



MARYLAND
STATE RETIREMENT
and PENSION SYSTEM

Comprehensive Annual Financial Report

Maryland State Retirement and Pension System

A Pension Trust Fund of the State of Maryland
For the Years Ended June 30, 2016 and 2015

2016

MISSION STATEMENT

The Board of Trustees of the Maryland State Retirement and Pension System (System) is charged with the fiduciary responsibility for administering the survivor, disability and retirement benefits of the System's participants and to ensure that sufficient assets are available to fund the benefits when due. To accomplish this mission the System has established the following key goals:

- To prudently invest System assets in a well diversified manner to optimize long-term returns, while controlling risk through excellence in execution of the investment objectives and strategies of the System.
- To effectively communicate with all retirement plan participants to inform them about the benefits provided by the System, and to educate them about planning and preparing for all aspects of their future retirement.
- To accurately and timely pay retirement allowances provided by State pension law to the System's retirees and their beneficiaries.
- To implement an automated, comprehensive and integrated pension administration and electronic document management system.
- To efficiently collect the required employer and members contributions necessary to fund the System.

Comprehensive Annual Financial Report Maryland State Retirement and Pension System



A Pension Trust Fund of the State of Maryland

For the Years Ended June 30, 2016 and 2015

Prepared by:

Maryland State Retirement Agency
120 East Baltimore Street
Baltimore, Maryland 21202

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MARYLAND
STATE RETIREMENT
and PENSION SYSTEM

STATE RETIREMENT AGENCY
120 East Baltimore Street
Baltimore, MD 21202
Tel: 410-625-5555
1-800-492-5909
TDD/TTY 410-625-5535
sra.maryland.gov

BOARD OF TRUSTEES
Nancy K. Kopp
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Sheila Hill
F. Patrick Hughes
Charles W. Johnson
Theresa Lochte
Richard E. Norman

R. Dean Kenderdine
Executive Director
Secretary To The Board

Introduction

December 15, 2016

Dear Members, Retirees and Beneficiaries:

On behalf of the Board of Trustees (the Board), we are pleased to present the Comprehensive Annual Financial Report of the Maryland State Retirement and Pension System for the fiscal year ended June 30, 2016. This report provides information on the financial status of the retirement system during a period when the system issued, on average, approximately \$289 million in monthly payments to nearly 153,000 retirees and beneficiaries.

The Board's fundamental mission is to ensure that retirement benefits are paid in full, and in an accurate and timely manner. The Board oversees the investment of the Maryland State Retirement and Pension System assets in order to help ensure the funding necessary to meet those obligations.

For the second consecutive year, the pension fund realized modest gains in fiscal 2016, earning 1.16 percent for the year, falling short of the 7.55 percent actuarial target. The fund earned 2.68 percent in fiscal 2015 after returning 14.37 percent the year before.

The main factor contributing to the lackluster returns for the fiscal year was the weak performance generated by global public equities, which typically represent the largest allocation in most investors' portfolios. Energy and other commodity-related assets also experienced depressed investment returns as oil prices fell to levels not seen in over a decade. While most publicly-traded, growth-oriented assets recorded unimpressive results for the year, some areas of the portfolio performed very well. Private equity, real estate and the rate sensitive portfolio all achieved returns in excess of nine percent for the year.

While earnings for the past two years have fallen short of our expected rate of return, the board continues to focus on long-term performance. Although this has been a challenging year for most institutional investors, the long term positive returns confirm the appropriateness of the Board's decision, some time ago, to more broadly diversify its portfolio to reduce the volatility of annual returns.

The capital markets are always going to experience volatility, which will result in good years and bad years. Being a long-term investor allows the system to weather the short-term volatility for long-term returns. Over the last 30 years—a period that has included multiple economic cycles—the system has earned an average return of 8.00%.

Your retirement system remains administratively and financially sound. As a participant in the system, you can remain confident that your pension benefits are secure. As always, your commitment to and involvement in the concerns of the system are greatly appreciated. We value your input—this is your system. If you have any questions, please do not hesitate to contact us.

Sincerely,

NANCY K. KOPP
Chairman

PETER FRANCHOT
Vice Chairman



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R. Dean Kenderdine
Executive Director
Secretary To The Board

LETTER OF TRANSMITTAL

December 15, 2016

Honorable Chairman and Members of the Board of Trustees:

We are pleased to submit the Comprehensive Annual Financial Report for the Maryland State Retirement and Pension System for the fiscal year ended June 30, 2016. We believe this report fairly presents the operating results achieved during this 12-month reporting period.

The System is responsible for properly administering retirement, disability, and death benefits. At the same time, it strives to keep employer contribution rates as reasonable as possible by maximizing investment returns while maintaining an acceptable level of risk. Members covered by the plans include state employees, teachers, law enforcement officers, legislators, judges, as well as local government employees and correctional personnel whose employers have elected to participate in the System.

The System currently provides monthly allowances to nearly 153,000 retirees and beneficiaries, and is an essential element of the future financial security for more than 192,000 active participating members. Descriptions of the membership requirements and benefits provided by each plan administered by the System are included in the Plan Summary Section starting on page 123.

This Comprehensive Annual Financial Report contains six sections. The Introductory Section provides information about the administrative structure of the System. The Financial Section provides a comprehensive review of the System's financial position, the results of its operations and its funded status. It also contains the report from the System's independent auditor, the combined financial statements and supplementary financial data. The Investment Section includes a report highlighting the System's investment performance in addition to various summary level portfolio compositions and other investment data. The Actuarial Section contains the independent actuary's report on the results of the System's annual actuarial valuation. The Statistical and Plan Summary Sections provide demographic composition of the System's membership segments affected by each plan and detailed descriptions of the various plans' provisions. In addition to this Letter of Transmittal, additional narrative, overview, and analysis can be found in Management's Discussion and Analysis beginning on page 18.

INVESTMENTS

The System's investment portfolio returned 1.16 percent in fiscal year 2016, falling short of the 7.55 percent actuarial return target. Investment returns continued to be challenged over fiscal year 2016, particularly in global public equities and commodity-related assets, as concerns over slowing global growth and Brexit muted investor enthusiasm for most risk assets.

After the payment of benefits, the fair value of assets decreased by roughly \$423.9 million from \$45.79 billion on June 30, 2015 to \$45.36 billion on June 30, 2016.

The System's long-term target asset allocation is comprised of 36 percent public equities, 21 percent rate sensitive assets, 11 percent private equities, 9 percent credit/debt strategies, 15 percent real return, and 8 percent absolute return. The System's portfolio is balanced across several asset and sub-asset classes and is globally diversified. This, coupled with a long term investment horizon, provides the System with greater protection during short-term market volatility.

FINANCIAL INFORMATION

System management has committed the resources necessary to maintain an internal control structure that provides reasonable assurance that assets are adequately safeguarded, financial records are consistently and accurately maintained, and transactions are properly executed to permit preparation of financial statements in accordance with generally accepted accounting principles. The System's internal control structure includes written policies and procedures and an internal audit division that reports to the Board.

ACCOUNTING SYSTEM AND REPORTS

The System reports its transactions on the accrual basis of accounting. Under this method, revenues are reported in the accounting period they are earned and become measurable, and expenses are reported when the related liability is incurred and measurable. Investments are reported at fair value at fiscal yearend. Investment purchases and sales are reported in the accounting period in which the related trade dates occur.

REVENUES

The reserves necessary to finance retirement allowances and other benefits are accumulated through investment earnings and the collection of employer and member contributions. During fiscal year 2016, investment earnings were \$497.5 million, while revenues from employer and member contributions were \$1.87 billion and \$764.4 million, respectively. For fiscal year 2016, member contribution rates on average were 7 percent, while employer rates varied depending on the System.

EXPENSES

The System's expenses consist of monthly retirement allowances, refunds of contributions to terminated and transferring members, withdrawing employers, and the administrative cost of System operations. Payments to retirees, beneficiaries and transferring or withdrawing members and employers continued to be the System's primary disbursements during FY 2016, totaling \$3.5 billion. In addition, the System disbursed \$361.0 million to manage the investment portfolio and to administer the System, of which \$332.3 million was paid for investment management, portfolio custody, and securities lending services and \$28.7 million used to fund the System's administrative operations.

FUNDING

Funds are derived from the excess of additions, which include contributions and investment earnings, over deductions, which are comprised of benefits and administrative expenses. Funds are accumulated to meet future benefit obligations to retirees and beneficiaries. This accumulated balance is referred to as the "net position restricted for pensions" in the Statement of Plan Net Position in the Financial Section of this report. The actuarial accrued liability is not disclosed in the basic financial statement but is disclosed in note nine to the basic financial statements. The funded status schedule presented in note nine shows the actuarial value of assets, which is based on a five-year smoothed expected rate of return, wherein the excess or shortfall of investment income over or under the actuarial assumed income of 7.55 percent is recognized over a five-year period. This is the value of assets used by the actuary in determining contribution rates for the Systems as disclosed in note five to the basic financial statements.

The actuarial accrued liability of the Systems is also determined by the actuary. It is a measure of the present value of actuarial accrued liabilities estimated to be payable in the future to current retirees, beneficiaries and employees for service earned to date. The percentage computed by dividing the actuarial value of assets available for benefits by the actuarial accrued liability is generally referred to as the "funded ratio." This ratio provides an indication of the funded status of the System on a going-concern basis and generally, the greater this percentage, the stronger the System. The System's funded ratio increased from 69.7 percent at June 30, 2015 to 70.5 percent at June 30, 2016.

At June 30, 2016, the System's actuarial accrued liability was \$67.8 billion and the unfunded actuarial accrued liability totaled \$19.9 billion, resulting in a funded status ratio of 70.5 percent. The unfunded actuarial accrued liability is being amortized over a closed 25-year period.

PROFESSIONAL SERVICES

The System contracts for the services of various independent consulting, investment advisory and financial professionals to assist the Board of Trustees in carrying out its fiduciary responsibility to efficiently and effectively manage the System. Actuarial services were provided by Gabriel Roeder Smith & Company and independent financial statement audit services were provided by SB & Company, LLC. The System's asset custody and portfolio accounting services were provided by the State Street Bank & Trust Company under a multi-year, master custody arrangement. Meketa Investment Group, Inc. served as the System's general investment consultant. Specialty consulting services were provided by Altius Associates

Limited and Pension Consulting Alliance, Inc. for private equity and real estate, respectively. Albourne America LLC advises staff on the retirement System's Absolute Return portfolio and Barra and Factset provides risk consulting services. A complete listing of the System's professional consultants and external investment advisors is presented on page 11.

AWARDS

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Maryland State Retirement and Pension System for its Comprehensive Annual Financial Report for the fiscal year ended June 30, 2015. This was the twenty-seventh consecutive year (1989 through 2015) that it has received this prestigious award. In order to be awarded a Certificate of Achievement, a governmental unit must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

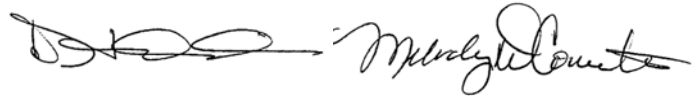
Additionally, the Maryland State Retirement and Pension System received the Public Pension Coordinating Council's (PPCC) 2016 Recognition Award for meeting professional standards for plan funding and administration, as set forth in the Public Pension Standards.

The PPCC is a coalition of associations that represent public pension funds that cover the vast majority of public employees in the U.S., including the National Association of State Retirement Administrators (NASRA), the National Council on Teacher Retirement (NCTR), and the National Conference on Public Employee Retirement Systems (NCPERS).

The Public Pension Standards are intended to reflect expectations for public retirement Systems management and administration, and serve as a benchmark by which all defined benefit public plans should be measured. The Maryland State Retirement and Pension System is proud to be a recipient of this award.

ACKNOWLEDGMENTS

This annual report reflects the dedicated efforts of the System's staff under the steady direction of the Board of Trustees. We extend our sincere gratitude to each member of the Board, the System's staff, the Board's advisors and the many people who worked with diligence and dedication throughout fiscal year 2016. Special thanks to the members of the Maryland State Retirement Agency's senior executive team and the agency's staff of professionals and para-professionals who helped to gather and prepare the information for this report.



R. Dean Kenderdine
Executive Director
Secretary to the Board

Melody Countess, CPA
Chief Operating Officer

BOARD OF TRUSTEES



NANCY K. KOPP, *Chairman*
State Treasurer
Ex Officio since February 14, 2002
Member, Administrative Committee
Member, Corporate Governance Committee
Member, Investment Committee



PETER FRANCHOT, *Vice Chairman*
State Comptroller
Ex Officio since January 22, 2007
Member, Investment Committee



DAVID R. BRINKLEY
Ex Officio since January 21, 2015
Member, Administrative Committee
Member, Corporate Governance Committee
Member, Investment Committee



ERIC D. BROTMAN
January 19, 2016 - June 30, 2019
Member, Corporate Governance Committee
Member, Investment Committee



JAMES A. BUSH, JR.
August 1, 2013 - July 31, 2017
Chairman, Audit Committee
Member, Investment Committee



JAMES "CHIP" DiPAOLA
January 15, 2016 - July 31, 2019
Member, Administrative Committee
Member, Audit Committee
Member, Investment Committee
Member, Securities Litigation Committee



KENNETH B. HAINES
January 1, 2012 - July 31, 2017
Vice-Chairman, Corporate Governance Committee
Member, Administrative Committee
Member, Investment Committee



DAVID B. HAMILTON
August 5, 2016 - July 31, 2020
Chairman, Securities Litigation Committee
Member, Audit Committee
Member, Investment Committee

BOARD OF TRUSTEES



JAMES M. HARKINS
October 1, 2004 - Present
Chairman, Administrative Committee
Member, Corporate Governance Committee
Member, Investment Committee
Member, Securities Litigation Committee



LINDA A. HERMAN
August 1, 2013 - July 31, 2017
Vice Chairman, Investment Committee



SHEILA HILL
August 1, 2015 - July 31, 2019
Chairman, Corporate Governance Committee
Member, Administrative Committee
Member, Investment Committee



F. PATRICK HUGHES
April 20, 2004 - June 30, 2017
Chairman, Investment Committee
Member, Audit Committee
Member, Securities Litigation Committee



CHARLES W. JOHNSON
January 14, 2016 - July 31, 2019
Vice Chairman, Securities Litigation Committee
Member, Corporate Governance Committee
Member, Investment Committee



THERESA LOCHTE
August 1, 2007 - July 31, 2019
Vice Chairman, Administrative Committee
Member, Audit Committee
Member, Investment Committee



RICHARD E. NORMAN
August 1, 2014 - July 31, 2018
Vice Chairman, Audit Committee
Member, Administrative Committee
Member, Investment Committee

ADVISORS TO THE INVESTMENT COMMITTEE



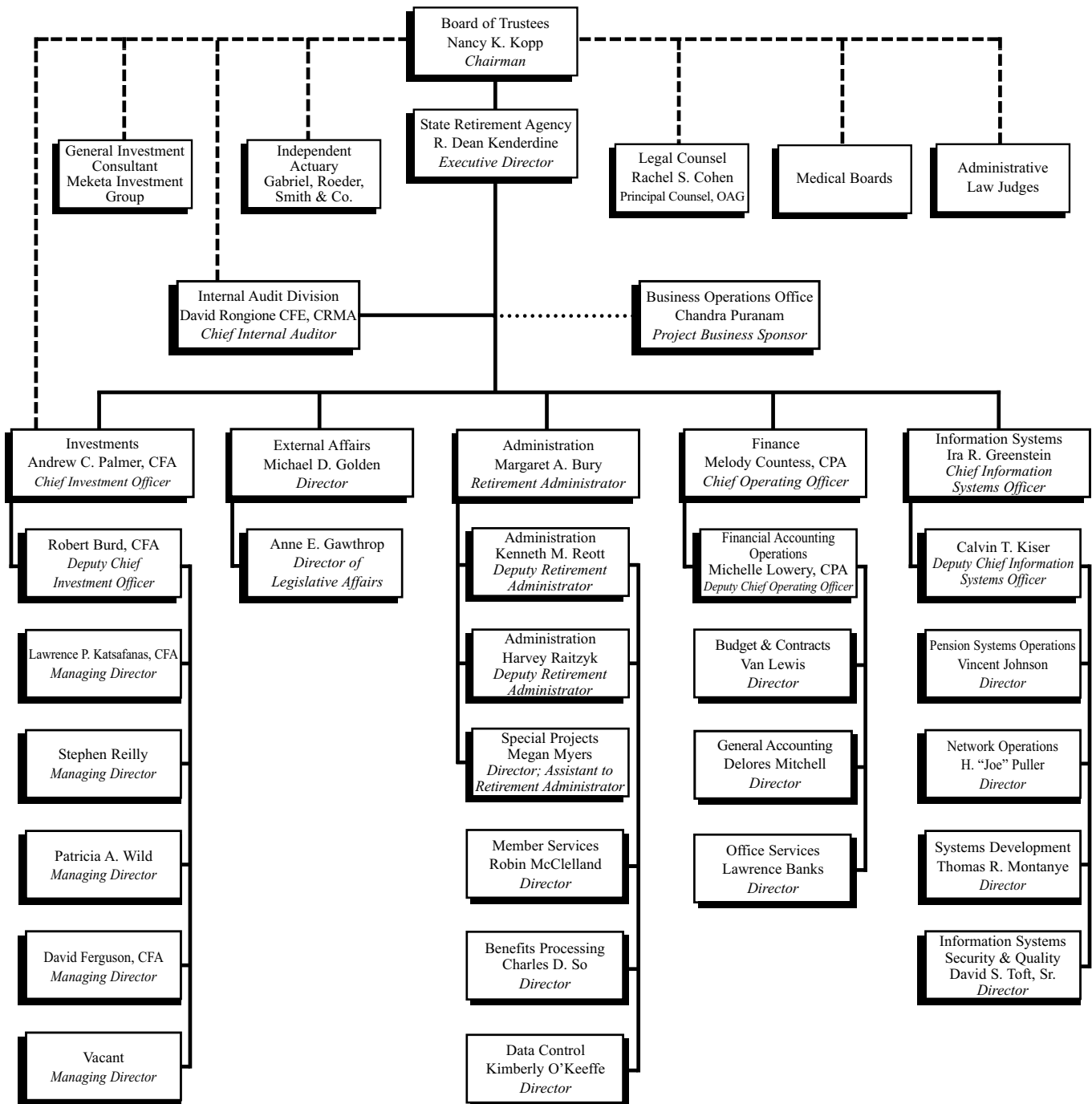
MICHAEL K. BARRY



LARRY E. JENNINGS, JR.



STEFAN A. STREIN



*Additional information regarding investment professionals who provide services to the System can be found on pages 11, and 77-81.

PROFESSIONAL SERVICES

Global Custodial Bank & Security Lending

State Street Bank and Trust Company
Boston, Massachusetts

Hearing Officers

Office of Administrative Hearings
Baltimore, Maryland

Independent Actuary

Gabriel Roeder Smith & Company
Southfield, Michigan

Independent Public Accountant

SB & Company, LLC
Hunt Valley, Maryland

Independent Investment Consultants

Altius Associates Limited
Richmond, Virginia

Meketa Investment Group, Inc.
Westwood, Massachusetts

Pension Consulting Alliance
Encino, California

Albourne America, LLC
San Francisco, California

Medical Board

Dr. Elizabeth Adegboyega-Panox
Dr. Eroll L. Bennett
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Dr. Archana Goel Leon-Guerrero
Dr. Christian E. Jensen
Dr. John Parkerson
Dr. William B. Russell
D. William Smulyan
Dr. Zia Zakai

Operational Banking Services

M & T Bank
Baltimore, Maryland

The Harbor Bank of Maryland
Baltimore, Maryland



Government Finance Officers Association

**Certificate of
Achievement
for Excellence
in Financial
Reporting**

Presented to

**Maryland State Retirement
and Pension System**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2015

Executive Director/CEO



Public Pension Coordinating Council

***Recognition Award for Administration
2016***

Presented to

Maryland State Retirement and Pension System

In recognition of meeting professional standards for
plan administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

A handwritten signature in cursive script that reads "Alan H. Winkle".

Alan H. Winkle
Program Administrator



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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 rounded rectangular shapes and a central horizontal line, resembling a simplified architectural or structural element. 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 the basic financial statements of the Maryland State Retirement and Pension System (the System), which is a pension trust fund of the State of Maryland, as of and for the years ended June 30, 2016 and 2015, and the related notes to the financial statements, which collectively comprise the System's financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

The System's 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 the basic financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audits 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 basic financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the basic 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 basic financial statements referred to above present fairly, in all material respects, the respective financial position of the System, as of June 30, 2016 and 2015, and the respective changes in plan net position for the years 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, Schedule of Changes in Employers' Net Pension Liability, Schedule of Employers' Net Pension Liability and Related Ratios, Schedule of Employers' Contributions and Related Ratios, Schedule of Investment Returns, and Notes to Required Supplementary Information be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with 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 basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The Introductory, Other Supplementary Information, Investment, Actuarial, Statistical and Plan Summary sections, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the basic financial statements.

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The Schedule of Funding Progress, Schedule of Contributions from Employers and Other Contributing Entity, Fund Balance Accounts, Schedule of Fund Balances, Schedule of Administrative Expenses, Schedule of Investment Expenses, Schedule of Plan Net Position by System, and Schedule of Changes in Plan Net Position by System are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The Other Supplementary Information as listed in the previous paragraph is the responsibility of management and was derived from, and relates directly to, the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audits of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Other Supplementary Information as listed in the previous paragraph is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The Introductory, Investment, Actuarial, Statistical, and Plan Summary Sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

SB + Company, LLC

Hunt Valley, Maryland
November 24, 2016

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, 2016, 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 Plan Net Position and Statements of Changes in Plan 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, 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 balances, 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 Plan 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 Plan 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 Plan 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 Plan 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 Plan 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, 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 Plan 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 Plan 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.

RECENT ACCOUNTING PRONOUNCEMENTS

As of the year ended June 30, 2016, GASB issued GASB No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, GASB No. 80, *Blending Requirements for Certain Component Units - and amendment of GASB Statement No. 14*, and GASB No. 82, *Pension Issues - an amendment of GASB Statements No. 67, No. 68, and No. 73*. These statements may have a material effect on the System's financial statements once implemented. The System will be analyzing the effects of these pronouncements and plans to adopt them as applicable by their effective date.

Fiscal Year 2016 Compared to 2015

The following condensed comparative Statement of Plan Net Position for the fiscal years ended June 30, 2016 and 2015, presents a decrease in the System's net position of \$423.9 (-0.9%). This decrease is primarily due to negative net returns in the domestic equity, private equity, real estate, and debt.

A schedule of the System's investments and changes (by type) from fiscal year 2016 to 2015 is as follows (expressed in millions):

	June 30,		Change	
	2016	2015	Variance	%
Cash & cash equivalents	\$ 1,366.2	\$ 1,134.3	\$ 231.9	20.4%
U.S. Government obligations	6,719.1	4,521.5	2,197.6	48.6%
Domestic corporate obligations	3,233.7	3,688.1	(454.4)	-12.3%
International obligations	46.3	910.9	(864.6)	-94.9%
Domestic stocks	6,703.2	8,471.7	(1,768.5)	-20.9%
International stocks	9,228.8	7,816.1	1,412.7	18.1%
Mortgages & mortgage-related securities	1,590.2	1,895.9	(305.7)	-16.1%
Alternative investments	17,284.7	17,633.3	(348.6)	-2.0%
Total managed investments	46,172.2	46,071.8	100.4	0.2%
Collateral for loaned securities	2,070.3	1,343.5	726.8	54.1%
Total investments and cash & cash equivalents	48,242.5	47,415.3	827.2	1.7%
Receivables	560.5	1,075.1	(514.6)	-47.9%
Total Assets	48,803.0	48,490.4	312.6	0.6%
Liabilities	3,437.1	2,700.6	736.5	27.3%
Total Net Position, End of Year	\$ 45,365.9	\$ 45,789.8	\$ (423.9)	-0.9%

As depicted in the following comparative Statement of Changes in Plan Net Position for fiscal years 2016 and 2015, contributions to the System during fiscal year 2016 increased slightly as a result of an increase in covered payroll and the State's reinvestment contribution of savings as a result of the pension reform legislation passed during the 2011 General Assembly session. The System's investments experienced a positive investment return of 1.1%, recognizing \$497.5 million in net investment income.

The System continues to pay out more benefits than contributions collected. An increase of \$184.9 million in benefits paid to retirees correlates to the increase in the number of retirees and beneficiaries experienced in fiscal year 2016. The increase in benefit payments outweighed the increase in contributions resulting in a net decrease in pension net position of \$423.9 million.

A schedule of the System's additions to and deductions from plan net position and related changes (by major category) from fiscal year 2016 to 2015, is as follows (expressed in millions):

	June 30,		Change	
	2016	2015	Variance	%
Employer contributions	\$ 1,138.8	\$ 1,127.8	\$ 11.0	1.0%
Member contributions	764.4	755.4	9.0	1.2%
State contributions on behalf of local governments & contribution interest	732.0	730.9	1.1	0.2%
Net investment income	497.5	1,197.7	(700.2)	-58.5%
Total additions	3,132.7	3,811.8	(679.1)	-17.8%
Benefit payments	3,469.5	3,284.6	184.9	5.6%
Refunds	58.4	48.2	10.2	21.2%
Administrative expenses	28.7	29.1	(0.4)	-1.4%
Total deductions	3,556.6	3,361.9	194.7	5.8%
Net (decrease) increase in plan net position	\$ (423.9)	\$ 449.9	\$ (873.8)	-194.2%

Analysis of Net Pension Liability (expressed in millions)

	June 30,		Change	
	2016	2015	Variance	%
Total Pension Liability	\$ 68,960.0	\$ 66,571.6	\$ 2,388.4	3.6%
Plan Fiduciary Net Position	45,365.9	45,789.8	(423.9)	-0.09%
Net Pension Liability	<u>\$ 23,594.1</u>	<u>\$ 20,781.8</u>	<u>\$ 2,812.3</u>	13.5%
Ratio - Fiduciary Net Position/TPL	<u>65.8%</u>	<u>68.8%</u>		

During the year the net pension liability increased by \$2,812.3 million. This was mainly due to decrease in net investment income of \$700.2 million, combined with a growth in expenses of \$194.7 million.

Fiscal Year 2015 Compared to 2014

The following condensed comparative Statement of Plan Net Position for the fiscal years ended June 30, 2015 and 2014, presents an increase in the System's net position of \$449.8 million (1.0%). This increase is primarily due to positive net returns in the investment portfolio, led by public equity, private equity, real estate and debt. Additional information on our fiscal year 2015 investment activities can be found in the Investment Section of this report.

A schedule of the System's investments and changes (by type) from fiscal year 2015 to 2014 is as follows (expressed in millions):

	June 30,		Change	
	2015	2014	Variance	%
Cash & cash equivalents	\$ 1,134.3	\$ 2,085.1	\$ (950.8)	-45.6%
U.S. Government obligations	4,521.5	3,556.6	964.9	27.1%
Domestic corporate obligations	3,688.1	2,771.8	916.3	33.1%
International obligations	910.9	1,603.7	(692.8)	-43.2%
Domestic stocks	8,471.7	8,255.4	216.3	2.6%
International stocks	7,816.1	7,827.1	(11.0)	-0.1%
Mortgages & mortgage-related securities	1,895.9	2,079.5	(183.6)	-8.8%
Alternative investments	17,633.3	12,227.2	5,406.1	44.2%
Total managed investments	46,071.8	40,406.4	5,665.4	14.0%
Collateral for loaned securities	1,343.5	2,876.4	(1,532.9)	-53.3%
Total investments and cash & cash equivalents	47,415.3	43,282.8	4,132.5	9.5%
Receivables	1,075.1	1,455.2	(380.1)	-26.1%
Total Assets	48,490.4	44,738.0	3,752.4	8.4%
Liabilities	2,700.6	4,374.8	(1,674.2)	-38.3%
Total Net Position, End of Year	\$45,789.8	\$ 40,363.2	\$ 5,426.6	

The System continues to pay out more benefits than contributions collected. An increase of \$171.1 million in benefits paid to retirees correlates to the increase in the number of retirees and beneficiaries experienced in fiscal year 2014. This increase offset against \$5,706.3 million of fiscal year 2014 investment returns resulted in a net change in pension net position of \$4,976.8 million.

As depicted in the following comparative Statement of Changes in Plan Net Position for fiscal years 2015 and 2014, contributions to the System during fiscal year 2015 increased slightly as a result of an increase in covered payroll and the State's reinvestment contribution of savings as a result of the pension reform legislation passed during the 2011 General Assembly session. The System's investments experienced a positive weighted average investment return of 2.59%, recognizing \$1,197.7 million in net investment income.

The System continues to pay out more benefits than contributions collected. An increase of \$162.8 in benefits paid to retirees correlates to the increase in the number of retirees and beneficiaries experienced in fiscal year 2015. This increase offset against \$1,197.7 million of fiscal year 2015 investment returns resulted in a net change in pension net position of \$449.8.

A schedule of the System's additions to and deductions from plan net position and related changes (by major category) from fiscal year 2015 to 2014, is as follows (expressed in millions):

	June 30,		Change	
	2015	2014	Variance	%
Employer contributions	\$1,127.8	\$ 1,016.6	\$ 111.2	10.9%
Member contributions	755.4	727.7	27.7	3.8%
State contributions on behalf of local governments & contribution interest	730.9	717.0	13.9	1.9%
Net investment income	1,197.7	5,706.3	(4,508.6)	-79.0%
Total additions	3,811.8	8,167.6	(4,355.8)	-53.3%
Benefit payments	3,284.6	3,121.8	162.8	5.2%
Refunds	48.2	42.9	5.3	12.4%
Administrative expenses	29.1	26.1	3.0	11.5%
Total deductions	3,361.9	3,190.8	171.1	5.4%
Net increase in plan net position	\$ 449.9	\$ 4,976.8	\$ (4,526.9)	-91.0%

Analysis of Net Pension Liability (expressed in millions)

	June 30,		Change	
	2015	2014	Variance	%
Total Pension Liability	\$66,571.6	\$ 63,086.7	\$ 3,484.9	5.5%
Plan Fiduciary Net Position	45,789.8	45,340.0	449.8	1.0%
Net Pension Liability	\$20,781.8	\$ 17,746.7	\$ 3,035.1	17.1%
Ratio - Fiduciary Net Position/TPL	68.8%	71.9%		

During the year the net pension liability increased by \$3,035.1 million. This was mainly due to decrease in net investment income of \$4,508.6 million, combined with a growth in expenses of \$171.1 million.

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
 120 E. Baltimore Street, Suite 1660
 Baltimore, Maryland 21202-1600

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

STATEMENTS OF PLAN NET POSITION

As of June 30, 2016 and 2015

(Expressed in Thousands)

	2016	2015
Assets:		
Cash & Cash Equivalents (note 3)	<u>\$1,366,155</u>	<u>\$ 1,134,336</u>
Receivables		
Contributions:		
Employers	12,710	35,612
Employers - long term (Note 5)	27,328	31,254
Members	3,790	11,526
Accrued investment income	113,802	212,114
Investment sales proceeds	402,910	784,555
Total receivables	<u>560,540</u>	<u>1,075,061</u>
Investments, at fair value (Notes 2 & 3)		
U.S. Government obligations	6,719,149	4,521,543
Domestic corporate obligations	3,233,707	3,688,098
International obligations	46,289	910,924
Domestic stocks	6,703,203	8,471,692
International stocks	9,228,831	7,816,127
Mortgages & mortgage related securities	1,590,173	1,895,887
Alternative investments	17,284,686	17,633,283
Collateral for loaned securities	2,070,270	1,343,489
Total investments	<u>46,876,308</u>	<u>46,281,043</u>
Total Assets	<u>48,803,003</u>	<u>48,490,440</u>
Liabilities:		
Accounts payable & accrued expenses (Note 8)	62,311	61,272
Investment commitments payable	1,304,496	1,295,839
Obligation for collateral for loaned securities	2,070,270	1,343,489
Total Liabilities	<u>3,437,077</u>	<u>2,700,600</u>
NET POSITION RESTRICTED FOR PENSIONS	<u>\$ 45,365,926</u>	<u>\$ 45,789,840</u>

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

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

STATEMENTS OF CHANGES IN PLAN NET POSITION

for the Fiscal Years Ended June 30, 2016 and 2015

(Expressed in Thousands)

	2016	2015
ADDITIONS:		
Contributions:		
Employers	\$ 1,138,835	\$ 1,127,888
Members	764,414	755,444
State contributions on behalf of local governments	730,282	728,931
Contribution interest	1,538	1,793
Total contributions	<u>2,635,069</u>	<u>2,614,056</u>
Investment Income:		
Net (depreciation) appreciation in fair value of investments	(940,988)	(126,669)
Interest	377,944	242,611
Dividends	1,382,213	1,420,987
Income before securities lending activity	<u>819,169</u>	<u>1,536,929</u>
Gross income from securities lending activity	10,699	9,656
Securities lending borrower rebates	(1,232)	(390)
Securities lending agent fees	(1,433)	(1,444)
Net income from securities lending activity	<u>8,034</u>	<u>7,822</u>
Total investment income	827,203	1,544,751
Investment expenses	(329,672)	(347,080)
Net investment income	<u>497,531</u>	<u>1,197,671</u>
TOTAL ADDITIONS	<u>3,132,600</u>	<u>3,811,727</u>
DEDUCTIONS:		
Benefit payments	3,469,493	3,284,550
Refunds	58,362	48,245
Administrative expenses	28,659	29,080
TOTAL DEDUCTIONS	<u>3,556,514</u>	<u>3,361,875</u>
Net (decrease) increase in plan position	(423,914)	449,852
NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the fiscal year	<u>45,789,840</u>	<u>45,339,988</u>
END OF THE FISCAL YEAR	<u>\$ 45,365,926</u>	<u>\$ 45,789,840</u>

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

NOTES TO THE FINANCIAL STATEMENTS

1. GENERAL DESCRIPTION OF THE SYSTEM

A. Organization

The State Retirement Agency (the Agency) is the administrator of the Maryland State Retirement and Pension System (the System). The System was established by the State Personnel and Pensions Article of the Annotated Code of Maryland to provide retirement allowances and other benefits to State employees, teachers, police, judges, legislators, and employees of participating governmental units. Responsibility for the System's administration and operation is vested in a 15-member Board of Trustees. The System is 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.

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 Governmental Accounting Standards Board (GASB) Statement No. 67, Financial Reporting for Pension Plans. Additionally, the System is fiscally dependent on the State by virtue of the legislative and executive controls exercised with respect to its operations, policies, and administrative budget. Accordingly, the System is included in the State's reporting entity and disclosed in its financial statements as a pension trust fund.

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

B. Covered Members

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

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

The State Police Retirement System was established on July 1, 1949, to provide retirement allowances and other benefits to any police employee or cadet of the Maryland State Police.

The Judges' Retirement System was established on June 30, 1969, to provide retirement allowances and other benefits for State and local, appointed, or elected judges.

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

The following tables present a summary of membership by system as of June 30, 2016 and 2015, with comparative prior year totals:

	Inactive & Deferred Vested	Retirees & Beneficiaries	Active Plan Participants		
			Vested	Non-vested	Total
Teachers' Retirement & Pension Systems	25,298	73,582	75,855	29,692	105,547
Employees' Retirement & Pension Systems*	27,885	74,240	57,147	25,571	82,718
Judges' Retirement System	7	407	222	76	298
State Police Retirement System	84	2,536	1,013	389	1,402
Law Enforcement Officers' Pension System	294	1,801	1,772	757	2,529
Total as of June 30, 2016	53,568	152,566	136,009	56,485	192,494
Total as of June 30, 2015	52,769	147,850	144,555	49,045	193,600

*Employees' Retirement and Pension Systems include 66 vested and 27 non-vested active members, 29 retired members, and 1 inactive member from the Correctional Officers Retirement System.

	Inactive & Deferred Vested	Retirees & Beneficiaries	Active Plan Participants		
			Vested	Non-vested	Total
Teachers' Retirement & Pension Systems	24,541	71,176	80,693	24,833	105,526
Employees' Retirement & Pension Systems*	27,846	72,058	60,791	23,094	83,885
Judges' Retirement System	8	397	243	64	307
State Police Retirement System	81	2,508	988	406	1,394
Law Enforcement Officers' Pension System	293	1,711	1,840	648	2,488
Total as of June 30, 2015	52,769	147,850	144,555	49,045	193,600
Total as of June 30, 2014	52,133	142,887	147,418	46,104	193,522

*Employees' Retirement and Pension Systems include 65 vested and 26 non-vested active members, and 27 retired members from the Correctional Officers Retirement System.

C. Summary of Significant Plan Provisions

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

Beginning July 1, 2011, the member contribution rate was increased for members of the Teachers' Pension System and Employees' Pension System from 5% to 7%, and from 4% to 6% respectively, in fiscal year 2013 and 7% in fiscal year 2014 and beyond for members of the Law Enforcement Officers' Pension System. Beginning July 1, 2013, the member contribution rate was increased for members of the Judges' Retirement System from 6% to 8%.

In addition, the benefit attributable to service on or after July 1, 2011 in many of the pension systems now will be subject to different cost-of-living adjustments (COLA) that is based on the increase in the Consumer Price Index (CPI) and capped at 2.5% or 1.0% based on whether the fair value investment return for the preceding calendar year was higher or lower than the investment return assumption used in the valuation (currently 7.55%).

