# EMPLOYEES' RETIREMENT SYSTEM

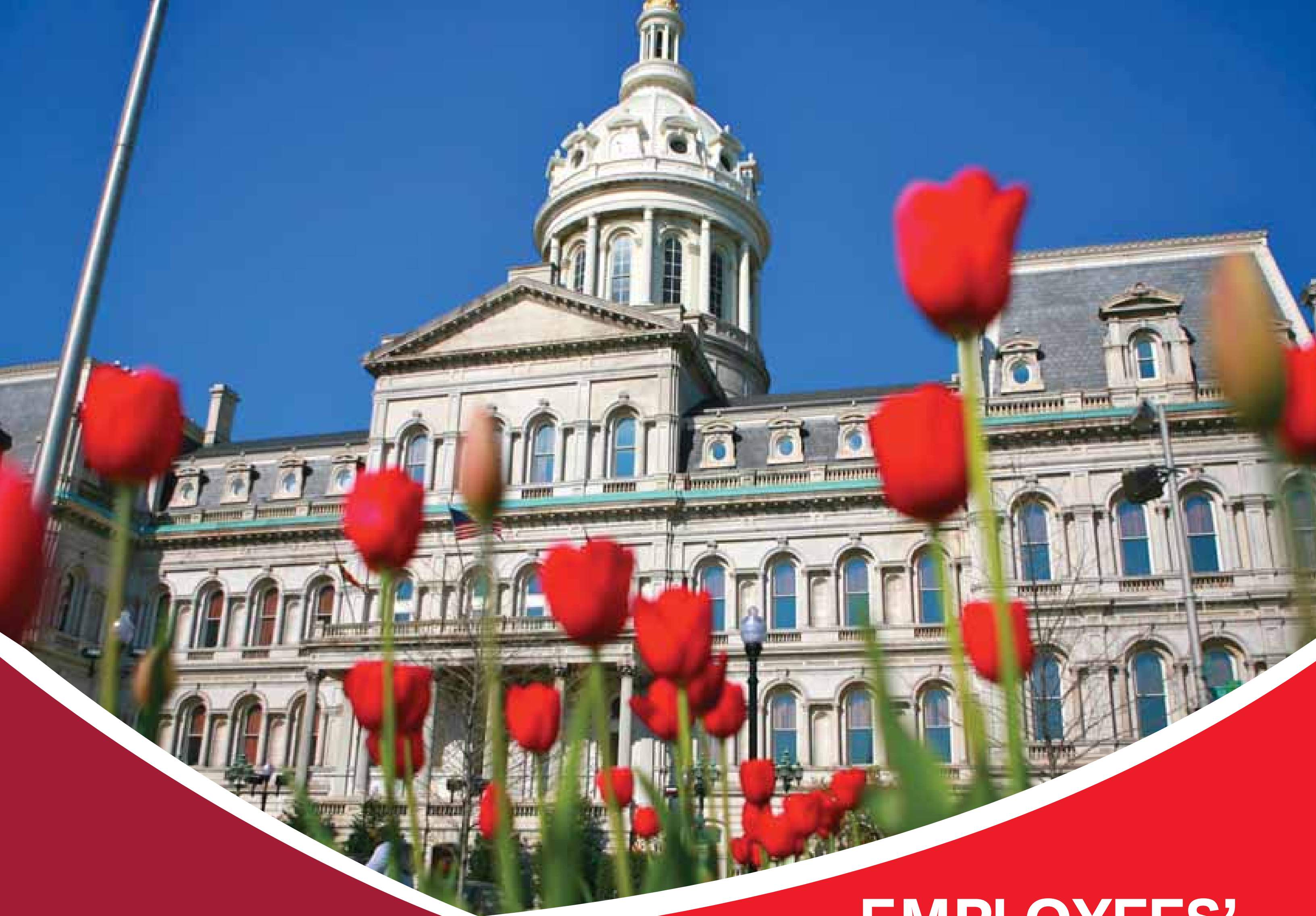
City of Baltimore, Maryland

## COMPREHENSIVE ANNUAL FINANCIAL REPORT

Year Ended June 30, 2017

A Pension Trust of
the City of Baltimore

ERS
EMPLOYEES' RETIREMENT SYSTEM
of the CITY OF BALTIMORE



# EMPLOYEES' RETIREMENT SYSTEM

## City of Baltimore, Maryland

COMPREHENSIVE ANNUAL FINANCIAL REPORT
Year Ended June 30, 2017

A Pension Trust of the City of Baltimore


**PREPARED BY**

**ROSELYN SPENCER**
EXECUTIVE DIRECTOR

**ADETUTU TALABI**
ACCOUNTING MANAGER


ERS
EMPLOYEES' RETIREMENT SYSTEM
of the CITY OF BALTIMORE

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# Employees' Retirement System

## Mission Statement

The System is committed to protecting and prudently investing member assets and providing accurate and timely retirement benefits with quality service to members and beneficiaries.

## Standards of Conduct

As Trustees and Staff, we are committed to:

Safeguard the members' assets.

Strive for continuous improvement.

Maintain confidentiality as appropriate.

Effectively communicate accurate information.

Provide accountable and proactive leadership.

Conduct all business in a fair and respectful manner.

Foster an atmosphere of cooperation and teamwork.

Value members as clients and advocate on their behalf.

Comply with the System's plan provisions, policies and guidelines.

Work efficiently, simplify procedures, and minimize bureaucratic hurdles.

Form alliances and partnerships to benefit the membership and the System.

*We expect all who interact with us to adhere to these standards of conduct.*

Approved by the Board of Trustees February 12, 2002

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# Introductory Section

Government Finance Officers Association

# Certificate of Achievement for Excellence in Financial Reporting

Presented to

**Employees' Retirement System**

**City of Baltimore, Maryland**

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

**June 30, 2016**

Christopher P. Morrill

Executive Director/CEO

CITY OF BALTIMORE
CATHERINE E. PUGH, Mayor

EMPLOYEES' RETIREMENT SYSTEM and
ELECTED OFFICIALS' RETIREMENT SYSTEM
ROSELYN H. SPENCER, Executive Director
7 E. Redwood Street
12th and 13th Floors
Baltimore, Maryland 21202

November 30, 2017

The Board of Trustees and
Members of the Employees' Retirement System
Baltimore, Maryland

It is my pleasure to present the Comprehensive Annual Financial Report (CAFR) of the Employees' Retirement System of the City of Baltimore, Maryland (ERS, System, and Plan) a pension trust of the City of Baltimore, Maryland (City) for the fiscal year ended June 30, 2017. The System's administration is responsible for the accuracy of the data and the completeness of the presentation, including all disclosures. We believe the enclosed data is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of the System's operations.

For financial reporting purposes, the System utilizes accounting principles generally accepted in the United States, which requires that management provide a narrative introduction, overview and analysis of the financial statements of the System in the form of a Management Discussion and Analysis (MD&A).The System applies all applicable pronouncements of the Government Accounting Standard Board (GASB). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it. The MD&A can be found immediately following the Independent Auditor's Report in the Financial Section, on page 18.

## Profile of the Plan

The ERS is a defined benefit contributory plan established January 1, 1926 by legislation, for eligible members who are employed in the general administrative service of the City and for certain non-teacher employees of the Baltimore City Public School System. All System-related administrative and benefit provisions are established by City Ordinance, as contained in Article 22 of the Baltimore City Code, and are amended only by the Mayor and City Council. A summary of Plan provisions is presented on pages 70 through 78. The number of active, retired and deferred members, as well as beneficiaries of the Plan can be found in the Notes to Basic Financial Statements starting on page 25.

## Major Initiatives

There were two technical undertakings during the year. Also, we are continuing to implement two multi-year legislative mandates: member contributions that are intended to provide cost savings to the City and changes in the actuarial return assumption rate.

*Enhanced Document Imaging*: The system's document imaging program was enhanced with the implementation of Microsoft SharePoint. The application will integrate with PensionPro the in-house records management system, to give staff in general, one-click access to members' digital files. This is expected to become the primary source of retrieving member's records. Advantages of this system include security, multi-user access, audit trail and lockdown of high profile and federally regulated record types, *inter alia*. The ERS Board Room has been fitted with a state-of-the-art, user-friendly audio/visual system. Some features of the system include video conferencing and presentation. The system is virtually plug-and-play with most setups and control available at a push of a panel button.

*Recap of Legislative Mandate*: Ordinance 16-488 was signed into law on June 21, 2016. The Ordinance changed the assumed interest rate for the Plan investments for fiscal years ending 6/30/16 and 6/30/17 from 7.75% (for assets covering active members), and 6.55% (for assets covering the liabilities of retired members) to 7.50% (pre-retirement) and 6.50% (post-retirement). In fiscal year ending on 6/30/18 and thereafter, the assumed interest rate will be 7.00% (pre-retirement) and 6.50% (post-retirement).

*“Class C” Member’s contributions* intended to provide cost savings to the City remained at 3% during the 2017 fiscal year. Contribution rate for “Class C” members will increase to 4.0% of pay for fiscal year 2018, and will continue for another year at 1.0% to cap at 5.0%for fiscal year 2019.

## Financial and Economic Summary

The Fund portfolios benefited from strong performance in the domestic and international stock markets, earning double digit returns. Post U.S. election expectations for large capital spending, pro-business policies, strong essential economic conditions, dovish central banks policies, low inflation and low volatility. all contributed to the strong financial markets.

Geopolitical events such as global presidential elections (France, Germany & Denmark) and BREXIT (in the United Kingdom) seem to be mere hiccups, and having little to no impact on the markets. On the other hand, Central Banks globally synchronizing action of less intervention and maintaining low interest rates added to strengthening other currencies against a strong U.S. dollar. In emerging markets, better governance, strong GDP growth and ample liquidity drove stock prices up to record highs.

All assets classes in the ERS allocation benefited from the strong markets by generating top quartile returns with emerging markets leading the way at 26.8%. Domestic and international equities returned 17.50% and 20.6% respectively. Private markets, hedge funds and real estate outperformed their respective benchmarks for the year. With a slight increase in the 10-year Treasury yields, the Fund fixed income investments posted a 1.2% return against (0.3)% in the Barclay’s aggregate index.

ERS investments ended the June 30, 2017 fiscal year with strong performance of 11.8%, an increase of 8.6% over the 2016 return of 3.2%. This return also outperformed the System’s policy benchmark of 11% and ranked ERS close to medium in the 60th percentile among its peers.

Total plan net position grew by $110.0 million or 7.26%, to $1,627.0 billion, as compared to the 2016 fiscal year decrease of $15.0 million. Plan assets remained broadly diversified to facilitate portfolio risk mitigation while contributing to performance returns. Positive contributions to performance came mostly from returns in domestic small and mid class equities and from international equities.

## Investment Summary

The System’s investment objective is to earn or exceed the actuarial assumption rate of 7.50%, or to outperform its policy benchmark. The Board of Trustees (Board) who serves as fiduciary is responsible for investment of the System’s assets in accordance with the approved asset allocation. Asset allocation for investment of the Plan’s assets is comprised of: 22% fixed income, 30% US equity, 17% non-US equity, 3% defensive equity, 2% absolute return (hedge funds), 13% real estate and 13% private equity. The Board is also responsible for: establishing reasonable investment objectives and policy guidelines, selecting investment managers and evaluating performance results to assure adherence to guidelines, and achievement of the System’s objectives. The Board has a fiduciary duty to exercise its investment authority prudently and solely in the interest of the System’s participants and beneficiaries.

The System outperformed its policy benchmark for the fiscal year by 0.8%. Strong market sentiment and performance in all asset classes were responsible for the System’s strong overall performance of 11.8% for the fiscal year. ERS’ diverse investment strategy which is designed to maximize returns for the long-term is on the right track for achieving its objective. Current investment performance for the three and five year periods is also strong with annualized returns at 6.6% and 9.6%, respectively. The Board utilizes external portfolio managers in active and passive strategies for investment of the System’s assets. The managers are monitored and evaluated by the Board and its investment consultant, Marquette Associates, Inc. (Marquette), who provides the Board with monthly and annual evaluation reports. A summary of their annual analysis and the target asset allocation is found on pages 45 to 52 in the Investment Section of this report. Please refer to the MD&A for more investment and financial analysis.

## Actuarial and Funding Results

An actuarial valuation report is prepared annually by the Board's Actuary to apply appropriate assumptions and determine funding requirements. As of June 30, 2017 the System's market value of assets increased from $1,517 million to $1,627 million or a 7.26% increase over the 2016 value of assets. The assets were insufficient to offset the Total Pension Liability (TPL) of $2,360 million as of June 30, 2017 resulting in a Net Pension Liability (NPL) of $733 million as provided on *page 35*. This represents a decrease of $78 million in NPL from 2016. Investment gains contributed to the decrease. The NPL is the difference between the Total Pension Liabilities (TPL) less the Plan Fiduciary Net Position (FNP). All data related to GASB 67 is provided in the required supplemental section and in the financial notes.

For funding purposes, the actuarial liability was $2,360 million based on a discount rate assumption of 7.50% for active members and 6.50% for retired members. The actuarial value of assets, which is a smoothed asset value used for funding purposes was $1,715 million as of June 30, 2017. When compared to the actuarial liability, there was an unfunded actuarial liability of $644 million. The System's funded ratio, which is the ratio of actuarial assets to actuarial liability, increased from 71% last year to 73%.

Normal cost, which is the cost for earning an additional year of pension service, also decreased from 7.48% to 7.40%. The fixed 20-year amortization period of 100% funding scheduled through the plan year beginning July 1, 2031, is now in the sixth year, with 14 years of amortization periods remaining.

The required employer contribution is determined actuarially, based on the normal cost of accrual of benefits and amortization of the unfunded actuarial liability offset by employee contributions. The recommended net lump sum City contribution increased by $2.3 million; from $87,541,882 for fiscal year 2017, to $89,866,171 for fiscal year 2018. Overall, this represents an increase in cost as a percentage of pay from 21.91% to 22.98% of pay.

## Accounting Systems and Internal Control

This report has been prepared in accordance with the principles of governmental accounting and reporting promulgated by GASB. The accrual basis of accounting is used to record assets and liabilities, and revenues and expenses. Revenues for the ERS are recorded when earned regardless of the date of collection, and expenses are recorded when liabilities are incurred regardless of when payment is made.

The System's administration assumes full responsibility for establishing and maintaining adequate internal controls and for the financial information contained in this report. Proper internal accounting and control exists to provide reasonable, but not absolute, assurance regarding the security of assets and the fair presentation of the financial statements and supporting schedules. Documented procedures, use of control cycles of work duties and other internal control policies are available for major job functions and operating processes. They are implemented thoughtfully and consistently. Management also understands that in executing reasonable assurance of an internal control framework, the cost of control should not exceed the anticipated benefits, and that the reasonable cost benefit framework requires management to make some estimates and/ or justifications.

## Other Information

*Independent Auditor:* The Baltimore City Code requires that the City's Board of Estimates select an independent auditor for the Retirement System, and that the auditor report findings annually to the Board of Estimates and to the Board of Trustees. The Board of Estimates elected to have CliftonLarsonAllen render an opinion as to the fairness of the System's financial statements. The auditor's report is contained in the Financial Section of this report.

*Professional Services:* The Board appoints consultants and investment managers, subject to approval by the City's Board of Estimates. These professionals are chosen based on their ability to provide services that are essential to the effective and efficient operation of the System. Trustees are also required to monitor and terminate investment managers as necessary for underperformance, or for other material reasons as determined by the Board. All of the professionals that provide services to the Board are listed on pages 13 and 56 through 57 in the Introductory and Investment Sections of this report.

## Awards and Acknowledgements

The Government Finance Officers Association of the United States and Canada (GFOA) awarded ERS a Certificate of Achievement for Excellence in Financial Reporting for its Comprehensive Annual Financial Report for the fiscal year ended June 30, 2016. This was the 34th consecutive year (fiscal years 1983-2016) that the ERS has received this prestigious award. A Certificate of Achievement is valid for a period of one year only. We believe that our current 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.

The annual report was prepared by the System's staff, with contributions from our investment consultant Marquette Associates, Inc., and actuary, Cheiron, Inc. It is intended to provide complete and reliable information as a basis for making management decisions, and as a means of determining compliance with legal provisions. Copies of this report are provided to the Elected City Officials, City Agency Heads and other interested parties. Copies are also filed with the Baltimore City Office of Legislative Reference. Other interested parties may obtain the report through the ERS website located at www.bcers.org.

Finally, I would like express my appreciation to the Board, staff and advisors for their significant contributions in overseeing the successful management of the System.

Respectfully submitted,

Roselyn H. Spencer
Executive Director

CITY OF BALTIMORE
CATHERINE E. PUGH, Mayor

EMPLOYEES' RETIREMENT SYSTEM and
ELECTED OFFICIALS' RETIREMENT SYSTEM
ROSELYN H. SPENCER, Executive Director
7 E. Redwood Street
12th and 13th Floors
Baltimore, Maryland 21202

November 30, 2017

TO: All members, Retirees, and Beneficiaries of
the City of Baltimore Employees' Retirement System (ERS)

I have some good news to share! ERS investments returned 11.8% for the fiscal year, outperforming the assumed actuary rate and the policy benchmark. This was a year of strong market growth and a good year for most pension funds including ERS. The Plan funded ratio is now at 73%. Strong investment returns contributed to the increase in the funded ratio. Eligible Retirees also received their customary annual COLA of 1.5% and 2.0% as applicable on January 1, 2017.

There was no change to the Board of Trustees line-up, which was actually a good thing. We need all hands on deck, to achieve some of the things on our agenda. From the beginning, we provided oversight of the Plan assets, by focusing on the key objective; "to first preserve and then grow the Plan assets in a prudent and cautious manner with a long term view." We adjusted the asset allocations by adding new investment strategies to allow for broader diversification and downside protection. I feel confident that the current asset allocation approved by the Board earlier in the year has positioned the Plan to meet its short and long term goals.

To assist with implementation, we added a specialized consultant to focus on complex sectors of the market such as hedge funds, Infrastructure, and other alternatives classes. This will assist the Board in making concrete decisions when it comes to complex asset classes.

Finally, my term as Chair of the Board ends on December 31, 2017, and I'm very proud of the work and accomplishments achieved with the combined efforts of my fellow Trustees. I would like to acknowledge their work and participation in handling the activities and management of the ERS. I would also like to thank them for the confidence placed in me and for the opportunity to serve as Chair. I was fortunate to have their full support and valuable contributions.

I would also like to thank the Executive Director, Roselyn Spencer and the Retirement System's staff for their tireless and never-ending commitment to servicing the Board and the Plan participants. Because of staff dedication and Board commitment, ERS is well on its way to being one of the most sustainable Plans in its sector.

Best wishes for the holidays and a prosperous New Year to all of you!

Sincerely,

Deborah F. Moore-Carter

Deborah F. Moore-Carter
Chair, Board of Trustees

Employees' Retirement System
City of Baltimore, Maryland
**BOARD OF TRUSTEES**



Both appointed and elected trustees serve four-year terms. Appointed trustees continue to serve until replaced by the Mayor, or until the expiration of two consecutive full terms. There are no limitations on the number of terms an elected trustee may serve.

**LEGAL COUNSEL, GENERAL COUNSEL, ACTUARY, AND INDEPENDENT AUDITOR**

## LEGAL COUNSEL

City of Baltimore
Law Department
Andre M. Davis, Esq.

