3,785	0.007%
C	-	0.000%	304	0.001%
D	16,384	0.030%	18,843	0.035%
NR	3,966,230	7.266%	3,016,790	5.593%
	<u>\$ 9,272,698</u>		<u>\$ 9,240,294</u>	

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**

The System's exposure to foreign currency risk as of June 30, 2020 and 2019, is shown below:

<b>International Investment Securities – At Fair Value as of June 30, 2020</b>					
<i>(U.S. Dollars in Thousands)</i>					
<b>Currency</b>	<b>Equity</b>	<b>Fixed Income</b>	<b>Cash</b>	<b>Alternative Investments</b>	<b>Total</b>
Australian Dollar	\$ 158,891	\$ -	\$ 652	\$ 139,550	\$ 299,093
Brazilian Real	93,993	34,914	879	-	129,786
Canadian Dollar	232,584	726	7,015	107,067	347,392
Chilean Peso	-	4,289	113	-	4,402
Colombian Peso	-	9,720	124	-	9,844
Czech Koruna	-	9,138	106	-	9,244
Danish Krone	136,369	-	171	-	136,540
Egyptian Pound	16,135	-	-	-	16,135
Euro Currency	1,410,413	92,641	7,882	876,331	2,387,267
Hong Kong Dollar	482,559	-	1,006	30,179	513,744
Hungarian Forint	153	6,633	199	-	6,985
Indonesian Rupiah	7,868	37,479	404	-	45,751
Japanese Yen	764,565	(1,667)	6,830	14,322	784,050
Malaysian Ringgit	2,911	28,050	612	-	31,573
Mexican Peso	65,663	35,633	2,441	-	103,737
New Israeli Sheqel	20,775	11,874	149	1,069	33,867
New Taiwan Dollar	145,572	-	1,366	-	146,938
New Zealand Dollar	7,730	-	194	3,156	11,080
Norwegian Krone	47,160	-	194	5,381	52,735
Philippine Peso	847	11,926	272	-	13,045
Polish Zloty	2,078	18,587	537	-	21,202
Pound Sterling	524,100	44,523	3,330	233,094	805,047
Qatari Rial	542	-	26	-	568
Romanian Leu	-	5,928	207	-	6,135
Russian Ruble	-	27,731	481	-	28,212
Singapore Dollar	30,474	-	199	4,671	35,344
Sol	-	17,496	191	-	17,687
South African Rand	79,429	15,223	437	-	95,089
South Korean Won	243,133	91,458	925	-	335,516
Swedish Krona	108,215	-	180	3,774	112,169
Swiss Franc	421,244	-	344	1,185	422,773
Thailand Baht	17,347	30,171	487	-	48,005
Turkish Lira	20,816	6,512	244	-	27,572
Uae Dirham	12,584	-	30	-	12,614
Yuan Renminbi	7,839	208,291	979	-	217,109
Total foreign currency risk	5,061,989	747,276	39,206	1,419,779	7,268,250
Other holdings with potential exposure to foreign currency risk	4,688,061	1,916,331	-	1,582,450	8,186,842
<b>Total Holdings Subject to Foreign Currency Risk</b>	<u>\$9,750,050</u>	<u>\$2,663,607</u>	<u>\$ 39,206</u>	<u>\$3,002,229</u>	<u>\$15,455,092</u>

**International Investment Securities – At Fair Value as of June 30, 2019**
*(U.S. Dollars in Thousands)*

<b>Currency</b>	<b>Equity</b>	<b>Fixed Income</b>	<b>Cash</b>	<b>Alternative Investments</b>	<b>Total</b>
Argentine Peso	\$ -	\$ 1,344	\$ -	\$ -	\$ 1,344
Australian Dollar	177,354	212	23,835	176,926	378,327
Brazilian Real	92,068	57,933	664	-	150,665
Canadian Dollar	241,961	650	4,811	132,515	379,937
Chilean Peso	-	7,305	-	-	7,305
Columbian Peso	-	14,541	247	-	14,788
Czech Koruna	1,835	11,080	76	-	12,991
Danish Krone	115,946	-	451	-	116,397
Egyptian Pound	12,168	-	-	-	12,168
Euro Currency	1,581,599	71,485	22,389	781,399	2,456,872
Hong Kong Dollar	409,598	-	1,234	83,969	494,801
Hungarian Forint	5,934	8,235	326	-	14,495
Indonesian Rupiah	18,192	46,574	853	-	65,619
Japanese Yen	801,761	(3,033)	8,633	73,269	880,630
Malaysian Ringgit	2,415	34,265	888	-	37,568
Mexican Peso	81,779	38,255	1,957	-	121,991
New Israeli Sheqel	29,858	13,670	107	2,086	45,721
New Taiwan Dollar	99,604	-	8,484	-	108,088
New Zealand Dollar	10,896	-	205	3,240	14,341
Norwegian Krone	44,117	-	935	7,997	53,049
Philippine Peso	5,870	13,142	137	-	19,149
Polish Zloty	17,717	24,542	386	-	42,645
Pound Sterling	641,423	47,269	8,919	210,858	908,469
Qatari Rial	614	-	26	-	640
Romanian Leu	-	6,340	81	-	6,421
Russian Ruble	-	31,663	625	-	32,288
Singapore Dollar	39,887	-	594	14,350	54,831
Sol	-	19,734	96	-	19,830
South African Rand	71,131	19,263	701	-	91,095
South Korean Won	216,822	125,460	756	-	343,038
Swedish Krona	117,387	58	1,081	8,381	126,907
Swiss Franc	356,497	-	415	4,727	361,639
Thailand Baht	44,709	33,144	816	-	78,669
Turkish Lira	14,118	8,611	150	-	22,879
Uae Dirham	13,403	-	27	-	13,430
Yuan Renminbi	2,765	65,817	677	833,518	902,777
Not Applicable (1)	4,182,348	1,230	-	-	4,183,578
Total Holdings Subject to Foreign Currency Risk	<u>\$9,451,776</u>	<u>\$698,789</u>	<u>\$91,582</u>	<u>\$2,333,235</u>	<u>\$12,575,382</u>