A brief summary of the retirement eligibility requirements of and the benefits available under the various systems in effect during fiscal year 2016, 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.

For State Police and Correctional Officers' Retirement System retirees, prior to July 1, 2011, unlimited compounded COLAs are effective July 1 and are applied to all benefits which have been in payment for one year. With certain exceptions, effective July 1, 1998, for Teachers', Employees', and Law Enforcement Officers' Pension System retirees, the adjustment is capped at a maximum 3% compounded and is applied to all benefits which have been in payment for one year. The annual increases to pension allowances for Employees' Pension System retirees who were employed by a participating governmental unit that does not provide enhanced pension benefits are limited to 3% of the initial allowance.

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

Retirement allowances for legislators and judges are recalculated when the salary of an active member holding a comparable position is increased.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. Basis of Accounting

The System's financial statements are prepared on the accrual basis of accounting principles generally accepted in the United States of America. Accordingly, investment purchases and sales are recorded as of their respective trade dates.

Employer and Member contributions are recognized in the period when due, pursuant to statutory or contractual requirements. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

B. Investment Limitations

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

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 Plan 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 Plan 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, can accrue ownership through corporate actions. No derivatives were purchased with borrowed funds.

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

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

E. Administrative and Investment Expenses

All of the System's administrative and investment expenses (e.g., salaries of Agency employees, investment advisory fees) are incurred centrally and charged to each individual retirement or pension system on the basis of its active membership and percentage ownership in the System's net position, respectively. The System's investment expenses are funded from investment income. The System's administrative expenses are funded from administrative fees assessed to each participating employer. See pages 60 and 61 for detailed Schedules of Administrative and Investment Expenses, respectively.

F. Federal Income Tax Status

During the fiscal years ended June 30, 2016 and 2015, 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

During the fiscal year ended June 30, 2016, the System adopted GASB No. 72, *Fair Value Measurement and Application*, which addresses accounting and financial reporting issues related to fair value measurements. See Note 3.H for more information on fair value measurements. The System also adopted GASB No. 73, *Accounting and Financial Reporting for Pensions and Related Assets That Are Not Within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB 67 and 68*, GASB No. 76, *the Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*, and GASB No. 79, *Certain External Investment Pools and Pool Participants*. The adoption of GASB 72 added material disclosures to the financial statements. There are no significant changes to the financial statements from the adoption of the remaining above GASB statements.

3. CASH, CASH EQUIVALENTS, AND INVESTMENTS

A. Legal Provisions

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

Type	Description	As of June 30, 2016	
		Strategic Target	Actual
Public Equity	Investments in securities, known as shares or stocks, that represent an ownership interest in corporations and are generally traded on a stock exchange.	37.0%	37.4%
Private Equity	Investments in companies that are not registered with the SEC and are not traded in the public markets. Private equity may also be referred to as venture capital or buy-outs.	10.0%	9.2%
Rate Sensitive	Investments in securities, known as bonds, that represent an ownership interest in the debt of governments and corporations that are generally not traded on an exchange. They generally pay interest on a regular schedule and repay principal or face value at maturity. Short term investments such as money market funds U.S. treasury bills and currency are also included.	20.0%	22.7%
Credit/Debt Related Strategies:	Debt issued by corporations and other nongovernment 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%
Absolute Return	Investments whose performance is expected to deliver absolute returns in any market conditions. 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.	9.0%	8.6%
Real Assets	Investments whose performance is expected to exceed the rate of inflation over an economic cycle. The System's Real Return program may include the following investment vehicles in both public and private investments: treasury inflation protected, global inflation linked bonds, commodities, energy related, infrastructure, timber and other natural resources, and multi-asset class portfolios with a real return mandate.	5.0%	4.5%
Real Estate	Investment in real property including office buildings, shopping centers, industrial property, warehouses, and apartments. Investment vehicles may include direct investments, REITS, and private partnerships.	10.0%	8.2%

The above listed strategic targets were implemented in stages through out the fiscal year. All asset classes are within the transitional target ranges, which have been identified within the Chief Investment Officer's Report in the Investment Section of this report.

The System is also authorized by its Board of Trustees to operate a securities lending program, and has contracted with its custodian bank to reinvest cash collateral received from the transfer of securities investment instruments authorized by the investment policy. The System's Board of Trustees has established a policy that determines collateralization percentages necessary for both foreign and domestic demand deposits. The policy requires collateral equal to 105% for international equity securities and 102% for all other securities, which is marked to market daily. 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, 2016 and 2015, was \$1,366,155 and \$1,134,336 (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, 2016, the System had the following fixed income investments allocated by year of maturity with the exception of the Commingled Funds, which are based on their average maturity:

Investment Type:	Fair Value (in thousands)	Investment Maturities (in years)			
		Less than 1	1 thru 5	5+ thru 10	More than 10
Asset backed securities	\$ 235,033	\$ -	\$ 41,397	\$ 66,050	\$ 127,586
Bank loans	554,821	8,785	247,371	298,665	-
Collateralized mortgage obligations	551,949	288	6,643	35,388	509,630
Credit/debt commingled funds	968,426	22,690	814,951	130,124	661
Convertible bonds	45,720	348	25,106	10,476	9,790
Domestic corporate obligations	1,911,590	34,087	511,649	650,801	715,053
International obligations	1,442,327	31,543	426,773	583,253	400,758
Mortgage pass-throughs	1,038,224	1,951	9,018	21,425	1,005,830
Municipals	41,169	491	5,643	3,906	31,129
Options	(48)	-	66	-	(114)
Short-term	1,201,123	1,201,123	-	-	-
Swaps	(82,763)	180	(83)	(20,242)	(62,618)
U.S. government agency	374,514	-	229,582	4,786	140,146
U.S. treasury inflation linked	1,207,507	-	560,945	646,562	-
U.S. treasury notes/bonds	4,787,835	367,816	139,535	581,123	3,699,361
U.S. treasury strips	349,293	-	-	-	349,293
Yankee bonds	508,960	29,025	137,547	229,066	113,322
Total	\$ 15,135,680	\$ 1,698,327	\$ 3,156,143	\$ 3,241,383	\$ 7,039,827

Market 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, 2016 and 2015.

As of June 30, 2016, the System had \$1,038,224 (in thousands), invested in mortgage passthrough 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, 2016, are identified in greater detail in Note 4.

E. Credit Risk

The System’s exposure to credit risk as of June 30, 2016 and 2015, is shown below:

Credit Quality Distribution for Securities with Credit Exposure as a Percentage of Total Investments				
<i>(Expressed in Thousands)</i>				
Rating	2016 Fair Value	Percentage Total Investments	2015 Fair Value	Percentage Total Investments
AAA	\$ 270,534	0.596%	\$ 531,255	1.160%
AA	544,859	1.201%	912,092	1.992%
A	1,812,339	3.995%	1,738,962	3.798%
BAA	173,654	0.383%	507,701	1.109%
BA	19,814	0.044%	22,904	0.050%
BBB	1,095,685	2.415%	1,297,771	2.834%
BB	337,033	0.743%	369,044	0.806%
B	219,705	0.484%	370,986	0.810%
CAA	48,201	0.106%	32,950	0.072%
CA	4,470	0.010%	4,164	0.009%
CCC	64,648	0.143%	110,722	0.242%
CC	4,701	0.010%	9,813	0.021%
C	1,380	0.003%	567	0.001%
D	26,489	0.058%	15,149	0.033%
NR	4,961,059	10.936%	2,352,764	5.138%
	<u>\$ 9,584,571</u>		<u>\$ 8,276,844</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 funds, alternative investments and swaps, 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, 2016 is shown below:

International Investment Securities – At Fair Value as of June 30, 2016					
<i>(U.S. Dollars in Thousands)</i>					
Currency	Equity	Fixed Income	Cash	Alternative Investments	Total
Australian Dollar	\$ 206,044	\$ 941	\$ 889	\$ 95,940	\$ 303,814
Brazilian Real	51,676	-	578	40	52,294
Canadian Dollar	311,502	2,423	2,825	15,047	331,797
Czech Koruna	1,501	-	14	-	1,515
Danish Krone	99,586	94	327	-	100,007
Egyptian Pound	2,345	-	131	-	2,476
Euro Currency	1,397,399	148,693	5,226	545,786	2,097,104
Hong Kong Dollar	427,851	-	1,795	50,911	480,557
Hungarian Forint	3,965	-	29	-	3,994
Indonesian Rupiah	49,420	-	482	-	49,902
Japanese Yen	889,948	672	7,354	71,142	969,116
Malaysian Ringgit	26,970	-	165	-	27,135
Mexican Peso	67,565	982	570	-	69,117
New Israeli Sheqel	12,930	-	228	269	13,427
New Taiwan Dollar	20,260	-	3,892	-	24,152
New Zealand Dollar	4,430	553	84	200	5,267
Norwegian Krone	35,630	937	571	1,831	38,969
Philippine Peso	19,311	-	1	-	19,312
Polish Zloty	12,343	-	316	-	12,659
Pound Sterling	863,401	60,750	8,758	205,308	1,138,217
Qatari Rial	1,271	-	-	-	1,271
Singapore Dollar	52,586	-	475	9,972	63,033
South African Rand	50,437	-	584	-	51,021
South Korean Won	194,443	-	379	-	194,822
Swedish Krona	111,250	975	351	5,623	118,199
Swiss Franc	419,788	-	328	5,001	425,117
Thailand Baht	40,090	-	447	-	40,537
Turkish Lira	26,093	-	241	-	26,334
Uae Dirham	6,862	-	(322)	-	6,540
Not Applicable (1)	3,537,059	1,300,899	-	86,109	4,924,067
Total Holdings Subject to Foreign Currency Risk	<u>\$ 8,943,956</u>	<u>\$ 1,517,919</u>	<u>\$ 36,718</u>	<u>\$ 1,093,179</u>	<u>\$ 11,591,772</u>

The majority of foreign currency-denominated investments are in non-US stocks. The Agency has an overlay program to help minimize its currency risk.

(1) This line includes American Depository Receipts and International Funds valued in U.S. Dollars; however, they are considered to have exposure to multiple foreign currencies.

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 periods ending June 30, 2016 and 2015 (in thousands):

	2016	2015
Interest income	<u>\$ 10,699</u>	<u>\$ 9,656</u>
Less:		
Interest expense	<u>1,232</u>	390
Program fees	<u>1,433</u>	<u>1,444</u>
Expenses from securities lending	<u>2,665</u>	<u>1,834</u>
Net income from securities lending	<u>\$ 8,034</u>	<u>\$ 7,822</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. The System's custodian, 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, 2016 were long-term U.S. government obligations, domestic and international equities, as well as domestic and international obligations. At the initiation of a loan, borrowers are required to provide collateral amounts of 102 percent (domestic equities and bonds) and 105 percent (international equities) of the fair value of the securities lent. In the event the collateral fair value falls below the respective collateral percentages, the borrower is required to provide additional collateral by the end of the next business day. The contractual agreement with the System's custodian provides indemnification in the event the borrower fails to return the securities lent or fails to pay the System income distributions by the securities' issuers while the securities are on loan. There have been no violations of the provisions of the agreement during the period of these financial statements.

The System maintains the right to terminate securities lending transactions upon notice. The cash collateral received on each loan was invested, together with the cash collateral of other qualified tax-exempt plan lenders, in a collective investment pool. As of June 30, 2016, the investment pool had an average duration of 30.26 days and an average final maturity of 91.42 days for U.S. dollar collateral. Because the loans were terminable at will, their duration did not generally match the duration of the investments made with cash collateral. The System cannot pledge or sell collateral securities received unless (and until) a borrower defaults. As of June 30, 2016, the System had no credit risk exposure to borrowers because the amount the System owed the borrowers exceeded the amount the borrowers owed the System. The fair value of collateral held and the fair value of securities on loan for the System as of June 30, 2016 (in thousands) was \$2,070,270 and \$2,025,140, respectively.

The following table presents the fair values of the underlying securities, and the value of the collateral pledged at June 30, 2016 (in thousands):

Securities Lent	Fair Value Loaned Securities	Collateral Fair Value	Percent Collateralized
Lent for cash collateral			
U.S. government and agency	\$ 995,883	\$ 1,020,329	102.5%
Domestic bond & equity	657,089	664,464	101.1%
International fixed	1,781	1,791	100.6%
International equity	215,068	224,072	104.2%
Lent for non-cash collateral			
U.S. government and agency	33,041	33,714	102.0%
Domestic bond & equity	104,996	107,677	102.6%
International equity	17,282	18,223	105.4%
Total securities lent	<u><u>\$ 2,025,140</u></u>	<u><u>\$ 2,070,270</u></u>	102.2%

The securities collateral value is based on the System's pro rata share of the value of the securities collateral maintained in a pool at the custodian bank for all lending clients participating in the lending program. Collateral value listed above includes all collateral for securities on loan.

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 plan has the following recurring fair value measurements as of June 30, 2016:

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, 2016 and 2015, the System had the following recurring fair value measurements:

As of June 30, 2016 Investments by fair value level (expressed in millions)	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Debt Securities				
U.S. Government obligations	\$ 6,719	\$ 6,719	\$ -	\$ -
Domestic corporate obligations	3,317	-	3,317	-
International obligations	46	-	46	-
Emerging markets debt	1,301	-	1,301	-
Mortgages & mortgage related securities	1,590	-	-	1,590
Total debt securities	<u>12,973</u>	<u>6,719</u>	<u>4,664</u>	<u>1,590</u>
Equity Securities				
Domestic stocks (includes REITs)	6,682	6,682	-	-
International stocks (includes REITs)	9,284	9,284	-	-
Total equity securities	<u>15,966</u>	<u>15,966</u>	<u>-</u>	<u>-</u>
Cash and Cash Equivalents	<u>1,359</u>	<u>1,359</u>	<u>-</u>	<u>-</u>
Total investment by fair value level	<u>30,298</u>	<u>\$ 24,044</u>	<u>\$ 4,664</u>	<u>\$ 1,590</u>
Investment measured at the net asset value (NAV)				
Private funds (includes equity, real estate, credit, energy, infrastructure and timber)	7,283			
Real estate-open ended	2,077			
Commodities	530			
Global Macro	247			
Global tactical	737			
Multi-strategy	199			
Hedge Funds				
Commodity	337			
Equity long/short	1,472			
Event-driven	421			
Global macro	547			
Multi-asset	125			
Multi-strategy	1,792			
Opportunistic	217			
Total investment measured at the NAV	<u>15,984</u>			
Investment derivative instruments and foreign currency holdings				
Credit default swaps	1	\$ -	\$ 1	\$ -
Foreign exchange contracts (liabilities)	(55)	-	(55)	-
Foreign - international currencies	7	-	7	-
Interest rate swaps	(84)	-	(84)	-
Warrants	21	-	21	-
Total investment derivative instruments	<u>(110)</u>	<u>\$ -</u>	<u>\$ (110)</u>	<u>\$ -</u>
Total	<u>\$ 46,172</u>			

As of June 30, 2015	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by fair value level (expressed in millions)				
Debt Securities				
U.S. Government obligations	\$ 4,522	\$ 4,522	\$ -	\$ -
Domestic corporate obligations	3,683	-	3,683	-
International obligations	911	-	911	-
Mortgages & mortgage related securities	1,896	-	-	1,896
Total debt securities	<u>11,012</u>	<u>4,522</u>	<u>4,594</u>	<u>1,896</u>
Equity Securities				
Domestic stocks (includes REITs)	8,466	8,466	-	-
International stocks (includes REITs)	7,715	7,715	-	-
Total equity securities	<u>16,181</u>	<u>16,181</u>	<u>-</u>	<u>-</u>
Cash and Cash Equivalents	<u>1,126</u>	<u>1,126</u>	<u>-</u>	<u>-</u>
Total investment by fair value level	<u>28,319</u>	<u>\$ 21,829</u>	<u>\$ 4,594</u>	<u>\$ 1,896</u>
Investment measured at the net asset value (NAV)				
Private funds (includes equity, real estate, credit, energy, infrastructure and timber)	7,632			
Real estate-open ended	1,586			
Commodities	800			
Global Macro	249			
Global tactical	1,038			
Hedge Funds				
Commodity	443			
Equity long/short	1,745			
Event-driven	574			
Global macro	595			
Global tactical	356			
Multi-asset	870			
Multi-strategy	1,638			
Opportunistic	106			
Total investment measured at the NAV	<u>17,632</u>			
Investment derivative instruments and foreign currency holdings				
Credit default swaps	7	\$ -	\$ 7	\$ -
Foreign exchange contracts (liabilities)	101	-	101	-
Foreign - international currencies	8	-	8	-
Options bought/written	(2)	-	(2)	-
Warrants	7	-	7	-
Total investment derivative instruments	<u>121</u>	<u>\$ -</u>	<u>\$ 121</u>	<u>\$ -</u>
Total	<u>\$ 46,072</u>			

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, 2016				As of June 30, 2015			
	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice
Private funds (includes equity, credit, energy, infrastructure, and timber) (1)	\$ 7,283	\$ 5,950			\$ 7,632	\$ 5,310		
Real estate-open ended (2)	2,077	-	Quarterly	45-90 days	1,586	-	Quarterly	45-90 days
Commodities (3)	458	-	Monthly	5-30 days	523	-	Monthly	5-30 days
	72	-	N/A	Liquidating	277	-	N/A	Liquidating
Global macro (4)	247	-	Weekly	3 days	249	-	Weekly	3 days
Global tactical (5)	215	-	Monthly	5 days	1,038	-	Monthly	5 days
	522	-	Daily	2 days				
Multi-strategy (6)	199	-	Weekly	3 days	-	-		
Hedge Funds								
Commodity (3)	223	-	Monthly	30-60 days	332	-	Monthly	30-60 days
	114	-	Quarterly	45 days	111	-	Quarterly	45 days
Equity long/short (7)	1,472	-	Monthly	30-45 days	757	-	Monthly	30-45 days
					988	-	Quarterly	45-90 days
Event-driven (8)	157	-	Annual	45 days	229	-	Annual	45 days
	143	-	Quarterly	65 days	193	-	Quarterly	65 days
	121	-	N/A	Liquidating	152	-	N/A	Liquidating
Global macro (4)	547	-	Monthly	5 days	595	-	Monthly	5 days
Global tactical (5)	-	-			356	-	Monthly	10 days
Multi-asset (9)	125	-	N/A	Liquidating	870	-	N/A	Liquidating
Multi-strategy (6)	1,792	-	Quarterly	60-90 days	1,638	-	Quarterly	60-90 days
Opporunitistic (10)	217	-	Annual	90 days	106	-	Annual	90 days
	<u>\$ 15,984</u>	<u>\$ 5,950</u>			<u>\$ 17,632</u>	<u>\$ 5,310</u>		

- (1) Private funds (includes equity, credit, energy, infrastructure and timber): This type includes 236 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) Real estate-open ended: This type includes 5 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.
- (3) Commodities: This asset type includes 6 investments, of which 3 have a non-hedge fund structure with 2 of the funds being liquid within 30 days and 1 currently being liquidated. The 3 hedge funds have a 60-day liquidity structure; however 2 of the funds have a 2 year lockup and the other has a one year lock-up. The investments include a wide range (oil products, natural gas, currencies, grains, livestock, agriculture, etc.) of commodities that are domestic and international; however, the primary focus is domestic. 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 1 hedge fund and 1 non-hedge fund investment which 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 3 to 5 days.
- (5) Global tactical: This category has 2 non-hedge funds which invest in developed global equity, fixed income and currency markets. 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 5 days.
- (6) Multi-strategy: These hedge funds include 2 diversified fund of funds. Both funds in this category are currently being redeemed. 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.
- (7) Equity long/short: This type includes investments in 8 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. These assets have a liquidity structure which ranges from 30 to 60 days; however, 2 funds have a two-year lock-up and 3 of the funds have a three-year lock-up.
- (8) Event-driven: This type includes 3 investments in credit hedge funds that invest in equities and bonds of companies at risk of or in the process of reorganizing to profit from economic, political, corporate and government-driven events. 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 these funds is currently in liquidation. The other two funds have a 45 to 60 day liquidity structure; one fund has a 1 year and the other fund a 2 year lock-up.
- (9) Multi-asset: This category includes 7 funds, of which 6 are hedge funds with a liquidity structure between 60 and 90 days, which includes 1 fund with a 2 year lockup. The 1 non-hedge fund has a 3 business day liquidity structure. 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.
- (10) Opportunistic: Currently there is 1 hedge fund in this category which invests in reinsurance for catastrophe risk (mostly hurricane and earthquake). This fund has a 1 year lock-up. The fair value of this fund 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

Each investment manager's guidelines determine the extent to which derivatives are permissible. Futures and other derivatives are permitted to the extent that they are used in a manner that does not materially increase total portfolio volatility or relate to speculative activities. Unleveraged derivatives are permitted for the purpose of hedging investment risk, to replicate an investment that would otherwise be made directly in the cash market, or to modify asset exposure in tactical portfolio shifts. Use of derivatives is not permitted to materially alter the characteristics, including the investment risk, of each investment manager's account. The investment managers are to have in place, and use, procedures that subject derivative based strategies to rigorous scenario and volatility analysis. Futures and short option positions must be hedged with cash, cash equivalents, or current portfolio security holdings.

List of Derivatives Aggregated by Investment Type
(in Thousands)

Currency	Changes in Fair Value(4)		Fair Value at June 30,2016		
	Classifications	Amount(1)	Classification	Amount(2)	Notional(3)
Commodity Futures Long	Investment Revenue	\$ (46,741)	Futures	\$ -	\$ 185,956
Commodity Futures Short	Investment Revenue	(3,514)	Futures	-	(10)
Credit Default Swaps Bought	Investment Revenue	(1,511)	Swaps	(263)	25,000
Credit Default Swaps Written	Investment Revenue	(717)	Swaps	1,689	61,132
Currency Swaps	Investment Revenue	(101)	Swaps	-	-
Fixed Income Futures Long	Investment Revenue	114,103	Futures	-	1,054,000
Fixed Income Futures Short	Investment Revenue	(26,573)	Futures	-	(395,139)
Fixed Income Options Bought	Investment Revenue	(628)	Options	790	634,200
Fixed Income Options Written	Investment Revenue	1,179	Options	(839)	(172,455)
Foreign Currency Options Written	Investment Revenue	550	Options	-	-
Futures Options Bought	Investment Revenue	(1,152)	Options	-	-
Futures Options Written	Investment Revenue	8,836	Options	-	-
FX Forwards	Investment Revenue	(24,923)	Long Term Instruments	(54,476)	13,810,538
Index Futures Long	Investment Revenue	(1,498)	Futures	-	228
Index Futures Short	Investment Revenue	(5)	Futures	-	-
Pay Fixed Interest Rate Swaps	Investment Revenue	(47,961)	Swaps	(29,248)	915,457
Receive Fixed Interest Rate Swaps	Investment Revenue	(124,323)	Swaps	(54,583)	222,041
Rights	Investment Revenue	253	Common Stock	301	1,742
Total Return Swaps Bond	Investment Revenue	5,114	Swaps	187	180,965
Warrants	Investment Revenue	(267)	Common Stock	21,087	9,566
		\$ (149,879)		\$ (115,355)	

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

1. Negative values (in brackets) refer to losses

2. Negative values (in brackets) refer to liabilities

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

4. Changes in fair value excludes futures margin payments

A. Credit Risk

The System is exposed to credit risk on derivative instruments that are in asset positions. To minimize its exposure to losses related to credit risk, the investment managers use counterparty collateral in their non-exchange-traded derivative instruments. Netting arrangements are also used when entering into more than one derivative instrument transaction with counterparty. At the present time, the Agency does not have a formal policy relating to counterparty collateral or netting arrangements.

The aggregate fair value of derivative instruments in asset positions at June 30, 2016, was \$306,244 (in thousands). 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):

Fair Value	S&P Rating	Fair Value	Moody's Rating	Fair Value	Fitch Rating
\$ 127,903	AA-	\$ 42,051	Aa1	\$ 29,092	AA
41,496	A+	14,395	Aa2	231,723	AA-
134,902	A	94,671	Aa3	43,482	A+
1,911	A-	110,816	A1	1,947	A
32	BBB+	44,279	A2		
		32	A3		
<u>\$ 306,244</u>	<u>(1)</u>	<u>\$ 306,244</u>	<u>(1)</u>	<u>\$ 306,244</u>	<u>(1)</u>

(1) Total aggregate fair value

Risk Concentrations

The following tables list the counter party risk concentration and credit ratings per ratings of Standard & Poor's (S&P), Moody's and Fitch:

Counterparty Name	Percentage of Net Exposure	S&P Rating	Fitch Rating	Moody's Rating
STATE STREET BANK LONDON	14%	A	AA-	A1
NORTHERN TRUST COMPANY, THE	14%	AA-	AA-	A2
TORONTO DOMINION BANK	14%	AA-	AA-	Aa1
HSBC BANK PLC	14%	A	AA-	A1
JPMORGAN CHASE BANK NA LONDON	11%	A+	AA-	Aa3
STANDARD CHARTERED BANK	10%	A	A+	Aa3
ROYAL BANK OF CANADA (UK)	10%	AA-	AA	Aa3
BANK OF NEW YORK	4%	A	AA-	A1
UBS AG LONDON	2%	A+	A+	A1
WESTPAC BANKING CORPORATION	2%	AA-	AA-	Aa2
COMMONWEALTH BANK OF AUSTRALIA	2%	AA-	AA-	Aa2
CITIBANK N.A.	1%	A	A+	A1
BARCLAYS BANK CME	1%	A-	A	A2

B. Interest Rate Risk

During Fiscal year 2016 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 4 years. The amount of funds held in the DROP as of June 30, 2016 and 2015, was \$20,333,054 and \$23,035,086, respectively.

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

6. 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, 2016 and 2015, the outstanding balances were \$27,328 and \$31,254 (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, 2016 and 2015, refunds to members and withdrawing employers were \$58,362 and \$48,245 (expressed in thousands), respectively.

8. ACCOUNTS PAYABLE AND ACCRUED EXPENSES

For the fiscal years ended June 30, 2016 and 2015, accounts payable and accrued expenses consisted of the following components (expressed in thousands):

	2016	2015
Administrative expenses	\$1,275	\$ 1,602
Investment management fees	23,047	23,849
Tax and other withholdings	37,989	35,821
Total	<u>\$62,311</u>	<u>\$ 61,272</u>

9. NET PENSION LIABILITY

Per the actuary reports dated June 30, 2016 and 2015, the components of the net pension liability of the participating employers as of June 30, 2016 and 2015 were as follows:

(expressed in thousands)

	2016	2015
Total Pension Liability (TPL)	\$68,959,953	\$ 66,571,552
Plan Fiduciary Net Position	45,365,926	45,789,840
Net Pension Liability	<u>\$23,594,027</u>	<u>\$ 20,781,712</u>
Ratio - Fiduciary Net Position/TPL	<u>65.79%</u>	<u>68.78%</u>

A. Actuarial Assumptions

Inflation	In the 2015 and 2016 actuarial valuations, 2.70% general, 3.20% wage.
Salary Increases	In the 2015 and 2016 actuarial valuations, 3.30% to 9.20% including inflation.
Investment Rate of Return	In the 2015 and 2016 actuarial valuations, 7.55%.
Discount Rate	7.55%
Investment Rate of Return	7.55%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2015 valuation pursuant to an experience study of the period 2010 - 2014.
Mortality	RP-2014 Mortality Tables with generational mortality projections using scale MP-2014, calibrated to MSRPS experience.

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, 2016, 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%	6.6%
Private Equity	10%	7.4%
Rate Sensitive	20%	1.3%
Credit Opportunity	9%	4.2%
Real Assets	15%	4.7%
Absolute Return	9%	3.7%
Total	100%	

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, 2016.

For the year ended June 30, 2016, the annual money-weighted rate of return on pension plan investments, net of the pension plan investment expense, was 1.10%. 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 7.55% 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 7.55%. 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 7.55%, 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 6.55%</u>	<u>Discount Rate 7.55%</u>	<u>1% Increase to 8.55%</u>
Teachers	\$ 18,305,762	\$ 12,991,208	\$ 8,597,434
Employees	11,962,762	9,013,117	6,524,209
State Police	1,190,497	892,786	652,410
Judges	186,111	128,654	79,894
LEOPS	757,739	566,027	405,638
CORS	5,572	2,235	(472)
Total System Net Pension Liability	\$ 32,408,443	\$ 23,594,027	\$ 16,259,113

REQUIRED SUPPLEMENTARY INFORMATION

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

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Total pension liability			
Service cost	\$ 763,578	\$ 439,705	\$ 30,309
Interest	2,914,637	1,737,109	155,993
Changes of benefit terms	-	-	-
Difference between expected and actual experience	(327,577)	16,870	(8,573)
Changes in assumptions	-	-	-
Benefit payments, including refunds of employee contributions	(2,056,256)	(1,255,358)	(121,917)
Net change in total pension liability	<u>1,294,382</u>	<u>938,326</u>	<u>55,812</u>
Total pension liability, beginning of year	<u>39,239,039</u>	<u>23,408,479</u>	<u>2,111,106</u>
Total pension liability, end of year (a)	<u>\$ 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

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

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

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

AND PENSION SYSTEM

EMPLOYERS' NET PENSION LIABILITY

June 30, 2015

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

REQUIRED SUPPLEMENTARY INFORMATION

MARYLAND STATE RETIREMENT

SCHEDULE OF CHANGES IN

for the Fiscal Year Ended

(Expressed in Thousands)

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

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

AND PENSION SYSTEM

EMPLOYERS' NET PENSION LIABILITY

June 30, 2014

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

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS
for the Fiscal Year Ended June 30, 2016
(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$40,533,421	\$24,346,805	\$2,166,918	\$536,318	\$1,376,491	\$68,959,953
Plan fiduciary net position	(27,542,213)	(15,331,453)	(1,274,132)	(407,662)	(810,466)	(45,365,926)
Employer net pension liability	<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 employee 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-employee payroll	196.51%	212.11%	954.94%	287.75%	361.92%	211.49%

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS
for the Fiscal Year Ended June 30, 2015
(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$ 39,239,039	\$ 23,408,479	\$ 2,111,106	\$ 508,601	\$ 1,304,327	\$ 66,571,552
Plan fiduciary net position	(27,763,619)	(15,510,791)	(1,302,837)	(412,532)	(799,752)	(45,789,840)
Employer net pension liability	<u>\$ 11,475,420</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 employee 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-employee payroll	177.34%	183.43%	887.72%	215.34%	332.06%	187.83%

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2014

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System	Judges' Retirement System	Law Enforcement Officers' Pension System	Total
Total pension liability	\$ 37,324,936	\$ 22,097,648	\$ 1,976,338	\$ 460,230	\$ 1,227,567	\$ 63,086,719
Plan fiduciary net position	(27,491,055)	(15,365,014)	(1,306,547)	(408,883)	(768,489)	(45,339,988)
Employer net pension liability	<u>\$ 9,833,881</u>	<u>\$ 6,732,634</u>	<u>\$ 669,791</u>	<u>\$ 51,347</u>	<u>\$ 459,078</u>	<u>\$ 17,746,731</u>
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 employee 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-employee 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, 2016

(Expressed in Thousands)

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

SCHEDULE OF EMPLOYERS' CONTRIBUTIONS AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2015

(Expressed in Thousands)

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

SCHEDULE OF EMPLOYERS' CONTRIBUTIONS AND RELATED RATIOS

for the Fiscal Year Ended June 30, 2014

(Expressed in Thousands)

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

SCHEDULE OF INVESTMENT RETURNS

Fiscal Year Ended	Annual money-weighted rate of return, net of investment expenses
2014	14.38%
2015	2.68%
2016	1.16%

**These schedules are 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.*

***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

Changes in Benefit Terms

There were no benefit changes during the year.

Changes in Assumptions

Adjustments to the roll-forward liabilities were made to reflect the following assumption change in the 2016 valuation:

- Inflation assumption changed from 2.90% to 2.70%

Method and Assumptions used in Calculations of Actuarially Determined Contributions

Actuarial	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	In the 2012 actuarial valuation: 8 years remaining as of June 30, 2012 for prior UAAL existing on June 30, 2000, and 25 years from each subsequent valuation date for each year's additional UAAL for the State systems and ECS Muni. 27 years for LEOPS Muni, and 34 years for CORS Muni. In the 2013 actuarial valuation: 25 years for the State Systems, 26 years for LEOPS Muni, and 32 years for CORS Muni. For ECS Muni: 7 years remaining for prior UAAL existing on June 30, 2000. 25 years from each subsequent valuation date for each year's additional UAAL. In the 2014 actuarial valuation: 24 years for the State Systems, 25 years for LEOPS Muni, and 31 years for CORS Muni. For ECS Muni: 6 years remaining for prior UAAL existing on June 30, 2000. 25 years from each subsequent valuation date for each year's additional UAAL.
Asset Valuation Method	Five-year smoothed market; 20% collar.
Inflation	In the 2012 actuarial valuation, 3.00% general, 3.50% wage. In the 2013 actuarial valuation, 2.95% general, 3.45% wage. In the 2014 actuarial valuation, 2.90% general, 3.40% wage.
Salary Increases	In the 2012 actuarial valuation, 3.50% to 10.75% including inflation. In the 2013 actuarial valuation, 3.45% to 10.70% including inflation. In the 2014 actuarial valuation, 3.40% to 10.65% including inflation.
Investment Rate of Return	In the 2012 actuarial valuation, 7.75%. In the 2013 actuarial valuation, 7.70%. In the 2014 actuarial valuation, 7.65%.
Retirement Age	Experienced-based table of rates that are specific to the type of eligibility condition. Last updated for the 2015 valuation pursuant to an experience study of the period 2010-2014.
Mortality	RP-2014 Mortality Tables with generational mortality projections using scale MP-2014, calibrated to MSRPS experience.

OTHER SUPPLEMENTARY INFORMATION

SCHEDULE OF FUNDING PROGRESS

(Expressed in Thousands)

Actuarial Valuation Date June 30,	Actuarial Value of Assets a	Actuarial Accrued Liability (AAL) b	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll c	UAAL as a Percentage of Covered Payroll [(b - a) / c]
2007**	\$ 37,886,936	\$ 47,144,354	\$ 9,257,418	80.36%	\$ 9,971,012	93%
2008	39,504,284	50,244,047	10,739,763	78.62%	10,542,806	102%
2009	34,284,569	52,729,171	18,444,602	65.02%	10,714,241	172%
2010	34,688,346	54,085,081	19,396,735	64.14%	10,657,944	182%
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

** Beginning July 1, 2006, the system changed its funding method from the Aggregate Entry Age Normal method to the Individual Entry Age Normal method. Due to an actuarial error, the Schedule of Funding Progress presented in the June 30, 2007 Comprehensive Annual Financial Report overstated the Actuarial Accrued Liability. The 2007 funding results have been restated above to reflect the corrected actuarial valuation results.