## GENERAL COUNSEL

City of Baltimore
Employees' Retirement System
Ian Berger

## ACTUARY

Cheiron, Inc.
Kenneth Kent, FSA, FCA, MAAA, EA
Anu Patel, FSA, MAAA, EA
McLean, Virginia

## INDEPENDENT AUDITOR

CliftonLarsonAllen, LLP
Jason Ostroski, CPA

See pages 56 to 57 in the Investment Section for a list of investment professionals.
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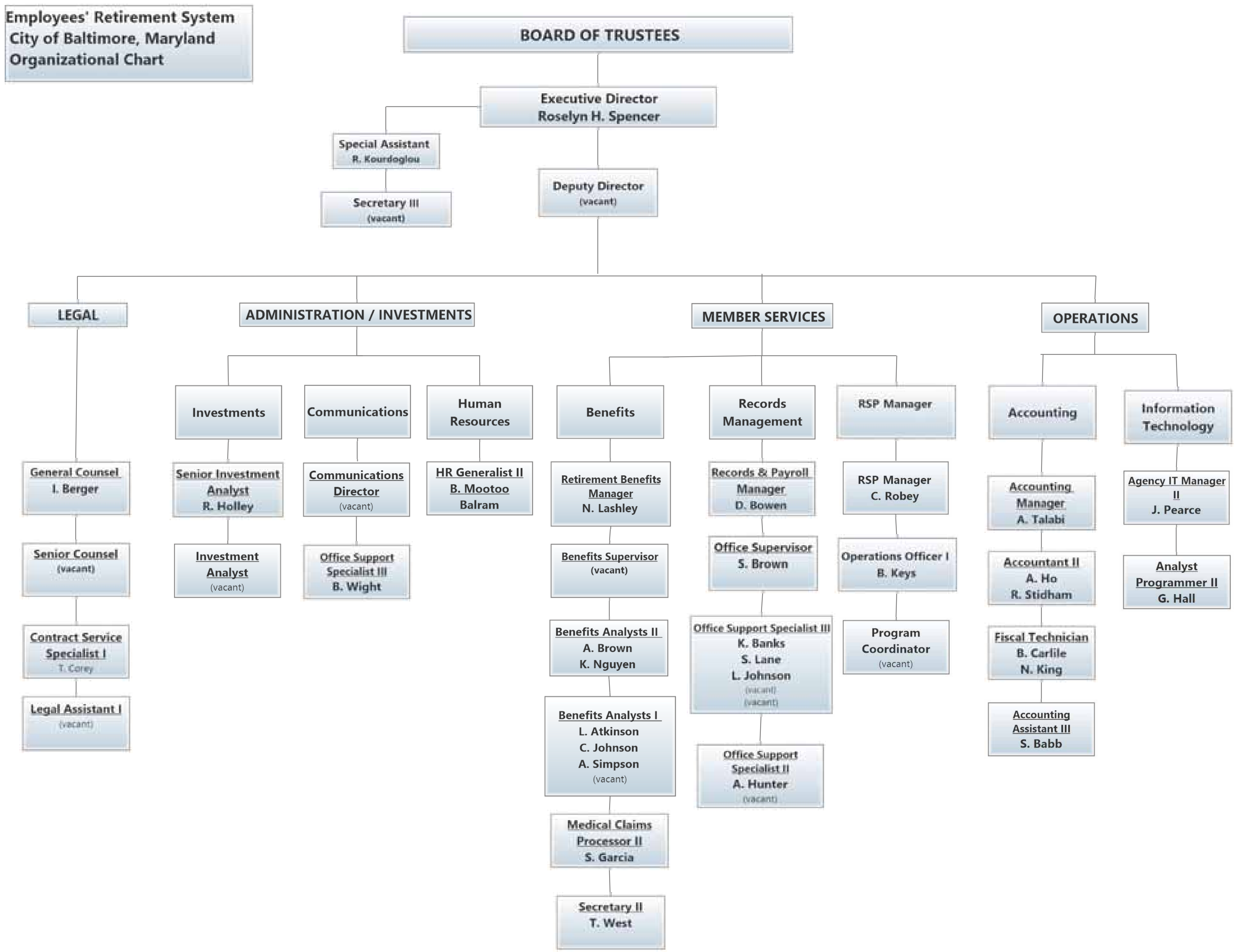
Employees' Retirement System
City of Baltimore, Maryland
Organizational Chart
BOARD OF TRUSTEES
Executive Director
Roselyn H. Spencer
Special Assistant
R. Kourdoglou
Secretary III
(vacant)
Deputy Director
(vacant)
LEGAL
General Counsel
I. Berger
Senior Counsel
(vacant)
Contract Service Specialist I
T. Corey
Legal Assistant I
(vacant)
ADMINISTRATION / INVESTMENTS
Investments
Senior Investment Analyst
R. Holley
Investment Analyst
(vacant)
Communications
Communications Director
(vacant)
Office Support Specialist III
B. Wight
Human Resources
HR Generalist II
B. Mootoo
Balram
MEMBER SERVICES
Benefits
Retirement Benefits Manager
N. Lashley
Benefits Supervisor
(vacant)
Benefits Analysts II
A. Brown
K. Nguyen
Benefits Analysts I
L. Atkinson
C. Johnson
A. Simpson
(vacant)
Medical Claims Processor II
S. Garcia
Secretary II
T. West
Records Management
Records & Payroll Manager
D. Bowen
Office Supervisor
S. Brown
Office Support Specialist III
K. Banks
S. Lane
L. Johnson
(vacant)
(vacant)
Office Support Specialist II
A. Hunter
(vacant)
RSP Manager
RSP Manager
C. Robey
Operations Officer I
B. Keys
Program Coordinator
(vacant)
OPERATIONS
Accounting
Accounting Manager
A. Talabi
Accountant II
A. Ho
R. Stidham
Fiscal Technician
B. Carlile
N. King
Accounting Assistant III
S. Babb
Information Technology
Agency IT Manager II
J. Pearce
Analyst Programmer II
G. Hall

# Financial Section

CliftonLarsonAllen LLP
CLAconnect.com

# INDEPENDENT AUDITORS' REPORT

The Honorable Joan M. Pratt, Comptroller
Other Members of the Board of Estimates of the City of Baltimore and the
Board of Trustees of the Employees' Retirement System
Baltimore, Maryland

## Report on the Financial Statements

We have audited the accompanying financial statements of the Employees' Retirement System of the City of Baltimore (the System), which comprise the statement of fiduciary net position as of June 30, 2017, and the related statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements, as listed in the table of contents.

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

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

### *Auditors' Responsibility*

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

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

### *Opinion*

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the System as of June 30, 2017, and the respective changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

### *Emphasis of Matter*

The financial statements include alternative investments valued at $284 million (18% percent of net position), and as explained in Note 2, their fair values have been estimated by management in the absence of readily determinable fair values. Management's estimates are based on information provided by the fund managers or the general partners.

A member of Nexia International

### *Other Matters*

*Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the schedules of changes in net pension liability and related ratios, employer contributions and investment returns and related notes, as listed in the table of contents, be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

*Other Information*

Our audit was conducted for the purpose of forming an opinion on the System's financial statements. The schedules of administrative expenses, investment expenses and payments to consultants, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the financial statements.

The schedules of administrative expenses, investment expenses and payments to consultants are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the financial statements. Such information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedules of administrative expenses, investment expenses and payments to consultants are fairly stated, in all material respects, in relation to the financial statements as a whole.

The introductory, investment, actuarial and statistical sections, as listed in the table of contents, have not been subjected to the auditing procedures applied in the audit of the financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

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

In accordance with *Government Auditing Standards*, we have also issued our report dated November 30, 2017 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

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**CliftonLarsonAllen LLP**

Baltimore, Maryland
November 30, 2017

We are pleased to provide this analytical overview of the financial activities of the Employees' Retirement System (ERS) for the fiscal years ended June 30, 2017 and 2016. ERS is the administrator of a cost-sharing multiple employer defined benefit local government retirement plan (the Plan). Readers are encouraged to consider the information presented here in conjunction with additional information furnished in the transmittal letter, which begins on page 7 of this report.

**Financial Highlights**

- The net position restricted for pensions at the close of the fiscal year 2017 is $1.627 billion. The net position is available to meet the Plan's ongoing obligations to plan participants and their beneficiaries.

- The Plan's total net position restricted for pensions increased by $110 million, compared to last year's decrease of $15 million. The increase was primarily due to higher investment returns.

- The time weighted rate of return for the fiscal year ended June 30, 2017 was 11.8% compared to the fiscal year ended June 30, 2016 return of 3.2%. The 8.6% increase in 2017 attributed to improved performance of all funds except fixed income and real estate. Both fixed income and real estate performed higher than the benchmark.

- The Plan's funding objective is to meet long-term benefit obligations through contributions and investment income. As of June 30, 2017, the plan's net position as a percentage of the total pension liability was 69%. In general, this indicates that the Plan has approximately $0.69 of assets to cover every dollar of benefits due.

- Revenues (Additions to Fiduciary Net Position) for the year were $258.3 million. Revenues include employer contributions of $84.5 million, plan member contributions of $10.7 million, net investment income of $162.9 million, and net securities lending income of $0.24 million.

- Expenses (Deductions from Fiduciary Net Position) increased by $5.5 million to $148.2 million from the prior year expenses of $142.7 million. The increase in expense primarily from retirement allowances and death benefits which increased by $4.8 million and $0.6 million respectively.

**Overview of Financial Statements**

The following discussions and analyses are intended to serve as an introduction to the Plan's financial statements and the financial section of this report.

The **Statement of Fiduciary Net Position** presents the Plan's assets and liabilities, as well as, the net position restricted for pensions at June 30, 2017. The assets comprise receivables, mainly from investment activities; investments at fair market value and securities lending collateral while the liabilities comprise of payables, also mainly from investment activities.

The **Statement of Changes in Fiduciary Net Position**, presents information showing how the Plan's net position changed during the year. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions are recognized when a formal commitment has been made by the City to provide the contributions. All investment gains and losses are shown at trade date. Both realized and unrealized gains and losses are shown on investments. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan.

The **Notes to Basic Financial Statements** provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes are an integral part of the financial statements and include detailed information not readily evident in the basic financial statements.

The statements and the notes are in conformity with the accounting principles generally accepted in the United States. These principles require certain financial statement presentations and disclosures including the use of the accrual basis of accounting to record assets and liabilities, as well as revenues and expenses.

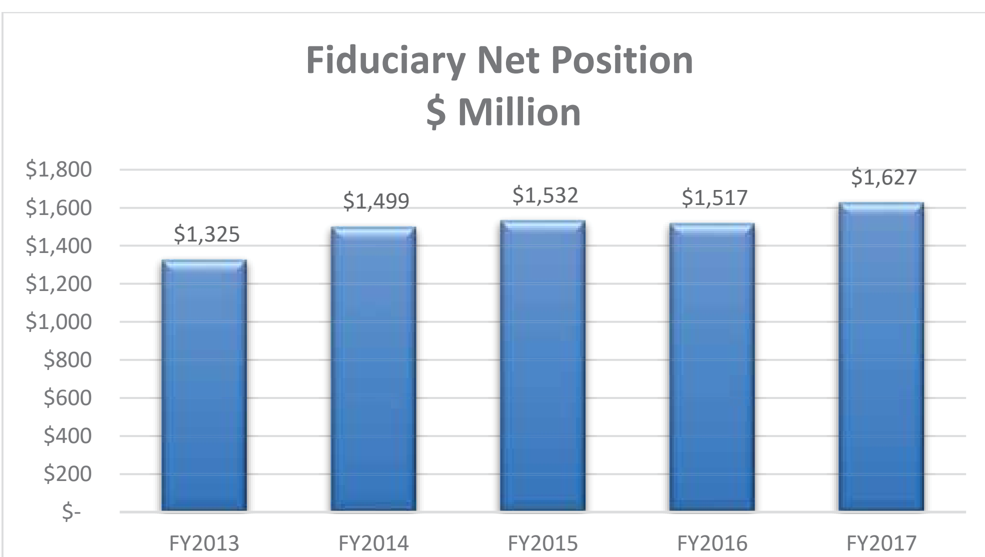
The **Statement of Fiduciary Net Position** and the **Statement of Changes in Fiduciary Net Position** can be found on pages 23 and 24 of this report.

The **Required Supplementary Information** that follows immediately after the notes to the basic financial statements include the Schedules of Changes in Net Pension Liability and Related Ratios, Employer Contributions, Investment Returns and Notes to Required Supplementary Information. See the Required Supplementary Information beginning on page 37 of this report. The remaining supplemental schedules provide additional detailed information concerning administrative expenses, investment expenses and payments to consultants. All of this information is considered useful in understanding and evaluating the financial activities of the Plan.

## Financial Analysis

Net position may serve over time as a useful indicator of the Plan's financial position. At June 30, 2017, assets exceeded liabilities by $1.627 billion. The net position is available to meet the Plan's ongoing obligation to Plan participants and their beneficiaries. As of June 30, 2017, total net position increased by 7.26% from $1.516 billion to $1.627 billion. The increase in total net position primarily from net investment income which increased by 308% when compared with last fiscal year ended June 30, 2016. Management believes that the Plan remains in a strong financial position to meet its obligations to the members, retirees, and their beneficiaries.

| Fiduciary Net Position | Fiscal Year 2017 | Fiscal Year 2016 | Increase / (Decrease) | Percentage Change |
|---|---|---|---|---|
| Investments | $1,587,514,722 | $1,529,231,600 | $58,283,122 | 3.81% |
| Other assets | 175,709,749 | 136,079,109 | 39,630,640 | 29.12% |
| Total assets | 1,763,224,471 | 1,665,310,709 | 97,913,762 | 5.88% |
| Total liabilities | 136,197,973 | 148,378,327 | (12,180,354) | -8.21% |
| **Total net position** | $1,627,026,498 | $1,516,932,382 | $110,094,116 | 7.26% |



### Investment Assets

ERS is a long-term investor and manages the Plan's assets with long-term objectives in mind. A primary element of the Plan's investment philosophy is to employ a diversification of assets as the best possible way to achieve its goals. After conducting an asset-liability study with the Plan's investment consultant, the Board of Trustees established an asset allocation plan taking into account the risk associated with each asset class as well as the financial objectives of the Plan. Investments are stated at fair value rather than at cost and include the recognition of unrealized gains and losses in the current period.

The rate of return on investments for the year ended June 30, 2017 was 11.8%, an increase of 8.6% compared to the fiscal year 2016's rate of return of 3.2%. The positive rate of return is attributable to significantly higher performance of all portfolios, compared to the previous fiscal year, with the exception of fixed income and real estate portfolios. Both fixed income and real estate outperformed the benchmark by 1.5% and 1.0% respectively. The annualized rate of return for the last three, five and ten year periods ended June 30, 2017 were 6.6%, 9.6% and 5.4% respectively. The Plan's long-term actuarial investment return assumption is 7.50%.

The Investment Section beginning on page 45 gives detailed information on the Plan's investment policies. See page 52 of this report for charts showing the asset allocation targets established by the Board of Trustees and the actual asset allocation of System assets at June 30, 2017.

### Liabilities

The liabilities are payables incurred by the transaction activity of the investment assets, securities lending, the retirement benefit expenses, and administrative expenses of the Plan.

| Changes in Fiduciary Net Position | Fiscal Year 2017 | Fiscal Year 2016 | Increase / (Decrease) | Percentage Change |
|---|---|---|---|---|
| **Additions** | | | | |
| Employer contribution | $84,474,451 | $77,100,573 | $7,373,878 | 10% |
| Employee contribution | 10,656,243 | 10,350,709 | $305,534 | 3% |
| Net investment income | 162,916,164 | 39,903,958 | 123,012,206 | 308% |
| Net Securities Lending Income | 240,674 | 356,084 | (115,410) | -32% |
| Total additions | 258,287,532 | 127,711,324 | 130,576,208 | 102% |
| **Deductions** | | | | |
| Retirement allowances | $142,957,078 | $138,184,417 | $4,772,661 | 3% |
| Death benefits | 1,225,559 | 652,743 | 572,816 | 88% |
| Refund of member's contribution | 348,412 | 235,808 | 112,604 | 48% |
| Lump Sum cash payments | 77,861 | 124,748 | (46,887) | -38% |
| Administrative expenses | 3,584,506 | 3,515,492 | 69,014 | 2% |
| Total deductions | 148,193,416 | 142,713,208 | 5,480,208 | 4% |
| **Net increases (decreases)** | $110,094,116 | ($15,001,884) | $125,096,000 | 834% |

### Contributions and Investment Income

Employer contributions increased by 10% over last year's contributions. The employer's contributions are actuarial based and are calculated two fiscal years in advance. Plan member contributions increased by $0.3 million (3.0%). The increase in net investment income of $123 million was primarily due to positive higher returns from all portfolios except fixed income and real estate, although, both outperformed their respective benchmarks. Net investment income includes investment expenses as a deduction. Investment expenses were $8.9 million for fiscal year 2017, 2.5% less than fiscal year 2016.

### Retirement Benefits and Administrative Expenses

The Plan was created to provide lifetime service retirement benefits, survivor benefits and disability benefits to eligible members and their beneficiaries. The cost of such programs includes recurring benefit payments, lump sum death benefits, payments to terminated members, and the administrative expenses of the Plan. The primary source of expense during fiscal year 2017 was for the payment of continuing retirement benefits totaling $143 million, compared to $138.2 million for fiscal year 2016. Retirement allowances increased $4.8 million due to an increase in the number of benefit recipients and the annual cost of living adjustment of 1.5% for participants under age 65 and 2.0% for participants age 65 and over.

### Requests for Information

This financial report is designed to provide a general overview of the Plan's finances and to account for the money it receives to the Board of Trustees, the Mayor and City Council, the Plan's membership and the City's taxpayers. Questions concerning any of the information provided in this report or requests for additional financial information can be addressed to: The Executive Director, Employees' Retirement System, 7 E. Redwood Street, 12th Floor, Baltimore, Maryland 21202.

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Employees' Retirement System
City of Baltimore, Maryland
**STATEMENT OF FIDUCIARY NET POSITION**
June 30, 2017

| | | |
|---|---|---|
| **Assets** | | |
| Cash and cash equivalents | | $ 104,210,228 |
| Receivables: | | |
| Investments sold | $ 46,961,709 | |
| Foreign currency contracts | 20,489,732 | |
| Accrued income | 2,713,302 | |
| Other receivables | 804,797 | |
| Total receivables | | 70,969,540 |
| Investments | | |
| Domestic equities | 565,820,313 | |
| International equities | 241,709,776 | |
| Domestic fixed income | 217,632,989 | |
| Real estate | 147,081,327 | |
| Commingled fixed income | 144,064,901 | |
| Global equities | 108,612,897 | |
| Private equities | 97,477,352 | |
| Hedge funds | 39,912,843 | |
| Total investments | | 1,562,312,398 |
| Securities lending collateral | | 25,202,323 |
| Capital assets | 2,433,747 | |
| Accumulated depreciation of capital assets | (1,903,765) | |
| Net capital assets | | 529,982 |
| Total assets | | 1,763,224,471 |
| **Liabilities** | | |
| Investments purchased | 87,527,348 | |
| Obligations under securities lending | 25,202,323 | |
| Foreign currency contracts | 20,489,732 | |
| Investment management fees payable | 1,481,243 | |
| Other accounts payable | 1,241,093 | |
| Administrative expenses payable | 256,234 | |
| Total liabilities | | 136,197,973 |
| **Net position restricted for pensions** | | $ 1,627,026,498 |

The notes to the basic financial statements are an integral part of this statement.

Employees' Retirement System
City of Baltimore, Maryland
**STATEMENT OF CHANGES IN FIDUCIARY NET POSITION**
For the Year Ended June 30, 2017

| | | |
|---|---|---|
| **Additions** | | |
| Contributions | | |
| Employers | 84,474,451 | |
| Plan members | 10,656,243 | |
| Total contributions | | 95,130,694 |
| | | |
| Investment income | | |
| Interest and dividend income | 99,449,978 | |
| Net appreciation in value of investments | 72,380,195 | |
| Less: Investment expenses | (8,914,009) | |
| Net investment income | | 162,916,164 |
| | | |
| Securities lending income | 340,857 | |
| Less: Securities lending fees | (100,183) | |
| Net securities lending income | | 240,674 |
| | | |
| Total additions | | 258,287,532 |
| | | |
| **Deductions** | | |
| Retirement allowances | 142,957,078 | |
| Death benefits | 1,225,559 | |
| Refund of members contributions | 348,412 | |
| Lump sum cash payments | 77,861 | |
| Adminstrative expenses | 3,584,506 | |
| | | |
| Total deductions | | 148,193,416 |
| | | |
| **Net increase** | | 110,094,116 |
| | | |
| **Net position restricted for pensions** | | |
| | | |
| Beginning of year | | 1,516,932,382 |
| | | |
| End of year | | 1,627,026,498 |

The notes to the basic financial statements are an intergral part of this statement.

## 1. Plan Description:

The Employees' Retirement System of the City of Baltimore (ERS) is the administrator of a cost-sharing multiple employer defined benefit local government retirement plan (the Plan). Established January 1, 1926, the Plan covers City employees and the Baltimore City Public School System employees with the exception of those required to join the Maryland State Retirement System, or the two other Baltimore City retirement systems, the Fire and Police Employees' Retirement System and the Elected Officials' Retirement System. Based on criteria established by the Governmental Accounting Standards Board, the ERS is a pension trust of the City of Baltimore and is included in the City's financial report as a Public Employees' Retirement System (PERS).

At June 30, 2017, the ERS membership consisted of:

| | |
|---|---|
| Active Plan Members | 8,043 |
| Retirees and Beneficiaries - currently receiving benefits | 9,144 |
| Terminated Plan Members - entitled to but not yet receiving benefits | 1,045 |
| Total Membership | 18,232 |

The Plan provides service retirement benefits as well as death and disability benefits in accordance with the Plan Provisions, Article 22 of the Baltimore City Code. Only the Mayor and City Council may amend the Plan Provisions. The reduction of benefits is precluded by the City Code.

The ERS Plan is divided into three Classes: A, C, and D for amendments of membership and benefit changes of the Plan Provisions.

Class "A" has 13 members. The "A" contributory class consists of all members hired prior to July 1, 1979 who did not elect to transfer to Class C, the non-contributory class. Membership was mandatory on the member's second anniversary of employment. However, the member could voluntarily enroll within the first two years of employment.

The Class "C" Plan is composed of 7,223 members and consists of all employees hired on or after July 1, 1979 who automatically become members on the first anniversary of employment, and all members hired prior to July 1, 1979 who elected to transfer from the Class "A" contributory class.

Effective July 1, 2013, Ordinance 13-144 was enacted by the Mayor and City Council introducing contributions for active ERS non-contributory members and eliminating the post retirement variable benefit increase. The Ordinance provides that effective July 1, 2013 members will contribute 1% of pay, to continue each year at 1% increments provided that 2% compensation is received for each year of contribution until employee contributions reaches 5% of compensation.

The ERS defined benefit class "C" Plan was closed to new members on June 30, 2014 to establish the City of Baltimore's Retirement Savings Plan (RSP). The RSP consist of a 401a contributory non-hybrid and a hybrid contributory defined benefit "D" Plan. The waiting period of entry for the contributory non-hybrid plan is 180 days. The hybrid contributory defined benefit Plan's waiting period is one year. Employees hired as of July 1, 2014, have 150 days of employment to select between the two Plans. Employees who do not select a Plan after 150 days of employment will automatically default into the hybrid contributory defined benefit "D" plan. The mandatory contribution to each of the Plans is 5%. Members have an option in both Plans to contribute to the City of Baltimore's 457 Deferred Compensation Plan and will receive a 50% match on the first two percent of their contributions.

The Class "D" Plan is composed of 807 members and consists of all employees hired on or after July 1, 2014.

## 2. Summary of Significant Accounting Policies:

Basis of Presentation:
For accounting and financial reporting purposes, the Plan conforms with accounting principles generally accepted in the United States and reporting standards as promulgated by the Governmental Accounting Standards Board, which designates accounting principles and financial reporting standards applicable to PERS. This report includes solely the accounts of the Plan, a pension trust of the City of Baltimore. There are no component units of the Plan based on the nature of operational or financial relationships.

Basis of Accounting:
These financial statements have been prepared on the accrual basis of accounting, whereby revenues are recorded when they are earned, expenses are recorded when liabilities are incurred, and investment purchases and sales are recorded as of their trade date. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions are recognized when due. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan.

Method Used to Value Investments:
Investments are reported at fair value. Securities traded on national or international exchanges are valued at the last reported sales price at the current exchange rates. The real estate holdings are based on the most recent appraisal (either internal to the manager or third party) as then presently available. For alternative investments, which include private equity, hedge, and risk parity funds where no readily ascertainable fair value exists, management, in consultation with the general partner and investment advisors, has determined these investments be measured at net asset value per share. The values for these investments are determined by the Plan's proportionate share of the partnership's most recent available financial information. Foreign exchange contracts are marked-to-fair value daily based on published fair value prices and quotations from national securities exchanges or securities pricing services. The changes in fair value are recognized as part of net appreciation/depreciation in the value of investments. Initial margin requirements for such financial instruments are provided by investment securities pledged as collateral or by cash.