*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, 2019 and 2018 (in thousands):

	2020	2019
Interest income	\$ 77,320	\$ 74,284
Less:		
Interest expense	56,542	60,278
Program fees	1,039	946
Expenses from securities lending	57,581	61,224
Net income from securities lending	<u>\$ 19,739</u>	<u>\$ 13,060</u>

The Board of Trustees has authorized the System to lend its securities to broker-dealers with a simultaneous agreement to return the collateral for the same securities in the future. Deutsche Bank, pursuant to a written agreement, is permitted to lend long-term securities to authorized broker-dealers subject to the receipt of acceptable collateral. The System lends securities for collateral in the form of either cash or other securities. The types of securities on loan as of June 30, 2020 included long-term U.S. government obligations, domestic and international equities, as well as domestic and international debt obligations. At the initiation of a loan, borrowers are required to provide collateral amounts of 102 percent (domestic securities and foreign securities that are denominated in the same currency as the collateral provided by the counterparty) and 105 percent (foreign securities that are not denominated in the same currency as the collateral provided by the counterparty). In the event the collateral fair value falls below 100 percent for domestic securities and foreign securities that are denominated in the same currency as the collateral or 103 percent on foreign securities not denominated in the same currency as the collateral provided by the counterparty, the borrower is required to provide additional collateral to the original levels by the end of the next business day. Deutsche Bank is obligated to indemnify the client if there are any losses of securities, collateral or investments of the client in the Bank's custody arising out of or related to the negligence or dishonesty of the Bank. Also, Deutsche Bank has put in place a custom insurance policy that can be called upon to the extent Deutsche Bank is unable to meet its indemnification obligation due to financial impairment. The initial duration of this policy will be in place until February 28, 2021. 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, 2020, such repos had average days to maturity of 11.77 days. The System cannot pledge or sell collateral securities received unless (and until) a borrower defaults. At year-end, the System had no credit risk exposure to borrowers because the amount the System owed the borrowers exceeded the amount the borrowers owed the System. The fair value of securities on loan and the fair value of collateral held for the System as of June 30, 2020 (in thousands) was \$4,063,798 and \$4,142,148, respectively. The Fair Value of securities on loan and the Fair Value of collateral held for the System as of June 30, 2019 (in thousands) was \$3,281,831 and \$3,335,710, respectively.

The following tables present the fair values of the underlying securities, and the value of the collateral pledged at June 30, 2020 and 2019 (in thousands):

	As of June 30, 2020		
<b>Securities Lent</b>	<b>Fair Value Loaned Securities</b>	<b>Collateral Fair Value</b>	<b>Percent Collateralized</b>
<b>Lent for cash collateral</b>			
U.S. government and agency	\$2,103,127	\$2,134,138	101.5%
Domestic bond & equity	1,919,267	1,964,444	102.4%
International fixed	7,955	8,132	102.2%
International equity	33,449	35,434	105.9%
<b>Total securities lent</b>	<u>\$4,063,798</u>	<u>\$4,142,148</u>	101.9%

<b>Securities Lent</b>	<b>As of June 30, 2019</b>		
	<b>Fair Value Loaned Securities</b>	<b>Collateral Fair Value</b>	<b>Percent Collateralized</b>
<b>Lent for cash collateral</b>			
U.S. government and agency	\$1,826,567	\$1,857,314	101.7%
Domestic bond & equity	1,370,770	1,399,332	102.1%
International fixed	5,026	5,124	101.9%
International equity	79,468	73,940	93.0%
<b>Total securities lent</b>	<b>\$3,281,831</b>	<b>\$3,335,710</b>	101.6%

There were no significant under-collateralization events as of June 30, 2020.

## H. Investments at Fair Value

Government Accounting Standards Board Statement Number 72 (GASB 72), *Fair Value Measurements and Application*, clarifies the definition of fair value for financial reporting, establishes a framework for measuring fair value, and requires additional disclosures about the use of fair value measurements. GASB 72 established a three-level valuation hierarchy for disclosure of fair value measurements. The valuation hierarchy is based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date. The three levels are defined as follows:

Level 1 – observable market inputs that are unadjusted quoted prices for identical assets or liabilities in active markets that a government can access at the measurement date.

Level 2 – inputs other than quoted prices included within Level 1 – that are observable for the asset or liability, either directly or indirectly (For example, quoted prices for similar assets or liabilities in active markets).

Level 3 – inputs to the valuation methodology are unobservable and significant to the fair value measurement.

The System categorized its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The system had the following recurring fair value measurements as of June 30, 2020 and 2019:

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.

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

As of June 30, 2020, and 2019, the System had the following recurring fair value measurements:

As of June 30, 2020	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
<b>Investments by fair value level (expressed in millions)</b>				
<b>Debt Securities</b>				
U.S. Government obligations	\$ 6,578	\$ 6,578	\$ -	\$ -
Domestic corporate obligations	4,253	-	4,253	-
International obligations	1,107	-	1,107	-
Emerging markets debt	1,080	-	1,080	-
Mortgages & mortgage related securities	1,152	-	-	1,152
<b>Total debt securities</b>	<u>14,170</u>	<u>6,578</u>	<u>6,440</u>	<u>1,152</u>
<b>Equity Securities</b>				
Domestic stocks (includes REITs)	7,083	7,083	-	-
International stocks (includes REITs)	6,623	6,623	-	-
<b>Total equity securities</b>	<u>13,706</u>	<u>13,706</u>	<u>-</u>	<u>-</u>
<b>Alternative Investment</b>	254	-	-	-
<b>Total investment by fair value level</b>	<u>\$ 28,130</u>	<u>\$ 20,284</u>	<u>\$ 6,440</u>	<u>\$ 1,152</u>
<b>Investment measured at the net asset value (NAV)</b>				
Equity Open-End Fund	5,823			
Private funds (includes equity, real estate, credit, energy, infrastructure and timber)	10,225			
Real estate-open ended	4,035			
Multi-asset	238			
<b>Hedge Funds</b>				
Equity long/short	603			
Event-driven	1,041			
Global macro	1,186			
Relative Value	1,950			
Opportunistic	412			
<b>Total investment measured at the NAV</b>	<u>\$25,513</u>			
<b>Investment derivative instruments and foreign currency holdings</b>				
Forwards	\$ 15	\$ -	\$ 15	\$ -
Options	(21)	-	(21)	-
Swaps	30	-	30	-
Rights/Warrants	118	-	118	-
Total investment derivative instruments	<u>142</u>	<u>\$ -</u>	<u>\$ 142</u>	<u>\$ -</u>
<b>*Total</b>	<u>\$ 53,785</u>			

\*Total Investments on the Statement of Fiduciary Net Position agrees to the total sum of \$53,785 on this table, \$4,142 of collateral for loaned securities, and (15) of forward contracts.