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

Fiscal Year Ended June 30,	Annual Required Contributions	Percentage Contributed
2007	\$ 1,025,972	81% *
2008	1,183,765	89%
2009	1,313,560	84%
2010	1,519,980	86%
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%

OTHER SUPPLEMENTARY INFORMATION

FUND BALANCE ACCOUNTS

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

A. 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.

B. 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.

C. 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, 2016 (with Comparative 2015 Totals)

(Expressed in Thousands)

	Annuity Savings Fund	Accumulation Fund	Expense Fund	Totals	
				2016	2015
Fund Balances, Beginning of Year	\$6,480,194	\$39,307,389	\$ 2,257	\$45,789,840	\$45,339,988
Additions					
Net investment income (loss)	-	827,203	(329,672)	497,531	1,197,671
Contributions (Note 5):					
Employers	-	1,110,722	28,113	1,138,835	1,127,888
Members	764,414	-	-	764,414	755,444
State contributions on behalf of local governments	-	730,282	-	730,282	728,931
Contribution interest	-	1,538	-	1,538	1,793
Deductions					
Benefit payments	-	(3,469,493)	-	(3,469,493)	(3,284,550)
Refunds (Note 7)	(58,362)	-	-	(58,362)	(48,245)
Administrative expenses (Note 2)	-	(33)	(28,626)	(28,659)	(29,080)
Transfers					
From the Accumulation Fund to the Annuity Savings Fund for interest credited to members' accounts	317,729	(317,729)	-	-	-
To the Accumulation Fund from the Annuity Savings Fund for contributions of retiring members (402,962)		402,962	-	-	-
From the Accumulation Fund to the Expense Fund for administrative and investment expenses	-	(329,672)	329,672	-	-
Net changes in fund balances	620,819	(1,044,220)	(513)	(423,914)	449,852
Fund Balances, End of Year	<u>\$7,101,013</u>	<u>\$38,263,169</u>	<u>\$ 1,744</u>	<u>\$45,365,926</u>	<u>\$45,789,840</u>

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

SCHEDULE OF ADMINISTRATIVE EXPENSES

for the Fiscal Years Ended June 30, 2016 and 2015

(Expressed in Thousands)

	2016	2015
Personnel services		
Staff salaries	\$12,921	\$12,999
Fringe benefits	5,984	5,552
Total personnel services	<u>18,905</u>	<u>18,551</u>
Professional and contractual services		
Actuarial services	334	472
Legal and financial services	1,797	1,878
Consulting services	2	858
Data processing services	2,195	1,379
Other contractual services	866	1,565
Total professional and contractual services	<u>5,194</u>	<u>6,152</u>
Miscellaneous		
Communications	646	834
Rent	1,688	1,431
Equipment and supplies	839	994
Other	1,387	1,118
Total miscellaneous	<u>4,560</u>	<u>4,377</u>
Total Administrative Expenses	<u>\$28,659</u>	<u>\$29,080</u>

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

SCHEDULE OF INVESTMENT EXPENSES
for the Fiscal Years Ended June 30, 2016 and 2015
(Expressed in Thousands)

	Management Fees for 2016	Incentive Fees for 2016	Total
Investment advisors			
Public equity	\$66,570	\$17,059	\$83,629
Rate Sensitive	10,009	-	10,009
Credit opportunity	36,019	907	36,926
Real return	23,431	6,152	29,583
Absolute return	47,443	1,756	49,199
Private equity	81,421	37	81,458
Real estate	29,916	2,702	32,618
Total investment advisory fees	<u>294,809</u>	<u>28,613</u>	<u>323,422</u>
Other investment service fees			
Currency overlay	3,147	-	3,147
Other investment expenses	3,103	-	3,103
Total other investment service fees	<u>6,250</u>	<u>-</u>	<u>6,250</u>
Total Investment Expenses	<u>\$301,059</u>	<u>\$28,613</u>	<u>\$329,672</u>
<hr/>			
	Management Fees for 2015	Incentive Fees for 2015	Total
Investment advisors			
Public equity	\$73,832	\$21,764	\$95,596
Rate Sensitive	10,710	-	10,710
Credit opportunity	40,080	12,259	52,339
Real return	26,151	7,623	33,774
Absolute return	43,006	15,192	58,198
Private equity	62,374	-	62,374
Real estate	25,045	1,159	26,204
Total investment advisory fees	<u>281,198</u>	<u>57,997</u>	<u>339,195</u>
Other investment service fees			
Currency overlay	5,034	-	5,034
Other investment expenses	2,851	-	2,851
Total other investment service fees	<u>7,885</u>	<u>-</u>	<u>7,885</u>
Total Investment Expenses	<u>\$289,083</u>	<u>\$57,997</u>	<u>\$347,080</u>

MARYLAND STATE RETIREMENT

SCHEDULE OF PLAN NET

as of June 30, 2016

(Expressed in Thousands)

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Assets:			
Cash & cash equivalents (note 3)	\$ 842,844	\$ 423,044	\$ 48,678
Receivables:			
Contributions:			
Employers	8,628	3,846	1,028
Employers - Long Term (Note 5)	-	27,328	-
Members	1,439	2,196	-
Accrued investment income	68,993	38,616	3,182
Investment sales proceeds	244,247	136,738	11,267
Due from other systems	43,729	12,157	18
Total receivables	<u>367,036</u>	<u>220,881</u>	<u>15,495</u>
Investments, at fair value (Notes 2 & 3)			
U.S. Government obligations	4,079,837	2,273,710	187,191
Domestic corporate obligations	1,963,492	1,094,262	90,089
International obligations	28,107	15,664	1,289
Domestic stocks	4,070,154	2,268,314	186,747
International stocks	5,603,704	3,122,968	257,109
Mortgages & mortgage related securities	965,546	538,103	44,301
Alternative investments	10,495,184	5,849,009	481,539
Collateral for loaned securities	1,255,736	701,870	57,808
Total investments	<u>28,461,760</u>	<u>15,863,900</u>	<u>1,306,073</u>
Total assets	<u>29,671,640</u>	<u>16,507,825</u>	<u>1,370,246</u>
LIABILITIES			
Accounts payable & accrued expenses	38,355	20,064	1,835
Investment commitments payable	790,870	442,638	36,471
Obligation for collateral for loaned securities	1,255,736	701,870	57,808
Due to other systems	44,466	11,800	-
Total liabilities	<u>2,129,427</u>	<u>1,176,372</u>	<u>96,114</u>
Net position restricted for pensions	\$ <u>27,542,213</u>	\$ <u>15,331,453</u>	\$ <u>1,274,132</u>

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

AND PENSION SYSTEM

POSITION BY SYSTEM

Judges' Retirement System	Law Enforcement Officers' Pension System	Subtotal	Eliminations*	Combined Total
\$ 16,336	\$35,253	\$ 1,366,155	\$ -	\$ 1,366,155
(36)	(756)	12,710	-	12,710
-	-	27,328	-	27,328
-	155	3,790	-	3,790
1,018	1,993	113,802	-	113,802
3,604	7,054	402,910	-	402,910
-	362	56,266	(56,266)	-
<u>4,586</u>	<u>8,808</u>	<u>616,806</u>	<u>(56,266)</u>	<u>560,540</u>
59,911	118,500	6,719,149	-	6,719,149
28,833	57,031	3,233,707	-	3,233,707
413	816	46,289	-	46,289
59,769	118,219	6,703,203	-	6,703,203
82,289	162,761	9,228,831	-	9,228,831
14,179	28,044	1,590,173	-	1,590,173
154,119	304,835	17,284,686	-	17,284,686
<u>18,498</u>	<u>36,358</u>	<u>2,070,270</u>	<u>-</u>	<u>2,070,270</u>
<u>418,011</u>	<u>826,564</u>	<u>46,876,308</u>	<u>-</u>	<u>46,876,308</u>
<u>438,933</u>	<u>870,625</u>	<u>48,859,269</u>	<u>(56,266)</u>	<u>48,803,003</u>
1,107	950	62,311	-	62,311
11,666	22,851	1,304,496	-	1,304,496
18,498	36,358	2,070,270	-	2,070,270
-	-	56,266	(56,266)	-
<u>31,271</u>	<u>60,159</u>	<u>3,493,343</u>	<u>(56,266)</u>	<u>3,437,077</u>
\$ <u>407,662</u>	\$ <u>810,466</u>	\$ <u>45,365,926</u>	\$ <u>-</u>	\$ <u>45,365,926</u>

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

	Teachers' Retirement and Pension Systems	Employees' Retirement and Pension Systems	State Police Retirement System
Additions:			
Contributions			
Employers	\$ 353,767	\$ 639,405	\$ 72,320
Members	464,470	278,944	7,251
State contributions on behalf of local governments	730,282	-	-
Contribution interest	-	1,538	-
Total Contributions	<u>1,548,519</u>	<u>919,887</u>	<u>79,571</u>
Investment Income			
Net depreciation in fair value of investments	(570,336)	(319,370)	(26,396)
Interest	229,121	128,249	10,568
Dividends	838,030	468,994	38,617
Income Before Securities Lending Activity	<u>496,815</u>	<u>277,873</u>	<u>22,789</u>
Gross income from securities lending activity:	6,431	3,665	310
Securities lending borrower rebates	(726)	(435)	(35)
Securities lending agent fees	(832)	(505)	(51)
Net income from securities lending activity	<u>4,873</u>	<u>2,725</u>	<u>224</u>
Total Investment Income	<u>501,688</u>	<u>280,598</u>	<u>23,013</u>
Less investment expenses:			
Investment advisory fees	(199,914)	(111,823)	(9,207)
Net investment income	<u>301,774</u>	<u>168,775</u>	<u>13,806</u>
Transfers from other systems	-	-	-
Total Additions	<u>1,850,293</u>	<u>1,088,662</u>	<u>93,377</u>
Deductions:			
Benefit payments	2,028,004	1,226,291	121,534
Refunds (Note 7)	28,252	29,067	383
Administrative expenses (Note 2)	15,589	12,451	206
Transfers to other systems	163	191	(41)
Total Deductions	<u>2,072,008</u>	<u>1,268,000</u>	<u>122,082</u>
Net (decrease) increase in plan assets	<u>(221,715)</u>	<u>(179,338)</u>	<u>(28,705)</u>
Net Position Restricted for Pensions:			
Beginning of the fiscal year	27,763,928	15,510,791	1,302,837
End of the Fiscal Year	<u>\$ 27,542,213</u>	<u>\$ 15,331,453</u>	<u>\$ 1,274,132</u>

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

AND PENSION SYSTEM**PLAN NET POSITION BY SYSTEM**

June 30, 2016

Judges' Retirement System	Law Enforcement Officers' Pension System	Total
\$ 18,384	\$ 54,959	\$ 1,138,835
2,863	10,886	764,414
-	-	730,282
-	-	1,538
<u>21,247</u>	<u>65,845</u>	<u>2,635,069</u>
(8,455)	(16,431)	(940,988)
3,383	6,623	377,944
12,363	24,209	1,382,213
<u>7,291</u>	<u>14,401</u>	<u>819,169</u>
98	195	10,699
(11)	(25)	(1,232)
(15)	(30)	(1,433)
<u>72</u>	<u>140</u>	<u>8,034</u>
<u>7,363</u>	<u>14,541</u>	<u>827,203</u>
(2,948)	(5,780)	(329,672)
<u>4,415</u>	<u>8,761</u>	<u>497,531</u>
-	-	-
<u>25,662</u>	<u>74,606</u>	<u>3,132,600</u>
30,487	63,177	3,469,493
-	660	58,362
45	368	28,659
-	(313)	-
<u>30,532</u>	<u>63,892</u>	<u>3,556,514</u>
(4,870)	10,714	(423,914)
<u>412,532</u>	<u>799,752</u>	<u>45,789,840</u>
<u>\$ 407,662</u>	<u>\$ 810,466</u>	<u>\$ 45,365,926</u>



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SRPS
Investment Section

CHIEF INVESTMENT OFFICER'S REPORT

INVESTMENT OVERVIEW

The Maryland State Retirement and Pension System returned 1.16 percent net of fees in fiscal year 2016. After the payment of benefits, the fair value of managed assets decreased by approximately \$36 million, from \$45.83 billion on June 30, 2015 to \$45.47 billion on June 30, 2016. While the fund did not meet the actuarial return target of 7.55 percent, the achieved return is well within the range expected in any given year.

Private markets and nominal fixed income provided the best returns for the year. Private equity and private real estate produced 9.9 percent and 11.6 percent, respectively, while nominal fixed income returned 10.7 percent. At the other end of the spectrum, commodities and natural resources returned -13.6 percent and -12.6%, respectively.

The Board's annual asset allocation study resulted in some meaningful changes in how the assets were invested. The changes were approved in September and were implemented during the course of the fiscal year. The changes reorganized the asset class structure into five broad categories: Growth/Equity, Rate Sensitive, Credit, Real Assets, and Absolute Return.

The growth portfolio is comprised of public equity and private equity. Within public equity, the portions allocated to developed markets were reduced and replaced with a larger focus on emerging markets equities. This change was intended to harness the greater proportion of global growth that is expected to be generated from these economies.

In the rate sensitive category, the allocation was shifted to focus exclusively on U.S. bonds to take advantage of the more attractive interest rates relative to foreign bonds, and to better match the System's liabilities, which are more closely tied to U.S. inflation. Also, the duration of the bonds in this asset class was extended to provide more diversification in a deflationary environment.

The credit asset class was adjusted to remove the exposure to investment-grade corporate bonds to reflect the representation of these bonds in the rate sensitive portfolio. Also, the allocation to emerging market debt was increased to take advantage of the potential higher returns offered by this asset class. The new real assets portfolio combines real estate with commodities, natural resources and infrastructure, while moving inflation protection bonds to the rates sensitive program.

INVESTMENT POLICY AND OBJECTIVES

The Board of Trustees is charged with the responsibility of managing the assets of the System. In doing so, the Board is required to exercise its fiduciary duties solely in the interest of the participants with the care, skill, and diligence that a prudent person would exercise under similar circumstances. This standard of care encourages diversifying investments across various asset classes.

Investment objectives are designed to support the fulfillment of the Board's mission to optimize risk-adjusted returns to ensure that sufficient assets are available to pay benefits to members and beneficiaries when due. As a long-term investor, the Board understands that short-term market returns will fluctuate.

These investment objectives are implemented in accordance with investment policies developed by the Board. The "prudent person standard", as outlined in both the Maryland Annotated Code and the Board's investment policies, allows for the Board to set investment policies and delegate authority to investment professionals employing active and passive strategies. Firms retained generally have a demonstrated performance record and a clearly defined and consistently applied investment process.

The Board manages the assets for the System with the goal of achieving an annualized investment return that over a long-term time frame: (1) meets or exceeds the investment policy benchmark for the System; (2) in nominal terms, equals or exceeds the actuarial investment return assumption adopted by the Board; and (3) in real terms, exceeds the U.S. inflation rate by at least 3 percent. A more detailed discussion of each of these goals follows below.

1. **Meeting or exceeding the Investment Policy Benchmark for the System.** The Investment Policy Benchmark is calculated by using a weighted average of the Board-established benchmarks for each asset class. This benchmark enables the comparison of the actual performance of the System to a passively managed proxy, and provides a measure of the contribution of active management and policy implementation to overall fund returns.
2. **In nominal terms, equaling or exceeding the actuarial investment return assumption of the System.** The Board adopts the

actuarial rate of interest, which was set at 7.55 percent for fiscal year 2016. The actuarial investment return assumption functions as an estimate of the long-term rate of growth of the assets for the System. In adopting an actuarial return assumption, the Board anticipates that the investment portfolio will achieve higher or lower returns each year but will trend toward 7.55% over time.

3. **In real terms, exceeding the U.S. inflation rate by at least 3 percent.** The inflation related objective compares the investment performance against a rate of inflation measured by the Consumer Price Index (CPI) plus 3 percent. The inflation measure provides a link to the liabilities of the System, which have an embedded sensitivity to changes in the inflation rate.

The Board is also responsible for establishing the asset allocation policy for the System. It does this by weighing three liability-oriented objectives when making asset allocation determinations. These objectives include:

1. achieving and maintaining a fully funded pension plan;
2. minimizing contribution volatility year to year; and
3. realizing surplus assets.

Asset allocation policy targets are determined by recognizing that liabilities (future benefit payments to the participants and beneficiaries of the System) must be paid in full and on time. The mix of asset classes is chosen to provide sufficient growth to meet the long term return objective of the System, while providing sufficient diversification to moderate the volatility of that return. For example, a portfolio of equities will likely provide the required return over a long time horizon, but will subject the fair value of the portfolio to unacceptable levels of volatility such that the goals of minimizing contribution volatility and realizing surplus assets would be difficult to achieve. Combining other asset classes with equities will provide differentiated return sources, reduce the volatility of returns and help realize those liability oriented objectives.

The Board's long-term asset class targets and ranges as of June 30, 2016 are shown below.

ASSET CLASS	LONG-TERM	
	POLICY TARGET	RANGE
Growth/Equity	47%	+/-5%
U.S Equity	16%	
International Developed Equity	12%	
Emerging Markets Equity	8%	
Private Equity	11%	
Rate Sensitive	21%	+/- 5%
Long-term Government Bonds	10%	
MBS/Corporate Bonds	6%	
TIPS	5%	
Credit	9%	+/- 4%
High Yield Bonds/Bank Loans	6%	
Emerging Market Debt	3%	
Real Assets	15%	+/- 4%
Real Estate	10%	
Commodities	3%	
Natural Resources/Infrastructure	2%	
Absolute Return	8%	+/- 4%
Total Assets	100%	

For private market investments in the real estate and private equity asset classes, additional risk reduction may be achieved through temporal diversification, making investments over time to take advantage of varying opportunities. To reflect the desirability of investing over time in accordance with a prudent pacing schedule, transitional allocations are implemented. Assets not yet deployed to private equity are assigned to the public equity transitional target. Assets not yet deployed to real estate are assigned to the rate sensitive transitional target.

INVESTMENT PERFORMANCE

Investment performance is calculated using time-weighted rates of total return. Total return includes interest and dividends, as well as capital appreciation.

The investment program realized a return of 1.2 percent for fiscal year 2016. Annualized returns for the 3-, 5-, 10-, 20- and 25-year periods ending June 30, 2016 were 5.9 percent, 5.7 percent, 4.9 percent, 6.1 percent and 7.2 percent, respectively.

	FY 2016 SRPS Performance	FY 2016 Benchmark Performance	SRPS Exposure June 30, 2016
Public Equity	-4.3%		37.4%
Custom Benchmark		-3.9%	
U.S. Equity	0.6%		7.7%
Russell 3000		2.1%	
International Equity	-11.1%		8.7%
MSCI ACWI ex. U.S.		-10.2%	
MSCI EAFE		-10.2%	
MSCI Emerging Markets		-12.1%	
MSCI World ex U.S.		-9.8%	
Global Equity	-4.0%		12.9%
MSCI AC World		-3.73%	
Emerging Markets Equity	NA		8.1%
MSCI Emerging Markets		-12.1%	
Private Equity	9.9%		9.2%
Custom State Street PE		4.6%	
Rate Sensitive	9.3%		22.7%
Custom Benchmark		10.7%	
BC U.S. Gov't Long Index		19.0%	
BC U.S. TIPS Index		4.6%	
Credit/Debt Strategies	2.2%		9.4%
Custom Benchmark		2.7%	
BC High Yield		1.6%	
S&P LSTA Leveraged Loan		0.9%	
JP Morgan GBI EM GD		2.0%	
JP Morgan EMBI GD		9.8%	
JP Morgan CEMBI Broad		5.6%	
Real Assets	-1.7%		12.7%
Custom Benchmark		0.9%	
NCREIF ODCE		13.7%	
FTSE EPRA NAREIT		11.6%	
Bloomberg Commodities Index		-13.3%	
Absolute Return	-3.0%		8.6%
Custom Benchmark		-2.7%	
TOTAL FUND	1.2%	1.7%	100%

The allocation as of June 30, 2016 reflects the ranges and transitional targets of the System as described in the previous section.

ECONOMIC AND CAPITAL MARKET OVERVIEW

For fiscal year 2016, the System produced its seventh consecutive year of positive performance. Seven years into the recovery, financial markets have slowed to more closely match the pace of global growth. With slower global growth and central banks struggling to generate

either inflation or growth, performance among different sectors and geographies has become more varied. This was a year characterized by modest investment returns from a portfolio perspective, but widely varied returns within the underlying investments of the fund. Overall, the assets for the System produced a net return of 1.2%, representing a modest absolute return and lagged the System's policy benchmark of 1.7%.

With returns by asset class ranging from negative thirteen percent to positive nineteen percent, the particular mix of assets was a significant determinant of whether returns

were negative or slightly positive. For example, U.S. stocks as measured by the Russell 3000 index returned positive 2.1% for the year, while the MSCI Emerging Markets Equity Index returned negative 12%. At the same time, U.S. long government bonds as measured by the Barclays Long Government Bond Index returned 19%, while the Bloomberg Commodity Index returned negative 13% for the fiscal year.

Most of the market volatility during fiscal year 2016 can be attributed to commodities. The sharp drop in oil prices that began in 2014 continued through the middle of February 2016, when spot prices for West Texas Intermediate Crude oil fell below \$27. This sharp drop in commodity prices had far reaching implications for credit markets and the investment behavior of large investors with oil based budgets. As oil prices fell, investors became concerned about a rise in loan defaults from the energy sector spilling over into the markets more broadly. Many countries reliant on energy exports to fund their budgets found their revenues falling rapidly, and needed to tap into their sovereign wealth funds to fund normal government expenditures. Not only did these large investors no longer have new assets to invest, but they were forced to sell some of their assets regardless of price. These large flows roiled markets through February. As oil prices stabilized, the most impacted markets staged significant recoveries for the rest of the fiscal year. For example, emerging market stocks were down more than 27% for the fiscal year as of January 20, 2016, and then staged a strong rally to finish the fiscal year down 12%. At the end of the year, the Brexit vote caused one last bout of volatility as Britain's vote to leave the European Union surprised markets and was associated with a large drop in the value of the pound.

Monetary policy was also impactful in the midst of these commodity related flows. In December 2015, the Federal Reserve tightened monetary policy by raising rates for the first time since 2006. In the same timeframe, the European Central Bank and Bank of Japan expanded monetary stimulus. The European Central Bank extended the time period of its asset purchases, expanded the eligible assets to include corporate bonds, and lowered the overnight rate even further into negative territory. The Bank of Japan introduced negative interest rates and expanded asset purchases to corporate equity and debt. These divergent monetary policies and their resulting impact on the dollar and emerging market investment flows likely contributed to the Fed's decision to delay its second tightening from March of 2016 to some future date. This pause in the pace of monetary policy tightening was a second signal to markets to rebound for the remainder of the fiscal year.

Fiscal year 2016 saw a continuation of the recent pattern of outperformance of U.S. stocks. For the five-year period ending June 30, 2016, the Russell 3000 index produced nearly 10% more return than the MSCI EAFE index on an annualized basis, and over 15% more than emerging market equities as measured by the MSCI Emerging Markets Index. Asset allocations with a bias to U.S. equities have had a significant return advantage over this time frame.

PUBLIC EQUITIES

As of June 30, 2016, approximately \$17 billion of the total assets of the System were invested in public equities, representing 37.4% of total assets. The public equity program has transitioned to a new asset allocation consisting of three components: U.S. equities, international developed equities and emerging markets equities. At the start of the fiscal year, the public equity country mix was similar to the MSCI ACWI Index. However, throughout the year this allocation has increased exposure to emerging markets at the expense of domestic and international developed markets.

The Terra Maria program for the System, which seeks to identify promising smaller or developing management firms, is an integral part of the public equities asset class. As of June 30, 2016, 70% of the Terra Maria program was invested in public equities, with 40 percent in U.S. equities. Each of the managers in the Terra Maria program has an active management mandate. A more detailed discussion of the Terra Maria program follows below.

A. U.S. Equities

As of June 30, 2016, approximately \$6.7 billion, or 14.8 percent of total assets, were invested in U.S. public equities. Passively and enhanced-passively managed equities totaled \$3.2 billion, while actively managed assets outside of the Terra Maria program totaled \$2.5 billion and Terra Maria program assets were \$990 million, representing 7.05 percent, 5.59 percent, and 2.18 percent of total assets, respectively.

U.S. Equity	\$ Millions	% of Total Plan
Passively Managed	\$3,206	7.05%
Actively Managed (exclude T.M.)	\$2,542	5.59%
Terra Maria Program	\$990	2.18%
Total U.S. Equity	\$6,740	14.82%

For fiscal year 2016, U.S. equities returned 0.56 percent, compared to 2.14 percent for its benchmark, the Russell 3000 Index.

B. International Equities

As of June 30, 2016, approximately \$6 billion, or 13.4% of total assets, were invested in international equities. Passively managed assets totaled approximately \$2.7 billion, while actively managed assets outside of the Terra Maria program totaled approximately \$2.7 billion and Terra Maria assets were \$0.7 billion, representing 5.9%, 5.9% and 1.6% of total assets, respectively. As more fully described below, in 2009 the System instituted a currency overlay program which is designed to protect the value of some foreign equities in a rising dollar environment.

International Equity	\$ Millions	% of Total Plan
Passively Managed	\$2,693.3	5.92%
Actively Managed (exclude T.M.)	\$2,700.4	5.94%
Terra Maria Program	\$761.2	1.57%
Currency Overlay	-\$33.4	-0.07%
Total Global Equity	\$5,063.0	11.0%

For fiscal year 2016, international equities, including the impact of the currency overlay program, returned -11.1% compared to -11.5% for its custom benchmark, a combination of the MSCI All Country World ex-U.S. Index and the MSCI World ex-U.S.

C. Emerging Market Equities

As of June 30, 2016, approximately \$4.2 billion, or 9.2% of total assets were invested in emerging market equities. Actively managed long-only assets outside of the Terra Maria program totaled \$3.1 billion, Terra Maria assets were \$146 million, and passively managed assets were \$908 million, representing 6.9%, 0.3%, and 2.0% of total assets, respectively.

Emerging Equity	\$ Millions	% of Total Plan
Passively Managed	\$908.4	2.0%
Actively Managed (exclude T.M.)	\$3,137.4	6.9%
Terra Maria Program	\$146.0	0.3%
Total International Equity	\$4,191.9	9.2%

Emerging market equities were not a dedicated part of the asset allocation for the entire fiscal year 2016. However, for the calendar year-to-date, the portfolio returned 6.2% compared to 6.4% for the MSCI Emerging Market Index.

CURRENCY OVERLAY PROGRAM

The currency overlay program was implemented in May of 2009. An objective of the program is to provide insurance against a strengthening dollar, which could negatively impact returns from foreign currency denominated equities. Managers in this program use a systematic currency overlay strategy and generally, do not make fundamental currency valuation assessments. The strategy is also dynamic in that the degree to which currency hedging is applied changes depending on currency market conditions. Managers in this program tend to use low hedge ratios when the dollar is weak and high hedge ratios when the dollar is strong.

During fiscal year 2016, the currency program acted as a drag to returns in the System's foreign equity holdings as the U.S. dollar weakened relative to other currencies. The cost of the currency hedging program during the fiscal year was \$47.7 million. While the program produced moderate losses during fiscal year 2016, it has served to reduce volatility and improve the risk/return profile of non-U.S. stocks since its inception.

PRIVATE EQUITY

As of June 30, 2016, private equity totaled \$4.2 billion, or 9.2% of total assets. This asset class includes buyouts, growth equity, venture capital, secondaries and funds-of-funds.

In fiscal year 2016, commitments were made to 17 private equity funds, totaling \$1.4 billion. Since the inception of the private equity program in fiscal year 2005, \$10 billion in commitments have been made to 168 different funds. In fiscal year 2016, the private equity program returned 9.9%, compared to 4.6% for its benchmark, the State Street Private Equity Index.

In fiscal year 2017, the Board expects that exposure to private equity will continue to increase toward its long-term targeted levels as unfunded commitments of \$4.5 billion are drawn down by the fund managers. Future commitments will follow a pacing model designed to approach the 11% allocation target for invested assets. This allocation is expected to be maintained with distributions from mature partnerships, providing the funds to invest in new partnerships.

RATE SENSITIVE

As of June 30, 2016, the rate sensitive portfolio represented \$9.8 billion, or 21.6% of total assets. This program experienced significant structural changes during the fiscal year as the new asset allocation was implemented. Most notably, the portfolio was transitioned from an intermediate duration positioning to a longer duration structure. This change resulted in considerable value added as rates fell throughout the year. The rate sensitive portfolio returned 9.3% for the year, compared to 10.7% for its blended benchmark: 50% Barclays US Government Long Bond Index, 15% Barclays US Investment Grade Corporate Index, 15% Barclays US Securitized Index, and 20% Barclays US TIPS Index.

CREDIT/DEBT STRATEGIES

The credit/debt strategies portfolio totaled approximately \$4.3 billion, representing 9.4% of total plan assets as of June 30, 2016. Investments in this asset class are held in both liquid and illiquid structures. Asset types in the portfolio include: mezzanine and distressed debt, high yield bonds, bank loans, and emerging market debt. The portfolio has a blended benchmark of 67 percent U.S. (80% BC U.S. Corporate High Yield Index, 20% S&P LSTA Leveraged Loan Index), and 33% Non-U.S. (50% JP Morgan GBI EM Global Diversified Index, 25% JP Morgan EMBI Global Diversified Index, 25% JP Morgan CEMBI Broad Index). Prior to November 1, 2016, the benchmark was 50% Barclays U.S. High Yield Index, 20% Barclays U.S. Credit Index, 20% JP Morgan GBI EM Global Diversified Index and 10% S&P LSTA Leveraged Loan Index. The portfolio returned 2.2% for the fiscal year, versus 2.7% for its benchmark. This underperformance relative to the benchmark was primarily due to the underperformance of active public credit managers and hedge funds, and below benchmark exposure to emerging markets debt during the second half of fiscal year 2016.

REAL ASSETS

The real assets portfolio totaled approximately \$5.8 billion, representing 12.7% of total assets as of June 30, 2016. The objectives of this asset class are to provide a level of protection against inflation, and to enhance diversification for the total fund. As of June 30, 2016, the largest component of the asset class was real estate, totaling \$3.7 billion, or 8.2% of total assets. Commodities represented \$1.3 billion, or 2.8% of total assets. The remaining assets consisted of investments associated with natural resources and infrastructure totaling \$0.8 billion or 1.7% of total assets.

The real assets portfolio returned -1.7% for the fiscal year, compared to 0.9% for its blended benchmark, which is dynamically calculated using the beginning fair values of the real estate, commodities and natural resources/infrastructure sub-asset classes and their corresponding benchmarks.

ABSOLUTE RETURN

The absolute return portfolio totaled approximately \$3.9 billion, representing 8.6% of total assets as of June 30, 2016. The portfolio consists of three global macro funds, three multi-asset funds, eight relative value multi-strategy funds, and one opportunistic fund. Its goal is to provide diversification for the total plan through its low correlation to the broad financial markets. The absolute return portfolio returned -3.0%, compared to the -2.7% return for its benchmark: Hedge Funds Research, Inc. (HFRI) Fund of Funds Index: Conservative +1%.

TERRA MARIA PROGRAM

As previously mentioned, the Terra Maria program seeks to identify promising smaller or developing managers. The seven existing public market program managers serve as an extension of staff to source investment managers, perform manager due diligence, monitor managers and prepare manager "hire/fire" and funding recommendations. The managers include Attucks Asset Management, Bivium Capital Partners, Capital Prospects LLC, FIS Group, Leading Edge Investment Advisors, Northern Trust Global Advisors and Progress Investment Management Company.

Terra Maria publicly-traded assets totaled approximately \$2.6 billion, or 5.4 percent of total assets at June 30, 2016. The program returned -3.7% for the fiscal year, compared to the custom benchmark return of -1.7%. The relative performance results have remained positive since the April 2007 inception of the program.

During fiscal year 2011, the Terra Maria program was expanded to include investments in private equity partnerships. Since January 2011, \$6.6 billion has been committed globally to 87 private equity funds. Of this, \$3.7 billion has been committed to 49 domestic funds, which includes \$631 million to 17 Terra Maria emerging managers.

Additionally, at the end of fiscal year 2016, \$5.1 billion, or 11.3 percent of the System's total assets, were managed by minority and women-owned firms.

INVESTMENT MANAGEMENT FEES

The asset allocation of the System is the primary determinant of return. The asset allocation is also the primary determinant in the cost of investing the assets. Of secondary importance is the proportion of assets invested passively. Alternative assets such as closed-end limited partnerships used for private equity, infrastructure and some real estate do not offer passive avenues for investment. In addition, open-end partnerships used for real estate and hedge fund strategies cannot be invested passively. Alternative assets are included in the asset allocation with the objective of earning higher returns over time, reducing risk by earning returns that are differentiated from stock and bond returns, or for both reasons. Staff is mindful of the negative effects fees have on net investment performance and is committed to aggressively negotiating fair and reasonable terms to mitigate the drag on performance, while maintaining exposure to investments that exhibit positive risk and return characteristics in a total portfolio context.

CONCLUSION

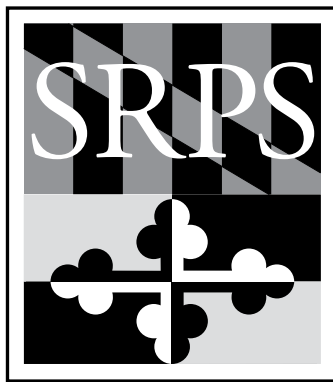
Fiscal year 2016 was a difficult environment for investors attempting to meet a fixed or growing liability. While returns were low, they were within the expected range of variability for the asset allocation of the System. The changes to the policy targets initiated in November improved the performance of the System's portfolio, and to a greater extent the policy portfolio. Looking to 2017 and beyond, the investment staff will continue to implement the Board's policies in a prudent and thoughtful way to maximize value for beneficiaries, while being ever mindful of the risks and uncertainties present in the global capital markets.

It has been an honor and a privilege to work with the Board and investment staff over the past year to meet the investment needs of the System and its beneficiaries.

Respectfully submitted,



Andrew C. Palmer CFA
Chief Investment Officer



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MARYLAND STATE RETIREMENT AND PENSION SYSTEM

INVESTMENT PORTFOLIO SUMMARY as of June 30, 2016 and 2015 (Expressed in Thousands)

	2016		2015	
	Fair Value	% of Fair Value	Fair Value	% of Fair Value
Rate Sensitive				
Fixed Income	\$ 8,332,955	18.3%	\$ 6,059,914	13.2%
Inflation linked bonds	1,856,604	4.1	3,504,186	7.6
(1) Cash (non-manager)	521,400	1.1	226,580	0.5
(2) Net cash & cash equivalents (manager)	-390,975	-0.9	-78,746	-0.2
Total Rate Sensitive	10,319,984	22.7	9,711,934	21.2
Credit				
High Yield Bond/Bank Loans	2,930,858	6.4	3,867,036	8.4
Emerging markets debt	1,308,262	2.9	530,955	1.2
(2) Net cash & cash equivalents (manager)	54,512	0.1	62,853	0.1
Total Credit	4,293,632	9.4	4,460,844	9.7
Equity				
Domestic stocks	3,466,768	7.6	4,599,465	10.0
Emerging markets stocks	3,645,061	8.0	793,296	1.7
Global stocks	5,811,305	12.8	7,422,753	16.2
International stocks	3,842,096	8.5	4,174,143	9.1
(2) Net cash & cash equivalents (manager)	240,503	0.5	257,328	0.6
Total Public Equity	17,005,733	37.4	17,246,985	37.6
Private Equity	4,169,027	9.2	3,675,473	8.0
Total Equity	21,174,760	46.6	20,922,458	45.6
Absolute Return	3,884,482	8.5	4,874,342	10.6
Real Estate (includes private)	3,718,494	8.2	3,351,289	7.3
Commodities	1,259,220	2.8	1,588,919	3.5
Natural Resources & Infrastructure	769,029	1.7	815,763	1.8
(2) Net cash & cash equivalents (manager)	45,758	0.1	107,894	0.2
Total Portfolio	\$ 45,465,359	100.0%	\$ 45,833,443	100.0%

(1) Securities lending collateral payable has been netted against the actual collateral. The amounts net to zero.

(2) Includes investment receivables and payables.

(3) Allocations for FY2015 have been restated to be comparable to FY2016.

Note: This schedule includes assets invested on behalf of the Maryland Transit Administration.

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

INVESTMENT PORTFOLIOS BY MANAGER

as of June 30, 2016

(Expressed in Thousands)

	Fair Value	Investment Advisory Fees		Fair Value	Investment Advisory Fees
Public Equity			Fixed Income Manager		
State Street Global Advisors	\$ 2,620,075	\$ 1,747	Western Asset Management	\$ 2,752,734	\$ 3,315
Equity Long Short (1)	1,479,958	37,944	Pacific Investment Management Company	1,345,678	861
RhumbLine Advisors	1,401,734	149	Aberdeen Asset Management, Inc.	681,172	1,111
D E Shaw & Co., LP	1,189,074	4,225	State Street Global Advisors	668,746	97
AQR Capital Management, LLC	1,105,291	4,165	Dodge & Cox	477,313	532
Dimensional Fund Advisors, Inc.	1,091,949	2,148	Fidelity Institution Asset Mgt	473,942	596
Baillie Gifford & Company	961,779	2,794	Principal Global Investors	469,440	561
Acadian Asset Management	686,252	1,806	Goldman Sachs Asset Management	466,417	820
Templeton Investment Counsel, Inc.	555,954	1,887	Progress Investment Management (1)	325,864	1,237
Fisher Investments	525,392	76	Northern Trust Global Advisors, Inc.(1)	173,469	384
Longview Partners Ltd.	498,952	2,455	Attucks Asset Management, LLC (1)	122,932	468
T. Rowe Price Associates, Inc.	488,845	1,869	Capital Prospects, LLC (1)	72,272	148
Artisan Partners Limited Partnership	485,445	2,427	Leading Edge Invest. Advisors, LLC (1)	42,340	208
Brown Capital Management	446,322	3,033	Cash - Internally Managed	521,400	N/A
Schroders Investment Management	441,070	1,079	Other (2)	158	2,602
Capital Prospects, LLC (1)	373,855	1,858		<u>\$ 8,593,877</u> (3)	<u>\$ 12,940</u> (4)
FIS Group, Inc.(1)	346,009	1,389			
Leading Edge Invest. Advisors, LLC (1)	309,305	2,393	Credit/Debt Related (1)	\$ 4,192,621	\$ 34,263
Axiom International Investors	305,824	560	Private Equity Funds (1)	4,169,027	81,957
Polunin Capital Management	303,820	0	Real Return (1)	3,870,956	29,112
Attucks Asset Management, LLC (1)	298,564	1,846	Absolute Return (1)	3,892,010	49,493
Bivium Capital Partners(1)	279,051	1,848	Real Estate		
Northern Trust Global Advisors, Inc.(1)	265,868	1,345	Private Real Estate (1)	3,077,006	29,286
Genesis Asset Management	204,877	1,601	Morgan Stanley Investment Management	447,128	1,753
Zevenbergen Capital Investment LLC	87,650	551	SSGA Global Liquid RE Securities	210,796	206
Record Currency Management	(51,245)	3,012	Record Currency Management	(3,575)	154
Other (2)	304,066	2,931	Other (2)	9,779	5,338
	<u>\$ 17,005,733</u> (3)	<u>\$ 87,139</u> (4)		<u>\$ 19,865,748</u> (3)	<u>\$ 231,560</u> (4)

(1) Sub-managers separately listed on the following pages

(2) Consulting fees and/or investment managers no longer under contract as of 6/30/16

(3) Includes assets invested on behalf of the Maryland Transit Administration.

(4) Includes management fees allocated to the Maryland Transit Administration.