Net investment income consists of realized and unrealized appreciation (depreciation) in the value of investments, and interest and dividend income earned, less investment expenses. Interest income is recorded on the accrual basis and dividends are recorded on the ex-dividend date. Securities and securities transactions are reflected in the financial statements on a trade-date basis. Interest income is recognized when earned. Dividend income is recorded on the ex-dividend date.

Tax Status:
The System is a tax-exempt governmental plan qualified under Section 401 and exempt under Section 501(a) of the Internal Revenue Code. IRS qualification letters have been received.

Use of Estimates in Preparing Financial Statements:
The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the Board to make estimates and assumptions that affect the reported amounts of assets, liabilities, additions, and deductions to net position held in trust for pension benefits and disclosure of contingent assets and liabilities at the date of the financial statements and during the reporting period. Actual results could differ from those estimates.

## 3. Contributions:

Article 22 of the Baltimore City Code grants the authority to establish and amend the contributions of the active plan members to the Mayor and City Council of Baltimore.

The contributions required by the Plan provisions for each membership class are as follows:

| Membership classes | Percentage of compensation |
|---|---|
| A | 4.0% |
| C | 1.0 - 5.0%* |

*Class C contributions was scheduled to be 4% for fiscal year 2017 but remained at 3% due to inconclusive union negotiatons.

The employer contributions are determined through an actuarial valuation. The valuation method is stipulated in the Plan provisions.

All contributions are transferred to BNY Mellon, the ERS custodian for safekeeping and investment.

## 4. Post retirement increases:

Post-retirement benefit increases are granted each year to eligible retirees and beneficiaries in pay status for 12 months as at year end. The minimum guaranteed benefit increase is 1.50% for participants in pay status under age 65 and 2.00% for participants in pay status age 65 and over, effective June 22, 2010. Eligible retired members and beneficiaries with a pension entry date on or before June 30, 2016 will receive the minimum guaranteed benefit increase and is payable on January 1, 2018.

## 5. Cash and Investments:

The Plan's cash deposits are covered up to statutory limits by the federal depository insurance at all times.

The Board of Trustees (the Board) is authorized by the Baltimore City Code to make investments in accordance with the guidelines and limitations set forth in the Code. The Board accomplishes the daily management of the Plan’s investments through an external investment advisor who acts as a fiduciary for the Plan and through external investment managers. The Board invests the assets of the Plan using the “prudent person standard” which allows the Board to consider the probable safety of investments, avoid speculative investments, and invest as people of prudence, discretion, and intelligence would in a similar situation. The Board has adopted an investment policy and guidelines to formally document its investment objectives and responsibilities. Investments of the Plan are held under custodial agreement with BNY Mellon Financial Corporation.

ERS Plan investments as of June 30, 2017, are listed below:

| Investment type | |
|---|---|
| Debt securities: | |
| U.S. Treasury notes and bonds | $14,313,624 |
| U.S./Canadian government agency bonds | 90,623,608 |
| Non-US government agency bonds | 17,504,765 |
| Corporate bonds | 95,190,992 |
| Commingled fixed income fund | 144,064,901 |
| Total Debt Securities | 361,697,890 |
| Equities: | |
| Domestic equities | 565,820,313 |
| International equities | 241,709,776 |
| Real estate | 147,081,327 |
| Global equities | 108,612,897 |
| Private equities | 97,477,352 |
| Hedge funds | 39,912,843 |
| Total equities | 1,200,614,508 |
| Total investments | $1,562,312,398 |

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 (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 arithmetic real rate of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2017, are summarized in the following table:

| Asset Class | Asset Allocation | Long-Term Expected Real Rate of Return |
|---|---|---|
| Domestic equity | 30% | 7.3% |
| Defensive equity | 3% | 6.8% |
| International and global equities | 17% | 7.6% |
| Domestic fixed income | 22% | 2.8% |
| Real estate | 13% | 7.4% |
| Hedge funds | 2% | 5.0% |
| Private equity | 13% | 11.1% |

***Rate of Return***

For the year ended June 30, 2017, the annual money-weighted rate of return of the Plan was 11.7%. The money-weighted rate of return expresses the Plan's investment performance, net of investment expense, adjusted for the changing amounts actually invested.

***Interest Rate Risk***

Interest rate risk is the risk that changes in interest rates of debt investments will adversely affect the fair value of investments. The Plan has selected the duration method to disclose the debt securities exposure to changes in interest rates for all debt securities. The duration years for the commingled fixed income funds are not available. The Plan fixed income interest rate policy limits the average duration of the portfolio within one to two years of the Barclay's Capital Bond index benchmark.

| Investment Type | Fair Value | Option Adjusted Duration (in years) |
|---|---|---|
| Debt Securities: | | |
| US Treasury Notes and Bonds | $ 14,313,624 | 12.06 |
| US/Canadian Government Agency Bonds | 90,623,608 | 2.74 |
| Non-US Government Bonds and agencies | 17,504,765 | 4.07 |
| Corporate Bonds | 95,190,992 | 3.32 |
| Commingled fixed income* | 144,064,901 | |
| Total Debt Securities | $ 361,697,890 | |

*Commingled fixed income fund duration is not available.

### *Credit Risk by Quality*

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligation. The Board has not adopted a formal policy to limit credit risk. ERS-rated debt investments as of June 30, 2017, were rated by Standard & Poor's (S&P) and for securities with no S&P rating, the Moody's quality ratings were used.

| | Investments at Fair Value / Credit Risk by Quality Rating | | | | | |
|---|---|---|---|---|---|---|
| Investment Type | AAA-A | BBB-B | CCC-C | DDD-D | Not Rated | Total |
| US Treasury Notes and Bonds | $ 14,302,815 | $ - | $ - | $ - | $ 10,809 | $ 14,313,624 |
| US/Canadian Government Agency Bonds | 50,637,068 | 448,399 | - | - | 39,538,141 | 90,623,608 |
| Non-US Government Bonds and agencies | 11,728,306 | 3,677,484 | - | - | 2,098,975 | 17,504,765 |
| Corporate Bonds | 39,851,008 | 52,482,305 | 308,326 | 1,407,989 | 1,141,364 | 95,190,992 |
| Commingled fixed Income | - | - | - | - | 144,064,901 | 144,064,901 |
| Total debt Securities | $ 116,519,197 | $ 56,608,188 | $ 308,326 | $ 1,407,989 | $ 186,854,190 | $ 361,697,890 |

### *Foreign Currency Exposure Risk*

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. At June 30, 2017, the Employees' Retirement System did not hold any hedging foreign investment positions. ERS does not have a formal policy to limit foreign currency risk.

ERS foreign currency risk at June 30, 2017 is presented in the following table:

| Currency | Total |
|---|---|
| Australian Dollar | $ 10,019,091 |
| Brazil Real | 903,969 |
| Canadian Dollar | 13,871,227 |
| Chilean Peso | 412,174 |
| Colombian Peso | 531,652 |
| Czech Koruna | 186,394 |
| Danish Krone | 1,494,927 |
| Euro Currency Unit | 57,483,412 |
| Hong Kong Dollar | 12,050,154 |
| Hungarian Forint | 170,421 |
| Indian Rupee | 597,126 |
| Indonesian Rupiah | 2,195,590 |
| Japanese Yen | 31,578,264 |
| Malaysian Ringgit | 190,563 |
| Mexican Peso | 3,918,975 |
| New Zealand Dollar | 1,220,727 |
| Norwegian Krone | 1,430,657 |
| Peruvian Sol | 163,616 |
| Philippines Peso | 1,373,876 |
| Polish Zloty | 356,107 |
| Pound Sterling | 31,168,444 |
| Singapore Dollar | 9,509,692 |
| South African Rand | 4,173,486 |
| Swedish Krona | 8,893,725 |
| Swiss Franc | 9,672,798 |
| Turkish Lira | 633,429 |
| Total Foreign Currency Exposure | 204,200,496 |

### *Concentration of Credit Risk*

Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer. As of June 30, 2017, the ERS has no single issuer that exceeds 5% of total investments. Investments issued or explicitly guaranteed by the U.S. Government and investments in mutual funds, external investment pools, and other pooled investments are excluded.

### *Fair Value Measurements*

The Plan categorizes their fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and give the highest priority to unadjusted quoted prices in active markets for identical assets (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements).

| | |
|---|---|
| Level 1 | Unadjusted quoted prices for identical instruments in active markets. |
| Level 2 | Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable. |
| Level 3 | Valuations derived from valuation techniques in which significant inputs are unobservable. |

Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. The Plan's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset. The table on page 31 shows the fair value leveling on the investments for the Plan.

Equity securities classified in Level 1 are valued using prices quoted in active markets for those securities. Debt securities classified in Level 1, Level 2 and Level 3 are valued using either a bid evaluation, mid evaluation, last trade or official close. Bid evaluations are an estimated price at which a dealer would pay for a security. Mid evaluations are when a bid and ask evaluation are both present. Last trade is the most recent trade price of a security at market close time. Official close is the closing price as defined by the exchange.

The Employees' Retirement System's invested assets measured at fair value as at June 30, 2017 are presented below:

| Investments by fair value level | Base Amount | 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. Treasury Notes and Bonds | $ 14,313,624 | $ 14,313,624 | $ - | $ - |
| U.S./Canadian Govt Agency Bonds | 90,623,608 | - | 90,623,608 | - |
| Non-US Govt Agency Bonds | 17,504,765 | - | 17,504,765 | - |
| Corporate Bonds | 95,190,992 | 2,233,633 | 86,791,438 | 6,165,921 |
| Total debt securities at fair value level | 217,632,989 | 16,547,257 | 194,919,811 | 6,165,921 |
| Equity securities | | | | |
| Domestic equities | 338,482,759 | 338,482,759 | - | - |
| International equities | 187,524,580 | 187,524,580 | - | - |
| Global equities | 108,612,897 | 108,612,897 | - | - |
| Total equity securities at fair value level | 634,620,236 | 634,620,236 | - | - |
| Total investments by fair value level | 852,253,225 | | | |
| Investments measured at the net asset value (NAV) | | | | |
| Domestic equities | 227,337,555 | | | |
| Real estate | 147,081,327 | | | |
| Commingled fixed income | 144,064,901 | | | |
| Private equity | 97,477,352 | | | |
| International equities | 54,185,195 | | | |
| Hedge funds | 39,912,843 | | | |
| Total investments measured at the NAV | 710,059,173 | | | |
| Total investments | $ 1,562,312,398 | | | |
| Investment derivative instruments | | | | |
| Foreign currency contract receivable | 20,492,349 | - | 20,492,349 | - |
| Foreign currency contract payable | (20,971,090) | - | (20,971,090) | - |
| Total investment derivative instruments | $ (478,741) | | (478,741) | |

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

| Investment Measured at the Net Asset Value (NAV) | | Unfunded Commitments | Redemption Frequency | Redemption Notice Period |
|---|---|---|---|---|
| Domestic equities | $ 227,337,555 | $ - | Daily, weekly & monthly | N/A, 0 - 30 days |
| Real estate funds | 147,081,327 | - | Not eligible, quarterly | 90-100 days |
| Comingled fixed income | 144,064,901 | - | Daily, weekly & monthly | N/A, 0 - 30 days |
| Private equity | 97,477,352 | 34,543,146 | Not eligible | N/A, 0 - 30 days |
| International equities | 54,185,195 | - | Daily, weekly & monthly | N/A, 0 - 30 days |
| Hedge funds | 39,912,843 | - | Daily, quarterly, annual, semi-annual | 90-100 days |
| Total investments measured at the NAV | $ 710,059,173 | $ 34,543,146 | | |

(1) Commingled fixed income fund is in high quality corporate bond securities with long durations in line with the profile of invested funds. A fundamentals-based, quantitative credit modeling process is used to screen out riskier securities and determine credit quality.

(2) Domestic equity investments include funds that are actively managed. The Funds invest in stocks of small, mid and large capilizations. The funds seek to outperform the S&P 500 index while maintaining a similar level of market risk over the long term.

(3) International equity investments is also in actively managed funds. About half of the investments are is in securities where rigorous dividend discount analysis is used to identify value in terms of long term flow of income. The other half of the investments are in funds which employs strategy that seeks to outperform the MSCI World index (half-hedged) while maintaining a similar level of market risk over the long term.

(4)The System's real estate investments consist of 2 core real estate funds and 2 real estate partnerships. The real estate partnerships consist of non-core, value added and opportunistic strategies. For the most part, the real estate investments are illiquid and redemptions are restricted, however the core funds of $142 million are liquid, the redemption frequency is quarterly, and a 90- 100 days notice period.

(5) The system's hedge fund investment is in a multi strategy fund. The fund has a deep and thorough research process that is harnessed trough a dynamic risk budgeting framework. The investment is eligible for redemption with a 90-100 days notice period.

(6)The System's private equity investments consist of 12 funds, invested in Diversified, Venture Capital, Distressed Debt, Buyouts, International and Special Situations strategies. These investments are considered illiquid as redemptions are restricted over the life of the investment.

## 6. Securities Lending:

The Plan has a Securities Lending Authorization Agreement with BNY Mellon Bank (the Custodian). All individual securities which are readily marketable and which are not restricted due to an outstanding short option are eligible for loan at the discretion of the Custodian. Investment managers may loan securities held in custody of commingled accounts if authorized in the manager's contract with the ERS.

Collateral received in exchange for securities loaned is collected in an escrow account for the Plan's benefit for the duration of the loan. At no time, will the Plan lose custody of the loaned securities. Collateral in exchange for the principal loaned may be in the form of cash, or securities issued or guaranteed by the U.S. government, its agencies, or instrumentalities. Irrevocable Letters of Credit from banks approved by the Custodian may not be used as collateral. The minimum levels of collateral will be set at 102% of the fair value of domestic securities loaned, including all accrued income, and 105% of the fair value of international securities loaned, including all accrued income. If the fair value of the collateral falls below 100% of the loaned securities, additional collateral will be collected to maintain the appropriate minimum level. All collateral amounts are marked daily. As of June 30, 2017, the maturities of the investments made with the cash collateral are not matched to the maturities of securities loans. The Plan does not have the right to sell or pledge securities received as collateral without borrower default.

At June 30, 2017, the Plan had no credit risk exposure to borrowers because the amounts the Plan owes borrowers exceeded the amounts the borrowers owed the Plan. The fair value of securities on loan at June 30, 2017 was $51,262,414 and the fair value of the collateral received for those securities on loan was $52,753,515. The Plan did not impose any restrictions during the fiscal year on the amount of loans the Custodian made on its behalf.

The terms of the Securities Lending Authorization Agreement require that the Custodian indemnify the Plan against: (1) the failure to demand adequate and appropriate collateral from a borrower; (2) the failure to comply with the investment guidelines in connection with the investment and reinvestment of cash collateral; (3) the failure to obtain and perfect a security interest or rights equivalent thereto in and to the collateral; and (4) the failure to make a reasonable determination of the creditworthiness of any borrower. There were no such failures by any borrowers during the fiscal year. Moreover, there were no losses during the fiscal year resulting from default of the borrower or the Custodian.

Substantially, all securities loans can be terminated on demand either by the Custodian or by the borrower, although generally the average term of these loans is one week. Cash collateral is invested in the Custodian's short-term investment pool and is measured at amortized cost, which best represents fair value. The short-term investment pool guidelines specify that a minimum of 20% of the invested cash collateral is to be available each business day and the dollar weighted average maturity of holdings should not exceed 90 days.

The following table presents the fair values of the underlying loaned securities, and the fair value of collateral pledged at June 30, 2017.

| Securities Lent | Fair Value of Loaned Securities | Collateral Fair value | Collateral Percentage % |
|---|---|---|---|
| **Lent for cash collateral:** | | | |
| U.S. Agencies | $ 600,794 | $ 613,500 | 102 |
| Equity | 1,128,788 | 1,157,994 | 103 |
| Corporate | 22,784,240 | 23,430,829 | 103 |
| **Lent for non cash collateral:** | | | |
| U.S. Treasury Notes & Bonds | 1,440,488 | 1,470,440 | 102 |
| Equity | 629,348 | 642,619 | 102 |
| Corporate | 24,678,756 | 25,438,133 | 103 |
| **Total Securities Lent** | $ 51,262,414 | $ 52,753,515 | 103 |

## 7. Derivatives Instruments:

A derivative is a unique and often complex financial arrangement entered with another party, typically a private-sector financial firm. The value or cash flows of a derivative are determined by how the fair value prices of the hedged item change. The System has classified the following as hedging investment instruments.

The System enters into forward currency contracts to manage exposure to fluctuations in foreign currency exchange rates on portfolio holdings. The System also enters into forward exchange contracts to settle future obligations. A forward exchange contract is a commitment to purchase or sell a foreign currency at a future date at a negotiated forward rate. A contract is classified as forward contract when the settlement date is more than two days after the contract date. Risk associated with such contracts include movement in the value of a foreign currency relative to the U.S. dollar. The contracts are valued at forward exchange rates and include net appreciation/depreciation in the statement of plan position. Realized gain or loss on forward currency contracts is the difference between the original contract and the closing value of such contract and is included in the statement of changes in fiduciary net position.

The table below summarizes the fair value of foreign currency contracts as of June 30, 2017:

| Currency | Receivable at Cost | Receivable at Fair Value | Payable at Cost | Payable at Fair Value | Net Unrealized Gain/(Loss) |
|---|---|---|---|---|---|
| Australian Dollar | $ 5,643,258 | $ 5,643,258 | $ (5,643,258) | $ (5,742,928) | $ (99,670) |
| Canadian Dollar | 889 | 889 | (889) | (889) | - |
| Danish Krone | 427,496 | 427,496 | (427,496) | (434,362) | (6,866) |
| Euro Currency Unit | 48,346 | 48,346 | (48,346) | (48,264) | 82 |
| Japanese Yen | 131,519 | 131,519 | (131,519) | (131,367) | 152 |
| New Zealand Dollar | 9,478,408 | 9,478,408 | (9,478,408) | (9,831,083) | (352,675) |
| Pound Sterling | 419,447 | 419,447 | (419,447) | (420,393) | (946) |
| Singapore Dollar | 3,531,350 | 3,531,350 | (3,531,350) | (3,546,122) | (14,772) |
| Swedish Krona | 206,926 | 206,926 | (206,926) | (213,589) | (6,663) |
| U.S. Dollar | 602,093 | 604,710 | (602,093) | (602,093) | 2,617 |
| Total currency | $ 20,489,732 | $ 20,492,349 | $ (20,489,732) | $ (20,971,090) | $ (478,741) |

## 8. Net Pension Liability:

The following schedules are the Net Pension Liability (NPL) as of June 30, 2017, and the sensitivity of the NPL to the discount rate.

***Net Pension Liability***

The components of the net pension liability of the Plan at June 30, 2017 were as follows:

| | |
|---|---|
| Total pension liability | $2,359,605,516 |
| Less: Plan fiduciary net position | 1,627,026,498 |
| Net Pension Liability | $ 732,579,018 |
| Plan fiduciary net position as a percentage of the total pension liability | 69.0% |

The discount rates used to measure the total pension liability was 7.50% and 6.50%, for active and retired members, respectively. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the 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 those 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.

The sensitivity of the pension liability schedule presents the net pension liability of the Plan calculated using the discount rate 7.50 percent as well as what the Plan's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.50 percent) or 1-percentage-point higher (8.50 percent) than the current rate.

***Sensitivity of the pension liability to changes in the discount rate.***

| | 1% Decrease | Current Discount Rate | 1% Increase |
|---|---|---|---|
| Discount Rate - Active Participants | 6.50% | 7.50% | 8.50% |
| Discount Rate - Retired Participants | 5.50% | 6.50% | 7.50% |
| Plan’s net pension liability | $986,917,966 | $732,579,018 | $516,497,977 |
| Plan fiduciary net position as a percentage of the total pension liability | 62.2% | 69.0% | 75.9% |

The amortization method and the actuarial assumptions presented below are determined as part of the actuarial valuation dated June 30, 2017. The information presented below is in the required supplementary schedules of this report on page 37.

| | | |
|---|---|---|
| Actuarial funding method: | Entry Age Normal Method. | |
| Actuarial assumptions: | Effective June 30, 2012 | |
| Investment rate of return: | Pre-retirement | 7.50% |
| | Post-retirement | 6.50% |
| Projected salary increases: | Inflation rate approximately 2.65%. | |
| Cost-of-living adjustments: | 1.5% for participants in pay status under age 65 and 2.0% for participants in pay status age 65 and over. | |

Pre-Retirement Mortality:

1. Non-line-of-Duty - RP 2000 Healthy Mortality with projections using 50% of the AA scale projected 15 years with a three-year set forward for both males and females (effective 6/30/15).

2. Line-of-Duty - 0.005% at all ages (effective 6/30/1999).

Post-Retirement Mortality:

1. Retirees and Beneficiaries - RP 2000 Health Mortality with projections using 50% of the AA scale project 15 years with a two-year set forward for both males and females. Given the requirement for experience studies performance every five years, these projections are sufficient until the next measurement period.

2. Disabled members - RP 2000 Disabled mortality with generational projections using 50% of the AA scale projected 15 years with a four-year set forward for both males and females.

The last actuarial experience study covered the period 7/1/2010 through 6/30/2014. Generally, an experience study is conducted every four years, unless requested by the ERS Board of Trustees.

## 9. Capital Assets:

The capital assets purchased as of the fiscal year ending June 30, 2017 consist of leasehold improvements, office equipment and office furniture. All capital assets are recorded at cost less accumulated depreciation.

| Capital Assets | Accumulated Cost | Accumulated Depreciation | Capital Assets |
|---|---|---|---|
| Leasehold Improvements | $1,660,538 | ($1,166,830) | $493,708 |
| Office Furniture | 387,222 | (358,179) | 29,043 |
| Office Equipment | 385,987 | (378,756) | 7,231 |
| Total Capital Assets | $2,433,747 | ($1,903,765) | $529,982 |

## 10. Subsequent Events:

The Plan evaluated subsequent events through November 30, 2017 the date the financial statements were available to be issued. Events or transactions occurring after June 30, 2017, but prior to November 30, 2017 that provided additional evidence about conditions that existed at June 30, 2017, have been recognized in the financial statements for the year ended June 30, 2017. Events or transactions that provided evidence about conditions that did not exist at June 30, 2017, but arose before the financial statements were available to be issued have not been recognized in the financial statements for the year ended June 30, 2017.