As of June 30, 2019	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
<b>Investments by fair value level (expressed in millions)</b>				
<b>Debt Securities</b>				
U.S. Government obligations	\$ 6,441	\$ 6,441	\$ -	\$ -
Domestic corporate obligations	4,764		4,764	
International obligations	89		89	
Emerging markets debt	525		525	
Mortgages & mortgage related securities	1,658			1,658
<b>Total debt securities</b>	<u>13,477</u>	<u>6,441</u>	<u>5,378</u>	<u>1,658</u>
<b>Equity Securities</b>				
Domestic stocks (includes REITs)	9,766	9,766		
International stocks (includes REITs)	9,957	9,957		
<b>Total equity securities</b>	<u>19,723</u>	<u>19,723</u>		
<b>Alternative Investment</b>	32	32		
<b>Cash and Cash Equivalents</b>	1,627	1,627	-	-
<b>Total investment by fair value level</b>	<u>\$ 34,859</u>	<u>\$27,823</u>	<u>\$5,378</u>	<u>\$1,658</u>
<b>Investment measured at the net asset value (NAV)</b>				
Private funds (includes equity, real estate, credit, energy, infrastructure and timber)	9,623			
Real estate-open ended	3,924			
Multi-strategy	443			
<b>Hedge Funds</b>				
Equity long/short	1,073			
Event-driven	1,045			
Global macro	1,314			
Relative Value	1,515			
Opportunistic	329			
<b>Total investment measured at the NAV</b>	<u>\$ 19,266</u>			
<b>Investment derivative instruments and foreign currency holdings</b>				
Credit default swaps	\$ 15	\$ -	\$ 15	\$ -
Foreign exchange contracts (liabilities)	1	-	1	-
Foreign - international currencies	12	-	12	-
Interest rate swaps	(14)	-	(14)	-
Warrants	13	-	13	-
<b>Total investment derivative instruments</b>	<u>\$ 27</u>	<u>\$ -</u>	<u>\$ 27</u>	<u>\$ -</u>
<b>Total</b>	<u>\$ 54,152</u>			

\*Total Investments on the Statement of Fiduciary Net Petition agrees to the total sum of \$54,152 on this table, \$3,336 of collateral for loaned securities, and (\$1,639) of cash equivalents

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, 2020				As of June 30, 2019			
	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)	\$10,225	\$ 7,445			\$ 9,623	\$ 9,836		
Real estate open-end fund (3)	4,035		Quarterly	45 - 90 days	3,924		Quarterly	45 - 90 days
Equity open-end fund (2)	3,738		Daily	1 day				
	1,553		Monthly	7 - 30 days				
	532		Triennially	150 days				
Multi-asset (9)	238		Monthly	5 days	443		Monthly	5 days
<b>Hedge Funds</b>								
Equity long/short (5)	597		Monthly	30 - 45 days	936		Monthly	30 - 45 days
	6		N/A	Liquidating	137		Quarterly	45 - 90 days
Event-driven (6)	188		Monthly	15 days	174		Monthly	15 days
	485		Quarterly	60 - 65 days	504		Quarterly	60 - 65 days
	147		Quarterly	90 days	316		Quarterly	120 days +
	158		Quarterly	120 days +	51		N/A	Liquidating
	63		N/A	Liquidating				
Global macro (4)	177		Daily	2 days	806		Monthly	5 - 30 days
	123		Weekly	3 days	281		Weekly	3 days
	370		Monthly	5 - 30 days	226		Daily	2 days
	198		Monthly	60 days				
	318		Quarterly	60 - 90 days				
Relative value (7)	204		Monthly	30 days	1,203		Quarterly	60 - 65 days
	373		Quarterly	30 days	313		Quarterly	30 days
	1,373		Quarterly	60 - 90 days				
Opportunistic (8)	317		Quarterly	90 days	234		Quarterly	90 days
	95		Semi Annual	90 - 120 days	95		Semi Annual	90 - 120 days
	<u>\$25,513</u>	<u>\$ 7,445</u>			<u>\$ 19,266</u>	<u>\$ 9,836</u>		

- (1) Private funds (includes equity, real estate, credit, energy, infrastructure and timber): This type includes 277 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 2 domestic and 9 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 four funds have a 7 to 30 days liquidity structure and one fund is redeemable in five months with triennial redemption restrictions.
- (3) Real estate-open ended: This type includes 7 domestic open-ended real estate funds, which can be liquidated. The fair values of the funds within this type have been determined using the NAV per share, which has been valued by the fund based on the characteristics of the underlying assets.