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

ALTERNATIVE INVESTMENTS RELATIONSHIP LISTING

as of June 30, 2016

Private Equity

1315 Capital, LP	Crescent Capital Partners V, LP	MD Asia Investors, LP
Abbott Capital Private Equity Fund III, LP	CVC European Equity Partners V-B, LP	MD Asia Investors II, LP
ABS Capital Partners VI, LP	Dover Street VII, LP	Navis Asia Fund VI, LP
ABS Capital Partners VII, LP	ECI 8, LP	New Mainstream Capital Fund II, LP
Adams Street Partners, LLC	ECI 9, LP	New Mountain Partners III, LP
Advent Central & Eastern Europe IV, LP	Equistone Partners Europe Fund IV, LP	New Mountain Partners IV, LP
Advent International GPE V-D, LP	Equistone Partners Europe Fund V, LP	North Sky Clean Tech Fund IV, LP
Advent International GPE VI-A, LP	Everstone Capital Partners II, LLC	Northstar Equity Partners IV
AIF Capital Asia IV, LP	Everstone Capital Partners III, LLC	Orchid Asia V, LP
Alchemy Partners, LP	Fort Point Capital (FPC Small Cap) I, LP	Orchid Asia VI, LP
Apax Europe VI-A, LP	Frazier Healthcare V, LP	PAG Asia Capital II, LP
Apax Europe VII-A, LP	Frazier Healthcare VI, LP	Pacific Equity Partners V, LP
Apax France VIII	Frazier Healthcare VII, LP	Partners Group Secondary 2008, LP
Apollo Investment Fund VII (AIF), LP	Frazier Life Sciences VIII, LP	Partners Group Secondary 2011, LP
Apollo Investment Fund VIII (AIF), LP	Frontier Fund III, LP	Partners Group Emerging 2011, LP
Arcadia II Beteiligungen BT GmbH & Co	Frontier Fund IV, LP	Partners Group Secondary 2015, L.P
Astorg VI	Goldman Sachs Vintage Fund V, LP	Permira IV, LP
Audax Private Equity Fund II, LP	Graphite Capital Partners VII	Point 406 Ventures II, LP
Audax Private Equity Fund III, LP	Graphite Capital Partners VII, Top Up	Point 406 Ventures III, LP
Audax Private Equity Fund IV, LP	Graphite Capital Partners VIII	Point 406 Ventures 2016 Opportunities Fund
Audax Private Equity Fund V, LP	Great Hill Equity Partners III, LP	Private Equity Partners Fund IV
Azure Capital Partners II, LP	Great Hill Equity Partners IV, LP	Quaker BioVentures II, LP
Azure Capital Partners III, LP	Great Hill Equity Partners V, LP	Riverside Asia Pacific Fund II, LP
Bain Capital Asia Fund III	Hancock Park Capital III, LP	Riverside Capital Appreciation Fund V, LP
Bain Capital Europe Fund IV, LP	HarbourVest Partners VI - Buyout Fund, LP	Riverside Capital Appreciation Fund VI, LP
Bain Capital Fund IX, LP	HarbourVest Partners VI - Partnership Fund, LP	Riverside Europe Fund IV, LP
Bain Capital IX Coinvestment Fund, LP	Hellman & Friedman Capital Partners VI, LLC	RLH Investors II, LP
Bain Capital Fund X, LP	Hellman & Friedman Capital Partners VII, LLC	RLH Investors III, LP
Bain Capital X Coinvestment Fund, LP	Hg Capital 5, LP	Siris Partners II, LP
Bain Capital Fund XI, LP	Hg Capital 6A, LP	SSG Capital Partners III, LP
Baring Asia Private Equity Fund VI, LP	Hg Capital 7C, LP	Summer Street Capital Fund II, LP
BC European Capital VIII, LP	Hg Capital Mercury A, LP	Summer Street Capital Fund III, LP
BC European Capital IX, LP	Institutional Venture Partners XV	Symmetric Partners, LP
Black River Capital Partners Fund (Agr. A) LP	ICV Partners III, LP	TA X, LP
Blackstone Capital Partners VI, LP	KKR European Fund III, LP	TA XI, LP
Blue Wolf Capital Fund III, LP	Landmark Equity Partners XIV, LP	TA XII, LP
Brazos Equity Fund III, LP	Landmark Equity Partners XV, LP	TDR Capital III, LP
Bridgepoint Europe Fund V, LP	Lexington Capital Partners, VII	Thoma Bravo Fund XII, LP
Bunker Hill Capital II, LP	Lexington Middle Market Investors III, LP	TPG Partners VI, LP
Calvert Street Capital Partners III, LP	Lion Capital Fund I, LP	TPG Partners VII, LP
Camden Partners Strategic Fund IV, LP	Lion Capital Fund II, LP	Triton Fund III, LP
Carlyle Partners V, LP	Lion Capital Fund III, LP	Triton Fund IV, LP
Carlyle Partners VI, LP	Littlejohn Fund III, LP	Valhalla Partners II, LP
CDH Fund V, LP	Littlejohn Fund IV, LP	Vector Capital IV, LP
Charterhouse Capital Partners VIII, LP	Littlejohn Fund V, LP	Vestar Capital Partners V, LP
Charterhouse Capital Partners IX, LP	LLR Equity Partners IV, LP	Vista Equity Partners Fund IV, LP
Clayton, Dubilier & Rice Fund VIII, LP	Lombard Asia IV, LP	Vista Equity Partners Fund V, LP
Clayton, Dubilier & Rice Fund IX, LP	Longitude Venture Partners, LP	Vista Equity Partners Fund VI, LP
Coller Capital Partners VI, LP	Longitude Venture Partners II LP	Vista Foundation Fund II, LP
Coller Capital Partners VII, LP	Madison Dearborn Capital Partners V, LP	Vistria Fund I, LP
Commonwealth Capital Ventures IV, LP	Madison Dearborn Capital Partners VI, LP	Wind Point Partners VII LP
Court Square Capital Partners III, LP	Madison Dearborn Capital Partners VII, LP	Yucaipa American Alliance Fund II LP
Crescent Capital Partners IV, LP	MBK Partners Fund III, LP	

Private Real Estate

AEW Senior Housing Fund II, LP	GI Partners Fund III, LP	Realty Associates Fund X
Blackrock Asia Property Fund III, LP	GI Partners Fund IV, LP	Rockwood Capital R E Partners Fund VIII, LP
CBRE US Core Partners	JP Morgan Investment Management Inc	Rockwood Capital R E Partners Fund IX, LP
CBRE Strategic Partners Europe Fund III	Lion Industrial Trust	Secured Capital Japan R E Partners Asia, LP
CBRE Strategic Partners UK Fund III	Lone Star Real Estate Fund II, LP	Secured Capital Japan R E Partners IV, LP
CBRE Strategic Partners US Value 5, LP	Lone Star Real Estate Fund III, LP	Starwood Debt Fund II, LP
CBRE Strategic Partners US Value 6, LP	Lone Star Real Estate Fund IV, LP	Starwood Hospitality Fund II, LP
CBRE Strategic Partners US Value 7, LP	Lubert Adler Real Estate Fund III, LP	Tristan Capital- European Special Opps 3
Covenant Apartment Fund VII	Lubert Adler Real Estate Fund VI	Tristan Capital- European Special Opps 4
Europe Fund III, LP	Lubert Adler Real Estate Fund VI-A	UBS Trumbull Property Fund
Federal Capital Partners Fund II	Morgan Stanley Prime Property Fund, LLC	
Federal Capital Partners Fund III	PRISA II (Prudential Real Estate Investors)	
Frogmore Real Estate Partners II, LP	Realty Associates Fund IX	

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

ALTERNATIVE INVESTMENTS RELATIONSHIP LISTING

as of June 30, 2016

(continued)

Real Return

Alinda Infrastructure Fund II, LP	Hancock Timberland X, LP	Quantum Energy Partners VI, LP
Astenbeck Commodities Fund II, LP	Harvest Fund Advisors, LLC	RMS Forest Growth III,LP
Core Commodity Management Diversified I, LLC	Koppenberg Macro Commodity Fund, LP	State Street Global Advisors US Tips
Edesia Dynamic Agriculture Fund, LP	Natural Gas Partners VIII, LP	Taylor Woods Partners, LP
EIF US Power Fund IV, LP	Natural Gas Partners IX, LP	Timbervest Partners III, LP
First Reserve Fund XII, LP	Natural Gas Partners X, LP	Tortoise Capital Advisors, LLC
First Reserve Fund XIII, LP	Natural Gas Partners XI, LP	Vermillion/Celadon Commodities Fund
Global Timber Investors 9	NGP Midstream & Resources, LP	White Deer Energy, LP
Gresham Investment Management, LLC	Quantum Energy Partners IV, LP	
	Quantum Energy Partners V, LP	

Absolute Return

Aristeia Capital	DGAM Diversified Strategies Fund	InvestCorp Dynamic Alt Beta Fund
Aristeia Co-Invest	Garda Firvo	Mellon Global Alpha II
Bridgewater All Weather	Graham Tactical Trend	Nephia Palmetto Fund
Bridgewater Pure Alpha	Hudson Bay Fund	Pine River Fund
Carlson Double Black Diamond	Hutchin Hill Diversified Alpha Fund	Rock Creek Potomac Fund

FIXED INCOME RELATIONSHIP LISTING

as of June 30, 2016

Credit/Debt Related

Alchemy Special Opps Fund II	Falcon Strategic Partners III	Park Square Capital Partners II
Alchemy Special Opps Fund III	Falcon Strategic Partners IV	Partners Group European Mezzanine 2008 LP
Anchorage Capital Group	King Street Capital	Peninsula Fund V
Apollo Credit Opps Fund III	KKR Flexible Credit	Perella Weinberg Partners
CarVal Credit Value Fund A LP	KKR Mezzanine Partners 1	Prudential Capital Partners III
CarVal Credit Value Fund II	LBC Credit Partners II LP	Prudential Capital Partners IV
CarVal Credit Value Fund III	Logan Circle Partners EMD	Shoreline China Val Fund III
Castle Lake III	Mackay Shields	SSGA Emerging Markets Debt
Castle Lake IV	Merit Mezzanine Fund V	SSGA Emerging Markets Hard Currency
Clearlake Capital Group	Neuberger Berman Flexible Credit	Stone Harbour Blended EMD
Clearlake Capital Group IV	Oaktree European Principal Fund III	TA Subordinated Debt Fund III
Crescent Capital Mezzanine Partners VI	Oaktree Opportunity Fund VIII	Varde Fund X
EIG Energy Fund XV	Oaktree Opportunity Fund VIII B	Wayzata Investment Partners III
EIG Energy Fund XVI	Oaktree Principal Fund V	

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

TERRA MARIA PROGRAM

as of June 30, 2016

Terra Maria Program

Attucks Asset Management

Advent Capital Management, LLC
Apex Capital Management
Brown Investment Advisory
Campbell Newman Asset Management
Chicago Equity Partners
Globeflex Capital LP
Hanseatic Management Services, Inc
LM Capital Group, LLC
Lombardia Capital Partners, LLC
Mar Vista Investment Partners, LLC
Nicholas Investment Partners, LP
Opus Capital Management, LLC
Paradigm Asset Management Company, LLC
Seizert Capital Partners, LLC
The Edgar Lomax Company
Thomas White International LTD

Bivium Capital Partners

ARGA Investment Management, LP
Aristotle Capital Management, LLC
Bailard Inc
Chautauqua Capital Management, LLC
Cornerstone Capital Management, LLC
Cupps Capital Management, LLC
Phocas Financial Corporation
Vulcan Value Partners, LLC
WCM Investment Management

Capital Prospects LLC

AH Lisanti Capital Growth, LLC
Bernzott Capital Advisors
Henderson Geneva Capital Management Ltd
Inview Investment Management, LLC
Lebenthal Lisanti Capital Growth LLC
Matrix Asset Advisors, Inc
Next Century Growth Investors, LLC
Paradigm Asset Management Company, LLC
Piedmont Investment Advisors, LLC

Profit Investment Management
Redwood Investments, LLC
Twin Capital Management, Inc
Sterling Advisors
Walthausen & Company, LLC

FIS Group

Ativo Capital Management, LLC
Black Creek Investment Management, Inc.
Channing Capital Management, LLC
Greenfield Seitz Capital Management, LLC
Martin Investment Management, LLC

Leading Edge Investment Advisors

Apex Capital Management
Driehaus Capital Management, LLC
Gratry & Company, Inc
Herndon Capital Management, LLC
Kirr, Marbach & Company, LLC
Markston International, LLC
New Century Investment Management, Inc
Penn Capital Management Co, LLC
Reed, Conner & Birdwell, LLC
SIT Investment Associates, Inc
Westwood Global Investments, LLC

Northern Trust

ClariVest Asset Management, LLC
Dolan McEniry Capital Management, LLC
Longfellow Investment Management Company, LLC
Magee Thompson Investment Partners, LLC
New Century Advisors, LLC
Riverbridge Partners, LLC
Strategic Global Advisors, LLC
Summit Creek Advisors, LLC

Progress Investment Management

Garcia Hamilton & Associates, LP
New Century Advisors, LLC
Pugh Capital Management, Inc

Bold denotes Program Manager for the Terra Maria Program

EQUITY RELATIONSHIP LISTING

as of June 30, 2016

Equity Long/Short

Amici Qualified Associates, LP
Criterion Capital Partners Fund
Hoplite OnShore

Indus-Pacific Opportunities Fund
Marshall Wace Eureka Fund
Neon Liberty Capital Management

Scopia Capital Management
Stelliam Fund

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

EQUITY COMMISSIONS TO BROKERS for the Fiscal Year Ended June 30, 2016

(Expressed in Thousands)

Brokers (1)	Total Shares	Total Commission
State Street Bank and Trust	249,186	\$ 1,008
Goldman Sachs	99,098	441
Instinet	102,272	398
Credit Suisse Securities	147,820	312
Merrill Lynch	96,572	311
J P Morgan Securities	46,882	273
Morgan Stanley	78,853	264
UBS	37,231	203
Barclays Capital, Inc.	11,856	165
Loop Capital	8,862	162
Investment Technology Group	15,087	150
Deutsche Bank Securities, Inc.	57,584	145
BNY	33,316	140
Societe Generale	16,384	122
Citigroup Global Markets	27,770	116
HSBC	44,971	113
Sanford C. Bernstein	15,858	109
Jefferies & Company	10,303	104
Other Broker Fees	295,665	2,043
Total broker commissions	<u>1,395,570</u>	<u>\$ 6,579</u>

(1) Proceeds from the sale and disbursements for the purchase of securities are reported net of brokers' commissions. As such, brokers' commissions are not included as investment expenses on the Statement of Changes in Plan Net Position. Other broker fees include 230 brokers each receiving less than \$100,000 in total commissions.

For the fiscal year ended June 30, 2016, total domestic equity commissions averaged .49 cents per share, and total international equity commissions averaged 5.79 basis points per share.

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

LARGEST STOCK & BOND HOLDINGS AT MARKET as of June 30, 2016

EQUITY INCOME SECURITIES:	Shares	Fair Value
Amazon.Com Inc.	195,507	\$ 139,908,719
Nestle SA Reg	1,250,092	96,432,369
Facebook Inc. A	839,885	95,982,058
Apple Inc.	992,687	94,900,877
Microsoft Corporation	1,682,180	86,077,151
Tencent Holdings Ltd	3,634,882	82,509,261
Roche Holdings AG Genusschein	273,927	72,010,578
Exxon Moble Corporation	764,680	71,681,103
Taiwan Semi Conductor SP ADR	2,321,118	60,882,925
Pfizer Inc.	1,720,117	60,565,320
Samsung Electronics Co Ltd	46,978	58,118,375
Sanofi	675,245	56,202,214
Alphabet Inc Cl C	79,158	54,785,252
Johnson & Johnson	435,743	52,855,626
Wal Mart Stores Inc.	716,284	52,303,058

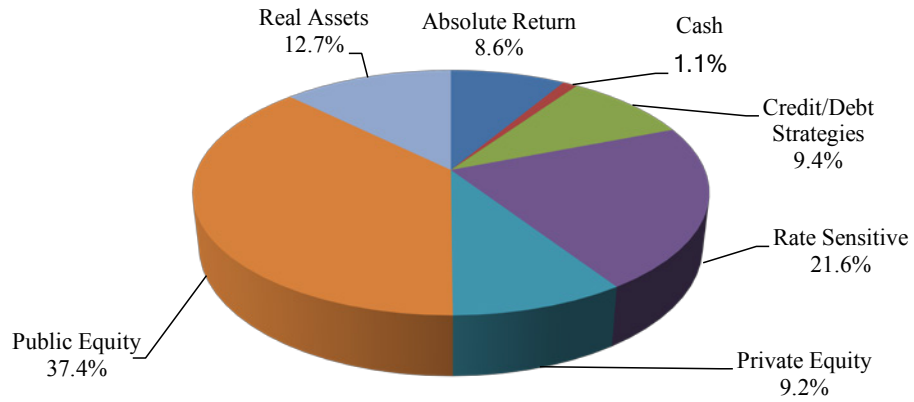
FIXED INCOME SECURITIES:	Par Value	Fair Value
United States Treasury Bonds, 3.125%, due Aug 15, 2044	\$ 257,578,525	\$ 293,959,680
United States Treasury Bonds, 2.875%, due May 15, 2043	222,153,607	238,616,778
United States Treasury Notes, 1.875%, due Oct 31, 2022	224,857,490	229,225,460
United States Treasury Bonds, 3.00%, due Nov 15, 2045	180,199,238	206,205,407
Federal National Mortgage Assn., 0.00%, due Oct 9, 2019	193,214,774	197,213,233
United States Treasury Bonds, 3.00%, due Nov 15, 2044	160,922,665	172,465,500
United States Treasury Bonds, 3.00%, due May 15, 2045	154,166,945	170,882,785
United States Treasury Strip, 0.00%, due May 15, 2043	135,900,909	156,997,883
Federal National Mortgage Assn., 3.50%, due Aug 16, 2046	147,839,539	147,968,964
United States Treasury Bonds, 2.875%, due Aug 15, 2045	136,100,677	146,872,889
United States Treasury Bonds, 3.00%, due Nov 15, 2044	120,988,617	139,915,511
United States Treasury Bonds, 2.50%, due Feb 15, 2046	121,510,649	125,918,097
United States Treasury Bonds, 6.125%, due Aug 15, 2029	115,686,508	118,565,700
United States Treasury Bonds, 2.875%, due May 15, 2043	96,676,005	109,075,530
United States Treasury Inflation Linked, .125%, due Apr 15, 2018	80,075,303	80,359,747

A complete list of portfolio holdings is available upon request.

MARYLAND STATE RETIREMENT AND PENSION SYSTEM

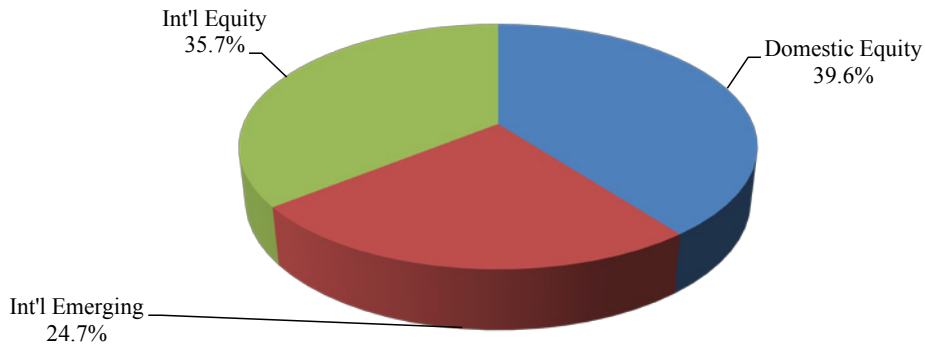
INVESTMENT PORTFOLIO ALLOCATION

as of June 30, 2016



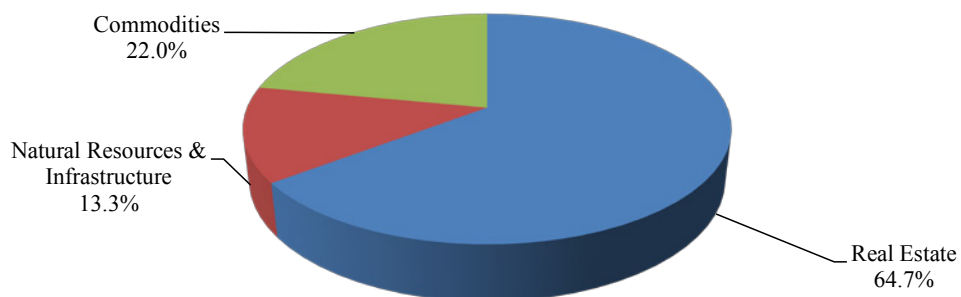
PUBLIC EQUITY DISTRIBUTION BY TYPE

as of June 30, 2016

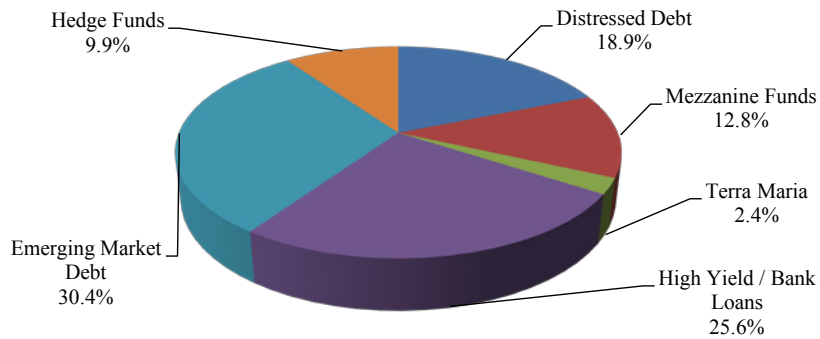


REAL ASSETS DISTRIBUTION BY TYPE

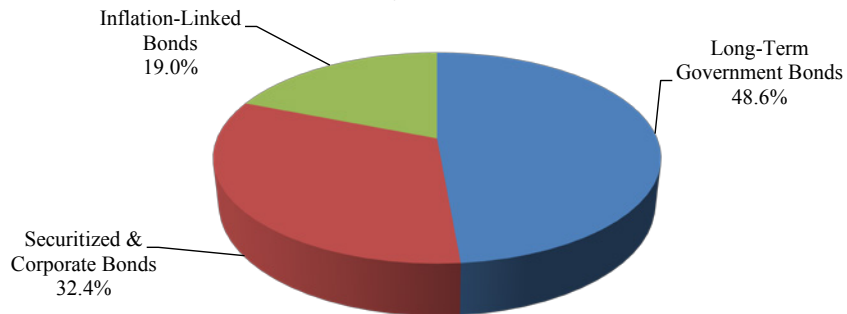
as of June 30, 2016



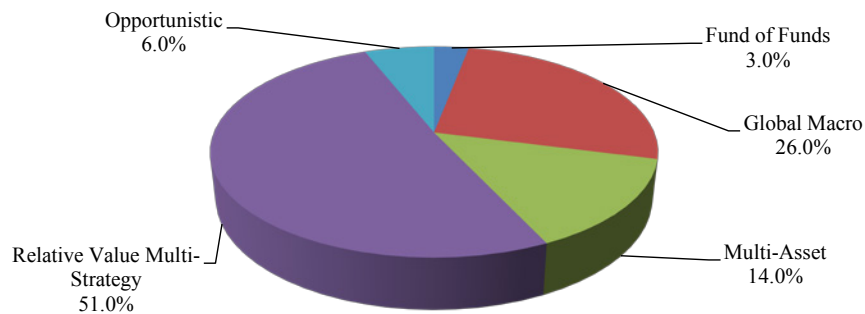
MARYLAND STATE RETIREMENT AND PENSION SYSTEM
CREDIT/DEBT STRATEGIES DISTRIBUTION BY TYPE
as of June 30, 2016



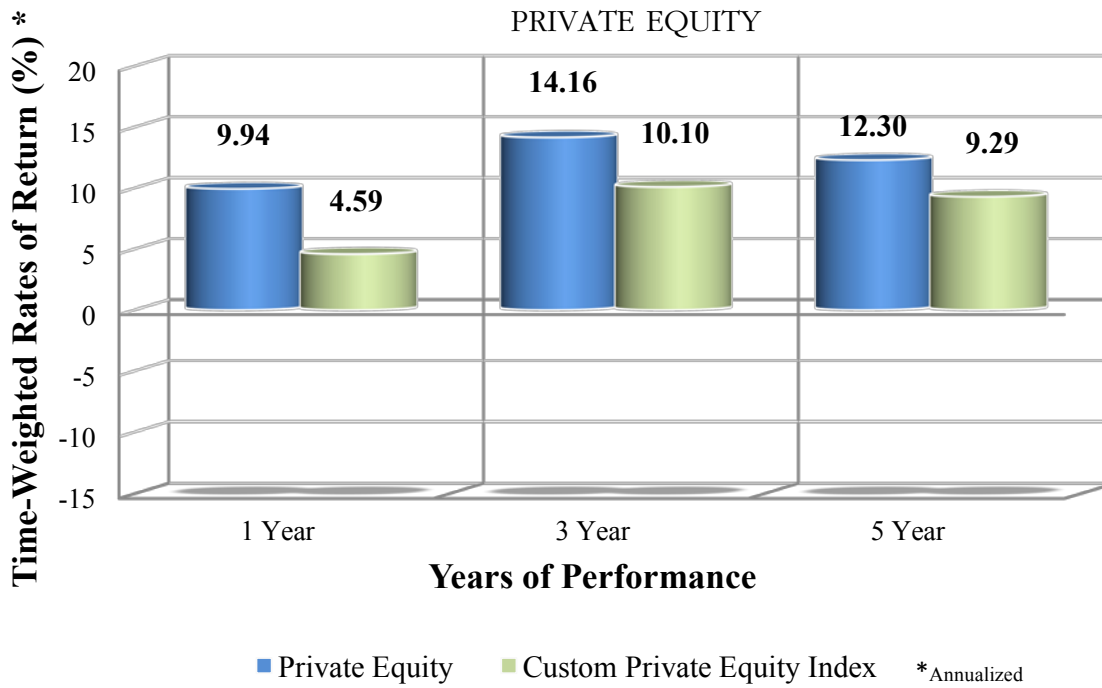
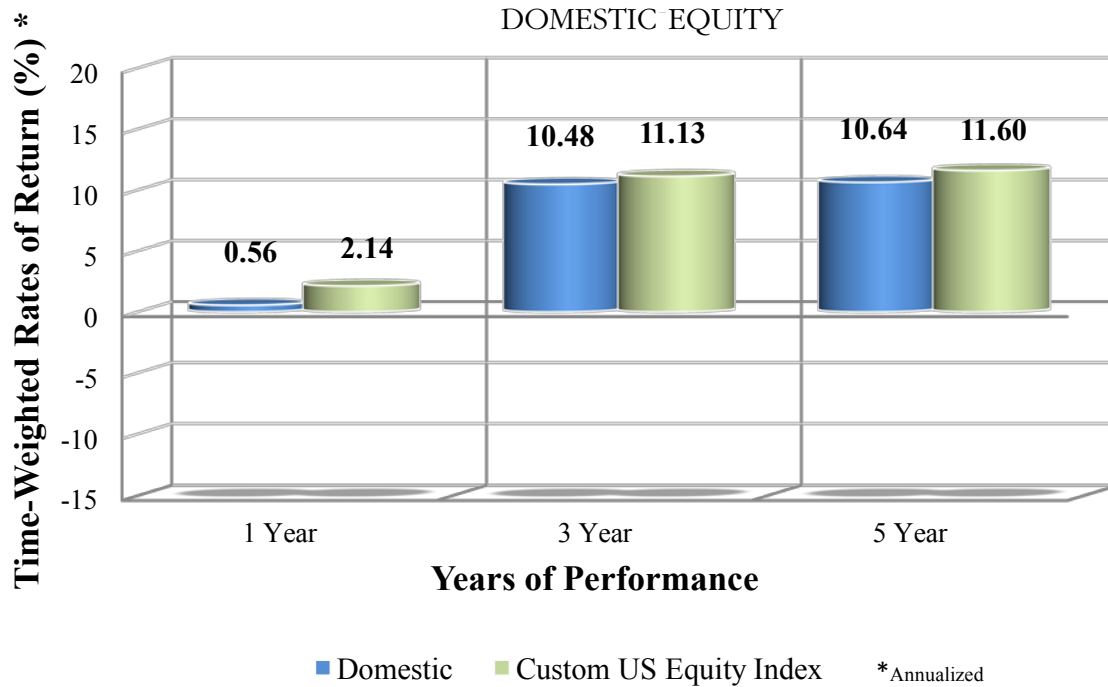
RATE SENSITIVE DISTRIBUTION BY TYPE
as of June 30, 2016



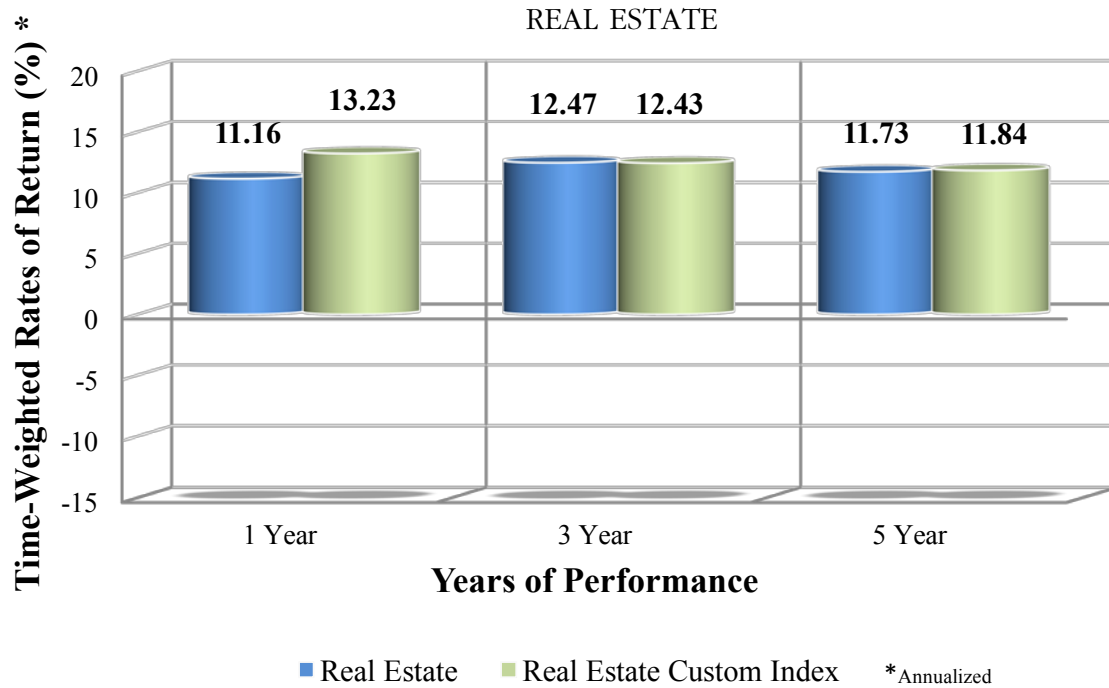
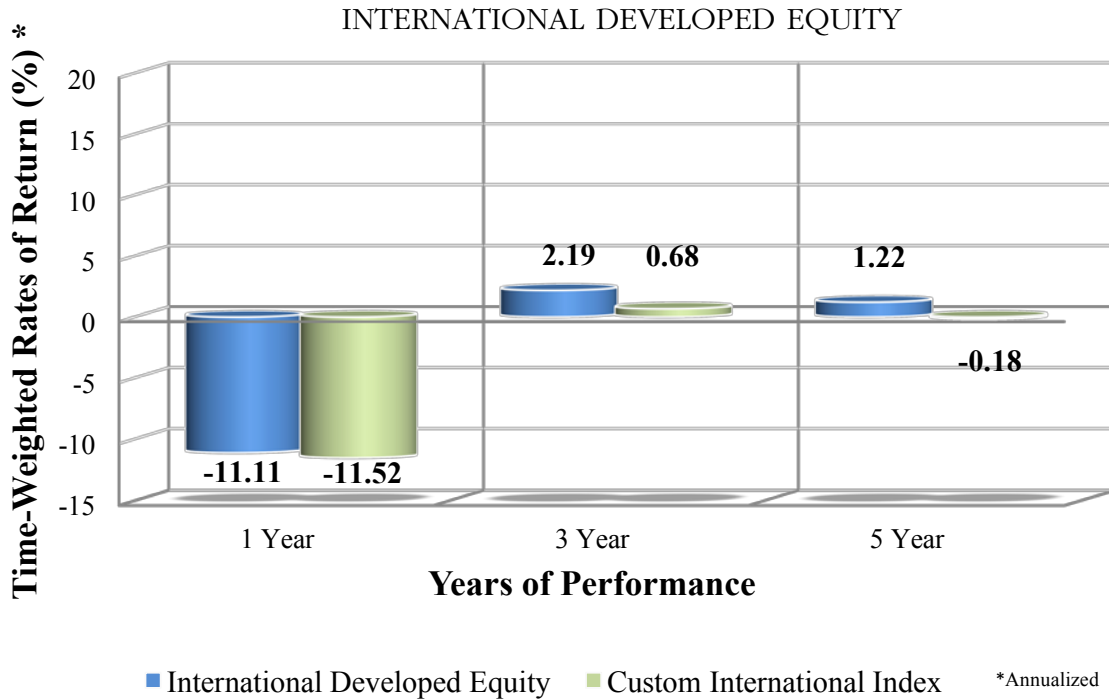
ABSOLUTE RETURN DISTRIBUTION BY TYPE
as of June 30, 2016



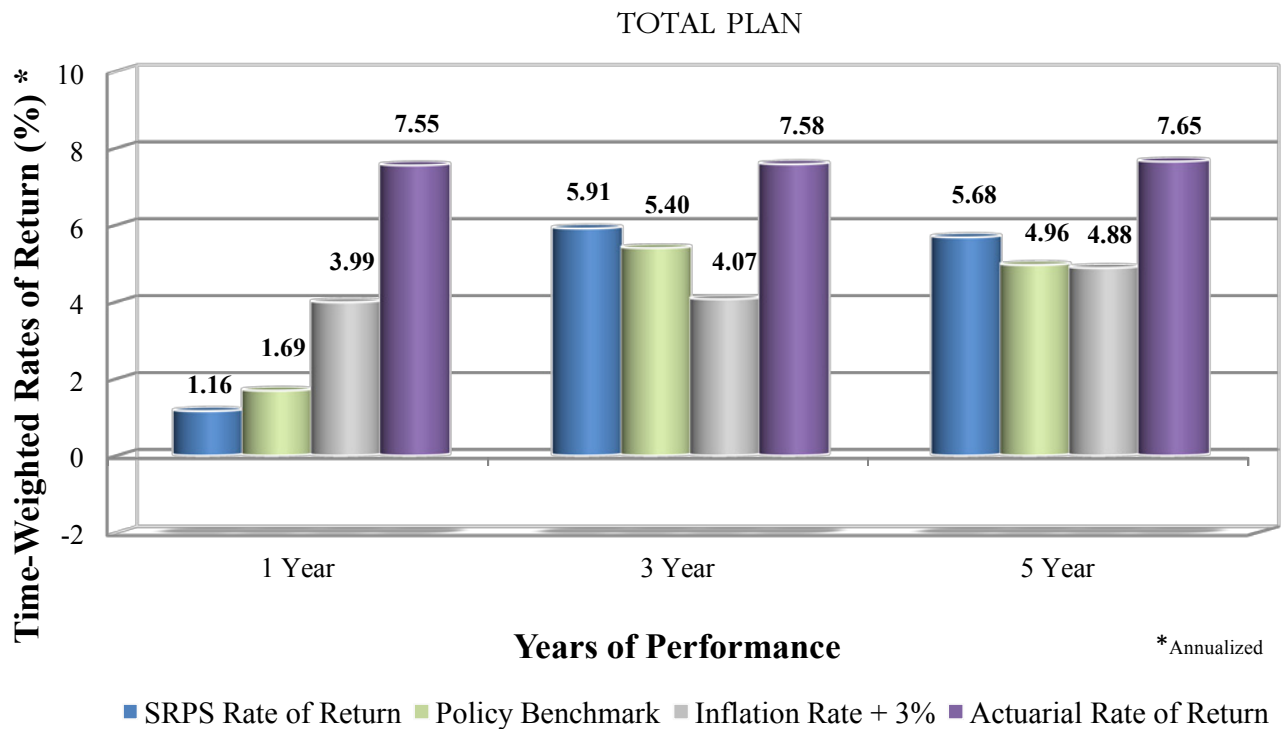
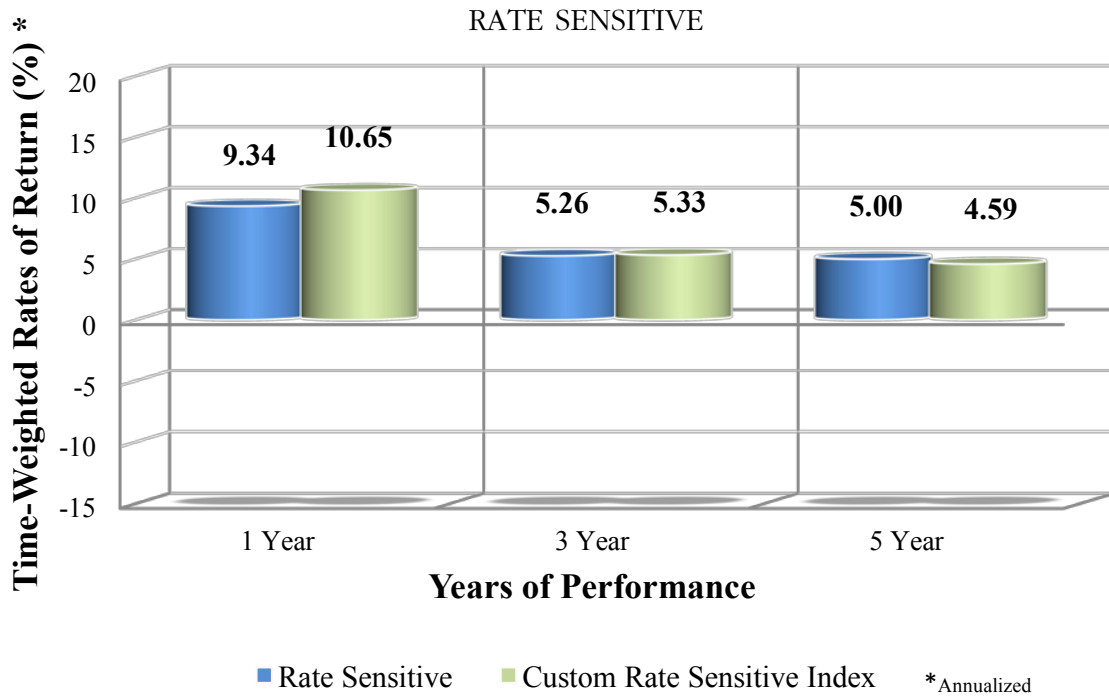
MARYLAND STATE RETIREMENT AND PENSION SYSTEM
 COMPARATIVE INVESTMENT RETURNS ENDING JUNE 30, 2016