# Required Supplementary Information and Supporting Schedules

Employees' Retirement System
City of Baltimore, Maryland
**SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS**
Year Ended June 30, 2017

| | **2017** | **2016** | **2015** | **2014** |
|---|---|---|---|---|
| **Total Pension Liability** | | | | |
| Service cost (MOY) | $ 25,736,202 | $ 25,507,759 | $ 26,107,551 | $ 26,483,854 |
| Interest (includes interest on service cost) | 157,784,730 | 155,822,464 | 152,621,503 | 148,861,690 |
| Changes of benefit terms | - | - | - | (1,001,048) |
| Difference between expected and actual experience | (6,869,329) | 11,578,209 | 2,052,377 | 13,956,452 |
| Changes of assumptions | - | 20,850,001 | (3,828,646) | - |
| Benefit payments, including refund of members contributions | (144,608,910) | (139,197,716) | (134,270,657) | (129,973,970) |
| **Net change in pension liability** | 32,042,693 | 74,560,717 | 42,682,128 | 58,326,978 |
| **Total pension liability - beginning** | **2,327,562,823** | **2,253,002,106** | **2,210,319,978** | **2,151,993,000** |
| **Total pension liability - ending** | **$ 2,359,605,516** | **$ 2,327,562,823** | **$ 2,253,002,106** | **$ 2,210,319,978** |
| Plan fiduciary net position | | | | |
| Contributions - employer | $ 84,474,451 | $ 77,100,573 | $ 97,170,796 | $ 94,917,886 |
| Contributions - members | 10,656,243 | 10,350,709 | 6,728,131 | 3,623,467 |
| Net investment income | 163,156,838 | 40,260,042 | 66,818,040 | 209,647,169 |
| Benefit payments, including refund of member contributions | (144,608,910) | (139,197,716) | (134,270,658) | (129,973,970) |
| Administrative expense | (3,584,506) | (3,515,492) | (3,748,434) | (3,711,975) |
| Net change in plan fiduciary net position | $ 110,094,116 | $ (15,001,884) | $ 32,697,875 | $ 174,502,577 |
| Plan fiduciary net position - beginning | **1,516,932,382** | **1,531,934,266** | **1,499,236,391** | **1,324,733,814** |
| Plan fiduciary net position - ending | **1,627,026,498** | **1,516,932,382** | **1,531,934,266** | **1,499,236,391** |
| Net pension liability - ending | **$ 732,579,018** | **$ 810,630,441** | **$ 721,067,840** | **$ 711,083,587** |
| Plan fiduciary net postion as a percentage of the total pension liability | 68.95% | 65.17% | 68.00% | 67.83% |
| Covered payroll | $ 391,121,606 | $ 399,465,753 | $ 408,095,216 | $ 401,291,783 |
| Net pension liability as a percentage of covered payroll | 187.30% | 202.93% | 176.69% | 177.20% |

Note: This schedules is intended to present information for 10 years. However until a full 10-year trend is compiled, the System will present information for those years for which information is available.

Employees' Retirement System
City of Baltimore, Maryland
Required Supplementary Information
**SCHEDULE OF EMPLOYER CONTRIBUTIONS**
**Last Ten Fiscal Years**

| | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 |
|---|---|---|---|---|---|---|---|---|---|---|
| Actuarial determined contribution | $ 84,474,451 | $ 75,862,000 | $ 90,489,000 | $ 91,286,000 | $ 88,300,214 | $ 77,995,003 | $ 62,374,396 | $ 48,748,397 | $ 43,673,027 | $ 43,918,411 |
| Contributions in relations to actuarially determined contribution | 84,474,451 | 77,100,573 | 97,170,796 | 94,917,886 | 88,300,214 | 77,995,003 | 62,374,396 | 48,748,397 | 43,673,027 | 43,918,411 |
| Contribution deficiency (excess) | $ - | $ (1,238,573) | $ (6,681,796) | $ (3,631,886) | $ - | $ - | $ - | $ - | $ - | $ - |
| Covered payroll | $ 391,121,606 | $ 399,465,753 | $ 408,095,216 | $ 401,291,783 | $ 392,868,271 | $ 390,557,576 | $ 392,941,135 | $ 401,328,980 | $ 398,009,463 | $ 367,517,243 |
| Contributions as a percentage of payroll | 21.60% | 19.30% | 23.81% | 23.65% | 22.48% | 19.97% | 15.87% | 12.15% | 10.97% | 11.95% |

The notes below summarize the key methods and assumptions used to determine the actuarial determined contribution for fiscal year 2017.

**Notes to Schedule**

| | |
|---|---|
| Valuation Date | July 1, 2015 |
| Timing | Actuarial determined contribution rates are calculated based on the actuarial valuation two years prior to the beginning of the plan year |

*Key Methods and Assumptions Used to Determine Contribution Rates:*

| | |
|---|---|
| Actuarial cost method | Entry Age Normal |
| Asset valuation method | Market Value |
| Amortization method | Level percent of pay closed period with 16 years remaining as of July 1, 2015 |
| Discount rate | 7.75% until retirement, 6.55% after retirement. |
| Investment return | 7.75% which is net of all expenses. While this is the same rate used for funding purposes which includes administrative expenses, for consistency in measurement, we have used the same rate for the expected future asset return. |
| Social Security Wage Base | 3.00% |
| Inflation | 2.65% |
| Salary increases | Age based salary scale |
| Mortality | RP 2000 Combined Mortality Table set forward 2 years with projections using 50% of the AA scale projected 15 years for healthy lives<br>RP 2000 Combined Mortality Table set forward 4 years with projections using 50% of the AA scale projected 15 years for disabled lives |

A complete description of the methods and assumtions used to determine contribution rates for the fiscal year ending June 30, 2017 can be found in July 1, 2015 actuarial valuation report

Employees' Retirement System
City of Baltimore, Maryland
Required Supplementary Information
**SCHEDULE OF INVESTMENT RETURNS**
**Last Ten Fiscal Years**

| | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 |
|---|---|---|---|---|---|---|---|---|---|---|
| Annual money-weighted rate of return, net of investment expense | 11.7% | 2.7% | 4.6% | 15.2% | 12.8% | -1.7% | 19.9% | -11.3% | -18.1% | -5.1% |

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION**

1. Effective July 1, 2006, amendments were made to the Plan provisions. These amendments included combining the assets of the Plan and increasing the cost of living adjustment. The investments in the paid up benefit and the contingency reserve funds were passively invested and not used in the actuary's valuation of the Plan's assets. The new Plan provision no longer separates the paid up benefit fund and the contingency reserve fund. The combining of assets allows the Plan to have all assets actively invested. The cost of living adjustment was changed to a guaranteed adjustment of 1.5% with an additional variable increase based on excess investment returns.

   All of the assumption and Plan provision changes resulted in a .056%, or $245,384, decrease in annual City cost for the fiscal year as well as an increase of the unfunded liability from $119.4 million to $151.5 million. The changes to the Plan provision paid an additional ad hoc cost of living adjustment of $13.1 million or a one-time increase of 1.45% to all retirees and beneficiaries with a retirement date on or before June 30, 2006, which was paid during fiscal year ending June 30, 2007. Changes were effective as of June 30, 2007.

2. The total recommended contributions increased by 13.08% from $43,673,028 for fiscal year 2009 to $48,748,396 for fiscal year 2010 as a reflection of the prior year's experience and increased unfunded actuarial liability as of June 30, 2008. This represents a projected increase in cost as a percent of pay from 12.61% to 13.26%.

   The valuation for fiscal year 2009 reflects a significant increase in the number of active participants for the Baltimore City Public School System that will be covered under the Plan. The membership increased from 1,548 in 2008 to 1,787 in 2009.

3. The total recommended contribution increased by 28% from $48,748,397 for fiscal year 2010 to $62,374,396 for fiscal year 2011 as a reflection of the prior years' experience and increased unfunded actuarial liability as of June 30, 2009. This represents a projected increase in cost as a percent of pay from 13.26% to 15.67%.

4. The total recommended contribution increased by 25.0% from $62,374,396 for fiscal year 2011 to $77,995,003 for fiscal year 2012 as a reflection of the prior years' experience and increased unfunded actuarial liability as of June 30, 2011. This represents a projected increase in a cost as a percent of pay from 15.67% to 19.43%.

5. The total recommended contribution increased by 13.2% from $77,995,003 for fiscal year 2012 to $88,300,214 for fiscal year 2013 as a reflection of the prior years' experience and increased unfunded actuarial liability as of June 30, 2011. The experience study changes increased the recommended contributions by $10,305,211. This represents a projected increase in cost as a percent of pay from 19.43% to 22.47%.

   The newly adopted funding policy of the Board provides for the unfunded actuarial liability to be amortized over a fixed period of 20 years targeting 100% funding by the fiscal year ending 2032.

6. The total recommended contribution increased by 7.5% from $88,300,214 for fiscal year 2013 to $94,917,886 for fiscal year 2014 as a reflection of the prior years' experience and increased unfunded actuarial liability as of June 30, 2012.

   The actuarial funding method was changed from the Projected Unit Cost Method to the Entry Age Normal Method to make funding measures consistent with anticipated accounting measures required under new accounting standards issued by the Governmental Accounting Standard Board (GASB). This change resulted in an increase of the unfunded actuarial liability of $100.2 million.

7. The total recommended contribution increased by 2.4% from $94,917,886 for fiscal year 2014 to $97,170,796 for fiscal year 2015 as a reflection of the prior years' experience and increased unfunded actuarial liability as of June 30, 2013. Fiscal year 2013 contributions were paid in two installments. Interest receivable on the installments will be calculated with the actuarial results.

   Ordinance 13-144 was enacted by the Mayor and City Council introducing contributions for active ERS members and eliminating the post retirement variable benefit increase. The Ordinance provides that effective July 1, 2013 members will contribute 1% of pay, to continue each year at 1% increments provided that 2% compensation is received for each year of contribution until employee contributions reach 5% of compensation.

8. Plan C member contributions were contingent upon increases in pay which were yet to be negotiated at the time the July 1, 2013 valuation was completed and when the City made the contribution for fiscal year 2014, the City contribution was not offset for Plan C member contributions. To account for member contributions and credits to the City funding requirement, the fiscal year 2015 contribution of $97,170,796 previously calculated as of July 1, 2013 valuation was adjusted to account for expected Plan C member contributions of 2% of pay resulting in a net City contribution of 90,489,236. The City contribution is further reduced for payments made in excess of required contribution after adjusting for member contributions actually received. This results in a net recommended City contribution of $86,857,159 for FYE 2015.

9. The actuarial value of assets is offset by the normal cost reserve from plan change, due to the continued recognition of prior year's investment losses; the rate of return is below expectation with an asset rate of return for the year of 6.10%, which is compared to the expected investment return of 7.75% for the prior year. As of June 30, 2016, previous investment losses are partially being recognized and further offset by investment gains, which are being deferred for recognition in the future.

10. The unfunded actuarial liability (Actuarial Liability minus Actuarial Assets) decreased from $670.38 million on June 30, 2016 to $644.11 million on June 30, 2017. This decrease is primarily attributable to contributions toward the unfunded of $70.6 million and the liability gain of $11.3 million offset by the asset loss of $14.2 million (based on actuarial assets) and interests costs of the unfunded.

    The total recommended contributions for FYE 2018 was revised from $87,541,882 to $90,743,732 because the expected member contribution rate increase of 1% did not occur since the City did not increase pay by the required 2%. This resulted in a shortfall of contributions of $3.2 million for FYE 2018. The revision represents an increase in cost as a percent of pay from 21.91% to 22.72% for FYE 2018.

Employees' Retirement System
City of Baltimore, Maryland
**SCHEDULE OF ADMINISTRATIVE EXPENSES**
For the Year Ended June 30, 2017

| | | |
|---|---|---|
| Salaries and wages: | | |
| Permanent full-time salaries | $ 1,740,366 | |
| Overtime | 292 | |
| Total salaries and wages | | $ 1,740,658 |
| Other personnel costs: | | |
| Medical insurance and health care | 263,741 | |
| Social security | 149,444 | |
| Others | 45,722 | |
| Total other personnel costs | | 458,907 |
| Contractual services: | | |
| Rent (Lease agreement) | 249,852 | |
| Retirement payroll processing | 244,425 | |
| Computer Equipments | 222,649 | |
| Computer network services and supplies | 154,420 | |
| Actuarial services | 92,279 | |
| Data processing services | 58,689 | |
| Audit Fees | 50,380 | |
| Professional services | 21,360 | |
| Telephone systems | 19,761 | |
| Printing | 18,165 | |
| Postage | 16,838 | |
| Dues and publications | 7,554 | |
| Lease of business machines | 6,790 | |
| Advertising | 2,966 | |
| Total contractual services | | 1,166,128 |
| Others: | | |
| Depreciation expense | 131,873 | |
| Maintenance and repairs | 36,372 | |
| Trustee Education and meetings | 35,730 | |
| Office Equipments | 12,405 | |
| Office Supplies | 1,737 | |
| Miscellaneous | 696 | |
| | | 218,813 |
| **Total administrative expenses** | | $ 3,584,506 |

Employees' Retirement System
City of Baltimore, Maryland
**SCHEDULE OF INVESTMENT EXPENSES**
**SCHEDULE OF PAYMENTS TO CONSULTANTS**
For the Year Ended June 30, 2017

## Schedule of Investment Expenses

| **Investment expenses:** | **Fees** |
|---|---|
| Investment management fees | $ 8,524,264 |
| Investment consultant fees | 257,355 |
| Custodial fees | 132,390 |
| Subtotal | 8,914,009 |
| Securities lending fees | 100,183 |
| **Total investment expenses** | **$ 9,014,192** |

## Schedule of Payments to Consultants

| **Firm** | **Fees** | **Nature of Service** |
|---|---|---|
| Pension Technology, Inc. | $ 353,155 | Benefits Adminstration System |
| Cheiron, Inc. | 92,279 | Actuarial Services |
| Sona Network | 73,578 | Computer Network Services |
| CliftonLarsonAllen, LLP | 50,380 | Financial Audit |
| BellaArt | 11,908 | Web and Graphic Communications |
| **Total of payments to consultants** | **$ 581,300** | |

Note: A schedule of fees and commissions is also illustrated in the Investment Section on page 55.


# Investment Section

# INVESTMENT CONSULTANT'S REPORT

## Introduction

This report, prepared for the City of Baltimore Employees' Retirement System (ERS) by Marquette Associates, Inc. is based on information supplied by the System's custodian, Mellon Bank, N.A (Mellon). Mellon provides Marquette Associates, Inc. with beginning and ending market values, cash flows, transactions, and positions for the ERS as well as each manager, where applicable. Mellon audits the information contained in its accounting reports monthly. The rates of return are calculated using a time-weighted rate of return methodology based upon market values. The returns are reported on both net of fees and gross of fees to provide comparisons with the appropriate benchmarks. Investment information is reported to the greatest degree possible in conformance with the presentation standards of Global Performance Investment Standards (GIPS) formerly known as AIMR.

## Distinction of Responsibilities

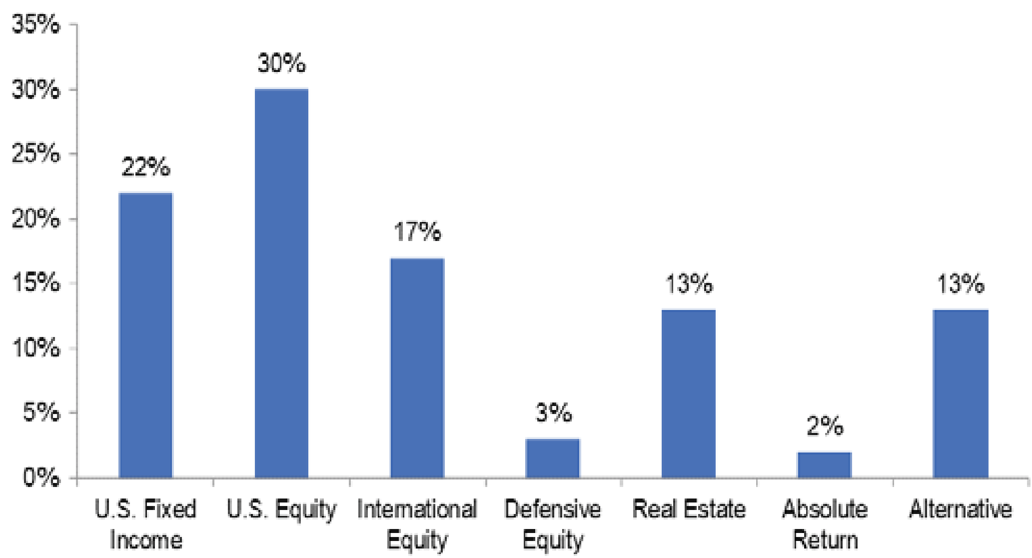
In recognition of the importance of prudent investment of System assets to both the City and the System's members, the Board, as primary fiduciary of the System, shall periodically review the asset management and actuarial characteristics of the System to ensure that investments are managed in a manner that is consistent with the retirement objectives of the System's members. These responsibilities are detailed in the Investment Guidelines.

The primary investment objectives of the System are to preserve the capital value of the System assets adjusted for inflation, to ensure adequate liquidity to meet benefit liabilities as they fall due, to meet the actuarial interest rate assumptions, and without unduly jeopardizing the above objectives, to exceed the investment return objective by the astute management of System assets.

The investment managers appointed to execute the policy will invest ERS assets in accordance with the policy guidelines and with their judgment concerning relative investment values. In particular, the investment managers are accorded full discretion to: (1) select individual securities, (2) make periodic strategic adjustments to the mix of the common stock and fixed income securities, where applicable and (3) diversify their portfolios.

## Investment Asset Allocation Structure

The goal of the asset allocation structure is to provide a favorable rate of return coupled with a prudent level of risk. The System implemented a new Asset Allocation during the year to achieve long term return objectives while reducing risk. As a result, the System implemented strategies to increase diversification in the fixed income, defensive equity, and real estate programs. The following table outlines the ERS's new investment policy targets:




*Prepared by Marquette Associates, Inc.*

### Investment Objective

The investment return is evaluated against a policy benchmark consisting a pro rata representation of the asset allocation utilizing indices outlined in the Investment Policy. In addition, the ERS's performance is evaluated relative to the Investorforce Public Fund Universe, a universe representing the performance of 260 Public Funds. Marquette utilizes the InvestorForce Performance Reporting network, an advanced and comprehensive analysis and performance management platform, comprised of 48 different investment consulting firms located throughout the United States.

### Market Overview

The U.S. Equity market, as proxied by the Russell 3000 Index, hit new highs throughout the year and ended with an impressive 18.5% return. With the potential benefits of deregulation and tax reform to earnings growth projections, the best performing areas of the market were driven by growth sectors such as technology stocks. In a market that rewarded higher risk, small-cap stocks outpaced their large-cap stocks. Improving economic fundamentals in Europe and more attractive relative valuations pushed international equity to outperform domestic markets. Developed international markets posted a gain of 21.0% and emerging markets posted an even greater return of 23.8%. As bond yields rose over the year across maturities, the bond market posted a loss of -0.3%. High yield fixed income outpaced higher quality bonds. Core real estate continued to outperform fixed income with more attractive yields and continued investor interest.

### Investment Performance

For the fiscal year ending June 30, 2017, the System posted an 11.8% return which outpaced the policy benchmark of 11.0% and ranked closed to median, in the 60th percentile of the peer group universe. The alternative asset classes such as private equity and private real estate solidly outpaced their respective benchmarks over the past year. The private equity program posted the best relative returns as direct fund investments added significant value. The real estate portfolio also posted strong gains versus its benchmark. The fixed income portfolio mitigated losses of the broad bond market with exposure to higher yielding debt issues. A greater exposure to small-cap stocks in the domestic equity portfolio also contributed to results as small-cap stocks outpaced large-cap stock for the year.

The market value of the ERS assets increased from the prior year to finish at $1,631.8 billion. The Total Fund market value for this report included both capital appreciation and cash flow activity. At the end of fiscal year 2017, the System's assets were allocated as follows:

| | | | Fiscal Year Rate of Return | |
|---|---|---|---|---|
| | Fair Value (in millions) | Percent of Total | ERS | Benchmark |
| U.S. Equity | $584.8 | 35.8% | 17.5% | 18.5% |
| International Equity | $308.9 | 18.9% | 20.6% | 21.0% |
| U.S. Fixed Income | $360.6 | 22.1% | 1.2% | -0.3% |
| Real Estate | $149.1 | 9.1% | 8.0% | 7.0% |
| Defensive Equity* | $38.6 | 2.4% | --- | --- |
| Private Equity | $100.2 | 6.1% | 12.5% | 10.8% |
| Hedge Funds | $40.0 | 2.5% | 9.7% | 6.5% |
| Cash Equivalents | $49.5 | 3.0% | | |
| Total Fund | $1,631.8 | 100.0% | 11.8% | 11.0% |

* Defensive Equity was funded on February 1, 2017.

Nichole Roman-Bhatty
Managing Partner
Marquette Associates, Inc.

*Prepared by Marquette Associates, Inc.*

Employees’ Retirement System
City of Baltimore, Maryland
**OUTLINE OF INVESTMENT OBJECTIVES AND POLICIES**

**Investment Objectives**

The primary investment objectives of the Employees' Retirement System (the Plan) are set forth below. It is recognized that maximizing any one objective may compromise the achievement of other objectives. For example, maximizing liquidity may reduce investment return; seeking maximum investment return may subject capital preservation to higher risk. Accordingly, the following investment objectives are given in descending order of priority:

1. To preserve the capital value of the Plan adjusted for inflation.
2. To ensure adequate Plan liquidity to meet benefit liabilities as they fall due.
3. To meet the actuarial interest rate assumptions.
4. Without unduly jeopardizing the above objectives, to exceed the investment return objective by the astute management of funds.