- (4) Global macro: This category includes 6 hedge funds 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 2 to 90 days.
- (5) Equity long/short: This type includes investments in 2 hedge funds that invest both long and short primarily in U.S. 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. One fund is currently liquidating and the other one has a one-year soft lock-up and require a 30-day notice.
- (6) Event-driven: This type includes 7 investments of which 3 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 2 funds are focused on financials, merger arbitrage and highly liquid 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. One of the credit hedge funds is currently in liquidation. The other five funds have a 15 to 90 day liquidity structure.
- (7) Relative value: This category includes 7 hedge funds with a liquidity structure between 30 and 90 days. These funds invest in a wide range of strategies. The fair values of the funds within this type have been determined using the NAV per share, which has been valued by the fund based on the characteristics of the underlying assets.
- (8) Opportunistic: Currently there are 3 hedge fund in this category, which invests in re-insurance for catastrophe risk (mostly hurricane and earthquake). Two funds have a quarterly redemption with a 90-day notice and the other has a semi-annual redemption with a 90-day notice. 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

The Chief Investment Officer hires external investment managers in conjunction with the responsibility for implementing the Board's asset allocation strategy. These managers often employ the use of derivatives to manage the asset allocation, rebalance the portfolio, equitize cash balances, hedge or manage exposures, or to implement tactical positions. The System invests in swaps, futures, options, forwards, and rights and warrants that are either exchange traded or over-the-counter instruments. Each external 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 increase total portfolio volatility relative to its benchmark. The external 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, 2020**  
(in Thousands)

Currency	Changes in Fair Value(4)		Fair Value at June 30,2020		
	Classifications	Amount(1)	Classification	Amount(2)	Notional(3)
Credit Default Swaps Bought	Investment Revenue	\$ 4	Swaps	\$ -	\$ -
Credit Default Swaps Written	Investment Revenue	(24,222)	Swaps	2,513	347,185
Fixed Income Futures Long	Investment Revenue	335,828	Futures	-	1,038,037
Fixed Income Futures Short	Investment Revenue	(12,924)	Futures	-	(288,107)
Fixed Income Options Bought	Investment Revenue	(2,611)	Options	7,990	298,416
Fixed Income Options Written	Investment Revenue	(18,744)	Options	(35,448)	(1,242,655)
Foreign Currency Futures Written	Investment Revenue	150	Futures	-	-
Futures Options Bought	Investment Revenue	(35)	Futures	-	-
Futures Options Written	Investment Revenue	1,000	Options	(198)	(649)
FX Forwards	Investment Revenue	36,740	Long Term Instruments	14,628	13,762,989
Index Futures Long	Investment Revenue	(88,046)	Futures	-	1,538
Index Futures Short	Investment Revenue	22,933	Futures	-	(367)
Pay Fixed Interest Rate Swaps	Investment Revenue	(38,934)	Swaps	(21,393)	234,251
Receive Fixed Interest Rate Swaps	Investment Revenue	25,062	Swaps	23,114	882,275
Rights	Investment Revenue	462	Common Stock	340	710
Total Return Swaps Bond	Investment Revenue	3,415	Swaps	(716)	(30,000)
Warrants	Investment Revenue	(8,971)	Common Stock	118,747	35,373
		<u>\$ 231,107</u>		<u>\$ 109,577</u>	

## DERIVATIVES (continued)

**List of Derivatives Aggregated by Investment Type – At Fair Value as of June 30, 2019**  
(in Thousands)

Currency	Changes in Fair Value(4)		Fair Value at June 30,2019		
	Classifications	Amount(1)	Classification	Amount(2)	Notional(3)
Credit Default Swaps Bought	Investment Revenue	\$ 63	Swaps	\$ -	\$ -
Credit Default Swaps Written	Investment Revenue	15,172	Swaps	15,010	396,364
Fixed Income Futures Long	Investment Revenue	84,059	Futures	-	845,338
Fixed Income Futures Short	Investment Revenue	(48,140)	Futures	-	(314,861)
Fixed Income Options Bought	Investment Revenue	2,341	Options	15,973	1,341,400
Fixed Income Options Written	Investment Revenue	4,687	Options	(15,223)	(1,675,422)
Foreign Currency Futures Long	Investment Revenue	-	Futures	-	-
Foreign Currency Futures Short	Investment Revenue	-	Futures	-	-
Foreign Currency Futures Written	Investment Revenue	-	Options	-	-
Foreign Currency Options Written	Investment Revenue	7	Options	-	-
Futures Options Bought	Investment Revenue	(85)	Options	-	16,236,939
Futures Options Written	Investment Revenue	1,802	Options	(54)	542
FX Forwards	Investment Revenue	30,596	Long Term Instruments	(2,280)	(229)
Index Futures Long	Investment Revenue	72,952	Futures	-	542
Index Futures Short	Investment Revenue	(967)	Futures	-	(229)
Pay Fixed Interest Rate Swaps	Investment Revenue	(46,510)	Swaps	(16,580)	(1,005,373)
Receive Fixed Interest Rate Swaps	Investment Revenue	6,617	Swaps	2,136	(80,000)
Rights	Investment Revenue	492	Common Stock	363	663
Total Return Swaps Bond	Investment Revenue	2,827	Swaps	201	(80,000)
Warrants	Investment Revenue	2,340	Common Stock	13,416	511
		\$ 128,253		\$ 12,962	

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.

## DERIVATIVES (continued)

## 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, 2020 and 2019, was \$155,937 and \$174,850 (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.

The following table lists the fair value of credit exposure per ratings of the Standard & Poor's (S&P), Moody's and Fitch.

## 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, 2020 and 2019:

As of June 30, 2020					
S&P		Moody's		Fitch	
Fair Value	Rating	Fair Value	Rating	Fair Value	Rating
\$35,420	AA-	\$24,139	Aa2	\$36,108	AA
30,522	A+	29,182	Aa3	45,289	AA-
47,288	A	47,288	A1	73,992	A+
42,159	A-	54,780	A2	548	A
548	BBB+	548	A3	-	NR
\$155,937	(1)	\$155,937	(1)	\$155,937	(1)

  

As of June 30, 2019					
S&P		Moody's		Fitch	
Fair Value	Rating	Fair Value	Rating	Fair Value	Rating
\$55,082	AA-	\$7,406	Aa2	\$21,290	AA
23,465	A+	54,550	Aa3	97,005	AA-
83,060	A	58,774	A1	43,570	A+
258	A-	41,135	A2	7,797	A
7,797	BBB+	7,797	A3	5,188	NR
5,188	NR	5,188	NR	-	
\$174,850	(1)	\$174,850	(1)	\$174,850	(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, 2019:

Counterparty Name	Percentage of Net Exposure	S&P Rating	Fitch Rating	Moody's Rating
STATE STREET BANK LONDON	22.8%	A	AA-	A1
WELLS FARGO LCH	14.1%	A-	A+	A2
HSBC BANK PLC	12.7%	A-	A+	A2
THE BANK OF NEW YORK MELLON	9.4%	AA-	AA	Aa2
ROYAL BANK OF CANADA (UK)	7.7%	AA-	AA	A2
JPMORGAN CHASE BANK NA LONDON	6.0%	A+	AA	Aa2
STANDARD CHARTERED BANK	5.2%	A	A+	A1
BNP PARIBAS SA	5.2%	A+	A+	Aa3
UBS AG	4.5%	A+	AA-	Aa3
WESTPAC BANKING CORPORATION	3.9%	AA-	A+	Aa3
CITIBANK N.A.	3.8%	A+	A+	Aa3
BARCLAYS BANK ICE	2.3%	A	A+	A1
TORONTO DOMINION BANK	1.4%	AA-	AA-	Aa3
NORTHERN TRUST COMPANY, THE	0.4%	AA-	AA-	A2
GOLDMAN SACHS BANK USA	0.3%	BBB+	A	A3
WELLS FARGO SECURITIES, LLC	0.1%	A-	A+	A2
MORGAN STANLEY CAPITAL SERVICES INC	0.1%	BBB+	A	A3
WELLS FARGO ICE	0.1%	A-	A+	A2

**B. Interest Rate Risk**

During fiscal years 2020 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 "nonemployer" 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) are eligible to participate in a Deferred Retirement Option Program (DROP). For members who enter the DROP on or before June 30, 2011, the SPRS member is deemed retired and the retirement allowance placed in an account earning 6% interest per year, compounded monthly. For members who enter the DROP on or after July 1, 2011, the SPRS 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 SPRS retiree. The SPRS member must end employment and fully retire at the end of the DROP period. The maximum period of participation is 5 years. The amount of funds held in the DROP as of June 30, 2020 and 2019, was \$ 25,017,803 and \$21,724,99, 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 makes all of the employer and other (non-employer) contributions to the System.

**6. LONG-TERM CONTRIBUTIONS RECEIVABLE**

In addition to actuarially determined contributions, certain withdrawn employers also make annual installment payments, including interest at the actuarially assumed rate of return in effect at the time of withdrawal (7% or 7.5% per year), for liabilities associated with employees that have elected to stay in the System when their employer elected to withdraw. As of June 30, 2020 and 2019, the outstanding balances were \$6,773 and \$12,741 (expressed in thousands), respectively. These payments are due over various time periods, based on the date of the employer's withdrawal.

## 7. 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, 2020 and 2019, refunds to members and withdrawing employers were \$68,752 and \$67,400 (expressed in thousands), respectively.

## 8. ACCOUNTS PAYABLE AND ACCRUED EXPENSES

For the fiscal years ended June 30, 2020 and 2019, accounts payable and accrued expenses consisted of the following components (expressed in thousands):

	2020	2019
Administrative expenses	\$ 5,575	\$ 1,497
Investment management fees	18,881	23,362
Tax and other withholdings	40,109	38,544
<b>Total</b>	<b>64,565</b>	<b>\$ 63,403</b>

## 9. NET PENSION LIABILITY

Based on actuarial valuations performed as of June 30, 2019 and 2018 and rolled forward to measurement dates of June 30, 2020 and 2019, respectively, the components of the net pension liability for participating employers at June 30, 2020 and 2019, respectively, were as follows:

	<i>(expressed in thousands)</i> 2020	2019
Total Pension Liability (TPL)	\$77,187,399	\$74,569,030
Plan Fiduciary Net Position	54,586,037	53,943,420
Net Pension Liability	\$22,601,362	20,625,610
Ratio - Fiduciary Net Position/TPL	70.72%	72.34%

## A. Actuarial Assumptions

The actuarial assumptions presented below were adopted pursuant to an experience study for the period July 1, 2014 to July 30, 2018.

Inflation	In the 2020 actuarial valuation, 2.60% general, 3.10% wage. In the 2019 actuarial valuation, 2.65% general, 3.15% wage.
Salary Increases	In the 2020 actuarial valuation, 3.10% to 11.60%. In the 2019 actuarial valuation, 3.10% to 11.60%
Investment Rate of Return	In the 2020 actuarial valuation, 7.40%. In the 2019 actuarial valuation, 7.40%.
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2018 valuation pursuant to an experience study of the period July 1, 2014 to July 30, 2018.
Mortality	Public Sector 2010 Mortality Tables calibrated to MSRPS experience with generational projections using MP-2018 (2-dimensional) mortality improvement scale.



**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, 2020, these best estimates are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
Public Equity	37%	5.2%
Private Equity	13%	6.5%
Rate Sensitive	19%	-0.3%
Credit Opportunity	9%	2.8%
Real Assets	14%	4.3%
Absolute Return	8%	1.8%
Total	<u>100%</u>	

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, 2020.

For the years ended June 30, 2020 and 2019, the annual money-weighted rate of return on pension plan investments, net of the pension plan investment expense, was 3.50% and 6.44%, 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 7.40% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.40%. 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 7.40%, 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:

*(Expressed in thousands)*

<u>System</u>	<u>1% Decrease to 6.40%</u>	<u>Discount Rate 7.40%</u>	<u>1% Increase to 8.40%</u>
Teachers	\$ 17,477,411	\$ 11,766,141	\$ 7,016,124
Employees	12,523,173	9,276,756	6,556,933
State Police	1,160,901	842,706	584,184
Judges	147,946	87,376	35,749
LEOPS	855,727	622,293	431,403
CORS	11,537	6,088	1,612
<b>Total System Net Pension Liability</b>	<u><b>\$32,176,695</b></u>	<u><b>\$22,601,360</b></u>	<u><b>\$14,626,005</b></u>