MARYLAND STATE RETIREMENT AND PENSION SYSTEM
 COMPARATIVE INVESTMENT RETURNS ENDING JUNE 30, 2016

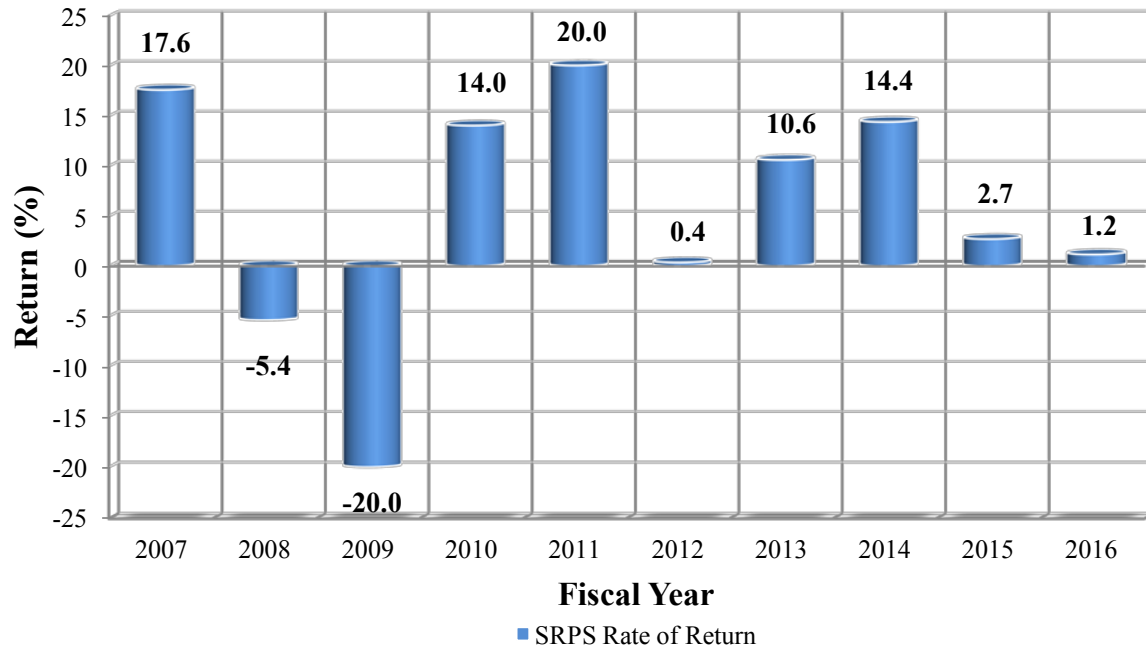


MARYLAND STATE RETIREMENT AND PENSION SYSTEM
 COMPARATIVE INVESTMENT RETURNS ENDING JUNE 30, 2016

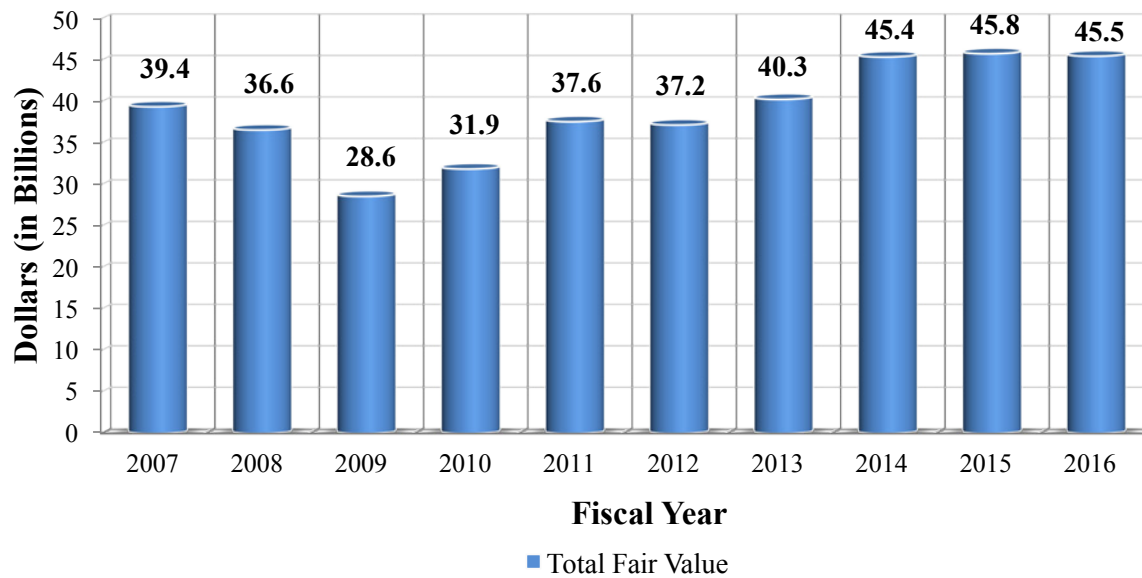



MARYLAND STATE RETIREMENT AND PENSION SYSTEM

TEN-YEAR HISTORY OF TIME-WEIGHTED ANNUAL RETURNS



TEN-YEAR GROWTH OF INVESTMENT PORTFOLIO



The logo for the SRPS Actuarial Section is centered on the page. It features the letters "SRPS" in a large, bold, serif font. Below "SRPS" is the text "Actuarial Section" in a smaller, elegant, cursive script font. The entire logo is set against a light gray square background that has a subtle, stylized pattern of vertical bars and horizontal lines with circular accents.

SRPS
Actuarial Section



Gabriel Roeder Smith & Company
Consultants & Actuaries

One Towne Square
Suite 800
Southfield, MI 48076-3723

248.799.9000 phone
248.799.9020 fax
www.gabrielroeder.com

November 4, 2016

Board of Trustees
Maryland State Retirement and Pension System
120 East Baltimore Street
Baltimore, MD 21202

Dear Members of the Board:

The results of the June 30, 2016 annual actuarial valuation of the Maryland State Retirement and Pension System ("MSRPS") are presented in this report.

This report was prepared at your request and is intended for use by the Maryland State Retirement Agency (SRA) and the Board of Trustees of the MSRPS and those designated or approved by the SRA or the Board. This report may be provided to other parties only in its entirety and only with the permission of the SRA or the Board. GRS is not responsible for unauthorized use of this report.

The purposes of the valuation are as follows:

- Measure the financial position of MSRPS with regard to funding,
- Provide the Board with State and PGU contribution rates for certification,
- Determine actuarial and statutory contribution rates with reinvested savings, and
- Analyze the aggregate experience of the System over the past year.

Information required by Statements No. 67 and No. 68 of the Governmental Accounting Standards Board ("GASB") that is for fiscal year 2016 is provided in a separate report.

The individual member data required for the valuations was furnished by the SRA, together with pertinent data on financial operations (unaudited). The cooperation and collaboration of SRA staff in furnishing these materials is acknowledged with appreciation. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by SRA.

Actuarial valuations are based upon assumptions regarding future activity in specific risk areas including the rates of investment return and payroll growth, eligibility for the various classes of benefits, and longevity among retired lives. The Board adopts these assumptions after considering the advice of the actuary and other professionals.

Each actuarial valuation takes into account all prior differences between actual and assumed experience in each risk area and adjusts the contribution rates as needed. GRS performed an experience study of MSRPS for the period 2010-2014 after completion of the June 30, 2014 valuations. Assumptions from the experience study including investment return, inflation, COLA increases, mortality rates, retirement rates, withdrawal rates, disability rates, and rates of salary increase were adopted by the Board for first use in the actuarial valuation as of June 30, 2015. As a result, an investment return assumption of 7.55% and an inflation assumption of 2.70% were used for the June 30, 2016 valuation. It is our opinion that the actuarial assumptions used for the valuation are reasonable.

New funding methodology set forth by Maryland legislation was first reflected in the June 30, 2015 valuation. The legislation removed the corridor funding method effective with the June 30, 2015 valuation.

The computed contribution rate shown on page I-2 may be considered as a minimum contribution rate that complies with the funding policy stated in the Statutes. Users of this report should be aware that contributions made at that rate do not guarantee benefit security. Given the importance of benefit security to any retirement system, we suggest that contributions to the System in excess of those presented in this report be considered. This valuation assumes the continuing ability of the participating employer to make the contributions necessary to fund this system. A determination regarding whether or not the participating employer is actually able to do so is outside our scope of expertise. Consequently, we did not perform such an analysis.

The benefit provisions valued in the actuarial valuation as of June 30, 2016 are the same as the provisions from the last actuarial valuation as of June 30, 2015. Portions of the savings from the 2011 pension reforms passed by the General Assembly are to be reinvested as additional contributions into the Systems. Legislation enacted in 2015 reduced the amount of reinvested savings to \$75 million per year beginning in fiscal year 2016 until the combined funded ratio of the Systems reaches 85%.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. The actuary did not perform an analysis of the potential range of such future measurements in this actuarial valuation report. This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. We certify that, to the best of our knowledge, this report is complete and accurate and has been prepared in accordance with Maryland's Annotated Code and generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice as promulgated by the Actuarial Standards Board.

This report should not be relied on for any purpose other than the purposes previously described. Determinations of the financial results associated with benefits described in this report in a manner other than the intended purpose may produce significantly different results.

The signing actuaries are independent of the plan sponsor. This is one of multiple documents comprising the actuarial report. The other documents comprising the actuarial report are the PowerPoint presentation presented to the Board on October 18, 2016 and the PowerPoint presentation presented to the Joint Committee on Pensions on November 2, 2016.

Brian B. Murphy, Brad L. Armstrong, and Amy Williams are Members of the American Academy of Actuaries (MAAA), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,

Brad L. Armstrong, ASA, MAAA
Consulting Actuary

Brian B. Murphy, FSA, MAAA
Consulting Actuary

Amy Williams, ASA, MAAA
Consulting Actuary

INTRODUCTION

The funding valuation report presents the results of the June 30, 2016 annual actuarial valuation of the Maryland State Retirement and Pension System (MSRPS). The purposes of the annual funding valuations are as follows:

- Measure the financial position of MSRPS,
- Assist the Board in determining employer contribution rates (including reinvested savings) necessary to fund the benefits provided by MSRPS, as well as establishing statutory employer contribution rates,
- Indicate trends in the financial progress of the fund, and
- Analyze the experience of the System over the past year.

A summary of the primary funding valuation results as of June 30, 2016 is presented on the following page.

The Governmental Accounting Standards Board (GASB) No. 67 and No. 68 valuation report presents the results of the June 30, 2016 annual accounting valuation of the Maryland State Retirement and Pension System (MSRPS). The purpose of the annual accounting valuations is as follows:

- Provide actuarial reporting and disclosure information for the System and State's financial report.

A summary of the primary accounting valuation results as of June 30, 2016 is presented in a separate report.

SUMMARY OF VALUATION RESULTS
JUNE 30, 2016
(\$ IN MILLIONS)
(STATE AND MUNICIPAL)

	2016						2015		% Change
	TCS	ECS	State Police	Judges	LEOPS	CORS ¹	Total	Total	
A. Demographic Information									
1. Active Number Counts	105,547	82,625	1,402	298	2,529	93	192,494	193,600	-0.6%
2. Active Payroll	\$ 6,611	\$ 4,245	\$ 93	\$ 45	\$ 156	\$ 5	\$ 11,156	\$ 11,064	0.8%
3. Retired Number Counts	73,582	74,211	2,536	407	1,801	29	152,566	147,850	3.2%
4. Annual Benefits for Retired Members ²	\$ 2,012	\$ 1,227	\$ 118	\$ 31	\$ 61	\$ 1	\$ 3,449	\$ 3,323	3.8%
5. Deferred / Inactive Number Counts	25,298	27,884	84	7	294	1	53,568	52,769	1.5%
6. Total Number Counts	204,427	184,720	4,022	712	4,624	123	398,628	394,219	1.1%
B. Assets									
1. Market Value (MV)	\$ 27,542	\$ 15,311	\$ 1,274	\$ 408	\$ 810	\$ 21	\$ 45,366	\$ 45,790	-0.9%
2. Rate of Return on MV ³							1.10 %	2.66 %	
3. Actuarial Value (AV)	\$ 29,021	\$ 16,130	\$ 1,344	\$ 431	\$ 856	\$ 22	\$ 47,804	\$ 46,171	3.5%
4. Rate of Return on AV							5.59 %	9.20 %	
5. Ratio of AV to MV							105.4%	100.8%	
C. Actuarial Results									
1. Normal Cost as a % of Payroll	11.46%	10.28%	32.20%	38.88%	21.66%	13.75%	11.44%	11.51%	
2. Actuarial Accrued Liability (AAL)									
a. Active	\$ 16,066	\$ 9,050	\$ 404	\$ 176	\$ 434	\$ 10	\$ 26,141	\$ 25,960	0.7%
b. Retired	22,979	13,845	1,709	345	895	12	39,785	38,588	3.1%
c. Deferred/Inactive	890	922	12	2	30	0	1,856	1,733	7.1%
d. Total	\$ 39,934	\$ 23,817	\$ 2,125	\$ 524	\$ 1,359	\$ 22	\$ 67,782	\$ 66,282	2.3%
3. Unfunded AAL (UAAL)	\$ 10,913	\$ 7,687	\$ 781	\$ 93	\$ 503	\$ 1	\$ 19,978	\$ 20,111	-0.7%
4. Funded Ratio	72.67 %	67.73 %	63.26 %	82.18 %	62.97 %	96.91 %	70.53 %	69.66 %	
D. Contribution Rates⁴									
	STATE PORTION ONLY								
	FY 2018						FY 2017	FY 2016⁵	
1. Pension Contributions									
a. Employer Normal Cost	4.47%	3.86%	24.20%	32.39%	14.99%		4.69%	4.77%	5.25%
b. Member Contribution Rate	6.99%	6.74%	8.00%	6.49%	7.00%		6.92%	6.91%	6.91%
c. UAAL Contribution Rate	<u>11.24%</u>	<u>14.70%</u>	<u>56.09%</u>	<u>14.06%</u>	<u>24.70%</u>		<u>12.91%</u>	<u>12.81%</u>	<u>12.36%</u>
d. Total	22.70%	25.30%	88.29%	52.94%	46.69%		24.52%	24.49%	24.52%
2. Total Actuarial Employer Rate (1.a + 1.c)	15.71%	18.56%	80.29%	46.45%	39.69%		17.60%	17.58%	17.61%
3. Total Employer Budgeted Rate									
a. Employer Budgeted Rate	15.71%	18.56%	80.29%	46.45%	39.69%		17.60%	17.58%	16.83%
b. Reinvested Savings Rate	<u>0.74%</u>	<u>0.66%</u>	<u>1.07%</u>	<u>0.00%</u>	<u>1.08%</u>		<u>0.74%</u>	<u>0.74%</u>	<u>0.75%</u>
c. Total Employer Budgeted Rate	16.45%	19.22%	81.36%	46.45%	40.77%		18.34%	18.32%	17.58%

¹Includes CORS Municipal only. State CORS included in ECS.

²Retiree benefit amounts include the cost-of-living-adjustment granted July 1, 2016 and July 1, 2015, respectively.

³Actuarial estimation method shown is expected to differ modestly from figures reported by State Street.

⁴Contribution rates shown in the "Total" column are for informational purposes only and are not used for funding purposes.

⁵Reflects the reduction of reinvested savings from \$150 million to \$75 million passed by the General Assembly.
Totals may not add due to rounding.

ACTUARY'S COMMENTS

For the year ended June 30, 2016, the System's assets earned 1.10% based on our estimate and 1.16% as reported by State Street (using a slightly different computation method) on a market value basis and 5.59% on a smoothed or actuarial value basis. These are both less than the 7.55% assumed rate of investment return. Recognized asset losses from fiscal years 2012, 2015 and 2016 offset recognized asset gains from fiscal years 2013 and 2014 in the actuarial value of assets as of June 30, 2016. This resulted in a loss under the asset smoothing method.

**UAAL and Actuarial Gain/(Loss)
(\$ in Millions)**

	State	Municipal	Total SRPS
Unfunded Actuarial Accrued Liability (UAAL) as of June 30, 2015	\$19,260	\$ 851	\$20,111
Expected UAAL as of June 30, 2016 before changes	19,377	845	20,222
Changes in benefit provisions	-	-	-
Changes in methods and assumptions	-	-	-
Expected UAAL as of June 30, 2016 after changes	19,377	845	20,222
Actual UAAL as of June 30, 2016	19,121	857	19,978
Net actuarial gain/(loss)	256	(12)	244
Actuarial gain/(loss) by source			
Actuarial investment experience	(820)	(77)	(897)
Actuarial accrued liability experience	1,076	65	1,141

In relative terms, the overall System funded ratio of actuarial value of assets to liabilities increased from 69.66% in 2015 to **70.53%** this year. If market value of assets were the basis for the measurements, the funded ratio would have decreased from 69.08% to 66.93% funded.

The market value of assets exceeds the retiree liabilities by about 14% in total, a decrease from 19% last year. This is referred to as a short condition test and is demonstrated in the chart at the bottom of this page. It is looking at the current retiree liabilities as the benefits that will be paid the soonest since these benefits are already in pay status. Active liabilities and deferred vested liabilities do not have associated immediate cash flow requirements. Although the market value of assets exceeds the current retiree liabilities in total, this is not true for two of the smaller systems. For State Police and LEOPS, the market value of assets is less than the retiree liabilities.

Summary of Contribution Rates by State System (\$ in Millions)							
	TCS	ECS	State Police	Judges	LEOPS	CORS	Total
Market Value of Assets (MVA)	\$2 7,542	\$15,311	\$ 1,274	\$ 408	\$ 810	\$ 21	\$45,366
Retiree Liability	22,979	13,845	1,709	345	895	12	39,785
MVA as % of Retiree Liability	120%	111%	75%	118%	91%	176%	114%

¹ *Actuarial calculations may differ from figures reported by State Street.*

In the 2013 legislative session, the Legislature changed the method used to fund the State Systems of the MSRPS. The unfunded liability for each State System is being amortized over a single closed 25-year period beginning July 1, 2014 and ending June 30, 2039 (22 years remaining as of the June 30, 2016 valuation, which determines the fiscal year 2018 contribution). In addition, the corridor method used by the Teachers' Combined System and the State portion of the Employees' Combined System, which was established in 2001, was being phased-out over a 10-year period. In 2015, the Legislature removed the corridor funding method effective with the June 30, 2015 valuation.

In the 2013 legislative session, the Legislature changed the method used to fund the State Systems of the MSRPS. The unfunded liability for each State System is being amortized over a single closed 25- year period beginning July 1, 2014 and ending June 30, 2039 (22 years remaining as of the June 30, 2016 valuation, which determines the fiscal year 2018 contribution). In addition, the corridor method used by the Teachers' Combined System and the State portion of the Employees' Combined System, which was established in 2001, was being phased-out over a 10-year period. In 2015, the Legislature removed the corridor funding method effective with the June 30, 2015 valuation.

The Teachers' Combined System (TCS) remained out of the corridor since the June 30, 2005 valuation and the State portion of the Employees Combined System (ECS) remained out of the corridor since the June 30, 2004 valuation resulting in contribution rates for TCS and ECS that are less than actuarial rates. With the elimination of the corridor effective with the June 30, 2015 valuation report, TCS and ECS will begin to contribute based on the actuarially determined rate beginning in fiscal year 2017.

Beginning in fiscal year 2012, employers pay a per-member fee to cover the Retirement Agency's operating expenses (i.e., administrative assumptions). The State pays the fee for libraries.

In 2011, the General Assembly enacted pension reforms which were effective July 1, 2011, and affected both current actives and new hires. The member contribution rate was increased for members of the Teachers' Pension System and Employees' Pension System from 5% to 7%, and from 4% to 6% in fiscal year 2012 and to 7% in fiscal year 2013 and beyond for LEOPS. In addition, the benefit attributable to service on or after July 1, 2011 is subject to different cost-of-living adjustments (COLAs) that are based on the increase in the Consumer Price Index and capped at 2.5% or 1.0% based on whether the market value investment return from the preceding calendar year was higher or lower than the investment return assumption used in the valuation (currently 7.55%). There were also changes to the provisions for members hired on or after July 1, 2011. The valuation as of June 30, 2012 was the first valuation which included members covered under the Reformed Benefit Plans applicable to members hired on or after July 1, 2011.

In addition to the benefit provision changes, a portion of the savings from the pension reforms is to be reinvested in certain State Systems (TCS, ECS, State Police, and LEOPS). Legislation enacted in 2014 reduced the amount of reinvested savings from \$300 million each year beginning in fiscal year 2014 to \$100 million each year for fiscal years 2014 and 2015, \$150 million for fiscal year 2016, \$200 million for fiscal year 2017, \$250 million for fiscal year 2018, \$300 million each year beginning in fiscal year 2019 and thereafter until the later of the combined funded ratio of the Systems reaching 85%, and the corridor funding method being fully phased-out. Legislation enacted in 2015 further reduced the amount of reinvested savings to \$75 million per year beginning in fiscal year 2016 until the combined funded ratio of the Systems reaches 85%. The allocation of reinvested savings by System is in proportion to the savings from the pension reforms as measured in the actuarial valuation as of June 30, 2011.

The actuarially determined rates are equal to the employer normal cost plus the unfunded actuarial accrued liability contribution rate. The unfunded actuarial contribution rate is equal to the payment resulting from amortizing the remaining unfunded liability as a level percentage of pay over a single 25-year closed period beginning July 1, 2014 and ending June 30, 2039 (22 years remaining as of June 30, 2016).

The fiscal year 2018 budgeted rates for TCS and ECS are equal to the actuarially determined rate. The budgeted rates with reinvested savings are based on a projection of payroll. It is our understanding that the Retirement Agency will monitor contributions to ensure that the System receives the proper amount of reinvested dollar savings during fiscal year 2018.

Beginning in fiscal year 2013, local employers contributed a portion of the statutory normal cost contribution for the Teachers Combined System. Normal cost contribution amounts for local employers for fiscal years 2013 through 2016 are defined by the Maryland statutes. Beginning in fiscal year 2017, local employers will contribute the full normal cost contribution on behalf of their employees.

The schedules required under Government Accounting Standards Board Statement (GASB) No. 67 (beginning with fiscal year 2014) and No. 68 (beginning with fiscal year 2015) are provided in a separate report.

OTHER OBSERVATIONS

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected System Contributions and Funded Status

Given the System's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of

the System earning 7.55% on the actuarial value of assets), it is expected that:

1. The employer normal cost as a percentage of pay will decrease to the level of the Reformed Benefit Plan's (i.e., plans for members hired after July 1, 2011) normal cost as time passes and the majority of the active population is comprised of Reformed Plan members,
2. The unfunded actuarial accrued liabilities will be fully amortized after 22 years (June 30, 2039), and
3. The funded status of the plan will increase gradually towards a 100% funded ratio.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

1. The measurement is inappropriate for assessing the sufficiency of System assets to cover the estimated cost of settling the System's benefit obligations, for example: transferring the liability to an unrelated third party in a free market type transaction.
2. The measurement is dependent upon the actuarial cost method which, in combination with the System's amortization policy, affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the System would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).
3. The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

PRIOR YEAR EXPERIENCE

Assets (State and Municipal)

Plan assets for this System are measured on both a market value and an actuarial or smoothed value basis. The actuarial smoothing method, described in detail in Appendix A, annually recognizes 20% of the difference between (a) the expected investment return if the market value of assets had earned the assumed rate of 7.55% during FY 2016, and (b) the actual investment return. In addition, there is a market value collar that constrains the actuarial value to be within 20% of the market value of assets. In periods of high returns, this method defers the amount of asset gains above the assumed return (7.55%). Conversely, in periods of returns below the assumed rate, recognition of the losses is deferred. The primary advantage of this smoothing technique is contribution stability. The System does not immediately feel the full impact of lower (or higher) costs when asset values fluctuate dramatically.

For the year ended June 30, 2016, the System's assets earned **1.10%** based on our estimate and **1.16%** as reported by State Street (using a slightly different computation method) on a market value basis and **5.59%** on a smoothed or actuarial value basis. The System experienced an investment loss of **\$2,925** million on a market value basis and a loss of **\$897** million on an actuarial basis. A reconciliation of market value and actuarial value of assets are presented below.

**(STATE AND MUNICIPAL)
(\$ in Millions)**

Item (In Millions)	Market Value	Actuarial Value
June 30, 2015 Value	\$ 45,790	\$ 46,171
Employer Contributions	1,871	1,871
Member Contributions	764	764
Benefit Payments and Other Disbursements	(3,557)	(3,557)
Expected Investment Earnings (7.55% in FY2016)	3,423	3,452
Expected Value June 30, 2016	\$ 48,291	\$ 48,701
Investment Gain/(Loss)	(2,925)	(897)
June 30, 2016 Value	\$ 45,366	\$ 47,804
Figures may not add correctly due to rounding		

1 Actuarial estimation method shown is expected to differ modestly from figures reported by State Street.

Trends (State and Municipal)

One of the best ways to measure or evaluate the financial condition of a pension plan is to examine the historical trends that are evolving. Below are three charts which illustrate trend information from 1993 through the end of 2016, on the System's assets and liabilities, annual cash flows in and out of the fund, and the State contribution rate. Our comments on each follow.

Chart A:
Assets/Liabilities

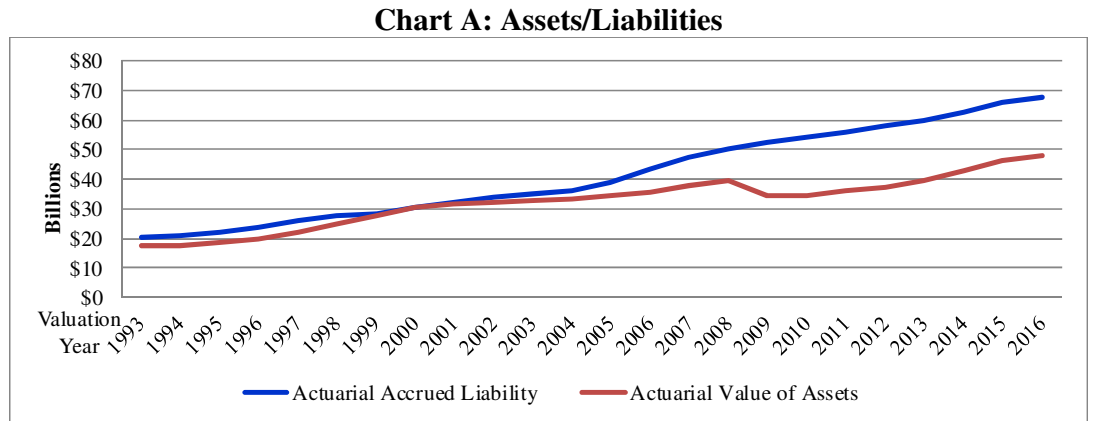


Chart B:
Benefits vs Contributions

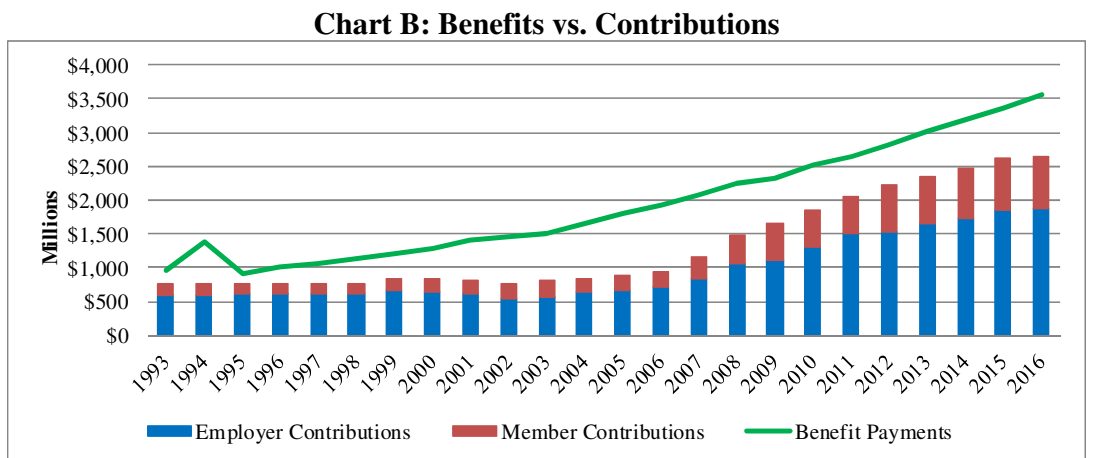
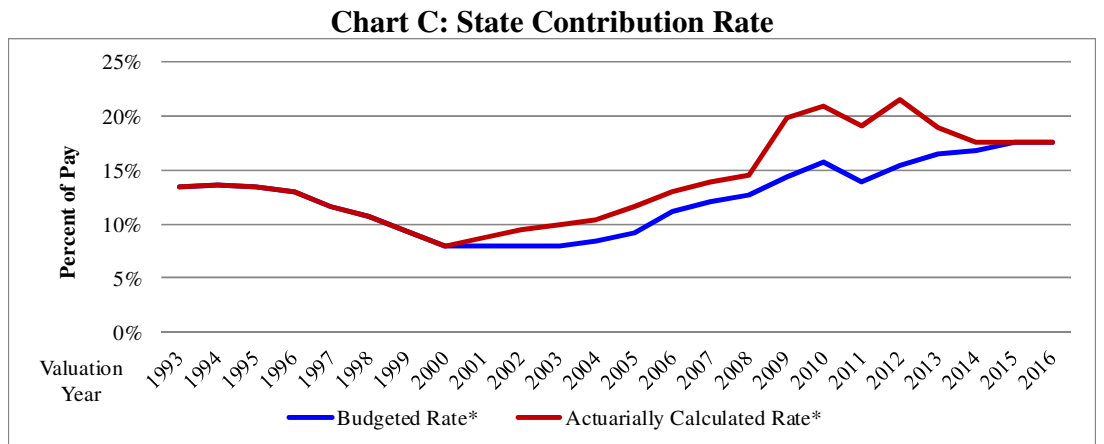


Chart C:
State Contribution Rate



* Excludes reinvested savings in valuation years 2011- 2015. 2010 rates are prior to the 2011 GA Reforms.

Comments

Chart A displays a comparison of the actuarial value of assets and the actuarial accrued liability. The difference between the actuarial value of assets and the actuarial accrued liability is the unfunded actuarial accrued liability. The unfunded actuarial accrued liability is about \$20 billion as of June 30, 2016, and decreased by about \$133 million since the last valuation as of June 30, 2015. As of June 30, 2016, the actuarial value of assets under the 5-year asset smoothing method is 105% of the market value of assets, compared with 101% as of June 30, 2015.

Chart B presents non-investment cash flow trend information that can have investment implications. Many statewide retirement systems, with the aging and retirements of the baby boom generation, are seeing payments to retirees on the increase. This is expected for mature retirement systems. Benefit payments, which is the total amount below the green line, exceeds the total contributions, which is the total amount below the top of the red bar. The amount needed to pay excess benefit payments over total contributions comes from investment return or current assets. If the difference between the total benefit payments and total contributions increases, a larger portion of investment return will be needed to pay benefits and may require a change in asset allocation. As long as cash into the fund from employer and employee contributions is increasing in a similar manner to benefit payments, the financial objectives of the System will continue to be met. The budgeted rates under the corridor funding method first became less than the actuarial rates in FY 2006 for ECS and in FY 2007 for TCS. The corridor method increased the extent of negative cash flows. The corridor funding method was eliminated first effective with the June 30, 2015 valuation. The budgeted rates are equal to the actuarial rates beginning in fiscal year 2017.

Finally, **Chart C** looks at the composite actuarially determined and budgeted State contribution rates. The budgeted contribution rates by System determine the fiscal year State appropriation. It shows the impact of the 1990's decade sustained investment gains, a continuous lowering of the rate until 2000. Effective with the 2001 valuation, the State appropriations were performed under

a corridor funding method for the two largest plans. The appropriation remained essentially level for a few years before increasing with the 2004 valuation. Legislation enacted in 2015, removed the corridor funding method for TCS and ECS beginning with the valuation as of June 30, 2015. The budgeted rate is now equal to the actuarial rate for TCS and ECS.

Chart C further illustrates that, since inception, the corridor method has consistently acted to reduce the State's contributions calculated in valuations between 2000 and 2016.

SUMMARY OF UNFUNDED ACTUARIAL
(STATE AND

Valuation Date June 30,	Actuarial Liabilities For			Total Liabilities	Actuarial Value of Assets
	Active Member Contributions	Retirees, Term Vested and Inactives	Active Members Employer Fin. Portion		
2007	\$ 2,489,643,667	\$ 25,790,846,645	\$ 18,863,863,688	\$ 47,144,354,000	\$ 37,886,935,596
2008	2,787,163,875	27,224,603,428	20,232,279,697	50,244,047,000	39,504,284,202
2009	2,959,415,829	28,914,824,184	20,854,931,317	52,729,171,330	34,284,568,617
2010	3,389,265,622	29,900,015,751	20,795,799,745	54,085,081,118	34,688,345,696
2011	3,732,934,034	31,901,090,890	20,283,517,888	55,917,542,812	36,177,655,993
2012	4,274,269,025	34,208,190,190	19,386,686,257	57,869,145,472	37,248,400,780
2013	4,818,674,217	36,001,888,558	19,239,528,603	60,060,091,378	39,350,969,353
2014	5,369,806,786	37,679,277,545	19,561,109,243	62,610,193,574	42,996,956,526
2015	5,908,597,531	40,321,760,550	20,051,422,798	66,281,780,879	46,170,624,066
2016	6,437,712,138	41,640,894,712	19,703,317,255	67,781,924,105	47,803,679,296

SUMMARY OF RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS
(STATE AND MUNICIPAL)

Fiscal Year Ended	Added to Rols		Removed from Rols		Rols-End of Year		% Increase in Annual Allowances	Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowances	Number	Annual Allowances		
2007	5,967	\$ 177,884,598	1,443	\$ 17,852,392	108,355	\$ 2,019,936,890	8.60%	\$ 18,642
2008	7,310	205,072,079	3,243	48,851,264	112,422	2,176,157,700	7.73%	19,357
2009	6,700	218,347,411	3,115	56,523,577	116,007	2,337,981,534	7.44%	20,154
2010	6,908	147,419,991	2,668	50,510,952	120,247	2,434,890,574	4.14%	20,249
2011	8,639	226,843,465	1,715	55,062,716	127,171	2,606,671,323	7.05%	20,497
2012	7,936	264,562,994	2,614	58,769,603	132,493	2,812,464,714	7.89%	21,227
2013	7,874	238,239,133	2,442	62,081,371	137,925	2,988,622,476	6.26%	21,668
2014	7,698	217,542,920	2,736	58,512,733	142,887	3,147,652,663	5.32%	22,029
2015	8,459	239,724,802	3,496	64,129,306	147,850	3,323,248,158	5.58%	22,477
2016	8,243	201,205,015	3,527	75,486,723	152,566	3,448,966,450	3.87%	22,606

Notes: Members added to rolls were estimated based on a retirement date/change date after June 30, 2014.
Annual allowances added to rolls include COLA increases for continuing members.
COLA increases were estimated based on the benefits for the continuing members.