**General Investment Policy**

The Employees’ Retirement System must comply with investment restrictions imposed by the laws of the City of Baltimore and any other State or Federal laws dealing with investment of public retirement plan assets. The Plan’s investment managers are expected to familiarize themselves with these laws.

Investment policy for the Plan relates to the portfolio of all assets that comprise the total holdings of the Plan. The Board of Trustees (Board) recognizes that the objective of a sound and prudent policy is to produce investment results that will preserve the assets of the Plan, as well as, to maximize earnings of the Plan consistent with its long-term needs. These long-term needs have been ascertained through various studies performed on behalf of the Board by its actuary and its investment advisor. Investment policy and the long-term average allocation of plan assets to which they refer are deemed to be consistent with the projected pattern of cash flows to the Plan and its projected benefit payments. Should the projected finances of the Plan change significantly, the applicable Federal or State statutes be amended, or changes in the Plan’s asset valuation methods be adopted, these policies and average asset allocations will be reviewed and modified by the action of the Board, if appropriate.

In general, the Board recognizes that large pools of assets must be diversified over several different security classifications in order to reduce risk. The following asset allocation has been established as an overall objective for the total holdings of the Plan:

| Asset Category | Target Allocation |
|---|---|
| Domestic equity | 30% |
| Defensive equity | 3% |
| International equity | 17% |
| Fixed Income | 22% |
| Private Equity | 13% |
| Real Estate | 13% |
| Hedge Funds | 2% |

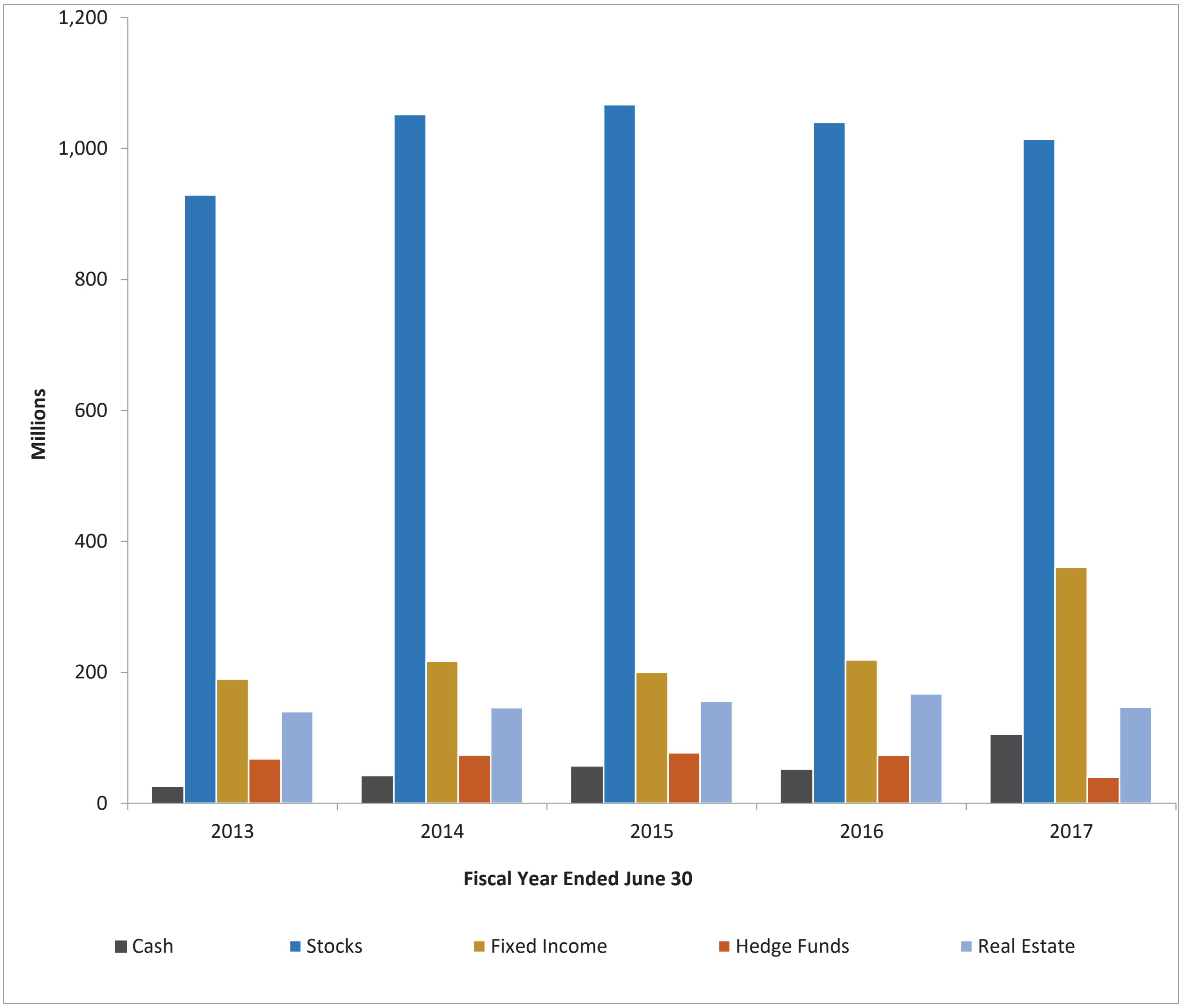
Within each major security classification, investments should be diversified and excessive concentration in any particular security, company or industry is to be avoided. Detailed guidelines in this regard have been supplied to each of the Plan’s investment managers. Additionally, each is expected to be familiar with the investment provisions in Article 22 of the Baltimore City Code. Subject to these objectives and guidelines, and the Plan laws referenced herein, the investment managers shall have full discretion of investment decisions. Managers are advised to notify the Board in writing if these objectives cannot be met or if the guidelines constrict performance, and are encouraged to suggest changes in these guidelines at any time.

## Proxy Voting

Pursuant to a U.S. Department of Labor directive, the Board of Trustees has a long standing policy that, when solicitations of proxies with respect to securities are received by an investment manager, the decisions as to whether and how to vote such proxies are delegated to that investment manager.

The Board also recognizes however, that the investment manager's decisions must be made in accordance with applicable legal standards and that the Board has an obligation to ensure that those standards are being observed. Therefore, the Board requests that annually (June 30) each management firm furnish the Plan with a written statement of their policy and practices with respect to the voting of securities held in their employee benefit plan asset portfolios, together with their written assurance that such policies and practices are being followed. These statements and assurances will be included, and will be given appropriate weight, in the Board's continuing evaluation of each manager's overall investment performance.

Employees' Retirement System
City of Baltimore, Maryland
**PORTFOLIO COMPOSITION**
**FAIR VALUE OF INVESTMENTS**




(amounts expressed in millions)

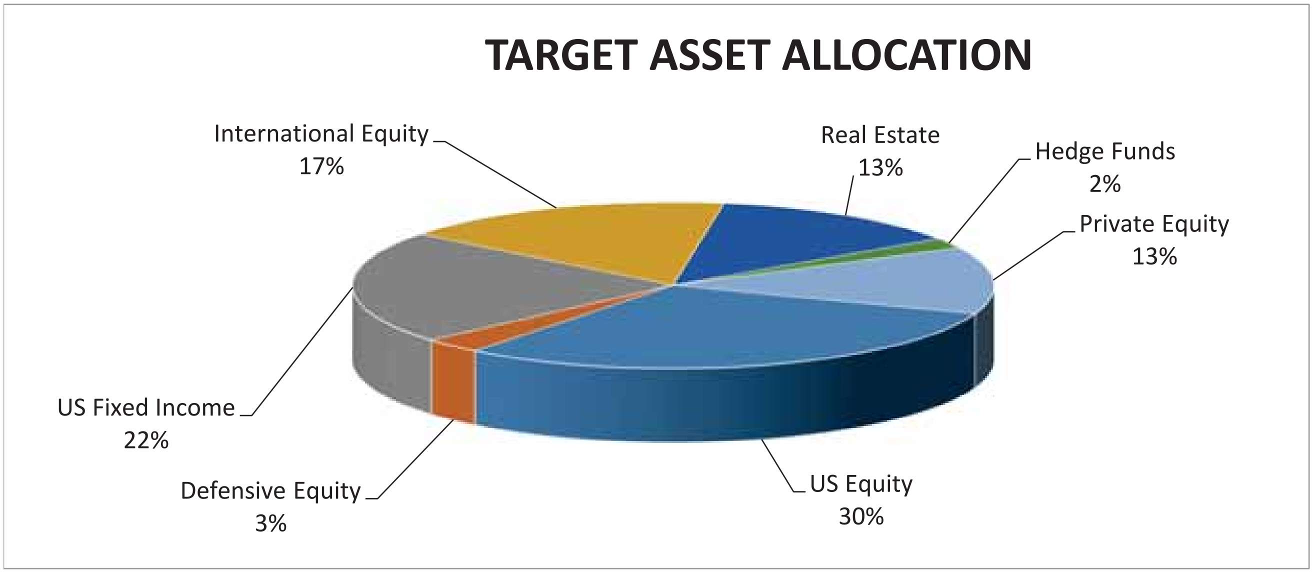
| | 2013 | | 2014 | | 2015 | | 2016 | | 2017 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Cash | $ 25 | 2% | $ 41 | 3% | $ 56 | 3% | $ 51 | 3% | $ 104 | 6% |
| Stocks | 929 | 69 | 1,052 | 69 | 1,067 | 69 | 1,040 | 67 | 1,014 | 61 |
| Fixed Income | 190 | 14 | 217 | 14 | 200 | 14 | 219 | 14 | 361 | 22 |
| Hedge Funds | 68 | 5 | 74 | 5 | 77 | 5 | 73 | 5 | 40 | 2 |
| Real Estate | 140 | 10 | 146 | 9 | 156 | 10 | 167 | 11 | 147 | 9 |
| Total | $ 1,352 | 100% | $ 1,530 | 100% | $ 1,556 | 100% | $ 1,550 | 100% | $ 1,666 | 100% |

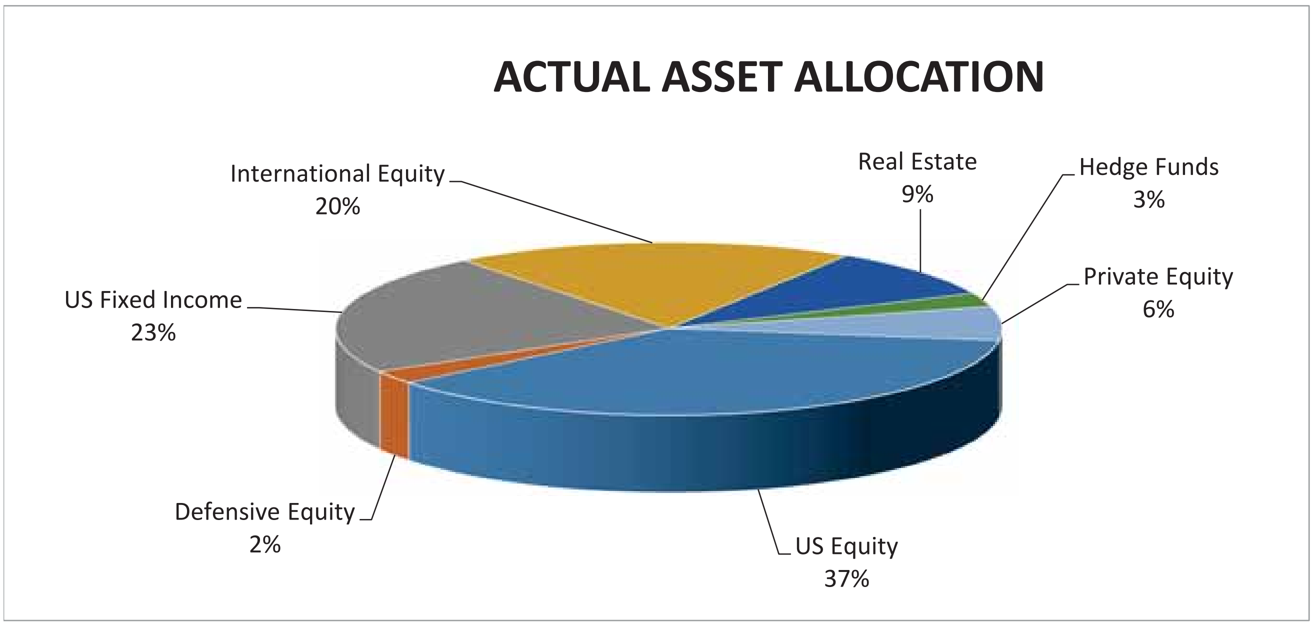
Employees' Retirement System
City of Baltimore, Maryland
**INVESTMENT RESULTS**
TIME WEIGHTED RATE OF RETURN, CURRENT VALUE BASIS

| | | Annualized | | |
|---|---|---|---|---|
| | **FY 2017** | **3 Years** | **5 Years** | **10 Years** |
| **TOTAL PORTFOLIO** | 11.8 % | 6.6 % | 9.6 % | 5.4 % |
| Median Public Pension Fund | 11.0 | 5.9 | 9.0 | 5.7 |
| **DOMESTIC EQUITIES** | 17.5 | 8.5 | 14.4 | 7.1 |
| Russell 3000 | 18.5 | 9.1 | 14.6 | 7.3 |
| **DEFENSIVE EQUITIES** | - | - | - | - |
| 50% S&P 500/50% 91 Day T-Bill | 8.9 | 5.0 | 7.3 | 4.1 |
| **INTERNATIONAL EQUITIES** | 20.6 | 3.9 | 8.8 | 1.8 |
| MSCI ACWI ex-US | 21.0 | 1.3 | 7.7 | 1.6 |
| **FIXED INCOME** | 1.2 | 2.9 | 2.7 | 4.7 |
| Barclays Aggregate | (0.3) | 2.5 | 2.2 | 4.5 |
| **REAL ESTATE** | 8.0 | 12.4 | 12.4 | 5.2 |
| NPI | 7.0 | 10.2 | 10.5 | 6.4 |
| **PRIVATE EQUITY COMPOSITE** | 12.5 | 12.1 | 13.7 | 9.5 |
| Venture Economics Private Equity | 10.8 | 7.9 | 9.4 | 7.3 |
| **HEDGE FUNDS** | 9.7 | 2.7 | 5.9 | 2.5 |
| HFRI Fund of Funds | 6.5 | 1.6 | 3.9 | 0.9 |
| T-Bills + 5% | 5.6 | 5.2 | 5.2 | 5.5 |

Note: The calculations above were prepared by the Employees' Retirement System's investment advisor, Marquette Associates, Inc. using a time weighted rate of return, based on market rate of return. The performance shown for the Total Portfolio does not include "Other Assets" dedicated to the payment of post-retirement benefit increases. The Median Public Pension Fund exhibits the overall rate of return for the average Public Pension Plan as measured by the Investorforce Public Universe.

Employees' Retirement System
City of Baltimore, Maryland
**ASSET ALLOCATION - ACTIVELY MANAGED ACCOUNTS**
June 30, 2017




Note: For asset allocation purposes, only actively managed accounts are included. Assets in the mutual funds are allocated between domestic equity and domestic fixed income based on the percentage held by the investment managers at June 30, 2017. Assets in the cash reserve are also excluded from this illustration. These assets are for the purpose of providing cash for the payment of benefit and administrative expenses.

Employees' Retirement System
City of Baltimore, Maryland
**TOP EQUITY AND FIXED INCOME HOLDINGS BY FAIR VALUE**
June 30, 2017

| | | Shares | Fair Value |
|---|---|---|---|
| **TOP TEN DOMESTIC EQUITY HOLDINGS** | | | |
| 1 | ALLSTATE CORP/THE | 75,100 | $ 6,641,844 |
| 2 | WAL-MART STORES INC | 80,400 | 6,084,672 |
| 3 | DOW CHEMICAL CO/THE | 90,600 | 5,714,142 |
| 4 | PROCTER & GAMBLE CO/THE | 55,800 | 4,862,970 |
| 5 | INTERNATIONAL BUSINESS MACHINE | 31,200 | 4,799,496 |
| 6 | CVS HEALTH CORP | 56,500 | 4,545,990 |
| 7 | EXCELON | 114,800 | 4,140,836 |
| 8 | COCA-COLA CO/THE | 92,300 | 4,139,655 |
| 9 | AT&T INC | 107,369 | 4,051,032 |
| 10 | PFIZER INC | 117,808 | 3,957,171 |
| | Total | | $ 48,937,808 |
| **TOP TEN INTERNATIONAL EQUITY HOLDINGS** | | | |
| 1 | CAE INC | 216,905 | $ 3,734,501 |
| 2 | NESTLE SA ADR | 38,100 | 3,320,034 |
| 3 | AIA GROUP LTD | 452,000 | 3,303,243 |
| 4 | BAYER AG | 25,100 | 3,240,668 |
| 5 | CRODA INTERNATIONAL PLC | 60,482 | 3,052,176 |
| 6 | ALLIANZ SE | 14,900 | 2,929,799 |
| 7 | NIFCO INC/JAPAN | 51,900 | 2,785,306 |
| 8 | SPIRAX-SARCO ENGINEERING PLC | 39,829 | 2,767,870 |
| 9 | DASSAULT SYSTEMES SE | 30,900 | 2,766,223 |
| 10 | AUCKLAND INTERNATIONAL AIRPORT | 526,295 | 2,747,568 |
| | Total | | $ 30,647,387 |
| **TOP TEN DOMESTIC FIXED INCOME HOLDINGS** | | | |
| 1 | FEDERAL HOME LN BK CONS DISC N | 18,200,000 | $ 18,187,867 |
| 2 | COMMIT TO PUR FNMA SF MTG 3.500% 08/1/2047 DD 08/1/17 | 10,000,000 | 10,253,400 |
| 3 | COMMIT TO PUR FNMA SF MTG 4.000% 08/1/2047 DD 08/1/17 | 8,000,000 | 8,395,760 |
| 4 | US TREASURY NOTE 1.375% 09/30/2020 DD 09/30/15 | 6,000,000 | 5,955,480 |
| 5 | COMMIT TO PUR FNMA SF MTG 3.000% 09/01/2047 DD 09/01/17 | 5,000,000 | 4,977,250 |
| 6 | COMMIT TO PUR FHLMC GOLD SFM 3.500% 07/01/2047 DD 07/01/17 | 4,350,000 | 4,468,842 |
| 7 | COMMIT TO PUR FNMA SF MTG 3.500% 07/01/2047 DD 07/01/17 | 4,100,000 | 4,210,987 |
| 8 | US TREASURY NOTE 2.000% 11/15/2026 DD 11/15/16 | 3,400,000 | 3,315,272 |
| 9 | COMMIT TO PUR FNMA SF MTG 4.000% 07/01/2047 DD 07/01/17 | 2,500,000 | 2,628,025 |
| 10 | US TREAS-CPI INFLAT 1.375% 02/15/2044 DD 02/15/14 | 1,678,544 | 1,825,903 |
| | Total | | $ 64,218,786 |

A complete list of portfolio holdings is available on request.

Employees' Retirement System
City of Baltimore, Maryland
**INVESTMENT SUMMARY**
June 30, 2017

| | Fair Value | Percentage of Fair Value |
|---|---|---|
| **Domestic Equity:** | | |
| Financial | $ 65,882,202 | |
| Technology | 48,227,487 | |
| Consumer Durables & Non Durables | 43,609,525 | |
| Commercial Services | 29,419,691 | |
| Energy | 28,302,935 | |
| Health Care and Pharmaceuticals | 24,710,713 | |
| Construction And Real Estate | 24,625,274 | |
| Entertainment, Media & Telecommunications | 23,462,783 | |
| Aerospace/Defense | 16,979,818 | |
| Manufacturing | 16,061,941 | |
| Transportation | 15,141,254 | |
| Others | 2,059,136 | |
| Total domestic equity | 338,482,759 | |
| Others | | |
| Commingled funds | 227,337,555 | |
| International equity | 241,709,775 | |
| Global Non - U.S. equity | 108,612,897 | |
| Private equity | 97,477,352 | |
| Total other | 675,137,579 | |
| **Total equity** | **1,013,620,338** | **64.88%** |
| **Fixed Income:** | | |
| U.S./Canadian securities and agencies | | |
| U.S. Treasury notes and bonds | 14,313,624 | |
| U.S./Canadian government agency bonds | 90,623,608 | |
| Non U.S government agency bonds | 17,504,765 | |
| Total U.S./Canadian securities and agencies | 122,441,997 | |
| Corporate: | | |
| Financial | 64,918,088 | |
| Consumer Durables & Non Durables | 9,957,518 | |
| Health Care and Pharmaceuticals | 6,100,589 | |
| Energy | 3,986,250 | |
| Technology | 3,045,233 | |
| Entertainment, Media & Telecommunications | 2,724,423 | |
| Manufacturing | 2,126,568 | |
| Transportation | 846,705 | |
| Aerospace/Defense | 606,839 | |
| Construction And Real Estate | 491,061 | |
| Commercial Services | 387,718 | |
| Total corporate | 95,190,992 | |
| Commingle fixed income fund | 144,064,901 | |
| **Total fixed income** | **361,697,890** | **23.15%** |
| Other investments: | | |
| Real estate | 147,081,327 | |
| Hedge Funds | 39,912,843 | |
| **Total other investments** | **186,994,170** | **11.97%** |
| **Total investments** | **$ 1,562,312,398** | **100.00%** |

Employees' Retirement System
City of Baltimore, Maryland
**SUMMARY SCHEDULE OF FEES AND COMMISSIONS**
For the Year Ended June 30, 2017

| | Assets Under Management | Fees |
|---|---|---|
| **Investment managers' fees** | | |
| Domestic equities | $ 565,820,313 | $ 1,871,162 |
| International equities | 241,709,776 | 1,452,833 |
| Domestic fixed income | 217,632,989 | 756,577 |
| Commingled fixed income | 144,064,901 | 61,863 |
| Real estate | 147,081,327 | 1,434,450 |
| Private equity | 97,477,352 | 1,728,034 |
| Global equities | 108,612,897 | 498,396 |
| Hedge funds | 39,912,843 | 720,949 |
| Securities Lending | | 100,183 |
| **Total investment managers' fees** | | **$ 8,624,447** |
| | | |
| **Other investment service fees:** | | |
| Custodial fees | | $ 132,390 |
| Investment consultant fees | | 257,355 |
| **Total other investment service fees** | | **$ 389,745** |

**Brokerage Fees**
Broker's fees on investment transactions for the year ended June 30, 2017 amounted to $338,586
The highest paid brokers are listed below.

| Brokerage Firms | Fees Paid |
|---|---|
| Pershing LLC, Jersey City | $ 83,879 |
| National Finl Svcs Corp, New York | 22,813 |
| Merrill Lynch Pierce Fenner Smith Inc Ny | 20,398 |
| Stifel Nicolaus | 17,829 |
| Hilltop Securities Inc, Dallas | 16,560 |
| Goldman Sachs & Co, Ny | 11,369 |
| J.P. Morgan Clearing Corp, New York | 8,566 |
| Rbc Capital Markets Llc, New York | 8,062 |
| Baird, Robert W & Co Inc, Milwaukee | 7,343 |
| Bny Convergex Execution Sol, New York | 7,297 |
| Knight Clearing Services Llc, Jersey Cit | 6,678 |
| Stephens Inc, Little Rock | 6,599 |
| Morgan Stanley & Co Inc, Ny | 5,909 |
| Deutsche Bk Secs Inc, Ny (Nwscus33) | 5,848 |
| Instinet Europe Limited, London | 5,417 |

| Brokerage Firms | Fees Paid |
|---|---|
| Citigroup Gbl Mkts Inc, New York | $ 5,005 |
| Wells Fargo Securities Llc, Charlotte | 4,884 |
| Piper Jaffray & Co, Minneapolis | 4,753 |
| Raymond James & Assoc Inc, St Petersburg | 4,729 |
| Credit Suisse, New York (Csus) | 4,568 |
| Bny Convergex, New York | 3,964 |
| Cantor Fitzgerald & Co Inc, New York | 3,495 |
| Sanford C Bernstein & Co Inc, London | 3,399 |
| Ubs Securities Llc, Stamford | 3,323 |
| Jefferies & Co Inc, New York | 2,916 |
| J P Morgan Secs Ltd, London | 2,648 |
| Merrill Lynch Intl London Equities | 2,460 |
| Bernstein Sanford C & Co, New York | 2,346 |
| Mirae Asset Securities, Seoul | 2,287 |
| Itg Australia Ltd, Melbourne | 2,224 |

**Brokerage Commissions**
Because of the highly visible nature of the Employees' Retirement System, it is important that the investment managers have as a primary objective in investment transactions to obtain the best execution in all cases. While the investment managers are permitted to direct a portion of commissions for research, it is expected that each manager will receive commission discounts which are commensurate with current discount practice. Investment managers are expected to give first preference whenever possible to brokerage firms with offices located in the Baltimore Metropolitan Area. However, the managers are expected to negotiate commission rates, and local brokerage firms should be given preference only when commission rates and transaction services are competitive with those available from other firms.