## REQUIRED SUPPLEMENTARY INFORMATION

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

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

*\*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

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

## REQUIRED SUPPLEMENTARY INFORMATION

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

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

*\*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

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

## REQUIRED SUPPLEMENTARY INFORMATION

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

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

*\*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

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

## REQUIRED SUPPLEMENTARY INFORMATION

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

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

*\*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

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

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

*\*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

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

## REQUIRED SUPPLEMENTARY INFORMATION

**MARYLAND STATE RETIREMENT**

## SCHEDULE OF CHANGES IN

for the Fiscal Year Ended

*(Expressed in Thousands)*

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

*\*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

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

## REQUIRED SUPPLEMENTARY INFORMATION

**MARYLAND STATE RETIREMENT**

## SCHEDULE OF CHANGES IN

for the Fiscal Year Ended

*(Expressed in Thousands)*

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

*\*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

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

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS  
for the Fiscal Year Ended June 30, 2020  
(Expressed in Thousands)

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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	<u>\$ 11,766,141</u>	<u>\$ 9,282,847</u>	<u>\$ 842,706</u>	<u>\$ 87,377</u>	<u>\$ 622,291</u>	<u>\$ 22,601,362</u>
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)

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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	<u>\$ 10,686,305</u>	<u>\$ 8,524,403</u>	<u>\$ 773,778</u>	<u>\$ 73,241</u>	<u>\$ 567,883</u>	<u>\$ 20,625,610</u>
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)

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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	<u>\$ 11,435,753</u>	<u>\$ 8,077,115</u>	<u>\$ 822,745</u>	<u>\$ 91,911</u>	<u>\$ 554,076</u>	<u>\$ 20,981,600</u>
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)

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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	<u>\$ 11,902,084</u>	<u>\$ 8,253,630</u>	<u>\$ 825,148</u>	<u>\$ 108,487</u>	<u>\$ 534,352</u>	<u>\$ 21,623,701</u>
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)

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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	<u>\$ 12,991,208</u>	<u>\$ 9,015,352</u>	<u>\$ 892,786</u>	<u>\$ 128,656</u>	<u>\$ 566,025</u>	<u>\$ 23,594,027</u>
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)

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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	<u>\$ 11,475,111</u>	<u>\$ 7,897,688</u>	<u>\$ 808,269</u>	<u>\$ 96,069</u>	<u>\$ 504,575</u>	<u>\$ 20,781,712</u>
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)*

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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, 2020

*(Expressed in Thousands)*

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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)*

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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)

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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)

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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)

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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)

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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)	<u>\$ 125,555</u>	<u>\$ 123,563</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 249,118</u>
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)

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>	<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
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)	<u>\$ 358,798</u>	<u>\$ 220,458</u>	<u>\$ 8,082</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 587,338</u>
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

<b>Fiscal Year Ended</b>	<b>Annual money-weighted rate of return, net of investment expenses</b>
2014	14.38%
2015	2.68%
2016	1.16%
2017	10.02%
2018	8.08%
2019	6.44%
2020	3.50%

*\*\*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 (18 years remaining as of the June 30, 2020 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 2021 are equal to the budgeted contributions developed in the valuation as of June 30, 2019, plus the proportionate share of reinvested savings allocated to each System for fiscal year 2021 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 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.

#### 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 the

## NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

### C. Actuarial Assumptions (continued)

June 30, 2019 valuation reflects the adoption of the assumptions recommended from that analysis. 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, 2020:

- A rate of return on investments of 7.40% compounded annually (effective June 30, 2019);
- projected salary increases of 3.10% compounded annually, attributable to wage inflation (effective June 30, 2019);
- additional projected salary increases ranging from 0.00% to 8.50% per year attributable to seniority and merit (effective June 30, 2019);
- post-retirement benefit increases ranging from 2.19% to 3.10% per year depending on the system for service earned prior to July 1, 2011, and 1.42% to 3.10% per year depending on the system for service earned on or after July 1, 2011 (effective June 30, 2019);
- 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 3.10% annually (effective June 30, 2019).

## OTHER SUPPLEMENTARY INFORMATION

## SCHEDULE OF FUNDING PROGRESS

*(Expressed in Thousands)*

<b>Actuarial Valuation Date June 30,</b>	<b>Actuarial Value of Assets a</b>	<b>Actuarial Accrued Liability (AAL) b</b>	<b>Unfunded AAL (UAAL) (b - a)</b>	<b>Funded Ratio (a / b)</b>	<b>Covered Payroll c</b>	<b>UAAL as a Percentage of Covered Payroll [(b - a) / c]</b>
2011	\$ 36,177,656	\$ 55,917,543	\$ 19,739,887	64.70%	\$ 10,478,800	188%
2012	37,248,401	57,869,145	20,620,744	64.37%	10,336,537	199%
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%

## 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, 2020 actuarial valuation date and each of the 9 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, 2020 the System's funded ratio increased from 72.94% to 73.55%.

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, 2020 the System's ratio of the unfunded actuarial accrued liability to its covered payroll decreased from 169% to 162%.

SCHEDULE OF CONTRIBUTIONS FROM  
EMPLOYERS AND OTHER CONTRIBUTING ENTITY  
*(Expressed in Thousands)*

Fiscal Year Ended June 30,	Annual Required Contributions	Percentage Contributed
2011	\$ 2,035,401	74%
2012	2,146,624	71%
2013	2,149,985	76%
2014	2,320,991	75%
2015	2,107,730	88%
2016	1,948,083	96%
2017	2,033,312	100%
2018	1,995,017	100%
2019	2,054,091	100%
2020	2,144,269	100%

## OTHER SUPPLEMENTARY INFORMATION

### FUND BALANCE ACCOUNTS June 30, 2020

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, 2020 (with Comparative 2019 Totals)