LIABILITIES / SOLVENCY TEST
MUNICIPAL)

Ratio of Assets to Actuarial Liabilities			Funded Ratio (Assets/Liab. Coverage)	Unfunded Actuarial Accrued Liability (UAAL)	Covered Payroll	UAAL as % of Covered Payroll
Active Member Contributions	Retirees Term Vested and Inactives	Active Members Employer Fin. Portion				
100.00%	100.00%	50.93%	80.36%	9,257,418,404	9,971,012,066	93%
100.00%	100.00%	46.92%	78.62%	10,739,762,798	10,542,806,018	102%
100.00%	100.00%	11.56%	65.02%	18,444,602,713	10,714,167,517	172%
100.00%	100.00%	6.73%	64.14%	19,396,735,421	10,657,943,561	182%
100.00%	100.00%	2.68%	64.70%	19,739,886,819	10,478,799,565	188%
100.00%	96.39%	0.00%	64.37%	20,620,744,692	10,336,536,835	199%
100.00%	95.92%	0.00%	65.52%	20,709,122,025	10,477,544,241	198%
100.00%	99.86%	0.00%	68.67%	19,613,237,049	10,803,632,045	182%
100.00%	99.85%	0.00%	69.66%	20,111,156,814	11,063,961,664	182%
100.00%	99.34%	0.00%	70.53%	19,978,224,809	11,155,923,517	179%

MARYLAND STATE RETIREMENT
ACCOUNTING STATEMENT
AS OF
(STATE AND

	Teachers' Combined System	Employees' Combined System
1. Actuarial Accrued Liability		
a. Employee Contributions	\$ 3,921,801,699	\$ 2,313,930,184
b. Retirees, Term. Vesteds & Inactives	23,868,580,136	14,766,783,489
c. Active Members	12,143,743,539	6,736,537,722
2. Total Actuarial Accrued Liability (1(a) + 1(b) + 1(c))	\$39,934,125,374	\$23,817,251,395
3. Actuarial Value of Assets	<u>29,020,809,180</u>	<u>16,130,437,566</u>
4. Unfunded Actuarial Accrued Liability: (2-3)	<u>\$10,913,316,194</u>	<u>\$ 7,686,813,829</u>
5. Funded Ratio	72.67%	67.73%
6. Annual Payroll	\$ 6,611,037,839	\$ 4,245,333,275
7. UAAL as % of Payroll	165%	181%

AND PENSION SYSTEM
INFORMATION
JUNE 30, 2016
MUNICIPAL)

State Police	Judges	LEOPS	CORS	Total MSRPS
\$ 84,129,424	\$ 30,239,339	\$ 85,572,713	\$ 2,038,780	\$ 6,437,712,138
1,720,992,197	347,436,390	925,105,548	11,996,952	41,640,894,712
319,664,128	146,252,790	348,753,669	8,365,406	19,703,317,255
\$2,124,785,749	\$523,928,519	\$1,359,431,930	\$22,401,138	\$67,781,924,105
<u>1,344,162,518</u>	<u>430,563,204</u>	<u>855,997,433</u>	<u>21,709,395</u>	<u>47,803,679,296</u>
<u>\$ 780,623,231</u>	<u>\$93,365,315</u>	<u>\$503,434,497</u>	<u>\$ 691,743</u>	<u>\$19,978,244,809</u>
63.26%	82.18%	62.97%	96.91%	70.53%
\$ 93,490,648	\$ 44,711,221	\$156,396,298	\$ 4,954,236	\$11,155,923,517
835%	209%	322%	14%	179%

REPORT OF THE ACTUARY ON THE VALUATION OF THE
TEACHERS' COMBINED SYSTEM OF THE STATE OF MARYLAND
Summary of Principal Plan Results

	Actuarial Valuation Performed		% Change
	June 30, 2016 (for FY2018)	June 30, 2015 (for FY2017)	
A. Demographic Information			
Active Number Count	105,547	105,526	0.0%
Retired Member and Beneficiary Count	73,582	71,176	3.4%
Vested Former Member Count	<u>25,298</u>	<u>24,541</u>	3.1%
Total Number Count	204,427	201,243	1.6%
Active Payroll	\$ 6,611,037,839	\$ 6,470,706,276	2.2%
Annual Benefits for Retired Members	\$ 2,012,244,463	\$ 1,941,845,919	3.6%
B. Actuarial Results			
Actuarial Accrued Liability	\$ 39,934,125,374	\$ 38,934,459,136	2.6%
Actuarial Value of Assets	<u>29,020,809,180</u>	<u>27,995,476,456</u>	3.7%
Unfunded Actuarial Accrued Liability (UAAL)	\$ 10,913,316,194	\$ 10,938,982,680	-0.2%
Funded Ratio	72.67%	71.90%	
C. Contribution Rates (State Portion Only)			
Employer Normal Cost Rate	4.47%	4.56%	
UAAL Amortization Rate	<u>11.24%</u>	<u>11.23%</u>	
Total Actuarial Employer Contribution Rate	15.71%	15.79%	

REPORT OF THE ACTUARY ON THE VALUATION OF THE
EMPLOYEES' COMBINED SYSTEM OF THE STATE OF MARYLAND
(STATE AND MUNICIPAL)

Summary of Principal Plan Results

	Actuarial Valuation Performed		% Change
	June 30, 2016 (for FY2018)	June 30, 2015 (for FY2017)	
A. Demographic Information			
Active Number Count	82,625	83,794	-1.4%
Retired Member and Beneficiary Count	74,211	72,031	3.0%
Vested Former Member Count	<u>27,884</u>	<u>27,846</u>	0.1%
Total Number Count	184,720	183,671	0.6%
Active Payroll	\$ 4,245,333,275	\$ 4,300,747,731	-1.3%
Annual Benefits for Retired Members	\$ 1,226,769,022	\$ 1,176,657,042	4.3%
B. Actuarial Results			
Actuarial Accrued Liability	\$ 23,817,251,395	\$ 23,402,850,436	1.8%
Actuarial Value of Assets	<u>16,130,437,566</u>	<u>15,615,326,568</u>	3.3%
Unfunded Actuarial Accrued Liability (UAAL)	\$ 7,686,813,829	\$ 7,787,523,868	-1.3%
Funded Ratio	67.73%	66.72%	
C. Contribution Rates (State Portion Only)			
Employer Normal Cost Rate	3.86%	3.94%	
UAAL Amortization Rate	<u>14.70%</u>	<u>14.34%</u>	
Total Actuarial Employer Contribution Rate	18.56%	18.28%	

REPORT OF THE ACTUARY ON THE VALUATION OF THE
STATE POLICE RETIREMENT SYSTEM OF THE STATE OF MARYLAND

Summary of Principal Plan Results

	June 30, 2016 (for FY2018)	June 30, 2015 (for FY2017)	% Change
A. Demographic Information			
Active Number Count	1,402	1,394	0.6%
Retired Member and Beneficiary Count	2,536	2,508	1.1%
Vested Former Member Count	<u>84</u>	<u>81</u>	3.7%
Total Number Count	4,022	3,983	1.0%
Active Payroll	\$ 93,490,648	\$ 91,049,875	2.7%
Annual Benefits for Retired Members	\$ 117,700,921	\$ 116,339,773	1.2%
B. Actuarial Results			
Actuarial Accrued Liability	\$ 2,124,785,749	\$ 2,103,134,384	1.0%
Actuarial Value of Assets	<u>1,344,162,518</u>	<u>1,314,315,006</u>	2.3%
Unfunded Actuarial Accrued Liability (UAAL)	\$ 780,623,231	\$ 788,819,378	-1.0%
Funded Ratio	63.26%	62.49%	
C. Contribution Rates (State Portion Only)			
Employer Normal Cost Rate	24.20%	24.42%	
UAAL Amortization Rate	<u>56.09%</u>	<u>56.98%</u>	
Total Actuarial Employer Contribution Rate	80.29%	81.40%	
Estimated Employer Rate after Reinvestment of Savings	81.36%	82.50%	

REPORT OF THE ACTUARY ON THE VALUATION OF THE
PENSION PLAN OF JUDGES AND THEIR SURVIVING SPOUSES

Summary of Principal Plan Results

	June 30, 2016 (for FY2018)	June 30, 2015 (for FY2017)	% Change
A. Demographic Information			
Active Number Count	298	307	-2.9%
Retired Member and Beneficiary Count	407	397	2.5%
Vested Former Member Count	<u>7</u>	<u>8</u>	-12.5%
Total Number Count	712	712	0.0%
Active Payroll	\$ 44,711,221	\$ 44,612,624	0.2%
Annual Benefits for Retired Members	\$ 30,682,291	\$ 29,995,284	2.3%
B. Actuarial Results			
Actuarial Accrued Liability	\$ 523,928,519	\$ 511,390,449	2.5%
Actuarial Value of Assets	<u>430,563,204</u>	<u>416,546,609</u>	3.4%
Unfunded Actuarial Accrued Liability (UAAL)	\$ 93,365,315	\$ 94,843,840	-1.6%
Funded Ratio	82.18%	81.45%	
C. Contribution Rates (State Portion Only)			
Employer Normal Cost Rate	32.39%	32.22%	
UAAL Amortization Rate	<u>14.06%</u>	<u>14.34%</u>	
Total Actuarial Employer Contribution Rate	46.45%	46.56%	

REPORT OF THE ACTUARY ON THE VALUATION OF THE
LAW ENFORCEMENT OFFICERS' PENSION SYSTEM OF THE STATE OF MARYLAND
(STATE AND MUNICIPAL)

Summary of Principal Plan Results

	June 30, 2016	June 30, 2015	% Change
	(for FY2018)	(for FY2017)	
A. Demographic Information			
Active Number Count	2,529	2,488	1.6%
Retired Member and Beneficiary Count	1,801	1,711	5.3%
Vested Former Member Count	<u>294</u>	<u>293</u>	0.3%
Total Number Count	4,624	4,492	2.9%
Active Payroll	\$ 156,396,298	\$ 151,955,067	2.9%
Annual Benefits for Retired Members	\$ 60,783,678	\$ 57,653,994	5.4%
B. Actuarial Results			
Actuarial Accrued Liability	\$ 1,359,431,930	\$ 1,308,633,034	3.9%
Actuarial Value of Assets	<u>855,997,433</u>	<u>808,435,955</u>	5.9%
Unfunded Actuarial Accrued Liability (UAAL)	\$ 503,434,497	\$ 500,197,079	0.6%
Funded Ratio	62.97%	61.78%	
C. Contribution Rates (State Portion Only)			
Employer Normal Cost Rate	14.99%	15.07%	
UAAL Amortization Rate	<u>24.70%</u>	<u>24.53%</u>	
Total Actuarial Employer Contribution Rate	39.69%	39.60%	
Estimated Employer Rate after Reinvestment of Savings*	40.77%	40.72%	

*FY 2016 Employer Rate was 42.14% before the reduction of reinvested savings from \$150 million to \$75 million.

REPORT OF THE ACTUARY ON THE VALUATION OF THE
CORRECTIONAL OFFICERS' RETIREMENT SYSTEM OF THE STATE OF MARYLAND
(MUNICIPAL)

Summary of Principal Plan Results

	June 30, 2016 (for FY2018)	June 30, 2015 (for FY2017)	% Change
A. Demographic Information			
Active Number Count	93	91	2.2%
Retired Member and Beneficiary Count	29	27	7.4%
Vested Former Member Count	<u>1</u>	<u>0</u>	100.0%
Total Number Count	123	118	4.2%
Active Payroll	\$ 4,954,236	\$ 4,890,091	1.3%
Annual Benefits for Retired Members	\$ 786,075	\$ 756,146	4.0%
B. Actuarial Results			
Actuarial Accrued Liability	\$ 22,401,138	\$ 21,313,441	5.1%
Actuarial Value of Assets	<u>21,709,395</u>	<u>20,523,472</u>	5.8%
Unfunded Actuarial Accrued Liability (UAAL)	\$ 691,743	\$ 789,969	-12.4%
Funded Ratio	96.91%	96.29%	

SCHEDULE OF ACTIVE MEMBERSHIP VALUATION DATA BY PLAN

Teachers' Retirement

Valuation Date As of June 30,	Number	Annual Payroll	Annual Average Pay	% Increase Avg. Pay
2007	4,788	\$ 383,619,438	\$ 80,121	5.49 %
2008	4,125	352,954,397	85,565	6.79
2009	3,554	306,096,545	86,127	0.66
2010	3,111	269,775,400	86,717	0.68
2011	2,589	225,118,122	86,952	0.27
2012	2,040	178,541,246	87,520	-0.65
2013	1,630	145,207,003	89,084	1.79
2014	1,276	116,356,416	91,188	2.36
2015	986	91,396,562	92,694	1.65
2016	724	68,494,031	94,605	2.06

Teachers' Pension

Valuation Date As of June 30,	Number	Annual Payroll	Annual Average Pay	% Increase Avg. Pay
2007	98,789	\$ 5,326,145,893	\$ 53,914	5.34 %
2008	101,836	5,764,636,027	56,607	4.99
2009	102,553	5,888,637,495	57,420	1.44
2010	103,162	5,984,872,410	58,014	1.03
2011	102,939	5,971,858,330	58,014	0.00
2012	101,654	5,902,062,066	58,060	0.08
2013	102,398	6,039,968,791	58,985	1.59
2014	103,194	6,193,896,978	60,022	1.76
2015	104,540	6,379,309,714	61,023	1.67
2016	104,823	6,542,543,808	62,415	2.28

Employees' Retirement

(State and Municipal)

Valuation Date As of June 30,	Number	Annual Payroll	Annual Average Pay	% Increase Avg. Pay
2007	9,980	\$ 472,525,475	\$ 47,347	2.44 %
2008	9,740	472,800,066	48,542	2.52
2009	9,962	483,871,203	48,572	0.06
2010	9,665	463,375,639	47,944	-1.29
2011	9,189	432,469,190	47,064	-1.84
2012	9,113	421,320,077	46,233	-1.77
2013	8,976	417,020,134	46,459	0.49
2014	8,741	423,960,682	48,503	4.40
2015	8,566	429,223,262	50,108	3.31
2016	7,923	395,490,050	49,917	-0.38

SCHEDULE OF ACTIVE MEMBERSHIP VALUATION DATA BY PLAN
(continued)

Employees' Pension
(State and Municipal)

Valuation Date As of June 30,	Number	Annual Payroll	Annual Average Pay	% Increase Avg. Pay
2007	78,719	\$ 3,543,695,246	\$ 45,017	4.21 %
2008	79,462	3,692,212,569	46,465	3.22
2009	79,418	3,765,664,905	47,416	2.05
2010	77,660	3,674,098,155	47,310	-0.22
2011	76,264	3,595,340,448	47,143	-0.35
2012	76,061	3,577,154,799	47,030	-0.24
2013	75,701	3,613,240,787	47,730	1.49
2014	76,084	3,791,019,971	49,827	4.39
2015	75,228	3,871,524,469	51,464	3.29
2016	74,702	3,849,843,225	51,536	0.14

Judges' Retirement

Valuation Date As of June 30,	Number	Annual Payroll	Annual Average Pay	% Increase Avg. Pay
2007	297	\$ 37,638,491	\$ 126,729	4.38 %
2008	286	37,943,327	132,669	4.69
2009	297	40,266,330	135,577	2.19
2010	294	39,960,883	135,921	0.25
2011	286	38,810,261	135,700	-0.16
2012	294	39,955,368	135,903	0.15
2013	288	40,000,518	138,891	2.20
2014	301	42,313,395	140,576	1.21
2015	307	44,612,624	145,318	3.37
2016	298	44,711,221	150,038	3.25

State Police Retirement

Valuation Date As of June 30,	Number	Annual Payroll	Annual Average Pay	% Increase Avg. Pay
2007	1,416	\$ 83,190,937	\$ 58,751	4.97 %
2008	1,426	86,464,247	60,634	3.21
2009	1,408	85,585,708	60,785	0.25
2010	1,354	81,705,369	59,946	0.71
2011	1,295	75,551,283	58,341	-3.32
2012	1,332	77,689,914	58,326	-0.03
2013	1,320	79,848,029	60,491	3.71
2014	1,351	85,660,006	63,405	4.82
2015	1,394	91,049,875	65,316	3.01
2016	1,402	93,490,648	66,684	2.09

SCHEDULE OF ACTIVE MEMBERSHIP VALUATION DATA BY PLAN
(continued)

Law Enforcement Officers' Pension

(STATE AND MUNICIPAL)

Valuation Date As of June 30,	Number	Annual Payroll	Annual Average Pay	% Increase Avg. Pay
2007	2,217	\$ 122,015,164	\$ 55,036	6.44 %
2008	2,327	133,445,391	57,347	4.20
2009	2,445	140,071,292	57,289	-0.10
2010	2,474	140,199,243	56,669	-1.08
2011	2,411	135,176,780	56,067	-1.06
2012	2,410	135,185,336	56,094	0.05
2013	2,407	137,612,972	57,172	1.92
2014	2,484	145,672,538	58,644	2.58
2015	2,488	151,955,067	61,075	4.15
2016	2,529	156,396,298	61,841	1.25

Correctional Officers' Retirement System

(MUNICIPAL)

Valuation Date As of June 30,	Number	Annual Payroll	Annual Average Pay	% Increase Avg. Pay
2009	68	\$ 4,047,633	\$ 59,524	N/A
2010	66	3,956,462	59,946	0.71 %
2011	86	4,475,151	52,037	-13.19
2012	90	4,628,029	51,423	-1.18
2013	90	4,646,007	51,622	0.39
2014	91	4,752,059	52,220	1.16
2015	91	4,890,091	53,737	2.90
2016	93	4,954,236	53,271	-0.87



SRPS
Statistical Section

STATISTICAL SECTION OVERVIEW

The Maryland State Retirement and Pension System (MSRPS) has implemented GASB Statement 44, Economic Condition Reporting: The Statistical Section. This statement establishes standardized reporting requirements relative to the supplementary information provided in this section in an effort to improve the understandability and usefulness of the information presented. GASB Statement 44 further states that the purpose of the Statistical Section is to provide historical perspective, context, and detail to assist readers in using the information in the financial statements and the notes to the financial statements to better understand and assess the System's overall economic condition. The schedules within the Statistical Section are classified into the following four categories: Financial Trends, Revenue Capacity, Demographic and Economic Information, and Operating Information.

The schedules beginning on page 113 show financial trend information to assist users in understanding and assessing how the MSRPS's financial position has changed over the past 10 years. The financial trend schedules presented are:

- Changes in Plan Net Position
- Benefits Expense by Type

The schedules beginning on page 114 show demographic and economic information and operating information. The demographic and economic information is intended to assist users in understanding the environment in which MSRPS operates. The operating information is intended to provide contextual information about MSRPS's operations to assist readers in using financial statement information. The demographic and economic information and the operating information presented include:

- Schedule of Average Benefit Payments .
- Funding Progress
- Contribution Rates by Plan
- Schedule of Retired Members by Type
- Schedule of Active Membership by Plan
- Schedule of Retirees and Beneficiaries by Plan
- Revenues by Source and Expenses by Type
- Revenues vs. Expenses
- Principal Participating Employers

TEN-YEAR HISTORY OF CHANGES IN PLAN NET POSITION
for the Years Ended June 30,
(Expressed in thousands)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Additions										
Employer contributions	\$ 833,782	\$ 1,047,963	\$ 1,109,563	\$ 1,308,921	\$ 1,512,472	\$ 1,595,761	\$ 1,643,101	\$ 1,733,653	\$ 1,858,612	\$ 1,870,655
Members contributions	319,274	420,461	532,100	535,581	528,028	703,256	710,856	727,726	755,444	764,414
Net Investment income	5,924,070	(2,139,662)	(7,355,906)	4,016,359	6,273,337	104,084	3,845,795	5,706,267	1,197,671	497,531
Total Additions	<u>7,077,126</u>	<u>(671,238)</u>	<u>(5,714,243)</u>	<u>5,860,861</u>	<u>8,313,837</u>	<u>2,403,101</u>	<u>6,199,752</u>	<u>8,167,646</u>	<u>3,811,727</u>	<u>3,132,600</u>
Deductions										
Benefit payments	1,965,872	2,120,463	2,279,170	2,445,540	2,580,392	2,755,106	2,950,700	3,121,823	3,284,550	3,469,493
Refunds	16,021	16,223	22,325	33,531	33,369	33,819	38,281	42,922	48,245	58,362
Administrative expenses	21,271	23,147	27,499	28,627	30,961	28,201	26,280	26,130	29,080	28,659
Total Deductions	<u>2,003,164</u>	<u>2,159,833</u>	<u>2,328,994</u>	<u>2,507,698</u>	<u>2,644,722</u>	<u>2,817,126</u>	<u>3,015,261</u>	<u>3,190,875</u>	<u>3,361,875</u>	<u>3,556,514</u>
Changes in Plan Net Positions	<u>\$ 5,073,962</u>	<u>\$(2,831,071)</u>	<u>\$(8,043,237)</u>	<u>\$ 3,353,162</u>	<u>\$ 5,669,115</u>	<u>\$(414,025)</u>	<u>\$ 3,184,491</u>	<u>\$ 4,976,771</u>	<u>\$ 449,852</u>	<u>\$(423,914)</u>

SCHEDULE OF BENEFIT EXPENSE BY TYPE
(Expressed In Thousands)

Fiscal Year	Age & Service Benefits		Death In Service Pre-Retirement Benefits	Disability Benefits Retirees			Death After Retirement Post-Retirement Benefits	Total
	Retirees	Survivors		Accidental	Ordinary	Survivors		
	2007	\$ 1,597,722	\$ 102,972	\$ 10,133	\$ 52,505	\$ 166,561	\$ 24,695	\$ 11,284
2008	1,714,059	118,215	8,908	59,908	176,802	28,052	14,519	2,120,463
2009	1,907,483	94,654	18,133	95,933	148,098	14,845	-	2,279,146
2010	2,045,795	100,953	18,857	102,032	161,836	16,068	-	2,445,541
2011	2,164,368	104,884	18,758	105,493	170,267	16,623	-	2,580,393
2012	2,318,614	109,674	19,232	109,996	179,914	17,677	-	2,755,107
2013	2,484,792	118,044	20,027	116,636	192,440	18,761	-	2,950,700
2014	2,633,852	124,807	20,514	120,829	202,147	19,672	-	3,121,823
2015	2,777,136	130,215	21,005	124,090	211,373	20,731	-	3,284,550
2016	2,937,077	138,467	21,592	128,518	221,849	21,990	-	3,469,493

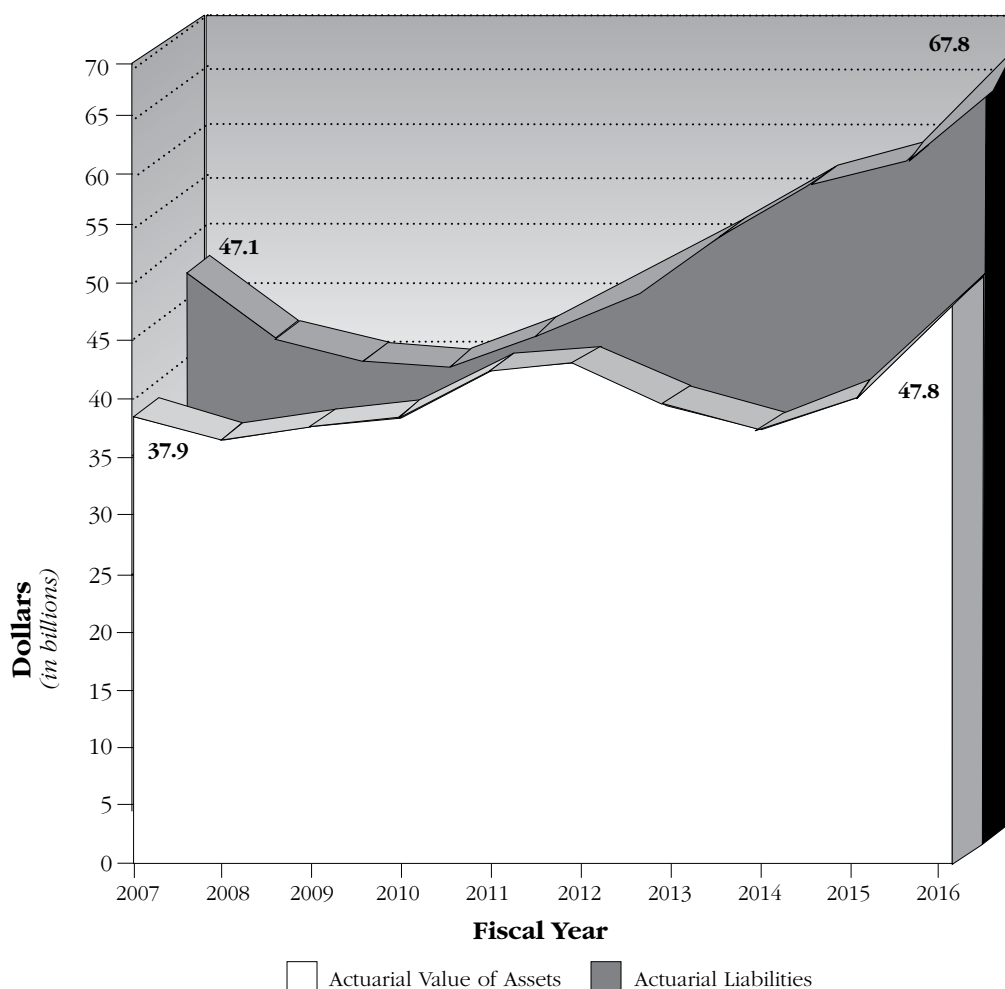
SCHEDULE OF REFUND EXPENSE BY TYPE
(Expressed in thousands)

Fiscal Year	Separation	Death	Misc.	Total
2007	\$ 13,270	\$ 2,546	\$ 205	\$ 16,021
2008	13,526	2,507	190	16,223
2009	18,712	3,472	140	22,324
2010	29,320	4,029	182	33,531
2011	29,041	4,108	220	33,369
2012	29,521	4,142	156	33,819
2013	33,348	4,834	99	38,281
2014	36,835	5,955	132	42,922
2015	40,966	7,126	153	48,245
2016	51,372	6,869	120	58,362

MARYLAND STATE RETIREMENT AND PENSION SYSTEM
Average Benefit Payments – Last Ten Years

	Years Credited Service						
	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30+
Period 7/1/2006 to 6/30/2007							
Average monthly benefit	\$ 457	\$ 637	\$ 868	\$ 1,253	\$ 1,696	\$ 2,499	\$ 2,256
Monthly final average salary	\$ 3,202	\$ 3,425	\$ 3,733	\$ 4,249	\$ 4,524	\$ 5,435	\$ 5,052
Number of retired members	275	750	701	983	937	1,256	1,383
Period 7/1/2007 to 6/30/2008							
Average monthly benefit	\$ 419	\$ 603	\$ 993	\$ 1,367	\$ 1,732	\$ 2,594	\$ 2,727
Monthly final average salary	\$ 2,811	\$ 3,172	\$ 3,825	\$ 4,510	\$ 4,617	\$ 5,478	\$ 5,224
Number of retired members	275	750	701	983	937	1,256	1,383
Period 7/1/2008 to 6/30/2009							
Average monthly benefit	\$ 534	\$ 577	\$ 868	\$ 1,232	\$ 1,657	\$ 1,973	\$ 2,925
Monthly final average salary	\$ 2,604	\$ 3,273	\$ 3,638	\$ 4,222	\$ 4,781	\$ 4,924	\$ 5,679
Number of retired members	191	751	625	757	872	678	2,171
Period 7/1/2009 to 6/30/2010							
Average monthly benefit	\$ 505	\$ 542	\$ 838	\$ 1,246	\$ 1,670	\$ 1,971	\$ 2,933
Monthly final average salary	\$ 2,902	\$ 3,425	\$ 3,636	\$ 4,392	\$ 4,814	\$ 5,097	\$ 5,811
Number of retired members	271	834	662	690	873	698	2,266
Period 7/1/2010 to 6/30/2011							
Average monthly benefit	\$ 435	\$ 541	\$ 851	\$ 1,211	\$ 1,800	\$ 2,161	\$ 3,100
Monthly final average salary	\$ 2,884	\$ 3,373	\$ 3,734	\$ 4,309	\$ 4,984	\$ 5,395	\$ 5,970
Number of retired members	306	951	901	950	1,164	900	2,856
Period 7/1/2011 to 6/30/2012							
Average monthly benefit	\$ 351	\$ 437	\$ 806	\$ 1,296	\$ 1,745	\$ 2,175	\$ 3,358
Monthly final average salary	\$ 2,878	\$ 3,483	\$ 3,788	\$ 4,645	\$ 5,128	\$ 5,520	\$ 6,310
Number of retired members	254	931	844	817	989	837	2,662
Period 7/1/2012 to 6/30/2013							
Average monthly benefit	\$ 435	\$ 473	\$ 802	\$ 1,317	\$ 1,712	\$ 2,231	\$ 3,297
Monthly final average salary	\$ 2,810	\$ 3,577	\$ 3,907	\$ 4,686	\$ 5,028	\$ 5,548	\$ 6,217
Number of retired members	234	972	860	910	978	917	2,389
Period 7/1/2013 to 6/30/2014							
Average monthly benefit	\$ 405	\$ 472	\$ 832	\$ 1,324	\$ 1,794	\$ 2,234	\$ 3,383
Monthly final average salary	\$ 2,475	\$ 3,508	\$ 4,064	\$ 4,699	\$ 5,222	\$ 5,673	\$ 6,380
Number of retired members	218	918	873	964	910	938	2,304
Period 7/1/2014 to 6/30/2015							
Average monthly benefit	\$ 454	\$ 459	\$ 888	\$ 1,304	\$ 1,804	\$ 2,275	\$ 3,246
Monthly final average salary	\$ 2,338	\$ 3,515	\$ 4,139	\$ 4,679	\$ 5,124	\$ 5,571	\$ 6,134
Number of retired members	201	911	972	1,089	968	1,042	2,621
Period 7/1/2015 to 6/30/2016							
Average monthly benefit	\$ 501	\$ 472	\$ 869	\$ 1,367	\$ 1,901	\$ 2,366	\$ 3,377
Monthly final average salary	\$ 2,371	\$ 3,407	\$ 4,128	\$ 4,773	\$ 5,427	\$ 5,786	\$ 6,425
Number of retired members	219	918	934	1,118	953	1,016	2,423

TEN-YEAR HISTORY OF FUNDING PROGRESS



TEN-YEAR HISTORY OF EMPLOYER CONTRIBUTION RATES BY PLAN

Fiscal Year	State						Participating Governmental Units (PGU)					
	Combined State Rate	Teachers' Combined Rate	Employees' Combined Rate	Judges' Retirement	State Police Retirement	Law Enforcement Officers' Pension	Combined PGU Rate	Law Enforcement Officers' Pension	Employees' Retirement	Employees' Pension	Correctional Officers' Retirement	
2007	9.18%	9.71%	6.83%	42.43%	13.83 %	40.60%	N/A	33.18%	10.68%	5.68%	- %	
2008	11.10	11.60	8.86	44.12	15.44	41.74	N/A	36.80	10.27	5.27	-	
2009	11.14	11.70	8.73	43.61	20.53	36.99	N/A	30.53	8.87	3.87	-	
2010	12.62	13.15	9.93	49.89	30.79	38.63	N/A	30.03	9.05	4.05	8.41	
* 2011	14.33	14.34	11.69	59.07	57.03	47.67	N/A	32.74	12.30	7.30	9.69	
* 2012	15.67	15.45	13.40	60.37	61.01	49.26	N/A	33.09	12.41	7.41	8.87	
2013	13.85	13.29	12.29	61.18	61.21	46.81	N/A	28.71	10.46	5.46	7.96	
2014	15.43	14.71	14.05	50.92	66.71	52.47	N/A	31.76	11.47	6.47	9.41	
2015	16.41	15.47	15.53	42.74	83.06	41.37	N/A	30.45	11.20	6.20	11.43	
2016	16.83	15.71	16.38	40.70	78.91	39.77	N/A	31.94	10.00	5.00	10.43	

*Rates for Municipal Systems only include basic employee cost rate.

Does not include reduction of \$120 Million in contributions for State Systems due to 2011 General Assembly reforms.

SCHEDULE OF RETIRED MEMBERS BY TYPE
as of June 30, 2016

Amount of Monthly Benefit	Number of Retirees	Type of Retirement						
		NR(4)	ER(3)	SP	SPD	ADR	ODR	SPDR
1- 300	17,846	15,242	998	940	16	9	387	254
301- 600	16,439	11,111	2,497	1,059	50	34	1,269	419
601- 900	14,381	8,676	2,502	959	93	63	1,755	333
901- 1,200	13,282	8,136	2,229	852	92	122	1,606	245
1,201- 1,500	12,473	7,929	1,733	820	91	261	1,463	176
1,501- 1,800	11,454	7,628	1,417	630	74	360	1,212	133
1,801- 2,100	10,140	6,931	1,215	496	67	382	979	70
2,101- 2,400	9,434	6,615	1,046	424	64	407	818	60
2,401- 2,700	8,290	6,059	800	321	68	412	601	29
2,701- 3,000	7,229	5,433	677	251	66	322	459	21
Over 3000	31,598	26,628	1,345	895	180	1,349	1,143	58
	<u>152,566</u>	<u>110,388</u>	<u>16,459</u>	<u>7,647</u>	<u>861</u>	<u>3,721</u>	<u>11,692</u>	<u>1,798</u>

Type of Retirement:

- 1 – Normal retirement for age and service
- 2 – Early retirement
- 3 – Survivor payment – normal or early retirement
- 4 – Survivor payment – death in service
- 5 – Accidental disability retirement
- 6 – Ordinary disability retirement
- 7 – Survivor payment – disability retirement

OF RETIREMENT AND OPTION SELECTED

#Option Selected							
MAX(3)	Opt. 1(1)	Opt. 2	Opt. 3(2)	Opt. 4(1)	Opt. 5	Opt. 6	Opt. A0
9,245	3,772	1,945	887	847	643	495	12
7,588	2,875	1,886	1,508	1,148	614	812	8
6,192	2,154	1,730	1,516	1,298	509	974	8
5,491	1,743	1,634	1,541	1,414	498	956	5
4,708	1,570	1,897	1,445	1,277	646	928	2
4,121	1,528	1,732	1,372	1,273	544	881	3
3,620	1,270	1,510	1,202	1,203	476	855	4
3,427	1,180	1,409	1,135	1,126	416	738	3
3,056	964	1,199	1,015	1,023	327	702	4
2,842	766	1,022	790	965	275	566	3
<u>14,316</u>	<u>2,981</u>	<u>4,128</u>	<u>4,067</u>	<u>4,926</u>	<u>875</u>	<u>2,248</u>	<u>29</u>
<u>64,606</u>	<u>20,803</u>	<u>20,092</u>	<u>16,478</u>	<u>16,500</u>	<u>5,823</u>	<u>10,155</u>	<u>81</u>

Option Selected:

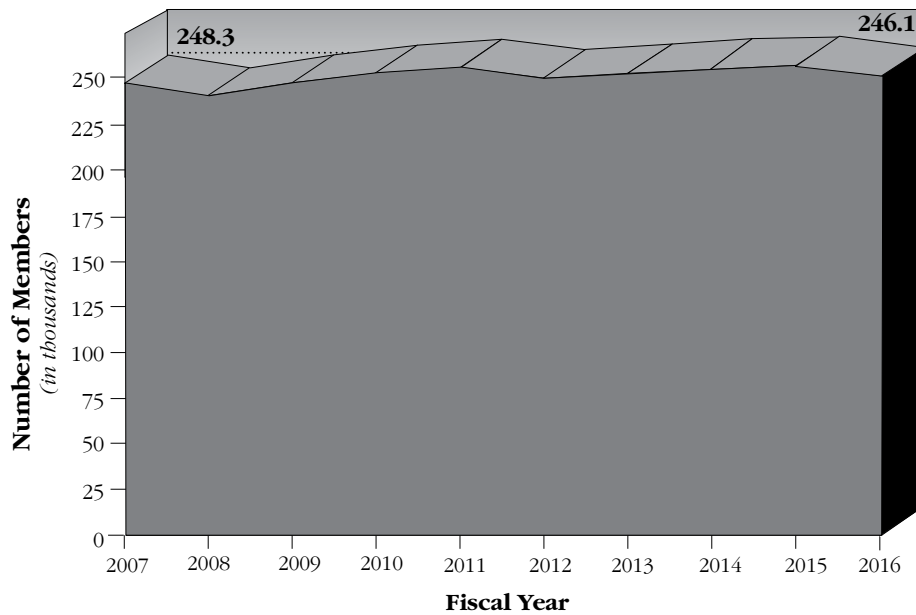
- Basic – The standard benefit if no option is selected. Generally, at retiree’s death, all payments cease. However, the basic allowance for the State Police, Law Enforcement Offices (LEOPS), Judges and Legislators provides a continuing benefit for spouses or children under 18.
- Opt. 1 – Guarantees return of the present value of the retirement benefit less the total payments already paid to the member.
- Opt. 2 – Guarantees the same payment to the designated beneficiaries for their lifetime.
- Opt. 3 – Guarantees one half the member’s payment to the designated beneficiaries for their lifetime.
- Opt. 4 – Guarantees return of the member’s accumulated contributions and interest less the member’s accumulated reserves already paid.
- Opt. 5 – Guarantees the same payment to the designated beneficiaries for their lifetime, unless the beneficiaries predecease the respective members. Allowance then increases to the basic.
- Opt. 6 – Guarantees one half the member’s payment to the designated beneficiaries for their lifetime, unless the beneficiaries predecease the respective members. Allowance then increases to the basic.
- Opt. 7 – Special option calculation performed by actuary.