**INVESTMENT PROFESSIONALS**

## EQUITY MANAGERS

The Edgar Lomax Company
Randall Eley
Springfield, Virginia

Rothschild Asset Mgmt. Inc.
Mirka Luoto
New York, New York

TimesSquare Capital Mgt.LLC
Joseph B. DeVera, Sr.
New York, New York

## EQUITY FUND OF FUNDS

### Group Advisor

FIS Funds Management, Inc.
Shalonda Epps
Philadelphia, Pennsylvania

Decatur Capital Management
Nanette Hill
Decatur, Georgia

Clifford Capital Partners
Ryan Batchelor
Naperville, Illinois

Denali Advisors
Rachel Tyndall
San Diego, California

Ativo Capital Management
Michael Brooks
Chicago, Illinois

Metis Global
Antoinette Bing
San Diego, California

Redwood Investments
Susan Lim
Newton, Massachusetts

Algert Global
Wendy Shang
San Francisco, California

Change Global
Thea Jamison
Camas, Washington

## INTERNATIONAL EQUITY MANAGERS

Harding Loevner, LP
Alec Wash, CFA
Bridgewater, New Jersey

Mondrian Investment Partners
Laura Conlon
Philadelphia, Pennsylvania

Lazard Asset Management. LLC
Eric B. McKee
New York, New York

## HEDGE FUND MANAGERS

Corbin Capital Partners, LP
Craig Bergstrom, CFA
New York, New York

Grosvenor Capital Management, LLC
Sean J. Conroy
Chicago, Illinois

**INVESTMENT PROFESSIONALS**

## FIXED INCOME MANAGERS

Semper Capital Mgt. (UCM Partners)
Thomas Mandel
New York, New York

PIMCO
Edward Devlin
New York, New York

Manulife Asset Mgt.
Nancy C. Irving
Boston, Massachusetts

## REAL ESTATE MANAGERS

American Realty Advisors
Stanley Iezman
Glendale, California

Ares Capital Mgt. (AREA)
Steven M. Wolf
Atlanta, Georgia

Thor Urban
Joseph J. Sitt
New York, New York

Cornerstone Real Estate Advisers
Terri A. Herubin
Hartford, Connecticut

## PRIVATE EQUITY & VENTURE CAPITAL MANAGERS

Abbott Capital, Inc.
Charles H. vanHorne
New York, New York

Adams Street Partners, LLC
Eric R. Mansell
Chicago, Illinois

Fairview Capital, LP
Laurence C. Morse
West Hartford, Connecticut

RCP Advisors, LLP
William F. Souder
Chicago, Illinois

Summit Partners
James M. Freeland
Boston, Massachusetts

Warburg Pincus
James W. Wilson, CFA
New York, New York

## SECURITIES LENDING

BNY Mellon Global Securities Lending
Renee Rawls
Pittsburgh, Pennsylvania

## PASSIVE MANAGEMENT

Mellon Capital Management Corp.
Brian Hock
Pittsburgh, Pennsylvania

## GLOBAL CUSTODIAN

BNY Mellon Asset Servicing
Sarah Baulch
Pittsburgh, Pennsylvania

## INVESTMENT ADVISOR

Marquette Associates, Inc.
Nichole Roman-Bhatty
Chicago, Illinois

Pension consulting Alliance LLC
Judy Chambers
Portland, Oregon

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# Actuarial Section

November 3, 2017

Board of Trustees
Employees' Retirement System
7 East Redwood Street, 12th Floor
Baltimore, Maryland 21202-3470

***Re: 2017 CAFR***

Honorable Members of the Board of Trustees:

Cheiron Inc. performs an actuarial valuation of the System at the end of each fiscal year. The most recent valuation, as of June 30, 2017, determined the employer's contribution for the plan year beginning July 1, 2018. The contribution is determined for the following year and therefore, it is our understanding the contribution plus interest is historically made during the 2018 Fiscal Year.

The Employees' Retirement System's funding objective is to meet long-term benefit promises through contributions which spread the cost over the employees' service base. If the contributions to the System are soundly executed, the System will pay all promised benefits when due – the ultimate test of financial soundness.

The funding method used in the annual valuation is the Entry Age Normal Cost method. This method tends to computes level contributions as a percentage of pay over the entire working lifetime of the plan participant. The employer's contribution is increased or decreased to amortize the difference between the actuarial value of assets and the actuarial accrued liability as a level dollar amount over 20 years as of July 1, 2011, targeting 100% funding by the fiscal year ending 2032.

The valuation is based on actuarial assumptions recommended by the Actuary and approved by the Board of Trustees and are subject to formal review every five years. The assumptions and methods used for funding purposes meet the parameters set forth in the disclosures presented in the financial section by Governmental Accounting Standards Board (GASB) Statement No. 67 and the Actuarial Standards of Practice. Some actuarial assumptions are incorporated into Article 22 of the Baltimore City Code. The City Code requires a periodic review of the assumptions by the Actuary. The most recent review examined experience from 2010 to 2014 and resulted in changes that were incorporated in the June 30, 2015 valuation. The current assumptions are a reasonable estimate of the anticipated experience of the System.

The valuation is based on a closed group of membership; no new hires are assumed. The actuarial value of assets for this disclosure is equal to the market value adjusted for investment performance above or below the assumed rate of return. Such gains or losses are aggregated and recognized at the rate of 20% each year. Membership data used for the actuarial valuation is supplied by the Retirement System. The data is examined by the actuary for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23. Asset information is provided on an unaudited basis.

The assumptions and methods used in determining the assets, liabilities, and the annual required contributions of the employer as defined by the Governmental Accounting Standards Board meet the parameters set by GASB Statement No. 67, *Financial Reporting for Pension Plans*. The supporting schedules that were prepared by Cheiron and reviewed by the System include Actuarial Funding Methods and Actuarial Assumptions, Schedule of Active Member Valuation Data, Schedule of Retirees and Beneficiaries Removed from Rolls, Solvency Test, Analysis of Financial Experience in the Actuarial Section and the Schedule of Employer Contributions and the Schedule of Funding Progress in the Financial Section. The undersigned meet the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained in this letter and the actuarial report.

These results were prepared solely for the Employees' Retirement System of the City of Baltimore for the purposes described herein, except that the plan auditor may rely on these results solely for the purpose of completing an audit related to the matters herein. Other users of these results are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

To the best of our knowledge, the exhibits that make up the actuarial section of this report and its contents when taken in context with our full valuation report as of July 1, 2017, have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

Sincerely,
Cheiron

Anu Patel

| | |
|---|---|
| Kenneth A. Kent, FSA, FCA, MAAA, EA | Anu Patel, FSA, MAAA, EA |
| Principal Consulting Actuary | Principal Consulting Actuary |

Attachments

## ACTUARIAL FUNDING METHODS AND ACTUARIAL ASSUMPTIONS

### Actuarial Funding Method

| | |
|---|---|
| Method of Funding:<br>(Effective 7/1/1989, Revised 7/1/2012) | Liabilities and contributions shown in this report are computed using the Entry Age Normal method of funding.<br><br>The Plan's normal cost is computed as the level percentage of pay required to fund the retirement benefits between each member's date of hire and assumed retirement.<br><br>The actuarial accrued liability is the difference between the present value of future benefits and the present value of future normal cost.<br><br>The current Unfunded Actuarial Liability, which is the difference between the actuarial liability and the actuarial value of assets, is amortized as a level dollar amount over 20 years. The 20-year period decreases each year from 2011 until 2031, at which time the unfunded liability will be fully paid each year. |
| Asset Valuation:<br>(Effective 6/30/1982, Revised 6/30/2011) | The actuarial value of assets is equal to the market value, adjusted for investment surpluses and deficits over a five-year period.<br><br>The actuarial value of assets is the market value less cumulative unallocated earnings. Any contribution receivable for the upcoming fiscal year (as determined in the prior year's valuation) is added to the result. The actuarial value of assets will not be greater than 120% nor less than 80% of the market value of assets as of the valuation date. |
| Post Retirement Benefit Increases:<br>(Effective 6/30/2011) | Annual post-retirement benefit increases are 1.5% for retirees under age 65 and 2.0% for retirees over age 65. |

**Actuarial Assumptions**

| | |
|---|---|
| Interest:<br>(Effective 6/30/2016) | 7.50% compounded annually until retirement except employee accumulations; 6.50% compounded annually after retirement. |
| Expenses:<br>(Effective 6/30/2015) | Administrative expenses are expected to be equal to the prior years' actual expenses rounded up to the next hundred thousand dollars and added as part of the annual normal cost for the year.<br><br>Investment expenses are assumed to be paid out of investment earnings. |
| Investment Return: | A liability weighted return on assets is expected on the basis that a 7.50% return is achieved on the portion of assets attributable to active and terminated vested participants, and a 6.50% return is assumed for retiree based assets. The weighted expected return this year is 6.93%. The liability weighted return on assets for next year's valuation will be based on the rates listed in the interest rate section above. |

## ACTUARIAL FUNDING METHODS AND ACTUARIAL ASSUMPTIONS

**Salary Scale:** (Effective 6/30/2015)

Salary increases are assumed to vary with age. Sample rates are as follows:

| Age | Annual Rate of Salary Increase |
|---|---|
| 20 | 0.0630 |
| 25 | 0.0580 |
| 30 | 0.0530 |
| 35 | 0.0470 |
| 40 | 0.0410 |
| 45 | 0.0370 |
| 50 | 0.0350 |
| 55 | 0.0350 |
| 60 | 0.0350 |
| 65 | 0.0350 |
| 69 | 0.0350 |

The interest rate and salary assumptions are based on an inflation rate of approximately 2.65% (Effective 6/30/2015).

**Social Security:** (Effective 6/30/2011)

3.00% per year compounded annually.

**Additional Assumptions:**

| | |
|---|---|
| Inflation: (Effective 6/30/2015) | 2.65% |
| Cost of Living Adjustment: (Effective 7/1/2010) | 1.50% for current retirees under age 65 and 2.0% for current retirees over age 65 |
| Percent Married: (Effective 7/1/2011) | Males 90%, Females 80% |
| Spouse Age: | A husband is assumed to be 4 years older than his wife. |
| Remarriage rates: | None |
| Job Elimination Benefit | A liability load of 1.75% is applied to active retirement benefits |
| New Entrant Assumption: | A liability load of 0.5% is applied to active benefits for future new entrants who may have previous service restored or transferred into the System (effective 6/30/2015) |

## ACTUARIAL FUNDING METHODS AND ACTUARIAL ASSUMPTIONS

Active decrements and service retirement rates are the same as presented in the June 30, 2015 actuarial valuation report. (Effective 6/30/2015) Sample rates follow:

**Rates of Retirement**

| AGE | < 30 yos | 30 yos | 30 + yos |
|---|---|---|---|
| 45 -49 | 0.00 | 0.10 | 0.00 |
| 50-54 | 0.00 | 0.10 | 0.05 |
| 55 | 0.03 | 0.10 | 0.05 |
| 56-57 | 0.04 | 0.10 | 0.05 |
| 58 | 0.05 | 0.10 | 0.05 |
| 59 | 0.05 | 0.10 | 0.10 |
| 60 | 0.05 | 0.10 | 0.10 |
| 61 | 0.07 | 0.20 | 0.15 |
| 62 | 0.15 | 0.20 | 0.25 |
| 63 | 0.11 | 0.20 | 0.20 |
| 64 | 0.14 | 0.20 | 0.17 |
| 65 | 0.20 | 0.30 | 0.25 |
| 66 | 0.20 | 0.20 | 0.25 |
| 67 | 0.17 | 0.20 | 0.20 |
| 68 | 0.15 | 0.20 | 0.20 |
| 69 | 0.20 | 0.20 | 0.20 |
| 70 | 1.00 | 1.00 | 1.00 |

**Withdrawals**

| Service | Rate |
|---|---|
| 0 | 0.1450 |
| 1 | 0.1350 |
| 2 | 0.1150 |
| 3 | 0.0900 |
| 4 | 0.0800 |
| 5 | 0.0800 |
| 6 | 0.0700 |
| 7 | 0.0600 |
| 8 | 0.0400 |
| 9 | 0.0400 |
| 10 | 0.0400 |
| 11 | 0.0400 |
| 12 | 0.0400 |
| 13 | 0.0300 |
| 14 | 0.0300 |
| 15 | 0.0300 |

**Mortality and Disablity Rates**

| AGE | Non-Line-of-Duty Disability | Line-of Duty Disability (Classes A&B) | Line-of Duty Disability (Class C) | Non-Line-of-Duty Death * Male | Non-Line-of-Duty Death * Female | Line-of Duty Death* |
|---|---|---|---|---|---|---|
| 25 | 0.00050 | 0.00004 | 0.00008 | 0.00037 | 0.00021 | 0.00005 |
| 30 | 0.00059 | 0.00004 | 0.00008 | 0.00061 | 0.00037 | 0.00005 |
| 35 | 0.00073 | 0.00005 | 0.00010 | 0.00093 | 0.00055 | 0.00005 |
| 40 | 0.00190 | 0.00006 | 0.00013 | 0.00122 | 0.00084 | 0.00005 |
| 45 | 0.00332 | 0.00009 | 0.00018 | 0.00169 | 0.00127 | 0.00005 |
| 50 | 0.00394 | 0.00012 | 0.00023 | 0.00255 | 0.00194 | 0.00005 |
| 55 | 0.00567 | 0.00013 | 0.00025 | 0.00457 | 0.00369 | 0.00005 |
| 60 | 0.00715 | 0.00034 | 0.00068 | 0.00888 | 0.00737 | 0.00005 |
| 65 | 0.00130 | 0.00038 | 0.00076 | 0.01608 | 0.01295 | 0.00005 |
| 69 | 0.00078 | 0.00039 | 0.00078 | 0.02455 | 0.01990 | 0.00005 |

** Rates for individuals who are the age shown as of June 30, 2017*

**Mortality Rates for Retired and Disabled Members and Beneficiaries**

1. Retirees and Beneficiaries – RP 2000 Healthy Mortality with generational projections using 50% of the AA scale projected 15 years with a two year set forward for both males and females.

2. Disabled Members – RP 2000 Disabled Mortality with generational projections using 50% of the AA scale projected 15 years with a four year set forward for both males and females.

| | Retirees and Beneficiaries * | | Disabled Members | |
|---|---|---|---|---|
| AGE | Male | Female | Male | Female |
| 55 | 0.00407 | 0.00328 | 0.03524 | 0.01956 |
| 60 | 0.00776 | 0.00641 | 0.04282 | 0.02562 |
| 65 | 0.01447 | 0.01172 | 0.05365 | 0.03403 |
| 70 | 0.02437 | 0.01990 | 0.06924 | 0.04709 |
| 75 | 0.04222 | 0.03212 | 0.09305 | 0.06384 |
| 80 | 0.07466 | 0.05341 | 0.12515 | 0.08899 |

## SCHEDULE OF ACTIVE MEMBER VALUATION DATA

| Valuation Date | Number | Annual Payroll | Annual Average | % Increase/ (Decrease) in Average Pay |
|---|---|---|---|---|
| 06/30/2006 | 9,193 | $331,888,366 | $36,102 | 5.9% |
| 06/30/2007 | 9,035 | 346,391,734 | 38,339 | 6.2 |
| 06/30/2008 | 9,280 | 367,517,242 | 39,603 | 3.3 |
| 06/30/2009 | 9,719 | 398,009,475 | 40,952 | 3.4 |
| 06/30/2010 | 9,680 | 401,328,980 | 41,460 | 1.2 |
| 06/30/2011 | 9,393 | 392,941,135 | 41,833 | 0.9 |
| 06/30/2012 | 9,107 | 390,557,576 | 42,885 | 2.5 |
| 06/30/2013 | 9,004 | 392,868,271 | 43,633 | 1.7 |
| 06/30/2014 | 8,904 | 401,291,783 | 45,069 | 3.3 |
| 06/30/2015 | 8,673 | 408,095,216 | 47,054 | 4.4 |
| 06/30/2016 | 8,274 | 399,465,753 | 48,280 | 2.6 |
| 06/30/2017 | 8,043 | 391,121,606 | 48,629 | 0.7 |

## SCHEDULE OF RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS

| | Added to Rolls | | Removed from Rolls | | Rolls - End of Year | | % Increase in | Average |
|---|---|---|---|---|---|---|---|---|
| | | Annual | | Annual | | Annual | Annual | Annual |
| Year Ended | No. | Allowances* | No. | Allowances* | No. | Allowances* | Allowances | Allowances |
| 6/30/2006 | 473 | $5,572,251 | 408 | $3,239,121 | 8,688 | $92,159,531 | 2.6% | $10,608 |
| 6/30/2007 | 436 | 11,159,559 | 428 | 3,725,576 | 8,696 | 99,593,514 | 8.1 | 11,453 |
| 6/30/2008 | 382 | 7,846,827 | 440 | 3,953,061 | 8,638 | 103,487,280 | 3.9 | 11,980 |
| 6/30/2009 | 478 | 6,819,538 | 498 | 4,385,748 | 8,618 | 105,921,070 | 2.4 | 12,291 |
| 6/30/2010 | 473 | 8,065,853 | 454 | 4,252,838 | 8,637 | 109,734,085 | 3.6 | 12,705 |
| 6/30/2011 | 493 | 9,685,011 | 437 | 4,966,673 | 8,693 | 114,452,423 | 4.3 | 13,166 |
| 6/30/2012 | 497 | 10,860,356 | 451 | 4,339,871 | 8,739 | 120,972,909 | 5.7 | 13,843 |
| 6/30/2013 | 501 | 10,216,250 | 432 | 5,192,731 | 8,808 | 125,996,428 | 4.2 | 14,305 |
| 6/30/2014 | 421 | 10,499,144 | 336 | 5,588,634 | 8,893 | 130,906,938 | 3.9 | 14,720 |
| 6/30/2015 | 393 | 10,089,809 | 388 | 6,224,773 | 8,898 | 134,771,974 | 3.0 | 15,146 |
| 6/30/2016 | 477 | 14,965,060 | 368 | 5,525,068 | 9,007 | 140,346,930 | 4.1 | 15,582 |
| 6/30/2017 | 436 | 10,896,681 | 299 | 5,283,016 | 9,144 | 145,960,595 | 4.0 | 15,962 |

* Includes post-retirement adjustments.

## SOLVENCY TEST`

The Employees' Retirement System's funding objective is to meet long-term benefit promises through contributions which spread the cost over the employees' service base. If the contributions to the System are soundly executed, the System will pay all promised benefits when due – the ultimate test of financial soundness.

A short-term solvency test is one means of examining progress under its funding program. In a short-term solvency test, the plan's present assets are compared with: 1) Active member contributions on deposit; 2) The liabilities for future benefits to present retired lives; 3) The liabilities for future benefits to terminated vested members; and, 4) The liabilities for service already rendered by active members. In a system which has been following the discipline of allocating cost on a consistent basis to valuation years, the liabilities for active member contributions on deposit (liability 1), the liabilities for future benefits to present retired lives (liability 2), and the liabilities for future benefits to terminated vested members (liability 3) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by active members (liability 4) will be partially covered by the remainder of present assets. Generally, the funded portion of liability 4 will increase over time.