*(Expressed in Thousands)*

	Annuity Savings Fund	Accumulation Fund	Expense Fund	Totals	
				2019	2018
<b>Fund Balances, Beginning of Year</b>	<u>\$9,120,957</u>	<u>\$44,817,718</u>	<u>\$4,745</u>	<u>\$53,943,420</u>	<u>\$51,827,233</u>
<b>Additions</b>					
Net investment income (loss)	-	2,228,406	(361,767)	1,866,639	3,288,209
Contributions (Note 5):					
Employers	-	1,328,457	31,457	1,359,914	1,301,554
Members	850,298	-	-	850,298	807,291
State contributions on behalf of local governments	-	784,149	-	784,149	751,945
Contribution interest	-	207	-	207	592
<b>Deductions</b>					
Benefit payments		(4,108,492)	-	(4,108,492)	(3,926,220)
Refunds (Note 7)	(68,752)	-	-	(68,752)	(67,400)
Administrative expenses (Note 2)	-	(9,821)	(31,525)	(41,346)	(39,784)
<b>Transfers</b>					
From the Accumulation Fund to the Annuity Savings Fund for interest credited to members' accounts	447,588	(447,588)	-	-	-
To the Accumulation Fund from the Annuity Savings Fund for contributions of retiring members	(479,305)	479,305	-	-	-
From the Accumulation Fund to the Expense Fund for administrative and investment expenses	-	(361,767)	361,767	-	-
Net changes in fund balances	<u>749,829</u>	<u>(107,144)</u>	<u>(68)</u>	<u>642,617</u>	<u>2,116,187</u>
<b>Fund Balances, End of Year</b>	<u>\$9,870,786</u>	<u>\$44,710,574</u>	<u>\$4,677</u>	<u>\$54,586,037</u>	<u>\$53,943,420</u>

**MARYLAND STATE RETIREMENT AND PENSION SYSTEM**

## SCHEDULE OF ADMINISTRATIVE EXPENSES

for the Fiscal Years Ended June 30, 2020 and 2019

*(Expressed in Thousands)*

	<b>2020</b>	<b>2019</b>
<b>Personnel services</b>		
Staff salaries	\$15,244	\$13,833
Fringe benefits	7,162	6,548
Total personnel services	<u>22,406</u>	<u>20,381</u>
<b>Professional and contractual services</b>		
Actuarial services	348	360
Legal and financial services	4,737	4,182
Consulting services	270	2,172
Data processing services	6,088	4,363
Other contractual services	1,598	1,213
Total professional and contractual services	<u>13,041</u>	<u>12,290</u>
<b>Miscellaneous</b>		
Communications	899	867
Rent	1,933	1,686
Equipment and supplies	699	1,091
Other	2,368	3,469
Total miscellaneous	<u>5,899</u>	<u>7,113</u>
<b>Total Administrative Expenses</b>	<u>\$41,346</u>	<u>\$39,784</u>

**MARYLAND STATE RETIREMENT AND PENSION SYSTEM**

SCHEDULE OF INVESTMENT EXPENSES  
for the Fiscal Years Ended June 30, 2020 and 2019  
(Expressed in Thousands)

	Management Fees for 2020	Incentive Fees for 2020	Total
<b>Investment advisors</b>			
Public equity	\$77,563	\$5,050	\$82,613
Fixed income	13,178	5,996	19,174
Credit opportunity	21,563	-	21,563
Real return	15,737	-	15,737
Absolute return	41,477	24,867	66,344
Multi Asset	1,528	-	1,528
Private equity	107,845	-	107,845
Real estate	36,599	2,656	39,255
<b>Total investment advisory fees</b>	<u>315,490</u>	<u>38,569</u>	<u>354,059</u>
<b>Other investment service fees</b>			
Currency overlay	3,724	-	3,724
Other investment expenses	3,984	-	3,984
<b>Total other investment service fees</b>	<u>7,708</u>	<u>-</u>	<u>7,708</u>
<b>Total Investment Expenses</b>	<u>\$323,198</u>	<u>\$38,569</u>	<u>\$361,767</u>
<hr/>			
	Management Fees for 2019	Incentive Fees for 2019	Total
<b>Investment advisors</b>			
Public equity	\$76,412	\$12,343	\$88,755
Fixed income	12,342	1,202	13,544
Credit opportunity	20,165	-	20,165
Real return	15,591	-	15,591
Absolute return	51,423	20,991	72,414
Multi Asset	1,436	-	1,436
Private equity	109,445	341	109,786
Real estate	36,542	1,869	38,411
<b>Total investment advisory fees</b>	<u>323,356</u>	<u>36,746</u>	<u>360,102</u>
<b>Other investment service fees</b>			
Currency overlay	4,672	-	4,672
Other investment expenses	5,352	-	5,352
<b>Total other investment service fees</b>	<u>10,024</u>	<u>-</u>	<u>10,024</u>
<b>Total Investment Expenses</b>	<u>\$333,380</u>	<u>\$36,746</u>	<u>\$370,126</u>

**MARYLAND STATE RETIREMENT**

## SCHEDULE OF PLAN NET

as of June 30, 2020

*(Expressed in Thousands)*

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>
<b>Assets:</b>			
Cash & cash equivalents (note 3)	\$ 923,471	\$ 525,757	\$ 44,736
<b>Receivables:</b>			
Contributions:			
Employers	17,667	15,868	3,045
Employers - Long Term (Note 5)	-	6,773	-
Members	844	8,856	342
Accrued investment income	126,481	70,909	5,871
Investment sales proceeds	440,589	247,574	20,334
Due from other systems	72,223	46,938	101
Total receivables	<u>657,804</u>	<u>396,918</u>	<u>29,693</u>
<b>Investments, at fair value</b> (Notes 2 & 3)			
U.S. Government obligations	4,002,726	2,200,867	184,698
Domestic corporate obligations	2,595,074	1,426,881	119,745
International obligations	1,329,427	730,975	61,344
Domestic stocks	5,339,875	2,936,087	246,398
International stocks	6,615,935	3,637,719	305,279
Mortgages & mortgage related securities	701,270	385,587	32,359
Alternative investments	12,135,419	6,672,563	559,965
Collateral for loaned securities	2,516,678	1,394,575	115,805
Total investments	<u>35,236,404</u>	<u>19,385,254</u>	<u>1,625,593</u>
<b>Total assets</b>	<u>36,817,679</u>	<u>20,307,929</u>	<u>1,700,022</u>
<b>Liabilities:</b>			
Accounts payable & accrued expenses	41,617	19,643	1,611
Investment commitments payable	1,000,097	563,162	46,512
Obligation for collateral for loaned securities	2,516,678	1,394,575	115,805
Due to other systems	44,276	79,714	(27)
<b>Total liabilities</b>	<u>3,602,668</u>	<u>2,057,094</u>	<u>163,901</u>
Net position restricted for pensions	<u>\$33,215,011</u>	<u>\$18,250,835</u>	<u>\$1,536,121</u>