TEN-YEAR HISTORY OF MEMBERSHIP BY PLAN

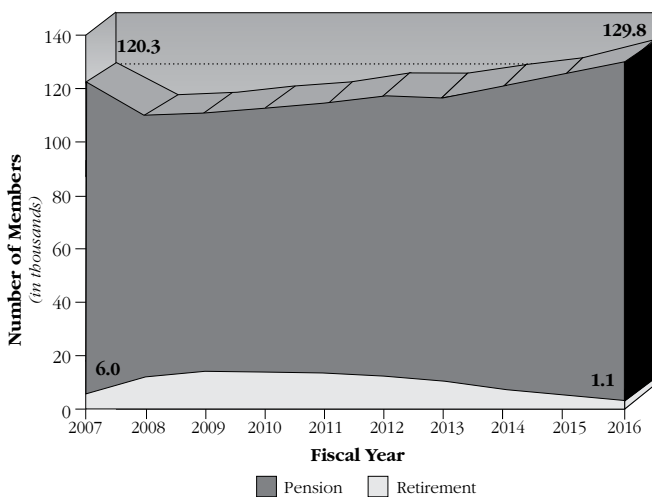
Fiscal Year	Total	Teachers' Retirement	Teachers' Pension	Employees' Retirement*	Employees' Pension	Judges' Retirement	State Police Retirement	Law Enforcement Officers' Pension	Local Correctional Officers' Retirement
2007	248,289	5,963	120,333	11,240	106,566	310	1,470	2,344	–
2008	251,050	5,217	123,562	10,906	107,021	294	1,487	2,501	–
2009	251,571	4,550	124,552	11,027	106,961	365	1,414	2,634	68
2010	249,561	4,012	125,278	10,664	105,138	300	1,431	2,672	66
2011	245,970	3,339	124,806	10,139	103,292	297	1,386	2,625	86
2012	244,224	2,663	124,064	10,011	103,038	304	1,417	2,637	90
2013	244,362	2,154	125,429	9,865	102,463	298	1,404	2,658	91
2014	245,655	1,718	126,972	9,572	102,791	309	1,433	2,767	93
2015	246,369	1,372	128,695	9,370	102,270	315	1,475	2,781	91
2016	246,062	1,051	129,794	8,749	101,760	305	1,486	2,823	94

Note: Includes vested former members. *Includes members of the Maryland General Assembly and State correctional officers.

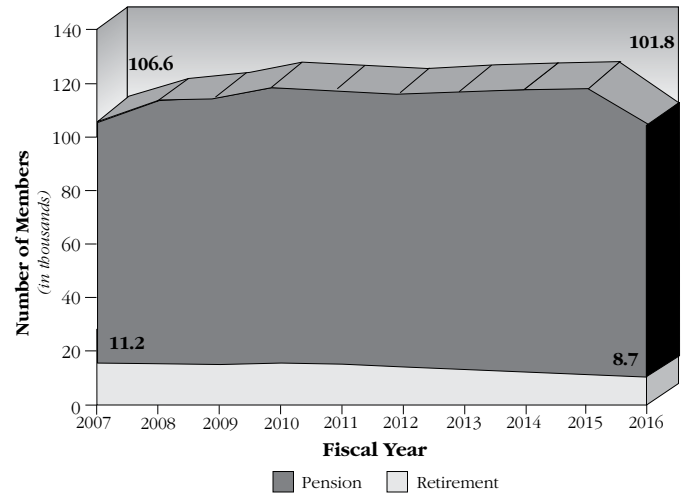
TOTAL SYSTEM MEMBERSHIP



MEMBERSHIP IN TEACHERS' PLANS



MEMBERSHIP IN EMPLOYEES' PLANS

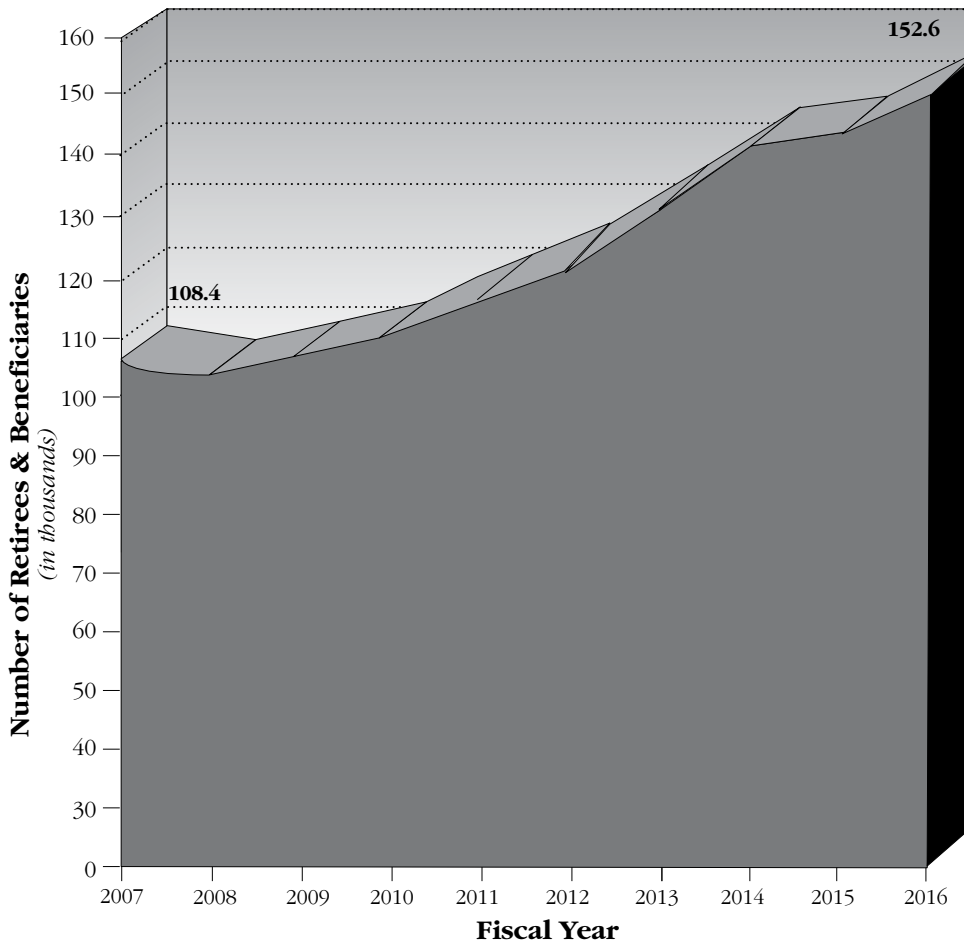


TEN-YEAR HISTORY OF RETIREES AND BENEFICIARIES BY PLAN

Fiscal Year	Total	Teachers' Retirement	Teachers' Pension	Employees' Retirement*	Employees' Pension	Judges' Retirement	State Police Retirement	Law Enforcement Officers' Pension	Correctional Officers' Retirement System
2007	108,355	31,023	21,016	24,408	28,631	335	2,063	863	
2008	112,422	30,955	23,030	24,197	30,723	342	2,149	958	
2009	116,007	30,598	25,158	23,778	32,832	348	2,226	1,067	
2010	120,247	30,270	27,269	23,475	35,418	351	2,282	1,182	
2011	127,171	30,012	30,553	23,230	39,339	358	2,371	1,302	6
2012	132,493	29,705	33,994	22,796	41,840	365	2,387	1,396	10
2013	137,925	29,247	37,143	22,368	44,825	378	2,428	1,518	18
2014	142,887	28,762	40,167	22,013	47,446	395	2,468	1,613	23
2015	147,850	28,131	43,045	21,571	50,460	397	2,508	1,711	27
2016	152,566	27,552	46,030	21,172	53,039	407	2,536	1,801	29

* Includes members of the Maryland General Assembly and correctional officers.

TOTAL SYSTEM RETIREES AND BENEFICIARIES



TEN-YEAR HISTORY OF REVENUES BY SOURCE AND EXPENSES BY TYPE
(Expressed in Thousands)

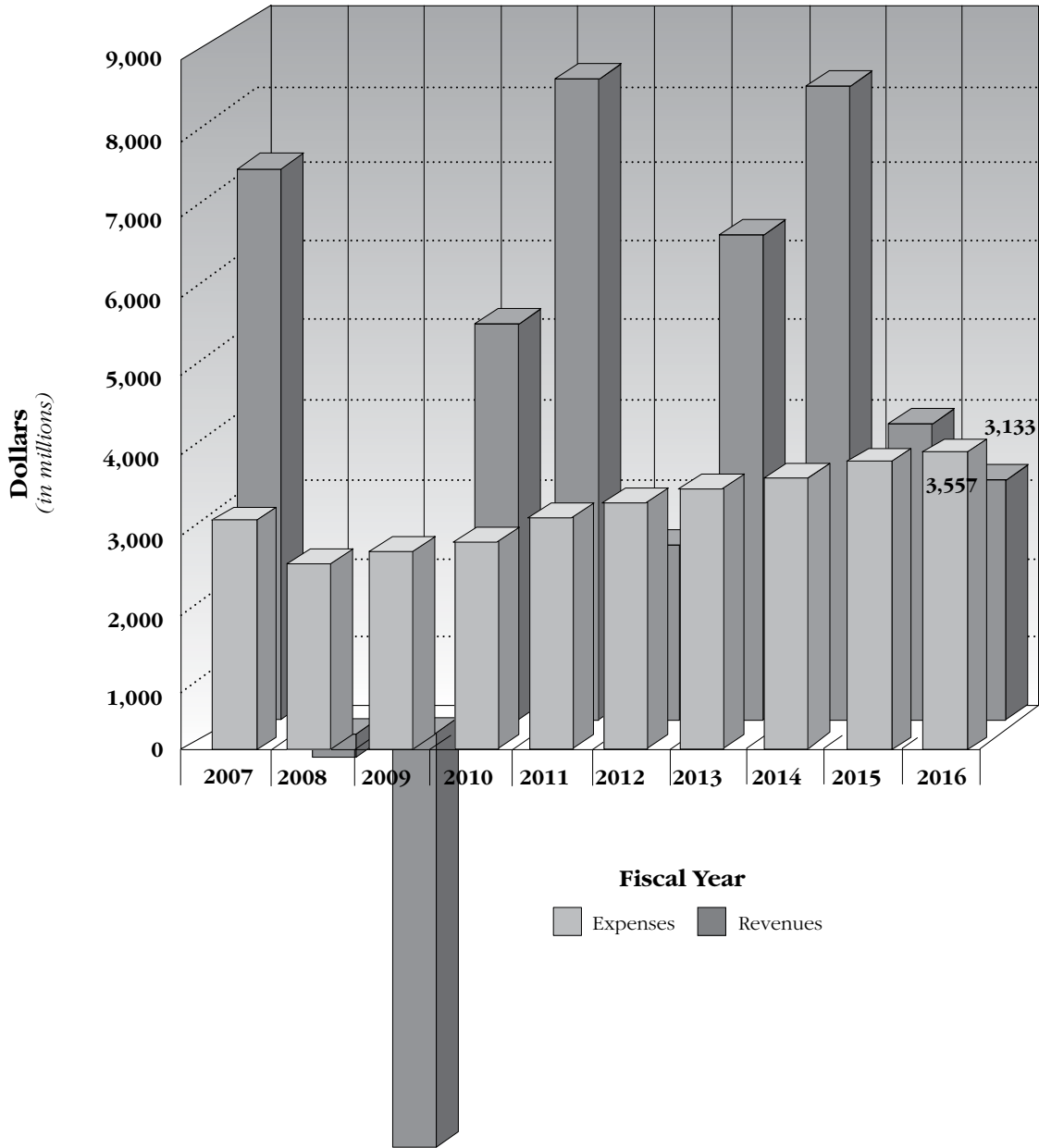
REVENUES

Fiscal Year	Members' Contributions	Employers' and Other Contributions	Annual Covered Payroll	Employers' and Other Contributions as a Percent of Covered Payroll	Net Investment Income	Total Revenues
2007	\$ 319,274	\$ 833,782	\$ 9,971,012	8.36 %	\$ 5,924,070	\$ 7,077,126
2008	420,461	1,047,962	10,542,806	9.94	(2,139,661)	(671,238)
2009	532,100	1,109,563	10,714,167	10.36	(7,355,906)	(5,714,243)
2010	535,581	1,308,921	10,657,944	12.28	4,016,359	5,860,861
2011	528,028	1,512,472	10,478,800	14.43	6,273,337	8,313,837
2012	703,256	1,595,761	10,336,536	15.44	104,084	2,403,100
2013	710,856	1,643,101	10,477,544	15.68	3,845,795	6,199,752
2014	727,726	1,733,653	10,803,631	16.05	5,706,267	8,167,646
2015	755,444	1,858,612	11,063,961	16.80	1,197,671	3,811,727
2016	764,414	1,870,655	11,155,924	16.77	497,531	3,132,600

EXPENSES

Fiscal Year	Benefits	Administrative Expenses	Refunds	Total
2007	\$ 1,965,872	\$ 21,271	\$ 16,021	\$ 2,003,164
2008	2,120,463	23,147	16,223	2,159,833
2009	2,279,170	27,499	22,325	2,328,994
2010	2,445,540	28,627	33,531	2,507,698
2011	2,580,392	30,961	33,369	2,644,722
2012	2,755,106	28,201	33,819	2,817,126
2013	2,950,700	26,280	38,281	3,015,261
2014	3,121,823	26,130	42,922	3,190,875
2015	3,284,550	29,080	48,245	3,361,875
2016	3,469,493	28,659	58,362	3,556,514

TEN-YEAR HISTORY OF REVENUES VS. EXPENSES



PRINCIPAL PARTICIPATING EMPLOYERS
CURRENT YEAR AND NINE YEARS AGO

	2016			2007		
	Covered Employees	Rank	Percentage of Total System	Covered Employees	Rank	Percentage of Total System
Participating Government						
State of Maryland	348,552	1	87%	311,735	1	87%
All other (Participating Municipalities)	50,076	2	13%	44,909	2	13%
Total System	398,628			356,644		

Governmental Units Participating in the Systems

as of June 30, 2016

Allegany Community College	Frederick County Board of Education	Prince Georges Community College
Allegany County Board of Education	Frostburg, City of	Prince Georges County Board of Education
Allegany County Commission	Fruitland, City of	Prince Georges County Crossing Guards
Allegany County Housing Authority	Garrett County Board of Education	Prince Georges County Government
Allegany County Library	Garrett County Community Action Committee	Prince Georges County Memorial Library
Allegany County Transit Authority	Garrett County Roads Board	Princess Anne, Town of
Annapolis, City of	Greenbelt, City of	Queen Anne's County Board of Education
Anne Arundel County Board of Education	Greensboro, Town of	Queen Anne's County Commission
Anne Arundel County Community College	Hagerstown, City of	Queenstown, Town of
Berlin, Town of	Hagerstown Community College	Ridgely, Town of
Berwyn Heights, Town of	Hampstead, Town of	Rock Hall, Town of
Bladensburg, Town of	Hancock, Town of	St. Mary's County Board of Education
Bowie, City of	Harford Community College	St. Mary's County Commission
Brunswick, City of	Harford County Board of Education	St. Mary's County, Housing Authority
Calvert County Board of Education	Harford County Government	St. Mary's County Metropolitan Commission
Cambridge, City of	Harford County Library	St. Michael's, Commissioners of
Caroline County Board of Education	Harford County Liquor Board	Salisbury, City of
Caroline County Sheriff Deputies	Housing Authority of Cambridge	Shore Up!
Carroll County Board of Education	Howard Community College	Snow Hill, Town of
Carroll County Public Library	Howard County Board of Education	Somerset County Board of Education
Carroll Soil Conservation District	Howard County Community Action Committee	Somerset County Commission
Catoctin & Frederick Soil Conservation District	Hurlock, Town of	Somerset County Economic Development Commission
Cecil County Board of Education	Hyattsville, City of	Somerset County Sanitary District, Inc.
Cecil County Commission	Kent County Board of Education	Southern MD. Tri-County Community Action Committee
Cecil County Library	Kent County Commissioners	Sykesville, Town of
Centreville, Town of	Kent Soil and Water Conservation District	Takoma Park, City of
Chesapeake Bay Commission	Landover Hills, Town of	Talbot County Board of Education
Chestertown, Town of	LaPlata, Town of	Talbot County Council
Cheverly, Town of	Manchester, Town of	Taneytown, City of
College of Southern Maryland	Maryland Health & Higher Education Facilities Authority	Thurmont, Town of
College Park, City of	Maryland Transit Administration	Tri-County Council of Western Maryland
Crisfield, City of	Middletown, Town of	Tri-County Council for Lower Eastern Shore
Crisfield Housing Authority	Montgomery College	University Park, Town of
Cumberland, City of	Morningside, Town of	Upper Marlboro, Town of
Cumberland, City of - Police Department	Mount Airy, Town of	Walkersville, Town of
Denton, Town of	Mount Rainier, City of	Washington County Board of Education
District Heights, City of	New Carrollton, City of	Washington, Board of License Commission
Dorchester County Board of Education	North Beach, Town of	Washington County Library
Dorchester County Commission	Northeast Maryland Waste Disposal Authority	Westminster, City of
Dorchester County Roads Board	Oxford, Town of	Worcester County Board of Education
Dorchester County Sanitary Commission	Pocomoke, City of	Worcester County Commission
Eastern Shore Regional Library	Preston, Town of	Wor-Wic Community College
Edmonston, Town of		
Emmitsburg, Town of		
Feddersburg, Town of		

***Withdrawn Governmental Units**

Allegany County Government (WMHPA)	Lexington Market Authority	Washington County Commissioners
Anne Arundel County Economic Opportunity Commission	Maryland National Capital Park & Planning Commission	Washington County License Commissioners
Anne Arundel County Government	Montgomery County Board of Education	Washington County Roads Board
Bethesda Fire Department	Montgomery County Government	Washington County Sanitary District
Caroline County Roads Board	Montgomery County Public Library	Wicomico County Department of Recreation and Parks
Chevy Chase Fire Department	Oakland, Town of	Wicomico County Roads Board
Frederick County Commissioners (WMHPA)	St. Mary's Nursing Home	
Garrett County Commissioners (WMHPA)	University of Maryland Medical System	
Harford County Liquor Board	Washington County Commissioners (WMHPA)	

**List reflects withdrawn governmental units with a withdrawal liability balance.*

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 circles and lines, resembling a network or a cluster of nodes. The entire graphic is set against a light gray background.

SRPS *Plan Summary*

TEACHERS' RETIREMENT SYSTEM

A COMPOSITE PICTURE

	2016	2015
Total Membership		
Active Vested	724	986
Active Non-vested	—	—
Vested Former Members	327	386
Retired Members	27,552	28,131
Active Members		
Number	724	986
Average Age	65.2	64.5
Average Years of Service	40.1	39.3
Average Annual Salary	\$ 94,605	\$ 92,694
Retirees & Beneficiaries		
Number	27,552	28,131
Average Age	76.8	76.3
Average Monthly Benefit	\$ 3,099	\$ 3,067

THE TEACHERS' RETIREMENT SYSTEM (TRS) was established on August 1, 1927 and is administered in accordance with the State Personnel and Pensions Article of the Annotated Code of Maryland. Prior to January 1, 1980, membership in the TRS was a condition of employment for State and local teachers and certain board of education, public library and community college employees, unless those who were eligible elected to participate in an optional retirement program. Effective July 1, 1971 Baltimore City teachers and retired teachers were included in the TRS.

Effective January 1, 1980, the TRS was effectively closed to new membership when the Teachers' Pension System (TPS) was established. Individuals who were members of the TRS on December 31, 1979, continue their TRS membership unless, and until, they elected to transfer to the TPS prior to January 1, 2005.

Member Contributions

All member contributions to the TRS are based on a specified percentage of annual earnable compensation. Members who elected in 1984 to receive unlimited future cost-of-living adjustments (COLA) contribute 7% if enrolled after June 30, 1973. Members enrolled before July 1, 1973 contribute the lesser of 7% or 2% more than the rate of contribution in effect on the date of their enrollment. This option is referred to as Selection A (Unlimited COLA).

Members who elected in 1984 to receive limited future COLA's contribute 5% if enrolled after June 30, 1973. Members enrolled before July 1, 1973 contribute the lesser of 5% or the rate of contribution in effect on the date of their enrollment. This option is referred to as Selection B (Limited COLA).

All other TRS members contribute **in accordance with the provisions of the Teachers' Pension System**. This option is referred to as Selection C (Combination Formula), that provides a two-part benefit calculation upon retirement. The employee contribution for Section C, Part 2 is 5%.

Members who are in Selection A, B, or C will remain in these until their retirement. As of January 1, 2005, they were no longer permitted to change selections.

Service Retirement Allowances

Eligibility — TRS members are eligible for full service retirement allowances upon attaining age 60 or upon accumulating 30 years of eligibility service regardless of age.

Allowances — Full service retirement allowances equal 1/55 (1.818%) of the highest three years' average final **compensation** (AFC) multiplied by the number of years and months of accumulated creditable service. Allowances for members who fail to make all required contributions are reduced by the actuarial equivalent of the total unpaid contributions plus interest to date of retirement. Service is accrued based on a full normal school year (ten months).

Early Retirement Allowances

Eligibility — TRS members are eligible for early service retirement allowances upon accumulating at least 25 years of eligibility service prior to attaining age 60.

Allowances — Early service retirement allowances equal the amount payable for a full service retirement reduced by 0.5% for each month by which the retirement date precedes the earlier of the date on which the member reaches age 60, or the date on which the member would have completed 30 years of service. The maximum reduction for a TRS member is 30 percent. The maximum reduction for a TRS member who elected Selection C is 30% on the first part and 42% on the second part of the benefit calculation.

Ordinary Disability Retirement Allowances

Eligibility — TRS members are eligible for ordinary disability retirement allowances upon completing five years of eligibility service and receiving certification from the Medical Board that they are permanently incapable of performing their necessary job functions.

Allowances — Ordinary disability retirement allowances generally equal 1/55 (1.818%) of the highest three years' AFC multiplied by the number of years of accumulated creditable service. However, the ordinary disability benefits can be no greater than 1.818% of AFC for each year of creditable service the members would have received had they continued to work until age 60.

Accidental Disability Retirement Allowances

Eligibility — TRS members are eligible for accidental disability benefits if the Medical Board certifies that, in the course of job performance and as the direct result of an accidental injury, they became totally and permanently disabled.

Allowances — Accidental disability allowances equal the sum of an annuity determined as the actuarial value of the members' accumulated contributions, plus 2/3 (66.7%) of AFC. Allowances may not exceed the members' AFC.

Death Benefits

Eligibility — To be eligible for death benefits, TRS members must have either accumulated at least one year of eligibility service prior to the date of death or died in the line of duty.

Benefits — The benefit provided upon death for TRS members equals the members' annual earnable compensation at the time of death plus accumulated contributions. Under certain circumstances, surviving spouses who were named as sole primary beneficiaries may elect to receive either the aforementioned lump sum payment, or a monthly allowance calculated under Option 2 (100% survivor option).

Special Death Benefit - Provides a special death benefit to the surviving spouse, dependent children, or dependent parents of employees killed in the line of duty equal to 2/3 of the deceased member's average final compensation.

Vested Retirement Allowances

Eligibility — TRS members are eligible for vested retirement allowances after separation from service and upon reaching normal retirement age, provided that at least five years of eligibility service was accumulated prior to separation.

Allowances — Vested allowances equal the normal service retirement allowances computed on the basis of the members' accumulated creditable service and AFC at the point of separation.

If members do not withdraw their contributions, and die before attaining age 60, their accumulated contributions are returned to the designated beneficiary.

Cost-of-Living Adjustments

Retirement allowances are adjusted each year based on the Consumer Price Index(CPI). Cost-of-living adjustments (COLAs) are effective July 1st of each year and are applied to all allowances payable for the year. However, the method by which the annual COLAs 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). Each option is explained in the following column.

Selection A (Unlimited COLA) — TRS members who elected Selection A, agreed to contribute no more than 7% of earnable

compensation in return for unlimited annual COLAs after retirement.

Selection B (Limited COLA) — TRS members who elected Selection B, agreed to contribute at the required TPS employee contribution rate of earnable compensation in return for COLAs that are limited to 5% annually after retirement.

Selection C (Combination Formula) — TRS members who elected Selection C, agreed to contribute at the required TPS employee contribution rate of earnable compensation in return for COLAs that, similar to the retirement benefit, are divided into two parts.

Part 1: The COLAs are unlimited unless the member elected Selection B prior to electing Selection C, in which case COLAs are limited to 5%.

Part 2: The COLAs are limited to 3%.

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.

Optional Forms of Payment

Option 1: Payment guarantees a cash reserve equal to the excess of the present value of the retirement allowance at the date of retirement minus the total amount of payments (less COLAs) made to the date of death.

Option 2: 100% joint and survivor annuity.

Option 3: 50% joint and survivor annuity.

Option 4: Payment guarantees a minimum return of the members' accumulated contributions.

Option 5: 100% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Option 6: 50% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Except for a spouse or disabled child, the beneficiary designated under Option 2 or 5 cannot be more than 10 years younger than the retiree (IRS Regulation).

Workers' Compensation Benefits Reduction

Disability retirement allowances are generally reduced by workers' compensation benefits paid after retirement if, and to the extent that, such benefits are for the same injury and the same period of time for which the retirement benefits are payable. The workers' compensation benefit reduction cannot reduce any retirement allowance to less than the amount necessary to cover the retiree's monthly health insurance premiums.

TEACHERS' PENSION SYSTEM

A COMPOSITE PICTURE

	2016	2015
Total Membership		
Active Vested	75,131	79,707
Active Non-vested	29,692	24,833
Vested Former Members	24,971	24,155
Retired Members	46,030	43,045
Active Members		
Number	104,823	104,540
Average Age	44.8	44.9
Average Years of Service	11.8	11.7
Average Annual Salary	\$ 62,415	\$ 61,023
Retirees & Beneficiaries		
Number	46,030	43,045
Average Age	69.9	69.5
Average Monthly Benefit	\$ 1,788	\$ 1,755

THE TEACHERS' PENSION SYSTEM (TPS) was established on January 1, 1980 and is administered in accordance with the State Personnel and Pensions Article of the Annotated Code of Maryland. Membership in the TPS is a condition of employment for all State and local teachers and certain board of education, public library and community college employees (unless those who are eligible elect to participate in an optional retirement program).

All individuals who are members of the Teacher's Pension System on or before June 30, 2011, participate in the Alternate Contributory Pension Selection (ACPS) except for the few members who transferred from the Teachers' Retirement System after April 1, 1998 or former vested members who terminated employment prior to July 1, 1998.

All individuals who enroll in the Teachers' Pension System on or after July 1, 2011, participate in the Reformed Contributory Pension Benefit (RCPB).

Member Contributions

All ACPS members are required to contribute 7% of earnable compensation during FY2010.

Service Pension Allowances

ACPS Eligibility — Members are eligible for full service pension allowances upon accumulating 30 years of eligibility service regardless of age. Absent 30 years of eligibility service, members must meet one of the following conditions to be eligible for full service pension allowances:

- age 62, & five years of eligibility service
- age 63, & four years of eligibility service
- age 64, & three years of eligibility service
- age 65 or older, & two years of eligibility service

RCPB Eligibility — Members are eligible for full service pension allowances when their combined age and eligibility service equals at least 90 years or they attain age 65 after 10 years of eligibility service.

ACPS Allowances — Service pension allowances equal 1.2% of AFC for the three highest consecutive years as an employee for each year of creditable service accrued prior to July 1, 1998, plus 1.8% of AFC for the three highest consecutive years as an employee for each year of creditable service accrued on and after July 1, 1998.

RCPB Allowances — Service pension allowances equal 1.5% of AFC for the five highest consecutive years as an employee for each year of creditable service on or after July 1, 2011.

Early Service Pension Allowances

ACPS Eligibility — Members are eligible for early service pension allowances upon attaining age 55 with at least 15 years of eligibility service.

ACPS Allowances — Early service pension allowances equal the amount payable for a full service pension reduced by 0.5% for each month by which the retirement date precedes the date on which the members reach age 62. The maximum reduction is 42 percent.

RCPB Eligibility — Members are eligible for early service pension allowances upon attaining age 60 with at least 15 years of eligibility service.

RCPB Allowances — Early service pension allowances equal the amount payable for a full service pension reduced by 0.5% for each month by which the retirement date precedes the date on which the members reach age 65. The maximum reduction is 30%.

Ordinary Disability Pension Allowances

Eligibility — ACPS and RCPB members are eligible for ordinary disability pension allowances upon completing five years of eligibility service and receiving certification from the Medical Board that they are permanently incapable of performing their necessary job functions.

Allowances — Ordinary disability pension allowances equal the full service pension allowances if the members are at least age 62 on the date of retirement. Otherwise, the allowances equal the full service pension allowances computed as though the members had continued to accrue service credits until age 62 without any change in the rate of earnable compensation.

Accidental Disability Pension Allowances

Eligibility — ACPS and RCPB members are eligible for accidental disability pension allowances if the Medical Board certifies that, in the course of their job performance and as the direct result of an accidental injury, they became totally and permanently disabled.

Allowances — Accidental disability pension allowances equal the sum of an annuity determined as the actuarial value of the mem-

bers' accumulated contributions, and 2/3 (66.7%) of AFC. Allowances may not exceed the members' AFC.

Death Benefits

Eligibility — To be eligible for death benefits, ACPS and RCPB members must have either accumulated at least one year of eligibility service prior to the date of death or died in the line of duty.

Benefits — The benefit provided upon death of ACPS members equals the members' annual earnable compensation on the date of death plus accumulated contributions. Under certain circumstances, surviving spouses who were named as sole primary beneficiaries may elect to receive either the aforementioned lump sum payment, or a monthly allowance calculated under Option 2 (100% survivor option). If at the time of death, the members had:

- accrued at least 25 years of eligibility service, or
- attained age 55 with at least 15 years of eligibility service, or
- attained age 62, then

the survivor's allowance is determined as if the members had been eligible to retire, and had in fact retired.

Special Death Benefit - Provides a special death benefit to the surviving spouse, dependent children, or dependent parents of employees killed in the line of duty equal to 2/3 of the deceased member's average final compensation.

Vested Pension Allowances

ACPS Eligibility — Members are eligible for vested pension allowances after separation from service and upon reaching age 62, provided that at least five years of eligibility service was accumulated prior to separation. Members may be eligible for reduced vested pension allowances upon attaining age 55 with at least 15 years of eligibility service. Vested allowances are reduced by 0.5% for each month by which the allowance commencement date precedes the date on which the members attain age 62.

ACPS Allowances — Vested allowances equal the normal service pension allowances computed on the basis of the members' accumulated creditable service and AFC at the point of separation. If members do not withdraw their contributions, and die before attaining age 62, their accumulated contributions are returned to the designated beneficiary.

RCPB Eligibility — Members are eligible for vested pension allowances after separation from service and upon reaching age 65, provided that at least 10 years of eligibility service was accumulated prior to separation. Members may be eligible for reduced vested pension allowances upon attaining age 60 with at least 15 years of eligibility service. Vested allowances are reduced by 0.5% for each month by which the allowance commencement date precedes the date on which the members attain age 65.

RCPB Allowances — Vested allowances equal the normal service pension allowances computed on the basis of the members' accumulated creditable service and AFC at the point of separation. If members do not withdraw their contributions, and die before attaining age 65, their accumulated contributions are returned to the designated beneficiary.

Cost-of-Living Adjustments

Retirement allowances for ACPS members are adjusted each year based on the Consumer Price Index. COLAs are effective July 1st of each year and, are compounded annually. Effective July 1, 1998, the adjustment is capped at a maximum 3% and is applied to all benefits which have been in payment for one year.

For ACPS and RCPB retirement allowances attributable to service earned on or after July 1, 2011, the adjustment is capped at the lesser of 2.5% or the increase in CPI if the most recent calendar year market value rate of return was greater than or equal to the assumed rate. For fiscal year 2013, the assumed rate of return is 7.75%, as approved by the Board of Trustees. The adjustment is capped at the lesser of 1% or the increase in CPI if, for fiscal year 2013, the market value return was less than the assumed rate of 7.75%.

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.

Optional Forms of Payment

Option 1: Payment guarantees a cash reserve equal to the excess of the present value of the pension allowance at the date of retirement minus the total amount of payments (less COLAs) made to the date of death.

Option 2: 100% joint and survivor annuity.

Option 3: 50% joint and survivor annuity.

Option 4: Payment guarantees a minimum return of the members' accumulated contributions.

Option 5: 100% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Option 6: 50% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Except for a spouse or disabled child, the beneficiary designated under Option 2 or 5 cannot be more than 10 years younger than the retiree (IRS regulation).

Workers' Compensation Benefits Reduction

Disability retirement allowances are generally reduced by workers' compensation benefits paid after retirement if, and to the extent that, such benefits are for the same injury and the same period of time for which the retirement benefits were paid. The workers' compensation benefit reduction cannot reduce any retirement allowance to less than the amount necessary to cover the retiree's monthly health insurance premiums.

EMPLOYEES' RETIREMENT SYSTEM

A COMPOSITE PICTURE

	2016	2015
Total Membership		
Active Vested	6,011	6,268
Active Non-vested	1,912	2,298
Vested Former Members	826	804
Retired Members	21,172	21,571
Active Members		
Number	7,923	8,566
Average Age	44.5	44.0
Average Years of Service	13.2	12.8
Average Annual Salary	\$ 49,917	\$ 50,108
Retirees & Beneficiaries		
Number	21,172	21,571
Average Age	73.4	73.3
Average Monthly Benefit	\$ 1,877	\$ 1,851

THE EMPLOYEES' RETIREMENT SYSTEM (ERS) was established on October 1, 1941 and is administered in accordance with the State Personnel and Pensions Article of the Annotated Code of Maryland. Prior to January 1, 1980, membership in the ERS was a condition of employment for all State employees (other than those eligible for participation in another system) and employees of participating governmental units. For certain elected and appointed officials, participation in ERS was optional.

Effective January 1, 1980, the ERS was effectively closed to new membership when the Employees' Pension System (EPS) was established. Individuals who were members of the ERS on December 31, 1979, continue their ERS membership unless, and until, they elect to transfer to the EPS, prior to January 1, 2005.

Member Contributions

All member contributions to the ERS are based on a specified percentage of annual earnable compensation. Members who elected in 1984 to receive unlimited future COLAs contribute 7% if enrolled after June 30, 1973. Members enrolled before July 1, 1973 contribute the lesser of 7% or 2% more than the rate of contribution in effect on their date of enrollment. This option is referred to as Selection A (Unlimited COLA).

Members who elected in 1984 to receive limited future COLAs contribute 5% if enrolled after June 30, 1973. Members enrolled before July 1, 1973 contribute the lesser of 5% or the rate of contribution in effect on the date of their enrollment. This option is referred to as Selection B (Limited COLA).

Members who are State employees as well as members whose employer elected to participate in the Employees' Pension System contribute in accordance with the provisions of the Employees' Pension System elected by the employer. This option is referred

to as Selection C (Combination Formula). The employee contribution for Section C, Part 2 is 5%.

Members who are in Selection A, B, or C will remain in these until their retirement. As of January 1, 2005, they were no longer permitted to change selections.

Service Retirement Allowances

Eligibility — ERS members are eligible for full service retirement allowances upon attaining age 60 or upon accumulating 30 years of eligibility service regardless of age.

Allowances — Full service retirement allowances equal 1/55 (1.818%) of the highest three years' AFC multiplied by the number of years and months of accumulated creditable service. Allowances for members who fail to make all required contributions are reduced by the actuarial equivalent of the total unpaid contributions plus interest to date of retirement.

Early Retirement Allowances

Eligibility — ERS members are eligible for early service retirement allowances upon accumulating at least 25 years of eligibility service prior to attaining age 60.

Allowances — Early service retirement allowances equal the amount payable for a full service retirement reduced by 0.5% for each month by which the retirement date precedes the earlier of the date on which the member reaches age 60, or the date on which the member would have completed 30 years of service. The maximum reduction for an ERS member is 30 percent. The maximum reduction for an ERS member who elected Selection C is 30% on the first part and 42% on the second part of the benefit calculation.

Ordinary Disability Retirement Allowances

Eligibility — ERS members are eligible for ordinary disability retirement allowances upon completing five years of eligibility service and receiving certification from the Medical Board that they are permanently incapable of performing their necessary job functions.

Allowances — Ordinary disability retirement allowances generally equal 1/55 (**1.818%**) of the highest three years' AFC multiplied by the number of years of accumulated creditable service. However, the ordinary disability benefits can be no greater than **1.818%** of AFC for each year of creditable service the members would have received had they continued to work until age 60.

Accidental Disability Retirement Allowances

Eligibility — ERS members are eligible for accidental disability benefits if the Medical Board certifies that, in the course of job performance and as the direct result of an accidental injury, they became totally and permanently disabled.

Allowances — Accidental disability allowances equal the sum of an annuity determined as the actuarial value of the members' accumulated contributions, plus 2/3 (66.7%) of AFC. Allowances may not exceed the members' AFC.

Death Benefits

Eligibility — To be eligible for death benefits, ERS members must have either accumulated at least one year of eligibility service prior to the date of death or died in the line of duty.