The schedule below illustrates the System's history of liabilities 1 through 4.

| | Aggregate Accrued Liabilities For | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | | Portion of Accrued Liabilities Covered by Report Assets | | | |
| Valuation Date | Active Member Contributions | Retirees and Beneficiaries | Terminated Vested Members | Active Members (Employer Financed Portion) | Valuation Assets | (1) | (2) | (3) | (4) |
| 6/30/2006 | $5,142,918 | $937,648,822 | $29,987,196 | $578,363,462 | $1,411,165,976 | 100% | 100% | 100% | 75.8% |
| 6/30/2007 | 4,891,816 | 991,713,294 | 33,164,687 | 568,912,381 | 1,447,196,612 | 100 | 100 | 100 | 73.4 |
| 6/30/2008 | 4,265,169 | 1,023,749,711 | 37,096,665 | 598,966,777 | 1,475,533,717 | 100 | 100 | 100 | 68.5 |
| 6/30/2009 | 3,875,023 | 1,039,839,384 | 40,657,298 | 640,558,977 | 1,424,202,643 | 100 | 100 | 100 | 53.1 |
| 6/30/2010 | 3,419,652 | 1,103,746,648 | 46,882,433 | 676,175,786 | 1,390,514,840 | 100 | 100 | 100 | 35.0 |
| 6/30/2011 | 3,013,222 | 1,169,599,360 | 43,416,490 | 724,418,152 | 1,410,211,059 | 100 | 100 | 100 | 26.8 |
| 6/30/2012 | 2,977,938 | 1,228,202,331 | 44,829,153 | 835,268,747 | 1,429,666,081 | 100 | 100 | 100 | 18.4 |
| 6/30/2013 | 2,688,948 | 1,270,442,197 | 44,651,885 | 834,209,969 | 1,465,943,503 | 100 | 100 | 100 | 17.8 |
| 6/30/2014 | 5,070,338 | 1,312,440,514 | 52,060,082 | 840,749,044 | 1,540,327,375 | 100 | 100 | 100 | 20.3 |
| 6/30/2015 | 10,682,704 | 1,356,302,147 | 48,799,252 | 837,218,003 | 1,615,537,148 | 100 | 100 | 100 | 23.9 |
| 6/30/2016 | 19,415,031 | 1,408,689,345 | 48,210,458 | 851,247,989 | 1,657,187,748 | 100 | 100 | 100 | 21.2 |
| 6/30/2017 | 27,652,436 | 1,449,436,246 | 52,505,622 | 830,011,213 | 1,715,495,626 | 100 | 100 | 100 | 22.4 |

## ANALYSIS OF FINANCIAL EXPERIENCE

### Gains and Losses in Accrued Liabilities During Fiscal Year Resulting from Differences Between Assumed Experience and Actual Experience

| Type of Activity | Gain or (Loss) for Year 2016 | Gain/(Loss) for Year 2017 |
|---|---|---|
| **Age and Service Retirements**<br>If members retire at older ages or with lower final average pay than assumed, there is a gain. If younger ages or higher pays, a loss. | $ (9,846,000) | $ (4,022,000) |
| **Disability Retirements**<br>If disability claims are less than assumed, there is a gain. If more claims, a loss. | (5,383,000) | (2,409,000) |
| **Death-in-Service Benefits**<br>If survivor claims are less than assumed, there is a gain. If more claims, there is a loss. | (3,439,000) | (3,745,000) |
| **Withdrawal from Employment**<br>If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss. | 3,388,000 | 2,029,000 |
| **Pay Increases**<br>If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss. | 6,147,000 | 13,676,000 |
| **Investment Income**<br>If there is greater investment income than assumed, there is a gain. If less, a loss. | (29,234,000) | (14,190,000) |
| **Death After Retirement**<br>If retirees live longer than assumed, there is a loss. If not as long, a gain. (includes PuBF G/(L)) | 4,259,000 | (1,898,000) |
| **New Entrants**<br>New entrants create a loss because they were not assumed in the previous evaluation. | (1,623,000) | 1,500,000 |
| **Plan Changes or Increase in Periodic Pension**<br>Plan changes or one time increase in the periodic benefit payments | 0 | 0 |
| **Assumption, Method and Plan Changes**<br>Changes due to assumption changes and/or changes in accounting and liability. | (20,850,000) | 0 |
| **Other**<br>Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, valuation methods, etc. | (393,000) | 6,199,000 |
| **Gain or (Loss) During Year from Financial Experience** | $ (56,974,000) | $ (2,860,000) |

**SUMMARY OF PLAN PROVISIONS**
June 30, 2017

1. **EFFECTIVE DATE:**

The Employees' Retirement System was established by City Ordinance, effective January 1, 1926, and has been amended periodically.

2. **ELIGIBILITY:**

Any regular and permanent officer, agent, or employee of the City with the exception of those required to join the Maryland State or other Retirement System will become a Class C member of the Employees' Retirement System upon completion of one year of employment. The Board of Estimates may authorize prospective membership for any class of part-time employees. There are three classes of members as follows:

**Class A** - Members who were hired before July 1, 1979, and entered membership on or after January 1, 1954, or who were employed and elected prior to April 1, 1954, to contribute at the higher Class A rate.

**Class B** - Members as of January 1, 1954, who did not elect Class A membership. Any Class B member may elect to become a Class A member by bringing his accumulated contributions and interest up to what they would be if he had elected Class A membership on January 1, 1954.

**Class C** - Members who were hired on or after July 1, 1979 and before July 1, 2014, or any other members who may have elected to transfer during various open transfer periods to Class C membership.

**Class D** - Members who were hired or rehired on or after July 1, 2014, and are Retirement Savings Plan "hybrid members".

3. **MEMBER CONTRIBUTIONS:**

Class C members make the following pre-tax contributions as a percentage of earnable compensation:

| | |
|---|---|
| July 1, 2013 -- June 30, 2014 | 1% |
| July 1, 2014 -- June 30, 2015 | 2% |
| July 1, 2015 ---June 30, 2016 | 3% |
| July 1, 2016 -- June 30, 2017 | 4% |
| July 1, 2017 -- June 30, 2018 | 5% |

Year-to-year increases in the contribution rate are conditioned on members' receiving a raise of at least 2%.

Class A and Class B members contribute 4% of earnable compensation. Class A and Class B contributions are not required upon attaining age 60 and completing 35 years of service.

Class D members contribute 5% of earnable compensation.

4. **COMPENSATION:**

Earnable compensation is the annual salary authorized for the member, not including overtime, differential pay, environmental pay, hazardous duty pays for conversion of leave or other fringe benefits, or any like additional payment.

Average final compensation is the average of the member's annual earnable compensation on January 1 for the three successive years of service when the member's earnable compensation is the highest or, if the member is in service on January 1 for less than three successive years, then the average during total service.

Covered compensation (for Class C members only) is the average of the FICA wage base for the 35-year period ending with the calendar year which ends immediately prior to the earlier of: (1) January 1, which is one year prior to January 1 of the calendar year in which member terminates employment; or (2) January 1 of the calendar year in which the member attains age 65.

5. **MILITARY SERVICE CREDIT:**

(A) **Classes A and B**

(1) **Military Service Prior to Employment:** A maximum of three years' service credit is granted provided the member has acquired:

(a) 10 years of service and has reached the age of 60; or
(b) 20 years of service, regardless of age.

(2) **Military Service Within Employment:** Upon retirement or death, any member who had a break in employment due to military duty, will receive service credit for the period of absence as provided by the Veterans' Reemployment Rights Act and the Uniformed Services Employment and Reemployment Rights Act of 1994.

(B) **Classes C** and D

(1) **Military Service Prior to Employment:** A maximum of three years' service credit is granted provided the member has acquired:

(a) 10 years of service and has reached the age of 62; or

(b) 20 years of service, regardless of age.

(2) **Military Service Within Employment:** Upon retirement or death, any member who had a break in employment due to military duty, will receive service credit for the period of absence as provided by the Veterans' Re-Employment Rights Act and the Uniformed Services Employment and Reemployment Rights Act of 1994. For members reemployed after military service, the City will pay their member contributions for the period of military service. If the member terminates City employment before becoming eligible for a retirement benefit or deferred vested benefit, the member will not receive the contributions made by the City for the period of military service.

6. **SERVICE RETIREMENT:**

(A) **Classes A and B**

(1) **Eligibility Requirements:**

(a) Age 60 with five years of service; or

(b) 30 years of membership service, regardless of age.

(2) **Benefit Amount:** The sum of:

(a) an annuity of the actuarial equivalent of a member's accumulated contributions; plus

(b) a pension, which together with the annuity will be equal to 1.935% for Class A members and 1.785% for Class B members for each year of service, times the member's average final compensation.

(B) **Class C**

(1) **Eligibility Requirements:**

(a) Age 65 with five years of service;

(b) 30 years of service, regardless of age; or

(c) Age 55 with five years of service, payable at age 65 or reduced for payment before age 65.

(2) **Benefit Amount:** The sum of:

(a) a pension of 1.60% for each year of service (not to exceed 30), times the member's average final compensation; plus

(b) .25% for each year of service not to exceed 30, times member's average final compensation in excess of covered compensation; plus

(c) 1.85% for each year of service in excess of 30, times the member's average final compensation.

If a member elects to have his maximum or optional pension commence prior to normal retirement date, age 65 with less than 30 years, the amount of his pension will be reduced 6.667% for each of the first five years (prorated for shorter periods) and 3.333% for each of the next five years (prorated for shorter periods) by which the commencement of his pension precedes his normal retirement age 65.

(C) **Class D**

(1) **Eligibility Requirements:**

(a) Age 65 with five years of service;

(b) 30 years of service, regardless of age; or

(c) Age 55 with five years of service, payable at age 65 or reduced for payment before age 65.

(2) **Benefit Amount:**

(a) 1.0% for each year of service times the member's average final compensation.

(b) For members who retire at age 62 with at least 20 years of service, 1.1% for each year of service times the member's average final compensation.

If a member elects to have his maximum or optional pension commence prior to normal retirement date, age 65 with less than 30 years, the amount of his pension will be reduced 6.667% for each of the first five years (prorated for shorter periods) and 3.333% for each of the next five years (prorated for shorter periods) by which the commencement of his pension precedes his normal retirement age 65.

7. **NON-LINE-OF-DUTY DISABILITY RETIREMENT:**

(A) **Classes A and B**

(1) **Eligibility Requirements:** Five years of service and determined by a hearing examiner to be mentally or physically incapacitated for the performance of duty, and that the incapacity is likely to be permanent.

(2) **Benefit Amount:** The sum of:

(a) an annuity of the actuarial equivalent of a member's accumulated contributions; plus

(b) a pension which, together with the annuity will equal 1.90% for Class A members and 1.75% for Class B members for each year of service, times the member's average final compensation.

The member will receive, as a minimum, the benefit as stated above or 25% of the member's average final compensation.

(3) **Offset to Retirement Allowance:** This benefit is offset by:

(a) workers' compensation; and

(b) earnings in excess of base amount (current earnable compensation in same job grade and step adjusted for longevity) with a $1 reduction for each $2 of the first $5,000 of excess and a $2 reduction for each $5 of additional excess earnings.

(B) **Classes C and D**

(1) **Eligibility Requirements:** Five years of service and determination by a hearing examiner to be mentally or physically incapacitated for the performance of duty, and that the incapacity is likely to be permanent.

(2) **Benefit Amount:** The non-line-of-duty disability pension will be the greater of:

(a) a pension equal to the member's accrued service retirement benefit; or

(b) 15% of the member's average final compensation.

(3) **Offset to Retirement Allowance:** This benefit is offset by workers' compensation.

8. **LINE-OF-DUTY DISABILITY RETIREMENT:**

(A) **Classes A and B**

(1) **Eligibility Requirements:** Immediate eligibility upon membership in the System and determined by a hearing examiner to be incapacitated for the further performance of duty, and the incapacity resulted from an accident occurring while in the actual performance of duty without willful negligence.

(2) **Benefit Amount:** The sum of:

(a) an annuity of the actuarial equivalent of the member's accumulated contributions; plus

(b) a pension equal to 66.667% of the member's average final compensation.

(3) **Offset to Retirement Allowance:** This benefit is offset by workers' compensation.

(B) **Classes C and D**

(1) **Eligibility Requirements:** Immediate eligibility upon membership in the System and determination by a hearing examiner to be incapacitated for the further performance of duty, and the incapacity resulted from an accident occurring while in the actual performance of duty without willful negligence.

(2) **Benefit Amount:** A pension equal to 66.667% of the member's average final compensation.

(3) **Offset to Retirement Allowance:** This benefit is offset by wokers' compensation.

9. **DISMEMBERMENT DISABILITY RETIREMENT (Classes C and D only):**

(A) **Eligibility Requirement:** Immediate eligibility upon membership in the System and determination by a hearing examiner that the loss of any two or more of hands, feet, sight of eye(s), or combination thereof, was a direct result of bodily injury from an accident that occurred while in the actual performance of duty.

(B) **Benefit Amount:** A pension equal to 100% of the member's average final compensation.

(C) **Offset to Retirement Allowance:** This benefit is offset by workers' compensation.

10. **TERMINATION OF EMPLOYMENT:**

(A) **Classes A and B**

(1) **Eligibility Requirement:**

(a) For a termination retirement allowance deferred to age 60, the completion of:

(i) 15 years of service; or

(ii) Five years of service, if removed from a position without fault or if an elected or appointed official not re-elected or re-appointed.

(b) For a termination retirement allowance payable immediately without reduction for age, the completion of 20 years of service, if removed from a position without fault or if an elected or appointed official not re-elected or re-appointed.

(c) Eligible for a refund of accumulated contributions if not eligible for any other benefits.

(2) **Benefit Amount:**

(a) Deferred Payment: Determined the same as for service retirement, but based on membership service and average final compensation at the time of termination.

(b) Immediate Payment: Determined the same as if the member had retired with a non-line-of-duty disability retirement allowance.

(B) **Class C**

(1) **Eligibility Requirement:**

(a) For a termination retirement allowance deferred to age 65, completion of:

(i) 10 years of service; or

(ii) Five years of service, if removed from a position without fault or if an appointed official not re-appointed.

(b) For a termination retirement allowance payable immediately without reduction for age, the completion of 20 years of service, if removed from a position without fault or if an appointed official not re-appointed.

(c) Eligible for a refund of accumulated contributions if not eligible for any other benefits.

(2) **Benefit Amount:**

(a) Deferred Payment: Determined the same as for service retirement, but based on membership service and average final compensation at the time of termination.

(C) **Class D**

(1) **Eligibility Requirement:**

(a) For a termination retirement allowance deferred to age 65, completion of 10 years of service.

(b) Eligible for a refund of accumulated contributions if not eligible for any other benefits.

(2) **Benefit Amount:**

Determined the same as for service retirement, but based on membership service and average final compensation at the time of termination.

11. **MAXIMUM ALLOWANCE AND OPTIONAL METHODS OF RECEIVING BENEFIT PAYMENTS:**

(A) **Lump Sum:** Under $12,500 or as adjusted by the Board of Trustees.

(B) **Maximum Allowance:** Upon retiree's death, 40% of retiree's maximum allowance to unremarried spouse or dependent children until the last dies or attains age 18 (age 22 if a full time student). All other options result in a lesser amount paid.

(C) **Reserve Guarantee Option:** Upon retiree's death, a cash refund to retiree's designated beneficiary based on present value of allowance at retirement less payments made.

(D) **100% Joint and Survivor Option:** Upon retiree's death, 100% of retiree's allowance to continue to designated beneficiary.

(E) **50% Joint and Survivor Option:** Upon retiree's death, 50% of retiree's allowance to continue to designated beneficiary.

(F) **50% Pop-Up:** Upon retiree's death 50% of retiree's allowance to continue to designated beneficiary.
If designated beneficiary predeceases member, member receives Maximum and no survivorship benefit is paid.

(G) **100% Pop-Up:** Upon retiree's death 100% of retiree's allowance to continue to designated beneficiary. If designated beneficiary predeceases member, member receives Maximum and no survivorship benefit is paid.

(H) **Specific Benefit Option:** Upon the retiree's death and subject to the approval of the Board of Trustees, the member's designated beneficiary will receive:

(1) a specific lump sum amount; or

(2) a specific periodic allowance.

These options are available for service, termination, non-line-of-duty disability, and line of duty disability retirement. Any option and/or beneficiary may be changed by the retired member within 30 days after retirement.

12. **NON-LINE-OF-DUTY DEATH BENEFITS:**

(A) **Classes A and B**

(1) **Lump Sum Benefit:**

(a) **Eligibility Requirements:** Member who

(i) dies while actively employed; and

(ii) whose death does not qualify as a line-of-duty death.

(b) **Benefit Amount:** The designated beneficiary is paid:

(i) the member's accumulated contributions; plus
(ii) if member has one or more years of membership service, 50% of the greater of the member's average final compensation or current annual earnable compensation.

(2) **100% Survivorship Benefit:**

(a) **Eligibility Requirements:** This benefit is paid to the member's designated beneficiary spouse to whom he/she has been married for at least five years or his/her parent(s), provided the Member:

(i) is eligible for service retirement at the time of death; or

(ii) would have become eligible for service retirement within 90 days of the date of death; or

(iii) retired on account of service, non line of duty disability, or line of duty disability and dies within 30 days of retirement; or

(iv) is entitled to a deferred allowance at age 60 and dies anytime between the effective retirement date at age 60 and no later than 30 days following the attainment of age 60.

(b) **Benefit Amount:** The eligible beneficiary may elect in lieu of the Lump Sum Benefit or the 40% Survivorship Benefit, an allowance equal to the amount that would have been paid under the Service Retirement 100% Joint and Survivor Option.

(3) **40% Survivorship Benefit:**

(a) **Eligibility Requirements:** This benefit is paid to the member's designated beneficiary spouse with whom he has been married for at least one year prior to the date of death or to the member's unmarried children if less than age 18 (or age 22 if students), provided the Member:

(i) died in active service; and

(ii) had more than 20 years of service as of the date of death.

(b) **Benefit Amount:** The eligible beneficiary spouse or children may elect in lieu of the Lump Sum Benefit or the 100% Survivorship Benefit, an allowance equal to 40% of the member's accrued service retirement benefit.

(4) **Offset to Death Benefits:** These benefits are offset by any pension benefits paid before the members' death.

(B) **Classes C and D**

**(1) Lump Sum Benefit:**

(a) **Eligibility Requirements:** Member who:

(i) dies while actively employed; and

(ii) has one or more years of membership service, but whose death does not qualify as a line-of-duty death.

(b) **Benefit Amount:** The designated beneficiary is paid:

(i) the member's accumulated contributions, if any; plus

(ii) one-time payment of 50% of the greater of the member's average final compensation or current annual earnable compensation.

**(2) 100% Survivorship Benefit:**

(a) **Eligibility Requirements:** This benefit is paid to the member's designated beneficiary spouse to whom he/she was married for at least 5 years or his parent(s), provided the member:

(i) is eligible for service retirement at the time of death; or

(ii) would have become eligible for service retirement within 90 days of the date of death; or

(iii) retired on account of service, non line of duty disability, or line of duty disability and dies within 30 days of retirement; or

(iv) is entitled to a deferred allowance at age 65 and dies anytime between the effective retirement date at age 65 and no later than 30 days following the attainment of age 65.

(b) **Benefit Amount:** The eligible beneficiary may elect in lieu of the Lump Sum Benefit or the 40% Survivorship Benefit, an allowance equal to the amount that would have been paid under the Service Retirement 100% Joint and Survivor Option.

**(3) 40% Survivorship Benefit:**

(a) **Eligibility Requirements:** This benefit is paid to the member's designated beneficiary spouse to whom he has been married for at least one year prior to the date of death or to the member's unmarried children if less than age 18 (or age 22 if students), provided the member:

(i) died in active service; and

(ii) had more than 20 years of service as of the date of death.

(b) **Benefit Amount:** The eligible beneficiary spouse or eligible children may elect in lieu of the Lump Sum Benefit or the 100% Survivorship Benefit, an allowance equal to 40% of the member's accrued service retirement benefit.

**(4) Offset to Death Benefits:** These benefits are offset by workers' compensation.

13. **LINE-OF-DUTY DEATH BENEFITS:**

(A) **Eligibility Requirements:** A determination by a hearing examiner that the death of a member was:

(1) the direct result of bodily injury though accidental means independent of any pre-existing physical or medical conditions;

(2) occurring while in the actual performance of duty; and

(3) not caused by willful negligence on the part of the member.

(B) **Benefit Amount:** The sum of:

(1) the member's accumulated contributions (if any); plus

(2) an annual pension of 100% of current earnable compensation, payable to:

(a) the spouse during widow(er)hood, provided: (1) there is no voluntary separation agreement renouncing rights of inheritance; and (2) the member has not designated his children as beneficiaries;

(b) if no eligible spouse, or if the spouse dies or remarries, the child or children, equally, until age 18 (age 22 if a full-time student);

(c) if no eligible spouse or child surviving, then to the deceased's father and/or mother equally, or to the survivor;

(d) for Classes A and B, any member who retires and dies within 30 days after the effective date of accidental disability retirement will receive the above benefits if death is the result of injuries in the line-of-duty.

If no beneficiary and if intestate without heirs, then contributions will remain part of the System, and no death benefit is paid.

(C) **Offset to Retirement Allowance:** This benefit is offset by workers' compensation, net of legal and medical fees.

14. **POST-RETIREMENT BENEFIT INCREASES:**

(A) **Eligibility Requirements;**

Only retirees and their beneficiaries, who have been receiving periodic benefit payments as of the June 30th determination date, and members who have been retired for a minimum of 12 months, are eligible for the increase. The increase is payable commencing in the January after the June 30th determination date.

(B) **Amount:**

(1) **Classes A, B and C**

1.5% for participants in pay status under age 65 and 2.0% for participants in pay status age 65 and over.

(2) **Class D**

(a) In pay status under age 65:

1.5% if Class D funded status is 85% or more.

1.0% if Class D funded status is at least 70% but less than 85%.

No increase if Class D funded status is less than 70%.

(b) In pay status age 65 or older:

2.0% if Class D funded status is 85% or more.

1.0% if Class D funded status is at least 70% but less than 85%.

No increase if Class D funded status is less than 70%.

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# Statistical Section

**STATISTICAL SECTION SUMMARY**

The statistical section of the Employees' Retirement System's (System) comprehensive annual financial report presents detailed information as a context for helping the readers understand the information in the financial statements, notes disclosures, required supplementary information, and the System's overall financial health for the last ten fiscal years. The different reports contained in this section are listed below.