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

**AND PENSION SYSTEM**

## POSITION BY SYSTEM

<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Subtotal</b>	<b>Eliminations*</b>	<b>Combined Total</b>
\$ 17,075	\$ 28,703	\$ 1,539,742	\$ -	\$ 1,539,742
(37)	3,536	40,079	-	40,079
-	-	6,773	-	6,773
4	378	10,424	-	10,424
1,884	3,818	208,963	-	208,963
6,518	12,453	727,468	-	727,468
-	4,703	123,965	(123,965)	-
<u>8,369</u>	<u>24,888</u>	<u>1,117,672</u>	<u>(123,965)</u>	<u>993,707</u>
59,561	130,153	6,578,005	-	6,578,005
38,615	84,382	4,264,697	-	4,264,697
19,782	43,228	2,184,756	-	2,184,756
79,457	173,634	8,775,451	-	8,775,451
98,446	215,126	10,872,505	-	10,872,505
10,435	22,803	1,152,454	-	1,152,454
180,576	394,600	19,943,124	-	19,943,124
<u>37,329</u>	<u>77,761</u>	<u>4,142,148</u>	<u>-</u>	<u>4,142,148</u>
<u>524,201</u>	<u>1,141,687</u>	<u>57,913,139</u>	<u>-</u>	<u>57,913,139</u>
<u>549,645</u>	<u>1,195,278</u>	<u>60,570,553</u>	<u>(123,965)</u>	<u>60,446,588</u>
687	1,007	64,565	-	64,565
14,778	29,289	1,653,838	-	1,653,838
37,329	77,761	4,142,148	-	4,142,148
<u>2</u>	<u>-</u>	<u>123,965</u>	<u>(123,965)</u>	<u>-</u>
<u>52,796</u>	<u>108,057</u>	<u>5,984,516</u>	<u>(123,965)</u>	<u>5,860,551</u>
\$ <u>496,849</u>	\$ <u>1,087,221</u>	\$ <u>54,586,037</u>	\$ <u>-</u>	\$ <u>54,586,037</u>

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

	<b>Teachers' Retirement and Pension Systems</b>	<b>Employees' Retirement and Pension Systems</b>	<b>State Police Retirement System</b>
<b>Additions:</b>			
<b>Contributions</b>			
Employers	\$386,100	\$788,646	\$91,390
Members	499,884	324,162	9,277
State contributions on behalf of local governments	784,149	-	-
Contribution interest	-	207	-
Total Contributions	<u>1,670,133</u>	<u>1,113,015</u>	<u>100,667</u>
<b>Investment Income</b>			
Net depreciation in fair value of investments	238,745	131,380	11,352
Interest	265,120	146,972	12,344
Dividends	837,275	463,861	38,719
<b>Income Before Securities Lending Activity</b>	<u>1,341,140</u>	<u>742,213</u>	<u>62,415</u>
Gross income from securities lending activity:	46,939	26,002	2,170
Securities lending borrower rebates	(34,328)	(19,015)	(1,586)
Securities lending agent fees	(632)	(349)	(29)
Net income from securities lending activity	<u>11,979</u>	<u>6,638</u>	<u>555</u>
<b>Total Investment Income</b>	<u>1,353,119</u>	<u>748,851</u>	<u>62,970</u>
Less investment expenses:			
Investment advisory fees	(219,442)	(121,747)	(10,169)
Net investment income	<u>1,133,677</u>	<u>627,104</u>	<u>52,801</u>
<b>Transfers from other systems</b>	<u>-</u>	<u>-</u>	<u>-</u>
<b>Total Additions</b>	<u>2,803,810</u>	<u>1,740,119</u>	<u>153,468</u>
<b>Deductions:</b>			
Benefit payments	2,359,572	1,508,547	127,108
Refunds (Note 7)	34,038	33,125	336
Administrative expenses (Note 2)	22,856	17,482	294
Transfers to other systems	(24,740)	25,530	(63)
<b>Total Deductions</b>	<u>2,391,726</u>	<u>1,584,684</u>	<u>127,675</u>
<i>Net (decrease) increase in plan assets</i>	<u>412,084</u>	<u>155,435</u>	<u>25,793</u>
Net position restricted for pensions			
Beginning of the fiscal year	<u>32,802,927</u>	<u>18,095,400</u>	<u>1,510,328</u>
<b>End of the Fiscal Year</b>	<u><u>\$33,215,011</u></u>	<u><u>\$18,250,835</u></u>	<u><u>\$1,536,121</u></u>

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

**AND PENSION SYSTEM**

## PLAN NET POSITION BY SYSTEM

June 30, 2020

<b>Judges' Retirement System</b>	<b>Law Enforcement Officers' Pension System</b>	<b>Total</b>
\$ 22,708	\$ 71,070	\$ 1,359,914
3,453	13,522	850,298
-	-	784,149
-	-	207
<u>26,161</u>	<u>84,592</u>	<u>2,994,568</u>
3,616	7,166	392,259
4,057	8,581	437,074
12,499	26,980	1,379,334
<u>20,172</u>	<u>42,727</u>	<u>2,208,667</u>
701	1,508	77,320
(512)	(1,101)	(56,542)
(9)	(20)	(1,039)
<u>180</u>	<u>387</u>	<u>19,739</u>
<u>20,352</u>	<u>43,114</u>	<u>2,228,406</u>
(3,281)	(7,128)	(361,767)
<u>17,071</u>	<u>35,986</u>	<u>1,866,639</u>
-	-	-
<u>43,232</u>	<u>120,578</u>	<u>4,861,207</u>
36,332	76,933	4,108,492
-	1,253	68,752
69	645	41,346
-	(727)	-
<u>36,401</u>	<u>78,104</u>	<u>4,218,590</u>
<u>6,831</u>	<u>42,474</u>	<u>642,617</u>
490,018	1,044,747	53,943,420
<u>\$ 496,849</u>	<u>\$ 1,087,221</u>	<u>\$54,586,037</u>



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