Benefits — The benefit provided upon death for ERS members equals the members' annual earnable compensation at the time of death plus accumulated contributions. Under certain circumstances, surviving spouses who were named sole primary beneficiaries may elect to receive either the aforementioned lump sum payment, or a monthly allowance calculated under Option 2 (100% survivor option).

Special Death Benefit - Provides a special death benefit to the surviving spouse, dependent children, or dependent parents of employees killed in the line of duty equal to 2/3 of the deceased member's average final compensation.

Vested Retirement Allowances

Eligibility — ERS members are eligible for vested retirement allowances after separation from service and upon reaching normal retirement age, provided that at least five years of eligibility service was accumulated prior to separation.

Allowances — Vested allowances equal the normal service retirement allowances computed on the basis of the members' accumulated creditable service and AFC at the point of separation.

If members do not withdraw their contributions, and die before attaining age 60, their accumulated contributions are returned to the designated beneficiary.

Cost-of-Living Adjustments

Retirement allowances are adjusted each year based on the Consumer Price Index. COLAs are effective July 1st of each year and are applied to all allowances payable for the year. However, the method by which the annual COLAs 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). Each option is explained below.

Selection A (Unlimited COLA) — ERS members who elected Selection A, agreed to contribute no more than 7% of earnable compensation in return for unlimited annual COLAs after retirement.

Selection B (Limited COLA) — ERS members who elected Selection B, agreed to contribute no more than 5% of earnable compensation in return for COLAs that are limited to 5% annually after retirement.

Selection C (Combination Formula) — ERS members who elected Selection C, agreed to contribute at the required EPS employee contribution rate of earnable compensation in return for

COLAs that, similar to the retirement benefit, are divided into two parts:

Part 1: The COLAs are unlimited unless the members elected Selection B prior to electing Selection C, in which case COLAs are limited to 5%.

Part 2: Generally, the COLAs are limited to 3%; however, if the employers participate in the Non-Contributory Pension System, the COLA's are limited to 3% of the initial allowance.

Optional Forms of Payment

Option 1: Payment guarantees a cash reserve equal to the excess of the present value of the retirement allowance at the date of retirement minus the total amount of payments (less COLA's) made to the date of death.

Option 2: 100% joint and survivor annuity.

Option 3: 50% joint and survivor annuity.

Option 4: Payment guarantees a minimum return of the members' accumulated contributions.

Option 5: 100% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Option 6: 50% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Except for a spouse or disabled child, the beneficiary designated under Option 2 or 5 cannot be more than 10 years younger than the retiree (IRS regulation).

Workers' Compensation Benefits Reduction

Disability retirement allowances, except for employees of participating governmental units, are generally reduced by workers' compensation benefits paid after retirement if, and to the extent that, such benefits are for the same injury and the same period of time for which the retirement benefits are payable. The workers' compensation benefit reduction cannot reduce any retirement allowance to less than the amount necessary to cover the retiree's monthly health insurance premiums.

Miscellaneous Provisions for Members of the Maryland General Assembly

For individuals who are members of the Legislative Pension Plan on or before December 31, 2014, the retirement allowance is equal to 3.00% of current legislative salary for each year of creditable service (maximum 22 years, 3 months) upon attainment of age 60 and at least eight years of creditable service. Reduced benefits are payable upon attainment of age 50 and completion of 8 years of creditable service. The benefit is reduced by .005 for each month between ages 50 and 60 that the early retirement date precedes age 60.

An individual who is a member of the Legislative Pension Plan on or before December 31, 2014, with eight years of creditable service who has not attained age 60 may leave contributions in

the system and receive a retirement allowance at age 60, or a reduced benefit on or after age 50. If termination occurs before the completion of eight years of creditable service, the member may make contributions equal to the member's and the State's required contributions until the member would have completed eight years of eligibility service, (and receive 24% of creditable compensation at age 60 or a reduced benefit on or after age 50).

For individuals who join the Legislative Pension Plan on or after January 1, 2015, the retirement allowance is equal to 3.00% of current legislative salary for each year of creditable service (maximum 22 years 3 months) upon attainment of age 62 and at least eight years of creditable service. Reduced benefits are payable upon attainment of age 55 and completion of 8 years of creditable service. The benefit is reduced by .005 for each month between ages 55 and 62 that the early retirement date precedes age 62.

An individual who joins the Legislative Pension Plan on or after January 1, 2015, accrues eight years of creditable service, and who has not attained age 62 may leave contributions in the system and receive a retirement allowance at age 62, or a reduced benefit on or after age 55. If termination occurs before the completion of eight years of creditable service, the member may make contributions equal to the member's and the State's required contributions until the member would have completed eight years of eligibility service, (and receive 24% of creditable compensation at age 62 or a reduced benefit on or after age 55).

A member who is certified as disabled by the Medical Board and approved by the Board of Trustees for a disability retirement benefit after attaining at least 8 years of creditable service may resign from the General Assembly and immediately receive a retirement allowance based on their creditable service.

The member's surviving spouse receives 50% of the member's retirement allowance if the member i) is retired, ii) is eligible for a deferred vested benefit, or iii) is active and has eight years of creditable service. The surviving spouse of a member who had accrued less than eight years of creditable service and dies in office shall receive a lump sum death benefit of accumulated contributions plus an amount equal to the deceased's annual earnable compensation at the time of death.

Beginning January 1, 2015, members contribute 7% of their earnable compensation during their first 22 years, 3 months of service with contributions earning interest at 4% per year.

All retirement allowances are recalculated each time the salaries for current members of the General Assembly are increased.

Miscellaneous Provisions for State Correctional Officers

Correctional officers serving in the first six job classifications, individuals serving as a security chief, a facility administrator,

an assistant warden or a warden, maximum security attendants at Clifton T. Perkins Hospital Center, a Correctional Dietary, Maintenance or Supply Officer, Maryland Correctional Enterprise Officers and Trainees, Plant Supervisors, Plant Managers, and Regional Managers; and Laundry Officers participate under this System. Effective July 1, 2006, Maryland counties may elect to participate on behalf of their detention center officers. Additionally, beginning July 1, 2016, individuals serving as a correctional case management specialist will participate in this System.

The retirement allowance for an individual who is a correctional officer on or before June 30, 2011, is 1/55th of average final compensation for the three highest years as a member for each year of creditable service. The retirement allowance for an individual who is a correctional officer on or after July 1, 2011, is 1/55th of average final compensation for the five highest years as a member for each year of creditable service.

An immediate service retirement allowance is payable to a correctional officer if, on or before the retirement, the officer has completed 20 years of eligibility service. For individuals who are members of this system on June 30, 2011, the vested retirement allowance of a member who has accrued at least 5 years of eligibility service commences at age 55. For individuals who become members on or after July 1, 2011, the vested retirement allowance for a member who has accrued at least 10 years of eligibility services commences at age 55.

For benefits attributable to service on or after July 1, 2011, the Cost-of-living adjustment for Correctional Officers is capped at the lesser of 2.5% or the increase in CPI if the most recent calendar year market value rate of return was greater than or equal to the assumed rate of investment return from the most recent actuarial valuation. The adjustment is capped at the lesser of 1% or the increase in CPI if the most recent calendar year market value rate of return was less than the assumed rate of investment return from the most recent actuarial valuation.

EMPLOYEES' PENSION SYSTEM

A COMPOSITE PICTURE

	2016	2015
Total Membership		
Active Vested	51,070	54,458
Active Non-vested	23,632	20,770
Vested Former Members	27,058	27,042
Retired Members	53,039	50,460
Active Members		
Number	74,702	75,228
Average Age	48.6	48.5
Average Years of Service	12.1	12.1
Average Annual Salary	\$ 51,536	\$ 51,464
Retirees & Beneficiaries		
Number	53,039	50,460
Average Age	69.4	69.0
Average Monthly Benefit	\$ 1,178	\$ 1,152

THE EMPLOYEES' PENSION SYSTEM (EPS)

The Employees' Pension System (EPS) is administered in accordance with the State Personnel and Pension Article of the Annotated Code. The EPS consists of four parts:

Non-Contributory Pension System (NCPS)

The NCPS was established on January 1, 1980 and consists only of those participating employers that did not elect membership in the Employees' Contributory Pension System (ECPS) or the Alternate Contributory Pension Selection (ACPS).

Employees' Contributory Pension System (ECPS)

The ECPS was established as of July 1, 1998 and consists of those participating employers that elected participation in the ECPS effective July 1, 1998 through July 1, 2005 and did not elect membership in the ACPS as of July 1, 2006. Employees who transferred from the ERS to the EPS after April 1, 1998 were not eligible for the benefits of the ECPS.

Alternate Contributory Pension Selection (ACPS)

The ACPS was established as of July 1, 2006 and consists of all eligible State employees and those participating employers that elected participation in the ACPS effective July 1, 2006. Employees who transferred from the ERS to the EPS after April 1, 1998 were not eligible for the benefits of the ACPS.

Reformed Contributory Pension Benefit (RCPB)

The RCPB was established as of July 1, 2011 and consists of all State employees and, employees of participating governmental units enrolling in the EPS on or after July 1, 2011. It does not apply to employees of participating governmental units participating in the NCPS or ECPS who in enroll in the Employees' Pension System on or after July 1, 2011.

Member Contributions

NCPS — Members were required to contribute 5% of earnable compensation in excess of the social security wage base.

ECPS — Members are required to contribute 2% of earnable compensation.

ACPS — Members were required to contribute 7% of earnable compensation.

RCPB — Members were required to contribute 7% of earnable compensation.

Service Pension Allowances

NCPS, ECPS, and ACPS Eligibility — Members are eligible for full service pension allowances upon accumulating 30 years of eligibility service regardless of age. Absent 30 years of eligibility service, members must meet one of the following conditions to be eligible for full service pension allowances:

- age 62, & five years of eligibility service
- age 63, & four years of eligibility service
- age 64, & three years of eligibility service
- age 65 or older, & two years of eligibility service

RCPB Eligibility - Members are eligible for full service pension allowances when their combined age and eligibility service equals at least 90 years or they attain age 65 after 10 years of eligibility service.

Allowances

NCPS - Full service pension allowance equals .8% of the highest three consecutive years AFC up to the SSIL, plus 1.5% of the AFC in excess of the SSIL, multiplied by the number of years of accumulated creditable service. For purposes of computing pension allowances, the SSIL is the average of the social security wage bases for the 35 years immediately prior to the year of retirement.

ECPS - Full service pension allowance equals 1.2% of AFC for the three highest consecutive years as an employee for each year of creditable service accrued prior to July 1, 1998 plus 1.4% of the AFC for the three highest consecutive years as an employee for each year of creditable service accrued on or after July 1, 1998.

ACPS - Full service pension allowance equals 1.2% of AFC for the three highest consecutive years as an employee for each year of creditable service accrued prior to July 1, 1998 plus 1.8% of the AFC for the three highest consecutive years as an employee for each year of creditable service accrued on or after July 1, 1998.

RCPB - Full service pension allowance equals 1.5% of AFC for the five highest consecutive years as an employee for each year of creditable service accrued on or after July 1, 2011.

Early Service Pension Allowances

NCPS, ECPS, and ACPS Eligibility — Members are eligible for early service pension allowances upon attaining age 55 with at least 15 years of eligibility service.

NCPS, ECPS, and ACPS Allowances — Early service pension allowances equal the amount payable for a full service pension reduced by 0.5% for each month by which the retirement date precedes the date on which the member reaches age 62. The maximum reduction is 42 percent.

RCPB Eligibility — Members are eligible for early service pension allowances upon attaining age 60 with at least 15 years of eligibility service.

RCPB Allowances — Early service pension allowances equal the amount payable for a full service pension reduced by .5% for each month by which the retirement date precedes the date on which the members reach age 65. The maximum reduction is 30%.

Ordinary Disability Pension Allowances

Eligibility — All EPS members are eligible for ordinary disability pension allowances upon completing five years of eligibility service and receiving certification from the Medical Board that they are permanently incapable of performing their necessary job functions.

Allowances — Ordinary disability pension allowances equal the full service pension allowances if the members are at least age 62 on the date of retirement. Otherwise, the allowances equal the full service pension allowances computed as though the members had continued to accrue service credits until age 62 without any change in the rate of earnable compensation.

Accidental Disability Pension Allowances

Eligibility — All EPS members are eligible for accidental disability pension allowances if the Medical Board certifies that, in the course of their job performance and as the direct result of an accidental injury, they became totally and permanently disabled.

Allowances — Accidental disability pension allowances equal the sum of an annuity determined as the actuarial value of the members' accumulated contributions, and 2/3 (66.7%) of AFC.

Death Benefits

Eligibility — To be eligible for death benefits, EPS members must have either accumulated at least one year of eligibility service prior to the date of death or died in the line of duty.

Benefits — The benefit provided upon death of all EPS members equals the members' annual earnable compensation on the date of death plus accumulated contributions. Under certain circumstances, surviving spouses who were named sole primary beneficiaries may elect to receive either the aforementioned lump sum payment, or a monthly allowance calculated as payment under Option 2 (100% survivor option).

If at the time of death, the members had:

- accrued at least 25 years of eligibility service, or
- attained age 55 with at least 15 years of eligibility service, or
- attained age 62, then

the survivor's allowance is determined as if the members had been eligible to retire.

Special Death Benefit - Provides a special death benefit to the surviving spouse, dependent children, or dependent parents of employees killed in the line of duty equal to 2/3 of the deceased member's average final compensation.

Vested Pension Allowances

NCPS, ECPS, and ACPS Eligibility — Members are eligible for

vested pension allowances after separation from service and upon reaching age 62, provided that at least five years of eligibility service was accumulated prior to separation. Members may be eligible for reduced vested pension allowances upon attaining age 55 with at least 15 years of eligibility service. Vested allowances are reduced by 0.5% for each month by which the allowance commencement date precedes the date on which the members attain age 62.

NCPS, ECPS, and ACPS Allowances — Vested allowances equal the normal service pension allowances computed on the basis of the members' accumulated creditable service and AFC at the point of separation. Members who elect to withdraw their accumulated contributions, remain eligible to receive the employer-provided share of the vested benefit. If members do not withdraw their contributions, and die before attaining age 62, their accumulated contributions are returned to the designated beneficiary.

RCPB Eligibility — Members are eligible for vested pension allowances after separation from service and upon reaching age 65, provided that at least 10 years of eligibility service was accumulated prior to separation. Members may be eligible for reduced vested pension allowances upon attaining age 60 with at least 15 years of eligibility service. Vested allowances are reduced by 0.5% for each month by which the allowance commencement date precedes the date on which the members attain age 65.

RCPB Allowances — Vested allowances equal the normal service pension allowances computed on the basis of the members' accumulated creditable service and AFC at the point of separation. If members do not withdraw their contributions, and die before attaining age 65, their accumulated contributions are returned to the designated beneficiary.

Cost of Living Adjustments

Retirement allowances for all EPS members are adjusted each year based on the Consumer Price Index. The Cost of Living Adjustments (COLA) are effective July 1st of each year.

For retirement allowances attributable to service earned on or before June 30, 2011:

NCPS - Limits the increase the retiree may receive to a maximum of 3% of the initial allowance annually.

ECPS - Limits the increase the retiree may receive to a maximum of 3%, compounded annually

ACPS - Limits the increase the retiree may receive to a maximum of 3%, compounded annually

For any EPS retirement allowance attributable to service earned on or after July 1, 2011, the adjustment is capped at the lesser of 2.5% or the increase in CPI if the most recent calendar year market value rate of return was greater than or equal to the assumed rate. For fiscal year 2013, the assumed rate of return is 7.75%, as approved by the Board of Trustees. The adjustment is capped at the lesser of 1% or the increase in CPI if, for fiscal 2013, the market value return was less than the assumed rate of 7.75%.

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.

Optional Forms of Payment

- Option 1:** Payment guarantees a cash reserve equal to the excess of the present value of the pension allowance at the date of retirement minus the total amount of payments (less COLAs) made to the date of death.
- Option 2:** 100% joint and survivor annuity.
- Option 3:** 50% joint and survivor annuity.
- Option 4:** Payment guarantees a minimum return of the members' accumulated contributions.
- Option 5:** 100% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.
- Option 6:** 50% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Except for a spouse or disabled child, the beneficiary designated under Option 2 or 5 cannot be more than 10 years younger than the retiree (IRS regulation).

Workers' Compensation Benefits Reduction

Disability retirement allowances, except for retirees of a participating governmental unit, are generally reduced by workers' compensation benefits paid after retirement if, and to the extent that, such benefits are for the same injury and the same period of time for which the retirement benefits were paid.

The workers' compensation benefit reduction cannot reduce any retirement allowance to less than the amount necessary to cover the retiree's monthly health insurance premiums.

JUDGES' RETIREMENT SYSTEM

A COMPOSITE PICTURE

	2016	2015
Total Membership		
Active Vested	222	243
Active Non-vested	76	64
Vested Former Members	7	8
Retired Members	407	397
Active Members		
Number	298	307
Average Age	58.3	58.1
Average Years of Service	9.0	8.9
Average Annual Salary	\$ 150,038	\$ 145,318
Retirees & Beneficiaries		
Number	407	397
Average Age	77.1	77.0
Average Monthly Benefit	\$ 6,282	\$ 6,296

Service Retirement Allowances

Eligibility — JRS members who are members before July 1, 2012, are eligible for full service retirement allowances upon attaining age 60 or upon retirement by order of the Court of Appeals, with at least 16 years of eligibility service.

Individuals who become JRS members on or after July 1, 2012, are eligible for full service retirement allowances upon attaining age 60 and accruing at least five years of eligibility service, or upon retirement by order of the Court of Appeals, with at least 16 years of eligibility service.

All JRS members must retire at age 70.

Allowances — Full service retirement allowances equal 2/3 (66.7%) of the current salary for an active judge holding a comparable position. If members retire with less than 16 years of eligibility service, the annual retirement allowance is prorated accordingly.

Early Retirement Allowances

Eligibility — JRS members are not eligible for early service retirement allowances.

Disability Retirement Allowances

Eligibility — JRS members are eligible for disability retirement allowances upon receiving certification from the Medical Board that they are permanently incapable of performing their necessary job functions.

Allowances — The disability retirement allowances for JRS members generally equal the full service retirement allowance based on the members' actual length of service. However, for members completing at least three years of eligibility service, the disability benefit will be no less than 1/3 (33.3%) of the members' annual earnable compensation at the time of retirement.

Death Benefits

Eligibility — All JRS members, and former members, are eligible for death benefits regardless of age or length of service.

THE JUDGES' RETIREMENT SYSTEM (JRS) was established on June 30, 1969 and is administered in accordance with the State Personnel and Pensions Article of the Annotated Code of Maryland. Membership is a condition of employment for all District Court, Circuit Court, Court of Appeals and Court of Special Appeals judges. Full-time masters in chancery and masters in juvenile causes appointed prior to June 30, 1989 and Workers' Compensation Commission judges are also members of the JRS.

Member Contributions

Beginning July 1, 2012, all members contribute 8% of annual earnable compensation during the first 16 years of service. After accruing 16 years of credit, no member contributions are required.

Benefits — The benefit provided upon death for JRS members, former members or retirees equals 50% of a service retirement allowance payable to the surviving spouse.

Special provisions apply in circumstances where deceased JRS members, former members or retirees have no surviving spouses, but are survived by a minor child (under age 18). In the event that deceased JRS members or former members are not survived by spouses or minor children, then all accumulated contributions are refunded to the estate.

Vested Retirement Allowances

Eligibility — JRS members who are members before July 1, 2012, are immediately vested. Members leaving the bench before attaining age 60 are eligible to receive their service retirement allowances commencing upon attaining age 60.

Individuals who become JRS members on or after July 1, 2012, are eligible for vested retirement allowances after separation from service and upon reaching age 60, provided that at least five years of eligibility service was accumulated prior to separation. For individuals joining the JRS on or after July 1, 2012 who are required to retire due to mandatory retirement and have less than 5 years of service at the time, these individuals are eligible for vested retirement allowances if they have accrued eligibility service equal to 70 minus their age when the individuals first became members of the JRS.

Allowances — Vested allowances equal the normal service retirement allowances computed on the basis of the members' accumulated creditable service and the **salary** of active judges holding comparable positions. JRS members may elect to withdraw their accumulated contributions in lieu of receiving vested retirement allowances following their termination of service on the bench.

Optional Forms of Payment

Generally, JRS retirement allowances are paid as a 50% joint and survivor annuity to the retirees' surviving spouse, or if there is no spouse, to any child under age 18. If the retirees have neither a living spouse nor children under 18 at retirement, retirees may select any one of the following six payment options.

Option 1: Payment guarantees a cash reserve equal to the excess of the present value of the retirement allowance at the date of retirement minus the total amount of payments made to the date of death.

Option 2: 100% joint and survivor annuity.

Option 3: 50% joint and survivor annuity.

Option 4: Payment guarantees a minimum return of the members' accumulated contributions.

Option 5: 100% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Option 6: 50% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Once retired, neither the option nor designated beneficiary(ies) may be changed. Except for a spouse or disabled child, the beneficiary designated under Option 2 or 5 cannot be more than 10 years younger than the retiree (IRS regulation).

Pension Changes

Effective July 1, 2012, the member contribution for all members of the JRS increases to 8%.

Effective July 1, 2012, for new members of the JRS vesting will require five years of eligibility service.

STATE POLICE RETIREMENT SYSTEM

A COMPOSITE PICTURE

	2016	2015
Total Membership		
Active Vested	1,013	988
Active Non-vested	389	406
Vested Former Members	84	81
Retired Members	2,536	2,508
Active Members		
Number	1,402	1,394
Average Age	35.5	35.3
Average Years of Service	11.1	10.9
Average Annual Salary	\$ 66,684	\$ 65,316
Retirees & Beneficiaries		
Number	2,536	2,508
Average Age	63.0	62.4
Average Monthly Benefit	\$ 3,868	\$ 3,866

THE STATE POLICE RETIREMENT SYSTEM (SPRS) was established on July 1, 1949 and is administered in accordance with the State Personnel and Pensions Article of the Annotated Code of Maryland. Membership is a condition of employment for all uniformed officers of the Maryland State Police. The Superintendent of the Maryland State Police may elect membership in either the SPRS or the EPS.

Member Contributions

All SPRS members contribute 8% of annual earnable compensation during employment.

Service Retirement Allowances

Eligibility — SPRS members who are members on or before June 30, 2011, are eligible for full service retirement allowances upon attaining age 50 or upon accumulating 22 years of eligibility service regardless of age. Individuals who become members on or after July 1, 2011, are eligible for full service retirement allowances upon accumulating 25 years of eligibility service or attainment of age 50. Except for the Superintendent, all SPRS members must retire at age 60.

Allowances — For individuals who are members on or before June 30, 2011, a full service retirement allowance equals 2.55% of AFC for the five highest years as a member for each year of creditable service, up to a maximum 71.4% of AFC (28 years). Individuals who become members on or after July 1, 2011, will receive a full service retirement allowance equal to 2.55% of AFC for the five highest years as a member for each of the first 29 years of creditable service. Allowances for members who fail to make all required contributions are reduced by the actuarial equivalent of the total unpaid contributions plus interest to date of retirement.

Early Retirement Allowances

Eligibility — SPRS members are not eligible for early service retirement allowances.

Ordinary Disability Retirement Allowances

Eligibility — SPRS members are eligible for ordinary disability retirement allowances upon completing five years of eligibility service and receiving certification from the Medical Board that they are permanently incapable of performing their necessary job functions.

Allowances — Ordinary disability retirement allowances generally equal 2.55% of the AFC multiplied by the number of years of creditable service up to a maximum of 28 years. The minimum ordinary disability retirement allowance is 35% of AFC.

Special Disability Retirement Allowances

Eligibility — SPRS members are eligible for special disability benefits if the Medical Board certifies that they became totally and permanently incapacitated for duty arising out of or in the actual performance of duty.

Allowances — Special disability allowances equal the sum of an annuity determined as the actuarial value of the members' accumulated contributions, and 2/3 (66.7%) of AFC. Allowances may not exceed the members' AFC.

Ordinary Death Benefits

Eligibility — To be eligible for ordinary death benefits, SPRS members must have accumulated at least one but less than two years of eligibility service prior to the date of death.

Benefits — The ordinary death benefit equals the members' annual earnable compensation at time of death plus accumulated contributions.

Special Death Benefits

Members in Service

Eligibility — To be eligible for special death benefits, SPRS members in service must have accumulated at least two years of eligibility service prior to the date of death or died in the line of duty.

Benefits — The special benefit provided upon the death of SPRS members in service equals 50% of the members' annual earnable compensation at time of death paid as an annuity plus return of accumulated contributions. In cases where the deceased members

are not survived by a spouse, the decedents' children or dependent parents, if any, will continue to receive an annuity equal to 50% of the members' annual earnable compensation until the youngest child reaches age 18, or for the life of each dependent parent. The special death benefit for troopers killed in the line of duty is 2/3 (66.7%) of AFC.

Survivor Benefit

Eligibility — To be eligible for survivor benefits, SPRS retirees must have retired on either a service retirement allowance or a disability allowance.

Benefits — The survivor benefit provided upon the death of an SPRS retiree equals 80% of the retirees' retirement allowance, paid as an annuity. In cases where the deceased members are not survived by a spouse, the decedents' children, if any, will continue to receive 80% of the retirees' allowance until the youngest child reaches age 18.

Vested Retirement Allowances

Eligibility — Individuals who are SPRS members on or before June 30, 2011, are eligible for vested retirement allowances after separation from service and upon reaching age 50, provided that at least five years of eligibility service was accumulated prior to separation. Individuals who are SPRS members on or after July 1, 2011, are eligible for vested retirement allowances after separation from service and upon reaching age 50, provided that at least 10 years of eligibility service was accumulated prior to separation.

Allowances — Vested allowances equal the normal service retirement allowances computed on the basis of the members' accumulated creditable service and AFC at the point of separation. SPRS members may elect to withdraw their accumulated contributions within two years of separation in lieu of receiving vested retirement allowances. If members do not withdraw their contributions, and die before attaining age 50, their accumulated contributions are returned to the designated beneficiary.

Cost-of-Living Adjustments

Retirement allowances attributable to service earned on or before June 30, 2011, are adjusted each year based on the Consumer Price Index.

For retirement allowance attributable to service earned on or after July 1, 2011, the adjustment is capped at the lesser of 2.5% or the increase in CPI if the most recent calendar year market value rate of return was greater than or equal to the assumed rate. For fiscal year 2013, the assumed rate of return is 7.75%, as approved by the Board of Trustees. The adjustment is capped at the lesser of 1% or the increase in CPI if, for fiscal year 2013, the market value return was less than the assumed rate of 7.75%.

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.

COLAs are effective July 1st of each year and are applied to all allowances payable for the year.

Optional Forms of Payment

Generally, SPRS retirement allowances are paid as an 80% joint and survivor annuity to the retirees' spouse, or if there is no spouse, to any child under age 18. If the retirees have neither a living spouse nor children under 18 at retirement, the retirees may select any one of the following six payment options.

Option 1: Payment guarantees a cash reserve equal to the present value of the retirement allowance at the date of retirement minus the total amount of payments (less COLAs) made to the date of death.

Option 2: 100% joint and survivor annuity.

Option 3: 50% joint and survivor annuity.

Option 4: Payment guarantees a minimum return of the members' accumulated contributions.

Option 5: 100% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Option 6: 50% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Except for a spouse or disabled child, the beneficiary designated under Option 2 or 5 cannot be more than 10 years younger than the retiree (IRS regulation).

Workers' Compensation Benefits Reduction

Disability retirement allowances are generally reduced by workers'

compensation benefits paid after retirement if, and to the extent that, such benefits are for the same injury and the same period of time for which the retirement benefits are payable. The workers' compensation benefit reduction cannot reduce any retirement allowance to less than the amount necessary to cover the retiree's monthly health insurance premiums.

Deferred Retirement Option Program

SPRS members are eligible to participate in a Deferred Retirement Option Program (DROP). For SRPS members who enter DROP on or before June 30, 2011, they must have at least 22 years of creditable service, but less than 28 years, and be under age 60. For SRPS members who enter DROP on or after July 1, 2011, they must have at least 22 years of creditable service, but less than 29 years, and be under age 60. The maximum period of participation is 4 years.

For members who enter the DROP on or before June 30, 2011, the SPRS member is deemed retired and the retirement allowance is 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.

LAW ENFORCEMENT OFFICERS' PENSION SYSTEM

A COMPOSITE PICTURE

	2016	2015
Total Membership		
Active Vested	1,772	1,840
Active Non-vested	757	648
Vested Former Members	294	293
Retired Members	1,801	1,711
Active Members		
Number	2,529	2,488
Average Age	41.1	40.9
Average Years of Service	10.6	10.6
Average Annual Salary	\$ 61,841	\$ 61,075
Retirees & Beneficiaries		
Number	1,801	1,711
Average Age	59.6	59.0
Average Monthly Benefit	\$ 2,812	\$ 2,808

THE LAW ENFORCEMENT OFFICERS PENSION SYSTEM (LEOPS)

was established on July 2, 1990 and is administered in accordance with the State Personnel and Pensions Article of the Annotated Code of Maryland. Membership in the LEOPS is a condition of employment for all uniformed law enforcement officers of the Maryland State Department of Natural Resources; the Maryland Investigative Services Unit; the Maryland Transportation Authority Police Force; the Baltimore City Sheriff's Department; the State Fire Marshall's Office; the University System of Maryland Police Force; Morgan University Police Force; the BWI Airport Fire and Rescue Department; the Department of General Services Police Force; the Department of Health and Mental Hygiene; the Motor Vehicle Administration; and the Department of Labor, Licensing, and Regulation; the State Department of Elections; Field Enforcement Bureau; and warrant apprehension unit of the Division of Parole and Probation. In addition, membership also includes firefighters for Martin's Airport Aviators employed by the Department of State Police. Finally, membership includes law enforcement officers, firefighters, and paramedics employed by a governmental unit that elects to participate in LEOPS.

The LEOPS consists of two separate components — a retirement plan (closed to new members January 1, 2005) and a pension plan. Retirement plan provisions are applicable to those officers

who, on the date they elected to participate in the LEOPS, were members of ERS (closed as of January 1, 2005). Pension plan provisions are applicable to all other LEOPS members.

Member Contributions

All member contributions to the LEOPS are based on the members' annual earnable compensation. Members subject to retirement plan provisions that elected to receive unlimited future COLAs contribute 7%. This option is referred to as Selection A (Unlimited COLA).

Members subject to retirement plan provisions that elected to receive limited future COLAs contribute 5%. This option is referred to as Selection B (Limited COLA).

Beginning July 1, 2011, members subject to pension plan provisions contribute 6% of annual earnable compensation during employment. Beginning July 1, 2012, member contributions will increase to 7% of earnable compensation.

Service Retirement Allowances

Eligibility — LEOPS members are eligible for full service retirement allowances upon attaining age 50 or upon accumulating 25 years of eligibility service regardless of age.

Allowances — For members subject to the retirement plan provisions, full service retirement allowances equal 2.3% of AFC for the first 30 years of creditable service, plus 1.0% of AFC for each additional year.

For members subject to the pension system provisions who became members of LEOPS on or before June 30, 2011, full service pension allowances equal 2.0% of AFC for the three highest consecutive years as an employee, up to a maximum benefit of 60% of AFC (30 years of credit). For members subject to the pension system provisions who become members of LEOPS on or after July 1, 2011, full service pension allowances equal 2.0% of AFC for the five highest consecutive years as an employee, up to a maximum benefit of 60% of AFC (30 years of credit)

Allowances for members who fail to make all required contributions are reduced by the actuarial equivalent of the total unpaid contributions plus interest to the date of retirement.

Early Retirement Allowances

Eligibility — LEOPS members are not eligible for early service retirement allowances.

Ordinary Disability Retirement Allowances

Eligibility — LEOPS members are eligible for ordinary disability retirement allowances upon completing five years of eligibility service and receiving Medical Board certification as to their permanent incapacity to perform their necessary job functions.

Allowances — Ordinary disability retirement allowances for LEOPS members subject to retirement plan provisions equal the greater of the normal service retirement allowance or 25% of AFC.

Ordinary disability retirement allowances for LEOPS members subject to pension plan provisions equal the full service pension allowance if the member is at least age 50 on the date of retirement. Otherwise, the allowances equal full service pension allowances computed as though the member had continued to work until age 50 without any change in the rate of earnable compensation.

Accidental Disability Retirement Allowances

Eligibility — LEOPS members are eligible for accidental disability benefits if the Medical Board certifies that they became totally and permanently incapacitated for duty arising out of or in the actual performance of duty.

Allowances — Accidental disability allowances equal the sum of an annuity determined as the actuarial value of the members' accumulated contributions, and 2/3 (66.7%) of AFC. Allowances may not exceed the members' AFC.

Ordinary Death Benefits

Eligibility — To be eligible for ordinary death benefits, LEOPS members must have accumulated at least one but less than two years of eligibility service prior to the date of death.

Benefits — The ordinary death benefit equals the members' annual earnable compensation at the time of death plus accumulated contributions.

Special Death Benefits

Eligibility — To be eligible for special death benefits, LEOPS members in service must have accumulated at least two years of eligibility service prior to the date of death or died in the line of duty.

Benefits — The special death benefit provided upon death for LEOPS members in service equals 50% of the applicable ordinary disability allowance. In cases where the deceased members are not survived by a spouse, the decedents' children, if any, will continue to receive the special death benefit until the youngest child reaches age 26. The special death benefit for officers killed in the line of duty is 2/3 (66.7%) of AFC.

Survivor Benefits

Eligibility — To be eligible for survivor benefits, LEOPS retiree must have retired on either a service retirement allowance or a disability allowance.

Benefits — The survivor benefit provided upon death for LEOPS retiree equals 50% of the retiree' retirement allowance, paid as an annuity. In cases where the deceased members are not survived by a spouse, the decedents' children, if any, will continue to receive 50% of the retiree' allowance until the youngest child reaches age 18.

Vested Pension Allowances

Eligibility — Members who join LEOPS on or before June 30, 2011, are eligible for vested pension allowances after separation from service and upon attaining age 50, provided that they accumulated at least five years of eligibility service prior to separation. Members who join LEOPS on or after July 1, 2011, are eligible for vested pension allowances after separation from service and upon attaining age 50, provided that they accumulated at least 10 years of eligibility service prior to separation.

Allowances — Vested allowances equal the normal service retirement or pension allowances computed on the basis of the members' accumulated creditable service and AFC at the date of separation.

Cost-of-Living Adjustments

Retirement allowances are adjusted each year based on the Consumer Price Index. COLAs are effective July 1st of each year and are applied to all allowances payable for the year. For LEOPS members subject to retirement plan provisions, annual COLAs are determined under the various methods applicable to ERS members. Each method is explained below:

Selection A (Unlimited COLA) —LEOPS members who elected Selection A (while enrolled in the ERS), agreed to contribute 7% of earnable compensation in return for unlimited annual COLAs after retirement.

Selection B (Limited COLA) — LEOPS members who elected Selection B (while enrolled in the ERS), agreed to contribute no more than 5% of earnable compensation in return for COLAs which are limited to 5% annually after retirement.

For all other LEOPS members, the annual COLA for retirement allowances attributable to service earned on or before June 30, 2011, is limited to 3% of the annual allowance. For retirement allowances attributable to service earned on or after July 1, 2011, the adjustment is capped at the lesser of 2.5% or the increase in CPI if the most recent calendar year market value rate of return was greater than or equal to the assumed rate. For fiscal year 2013, the assumed rate of return is 7.75%, as approved by the Board of Trustees. The adjustment is capped at the lesser of 1% or the increase in CPI if, for fiscal year 2013, the market value return was less than the assumed rate of 7.75%.

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.

Optional Forms of Payment

Generally, LEOPS retirement allowances are paid as a 50% joint and survivor annuity to the retiree' spouse, or if there is no spouse, to any child under age 18. If the retiree have neither a living spouse nor children under 18 at retirement, the retiree may select any one of the following six payment options.

Option 1: Payment guarantees a cash reserve equal to the excess of the present value of the retirement allowance at the date of retirement minus the total amount of payments (less COLAs) made to the date of death.

Option 2: 100% joint and survivor annuity.

Option 3: 50% joint and survivor annuity.

Option 4: Payment guarantees a minimum return of the members' accumulated contributions.

Option 5: 100% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Option 6: 50% joint and survivor annuity with adjustment to maximum benefit if beneficiary predeceases retiree.

Except for a spouse or disabled child, the beneficiary designated under Option 2 or 5 cannot be more than 10 years younger than the retiree (IRS regulation).

Workers' Compensation Benefits Reduction

Disability retirement allowances are generally reduced by workers' compensation benefits paid after retirement if, and to the extent that, such benefits are for the same injury and the same period of time for which the retirement benefits are payable. The workers' compensation benefit reduction cannot reduce any retirement allowance to less than the amount necessary to cover the retiree' monthly health insurance premiums.

Deferred Retirement Option Program

LEOPS members are eligible to participate in a Deferred Retirement Option Program (DROP). To participate, the LEOPS member must have at least 25 years of creditable service, but less than 30 years. The maximum period of participation is 5 years. For members who enter the DROP on or before June 30, 2011, the LEOPS member is deemed retired and the retirement allowance is placed in an account earning 6% interest per year, compounded monthly. For members who enter the DROP on or after July 1, 2011, the LEOPS 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 LEOPS retiree. The LEOPS member must end employment and fully retire at the end of the DROP period..

STRIPS