**Financial Trends**

Changes of Plan Net Position schedules detail the System's financial performance from year to year.

**Revenue Capacity**

The Revenue by Source schedule list the different income streams of the System.

**Expenses Capacity**

The Expense by Type schedules contains information about the major costs of the System.

**Demographic Information**

The demographic schedules consist of various membership information used by the Actuary to determine or monitor the demographic assumptions. The tables which are used to compare current assumptions with actual experience to determine recommended assumption changes include:

- The Schedule of Active Members by Years of Service, which provides active membership information including the average service credit and member's age for each fiscal year;
- The Schedule of Retirees by Attained Age and Type of Retirement, provides the number of retirees by age and the type of retirement, and
- The Schedule of Beneficiaries By attained Age and Type of Retirement that provides membership information on beneficiaries by age and type of the member's retirement.

**Benefit Expenses by Type**: is a report of benefit related expenses by the type of retirement and payment for each year of service.

**Average Monthly Benefit Payments**: is a schedule of monthly benefit payments based on years of credited service. For each year, the schedule provides the average monthly benefit payment, Average – average Final Compensation and number of retirees grouped in years of credited service.

Employees' Retirement System
City of Baltimore, Maryland
**Statement of Changes in Fiduciary Net Position**
For the Last Ten Fiscal Years

| | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|
| **Additions** | | | | | |
| Contributions | | | | | |
| Employer | $ 43,918,411 | $ 43,673,027 | $ 48,748,397 | $ 62,374,396 | $77,995,003 |
| Plan members | 345,637 | 172,567 | 215,669 | 358,202 | 359,028 |
| Total contributions | $ 44,264,048 | $ 43,845,594 | $ 48,964,066 | $ 62,732,598 | $ 78,354,031 |
| Investment Income | | | | | |
| Net appreciation in fair value of investments | $ (111,674,879) | $ (278,688,103) | $ 91,458,311 | $ 195,926,226 | $18,948,964 |
| Interest, dividends, and real estate income | 46,115,481 | 28,522,723 | 26,028,223 | 20,583,936 | 6,758,532 |
| Less: investment expenses | (6,275,603) | (5,406,811) | (5,641,242) | (6,115,531) | (6,155,302) |
| Net investment income | $ (71,835,001) | $ (255,572,191) | $ 111,845,292 | $ 210,394,631 | $19,552,194 |
| Securities lending income | $ 1,001,675 | $ 762,206 | $ 290,022 | $ 283,344 | $205,199 |
| Securities lending fees | (300,467) | (228,479) | (86,970) | (83,849) | (60,244) |
| Net securities lending income | $ 701,208 | $ 533,727 | $ 203,052 | $ 199,495 | $144,955 |
| **Total additions** | $ (26,869,745) | $ (211,192,870) | $ 161,012,410 | $ 273,326,724 | $98,051,180 |
| **Deductions** | | | | | |
| Retirement allowances | $ 101,461,516 | $ 104,166,249 | $ 108,225,770 | $ 112,642,028 | $118,802,304 |
| Adminstrative expenses | 2,913,458 | 3,138,612 | 3,061,461 | 3,189,932 | 3,297,684 |
| Death benefits | 1,061,050 | 881,569 | 791,170 | 546,942 | 1,289,869 |
| Lump cash payments | 177,877 | 289,626 | 155,564 | 123,425 | 73,596 |
| Refund of Contributions | 9,161 | | 334 | 95,936 | 9,088 |
| **Total deductions** | $ 105,623,062 | $ 108,476,056 | $ 112,234,299 | $ 116,598,263 | $123,472,541 |
| Net increases / (decreases) | $ (132,492,807) | $ (319,668,926) | $ 48,778,111 | $ 156,728,461 | ($25,421,361) |
| **Net position held in trust for pension benefits** | | | | | |
| **Beginning Balance** | $1,488,574,968 | $ 1,356,082,161 | $ 1,036,413,235 | $ 1,085,191,346 | $ 1,241,919,807 |
| **Ending Balance** | $1,356,082,161 | $ 1,036,413,235 | $ 1,085,191,346 | $ 1,241,919,807 | $1,216,498,446 |

Employees' Retirement System
City of Baltimore, Maryland
**Statement of Changes in Fiduciary Net Position**
For the Last Ten Fiscal Years

| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| **Additions** | | | | | |
| Contributions | | | | | |
| Employer | $ 88,300,214 | $ 94,917,886 | $ 97,170,796 | $ 77,100,573 | $ 84,474,451 |
| Plan members | 223,720 | 3,623,467 | 6,728,131 | 10,350,709 | 10,656,243 |
| Total contributions | $ 88,523,934 | $ 98,541,353 | $ 103,898,927 | $ 87,451,282 | $ 95,130,694 |
| Investment Income | | | | | |
| Net appreciation in fair value of investments | $ 135,498,253 | $ 192,951,419 | $ (14,411,263) | $ 437,788 | $ 72,380,195 |
| Interest, dividends, and real estate income | 19,359,439 | 24,639,052 | 90,342,747 | 48,604,366 | 99,449,978 |
| Less: investment expenses | (6,931,175) | (8,117,367) | (9,321,676) | (9,138,196) | (8,914,009) |
| Net investment income | $ 147,926,517 | $ 209,473,104 | $ 66,609,808 | $ 39,903,958 | $ 162,916,164 |
| Securities lending income | $ 359,807 | $ 788,486 | $ 297,447 | $ 496,519 | $ 340,857 |
| Securities lending fees | (107,623) | (614,421) | (89,215) | (140,435) | (100,183) |
| Net securities lending income | $ 252,184 | $ 174,065 | $ 208,232 | $ 356,084 | $ 240,674 |
| **Total additions** | $ 236,702,635 | $ 308,188,522 | $ 170,716,967 | $ 127,711,324 | $ 258,287,532 |
| **Deductions** | | | | | |
| Retirement allowances | $ 124,059,639 | $ 129,205,776 | $ 133,129,502 | $ 138,184,417 | $ 142,957,078 |
| Adminstrative expenses | 3,554,942 | 3,711,975 | 3,748,434 | 3,515,492 | 3,584,506 |
| Death benefits | 689,223 | 699,991 | 943,540 | 652,743 | 1,225,559 |
| Lump cash payments | 157,082 | 63,979 | 125,608 | 124,748 | 77,861 |
| Refund of Contributions | 6,381 | 4,224 | 72,008 | 235,808 | 348,412 |
| **Total deductions** | $ 128,467,267 | $ 133,685,945 | $ 138,019,092 | $ 142,713,208 | $ 148,193,416 |
| Net increases / (decreases) | $ 108,235,368 | $ 174,502,577 | $ 32,697,875 | $ (15,001,884) | $ 110,094,116 |
| **Net position held in trust for pension benefits** | | | | | |
| **Beginning Balance** | $1,216,498,446 | $ 1,324,733,814 | $ 1,499,236,391 | $ 1,531,934,266 | $ 1,516,932,382 |
| **Ending Balance** | $ 1,324,733,814 | $ 1,499,236,391 | $ 1,531,934,266 | $ 1,516,932,382 | $ 1,627,026,498 |

Employees' Retirement System
City of Baltimore, Maryland
**REVENUES BY SOURCE**

| Fiscal Year | Net Investment Income (Loss) | Employer Contributions Amount | Employer Contributions % of Covered Payroll | Member Contributions | Total Income (Loss) |
|---|---|---|---|---|---|
| 2008 | $ (71,133,793) | $ 43,918,411 | 11.5 | $ 345,637 | $ (26,869,745) |
| 2009 | (255,038,464) | 43,673,027 | 11.0 | 172,567 | (211,192,870) |
| 2010 | 112,048,344 | 48,748,397 | 12.4 | 215,669 | 161,012,410 |
| 2011 | 210,594,126 | 62,374,396 | 15.9 | 358,202 | 273,326,724 |
| 2012 | 19,697,149 | 77,995,003 | 20.0 | 359,028 | 98,051,180 |
| 2013 | 148,178,701 | 88,300,214 | 22.5 | 223,720 | 236,702,635 |
| 2014 | 209,647,169 | 94,917,886 | 23.7 | 3,623,467 | 308,188,522 |
| 2015 | 66,818,039 | 97,170,796 | 23.8 | 6,728,131 | 170,716,966 |
| 2016 | 40,260,042 | 77,100,573 | 19.3 | 10,350,709 | 127,711,324 |
| 2017 | 163,156,838 | 84,474,451 | 21.6 | 10,656,243 | 258,287,532 |

Note: Employer contributions were made in accordance with actuarially determined contribution requirements.

Employees' Retirement System
City of Baltimore, Maryland
**EXPENSES BY TYPE**

| Fiscal Year | Benefits | Refunds | Administrative Expenses | Total |
|---|---|---|---|---|
| 2008 | $ 102,700,443 | $ 9,161 | $ 2,913,458 | $ 105,623,062 |
| 2009 | 105,337,444 | | 3,138,612 | 108,476,056 |
| 2010 | 109,172,504 | 334 | 3,061,461 | 112,234,299 |
| 2011 | 113,312,395 | 95,936 | 3,189,932 | 116,598,263 |
| 2012 | 120,165,769 | 9,088 | 3,297,684 | 123,472,541 |
| 2013 | 124,905,944 | 6,381 | 3,554,942 | 128,467,267 |
| 2014 | 129,969,746 | 4,224 | 3,711,975 | 133,685,945 |
| 2015 | 134,198,650 | 72,007 | 3,748,433 | 138,019,090 |
| 2016 | 138,961,908 | 235,808 | 3,515,492 | 142,713,208 |
| 2017 | 144,260,498 | 348,412 | 3,584,506 | 148,193,416 |

Employees' Retirement System
City of Baltimore, Maryland
**SCHEDULE OF ACTIVE MEMBERS BY YEARS OF SERVICE**

| Years of Credited Service | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-4 | 2,306 | 2,714 | 2,675 | 2,426 | 2,051 | 1,811 | 1,766 | 1,800 | 1,678 | 1,723 |
| 5-9 | 1,812 | 1,826 | 1,917 | 1,929 | 2,033 | 2,181 | 2,215 | 2,026 | 1,778 | 1,523 |
| 10-14 | 1,304 | 1,406 | 1,376 | 1,422 | 1,426 | 1,425 | 1,430 | 1,451 | 1,446 | 1,458 |
| 15-19 | 949 | 724 | 705 | 710 | 817 | 988 | 1,054 | 1,034 | 1,059 | 1,072 |
| 20-24 | 1,166 | 1,320 | 1,307 | 1,192 | 979 | 721 | 550 | 519 | 547 | 623 |
| 25-29 | 976 | 929 | 794 | 707 | 772 | 892 | 992 | 968 | 887 | 705 |
| 30+ | 767 | 800 | 906 | 1,007 | 1,029 | 986 | 897 | 875 | 879 | 939 |
| Total Members | 9,280 | 9,719 | 9,680 | 9,393 | 9,107 | 9,004 | 8,904 | 8,673 | 8,274 | 8,043 |
| Average Service Credit | 13.56 | 13.17 | 13.27 | 13.58 | 13.92 | 13.92 | 13.83 | 13.88 | 14.30 | 14.34 |
| Average Age | 48.66 | 48.61 | 48.96 | 49.35 | 49.74 | 49.89 | 49.89 | 50.10 | 50.54 | 50.66 |

Employees' Retirement System
City of Baltimore, Maryland
**SCHEDULE OF RETIREES BY ATTAINED AGE AND TYPE OF RETIREMENT**
June 30, 2017

| | | TYPE OF RETIREMENT* | | | | |
|---|---|---|---|---|---|---|
| Age | Number of Recipients | 0 | 1 | 2 | 3 | 4 |
| 0-29 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30-39 | 6 | 0 | 0 | 0 | 6 | 0 |
| 40-44 | 12 | 0 | 0 | 0 | 11 | 1 |
| 45-49 | 30 | 2 | 0 | 2 | 26 | 0 |
| 50-54 | 114 | 29 | 0 | 15 | 66 | 4 |
| 55-59 | 524 | 133 | 141 | 72 | 171 | 7 |
| 60-64 | 1,153 | 395 | 369 | 166 | 213 | 10 |
| 65-69 | 1,770 | 930 | 482 | 203 | 148 | 7 |
| 70-74 | 1,408 | 833 | 343 | 148 | 75 | 9 |
| 75-79 | 1,029 | 570 | 288 | 105 | 59 | 7 |
| 80-84 | 773 | 387 | 266 | 82 | 31 | 7 |
| 85 and up | 843 | 512 | 231 | 77 | 17 | 6 |
| Totals | 7,662 | 3,791 | 2,120 | 870 | 823 | 58 |
| Average Annual Benefit | $17,389 | $23,646 | $7,340 | $21,595 | $9,636 | $22,704 |

*Type of Retirement
0 - Normal retirement for age and service
1 - Early retirement
2 - Discontinued service retirement
3 - Non-line of duty disability
4 - Line of duty disability

Employees' Retirement System
City of Baltimore, Maryland
**SCHEDULE OF BENEFICIARIES BY ATTAINED AGE AND TYPE OF RETIREMENT**
June 30, 2017

| Age | Number of Recipients | TYPE OF RETIREMENT* 0 | 1 | 2 | 3 | 4 | 5 | 8 |
|---|---|---|---|---|---|---|---|---|
| 0-24 | 18 | 8 | 2 | 2 | 4 | - | 2 | - |
| 25-29 | - | - | - | - | - | - | - | - |
| 30-34 | 1 | - | - | - | 1 | - | - | - |
| 35-39 | - | - | - | - | - | - | - | - |
| 40-44 | 2 | - | - | - | - | - | 2 | - |
| 45-49 | 6 | 1 | - | 1 | 3 | 1 | - | - |
| 50-54 | 23 | 5 | 6 | 2 | 8 | - | 2 | - |
| 55-59 | 71 | 26 | 10 | 4 | 20 | 1 | 10 | - |
| 60-64 | 125 | 50 | 19 | 6 | 32 | - | 18 | - |
| 65-69 | 214 | 86 | 35 | 15 | 59 | 2 | 17 | - |
| 70-74 | 210 | 101 | 37 | 22 | 36 | 1 | 13 | - |
| 75-79 | 235 | 113 | 51 | 22 | 31 | 3 | 14 | 1 |
| 80-84 | 237 | 129 | 59 | 13 | 23 | 1 | 12 | - |
| 85 and up | 340 | 210 | 63 | 21 | 27 | 9 | 10 | - |
| Totals | 1,482 | 729 | 282 | 108 | 244 | 18 | 100 | 1 |
| Average Annual Benefit | $8,580 | $10,411 | $4,365 | $10,458 | $5,246 | $9,893 | $12,968 | $10,912 |

*Type of Retirement
0 - Normal retirement for age and service
1 - Early retirement
2 - Discontinued service retirement
3 - Non-line-of-duty disability
4 - Line-of-duty disability
5 - Non-line-of-duty death, member eligible for service retirement at death
8 - Line-of-duty death

Employees' Retirement System
City of Baltimore, Maryland
**BENEFIT EXPENSES BY TYPE**

| Year | Age and Service Benefits | | | Death Benefits | | | Disability Benefits | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Retirees | | | |
| Ending | Retirees | Beneficiaries | Lump Sum | Duty | Non-Duty | Lump Sum | Duty | Non-Duty | Beneficiaries | Total |
| 2008 | 85,680,282 | 6,378,604 | 324,170 | 516,418 | 981,229 | 177,877 | 1,503,083 | 5,994,761 | 1,144,019 | 102,700,443 |
| 2009 | 86,813,655 | 6,856,655 | 289,626 | 502,613 | 1,100,267 | 881,569 | 1,513,339 | 6,214,941 | 1,164,778 | 105,337,443 |
| 2010 | 90,004,238 | 7,367,063 | 155,564 | 461,609 | 1,246,067 | 791,170 | 1,443,226 | 6,499,946 | 1,203,621 | 109,172,504 |
| 2011 | 94,588,958 | 7,080,619 | 123,425 | 418,549 | 1,151,890 | 546,942 | 1,420,134 | 6,722,021 | 1,259,857 | 113,312,395 |
| 2012 | 99,171,620 | 8,156,362 | 73,596 | 410,158 | 1,143,187 | 1,289,869 | 1,435,552 | 7,093,318 | 1,392,106 | 120,165,768 |
| 2013 | 103,423,042 | 8,739,976 | 157,082 | 388,447 | 1,187,725 | 689,223 | 1,438,353 | 7,413,884 | 1,468,211 | 124,905,943 |
| 2014 | 107,713,150 | 9,102,520 | 63,979 | 404,560 | 1,236,993 | 699,991 | 1,498,018 | 7,721,421 | 1,529,114 | 129,969,746 |
| 2015 | 110,984,187 | 9,378,946 | 125,608 | 416,846 | 1,274,558 | 943,540 | 1,543,510 | 7,955,905 | 1,575,550 | 134,198,650 |
| 2016 | 130,663,656 | 7,161,289 | 124,748 | 270,961 | 1,059,257 | 652,743 | 1,286,253 | 395,782 | 1,098,518 | 142,713,208 |
| 2017 | 122,699,096 | 7,476,618 | 77,861 | 296,229 | 1,450,454 | 1,225,559 | 1,572,777 | 8,124,459 | 1,337,445 | 144,260,498 |

Employees' Retirement System
City of Baltimore, Maryland
**AVERAGE MONTHLY BENEFIT PAYMENTS - NEW RETIREES**

| Retirement Effective Dates | Years of Credited Service | | | | | |
|---|---|---|---|---|---|---|
| | 0-10 | 11-15 | 16-20 | 21-25 | 26-30 | 31+ |
| Period 7/1/07 to 6/30/08 | | | | | | |
| Average-Average Final Compensation | $ 3,331 | $ 4,546 | $ 10,411 | $ 14,291 | $ 18,903 | $ 22,097 |
| Average Monthly Benefit | 278 | 379 | 868 | 1,191 | 1,575 | 1,841 |
| Total No. of Retirees | 39 | 40 | 44 | 45 | 48 | 89 |
| Period 7/1/08 to 6/30/09 | | | | | | |
| Average-Average Final Compensation | $ 4,217 | $ 5,490 | $ 10,265 | $ 14,883 | $ 21,556 | $ 26,846 |
| Average Monthly Benefit | 351 | 457 | 855 | 1,240 | 1,796 | 2,237 |
| Total No. of Retirees | 60 | 62 | 57 | 31 | 55 | 106 |
| Period 7/1/09 to 6/30/10 | | | | | | |
| Average-Average Final Compensation | $ 4,291 | $ 5,915 | $ 10,768 | $ 16,808 | $ 19,971 | $ 26,390 |
| Average Monthly Benefit | 358 | 493 | 897 | 1,401 | 1,664 | 2,199 |
| Total No. of Retirees | 52 | 48 | 41 | 55 | 58 | 115 |
| Period 7/1/10 to 6/30/11 | | | | | | |
| Average-Average Final Compensation | $ 5,259 | $ 6,584 | $ 9,636 | $ 17,606 | $ 23,588 | $ 30,143 |
| Average Monthly Benefit | 438 | 549 | 803 | 1,467 | 1,966 | 2,512 |
| Total No. of Retirees | 46 | 48 | 49 | 55 | 71 | 100 |
| Period 7/1/11 to 6/30/12 | | | | | | |
| Average-Average Final Compensation | $ 4,590 | $ 6,510 | $ 10,320 | $ 15,464 | $ 24,619 | $ 44,700 |
| Average Monthly Benefit | 383 | 542 | 860 | 1,289 | 2,052 | 3,725 |
| Total No. of Retirees | 69 | 60 | 29 | 52 | 62 | 107 |

Employees' Retirement System
City of Baltimore, Maryland
**AVERAGE MONTHLY BENEFIT PAYMENTS - NEW RETIREES**

| Retirement Effective Dates | Years of Credited Service | | | | | |
|---|---|---|---|---|---|---|
| | 0-10 | 11-15 | 16-20 | 21-25 | 26-30 | 31+ |
| Period 7/1/12 to 6/30/13 | | | | | | |
| Average-Average Final Compensation | $ 4,161 | $ 7,014 | $ 11,342 | $ 13,417 | $ 22,068 | $ 46,793 |
| Average Monthly Benefit | 347 | 585 | 945 | 1,118 | 1,839 | 3,899 |
| Total No. of Retirees | 65 | 58 | 39 | 63 | 57 | 104 |
| Period 7/1/13 to 6/30/14 | | | | | | |
| Average-Average Final Compensation | $ 5,365 | $ 7,901 | $ 10,578 | $ 15,161 | $ 22,880 | $ 29,604 |
| Average Monthly Benefit | 447 | 658 | 882 | 1,263 | 1,907 | 2,467 |
| Total No. of Retirees | 67 | 69 | 32 | 57 | 60 | 135 |
| Period 7/1/14 to 6/30/15 | | | | | | |
| Average-Average Final Compensation | $ 7,428 | $ 7,216 | $ 12,285 | $ 14,845 | $ 24,251 | $ 29,659 |
| Average Monthly Benefit | 619 | 601 | 1,024 | 1,237 | 2,021 | 2,472 |
| Total No. of Retirees | 71 | 50 | 42 | 31 | 61 | 106 |
| Period 7/1/15 to 6/30/16 | | | | | | |
| Average-Average Final Compensation | $ 5,670 | $ 7,286 | $ 10,581 | $ 13,174 | $ 21,873 | $ 31,452 |
| Average Monthly Benefit | 472 | 607 | 882 | 1,098 | 1,823 | 2,621 |
| Total No. of Retirees | 79 | 72 | 56 | 38 | 71 | 130 |
| Period 7/1/16 to 6/30/17 | | | | | | |
| Average-Average Final Compensation | $ 7,594 | $ 8,897 | $ 11,430 | $ 18,309 | $ 22,205 | $ 37,646 |
| Average Monthly Benefit | 633 | 741 | 953 | 1,526 | 1,850 | 3,137 |
| Total No. of Retirees | 92 | 77 | 57 | 30 | 67 | 92 |

EMPLOYEES'
RETIREMENT
SYSTEM
of the CITY OF BALTIMORE

# EMPLOYEES' RETIREMENT SYSTEM

## City of Baltimore, Maryland


7 E. Redwood Street
12th Floor
Baltimore, Maryland 21202

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City of Baltimore Mayor's Office